

ASCII Object Reference SERVOSTAR 300 and S700

Revision 2.2

Previous versions

Description	Edition	
Beta Basic Edition	REV 1.0 beta	11.05.04
Basic Edition	REV 1.0	03.05.05
New Commands and amendments	REV 1.1	11.10.05
New Commands and amendments	REV 1.2	02.02.06
New Commands and amendments	REV 1.3	11.09.06
New Commands and amendments	REV 1.4	23.10.06
New Commands and amendments	REV 1.5	30.10.06
New Commands and amendments	REV 1.6	03.11.06
New Commands and amendments	REV 1.7	23.11.06
New Commands and amendments	REV 1.8	15.03.07
New Commands and amendments	REV 1.9	21.12.07
New Commands and amendments	REV 2.0	30.01.08
New Commands and amendments	REV 2.1	05.12.08
New Commands and amendments	REV 2.2	18.06.09

ASCII -Command	\
Syntax Transmit	\[Data]
Syntax Receive	\<Data>
Type	Command
Format	Unsigned8
DIM	-
Range	0(=Master) .. 63
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Communication

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		362B (hex)	
PROFIBUS PNU:		1899 (dec) IND = 1 (de	
DPR Objekt Nr:		299	

Data Type BUS/DPR	Unsigned8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Selection of remote address
-------------------	-----------------------------

Description

For a CAN network with several amplifiers, there is an option for using a serial connection to one of the devices (master) to communicate with all the other amplifiers. To do this, the |SCAN| command is initiated on the master device, which performs an automatic detection of all the drivess that are connected. The response to the |SCAN| command contains a list of the addresses of all the drives devices that have been detected.

Typing the backslash character followed by a drive address (\ addr) in the range of 0 to 63 selects the addressed drive for communications. Further commands sent via the serial interface are ignored by the master device, and passed on directly across the CAN bus to the activated device. The response that this device outputs to the CAN bus is diverted to the serial interface. The command, \0, deselects the slave device and re-activate the master.

The setting |MDRV| = 0 disables the multi link functionality.

ASCII -Command	ACC
Syntax Transmit	ACC [Data]
Syntax Receive	ACC <Data>
Type	Variable rw
Format	Integer32
DIM	>> ACCUNIT
Range	3 ..126000
Default	3150
Opmode	0, 1
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	velocity

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	136		
CAN Object No:	3501 (hex)		
PROFIBUS PNU:	1601 (dec) IND = 1 (de		
DPR Objekt Nr:	1		

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Acceleration ramp
-------------------	-------------------

Description

This variable defines the acceleration ramp for the velocity control loop. The acceleration ramp is only used for command changes resulting in a velocity increase (acceleration). |DEC| is used for braking (deceleration).

See also |ACCUNIT|

ASCII -Command	ACC_X
Syntax Transmit	ACC_X [Data]
Syntax Receive	ACC_X <Data>
Type	Variable rw
Format	Integer16
DIM	>> ACCUNIT
Range	3 ... 126000
Default	3150
Opmode	All
Drive Status	-
Start Firmware	3.07
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3877 (hex)
PROFIBUS PNU:	1687 (dec) IND = 33 (d)
DPR Objekt Nr:	887

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	2.0
EEPROM	Yes

Short Description	acceleration ramp velocity controller 2. Set
-------------------	--

Description
see |PARCNFG|

ASCII -Command	ACCR
Syntax Transmit	ACCR [Data]
Syntax Receive	ACCR <Data>
Type	Variable rw
Format	Integer32
DIM	>> ACCUNIT
Range	3 ..126000
Default	3150
Opmode	8
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Setting-up Mode

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	42		
CAN Object No:	3502 (hex)		
PROFIBUS PNU:	1602 (dec) IND = 1 (de		
DPR Objekt Nr:	2		

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Acceleration ramp for homing/jog modes
-------------------	--

Description

This variable defines the acceleration ramp used for jogging and homing with the internal position control loop. The entry is made in ACCUNIT. If |ACCUNIT|=0 (acceleration in ms) ACCR is defined to |PVMAX|. When starting the homing or jog mode, the ACCR acceleration ramp can (in some circumstances) be limited by the minimum acceleration time |PTMIN|.

ASCII -Command	ACCUNIT
Syntax Transmit	ACCUNIT [Data]
Syntax Receive	ACCUNIT <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	0,1, ... , 30
Default	1
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☒
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☒
SERCOS IDN:	160...2
CAN Object No:	3659 (hex)
PROFIBUS PNU:	1945 (dec) IND = 1 (de
DPR Objekt Nr:	345
Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Type of acceleration setpoint for the system
-------------------	--

Description

Using this command, the systemwide acceleration type is defined. This function is used for ramps of the trajectory generator (internal motion tasks |OPMODE| 8) and also for the ramps of the speed controller.

ACCUNIT = 0 in ms up to |VLIM| or |PVMAX|
 ACCUNIT = 1 Acceleration is defined in rad/sec²
 ACCUNIT = 2 Acceleration is defined in rpm/sec
 ACCUNIT = 3 Acceleration is defined in |PUNIT|/sec²
 ACCUNIT = 4 Acceleration is defined in 1000*|PUNIT|/sec²
 ACCUNIT = 5 Acceleration is defined 1000000*|PUNIT|/sec²

If ACCUNIT=1 is selected, this Bit is ignored, this means the ramps are calculated in rad/sec².

If ACCUNIT is changed, all acc/dec parameters are calculated in a different way to get the right unit. Affected are |ACC|, |ACCR|, |DEC|, |DECR|, |DECSTOP|, |DECDIS|.

The motion tasks are not affected. So, before defining a motion task ACCUNIT has to be set in right manner. If ACCUNIT is changed later, all motion tasks have to be proofed or changed !!!!

The accdec-ramps of the motion tasks are limited bei |PTMIN|.

Attention!

High acceleration corresponds to small values of |PTMIN| at ACCUNIT=0. If ACCUNIT is > 0, |PTMIN| is small if the acceleration is high.

ASCII -Command	ACTFAULT
Syntax Transmit	ACTFAULT [Data]
Syntax Receive	ACTFAULT <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 1
Default	1
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☒
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	3503 (hex)		
PROFIBUS PNU:	1603 (dec) IND = 1 (de		
DPR Objekt Nr:	3		

Data Type BUS/DPR	Integer8
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Active fault mode
-------------------	-------------------

Description

The ACTFAULT command is used to specify the response of the drive if a fault occurs.

ACTFAULT=0: If a fault occurs, the output stage is immediately inhibited, the drive coasts down.

ACTFAULT=1: If a fault occurs, an Emergency Stop procedure is initiated, that consists of the following steps.

1. Switch over the controller mode to velocity control (|OPMODE|=0)
2. Change the braking ramp for the velocity control loop (|DEC|) to the emergency stop ramp (|DECSTOP|)
3. Set the internal velocity setpoint to 0 (before the ramp generator).
4. Start a timer (with time-out = 5 seconds)

As soon as the internal velocity setpoint (after the ramp generator) has reached 0, the output stage is inhibited and the original controller mode is re-activated. This will also happen if the time-out occurs before the velocity setpoint has reached 0.

ASCII -Command	ACTIVE
Syntax Transmit	ACTIVE
Syntax Receive	ACTIVE <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	0, 1
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	3504 (hex)		
PROFIBUS PNU:	1604 (dec) IND = 1 (de		
DPR Objekt Nr:	4		

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Output stage active/inhibited
-------------------	-------------------------------

Description

The ACTIVE command returns the present status of the output stage.

ACTIVE=1 output stage is active/enabled

ACTIVE=0 output stage is inhibited/disabled

The following conditions must be met to enable the output stage, depending on the controller configuration:

1. Standard configuration (no active MainsBTB function)
 - software enable set
 - hardware enable set
 - BTB is present
2. With active MainsBTB function (|O1MODE| or |O2MODE|=3)
 - Software enable set
 - hardware enable set
 - BTB is present
 - MainsBTB (Mains supply BTB) is present
 - DC-link (DC-bus) voltage > undervoltage threshold

ASCII -Command	ACTRS232
Syntax Transmit	ACTRS232 [Data]
Syntax Receive	ACTRS232 <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 1, 2
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700	
MMI	☒	CAN-Bus ☒
PROFIBUS	☒	Sercos ☐
SERCOS IDN:		
CAN Object No:	3655 (hex)	
PROFIBUS PNU:	1941 (dec) IND = 1 (de	
DPR Objekt Nr:	341	
Data Type BUS/DPR	Integer8	
Weighting 10^3		

Last Change of this Object	1.0
EEPROM	No

Short Description	Activate RS232 watchdog
-------------------	-------------------------

Description

The ACTRS232 command activates or deactivates the monitoring of the serial interface (RS232-watchdog).

ACTRS232=0 no monitoring of serial communication

ACTRS232=1 the RS232-watchdog is activated. The watchdog timer can be set in msec through the [RS232T] command. The watchdog must be triggered by every serial command. When the timer runs out, all movement is stopped and the warning n04 is displayed. The warning must be cancelled by the "Acknowledge fault" function.

ACTRS232=2 the RS232-watchdog is activated. The watchdog timer can be set in msec through the [RS232T] command. The watchdog must be triggered by every serial command. When the timer runs out, the present movement is stopped and ACTRS232 is set to 0. No warning is given out.

After switching on the amplifier, the RS232-watchdog is always deactivated (ACTRS232=0). When a service function is initiated via the serial interface, the PC program (or external controls) should ensure that the monitoring of the serial interface is switched on. In this way, you can be sure that if communication is interrupted or the PC crashes, the service function will be automatically terminated.

ASCII -Command	ADDR
Syntax Transmit	ADDR [Data]
Syntax Receive	ADDR <Data>
Type	Variable rw
Format	Unsigned8
DIM	-
Range	0 .. 127
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☒
Function Group	Basic Setup

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	96		
CAN Object No:	3505 (hex)		
PROFIBUS PNU:	1605 (dec) IND = 1 (de		
DPR Objekt Nr:	5		

Data Type BUS/DPR	Unsigned8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Multidrop address
-------------------	-------------------

Description

This variable defines the station address (0 to 63) for the amplifier. This address is required by the fieldbus (CANBUS, PROFIBUS, SERCOS, etc.) and for the parameter setting of the servo amplifier in a multi-axis system for an unambiguous identification of the servo amplifier within the system. You can use the keys on the front panel of the servo panel to set the station address (refer to the Installation Manual). After changing the address, all parameters should be stored in the EEPROM (see |SAVE|) and the amplifier should be switched off and on again.

ASCII -Command	AENA
Syntax Transmit	AENA [Data]
Syntax Receive	AENA <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 1
Default	0
Opmode	0, 2, 4, 5, 8
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	3506 (hex)		
PROFIBUS PNU:	1606 (dec) IND = 1 (de		
DPR Objekt Nr:	6		
Data Type BUS/DPR	Integer8		
Weighting 10^3			

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Software auto-enable
-------------------	----------------------

Description

This variable defines the state of the software enable when the amplifier is switched on. In order to enable the output stage, both the hardware enable and the software enable must be set (series AND configuration). The software enable gives an external control the option of enabling or disabling the output stage by software control, via a bus interface (CANBUS, PROFIBUS, SERCOS, RS232) or an expansion card in a slot.

0 = inactive

1 = active

When using an analog setpoint (|OPMODE|=1, 3), the software enable is automatically set when the amplifier is switched on, so that these instruments are instantly ready for operation (provided that the hardware enable is already present). When using a digital setpoint (|OPMODE|=0, 2, 4 through 8), the software enable is set to the same state as AENA at power-on.

For faults that can be reset in software after the fault has been cleared (digital input 1 or |CLRFAULT|), the software enable is set to the state of AENA. In this way, the response of the amplifier to a software reset is analogous to the power-on behavior.

ASCII -Command	ALIAS
Syntax Transmit	ALIAS [Data]
Syntax Receive	ALIAS <Data>
Type	Variable rw
Format	String
DIM	-
Range	max 8 ASCII Characters
Default	DRIVE0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Basic Setup

Available in	S300/700
MMI	☒ CAN-Bus ☐
PROFIBUS	☐ Sercos ☒
SERCOS IDN:	142
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Drive name
-------------------	------------

Description

The ALIAS command is used to assign a symbolic name to an amplifier. If the PC setup software is used, this name appears in the title bar of all open parameter windows.

In Multi-Drive mode (parameterizing several amplifiers that are grouped through the CAN bus) the ALIAS name can be used to give a clear assignment of the parameter window to the corresponding amplifier.

ASCII -Command	AN11NR
Syntax Transmit	AN11NR [Data]
Syntax Receive	AN11NR <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 1, 2, 3, 4
Default	0
Opmode	All
Drive Status	Disable
Start Firmware	1.0
Configuration	☒
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3699 (hex)
PROFIBUS PNU:	2009 (dec) IND = 1 (de
DPR Objekt Nr:	409

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	No. of INxTRIG variable, that is changed analog
-------------------	---

Description

The parameter AN11NR defines the number (x) of the auxiliary variable |IN1TRIG|, |IN2TRIG|, |IN3TRIG| or |IN4TRIG|, which can be changed by the analog input 2. This parameter has effect only with |ANCNFG|=11 and |ANCNFG|=12.

ASCII -Command	AN11RANGE
Syntax Transmit	AN11RANGE [Data]
Syntax Receive	AN11RANGE <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	-262144 .. 262143
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	369A (hex)
PROFIBUS PNU:	2010 (dec) IND = 1 (de
DPR Objekt Nr:	410

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Range of the analog change of INxTRIG
-------------------	---------------------------------------

Description

The parameter AN11RANGE gives the change of |IN1TRIG|, |IN2TRIG|, |IN3TRIG| or |IN4TRIG|, that is caused by an analog input 2 step from 0V to 10V. The function is supported using |ANCNFG|=11 and |ANCNFG|=12.

Example:

```
|ANCNFG|=11
|AN11NR|=1
|IN1TRIG|=1000
AN11RANGE=500
```

```
at Analog input2 = 0V |IN1TRIG| = 1000
at Analog input2 = 10V |IN1TRIG| = 1500
at Analog input2 = -10V |IN1TRIG| = 500
```

ASCII -Command	AN1TRIG
Syntax Transmit	AN1TRIG [Data]
Syntax Receive	AN1TRIG <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	Long Int
Default	0
Opmode	All
Drive Status	-
Start Firmware	3.00
Configuration	☐
Function Group	

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	3880 (hex)		
PROFIBUS PNU:	1696 (dec) IND = 33 (d)		
DPR Objekt Nr:	896		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	2.1
EEPROM	Yes

Short Description	Scaling of the analog output 1
-------------------	--------------------------------

Description
AN1TRIG scales the analog output. The scaling is done in %.

ASCII -Command	AN2TRIG
Syntax Transmit	AN1TRIG [Data]
Syntax Receive	AN1TRIG <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	Long Int
Default	0
Opmode	All
Drive Status	-
Start Firmware	3.00
Configuration	☐
Function Group	

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		3881 (hex)	
PROFIBUS PNU:		1697 (dec) IND = 33 (d)	
DPR Objekt Nr:		897	

Data Type BUS/DPR	Integer32
Weighting 10 ³	

Last Change of this Object	2.1
EEPROM	Yes

Short Description	Scaling of the analog output 2
-------------------	--------------------------------

Description

AN2TRIG scales the analog output. The scaling is done in %.

Example:

|ANOUT2| = 1 Actual velocity

AN2TRIG = 100 10V at the output at actual velocity=|VLIM|

AN2TRIG = 50 5V at the output at actual velocity=|VLIM|

AN2TRIG = 200 10V at the output at actual velocity=|VLIM|/2

If |ANOUT2|=8 is selected (constant voltage), AN2TRIG gives the voltage in mV.

ASCII -Command	ANCNFG
Syntax Transmit	ANCNFG [Data]
Syntax Receive	ANCNFG <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 14
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☒
Function Group	Analog I/O

Available in	S300/700	
MMI	☒	CAN-Bus ☒
PROFIBUS	☒	Sercos ☐
SERCOS IDN:		
CAN Object No:	3507 (hex)	
PROFIBUS PNU:	1607 (dec) IND = 1 (de	
DPR Objekt Nr:	7	
Data Type BUS/DPR	Integer8	
Weighting 10^3		

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Configuration of analog input
-------------------	-------------------------------

Description

The ANCNFG command is used to configure the function of the analog inputs.

Since the ANCNFG variable is used for the configuration of the instrument, the controller must be switched off and then on again after the variable has been changed (use |SAVE| first).

Zustand		Description
ANCNFG=0	(Xcmd=Analog In 1)	Analog In 1 is used as velocity setpoint or current setpoint depending on the status of OPMODE (velocity in OPMODE =1; current in OPMODE =3). If one of the digital inputs is selected for IN1TRIG , IN2TRIG , IN3TRIG or IN4TRIG =8 (switch-over between Analog In 1 and Analog In 2), Analog In 1 (input=low) or Analog In 2 (input=high) have the functionality. Scaling : Analog In 1 velocity Setpoint VSCALE1 (OPMODE =1) Analog In 1 Current Setpoint ISCALE1 (OPMODE =3) Analog In 2 velocity Setpoint VSCALE2 (OPMODE =1) Analog In 2 Current Setpoint ISCALE2 (OPMODE =3)
ANCNFG=1	v_cmd=Analog In 1, Icmd=Analog In 2	Analog In 1 is used as velocity setpoint if OPMODE =1 (scaling factor VSCALE1) Analog In 2 is used as current setpoint if OPMODE =3 (scaling factor ISCALE2)
ANCNFG=2	Analog In 1 = nsoll, Analog In 2 = Isoll	Analog In 1 velocity setpoint Analog In 2 current feedforward (OPMODE =0,1) scaling factor ISCALE2
ANCNFG=3	Xcmd=Analog In 1, Ipeak1=Analog In 2	Analog In 1 depending on OPMODE velocity or current setpoint (scaling VSCALE1 or ISCALE1) The absolute of Analog In 2 limits the current of the drive 10V 100% of IPEAK 5V 50% of IPEAK This current limit has effect to all used OPMODE

ANCNFG=4	Xcmd=Analog In 1+Analog In 2	The sum of Analog In 1 and Analog In 2 is used for velocity or current setpoint, depending on OPMODE . OPMODE 1 velocity setpoint OPMODE 3 current setpoint
ANCNFG=5	Xcmd=Analog In 1*Analog In 2	The multiplikation of Analog In 1 and Analog In 2 is used for velocity or current setpoint, depending on OPMODE . OPMODE 1 velocity setpoint OPMODE 3 current setpoint Analog In 1 VSCALE1 / ISCALE1 Analog In 2 10V means 100% -10V means -100%
ANCNFG=6	Electronic Gearing	Analog In 1 is used as velocity or current setpoint, depending on OPMODE Analog In 2 is used as scaling factor for electronic gearing (OPMODE =4). VSCALE2 is used to define a correction factor in %. e.g. VSCALE2 =20 (means 20%) Analog In 2= +10V GEAROeff= GEARO * 1.2 Analog In 2= -10V GEAROeff= GEARO * 0.8 Analog In 2= 0V GEAROeff= GEARO
ANCNFG=7	Analog In 1 = Isoll, Analog In 2 = Nmax	Analog In 1 is used as current setpoint (ISCALE1) (OPMODE has to be set to 3). Analog In 2 limits the velocity of the motor Analog In 2=10V, Nmax=(VSCALE2) If the velocity of the motor is greater than Nmax, the velocity is limited.
ANCNFG=8	Analog In 1 = Psoll	Analog In 1 is used as a analog position setpoint (only available in OPMODE =5). The working distance is defined by SRND and ERND . Analog In 1 = 0V Position = SRND Analog In 1 = +/-10V Position = ERND When the drive is switched on, the reference point is not set and the drive does not move. The OPMODE can be set to 5. The a reference move can be starte bs digital input. After that, when the homing move is finished, the input can be set to zero again and then the drive moves automatically to the given analog position. POSCNFG has to be "0" (linear axes type).
ANCNFG=9		Analog In 1: velocity or current setpoint (same as ANCNFG=0) Analog In 2: Ferraris sensor
ANCNFG=10	Reserved	
ANCNFG=11		Change of an IN1TRIG , IN2TRIG , IN3TRIG or IN4TRIG variable via the Analog In 2. The corresponding Number (x) of the trigger variable is set by AN11NR . The range of the parameter change is defined by AN11RANGE . The change of the analog in 2 acts directly (update time 1 to 10ms), see also AN11NR and AN11RANGE .

ANCNFG=12		Internal change of an IN1TRIG , IN2TRIG , IN3TRIG or IN4TRIG variable via the Analog In 2. The corresponding number (x) of the trigger variable is set by AN11NR . The range of the parameter change is defined by AN11RANGE . The change of the analog in 2 acts after a rising edge at digital inputx, see also AN11NR and AN11RANGE .
ANCNFG=13	Xcmd=Analog In 1, Ipeak1=Analog In 2	Analog In 1 depending on OPMODE velocity or current setpoint (scaling VSCALE1 or ISCALE1) The absolute of Analog In 2 limits the positive current of the drive 10V 100% of IPEAK 5V 50% of IPEAK The negative current is not effected. In the positive direction, the acceleration current is limited and in the negative direction the deceleration current. This current limit has effect to all used OPMODE
ANCNFG=14	Xcmd=Analog In 1, Ipeak1=Analog In 2	Analog In 1 depending on OPMODE velocity or current setpoint (scaling VSCALE1 or ISCALE1) The absolute of Analog In 2 limits the negative current of the drive 10V 100% of IPEAK 5V 50% of IPEAK The positive current is not effected. In the negative direction, the acceleration current is limited and in the negative direction the deceleration current. This current limit has effect to all used OPMODE

ASCII -Command	ANDB
Syntax Transmit	ANDB [Data]
Syntax Receive	ANDB <Data>
Type	Variable rw
Format	Float
DIM	mV
Range	0.0 .. 10000.0
Default	0
Opmode	1, 3
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Analog I/O

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3508 (hex)
PROFIBUS PNU:	1608 (dec) IND = 1 (de
DPR Objekt Nr:	8

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Dead band of the analog velocity input signal
-------------------	---

Description

This variable suppresses small analog input signals by setting a dead band zone in which signals are ignored. This function is useful with |OPMODE|=1 (without higher-level position control). Depending on the operating mode, this parameter applies to analog input 1 or analog input 2 (depending on which setpoint input is used as the source for the velocity value). See |ANCNFG| for additional information.

ASCII -Command	ANIN1
Syntax Transmit	ANIN1
Syntax Receive	ANIN1 <Data>
Type	Variable ro
Format	Integer32
DIM	mV
Range	-10000 .. 10000
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Actual values

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	P 3034 ...5		
CAN Object No:	3509 (hex)		
PROFIBUS PNU:	1609 (dec) IND = 1 (de		
DPR Objekt Nr:	9		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Voltage at analog input 1
-------------------	---------------------------

Description

The ANIN1 command returns the present value of the voltage at the analog input analog input 1.

ASCII -Command	ANIN2	Available in	S300/700
Syntax Transmit	ANIN2	MMI	☒ CAN-Bus ☒
Syntax Receive	ANIN2 <Data>	PROFIBUS	☒ Sercos ☒
Type	Variable ro	SERCOS IDN:	P 3034 ...5
Format	Integer32	CAN Object No:	350A (hex)
DIM	mV	PROFIBUS PNU:	1610 (dec) IND = 1 (de
Range	-10000 .. 10000	DPR Objekt Nr:	10
Default	-	Data Type BUS/DPR	Integer32
Opmode	All	Weighting 10^3	
Drive Status	-	Last Change of this Object	1.0
Start Firmware	1.0	EEPROM	No
Configuration	☐		
Function Group	Actual values		
Short Description	Voltage at analog input 2		

Description

The ANIN2 command returns the present value of the voltage at the analog input SW2.

ASCII -Command	ANOFF1
Syntax Transmit	ANOFF1 [Data]
Syntax Receive	ANOFF1 <Data>
Type	Variable rw
Format	Integer16
DIM	mV
Range	-10000 .. 10000
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Analog I/O

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	350B (hex)		
PROFIBUS PNU:	1611 (dec) IND = 1 (de		
DPR Objekt Nr:	11		

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Analog offset for analog input 1
-------------------	----------------------------------

Description

This variable compensates for the offset voltages of CNC controls and the analog input 1 |ANIN1| . It can also correct an analog offset from external controls.

ASCII -Command	ANOFF2
Syntax Transmit	ANOFF2 [Data]
Syntax Receive	ANOFF2 <Data>
Type	Variable rw
Format	Integer16
DIM	mV
Range	-10000 .. 10000
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Analog I/O

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		350C (hex)	
PROFIBUS PNU:		1612 (dec) IND = 1 (de	
DPR Objekt Nr:		12	

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Analog offset for analog input 2
-------------------	----------------------------------

Description

This variable compensates for the offset voltages of CNC controls and the analog input, [ANIN2] . It can also correct an analog offset from external controls.

ASCII -Command	ANOUT1
Syntax Transmit	ANOUT1 [Data]
Syntax Receive	ANOUT1 <Data>
Type	Variable rw
Format	Integer8
DIM	
Range	0 .. 8
Default	0
Opmode	All
Drive Status	Disable + Reset
Start Firmware	3.00
Configuration	☒
Function Group	

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		387E (hex)	
PROFIBUS PNU:		1694 (dec) IND = 33 (d)	
DPR Objekt Nr:		894	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	2.1
EEPROM	Yes

Short Description	Configuration of the Analog Output 1
-------------------	--------------------------------------

Description

Only S700

Configuration of analog output 1. The actual value is read via |MONITOR1|. The output provides various analog command values or actual values, depending on the selection in the operator software. Output resistor 2.2kOhm. Resolution 10 bit.

ASCII -Command	ANOUT2
Syntax Transmit	ANOUT2 [Data]
Syntax Receive	ANOUT2 <Data>
Type	Variable rw
Format	Integer8
DIM	
Range	0 .. 8
Default	0
Opmode	All
Drive Status	Disable + Reset
Start Firmware	3.00
Configuration	☒
Function Group	

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		387F (hex)	
PROFIBUS PNU:		1695 (dec) IND = 33 (d)	
DPR Objekt Nr:		895	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	2.1
EEPROM	Yes

Short Description	Configuration of the Analog Output 2
-------------------	--------------------------------------

Description

Only S700

Configuration of analog output 2. The actual value is read via [MONITOR2]. The output provides various analog command values or actual values, depending on the selection in the operator software. Output resistor 2.2kOhm. Resolution 10 bit.

ASCII -Command	ANZERO1
Syntax Transmit	ANZERO1
Syntax Receive	ANZERO1
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Analog I/O

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	350F (hex)		
PROFIBUS PNU:	1615 (dec) IND = 1 (de		
DPR Objekt Nr:	15		

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Zero analog input 1
-------------------	---------------------

Description

This command can be used to start the automatic offset correction for the analog input 1. The setpoint at analog input 1 should be short-circuited before using this command. After the command has been carried out, the offset value that was determined is available in the |ANOFF1| parameter. To save this value permanently in the EEPROM, you should use the |SAVE| (save to EEPROM) command.

The function can adjust an offset of max. 75 mV.

ASCII -Command	ANZERO2
Syntax Transmit	ANZERO2
Syntax Receive	ANZERO2
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Analog I/O

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	3510 (hex)		
PROFIBUS PNU:	1616 (dec) IND = 1 (de		
DPR Objekt Nr:	16		

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Zero analog input SW2
-------------------	-----------------------

Description

This command can be used to start the automatic offset correction for the analog input 2. The setpoint at analog input 2 should be short-circuited before using this command. After the command has been carried out, the offset value that was determined is available in the |ANOFF2| parameter. To save this value permanently in the EEPROM, you should use the |SAVE| (save to EEPROM) command.

The function can adjust an offset of max. 75 mV.

ASCII -Command	ARHPD
Syntax Transmit	ARHPD [Data]
Syntax Receive	ARHPD <Data>
Type	Variable rw
Format	Float 32
DIM	
Range	0 ... 10
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3607 (hex)
PROFIBUS PNU:	1863 (dec) IND = 1 (de
DPR Objekt Nr:	263

Data Type BUS/DPR	Float 32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Damping high pass filter
-------------------	--------------------------

Description

ARHPD is the high-pass damping of the velocity-loop filter.

For a detailed description of how to set up the velocity-loop filter, see [BQMODE].

ASCII -Command	ARHPF
Syntax Transmit	ARHPF [Data]
Syntax Receive	ARHPF [Data]
Type	Variable rw
Format	Float 32
DIM	
Range	0 ... 4000
Default	1000
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3608 (hex)
PROFIBUS PNU:	1864 (dec) IND = 1 (de
DPR Objekt Nr:	264

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Frequency limit high pass filter
-------------------	----------------------------------

Description

ARHPF is the high-pass frequency of the velocity-loop filter.

For a detailed description of how to set up the velocity-loop filter, see [BQMODE].

ASCII -Command	ARLP2
Syntax Transmit	ARLP2 [Data]
Syntax Receive	ARLP2 [Data]
Type	Variable rw
Format	Float 32
DIM	Hz
Range	0 ... 1500
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3609 (hex)
PROFIBUS PNU:	1865 (dec) IND = 1 (de
DPR Objekt Nr:	265

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Low pass filter
-------------------	-----------------

Description

ARLP2 is the cut-off frequency of an additional 1st-order low-pass filter for the velocity loop. If ARLP2 is set to a value > 0, the filter is activated, otherwise it is turned off.

Low-pass filters are used to suppress signals of higher frequencies (e.g. resonances and noise). Applying a low-pass filter to the velocity loop leads to an undesired phase lag above the filter's cut-off frequency besides the desired signal attenuation. This leads to a degradation of phase margin. Thus, the velocity-loop bandwidth is always < 0.5 times the low-pass cut-off frequency.

For a detailed description of how to set up the velocity-loop filter, see [BQMODE].

ASCII -Command	ARLPD
Syntax Transmit	ARLPD [Data]
Syntax Receive	ARLPD [Data]
Type	Variable rw
Format	Float 32
DIM	
Range	0 ... 10
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	360A (hex)
PROFIBUS PNU:	1866 (dec) IND = 1 (de
DPR Objekt Nr:	266

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Damping low pass filter
-------------------	-------------------------

Description

ARLPD is the low-pass damping of the velocity-loop filter.

For a detailed description of how to set up the velocity-loop filter,see [BQMODE].

ASCII -Command	ARLPF	Available in	S300/700
Syntax Transmit	ARLPF [Data]	MMI	☐ CAN-Bus ☐
Syntax Receive	ARLPF [Data]	PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Float 32	CAN Object No:	360B (hex)
DIM		PROFIBUS PNU:	1867 (dec) IND = 1 (de
Range	0 ... 4000	DPR Objekt Nr:	267
Default	160	Data Type BUS/DPR	-
Opmode	All	Weighting 10^3	
Drive Status	-	Last Change of this Object	1.0
Start Firmware	1.0	EEPROM	Yes
Configuration	☐		
Function Group			
Short Description	Frequency limit low pass filter		

Description
ARLPF is the low-pass frequency of the velocity-loop filter.

For a detailed description of how to set up the velocity-loop filter, see [BQMODE].

ASCII -Command	ASMWAIT
Syntax Transmit	ASMWAIT [Data]
Syntax Receive	ASMWAIT <Data>
Type	Variable rw
Format	Integer32
DIM	ms
Range	0 .. 2000
Default	100
Opmode	All
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3868 (hex)
PROFIBUS PNU:	1672 (dec) IND = 33 (d)
DPR Objekt Nr:	872

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	2.1
EEPROM	Yes

Short Description	Forced delay of the velocity command value for induction machines
-------------------	---

Description

Forced delay of the velocity command value for induction machines.

An induction machine has to be magnetized before it can generate torque.

ASMWAIT sets a forced delay time, during which the velocity command value is kept at 0 after the drive is enabled. When the machine is completely magnetized, it can start with full torque.

Operation without brake (MBRAKE = 0):

Q-current is allowed directly after enabling the drive, to keep the shaft from moving too much.

Operation with brake (MBRAKE = 1):

TBRAKE0 inhibits Q-current, to prevent machine from working against the brake, before it is lifted completely.

ASMWAIT < TBRAKE0: After enable, velocity command and Q-current are kept ant 0 for the duration of TBRAKE0. The brake is lifted immediately. Magnetization begins before the end of TBRAKE0 (defined by ASMWAIT).

ASMWAIT > TBRAKE0: After enable, velocity command and Q-current are kept ant 0 for the duration of ASMWAIT.

Magnetization begins immediately. The brake is being lifted before the end of ASMWAIT (defined by TBRAKE0).

ASCII -Command	AUTOHOME
Syntax Transmit	AUTOHOME [Data]
Syntax Receive	AUTOHOME <Data>
Type	Variable rw
Format	Integer8
DIM	
Range	0,1
Default	0
Opmode	8, 4
Drive Status	Disable
Start Firmware	1.0
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36D7 (hex)
PROFIBUS PNU:	1671 (dec) IND = 17 (d)
DPR Objekt Nr:	471

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Automatic homing
-------------------	------------------

Description

The Command AUTOHOME selects, if the homing procedure will be started automatic.

AUTOHOME=0 no automatic homing prcedure started

AUTOHOME=1 After the drive is enabled the homing procedure [MH] is started automatic

FW > 1.31

AUTOHOME=2 After the drive is enabled the homing procedure [MH] is started automatic, in case it was not already set .

ASCII -Command	AVZ1
Syntax Transmit	AVZ1 [Data]
Syntax Receive	AVZ1 <Data>
Type	Variable rw
Format	Float
DIM	ms
Range	0.2 .. 100.0
Default	1
Opmode	1
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Analog I/O

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	3511 (hex)		
PROFIBUS PNU:	1617 (dec) IND = 1 (de		
DPR Objekt Nr:	17		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Filter time constant for analog input 1
-------------------	---

Description

Filter time constant for analog input 1. (62.5µs Update Rate)

ASCII -Command	AVZ2
Syntax Transmit	AVZ2 [Data]
Syntax Receive	AVZ2 <Data>
Type	Variable rw
Format	Float
DIM	ms
Range	0.2 .. 100.0
Default	1
Opmode	1
Drive Status	-
Start Firmware	3.07
Configuration	☐
Function Group	Analog I/O

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	387A (hex)		
PROFIBUS PNU:	1690 (dec) IND = 33 (d)		
DPR Objekt Nr:	890		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	2.1
EEPROM	Yes

Short Description	Filter time constant for analog input 2
-------------------	---

Description
Only S700

Filter time constant for analog input 2. (62.5µs Update Rate)

ASCII -Command	BCC
Syntax Transmit	BCC
Syntax Receive	BCC <Data>
Type	Variable ro
Format	Integer16
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	363A (hex)
PROFIBUS PNU:	1914 (dec) IND = 1 (de
DPR Objekt Nr:	314

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	EEPROM check sum
-------------------	------------------

Description

The BCC variable returns a checksum for the parameter area of the serial EEPROM.

When a [SAVE] command is carried out, all the internal parameters of the amplifier are saved in this area, in ASCII format. The checksum is obtained by summing all the stored bytes, and is recalculated with every [LOAD] or [SAVE] command. It is only intended for the detection of EEPROM errors.

But it can also be used to detect whether the data set that is present in the controls matches the data set that is stored in the servo amplifier.

ASCII -Command	BCCOT
Syntax Transmit	BCCOT [Data]
Syntax Receive	BCCOT <Data>
Type	Variable ro
Format	Integer16
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	2.14
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3895 (hex)
PROFIBUS PNU:	1828 (dec) IND = 17 (d)
DPR Objekt Nr:	917

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	2.2
EEPROM	Nein

Short Description	EEPROM check sum without life time counter
-------------------	--

Description

The BCCOT variable returns a checksum for the parameter area of the serial EEPROM without operation hour counter data. When a [SAVE] command is carried out, the internal parameters of the amplifier are saved in this area, in ASCII format. This checksum is obtained by summing the stored bytes, and is recalculated with every [LOAD] or [SAVE] command. This variable can be used to detect changes of drive parameters.

ASCII -Command	BQMODE
Syntax Transmit	BQMODE [Data]
Syntax Receive	BQMODE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0...4
Default	1
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3666 (hex)
PROFIBUS PNU:	1958 (dec) IND = 1 (de
DPR Objekt Nr:	358
Data Type BUS/DPR	Integer8
Weighting 10 ³	

Last Change of this Object	1.3
EEPROM	Yes

Short Description	Filter selection
-------------------	------------------

Description

Zustand	Short Description	Description
BQMODE=0	filter turned off	
BQMODE=1	compatibility mode	In this mode, the filter is selected due to the settings of ARLPF , ARHPF , ARLPD and ARHPD . The filter is selected as follows: ARLPF > 0, ARHPF > 0, ARLPD = ARHPD = 0 : PID-T2 filter (1st-order lag compensator) ARLPF > 0, ARHPF > 0, ARLPD > 0, ARHPD ≥ 0 : notch /bi-quad ARLPF > 0, ARLPD > 0, ARHPD = ARHPD = 0 : 2nd-order low-pass (n/a) ARLPF = ARHPF = ARLPD = ARHPD = 0 : filter turned off
BQMODE=2	PID-T2 filter (1st-order lag compensator)	The PID-T2 filter is only activated if the following conditions are met: ARLPF > 0, ARHPF > 0. PID-T2 filters can be used effectively to reduce the torque ripple and resonances from the motor, gearbox and a coupled load. The transfer function is TF

BQMODE=3	notch / bi-quad filter	The notch / bi-quad filter is only activated if the following conditions are met: $ ARLPF > 0, ARHPF > 0, ARLPD > 0, ARHPD \geq 0.$ Notch filters can be used to suppress single resonances because they offer a high attenuation for a small frequency range. However, even small deviations between filter frequency and resonance frequency degrade the effect of this filter type dramatically. This high parameter sensitivity makes notch filters difficult to set up. Bi-quad filters can be used effectively to compensate for resonances in a two-mass servo system. If set up properly, this filter type helps to increase the stability margins which allows for a higher gain and thus a higher bandwidth of the velocity loop. The transfer function is TF Note: If $ARLPF = ARHPF$, $ARLPD > 0$ and $ARHPD = 0$, the filter acts as a notch filter, otherwise it acts as a bi-quad filter.
BQMODE=4	2nd-order low-pass filter	The 2nd-order low-pass filter is only activated if the following conditions are met: $ ARLPF > 0, ARLPD > 0.$ For general examples of low-pass filter usage, see $ARLP2$. If a 1st-order low-pass filter exhibits too much phase lag below the cut-off frequency or too little signal attenuation above the cut-off frequency, a 2nd-order low-pass filter can be used to improve the behavior. The transfer function is TF

ASCII -Command	BUSP0
Syntax Transmit	BUSP1 [Data]
Syntax Receive	BUSP0 <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	0 .. 127
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☒
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	385B (hex)
PROFIBUS PNU:	1659 (dec) IND = 33 (d)
DPR Objekt Nr:	859

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	fieldbus configurationsvariable
-------------------	---------------------------------

Description

SERCOS:

IDN 97 lower 16 BIT

IDN 98 upper 16 BIT

CAN: (Firmware >=2.51)

The Bits 0 ..7 are used to enable different warnings. Default state is no warning message on the bus communicaion.

Bedeutung der Bits:

Bit 0: Emergency if Hardware-disable is set when CANopen - status is OPERATION ENABLE, Error Code 0x7181

Bit 1: Warnung n06 (software-limit switch 1 active), Error Code 0x8683

Bit 2: Warnung n07 (software-limit switch 1 active), Error Code 0x8684

Bit 3: Warnung n08 (bad motion task used), Error Code 0x8681

Bit 4: Warnung n09 (no referencepoint set), Error Code 0x8685

Bit 5: Warnung n10 (PSTOP reached), Error Code 0x8686

Bit 6: Warnung n11 (NSTOP reached), Error Code 0x8687

ASCII -Command	BUSP1
Syntax Transmit	BUSP1 [Data]
Syntax Receive	BUSP1 <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	0 .. 15
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36E5 (hex)
PROFIBUS PNU:	1685 (dec) IND = 17 (d)
DPR Objekt Nr:	485
Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	fieldbus configurationsvariable
-------------------	---------------------------------

Description

BUSP1 gives the state of the Modbus+ network of the drive. The bit 3 can be written by the drive and can be saved. If the bit is set, Modbus+ network errors are indicated at the drive.

default: T3 = 450µs ati 500µs cycletime

T3 = T2 + 50 us fix at 250us cycletime!

Priority for T3 at 500 us:

1. BUSP1 Bits 16 - 27
2. BUSP1 Bits 8 - 12
3. T3 from controller

Configuration for CANopen - behavior:

Bit definition:

Bit 0: Firmware >= 2.51

The Bit 30 of setting COB-IDs for Tx-PDOs are checked. The drive sets the bit and waits for write zyklus of COB - Identifier withset Bit 30.

Bit	Description
0	current feed forward 1 cycle stretched
1	current feed forward 1 cycle compressed
2	velocity feed forward 1 cycle stretched
3	velocity feed forward 1 cycle compressed
4	delayed 1 cycle more, in case square interpolation isn't active
5	position setpoint and feed forward 4 cycles delayed
6	position setpoint and feed forward 5 cycles delayed
7	position setpoint and feed forward 6 cycles delayed
8	T3 is given b the control unit
9	T3 = 100µs
10	T3 = 200µs
11	T3 = 300µs
12	T3 = 350µs

13	position setpoint delayed by one sercos cycle
14	position setpoint delayed by two sercos cycles
15	actuell position value delayed by 1 Sercos cycle
16-27	T3 switched off and from IDN 3062
28-31	reserved

ASCII -Command	BUSP10
Syntax Transmit	BUSP1 [Data]
Syntax Receive	BUSP1 <Data>
Type	Variable ro
Format	Integer16
DIM	-
Range	0 .. 15
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36EE (hex)
PROFIBUS PNU:	1694 (dec) IND = 17 (d)
DPR Objekt Nr:	494

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	fieldbus configurationsvariable
-------------------	---------------------------------

Description

ASCII -Command	BUSP11
Syntax Transmit	BUSP1 [Data]
Syntax Receive	BUSP1 <Data>
Type	Variable ro
Format	Integer16
DIM	-
Range	0 .. 15
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36EF (hex)
PROFIBUS PNU:	1695 (dec) IND = 17 (d)
DPR Objekt Nr:	495

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	fieldbus configurationsvariable
-------------------	---------------------------------

Description

ASCII -Command	BUSP12
Syntax Transmit	BUSP1 [Data]
Syntax Receive	BUSP1 <Data>
Type	Variable ro
Format	Integer16
DIM	-
Range	0 .. 15
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36F0 (hex)
PROFIBUS PNU:	1696 (dec) IND = 17 (d)
DPR Objekt Nr:	496

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	fieldbus configurationsvariable
-------------------	---------------------------------

Description

ASCII -Command	BUSP13
Syntax Transmit	BUSP1 [Data]
Syntax Receive	BUSP1 <Data>
Type	Variable ro
Format	Integer16
DIM	-
Range	0 .. 15
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36F1 (hex)
PROFIBUS PNU:	1697 (dec) IND = 17 (d)
DPR Objekt Nr:	497

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	fieldbus configurationsvariable
-------------------	---------------------------------

Description

ASCII -Command	BUSP14
Syntax Transmit	BUSP1 [Data]
Syntax Receive	BUSP1 <Data>
Type	Variable ro
Format	Integer16
DIM	-
Range	0 .. 15
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36F2 (hex)
PROFIBUS PNU:	1698 (dec) IND = 17 (d)
DPR Objekt Nr:	498

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	fieldbus configurationsvariable
-------------------	---------------------------------

Description

ASCII -Command	BUSP15
Syntax Transmit	BUSP1 [Data]
Syntax Receive	BUSP1 <Data>
Type	Variable ro
Format	Integer16
DIM	-
Range	0 .. 15
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36F3 (hex)
PROFIBUS PNU:	1699 (dec) IND = 17 (d)
DPR Objekt Nr:	499

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	fieldbus configurationsvariable
-------------------	---------------------------------

Description

ASCII -Command	BUSP16
Syntax Transmit	BUSP1 [Data]
Syntax Receive	BUSP1 <Data>
Type	Variable ro
Format	Integer16
DIM	-
Range	0 .. 15
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36F4 (hex)
PROFIBUS PNU:	1700 (dec) IND = 17 (d)
DPR Objekt Nr:	500

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	fieldbus configurationsvariable
-------------------	---------------------------------

Description

ASCII -Command	BUSP2
Syntax Transmit	BUSP2 [Data]
Syntax Receive	BUSP2 <Data>
Type	Variable rw
Format	Integer16
DIM	10 ms
Range	1 .. 6000
Default	100
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36E6 (hex)
PROFIBUS PNU:	1686 (dec) IND = 17 (d)
DPR Objekt Nr:	486

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	fieldbus configurationsvariable
-------------------	---------------------------------

Description

This parameter defines the time-out of the Modbus communication in 10ms steps. If the drive gets no interrupt from the board in that time, the drive is disabled and the communication in |BUSP1| is displayed as faulty.

SERCOS:
IDN 15 Telegram typ in Byte 0
IDN 32 Main operation mode in Byte 2

ASCII -Command	BUSP3
Syntax Transmit	BUSP3 [Data]
Syntax Receive	BUSP3 <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0,1
Default	1
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36E7 (hex)
PROFIBUS PNU:	1687 (dec) IND = 17 (d)
DPR Objekt Nr:	487

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	fieldbus configurationsvariable
-------------------	---------------------------------

Description

This parameter defines the direction of the address selection of the Modbus+ board in the initialization phase.

BUSP3 = 0 The address is given by the Modbus board.

BUSP3 = 1 The address is given by the drive and it's address in |ADDR|.

SERCOS:

IDN 121 Gearing input stage with data defined on motor side

ASCII -Command	BUSP4
Syntax Transmit	BUSP4 [Data]
Syntax Receive	BUSP4 <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 9
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36E8 (hex)
PROFIBUS PNU:	1688 (dec) IND = 17 (d)
DPR Objekt Nr:	488

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	fieldbus configurationsvariable
-------------------	---------------------------------

Description

This parameter defines the number of data words (command), which are updated cyclic. Data, which is enabled as process data, cannot be written by the SDO channel (messaging).

SERCOS:
IDN 122 Gearing output stage with data defined on motor side

ASCII -Command	BUSP5
Syntax Transmit	BUSP5 [Data]
Syntax Receive	BUSP5 <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	1 .. 64
Default	1
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36E9 (hex)
PROFIBUS PNU:	1689 (dec) IND = 17 (d)
DPR Objekt Nr:	489

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	fieldbus configurationsvariable
-------------------	---------------------------------

Description

This parameter gives the address of the Modbus-Master for this drive. While initializing, this parameter is send from the drive to the Modbus board. The board then transmits only data to the drive, that was send from this master.

SERCOS:
IDN 123

ASCII -Command	BUSP6
Syntax Transmit	BUSP6 [Data]
Syntax Receive	BUSP6 <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 18
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36EA (hex)
PROFIBUS PNU:	1690 (dec) IND = 17 (d)
DPR Objekt Nr:	490

Data Type BUS/DPR	Integer8
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	fieldbus configurationsvariable
-------------------	---------------------------------

Description

This parameter defines the number of cyclic updated actual values in 16 bit data words, which are updated every cycle between the drive and the Modbus board.

SERCOS:
IDN 79

CAN:
Testparameter for individual bus timing - settings. In case $\diamond 0$, the setting for CBAUD isn't active
Value - range: $-2^{31} \dots 2^{31} - 1$

ASCII -Command	BUSP7
Syntax Transmit	BUSP1 [Data]
Syntax Receive	BUSP1 <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	0 .. 15
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36EB (hex)
PROFIBUS PNU:	1691 (dec) IND = 17 (d)
DPR Objekt Nr:	491

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	fieldbus configurationsvariable
-------------------	---------------------------------

Description

SERCOS:

IDN117

ASCII -Command	BUSP8
Syntax Transmit	BUSP1 [Data]
Syntax Receive	BUSP1 <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	0 .. 15
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36EC (hex)
PROFIBUS PNU:	1692 (dec) IND = 17 (d)
DPR Objekt Nr:	492

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	fieldbus configurationsvariable
-------------------	---------------------------------

Description
BUSP8 = IDN 138

ASCII -Command	BUSP9
Syntax Transmit	BUSP1 [Data]
Syntax Receive	BUSP1 <Data>
Type	Variable ro
Format	Integer16
DIM	-
Range	0 .. 15
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36ED (hex)
PROFIBUS PNU:	1693 (dec) IND = 17 (d)
DPR Objekt Nr:	493

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	fieldbus configurationsvariable
-------------------	---------------------------------

Description

ASCII -Command	CALCCOG
Syntax Transmit	CALCCOG [Data]
Syntax Receive	CALCCOG <Data>
Type	-
Format	-
DIM	-
Range	-
Default	-
Opmode	8
Drive Status	Enable
Start Firmware	2.21
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	
Data Type BUS/DPR	-
Weighting 10 ³	

Last Change of this Object	2.0
EEPROM	-

Short Description	Generate lookup table for cogging compensation
-------------------	--

Description

Syntax:

CALCCOG [velocity] (Rotary Motors)

CALCCOG [velocity] [distance] [start position] (Linear Motors)

The CALCCOG command is used to generate a current feed-forward lookup table for the cogging compensation. The pre-requisites for the CALCCOG command are:

Since a motion task is used to generate motion, the drive must be in OPMODE 8

The reference point must be set.

The drive must be enabled.

No homing procedure, motion task or jog mode may be active.

For rotary motors (MTYPE ≠ 2), only one optional parameter is accepted. This parameter specifies the velocity at which the motor turns when the lookup-table entries are recorded. Only positive values are allowed for this parameter. The default velocity is 5 rpm. The recording always starts at the current position, and the traversing range is always a single revolution.

For linear motors (MTYPE = 2), three optional parameters are accepted. The first parameter specifies the velocity at which the motor moves when the lookup-table entries are recorded. Only positive values are allowed for this parameter. The default velocity corresponds to 5 pole-pair pitches per minute. The second parameter specifies the distance the motor moves along while the lookup-table entries are recorded. This is exactly the range that will be compensated when the cogging compensation is activated. The distance must be set to either of 1/4, 1/2, 1, 2, 4, ..., 2^m pole-pair pitches, where m is any positive integer number. The default value is one pole-pair pitch. The optional parameter start position specifies the position from which the recording of the current feed-forward table is started. The default start position is the current position. If this parameter is given and differs from the current position, a motion task is generated to move to the designated start position at velocity VREF.

Note: Parameters can only be omitted in right-to-left order, i.e. valid command lines are:

CALCCOG [velocity] [distance] [start position]

CALCCOG [velocity] [distance]

CALCCOG [velocity]

CALCCOG

ASCII -Command	CALCHP
Syntax Transmit	CALCHP [Data] , [Data]
Syntax Receive	CALCHP
Type	Command
Format	-
DIM	rpm
Range	0 .. 200
Default	5
Opmode	All
Drive Status	Enabled
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3512 (hex)
PROFIBUS PNU:	1618 (dec) IND = 1 (de
DPR Objekt Nr:	18

Data Type BUS/DPR	-
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	-

Short Description	Determining the Hiperface/ENDAT parameters
-------------------	--

Description

This command can be used to start the automatic determination of the Hiperface ENDAT parameters. To do this, the output stage must be enabled and the drive must be able to move freely. While this command is being carried out, the motor makes a full turn at the predefined velocity. During this phase, the offset parameters (|HISOFFS|/|HICOFFS|) and the sine/cosine gain factor (|HIFACT1|) are calculated. After this function has been completed, the newly determined parameters can be stored in the encoder, using the |HSAVE| command for |FBTYPE| = 2 or 4 or using the command |SAVE| for |FBTYPE| = 7. The CALCHP function is only available when a Hiperface- or an EnDAT-Encoder or sine encoder has been selected as the feedback device (|FBTYPE|=2 or 4 or 7).

The first is to select a certain speed in rpm and the second the angle of the motor that should be moved.

E.g.: CALCHP 5 10, start CALCHP with 5 rpm and move the motor 10 degrees.

ASCII -Command	CALCMP
Syntax Transmit	CALCMP [Data]
Syntax Receive	CALCMP <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	2.53
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	386F (hex)
PROFIBUS PNU:	1679 (dec) IND = 33 (d)
DPR Objekt Nr:	879

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	2.0
EEPROM	Yes

Short Description	Cycles for commutation alignment by PID control loop
-------------------	--

Description

CALCMP [count] command starts “count” times the commutation alignment procedure executed with the help of the PID position loop.

ASCII -Command	CALCRK
Syntax Transmit	CALCRK [Data]
Syntax Receive	CALCRK
Type	Command
Format	-
DIM	rpm
Range	0 .. 200
Default	5
Opmode	All
Drive Status	Enabled
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3513 (hex)
PROFIBUS PNU:	1619 (dec) IND = 1 (de
DPR Objekt Nr:	19

Data Type BUS/DPR	-
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	-

Short Description	Calculate resolver parameters
-------------------	-------------------------------

Description

This command can be used to start the automatic determination of the resolver parameter |RK| (sine/cosine gain factor). To do this, the output stage must be enabled and the drive must be able to move freely. While this command is being carried out, the motor makes approx. 2.5 turns at the given velocity. If CALCRK is started without parameter, the default value is used. After this function has been completed, the newly determined |RK| parameter can be stored in the EEPROM, using the |SAVE| command. This command can be used to reduce the current ripple of the motor at high velocity. It can only be used with resolver feedback.

ASCII -Command	CALCRP
Syntax Transmit	CALCRP
Syntax Receive	
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☒
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3514 (hex)
PROFIBUS PNU:	1620 (dec) IND = 1 (de
DPR Objekt Nr:	20

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Calculate resolver phase
-------------------	--------------------------

Description

This command can be used to start the automatic determination of the resolver parameter RESPHASE (resolver phase shift).

Before starting this command in the hyper Terminal, switch off the power and disable the drive. At the same time, set MSG = 2. After starting this command, the value of |RESPHASE| will be then automatically identified. If the process finishes, in the Hyper Terminal shows the value of |RESPHASE| and the information "ERR 4 feedback !". This is normal and you can ignore it. Now, type SAVE to store the value of |RESPHASE| permanently and execute the COLDSTART.

ASCII -Command	CANDUMP
Syntax Transmit	CANDUMP [Data]
Syntax Receive	CANDUMP <Data>
Type	Variable ro
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	2.15
Configuration	☐
Function Group	

Available in	S300/700		
MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐
SERCOS IDN:			
CAN Object No:	-		
PROFIBUS PNU:	no		
DPR Objekt Nr:			

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.6
EEPROM	No

Short Description	List with CANopen communication parameter
-------------------	---

Description

Description

The command is used to get a list with the CANopen communication parameter.

ASCII -Command	CANSDO
Syntax Transmit	CANSDO [Data]
Syntax Receive	CANSDO <Data>
Type	Variable rw
Format	INT32
DIM	-
Range	
Default	
Opmode	
Drive Status	
Start Firmware	2.15
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	INT32
Weighting 10^3	

Last Change of this Object	1.5
EEPROM	No

Short Description	Access to a CAN Service Data Object
-------------------	-------------------------------------

Description

The ASCII-command CANSDO <object> <value>, where object gives index, subindex and length of a CAN-object dictionary entry, gives read and write access to a CAN-SDO.

Examples:

Write access:

CANSDO 0x2F001802 1 means object 1800 sub 2 shall be written with a value of 1 and has 1 Byte=8 Bit length. The length must be according to the type of the entry given in the object dictionary (2F = 1 byte, 2B = 2 bytes, 27 = 3 bytes, 23 = 4 bytes)

Read access:

CANSDO 0x40416000 reads object 6041 subindex 0.

For further information to SDO access refer to the CAN manual.

ASCII -Command	CBAUD
Syntax Transmit	CBAUD [Data]
Syntax Receive	CBAUD <Data>
Type	Variable rw
Format	Integer16
DIM	kBaud
Range	10,20,50,100,125,250,333,500,666,800,1000
Default	500
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☒
Function Group	Basic Setup

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		3515 (hex)	
PROFIBUS PNU:		1621 (dec) IND = 1 (de	
DPR Objekt Nr:		21	

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Baud Rate CAN Bus
-------------------	-------------------

Description

The transmission rate is required by the fieldbus (CANopen) and for the parameter setting of the servo amplifier in multi-axis systems (see the Installation Manual). You can also use the keys on the front panel of the servo amplifier to set the baud rate (see the Installation Manual).

ASCII -Command	CCSAVE
Syntax Transmit	CCSAVE [Data]
Syntax Receive	CCSAVE <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	0 , 1
Default	-
Opmode	All
Drive Status	-
Start Firmware	2.15
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.6
EEPROM	No

Short Description	Save / reset CANopen communication parameter
-------------------	--

Description

Description

CCSAVE ist used to save the CANopen communiaction parameter in object area 1000h – 1FFFh into the drive or to reset the values to default.

Es sind zwei Werte zulässig:

0 – CANopen-communication parameter are set to default. The new data are active after drive restart.

1 – CANopen-communication parameter are saved into the drive.

ASCII -Command	CINPOS
Syntax Transmit	CINPOS [Data]
Syntax Receive	CINPOS <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	0 .. 3280
Default	0
Opmode	All
Drive Status	
Start Firmware	2.51
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	386C (hex)
PROFIBUS PNU:	1676 (dec) IND = 33 (d)
DPR Objekt Nr:	876

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	2.1
EEPROM	Yes

Short Description	Current "In Position" or "Target reached" message
-------------------	---

Description

The CINPOS command defines the size of the Current In Position windows for the CINPOS state message (Bit 2 in DRVSTAT2). As long as the difference between the last commanded current (ICMD) and the actual current (I) is within the width of the current In-Position window (CINPOS) , a 1 is signaled, otherwise a 0. The signal change is not signaled before the new state was valid at least INPT0 milliseconds.

ASCII -Command	CLRFAULT
Syntax Transmit	CLRFAULT
Syntax Receive	CLRFAULT
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700	
MMI	☒	CAN-Bus ☒
PROFIBUS	☒	Sercos ☐
SERCOS IDN:		
CAN Object No:	3518 (hex)	
PROFIBUS PNU:	1624 (dec) IND = 1 (de	
DPR Objekt Nr:	24	
Data Type BUS/DPR	-	
Weighting 10^3		

Last Change of this Object	1.0
EEPROM	-

Short Description	Clear drive fault
-------------------	-------------------

Description

The CLRFAULT command cancels the fault status of an amplifier. A hardware or software reset of the amplifier is carried out, depending on the type of fault that is present.

After a software reset the amplifier is immediately ready for operation, after a hardware reset the complete initialization phase must be gone through first (as for power-on).

As well as amplifier faults (display Fxx), the following warnings are also deleted.

- contouring/following error
- threshold monitoring

With the selection |CLRWARN|=1 (separate cancellation of warnings) this command will delete all warnings that are present. A listing of all possible fault/error messages, with information on the hardware/software reset required, can be found in the description of the |ERRCODE| command.

The CLRFAULT command can either be implemented through the ASCII channel (CLRFAULT command) or via the CAN/PROFIBUS (with the “cancel fault” bit in the control word), or through a digital input (“Controller reset” function).

ASCII -Command	CLRHR
Syntax Transmit	CLRHR
Syntax Receive	CLRHR
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	3519 (hex)		
PROFIBUS PNU:	1625 (dec) IND = 1 (de		
DPR Objekt Nr:	25		

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Bit 5 of status register STAT is cleared
-------------------	--

Description

IN PREPARATION !

After every start-up or hardware reset of the drive, BIT 5 (0x20) of the |STAT| register is set to high. This bit is cleared by CLRHR. Possible usage:

The Software User Interface uploads all the data stored in the drive, if the hardware reset Bit5 in the |STAT| register is set too high. When the parameter are completely uploaded, the Bit5 is set to low using the command CLRHR. The |STAT| register is monitored form the Software User Interface all the time and is checked, if it is low. When it becomes high again (drive had a reset) the Software User Interface uploads the data again.

ASCII -Command	CLRORDER
Syntax Transmit	CLRORDER [Data]
Syntax Receive	-
Type	Command
Format	Integer16
DIM	-
Range	0;1 ..180; 192 .. 255
Default	-
Opmode	All
Drive Status	Enabled (only RAM) / Disabled
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	351A (hex)		
PROFIBUS PNU:	1626 (dec) IND = 1 (de		
DPR Objekt Nr:	26		

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Deleting a Motion Task
-------------------	------------------------

Description

The command CLRORDER is used to delete a motion task given by the variable (e.g. CLRORDER 10, means: motion task 10 is deleted).

ASCII -Command	CLRWARN
Syntax Transmit	CLRWARN [Data]
Syntax Receive	CLRWARN <Data>
Type	Variable rw
Format	Unsigned8
DIM	-
Range	0, 1
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	3.18
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	351B (hex)		
PROFIBUS PNU:	1627 (dec) IND = 1 (de		
DPR Objekt Nr:	27		

Data Type BUS/DPR	Unsigned8
Weighting 10^3	

Last Change of this Object	2.1
EEPROM	Yes

Short Description	Warning mode
-------------------	--------------

Description

The CLRWARN configuration variable can be used to control the response of the drive if a warning occurs.

CLRWARN=0 Warnings will be displayed until the cause of the warning has been removed.

Warnings cannot be cancelled (exceptions: - contouring/following error, threshold detection).

CLRWARN=1 A warning is only displayed at the moment when it occurs (transition).

All warnings can be cancelled by the [CLRFAULT] command, or through the digital input ("Controller reset" function).

The listing of the possible warnings can be found in the description of the [STATCODE *] command.

ASCII -Command	CMDDLY
Syntax Transmit	CMDDLY [Data]
Syntax Receive	CMDDLY <Data>
Type	Variable rw
Format	Integer16
DIM	ms
Range	0 ... 160
Default	15
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3670 (hex)
PROFIBUS PNU:	1968 (dec) IND = 1 (de
DPR Objekt Nr:	368

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.1
EEPROM	Yes

Short Description	Command delay time for RS232
-------------------	------------------------------

Description

The parameter CMDDLY defines a minimum delay time for answers from the drive via RS232 (ASCII). This enables the possibility for slower controller to communicate with the Drive.

The delay time CMDDLY defines the time between the last character of a ASCII string send to the drive to the first character of the answer.

The time between the characters cannot be changed, they are defined by the baud rate and the internal calculation times.

This time defines only the minimum delay time between the ASCII strings. The time can be longer, depending on the internal calculation time

ASCII -Command	COGFILT
Syntax Transmit	COGFILT [Data]
Syntax Receive	COGFILT <Data>
Type	Variable rw
Format	Float
DIM	-
Range	0...1
Default	0.1
Opmode	All
Drive Status	-
Start Firmware	2.21
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36D3 (hex)
PROFIBUS PNU:	1667 (dec) IND = 17 (d)
DPR Objekt Nr:	467

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	2.1
EEPROM	Yes

Short Description	Bandwidth factor for cogging-compensation filter
-------------------	--

Description

The COGFILT parameter represents a bandwidth factor that is used to set up the filter that is applied to the current q-component command values recorded during generation of the cogging-compensation feed-forward table using [CALCCOG]. This parameter can assume any value in the range from 0 to 1. A value of 0 means that all frequency components are removed from the spectrum, a value of 1 means that no filtering is applied at all. For any other value, the samples from $\text{COGFILT} \cdot N/2$ to $N-1-\text{COGFILT} \cdot N/2$ are removed from the spectrum, where N is the total number of samples of the spectrum.

Example:

If the spectrum consists of 1024 samples in total and $\text{COGFILT}=0.1$, the samples 51 to 972 are removed from the spectrum.

ASCII -Command	COGMODE
Syntax Transmit	COGMODE [Data]
Syntax Receive	COGMODE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 1
Default	0
Opmode	All
Drive Status	-
Start Firmware	2.21
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36CF (hex)
PROFIBUS PNU:	1663 (dec) IND = 17 (d)
DPR Objekt Nr:	463

Data Type BUS/DPR	Integer8
Weighting 10 ³	

Last Change of this Object	2.1
EEPROM	Yes

Short Description	Cogging-compensation mode
-------------------	---------------------------

Description

The COGMODE parameter is used to activate (value=1) / de-activate (value=0) the cogging compensation which compensates for the force / torque ripple that is caused by cogging. The compensation is achieved through a position-dependent current feed-forward signal that is fetched from a table and added to the current q-component command signal. Before the cogging compensation can be used, a current feed-forward table has to be generated using the |CALCCOG| command.

Since the current feed-forward signal is related to the position-feedback position |PFB|, the cogging compensation can only be used if the reference point is set. In order for the cogging compensation to work properly, either it has to be ensured that the reference point is always located at the same position or the current feed-forward table has to be re-calculated using |CALCCOG| each time the reference point is set.

Since all feed-forward signals are switched off in current-control mode, the cogging compensation is not available in |OPMODE|'s 2 and 3.

ASCII -Command	COGRED
Syntax Transmit	COGRED [Data]
Syntax Receive	COGRED <Data>
Type	Variable rw
Format	Float
DIM	-
Range	0.01 ... 1
Default	0.1
Opmode	All
Drive Status	-
Start Firmware	2.51
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐

SERCOS IDN:	
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	2.0
EEPROM	Yes

Short Description	Factor for GV reduction during cogging measurement
-------------------	--

Description

During generation of a new cogging-compensation table via |CALCCOG|, |GV| is reduced in order to prevent the current from oscillating. By default, during cogging measurement, |GV| is reduced to 10% of its regular value. For small GV values, this maybe insufficient to measure the cogging properly. Therefore, the parameter COGRED can be used to adjust the reduction of |GV| during the cogging measurement, ranging from 0.01 to 1. If the resulting reduced GV is below 0.05, it is internally limited to 0.05.

ASCII -Command	COLDSTART
Syntax Transmit	COLDSTART
Syntax Receive	COLDSTART
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	Disabled
Start Firmware	1.0
Configuration	☐
Function Group	Drive Status

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	3632 (hex)		
PROFIBUS PNU:	1906 (dec) IND = 1 (de		
DPR Objekt Nr:	306		

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Drive reset
-------------------	-------------

Description

Software reset (warm boot) of the servo amplifier. The servo amplifier must be disabled. The current faults are cancelled, the servo amplifier software is initialized and communications are re-established. This command has the same effect as turning the drive power off and then back on.

ASCII -Command	CONTINUE
Syntax Transmit	CONTINUE
Syntax Receive	CONTINUE
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	8
Drive Status	Enabled
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	351D (hex)
PROFIBUS PNU:	1629 (dec) IND = 1 (de
DPR Objekt Nr:	29

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Continue last position order
-------------------	------------------------------

Description

The CONTINUE command can be used to continue (and complete) a motion block that was previously interrupted by the |STOP| command. This is especially important for a motion block with relative paths.

ASCII -Command	CTUNE
Syntax Transmit	CTUNE [Data]
Syntax Receive	CTUNE
Type	Command
Format	-
DIM	Hz
Range	500 ... 1800
Default	
Opmode	All
Drive Status	Enabled
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Calculate current parameters
-------------------	------------------------------

Description

This command calculates current parameters. Set the |OPMODE| = 2 before starting.

An optional parameter for the bandwidth can be set for the tuning process.
The default data is with |FILTMODE| = 2 1800 Hz else 1200 HZ

ASCII -Command	CUPDATE
Syntax Transmit	CUPDATE
Syntax Receive	CUPDATE
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	Disabled
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	351F (hex)
PROFIBUS PNU:	1631 (dec) IND = 1 (de
DPR Objekt Nr:	31

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Program update (CAN bus)
-------------------	--------------------------

Description

The CUPDATE command activates a function that can receive data through a CAN bus interface and save them in the program memory of the amplifier. After this function has been activated, no more commands will be accepted through the serial interface. The program PRGDOWN.EXE should be used for downloading data on the PC side. This program operates with the hardware in a handshaking procedure, and prepares the data for CAN transmission.

ASCII -Command	DAOFFSET1
Syntax Transmit	DAOFFSET1 [Data]
Syntax Receive	DAOFFSET1 <Data>
Type	Variable rw
Format	Float
DIM	mV
Range	-500 .. 500
Default	0
Opmode	All
Drive Status	-
Start Firmware	3.14
Configuration	☐
Function Group	

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		387C (hex)	
PROFIBUS PNU:		1692 (dec) IND = 33 (d)	
DPR Objekt Nr:		892	

Data Type BUS/DPR	Integer16
Weighting 10^3	*

Last Change of this Object	2.1
EEPROM	Yes

Short Description	Analog Offset Output 1
-------------------	------------------------

Description

Only S700

This is an offset that is applied to the D/A converter for analog output 1. The offset value is given in internal units (counts). Scaling is as follows:

DAOFFSET1 = 2058 -10V
 DAOFFSET1 = 1250 0V
 DAOFFSET1 = 442 10V

ASCII -Command	DAOFFSET2
Syntax Transmit	DAOFFSET2 [Data]
Syntax Receive	DAOFFSET2 <Data>
Type	Variable rw
Format	Float
DIM	mV
Range	-500 .. 500
Default	0
Opmode	All
Drive Status	-
Start Firmware	3.14
Configuration	☐
Function Group	

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		387D (hex)	
PROFIBUS PNU:		1693 (dec) IND = 33 (d)	
DPR Objekt Nr:		893	

Data Type BUS/DPR	Integer16
Weighting 10^3	*

Last Change of this Object	2.1
EEPROM	Yes

Short Description	Analog Offset Output 2
-------------------	------------------------

Description

Only S700

This is an offset that is applied to the D/A converter for analog output 2. The offset value is given in internal units (counts). Scaling is as follows:

DAOFFSET2 = 2058 -10V
 DAOFFSET2 = 1250 0V
 DAOFFSET2 = 442 10V

ASCII -Command	DEC
Syntax Transmit	DEC [Data]
Syntax Receive	DEC <Data>
Type	Variable rw
Format	Integer32
DIM	>> ACCUNIT
Range	3 ..126000
Default	3150
Opmode	0, 1, 8 (bei EXTPOS=1,4)
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	velocity

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	137		
CAN Object No:	3522 (hex)		
PROFIBUS PNU:	1634 (dec) IND = 1 (de		
DPR Objekt Nr:	34		

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Deceleration rate
-------------------	-------------------

Description

The DEC command defines the deceleration ramp for the velocity control loop. The DEC deceleration/braking ramp is only used for setpoint step changes that result in a velocity decrease (braking). The |ACC| parameter is used for acceleration.

The DEC braking ramp applies to all setpoint changes, whether they are provided in analog or digital form. Separate braking ramps (|DECSTOP|/|DECDIS|) are used for setpoint changes that are generated internally in emergency stop situations (e.g. amplifier fault, or removal of the amplifier enable).

See also |ACCUNIT|

ASCII -Command	DEC_X
Syntax Transmit	DEC_X [Data]
Syntax Receive	DEC_X <Data>
Type	Variable rw
Format	Integer16
DIM	>> ACCUNIT
Range	3 ... 126000
Default	3150
Opmode	All
Drive Status	-
Start Firmware	3.07
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3878 (hex)
PROFIBUS PNU:	1688 (dec) IND = 33 (d)
DPR Objekt Nr:	888

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	2.0
EEPROM	Yes

Short Description	Deceleration ramp velocity controller 2. Set
-------------------	--

Description
see |PARCNFG|

ASCII -Command	DECDIS
Syntax Transmit	DECDIS [Data]
Syntax Receive	DECDIS <Data>
Type	Variable rw
Format	Integer32
DIM	>> ACCUNIT
Range	3 ..126000
Default	3150
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	3523 (hex)		
PROFIBUS PNU:	1635 (dec) IND = 1 (de		
DPR Objekt Nr:	35		

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Deceleration used on disable output stage
-------------------	---

Description

When the output stage is disabled (removal of the hardware or software enable), the internal velocity setpoint is set to 0, using the preset DECDIS ramp. The output stage is only disabled when the actual velocity has fallen below the standstill threshold (|VEL0|). The DECDIS ramp only has an effect for motors with a configured brake (|MBRAKE|=1) or with the selection |STOPMODE|=1. With |STOPMODE|=0 the output stage is immediately disabled, and the drive coasts down.

See also |ACCUNIT|

ASCII -Command	DECR
Syntax Transmit	DECR [Data]
Syntax Receive	DECR <Data>
Type	Variable rw
Format	Integer32
DIM	>> ACCUNIT
Range	3 ..126000
Default	3150
Opmode	8
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Setting-up Mode

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	42		
CAN Object No:	3524 (hex)		
PROFIBUS PNU:	1636 (dec) IND = 1 (de		
DPR Objekt Nr:	36		

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Deceleration ramp for homing/jog modes
-------------------	--

Description

The DECR command defines the braking ramp for jog mode or homing with the internal position control loop. The entry is made in ACCUNIT. If ACCUNIT=0 (acceleration in ms) DECR is defined to |PVMAX|. When starting the homing/jog mode, the DECR deceleration ramp can, in some circumstances, be limited by the minimum acceleration time |PTMIN| (see description of the |PTMIN| parameter).

Details are shown at parameter |ACCUNIT| .

ASCII -Command	DECSTOP
Syntax Transmit	DECSTOP [Data]
Syntax Receive	DECSTOP <Data>
Type	Variable rw
Format	Integer32
DIM	>> ACCUNIT
Range	3 ..126000
Default	3150
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	velocity

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:		P 3022	
CAN Object No:		3525 (hex)	
PROFIBUS PNU:		1637 (dec) IND = 1 (de	
DPR Objekt Nr:		37	

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Quick stop – braking ramp for emergency situations
-------------------	--

Description

In emergency stop situations, the internal setpoint goes to 0 using the preset DECSTOP ramp. The output stage is only disabled when the actual velocity has fallen below the standstill threshold (|VEL0|).

An emergency stop situation exists in the following cases:

- amplifier fault (with |ACTFAULT|=1)
- contouring/following error
- threshold monitoring (fieldbus devices)
- hardware/software limit switch activated
- quick stop function through the digital input (|INxMODE|=27)
- quick stop function through the fieldbus (control word)

see also |ACCUNIT|

ASCII -Command	DENA
Syntax Transmit	DENA [Data]
Syntax Receive	DENA <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 1, 2
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	362D (hex)
PROFIBUS PNU:	1901 (dec) IND = 1 (de
DPR Objekt Nr:	301

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	DPR software disable reset mode
-------------------	---------------------------------

Description

With external DPR-SLOT cards, it is possible to cancel existing instrument faults by removing the DPR software enable. This function can be activated or inhibited by using the DENA variable.

DENA=0 Removing the software enable causes a hardware/software reset of the amplifier.
The reset only takes place when a fault occurs, or the warning “contouring error” or “threshold monitoring activated” is present.
(customer-specific protocol: Beckhoff).

DENA=1 Removing the software enable causes a hardware/software reset of the amplifier.
The reset only takes place when a fault occurs, or the warning “contouring error” or “threshold monitoring activated” is present.

DENA=2 No reset if the software enable is removed.

ASCII -Command	DI2T
Syntax Transmit	DI2T [Data]
Syntax Receive	DI2T <Data>
Type	Variable ro
Format	Integer 8
DIM	%
Range	0 ... 100
Default	-
Opmode	All
Drive Status	
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3559 (hex)
PROFIBUS PNU:	1689 (dec) IND = 1 (de
DPR Objekt Nr:	89

Data Type BUS/DPR	Integer 8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Drive I2T load
-------------------	----------------

Description

This variable returns the average current as a percentage of the continuous current (see [DICONT]). The average current is filtered with a time constant of 16 seconds.

ASCII -Command	DICONT
Syntax Transmit	DICONT
Syntax Receive	DICONT <Data>
Type	Variable ro
Format	Float
DIM	A
Range	1.5 .. 20.0
Default	Hardware Defined
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	112		
CAN Object No:	3527 (hex)		
PROFIBUS PNU:	1639 (dec) IND = 1 (de		
DPR Objekt Nr:	39		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	No

Short Description	Drive continuous current
-------------------	--------------------------

Description

The continuous current rating of the drive. DICONT is depending on |VBUSBAL| for drive 403, 406, 614 and 670.

ASCII -Command	DIFVAR
Syntax Transmit	DIFVAR
Syntax Receive	DIFVAR <Data>
Type	Multi-line Return Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3528 (hex)
PROFIBUS PNU:	1640 (dec) IND = 1 (de
DPR Objekt Nr:	40

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	List variables with values
-------------------	----------------------------

Description

This command produces a list of parameters with settings that differ from the default values. The list contains entries in the following form:

PARAMETER Value (Default) PARAMETER = Parameter name
Value = the actual parameter setting
Default = the default value for the parameter

ASCII -Command	DILIM
Syntax Transmit	DILIM [Data]
Syntax Receive	DILIM <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 1
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☒
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	362C (hex)
PROFIBUS PNU:	1900 (dec) IND = 1 (de
DPR Objekt Nr:	300

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	DPR current limit
-------------------	-------------------

Description

With external DPR-SLOT cards it is possible to limit the drive current through the DPR (RAM interface to the SLOT card). This function must be enabled through the DILIM configuration variable.

ASCII -Command	DIPEAK
Syntax Transmit	DIPEAK
Syntax Receive	DIPEAK <Data>
Type	Variable ro
Format	Float
DIM	A
Range	3.0 .. 70.0
Default	Hardware Defined
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	110		
CAN Object No:	3529 (hex)		
PROFIBUS PNU:	1641 (dec) IND = 1 (de		
DPR Objekt Nr:	41		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	No

Short Description	Drive peak rated current
-------------------	--------------------------

Description

The peak rated current of the drive. DIPEAK is depending on |VBUSBAL| for drive 403, 406, 614 and 670.

ASCII -Command	DIR
Syntax Transmit	DIR [Data]
Syntax Receive	DIR <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	0 ... 128
Default	21
Opmode	All
Drive Status	Disable
Start Firmware	0.87
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☒
SERCOS IDN:	43 + 55
CAN Object No:	352A (hex)
PROFIBUS PNU:	1642 (dec) IND = 1 (de
DPR Objekt Nr:	42

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Direction of different actual values
-------------------	--------------------------------------

Description

The DIR variable defines the count direction for feedback information

The DIR variable can be considered as a 16-bit variable, whereby the single bits define the count direction for different feedback units.

Bit=1 means a positive direction (cw), Bit=0 a negative direction (ccw)

- Bit 0 (0x01) count direction for |FBTYPE| unit (=1 positive direction)
- Bit 1 (0x02)
- Bit 2 (0x04) count direction for |EXTPOS| unit (=1 positive direction)
- Bit 3 (0x08)
- Bit 4 (0x10) count direction for |GEARMODE| unit (=1 positive direction)
- Bit 5 (0x20)
- Bit 6 (0x40) =1 inverse commutation
- Bit 7 (0x80) =1 inverse encoder absolute position (ENDAT,HYPERFACE, BISS)

ASCII -Command	DIROUT
Syntax Transmit	DIROUT [Data]
Syntax Receive	DIROUT <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	
Default	0
Opmode	All
Drive Status	Disable/Reset
Start Firmware	3.05
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	385F (hex)
PROFIBUS PNU:	1663 (dec) IND = 33 (d)
DPR Objekt Nr:	863

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	2.0
EEPROM	Yes

Short Description	polarity of the digital outputs
-------------------	---------------------------------

Description

Defines the polarity of the digital outputs. DIROUT is a bit parameter. A single bit x of this variable is assigned to the digital output OUTPUTx. A bit state of 1 inverts the corresponding digital output.

Outputs main device 2 (O1 - O2)
 Outputs option card 8 (O3 – O10)
 virtual outputs 8 (O11 - O18)

ASCII -Command	DIS
Syntax Transmit	DIS
Syntax Receive	DIS
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	Enabled
Start Firmware	1.0
Configuration	☐
Function Group	Amplifier

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	352B (hex)		
PROFIBUS PNU:	1643 (dec) IND = 1 (de		
DPR Objekt Nr:	43		

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Software-Disable
-------------------	------------------

Description

The DIS command sets the software enable for the output stage to 0. Depending on the configuration (see [MBRAKE], [STOPMODE]), the drive will coast down, or be run down under control.

ASCII -Command	DISDPR
Syntax Transmit	DISDPR [Data]
Syntax Receive	DISDPR <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 1
Default	0
Opmode	All
Drive Status	Disable
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3673 (hex)
PROFIBUS PNU:	1971 (dec) IND = 1 (de
DPR Objekt Nr:	371

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Disable DPR access
-------------------	--------------------

Description

DISDPR=1 disables the write access of e.g. Lightbus option boards to the drive. Read access is still possible. This enables the service functionality via PC even if the Bus is running.

DISDPR=0 Full access from the controller side.

DISDPR=1 Only read access.

This parameter is not stored in the EEPROM.

ASCII -Command	DNBAUD
Syntax Transmit	DNBAUD [Data]
Syntax Receive	DNBAUD <Data>
Type	Variable rw
Format	Integer8
DIM	kBaud
Range	125,250,500
Default	125
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	369F (hex)
PROFIBUS PNU:	2015 (dec) IND = 1 (de
DPR Objekt Nr:	415

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	DeviceNet baud rate
-------------------	---------------------

Description

The baud rate switch on the DeviceNet option card may be set to 0 (125 KBaud), 1 (250 KBaud) or 2 (500 KBaud). If the switch is set to a value greater than 2, the baud rate is configurable through the terminal parameter DNBAUD and through DeviceNet. If the switch is set from 0 to 2, the baud rate cannot be controlled with DNBAUD or DeviceNet.

ASCII -Command	DNDUMP
Syntax Transmit	DNDUMP [Data]
Syntax Receive	DNDUMP <Data>
Type	
Format	-
DIM	-
Range	
Default	
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Debugging information DeviceNet
-------------------	---------------------------------

Description

DNDUMP prints out debugging information with the status of the DeviceNet connection.

ASCII -Command	DNMACID
Syntax Transmit	DNMACID [Data]
Syntax Receive	DNMACID <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0...63
Default	63
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36A0 (hex)
PROFIBUS PNU:	2016 (dec) IND = 1 (de
DPR Objekt Nr:	416

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	MACID (Adress) for DeviceNet card
-------------------	-----------------------------------

Description

The MACID (address) switches on the DeviceNet option card may be set to a valid address from 0 to 63. If the switches are set to a value greater than 63, the MACID is configurable through the terminal parameter DNMACID and through DeviceNet. If the switches are set from 0 to 63, the MACID cannot be controlled with DNMACID or DeviceNet.

ASCII -Command	DOVRIDE
Syntax Transmit	DOVRIDE [Data]
Syntax Receive	DOVRIDE <Data>
Type	Variable rw
Format	Int16
DIM	-
Range	0 .. 8192
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36B6 (hex)
PROFIBUS PNU:	2038 (dec) IND = 1 (de
DPR Objekt Nr:	438

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Digital override factor
-------------------	-------------------------

Description

If the digital Override function is selected (see |OVRIDE|=3), DOVRIDE gives the possibility to change the digital scaling.

The scaling is:

DOVRIDE=0 Motion task speed is 0 %
DOVRIDE=8192 Motion task speed is 100 %

ASCII -Command	DPRILIMIT
Syntax Transmit	DPRILIMIT [Data]
Syntax Receive	DPRILIMIT <Data>
Type	Variable rw
Format	Int16
DIM	-
Range	0 .. 3280
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3658 (hex)
PROFIBUS PNU:	1944 (dec) IND = 1 (de
DPR Objekt Nr:	344

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Digital Limiting of the peak Current via DPR
-------------------	--

Description

Digital Limiting of the peak current via DPR.

The scaling is:

DPRILIMIT=3280 Current limited to DIPEAK

DPRILIMIT=0 Current limited to 0 A

If the drive is switched on, DPRILIMIT is set to 3280 (no current limit). DPRILIMIT is not stored in EEPROM. So to enable the limit, write the data to the variable via fieldbus, RS232 or I/O command buffer.

To enable this function, DILIM has to be set to "1".

ASCII -Command	DPRSTATE	Available in	S300/700
Syntax Transmit	DPRSTATE [Data]	MMI	☐ CAN-Bus ☐
Syntax Receive	DPRSTATE <Data>	PROFIBUS	☐ Sercos ☐
Type	Variable ro	SERCOS IDN:	
Format		CAN Object No:	
DIM		PROFIBUS PNU:	
Range		DPR Objekt Nr:	0
Default			
Opmode			
Drive Status			
Start Firmware	1.0		
Configuration	☐	Data Type BUS/DPR	
Function Group		Weighting 10^3	
		Last Change of this Object	2.2
		EEPROM	
Short Description	DPR state		
Description			

ASCII -Command	DPWM
Syntax Transmit	DPWM [Data]
Syntax Receive	DPWM <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	2.13
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3676 (hex)
PROFIBUS PNU:	1974 (dec) IND = 1 (de
DPR Objekt Nr:	374

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	2.0
EEPROM	Yes

Short Description	PWM/current loop/position loop configuration
-------------------	--

Description

The configuration parameter DPWM defines the PWM, current and position loop frequency. Following settings are possible:

DPWM=0	PWM frequency 8 KHz, current loop 16 KHz, position loop 4 KHz
DPWM=1	PWM frequency 16 KHz, current loop 32 KHz, position loop 4 KHz
DPWM=2	PWM frequency 16 KHz, current loop 16 KHz, position loop 4 KHz
DPWM=3	PWM frequency 8 KHz, current loop 16 KHz, position loop 8 KHz

ASCII -Command	DR_TYPE
Syntax Transmit	DR_TYPE
Syntax Receive	DR_TYPE <Data>
Type	Variable ro
Format	Integer16
DIM	-
Range	1 .. 8
Default	-
Opmode	-
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	352E (hex)
PROFIBUS PNU:	1646 (dec) IND = 1 (de
DPR Objekt Nr:	46

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Gives the Output Stage Identification
-------------------	---------------------------------------

Description

This command can be used to read the drive type.

DR_TYPE	Drive
1	S
2	S
3	S
4	S
5	S
6	S
7	S
8	S
9	S

ASCII -Command	DREF
Syntax Transmit	DREF [Data]
Syntax Receive	DREF <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0...34
Default	0
Opmode	8
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Setting-up Mode

Available in	S300/700	
MMI	☒	CAN-Bus ☒
PROFIBUS	☒	Sercos ☐
SERCOS IDN:		
CAN Object No:	352C (hex)	
PROFIBUS PNU:	1644 (dec) IND = 1 (de	
DPR Objekt Nr:	44	
Data Type BUS/DPR	Integer8	
Weighting 10^3		

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Direction for Homing
-------------------	----------------------

Description

The DREF parameter can be used to define the preferred direction of motion for a homing operation and for positioning with a modulo-axes.

Bits 0..3 are used for homing, Bits 4..7 for modulo-axis (|POSCNFG|=1).

The possible combinations are shown in the table.

If a homing mode with zero puls is selected DREF should be set to 2,18 or 34.

See also |POSCNFG|

	Homing - Direction	Modulo - Direction
DREF = 0	negative	negative
DREF = 1	positive	negative
DREF = 2	shortest distance	negative
DREF =4	negative movement without reversing	>= version 1.30 DREF =4 homing direction negativ (like DREF=0),no positive movement on reference switch or limit switch This setting is only usefull for NREF =1,3.
DREF = 5	potitive movement without reversing	>= version 1.30 DREF =5 homing direction positive (like DREF=0),no negative movement on reference switch or limit switch This setting is only usefull for NREF =1,3.
DREF = 16	negative	positive
DREF = 17	positive	positive
DREF = 18	shortest distance	positive
DREF = 32	negative	shortest distance
DREF = 33	positive	shortest distance
DREF = 34	shortest distance	shortest distance

ASCII -Command	DRIVE	Available in	S300/700
Syntax Transmit	DRIVE [Data]	MMI	☐ CAN-Bus ☒
Syntax Receive	DRIVE <Data>	PROFIBUS	☒ Sercos ☐
Type	Variable r	SERCOS IDN:	
Format	Integer32	CAN Object No:	3677 (hex)
DIM	-	PROFIBUS PNU:	1975 (dec) IND = 1 (de
Range	32Bit	DPR Objekt Nr:	375
Default	-	Data Type BUS/DPR	Integer32
Opmode	All	Weighting 10^3	
Drive Status	-	Last Change of this Object	1.0
Start Firmware	0.71	EEPROM	No
Configuration	☐		
Function Group			
Short Description	type of the servo drive (drive family)		

Description
The variable DRIVE returns the type of the servo drive (drive family).

ASCII -Command	DRVCNFG
Syntax Transmit	DRVCNFG [Data]
Syntax Receive	DRVCNFG <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	long int
Default	0
Opmode	All
Drive Status	-
Start Firmware	2.14
Configuration	☒
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3672 (hex)
PROFIBUS PNU:	1970 (dec) IND = 1 (de
DPR Objekt Nr:	370
Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Configuration Variable for CAN-Bus
-------------------	------------------------------------

Description

The configuration parameter offers the possibility to change/correct the behaviour of the servo amplifier via setting of configuration bits. A resetted bit results in the default or old behaviour of the drive.

The chosen bit combination has to be given as decimal number.

Example: If bit 2 and 5 are set the number is $2^2 + 2^5 = 4 + 32 = 36$

Bit	Description
0	reserved
1	reserved
2	reserved
3	reserved
4	= 1 PDO mapping and communication parameters, SDO parameters 6093, 6094 are saved with the other drive parameters to EEPROM after a SAVE command = 0 no saving of above CANopen specific parameters
5	reserved
6	reserved
8 (0x100)	A single turn absolute sine encoder is executed as a multi turn encoder. On power up the absolute position of the single turn absolute encoder is read and stored in PFB . Homing is not required. This setting is also used for analog hall feedbacks with setting ENCLINES = 1
9	reserved
11	reserved
12	reserved

13 (0x2000)	= 1 Configuration for following tasks: At start of the following task it's checked if the planed moving distance is smaller than the deceleration distance. In case the result is positive the deceleration ramp of the active motion task is used. = 0 The following task is always started. The braking ramp can be very fast.
14	reserved
15 (0x8000)	= 1 Endat-position will be read only once = 0 Endat-position will be read multiple times (up to 5). THE absolute position will be taken only if value is equal all the time
16 (0x10000)	= 1 With following tasks the acceleration ramp of it will be taken always = 0 One of the following ramps is taken: - Is the velocity of the following task greater and in the same direction, the acceleration ramp of the following task is taken - Is the velocity of the following task less and in the same direction, the braking ramp of the former task is taken - Is the velocity of the following task is in the opposite direction, the braking ramp of the first is taken and the acceleration ramp of the following task
17	reserved
18	reserved
19 (0x80000)	= 1 The external position PFB0 won't be reset at end of homing = 0 The external position PFB0 will be set to ROFFS at end of homing
20	reserved
21	reserved
22 (0x400000)	= 1 no encoder-pulses with disabled power stage = 0 encoder-pulses also with disabled power stage
25	reserved
24 (0x1000000)	= 1 If bit 13 is set, the drive moves back to its target position = 0 No return
26	reserved
26	reserved
27	reserved
28	reserved

29	= 1 Reading of the absolute EnDat / Hiperface position at disabled power stage
	= 0 Reading of the absolute EnDat / Hiperface position only at power-on
30	= 1 Fault message F04 at position difference (if bit 29 = 1)
	= 0 If there is a position difference, it will be corrected (if bit 29 = 1)
31	reserved

ASCII -Command	DRVCNFG2
Syntax Transmit	DRVCNFG [Data]
Syntax Receive	DRVCNFG <Data>
Type	Variable rw
Format	Integer32
DIM	
Range	32 Bit
Default	0
Opmode	All
Drive Status	Disable+Reset (Coldstart)
Start Firmware	1.0
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	386F (hex)
PROFIBUS PNU:	1684 (dec) IND = 17 (d)
DPR Objekt Nr:	484
Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	2.2
EEPROM	Yes

Short Description	Additional drive functions
-------------------	----------------------------

Description

The variable is used to activate different additional functions of the drive.

Bit	significance	description
0	0x1	
1	0x2	0 = Latchfunction at digital input 1 is always activ 1 = Latchfunction at digital input 1 has to be enabled by the controller
2	0x4	0 = Latchfunction at digital input 1 is always activ 1 = Latchfunction at digital input 1 has to be enabled by the controller
3	0x8	
4	0x10	
5	0x20	
6	0x40	
7	0x80	
8	0x100	0 = ROFFSABS – value saved in the drive EEPROM is used 1 = ROFFSABS – value saved in the feedback is used
9	0x200	
10	0x400	
11	0x800	
12	0x1000	
13	0x2000	
14	0x4000	0 = all warnings without n32 are reset by CLRFAULT 1 = all warnings without n23 and n32 are reset by CLRFAULT

15	0x8000	No Drift Drive operates in OPMODE 4 0 = No drift function on master slave applications inactive 1 = No drift function is active Warning ! In case of emergency stop situations(hardware or software limit switch) reset on enabled drives the the motor can speed up automatic to maximum.
16	0x10000	Bit16 = 0 At the End of reference movement (multiturn-feedback) the ROFFSABS is calculated and saved to EEPROM. Bit16 = 1 No effect to ROFFSABS
17	0x20000	
18	0x40000	FW >= 2.14 1 = scope record cycle 62.5 µs (16 KHz) In case of motor encoder feedback the sine cosine signal is used direct after the differentiation for the bode plot 0 = scope record cycle 250 µs (4 KHz) the actual velocity value of the observer is used for the bode plot
19	0x80000	Version >=3.07 (9.05.2008) =0 function ANCNFG =8 uses the absolut value of SW1-voltage.This -/+ 10V takes the range SRND ... ERND . =1 function ANCNFG =8 uses the value and the sign of SW1-voltage.This -/+ 10V takes the range SRND - (ERND - SRND)... ERND .
20	0x100000	FW >= 3.07 Bit=0 Monitoring of the SENSE-voltage aktiv (In case anexternal feedback is powered via X1) Bit=1 Monitoring of SENSE-voltage switched off. THis may be used, if an external feedback is also powered external.
21	0x200000	FW >= 3.08 Bit=0 if at "AS-Option disable" software-enable is set, by set of "AS-Option enable" the software-enable will be set automatically. Bit=1 at activate of "AS-Option enable" the software-enable remains at 0 no matter of the status "AS-Option disable".

22	0x400000	ab FW >= 3.09 Storage of the upper 32 bit of 64 bit-Position in eeprom. This function is equivalent to POSCNFG =2, it may be used without modulo functionality.
23	0x800000	
24	0x1000000	Version >=3.06 (25.04.2008) = 0 FBTYPE =23,24 by switch on the absolute BISS-Position is read in sensor-mode. = 1 bei FBTYPE =23,24 wird beim Einschalten die absolute BISS-Position im Register-Mode eingelesen Diese Einstellung kann benutzt werden, falls es Probleme beim Einlesen des BISS-Gebers geben sollte.
25	0x2000000	
26	0x4000000	
27	0x8000000	0 = asynchron controlled motor field weakening 1 = asynchron controlled motor field weakening by voltage controller
28	0x10000000	
29	0x20000000	
30	0x40000000	0 = In case of error F04 or F25 an error reset will effect a hardware-reset. 1 = Every "ERROR-Reset"-Command resets a F04 or F25 error by software. For Resolver Fault, this bit has only effect on FBTYPE =0 setting.
31	0x80000000	0 = object chanel functions are executed by reading 1 = object chanel functions are executed by writing

ASCII -Command	DRVCNFG3
Syntax Transmit	DRVCNFG [Data]
Syntax Receive	DRVCNFG <Data>
Type	Variable rw
Format	Integer32
DIM	
Range	32 Bit
Default	0
Opmode	All
Drive Status	Disable+Reset (Coldstart)
Start Firmware	3.57
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36E4 (hex)
PROFIBUS PNU:	1679 (dec) IND = 33 (d)
DPR Objekt Nr:	879

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	2.2
EEPROM	Yes

Short Description	Configuration parameter for additional drive functionality
-------------------	--

Description

The configuration parameter DRVCNFG3 offers the possibility to change/correct the behaviour of the servo amplifier via setting of configuration bits.

Bit 1 (0x00000001) =1 old format for the BISS protocol

ASCII -Command	DRVSTAT
Syntax Transmit	DRVSTAT
Syntax Receive	DRVSTAT <Data>
Type	Variable ro
Format	Integer32
DIM	-
Range	0 .. 0xFFFFFFFF
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Drive Status

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	352D (hex)		
PROFIBUS PNU:	1645 (dec) IND = 1 (de		
DPR Objekt Nr:	45		
Data Type BUS/DPR	Integer32		
Weighting 10^3			

Last Change of this Object	1.0
EEPROM	No

Short Description	internal Status information
-------------------	-----------------------------

Description

The DRVSTAT command returns the internal status information in the form of a bit-variable.

Bit/Display/Level	Bit combination	Description
1 / n02 / 0	0x00000002	=1 Regen message. Is high, if the actual regen power exceeds the adjusted threshold PBALMAX , otherwise low.
2 / n03 / 1	0x00000004	=1 following error. Is set, if the distance between the actual position and the target position of the trajectory generator is greater than the contouring error window PEMAX . Is cleared by the command CLRFAULT or by an digital input with INxMODE =14. Note: Running the position modes (OPMODE = 4 or 8) a position following error will cause "n03".
3 / n04 / 1	0x00000008	=1 Node guarding (watch dog). Is set, if the Bus (PROFIBUS or CAN) or the Slotcard has no communication to the master for the adjusted time EXTWD . Is cleared by the command CLRFAULT or by an digital input with INxMODE =14.
4 / n05 / 0	0x00000010	=1 Line phase missing. Is high, if one or all of the three input line phase are lost, otherwise low.

5 / n06 / 1	0x00000020	=1 Software limit switch 1 (SWE1) underrun. Is set if: - the position is lower than SWE1 - a motion task is started which has a target position lower than SWE1 . At the same time the bit "faulty motion task" is set. the bit is cleared if: - the actual position overruns SWE1 and a positive velocity is given - a motion task is started which has a target position greater than SWE1 .
6 / n07 / 1	0x00000040	=1 Software limit switch 2 (SWE2) overrun. Is set if: - the position is higher than SWE2 - a motion task is started which has a target position higher than SWE2 . At the same time the bit "faulty motion task" is set. the bit is cleared if: - the actual position underruns SWE2 and a negative velocity is given - a motion task is started which has a target position smaller than SWE2 .
7 / n08 / 0	0x00000080	=1 Faulty motion task was started Is set, if a faulty motion task (wrong checksum) is started. Is cleared, if a valid motion task is started.
8 / n09 / 0	0x00000100	=1 No reference point. Is set, is a motion task is started without starting a reference move before. Is cleared, if a reference move is started.
9 / n10 / 1	0x00000200	= 1 PSTOP active. Is high, if the hardware limit switch PSTOP is active, otherwise low.
10 / n11 / 1	0x00000400	= 1 NSTOP active. Is high, if the hardware limit switch NSTOP is active, otherwise low.
11 / n12 / 0	0x00000800	=1 Default motor data loaded. Is set, if the motor number stored in the EEPROM of the drive is not the same as the motor number stored in the feedback system (EnDAT or Hiperface). By saving the drive parameter (SAVE) and restart the drive, the warning disappears.
12 / n13 / 1	0x00001000	=1 Slot warning (I/-expansion board). Is high, if the external 24V supply of the I/O expansion board is missing, otherwise low.
13 / n14 / 0	0x00002000	=1 Scanning for MPHASE (FBTYPE =7) Is set while start-up of the drive and is cleared after the drive was enabled and MPHASE was determined.
14 / n15 / 0	0x00004000	
15 / n16 / 0	0x00008000	Is active, if one or more of the warnings n17...n31 are active.
16	0x00010000	=1 Motion task active. Is set, if a motion task is started (motion task, jog or homing move). Is cleared, if the action is finished or a STOP - command is executed.
17	0x00020000	=1 Reference point is set. Is set, if the homing move was done or a absolute encoder feedback device is used. Is cleared if a homing move is started.

18	0x00040000	=1 Home switch. Is high, if the homing switch is closed, otherwise low.
19	0x00080000	=1 In-Position. Is high, if the distance between the target position and the actual position is smaller than PEINPOS , otherwise low. When several motion tasks are tied together, only the last motion task enables this bit.
20	0x00100000	=1 Position latch occurred (positive edge). Is set, if a positive edge at the latch input (Input2 with IN2MODE =26) was detected. Is cleared, if the latched position was read (example: LATCH1N16 / LATCH1N32).
21	0x00200000	
22	0x00400000	
23		
24		
25	0x02000000	
26	0x04000000	=1 Initialization phase finished. Is set, if the initialization phase of the drive is finished (takes about 15s).
27	0x08000000	
28	0x10000000	=1 Motor stand still message. Is high, if the actual motor velocity is lower than the threshold VEL0 , otherwise low.
29	0x20000000	=1 Safety relais selected. Is high, if the safety relay of the option -AS- is switched on, otherwise low.
30	0x40000000	= Output stage enabled. Is high, if the soft- and the hardware enable is present, otherwise low.
31	0x80000000	=1 Drive has an error state. Is set, if the drive has a fault (output stage is disabled, error number is displayed). The command ERRCODE gives the error in plain text. The bit is cleared, if the drive is reset or the command CLRFAULT is send

ASCII -Command	DRVSTAT2
Syntax Transmit	DRVSTAT2 [Data]
Syntax Receive	DRVSTAT2 <Data>
Type	Variable ro
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.37
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	375B (hex)
PROFIBUS PNU:	1803 (dec) IND = 17 (d)
DPR Objekt Nr:	603
Data Type BUS/DPR	-
Weighting 10 ³	

Last Change of this Object	1:3
EEPROM	No

Short Description	internal status information
-------------------	-----------------------------

Description

The ASCII parameter DRVSTAT2 extends the parameter DRVSTAT and returns the internal status information in the form of a bit-variable

Bit	significance	description
0	0x00000001	result of the VINPOS function As long as the difference between the last target velocity VCMD and the actual velocity V is within the width of the velocity In-Position window VINPOS , a 1 is signalled, otherwise a 0. The signal change is not signaled before the new state was valid at least INPT0 msec.
1	0x00000002	=1 slave synchronised to the master This function is only available for following settings: INxMODE=42,43,51,53 or ENGAGE >0
2		
3		
4	0x00000010	=1 Cogging-Measurement (CALCCOG-Command)

ASCII -Command	DUMP
Syntax Transmit	DUMP
Syntax Receive	DUMP <Data>
Type	Multi-line Return Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	352F (hex)		
PROFIBUS PNU:	1647 (dec) IND = 1 (de		
DPR Objekt Nr:	47		

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	List All EEPROM Variables with Values
-------------------	---------------------------------------

Description

This command produces a list of all the parameters that can be stored in the EEPROM, together with their present values. All the amplifier-specific parameters (e.g. A/D-offset values) start with a “;”(semicolon).

ASCII -Command	DUMPSLNO
Syntax Transmit	DUMPSLNO [Data]
Syntax Receive	DUMPSLNO <Data>
Type	Variable rw
Format	Integer16
DIM	
Range	write 0 read 0 ... Integer16
Default	343
Opmode	All
Drive Status	
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	35FA (hex)
PROFIBUS PNU:	1850 (dec) IND = 1 (de
DPR Objekt Nr:	250

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.1
EEPROM	No

Short Description	Listing of the numerical EEPROM-parameters
-------------------	--

Description

With the command DUMPSLNO a list of the object numbers which are stored in the EEPROM can be fetched step by step. The parameters are ordered the same way as in the parameter files stored by the GUI, the priorities of parameters are considered.

With "DUMPSLNO 0" the list can be resetted.

The command can be used to get all relevant for storing and restoring a parameter list of the drive.

Example:

-->DUMPSLNO

343 ; FW command

-->DUMPSLNO

194 ; PBALRES command

-->DUMPSLNO

209 ; PRBASE command

At the end of this list a 0 is reported.

ASCII -Command	EGEARl
Syntax Transmit	EGEARl [Data]
Syntax Receive	EGEARl <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	1 ... long Integer
Default	1
Opmode	4 ... 8
Drive Status	Disable
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	350D (hex)
PROFIBUS PNU:	1613 (dec) IND = 1 (de
DPR Objekt Nr:	13

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Ratio external feedback
-------------------	-------------------------

Description

In case an external feedback system is used the ratio can be set by EGEARl and |EGEARO|. The feedbackturn are set by EGEARl the motor turn by |EGEARO|

This setting affects only to generation of command velocity.
It has no effect on the emulated respectively acquired position (ROD/SSI).

ASCII -Command	EGEARO
Syntax Transmit	EGEARO [Data]
Syntax Receive	EGEARO <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	0 ... Long Integer
Default	1
Opmode	4 ... 8
Drive Status	Disable
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	350E (hex)
PROFIBUS PNU:	1614 (dec) IND = 1 (de
DPR Objekt Nr:	14

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Ratio external feedback
-------------------	-------------------------

Description

In case an external feedback system is used the ratio can be set by |EGEAR| and EGEARO. The feedbackturn are set by |EGEAR| the motor turn by EGEARO

This setting affects only to generation of command velocity.
It has no effect on the emulated respectively acquired position (ROD/SSI).

ASCII -Command	EMRGTO
Syntax Transmit	EMRGTO [Data]
Syntax Receive	EMRGTO <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	0 ... 2147483647
Default	5000
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36DC (hex)
PROFIBUS PNU:	1676 (dec) IND = 17 (d)
DPR Objekt Nr:	476

Data Type BUS/DPR	Integer16
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	
-------------------	--

Description

EMRGTO defines the emergency time out for the |ACTFAULT|=1 and |STOPMODE|=1 operations.

After the ACTFAULT (drive error) or STOPMODE (power stage enable) conditions the drive tries to reduce the velocity to zero. If this fails, the power stage will be disabled after the EMRGTO time at the latest. F 30 is reported.

EMRGTO = 0 then the F30 function is switched off.

New since FW 0.80:

If in 0.25 of EMRGTO time the velocity is not decrease by 0.125 the drive create an F30. This is because the default of 5 seconds could be very long if for what ever reason no speed deceleration is done.

EMRGTO can be set to 0 or values ≥ 10

ASCII -Command	EN
Syntax Transmit	EN
Syntax Receive	EN
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	Disabled
Start Firmware	1.0
Configuration	☐
Function Group	Amplifier

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		3530 (hex)	
PROFIBUS PNU:		1648 (dec) IND = 1 (de	
DPR Objekt Nr:		48	

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Software-Enable
-------------------	-----------------

Description

The EN command sets the software enable for the output stage.

If the software enable and the hardware enable are set and no fault is present (the BTB contact is closed), then the output stage is enabled.

If the MAINS BTB function is activated ($|OxMODE|=3$), then the output stage will only be enabled when the supply power has been switched on and the charging circuit has charged up the DC bus. If the supply power is removed from an enabled instrument, then it remains enabled until the DC bus voltage has fallen below the undervoltage limit ($|VBUSMIN|$).

ASCII -Command	ENCIN
Syntax Transmit	ENCIN [Data]
Syntax Receive	ENCIN <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	16 ... 32767
Default	1024
Opmode	All
Drive Status	Disable
Start Firmware	0.87
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3532 (hex)
PROFIBUS PNU:	1650 (dec) IND = 1 (de
DPR Objekt Nr:	50

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	digital feedback resolution
-------------------	-----------------------------

Description

ENCIN sets the resolution (number of square pulses) of the encoder input channel using a digital encoder as feedback unit. In case of Rotary Motors it is the number of pulses per revolution, in case of linear Motors it is the number of pulses per pole pitch.

This parameter is used for following feedback settings: |EXTPOS| = 1...4 or |FBTYPE| = 12...19

FW >= 2.17

Max. ENCIN value = 8 388 608

ASCII -Command	ENCLINES
Syntax Transmit	ENCLINES [Data]
Syntax Receive	ENCLINES <Data>
Type	Variable rw
Format	Integer24
DIM	-
Range	65535
Default	1000
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☒
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		3533 (hex)	
PROFIBUS PNU:		1651 (dec) IND = 1 (de	
DPR Objekt Nr:		51	

Data Type BUS/DPR	Integer24
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	SinCos Encoder Resolution
-------------------	---------------------------

Description

ENCLINES sets the resolution (number of lines) of the sine encoder input channel .. In case of rotary Motors it is the number of lines per revolution, in case of linear motors it is the number of lines per pole pitch. The ENCLINES data is stored in an ENDAT or Hiperface Encoder if this feedback is used. In this case during power up process the ENCLINES data is read automatically .

Example to the ENCLINES setting on a linear motor >>> |1|

In case an external feedbacksystem is used for the position loop |ENCLINES| has to correspond with this measurement system.

ENCLINES are not saved into EnDat-Linearfeedbacks and they are also not set automatic.

ASCII -Command	ENCMODE
Syntax Transmit	ENCMODE [Data]
Syntax Receive	ENCMODE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 1, 2, 3
Default	1
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Encoder

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	P 3011		
CAN Object No:	3534 (hex)		
PROFIBUS PNU:	1652 (dec) IND = 1 (de		
DPR Objekt Nr:	52		

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Selection of Encoder Emulation
-------------------	--------------------------------

Description

Selection of the digital encoder channel connector S600

ENCMODE=0 input

ENCMODE=1 EEO digital encoder output (RS422)
output resolutions = |ENCOUT| per motor revolution (rotary motor).
output resolutions = |ENCOUT| per motor pole pitch (linear motor).

Note:

The ROD-emulation is fixed to the resolver pole pairs. Example: A 6-pole resolver emulates 3x |ENCOUT| pulses by one feedback turn.

ENCMODE=2 SSI output also used for SSI input
see also |GEARMODE| = 7

ENCMODE=3 EEO digital encoder interpolation mode
This mode is available with high resolution sincos feedback device .
output resolutions = |ENCOUT| * |ENCLINES| lines per motor rev. (rotary motor).
output resolutions = |ENCOUT| * |ENCLINES| per motor pole pitch (linear motor).
Following settings are possible: 4,8,16,32,64,128

ASCII -Command	ENCOUT
Syntax Transmit	ENCOUT [Data]
Syntax Receive	ENCOUT <Data>
Type	Variable rw
Format	Integer16
DIM	CPR
Range	see Description
Default	1024
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☒
Function Group	Encoder

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	3535 (hex)		
PROFIBUS PNU:	1653 (dec) IND = 1 (de		
DPR Objekt Nr:	53		

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Resolution Encoder Emulation EEO (ROD)
-------------------	--

Description

The resolution of the digital encoder output emulation (ROD)

ENCOUT defines the number of lines that are given out by the EEO (digital encoder) interface for one turn of a rotary motor or one pole pitch for a linear motor.

For resolver feedback (|FBTYPE|=0) all lines per rev from 32 to 4096 with all integer numbers between are possible (32,33,..... 4095,4096)

For sine encoder feedback (|FBTYPE|=2,4,7,11) all lines per rev (or pole pitch) from 256 to 524288, but only degrees of 2 (256, 512, 1024, .., 262144, 524288).

Starting with firmware 4.94 all integer numbers between 256 and 4096 are also available (256,257,258,..... 4095,4096)

|FW| >= version 0.87 negative values are possible.

Negative values are used to invert the output direction.

If multispeed resolver are used there is more than one zero pulse within 360°. There is a zero pulse to each resolver pole pair.

Example. 6 pole resolver >> 3 zero pulses

If multispeed resolver are used there is more than one zero pulse within 360°. There is a zero pulse to each resolver pole pair.

Example. 6 pole resolver >> 3 zero pulses

See |REFMODE| for information about the zero pulse signal.

ASCII -Command	ENCTO
Syntax Transmit	ENCTO [Data]
Syntax Receive	ENCTO <Data>
Type	Variable rw
Format	Integer32
DIM	ms
Range	100 .. 12000
Default	2000
Opmode	All
Drive Status	-
Start Firmware	0.73
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3543 (hex)
PROFIBUS PNU:	1667 (dec) IND = 1 (de
DPR Objekt Nr:	67

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	2.1
EEPROM	Yes

Short Description	Encoder supply delay
-------------------	----------------------

Description

This parameter defines the time between the “encoder power supply on” and the reading of the encoder parameter channel.

ASCII -Command	ENCVON
Syntax Transmit	ENCVON [Data]
Syntax Receive	ENCVON <Data>
Type	Command
Format	-
DIM	-
Range	0 ... 2
Default	0
Opmode	All
Drive Status	-
Start Firmware	0.73
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	3546 (hex)
PROFIBUS PNU:	1670 (dec) IND = 1 (de
DPR Objekt Nr:	70

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	power supply for the external encoder (connector X1
-------------------	---

Description

The command ENCVON switches the power supply for the external encoder on/off (connector X1). ENCVON=1 means 5V power supply, ENCVON=2 have to be used for 12V power supply. These settings can only be used when no external encoder was configured (ENDAT or HIPERFACE with FBTYPE/GEARMODE/EXTPOS). In case of encoder configuration the power supply required by this encoder has a higher priority as the setting ENCVON. The setting ENCVON=2 (12V power supply) is only possible when the SENSE wire was not recognized.

ASCII -Command	ENCZERO
Syntax Transmit	ENCZERO [Data]
Syntax Receive	ENCZERO <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	0 .. ENCOUT-1
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Encoder

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		3537 (hex)	
PROFIBUS PNU:		1655 (dec) IND = 1 (de	
DPR Objekt Nr:		55	

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Zero Pulse Offset EEO (ROD)
-------------------	-----------------------------

Description

The ENCZERO command can be used to shift the output of the encoder emulation digital encoder zero pulse over the range of one turn. The shift is made in the clockwise direction, e.g.

[ENCOUT] 1024

ENCZERO 256

The zero pulse is given out at the 90° position.

This is also effective for SSI outputs.

ASCII -Command	ENGAGE
Syntax Transmit	ENGAGE [Data]
Syntax Receive	ENGAGE <Data>
Type	Variable rw
Format	Integer8
DIM	
Range	0...8
Default	0
Opmode	4
Drive Status	-
Start Firmware	1.38
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	36CD (hex)
PROFIBUS PNU:	1653 (dec) IND = 17 (d)
DPR Objekt Nr:	461

Data Type BUS/DPR	Integer8
Weighting 10 ³	

Last Change of this Object	1.9
EEPROM	Yes

Short Description	Master -slave switch on / off
-------------------	-------------------------------

Description

The ENGAGE command is used to switch the master - slave mode on or off (synchronise)

ENGAGE= 0 Master/Slave-mode active in case of |OPMODE|=4

ENGAGE= 1 Master/Slave-mode active in case of |OPMODE|=4 and given synchronisation command ENGEDGE.

After drive switch on and ENGAGE=1 the master - slave-mode is inactive (ENGEDGE=0). To start the master - slave-mode the internal variable ENGEDGE has to be set via field bus, internal plc- program or command M ENGEDGE.

ENGEDGE can be set to different modes:

ENGEDGE = 0 No synchronisation,
Master/Slave inactive, Slave will fix the actual position

ENGEDGE = 1 Synchronisation via velocity.
The slave accelerates to the master velocity via ramp |ACCR|. If the master speed is reached ENGEDGE is set to 5 (running sync to master). The following error is without effect to ENGEDGE). This function is activated also by a going edge on for example digital input 3 with setting |IN3MODE| =42.

ENGEDGE = 2 Declutch
The slave decelerates via |DECR|. If the slave is standing still ENGEDGE is set to 0. This function is activated also by a falling edge on for example digital input3 with setting |IN3MODE| =42, 43 or 51.

ENGEDGE = 3 1 Synchronisation via velocity.
The master position is latched within the synchronisation start. The slave accelerates to the master velocity via ramp |ACCR| and eliminates the position difference. When the master speed is reached, ENGEDGE is set to 4 (position compensation) and by raising the setpoint the position difference is cancelled. If this procedure is finished ENGEDGE is set to 5. This function is activated also, if a going edge is for example at digital input 3 with configuration |IN3MODE| = 43.

ENGEDGE = 4 see ENGEDGE=3

ENGEDGE = 5 see ENGEDGE=1

ENGEDGE = 6 synchronisation via position with constant acceleration (linear).
The slave speeds up to the master velocity within a defined distance, that is given in variable M IN51MERK. It relates to the slave distance and is defined in counts (20 bit/turn => 2²⁰). After master position and speed are reached, ENGEDGE is set to 5 (running sync to master). This function can also be executed by a going edge on for example digital input 3 and configuration |IN3MODE| =51.

ENGEDGE = 7 synchronisation via position with customer defined profile.
The slave speeds up to the master velocity within a defined distance, that is given in variable M IN51MERK. It relates to the slave

distance and is defined in counts (20 bit/turn => 2^{20}). The synchronisation profile is fixed within the first lookup-table (sinus2 in case of standard-table). Nachdem die Position und Geschwindigkeit des Masters erreicht wurden, wird ENGEDGE automatisch auf 5 gesetzt (Fahren synchron zum Master). This function can also be executed by a going edge on for example digital input 3 and configuration |IN3MODE|=53.

ENGEDGE = 8...11 reserved

ENGEDGE = 12 declutching, the slave slows down via a customer given profile.
The synchronisation profile is fixed within the first lookup-table (sinus2 in case of standard-table).

If standstill is reached, ENGEDGE is set to 0 (standstill at slave).

This function can also be executed by a going edge on for example digital input 3 and configuration |IN3MODE|=53

ASCII -Command	ERESMASK
Syntax Transmit	ERESMASK [Data]
Syntax Receive	ERESMASK <Data>
Type	Variable ro
Format	Integer32
DIM	-
Range	
Default	
Opmode	All
Drive Status	-
Start Firmware	0.86
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3755 (hex)
PROFIBUS PNU:	1797 (dec) IND = 17 (d)
DPR Objekt Nr:	597

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Failure reset setting
-------------------	-----------------------

Description
The command ERESMASK describes the kind of fault reset for error messages Fxx.If the bit xx of ERESMASK is set to 1, the fault reset of the corresponding error Fxx+1 causes a hardware reset of the drive (bit=0 means a software reset of the error).
See also |ERRCODE|

ASCII -Command	ERND
Syntax Transmit	ERND [Data]
Syntax Receive	ERND <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	-
Default	2^31-1
Opmode	-
Drive Status	-
Start Firmware	1.0
Configuration	☒
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☒
SERCOS IDN:	103
CAN Object No:	3638 (hex)
PROFIBUS PNU:	1912 (dec) IND = 1 (de
DPR Objekt Nr:	312

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	End position of modulo axes
-------------------	-----------------------------

Description

The ERND parameter is used to define the end of the range of movement for a modulo axes (|POSCNFG|=2). The start of the range can be set by the |SRND| command. All positioning operations are made in the positioning range <|SRND|...ERND-1>. The entry for ERND is made in SI units (taking account of |PGEARI|, |PGEARO|).

ASCII -Command	ERRCNFG
Syntax Transmit	ERRCNFG [Data]
Syntax Receive	ERRCNFG <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	
Default	83894274
Opmode	All
Drive Status	8
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3884 (hex)
PROFIBUS PNU:	1700 (dec) IND = 33 (d)
DPR Objekt Nr:	900

Data Type BUS/DPR	Integer32
Weighting 10 ³	

Last Change of this Object	2.1
EEPROM	Yes

Short Description	behavior of the drive in the case of error
-------------------	--

Description

The command ERRCNFG defines the behavior of the drive in the case of error message Fxx.

If the bit number xx of the ERRCNFG parameter is set to 1, then the corresponding error message FXX+1 generates an immediately power stage disable (no matter what is the setting of ACTFAULT).

Example:

The default value 83894274 (-> 0x0500 2002) disables immediately the output stage in case of error:

F02 Fault over voltage

F14 Output stage fault

F25 Commutation Error

F27 „AS-Option“ Error

See also command [ERRCODE], [ERRCODES]

ASCII -Command	ERRCODE
Syntax Transmit	ERRCODE
Syntax Receive	ERRCODE <Data>
Type	Command
Format	String
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	129		
CAN Object No:	385D (hex)		
PROFIBUS PNU:	1661 (dec) IND = 33 (d)		
DPR Objekt Nr:	861		

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Activated Fault Messages
-------------------	--------------------------

Description
The ERRCODE command returns the clear text information about any existing faults.

See also |ERRCODES|

ASCII -Command	ERRCODE *
Syntax Transmit	ERRCODE *
Syntax Receive	ERRCODE <Data>
Type	Command
Format	Integer32
DIM	-
Range	0 .. 0xFFFFFFFF
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Drive Status

Available in	S300/700
MMI	☒ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	
Data Type BUS/DPR	-
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	-

Short Description	Output Error Register
-------------------	-----------------------

Description

The ERRCODE* command returns the internal status information in the form of a bit-variable. A bit is set for as long as the corresponding error/fault is detected. The bit is deleted by the hardware reset of the amplifier.

Faults that are designated by the SW label can also be deleted by a software reset (function |CLRFAULT| – clear fault).

Level gives an information about the error handling in the drive.

Level 2:

A fault causes an emergency stop. The stop of the motor is done in velocity control using the emergency stop ramp (|DECSTOP|). When the motor reaches the zero velocity level (|VEL0|) (limited by max. 5 sec), the power stage is disabled. The Ready-to-Operate relay is switched off. The drive has to be reset before it can be enabled again. The fault is displayed.

Level 3:

A fault causes an emergency stop. The stop of the motor is done without feedback device (sensorless). When the motor has stopped, the power stage is disabled. The Ready-to-Operate relay is switched off. The drive has to be reset before it can be enabled again. The fault is displayed.

Level 4:

A fault causes an directly disable of the power stage. The motor has no torque (coast). The Ready-to-Operate relay is switched off. The drive has to be reset before it can be enabled again. The fault is displayed.

Faults, that have different levels (2/3 and 4), the behavior is controlled by |ACTFAULT| and |MBRAKE| or |STOPMODE|

|ACTFAULT|=1 or |MBRAKE|=1 LEVEL 2 or 3 (Default-Setting)

|ACTFAULT|=0 and |MBRAKE|=0 LEVEL 4

Bit/Displ./Reset/Level	Bit	Description
00/F01/SW/2,4	0x00000001	=1 Heatsink overtemperature is set, if the heatsink temperature TEMPH exceeds the max allowed threshold MAXTEMPH.
01/F02/SW/2,4	0x00000002	=1 DC-link overvoltage Is set, if the DC-link voltage exceeds the max threshold selected by VBUSBAL .
02/F03/SW/2	0x00000004	=1 Contouring error of the external trajectory (OPMODE =6/SERCOS) Is set, if the target speed which is given by the extrnal trajectory is higher than VLIM / VLIMN .
03/F04/HW/3,4	0x00000008	=1 Feedback error Is set, if a feedback error was detected.

The drive decelerates by current controller.

04/F05/SW/2,4	0x00000010	=1 Undervoltage protection Is set, if the DC-link voltage is lower than VBUSMIN (only if the drive is enabled).
05/F06/HW/2,4	0x00000020	=1 Motor overtemperature is set, if the heatsink temperature TEMPM exceeds the max allowed threshold MAXTEMPM . FW >= 2.27 the failure is reset by software.
06/F07/HW/2,4	0x00000040	=1 if the internal electronic supply is faulty.
07/F08/SW/3,4	0x00000080	=1 Overspeed Is set, if the velocity of the motor exceeds the overspeed threshold (VOSPD). The drive decelerates by current controller.
08/F09/HW/4	0x00000100	=1 EEPROM Checksum error Is set, if the data read/written from the EEPROM is not valid. There are two possibilities, that can cause this error. First is a defect EEPROM and the second is a wrong checksum in the EEPROM. In the second case, a SAVE can solve the problem.
09/F10/HW	0x00000200	Signal failure digital encoder input see also SDLY
10/F11/HW/2,4	0x00000400	=1 Brake error Is set, if the brake switch detects a fault (e.g. Brake is selected, but no brake is connected).
11/F12/HW	0x00000800	
12/F13/SW/2,4	0x00001000	=1 Ambient overtemperature is set, if the ambient temperature TEMPE exceeds the max allowed threshold MAXTEMPE .
13/F14/HW/2,4	0x00002000	=1 Output stage fault This fault can be caused by: Earth short circuit of the motor Short circuit of the motor phases Short circuit of the regen.
14/F15/SW/2,4	0x00004000	=1 I ² tmax override.
15/F16/SW/2,4	0x00008000	=1 Mains BTB
16/F17/HW/2,4	0x00010000	=1 A/D converter error
17/F18/HW/2,4	0x00020000	=1 Regen error destroyed regen transistor regen resistor extern selected, but the internal one is used.
18/F19/SW/2,4	0x00040000	=1 DC bus breakdown (see also VBUSLIM , PMODE and VBUSMAX)
19/F20/HW/2,4	0x00080000	=1 Slot error Error depends on the type of Slot board: 1. I/O expansion board The error is caused by a missing 24V supply at the I/O board. 2. DPR Slot board (Beckhoff, L&B, Sigmatek) The error is generated, if the DPR interrupt fails to appear. The watch-dog time can be selected by EXTWD . 3. PROFIBUS Error in the initialization time.

20/F21/HW/2,4	0x00100000	=1 PROFIBUS handling error If the OPMODE is changed by another communication channel than PROFIBUS, when the drive is under control of the PROFIBUS, this error is generated. Exception: Working mode -126 for PROFIBUS. This is the safe opmode when the drive is switched on.
21/F22/HW/2,4	0x00200000	reserved
22/F23/HW/2,4	0x00400000	=1 CANopen Bus-Off Fault in CAN communication. The communication fault BUSOFF is generated by layer 2 (CAN controller). This fault can have several reasons. Some examples are: Drive tries to establish communication, but there is no other node. CAN nodes have different baud rates, Bus cable defect, reflections because of missing or wrong bus terminations, etc. A BUSOFF is displayed by the drive, if another CAN node is connected and minimum one errorfree object is generated. If the BUSOFF is generated and the drive is moving the motor, the motor is stopped using the emergency ramp and then the drive is disabled.
23/F24/SW/2,4	0x00800000	Warning generates a error message (defined by WMASK)
24/F25/HW/3,4	0x01000000	Commutation Error (Run-away of the motor) The drive will be directly disabled. see also VCOMM
25/F26/SW/2,4	0x02000000	Hardware limit switch error at homing move
26/F27/HW/4	0x04000000	=1 "-AS-Option" error If the ENABLE signal of the drive is high and the -AS-option is activated, this error is generated
27/F28/SW/2	0x08000000	=1 EtherCAT Error synchronisation is activated if the drive during the start up procedure isn't able to be synchronized or if the drive is in EtherCAT status „Operational“ and loose synchronize.
28/F29/SW/2	0x10000000	=1 Slotcard Error (SERCOS) is activated if the communication is disturbed or a SW enable is set via slotcard without a set HW Enable. DPR-card (EtherCAT) is activated if the communication is switched to a lower level while the drive is enabled a not supported mapping of cyclic data is refined or a SW enable is set via slotcard without a set HW Enable.

29/F30/SW	0x20000000	Emergency stop time out See also EMRGTO
30/F31/SW	0x40000000	Reserved
31/F32/HW/4	0x80000000	=1 System error Is set, if an error occurred in the system check of the initialization phase or a watch-dog error in the working phase. Following reasons are possible: 1. Wrong program data in the FLASH (e.g. interrupted program download) 2. Macro error (the macros could not be compiled) 3. Software watch-dog activated 4. Error with the EEPROM (read or write). 5. Macro RAM (the compilation of the MACROs detect too less RAM) When the drive is switched on, a detailed message is send via RS232. In case of F32 error try a SAVE command. When this procedure is finnished reset the drive.

ASCII -Command	ERRCODE2
Syntax Transmit	ERRCODE2 [Data]
Syntax Receive	ERRCODE2 <Data>
Type	Variable ro
Format	Integer32
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	2.21
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3862 (hex)
PROFIBUS PNU:	1666 (dec) IND = 33 (d)
DPR Objekt Nr:	866
Data Type BUS/DPR	Integer32
Weighting 10 ³	

Last Change of this Object	1.8
EEPROM	No

Short Description	Additional error code info
-------------------	----------------------------

Description

In case of an error (|ERRCODE| !=0) this variable gets an additional information about the error cause.

ERRCODE2 = 0 no additional information
 ERRCODE2 = 1 Software Watch-Dog (in case of F32, ERRCODE=0x80000000)
 ERRCODE2 = 2 wrong command order in the command table (F32)
 ERRCODE2 = 3 macro translation error (F32)
 ERRCODE2 = 4 PWM error (F32)

ERRCODE2 = 5,6 superior commutation error control
 The error is executed, if the actual speed is above VCOMM value, |I| is bigger than |ICONT| and the sign is not fitting to the actual acceleration (example: slow down with positive speed and positive current). The error gets active, if the conditions are set for more than 12 msec.

ERRCODE2 = 7 HALL wrong segment number
 A hall-signal with number 0 or 7 was detected.

ERRCODE2 = 8 W&S following error monitor
 During W&S-process the motor runs more than 1.5 mechanical „turns“

ERRCODE2 = 9 W&S Phase 1 (rough tuning)
 Movement to big: The position distance before and after current setting is bigger than 35 degree (electric).

ERRCODE2 = 10 W&S Phase 1 (rough tuning)
 Movement to small: The position distance before and after current setting is smaller than |WSAMPL| (or 65536/|ENCLINES| if |WSAMPL|=0)

ERRCODE2 = 11 W&S after phase 2 (fine tuning). Difference of |MPHASE| between phase 1(rough tuning) and phase2 (fine tuning) is bigger than 30 degree.

ERRCODE2 = 12 W&S Phase 2 (fine tuning)
 Iq-current to big: In case of current is bigger than 7.6% of |DIPEAK| in phase 2 this indicates a wrong commutation angle.

ASCII -Command	ERRPARAM
Syntax Transmit	ERRPARAM [Data]
Syntax Receive	ERRPARAM <Data>
Type	Variable ro
Format	Integer32
DIM	
Range	
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.37
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	375A (hex)
PROFIBUS PNU:	1802 (dec) IND = 17 (d)
DPR Objekt Nr:	602

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.3
EEPROM	No

Short Description	Objectnumber of the incorrect parameter (warning n24)
-------------------	---

Description

The ASCII parameter ERRPARAM gets the object number of the incorrect parameter that caused the warning n24. During the initialisation phase the drive performs a plausibility check of the configuration parameters. In case of Unreasonable settings (for example: reference limit switch configured for more than one digital input), the warning n24 (s. [STATCODE]) is generated. The parameter number of the faulty parameter is stored in the ERRPARAM. The ASCII name of the faulty parameter can be determined with the command [IDDUMP].

There are following plausibility checks:

Function INxMODE=2,3,4,5 possible only for x=3 or 4

Function INxMODE=6,7 only for x=3

Function INxMODE=19 only for x=2

Function INxMODE=26 only for x=1 and 2

Function INxMODE=30,33 only possible for x=1..4,19,20

Functions INxMODE=2,3,4,5,6,7,8,10,11,12,13,14,15,19,21,22,25,29,32,38,42 are possible for all digital inputs but every function can be used only once.

ASCII -Command	ERRTIME	Available in	S300/700
Syntax Transmit	ERRTIME [Data]	MMI	☐ CAN-Bus ☒
Syntax Receive	ERRTIME <Data>	PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer32	CAN Object No:	355F (hex)
DIM	ms	PROFIBUS PNU:	1695 (dec) IND = 1 (de
Range	0 .. 20000	DPR Objekt Nr:	95
Default	0	Data Type BUS/DPR	Integer32
Opmode	All	Weighting 10^3	
Drive Status		Last Change of this Object	2.1
Start Firmware	2.11	EEPROM	Yes
Configuration	☐		
Function Group			
Short Description	Error handling delay time		

Description
The command ERRTIME defines the value of the error handling delay time for the delay function defined with ERRMASK.
See: |ERRCODE| and |ERRMASK|

ASCII -Command	ESPEED
Syntax Transmit	-
Syntax Receive	ESPEED <Data>
Type	Variable r
Format	Float
DIM	rpm
Range	0 .. 16000
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3675 (hex)
PROFIBUS PNU:	1973 (dec) IND = 1 (de
DPR Objekt Nr:	373

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	-

Short Description	Maximum velocity corresponding to the Feedback Type
-------------------	---

Description

The command ESPEED gives the maximum velocity of the motor corresponding to the selected feedback type (FBTYPE).

ASCII -Command	ETHMODE	Available in	S300/700
Syntax Transmit	ETHMODE [Data]	MMI	☐ CAN-Bus ☒
Syntax Receive	ETHMODE <Data>	PROFIBUS	☐ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer8	CAN Object No:	3778 (hex)
DIM	-	PROFIBUS PNU:	1832 (dec) IND = 17 (d)
Range	0..2	DPR Objekt Nr:	632
Default	1	Data Type BUS/DPR	-
Opmode	All	Weighting 10^3	
Drive Status		Last Change of this Object	2.1
Start Firmware	3.07	EEPROM	Yes
Configuration	☒		
Function Group			
Short Description	Select on-board field bus interface		

Description
only S700:

Selects the on-board field bus interface that is activated on boot-up

- 0
- 1
- 2

ASCII -Command	EXTBRAKE
Syntax Transmit	EXTBRAKE [Data]
Syntax Receive	EXTBRAKE <Data>
Type	Variable rw
Format	Integer8
DIM	
Range	
Default	0
Opmode	All
Drive Status	Disable + Reset (Coldstart)
Start Firmware	1.37
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	385C (hex)
PROFIBUS PNU:	1660 (dec) IND = 33 (d)
DPR Objekt Nr:	860

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.3
EEPROM	Yes

Short Description	software brake on/off software configuration
-------------------	--

Description

With EXTBRAKE=1 a software brake control is switched on.
The brake control is linked to the internal macro variable EXTBRAKEC and can be used by fieldbus or ASCII channel in the case, that the power stage is disabled.

EXTBRAKEC=1 brake open
EXTBRAKEC=0 brake closed

ASCII -Command	EXTLATCH
Syntax Transmit	EXTLATCH [Data]
Syntax Receive	EXTLATCH <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 2
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☒
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☒
SERCOS IDN:	P 3018
CAN Object No:	3681 (hex)
PROFIBUS PNU:	1985 (dec) IND = 1 (de
DPR Objekt Nr:	385
Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Selection of the Source of the Latch Inputs
-------------------	---

Description

The configuration variable EXTLATCH defines the source for the position information using the Latch functions of the digital inputs (|IN1MODE|=26 and/or |IN2MODE|=26). If more than one inputs (1 or 2) are configured as Latch input, EXTLATCH defines the different sources. If only one input is configured as Latch input, both different sources are stored at the same time.

If EXTLATCH=0 the actual position controller feedback is latched, that is

|EXTPOS| = 0 the actual value of the standard feedback (FBTYPE)

|EXTPOS| > 0 the actual value of an external feedback.

|EXTPOS| < 0 the value of the latched data is defined by

EXTLATCH = 0 latch position |PFB| by both digital inputs 1 and 2 (|IN1MODE|=26 / |IN2MODE|=26) in the register |LATCH1P32| and |LATCH2P32|

EXTLATCH = 1 latch position |PFB0| by digital input 1 in |LATCH1P32| and position |PFB| by digital input 2 in |LATCH2P32|

EXTLATCH =2 latch position |PFB0| by both digital inputs 1 and 2 in register |LATCH1P32| and |LATCH2P32|

ASCII -Command	EXTPOS
Syntax Transmit	EXTPOS [Data]
Syntax Receive	EXTPOS <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 ... 24
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☒
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3539 (hex)
PROFIBUS PNU:	1657 (dec) IND = 1 (de
DPR Objekt Nr:	57
Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Position Value For Position Control
-------------------	-------------------------------------

Description

The parameter EXTPOS define the source of feedback used for the position loop. For EXTPOS = 0 the motor feedback, defined by the command |FBTYPE|, will used for the position loop. For EXTPOS > 0 an external feedback will used for position loop. The gearing factor of the external feedback to bring the external position to 32Bit per revolution will set by the parameter |EGEARO| as a multiplier and |EGEAR| as a divisor.

If EXTPOS is set to negative values the feedback is read and the position stored in PFB0. The position loop acts with the commutation feedback (|FBTYPE|).

1

Example |EXTPOS| = -6 The sinus/cosinus-Feedback(SV) is read.

The position can be monitored by ASCII-command |PFB0|.

The input of the external feedback is withput effect to the position control.

|EGEAR| and |EGEARO| can be used to set the ratio:

1. On all analog read position feedbacks |EXTPOS|=6,7,8,9 the position is calculated by the |ENCLINES|-setting and converted to the 32Bit/turn -format.

The parameter |EGEAR|/|EGEARO| are only for the gearing-factor.

On EGEAR-feedback turn the motor makes |EGEARO| turns.

example: |EGEAR|=10,|EGEARO|=3 -> ratio 10 : 3

2. On all digital read position feedbacks(EXTPOS=1...4)

the parameter |ENCIN| defines the feedback pulses / turn.

The parameter |EGEAR|/|EGEARO| sets the gearing-faktor.

example:

An external digital Encoder has got 1024 pulses / turn,

on 1 feedback turn the motor runs 3 turns.

The necessary settings are:

EXTPOS 3,
ENCIN 1024,
EGEAR 1,
EGEARO 3

EXTPOS	Feedback for position control
EXTPOS = 0	motor feedback FBTYPE
EXTPOS = 1	24 V pulse / direction connector X3
EXTPOS = 2	24 V digital encoder connector X3

EXTPOS = 3	5 V digital encoder connector X5
EXTPOS = 4	5 V pulse / direction connector X5
EXTPOS = 5	SSI encoder connector X5
EXTPOS = 6	5V SinCos Encoder connector X1
EXTPOS = 7	12V SinCos Encoder connector X1
EXTPOS = 8	ENDAT connector X1
EXTPOS = 9	HIPERFACE connector X1
EXTPOS=10	5V ROD encoder at X1 for actual position value in positon control mode
EXTPOS = 11	Fw >= 2.28 5V Biss digital feedback at X1. The primary feedback has to be a resolver (FBTYPE = 0).

ASCII -Command	EXTWD
Syntax Transmit	EXTWD [Data]
Syntax Receive	EXTWD <Data>
Type	Variable rw
Format	Integer32
DIM	ms
Range	1 .. 32000
Default	100
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		353A (hex)	
PROFIBUS PNU:		1658 (dec) IND = 1 (de	
DPR Objekt Nr:		58	

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	External Watch Dog (Fieldbus)
-------------------	-------------------------------

Description

The EXTWD parameter can be used to define the monitoring time (watchdog timer) for the fieldbus/slot communication. The monitoring is only active if the EXTWD parameter has a value greater than zero (EXTWD=0 means monitoring is switched off) and the output stage is enabled. If the preset time runs out, without the timer being retriggered, then the warning n04 (threshold monitoring) is generated and the drive is stopped. The amplifier remains ready for operation, and the output stage is still enabled. This warning must be cancelled (function |CLRFAULT| or |INxMODE|=14) before a new motion command (setpoint) can be accepted.

For DeviceNet, set to 1 to enable F04 and 0 to disable. (Watchdog time is set by DeviceNet controller.)

ASCII -Command	FBTYPE
Syntax Transmit	FBTYPE [Data]
Syntax Receive	FBTYPE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 ... 16
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☒
Function Group	Feedback

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	P 3010		
CAN Object No:	353B (hex)		
PROFIBUS PNU:	1659 (dec) IND = 1 (de		
DPR Objekt Nr:	59		
Data Type BUS/DPR	Integer8		
Weighting 10^3			

Last Change of this Object	2.1
EEPROM	Yes

Short Description	Selection of commutation feedback
-------------------	-----------------------------------

Description

The FBTYPE command is used to select the type of feedback device that is used for the commutation and velocity controller. It is also used for the position controller unless |EXTPOS| = 1.

The type of encoder that is set is only initialized when the amplifier is switched on, which means that the amplifier must be switched off and then on again after every change of this variable.

The encoder parameters can be altered by using the appropriate ASCII command (in brackets) and then saved in the encoder EEPROM, using the |HSAVE| command. The encoder commands (|HISOFFS|, |HICOFFS|, |HIFACT1|, |HSAVE|) are only available when communication with the connected encoder has been established.

If communication with the encoder is not possible, then the error message ENCODER FAULT F04 is displayed.

When the data are loaded from the encoder, the setting for the motor number in the encoder is compared with the internal setting (|MNUMBER|). If the numbers are different, then an attempt is made to load a motor data set from the internal motor database that has the same motor number as that stored in the encoder. At the same time, the warning "NEW MOTOR DATA SET" n12 is displayed.

In order to prevent a warning being generated at the next power-on, the latest |MNUMBER| setting should be saved in the EEPROM, using the |SAVE| command. If it was not possible to load a valid motor number from the encoder (for instance, when an encoder is used for the first time), then no motor data will be loaded. However, the n12 warning will still be generated. The |HSAVE| command can be used to save the preset setting for the motor number (|MNUMBER|) in the encoder, so that no warning will be produced at the next power-on.

When using an encoder without a parameter channel (|FBTYPE|=7/16), and thus without the facility for storing parameters, the offset values |HISOFFS| / |HICOFFS| / |HIFACT1| will be saved in the serial EEPROM of the amplifier. After an alteration, these values can be permanently stored by using the |SAVE| command.

Zustand	Type of Feedback System	Description
FBTYPE = 0	Resolver	Data is loaded from the drive EEPROM. connector X2
FBTYPE = 1	SinCos 5V (MPHASE from EEPROM) A linearmotor with analoge hall feedback can operate without wake & shake if ENCLINES = 1.	connector X1
FBTYPE = 2	Hiperface (Stegmann)	In the initialization phase, all the data is loaded that is stored in the encoder EEPROM. These are: Offset compensation Sine (HISOFFS) Offset compensation Cosine (HICOFFS) Amplitude scaling (HIFACT1) Motor number (MNUMBER) Motorphase (MPHASE) connector X1
FBTYPE = 3	SinCos 12V (MPHASE fromEEPROM)	connector X1

FBTYPE = 4	EnDAT (Heidenhain)	In the initialization phase, all the data is loaded that is stored in the encoder EEPROM. These are: Offset compensation Sine (HISOFFS) Offset compensation Cosine (HICOFFS) Amplitude scaling (HIFACT1) Motor number (MNUMBER) Motorphase (MPHASE) connector X1
FBTYPE = 5	SinCos with Hall	connector X1
FBTYPE = 6	SinCos 12V with Hall	connector X1
FBTYPE = 7	SinCos 5V mit W&S FW >= 2.18 A linearmotor with analoge hall feedback can operate without W&S if ENCLINES = 1 and DRVCNFG Bit 8 = 1 is set. Additional is bit "reference ok" set. (standardfunction Bit 8). If this is not allowed use FBTYPE = 1 for this feedback.	connector X1
FBTYPE=8	SinCos 12 V with W & S	connector X1
FBTYPE=9	SSI	connector X5
FBTYPE=10	sensorless	
FBTYPE=11	Hall only 5 V	
FBTYPE=12	RS422 feedback device (A quad B) 24V level.	connector X3
FBTYPE = 13	digital encoder 5V (MPHASE from EEPROM	connector X5
FBTYPE = 14	digital encoder 24V with Hall	connector X1/X3
FBTYPE = 15	digital encoder 5V with Hall	connector X1
FBTYPE = 16	digital encoder 24V with W&S	connector X3
FBTYPE = 17	digital encoder 5V W&S	connector X1
FBTYPE = 18	digital encoder 5V with Hall	connector X1/X5
FBTYPE = 19	digital encoder 5V W&S	connector X5
FBTYPE = 20	BISS - Feedback	5V BISS digital connector X1 After the amplifier is switched on all Encoder-EEPROM data are load in the drive. These are: sinus offset adjustment HISOFFS , offset adjustment cosinus HICOFFS , amplitude scaling HIFACT1 , motor number MNUMBER , motor phase MPHASE only FW > 2.14
FBTYPE = 21	EnDat + W&S	
FBTYPE = 22	BISS - Feedback	BISS 12V /digital After the amplifier is switched on all Encoder-EEPROM data are load in the drive. These are: sinus offset adjustment HISOFFS , offset adjustment cosinus HICOFFS , amplitude scaling HIFACT1 , motor number MNUMBER , motor phase MPHASE only FW > 2.14

FBTYPE = 23	BISS Feedback	BISS 5V / analoge After the amplifier is switched on all Encoder-EEPROM data are load in the drive. These are: sinus offset adjustment HISOFFS , offset adjustment cosinus HICOFFS , amplitude scaling HIFACT1 , motor number MNUMBER , motor phase MPHASE only FW > 2.14
FBTYPE = 24	BISS Feedback	BISS 12V / analoge After the amplifier is switched on all Encoder-EEPROM data are load in the drive. These are: sinus offset adjustment HISOFFS , offset adjustment cosinus HICOFFS , amplitude scaling HIFACT1 , motor number MNUMBER , motor phase MPHASE only FW > 2.14
FBTYPE = 25	only S700: SSI	Connector X1 FW ≥ 3.06
FBTYPE=26	only S700: SSI - linear feedback	FW > 3.06 see also SSIRESOL
FBTYPE = 27	digital encoder 5V (MPHASE from EEPROM)	connector X1
FBTYPE = 28	SSI-Linear	connector X5 (POS-I/O-Optioncard)

ASCII -Command	FFTSW
Syntax Transmit	FFTSW [Data]
Syntax Receive	FFTSW <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	0 .. 15
Default	0
Opmode	All
Drive Status	-
Start Firmware	2.51
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3866 (hex)
PROFIBUS PNU:	1670 (dec) IND = 33 (d)
DPR Objekt Nr:	870

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	2.1
EEPROM	Yes

Short Description	Current feed forward configuration
-------------------	------------------------------------

Description

FFTSW is a bit-form variable for configuration of the current feed forward functionality.

Bit 1 (0x00000001) =1 current feed forward added after the current set point filter
=0 added before the set point filter

Bit 2 (0x00000002) =1 extended current feed forward functionality (new)
=0 standard current feed forward functionality (old)

Bit 3 (0x00000004) =1 inertia feed forward switched on
=0 inertia feed forward switched off

Bit 4 (0x00000008) =1 current feed forward linear interpolation off
=0 current feed forward linear interpolation on

Bit 5 (0x00000010) =1 velocity linear interpolation off
=0 velocity linear interpolation on

Bit	Description
Bit 1 (0x00000001)	1: current feed forward added after the current set point filter 0: added before the set point filter

ASCII -Command	FILTMODE
Syntax Transmit	FILTMODE [Data]
Syntax Receive	FILTMODE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 ... 4
Default	1
Opmode	All
Drive Status	
Start Firmware	1.21
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	353C (hex)
PROFIBUS PNU:	1660 (dec) IND = 1 (de
DPR Objekt Nr:	60

Data Type BUS/DPR	Integer8
Weighting 10 ³	

Last Change of this Object	1.1
EEPROM	Yes

Short Description	Smith Predictor
-------------------	-----------------

Description

The Smith Predictor estimates the current, which will settle in 62,5 ms, to compensate the delay time of the servo drive. (fs = 8 kHz). A new motor model with electrical motor time constant is used. $T_e = L / R$. The algorithm is switched on by FILTMODE 2. |KC| sets the predictor activity (KC = 1 >>> 100 %, KC = 0,3 >>> 30 %)

To execute the algorithm the following motor parameter have to be saved:

|MRS| Phase-Phase resistor of the winding

|ML| Phase-Phase inductivity of the winding in mH.

With predictor the current controller bandwidth can be set up to 2,5 kHz (fs = 8 kHz). If the predictor is switched on the |CTUNE| default value is 1,8 kHz. Usual the current controller gain |MLGQ| can be increased by 50 %.

ASCII -Command	FLTCNT
Syntax Transmit	FLTCNT
Syntax Receive	FLTCNT <Data>
Type	Command
Format	String
DIM	-
Range	0, 65535 per Fault Message
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Drive Status

Available in	S300/700		
MMI	☒	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐
SERCOS IDN:			
CAN Object No:	-		
PROFIBUS PNU:	no		
DPR Objekt Nr:			

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Fault Frequency
-------------------	-----------------

Description

The FLTCNT command provides a listing of all possible error messages, with the number of occurrences of each type of fault in clear text. The total number of faults (sum of the individual faults) is given out before the fault list.

ASCII -Command	FLTCNT *
Syntax Transmit	FLTCNT *
Syntax Receive	FLTCNT <Data>
Type	Command
Format	1 x Integer32 + 32 x Integer16
DIM	-
Range	-
Default	-
Opmode	-
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☒ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Fault Frequency
-------------------	-----------------

Description
The command returns a list of 33 numbers:
1st number: ☐ total number of faults (Integer32)
2nd number: ☐ number of occurrences of fault F01
3rd number: ☐ number of occurrences of fault F02
.....
33rd number: ☐ number of occurrences of fault F32

ASCII -Command	FLTHIST	Available in	S300/700
Syntax Transmit	FLTHIST	MMI	☒ CAN-Bus ☐
Syntax Receive	FLTHIST <Data>	PROFIBUS	☐ Sercos ☐
Type	Command	SERCOS IDN:	
Format	String	CAN Object No:	-
DIM	Number and TRUN	PROFIBUS PNU:	no
Range	10 No. of Last Messages+Times	DPR Objekt Nr:	
Default	-	Data Type BUS/DPR	-
Opmode	All	Weighting 10^3	
Drive Status	-	Last Change of this Object	1.0
Start Firmware	1.0	EEPROM	-
Configuration	☐		
Function Group	Drive Status		
Short Description	Fault History: Display last 10 faults		

Description

The FLTHIST command produces a list of the last 10 faults that occurred, together with the corresponding number of operating hours at the time of occurrence, in clear text.

ASCII -Command	FLTHIST *
Syntax Transmit	FLTHIST *
Syntax Receive	FLTHIST <Data>
Type	Command
Format	20 x Integer32
DIM	Number and TRUN
Range	-
Default	-
Opmode	-
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☒ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Fault History: Display last 10 faults
-------------------	---------------------------------------

Description

The FLTHIST command produces a list of the last 10 faults that occurred, together with the corresponding number of operating hours at the time of occurrence, in clear text.

The output looks like this:

n1 t1 n2 t2 n3 t3n10 t10

n – fault number

t – time of the event (operating hours counter) [in 1024/60000 minutes]

ASCII -Command	FW
Syntax Transmit	FW
Syntax Receive	FW <Data>
Type	Variable ro
Format	Float
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3657 (hex)
PROFIBUS PNU:	1943 (dec) IND = 1 (de
DPR Objekt Nr:	343

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	No

Short Description	Displays the Version Number of the Firmware
-------------------	---

Description

The command FW displays the versionnumber of the firmware. The command is also appears in the |DUMP| list and is part of the parameter settings of the drive.

ASCII -Command	GEARFILT
Syntax Transmit	GEARFILT [Data]
Syntax Receive	GEARFILT <Data>
Type	
Format	Command
DIM	-
Range	1 ...8
Default	4
Opmode	4
Drive Status	Enable
Start Firmware	1.0
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36D6 (hex)
PROFIBUS PNU:	1670 (dec) IND = 17 (d)
DPR Objekt Nr:	470

Data Type BUS/DPR	Command
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	-

Short Description	
-------------------	--

Description

For the operation of electronic gearing (OPMODE = 4), a second order low pass filter is introduced, to smooth the input position command signal. This command GEARFILT can be used to determine the corresponding frequency of the electronic gearing filter.

GEARFILT	f (HZ)
1	318
2	159
3	80
4	40
5	20
6	10
7	5
8	2.5

The filter is only used, if it is necessary, because the filter also introduces a delay to prevent the slave from following the master exactly at time during acceleration and deceleration. Normally, GEARFILT = 4 with 40 Hz cut-frequency is chosen.

ASCII -Command	GEARI
Syntax Transmit	GEARI [Data]
Syntax Receive	GEARI <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	-2147483648 ... 2147483647
Default	1024
Opmode	4
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Gearing

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		353E (hex)	
PROFIBUS PNU:		1662 (dec) IND = 1 (de	
DPR Objekt Nr:		62	

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Input Factor for Electronic Gearing
-------------------	-------------------------------------

Description

In master/slave applications (|OPMODE|=4) this parameter can be used to set the master/slave translation ratio.

1. In case of analoge input signals (|GEARMODE|=6...9) the position is registered by the |ENCLINES| setting and converted in the 32bit/turn format.

The parameter GEARI/GEARO| is only for the gearing-ratio.

Example:

GEARI ->> feedback turns

|GEARO| - >> motor turns.

GEARI=10,GEARO=3 -> ratio 10 : 3

2. In case of SSI-feedback (|GEARMODE|=5) the position is set and calvulated by |SSIRXD| and |SSIREVOL| and converted in the 32bit/turn format.

The parameter GEARI/GEARO| is only for the gearing-ratio.

3. In case of all digital position inputs (|GEARMODE|=1...4) the parameter GEARI defines the feedback pulses within |GEARO| motor turns.

Example:

An externer ROD-feedbackhas 1024 pulses / turn, by 1 feedback turnn the motor should go 3 turns.

The corresponding setting is:

GEARI = 1024, GEARO 3

ASCII -Command	GEARMODE
Syntax Transmit	GEARMODE [Data]
Syntax Receive	GEARMODE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 9
Default	0
Opmode	4
Drive Status	Disabled
Start Firmware	1.0
Configuration	☒
Function Group	Gearing

Available in	S300/700	
MMI	☒	CAN-Bus ☒
PROFIBUS	☒	Sercos ☐
SERCOS IDN:		
CAN Object No:	353F (hex)	
PROFIBUS PNU:	1663 (dec) IND = 1 (de	
DPR Objekt Nr:	63	
Data Type BUS/DPR	Integer8	
Weighting 10^3		

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Position Input Electronic Gearing Mode
-------------------	--

Description

The servo amplifier is controlled through different interfaces from various sources. The GEARMODE variable configures the source that provides the master setpoint (position). For the connector pin assignments, see the Installation Manual.

All devices resolver, SinCos and incremental signals can be used at the same time. Resolver for commutation and speed control, SinCos for position control and incremental encoder for electronic gearing.

Following settings have to be made:

|EXTPOS|=1 .. 3 (External actual position)

Zustand	Description
GEARMODE=0	No Feedback
GEARMODE=1	Pulse And Direction Digital I/O 24V (X3) With a stepper motor control (pulse/direction, 24V signal level) connected to the digital inputs DIGITAL-IN 1/2, terminals X3/11, 12, an additional function assignment for the inputs is not necessary and any assignments on the screen page, Digital I/O, are ignored. INPUT1=direction (Low = positive, High = negative) INPUT2=pulse
GEARMODE=2	24 V digital encoder at X3

Encoder Follower Digital I/O 24V (X3)
With an incremental encoder (track A/B, 24V signal level) connected to the digital inputs DIGITAL-IN 1/2, terminals X3/11, 12, an additional function assignment for the inputs is not necessary and any assignments on the screen page, Digital I/O, are ignored.

GEARMODE=3	5 V digital encoder at X5
	Encoder Follower Digital I/O 5V X5 With an incremental encoder connected to connector X5 (Drive 400 X4), terminals 4, 5, 6, 7. ENCMODE has to be set to "0".
GEARMODE=4	5V pulse and direction Digital I/O
	With a stepper motor control connected to connector X5, terminals 4, 5, 6, 7. INPUT1=direction (Low = positive, High = negative) INPUT2=pulse ENCMODE has to be set to "0"
GEARMODE=5	SSI at X5
GEARMODE=6	5V sine encoder connected to X1. Only analog processing.
GEARMODE=7	12V sine encoder connected to X1. Only analog processing.
GEARMODE=8	EnDAT-Encoder at input X1. The difference to GEARMODE=6 is, that the parameter channel of the encoder is read and the absolute position is transferred to the position register. ENCLINES is calculated automatically to this internal resolution of 20 Bit per rev of the encoder. This setting can be used in position mode under EXTPOS =1. The sine/cosine signals of the encoder are read analog. This increases the resolution significantly.
GEARMODE=9	HIPERFACE-Encoder at input X1. The difference to GEARMODE=6 is, that the parameter channel of the encoder is read and the absolute position is transferred to the position register. ENCLINES is calculated automatically to the internal resolution of 20 Bit per rev of the encoder. This setting can be used in position mode under EXTPOS =1. The sine/cosine signals of the encoder are read analog. This increases the resolution significantly.
GEARMODE=10	5V ROD-encoder as master - slave input connector X1 (OPMODE = 4)

ASCII -Command	GEARO
Syntax Transmit	GEARO [Data]
Syntax Receive	GEARO <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	0 .. 2147483647
Default	1
Opmode	4
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Gearing

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		3540 (hex)	
PROFIBUS PNU:		1664 (dec) IND = 1 (de	
DPR Objekt Nr:		64	

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Output Factor for Electronic Gearing
-------------------	--------------------------------------

Description

In master/slave applications (|OPMODE|=4) this parameter can be used to set the master/slave translation ratio.

ASCII -Command	GET	Available in	S300/700
Syntax Transmit	GET	MMI	☒ CAN-Bus ☒
Syntax Receive	GET <Data>	PROFIBUS	☒ Sercos ☐
Type	Command	SERCOS IDN:	
Format	String	CAN Object No:	3541 (hex)
DIM	-	PROFIBUS PNU:	1665 (dec) IND = 1 (de
Range	-	DPR Objekt Nr:	65
Default	-	Data Type BUS/DPR	-
Opmode	All	Weighting 10^3	
Drive Status	-	Last Change of this Object	1.0
Start Firmware	1.0	EEPROM	-
Configuration	☐		
Function Group	Oscilloscope		
Short Description	Scope: output data		

Description

The GET command returns a list with all the most recently recorded SCOPE data. The list consists of n+3 lines (n = no. items of data recorded)

Line 1: commentary e.g. "Drive Recording"

Line 2: n, timebase in msec e.g. 10, 0.25 (10 data lines, timebase 250 microseconds)

Line 3: var1, var2, var3 names of the recorded variables, e.g. |VCMD|, |V|, |ICMD|

Line 4: data1, data2, data3 recorded data, e.g. 0, 20.3, -0.5

Line 5: data1, dat2, data3

..

Line 1: data1, data2, data3

see also |RECORD|, |RECTRIG|

ASCII -Command	GF
Syntax Transmit	GF [Data]
Syntax Receive	GF <Data>
Type	Variable rw
Format	Float
DIM	-
Range	0 ... 10
Default	1
Opmode	All
Drive Status	-
Start Firmware	1.37
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.2
EEPROM	Yes

Short Description	proportional gain of the flux controller
-------------------	--

Description

ASCII -Command	GFTN	Available in	S300/700
Syntax Transmit	GFTN [Data]	MMI	☐ CAN-Bus ☐
Syntax Receive	GFTN <Data>	PROFIBUS	☐ Sercos ☐
Type		SERCOS IDN:	
Format		CAN Object No:	-
DIM		PROFIBUS PNU:	no
Range		DPR Objekt Nr:	
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description			
Description			

ASCII -Command	GP
Syntax Transmit	GP [Data]
Syntax Receive	GP <Data>
Type	Variable rw
Format	Float
DIM	(m/s)/m
Range	0.1 ... 1000
Default	0.1
Opmode	4, 5, 8
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Position

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	104		
CAN Object No:	3542 (hex)		
PROFIBUS PNU:	1666 (dec) IND = 1 (de		
DPR Objekt Nr:	66		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Position Control Loop: Proportional Gain
-------------------	--

Description

This variable is the proportional gain of the position control loop . If GP is set too low, the lag or settling time is too long and the drive is too soft. If GP is set too high, the drive oscillates.

ASCII -Command	GP_X
Syntax Transmit	GP [Data]
Syntax Receive	GP <Data>
Type	Variable rw
Format	Float
DIM	(m/s)/m
Range	0.1 ... 1000
Default	0.1
Opmode	4, 5, 8
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Position

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	104		
CAN Object No:	3761 (hex)		
PROFIBUS PNU:	1809 (dec) IND = 17 (d)		
DPR Objekt Nr:	609		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Position Control Loop: Proportional Gain 2
-------------------	--

Description
see |PARCNFG|

ASCII -Command	GPFFT
Syntax Transmit	GPFFT [Data]
Syntax Receive	GPFFT <Data>
Type	Variable rw
Format	Float
DIM	-
Range	0 ... 1000
Default	1
Opmode	4,5,8
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3544 (hex)
PROFIBUS PNU:	1668 (dec) IND = 1 (de
DPR Objekt Nr:	68

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	2.1
EEPROM	Yes

Short Description	Position control loop: feed forward for the current setpoint
-------------------	--

Description

Position control loop: feed forward for the current setpoint.
Has to be set, that the following error is minimized.

This parameter has effect for control structure only in the following cases:

- 1.using table based motion task enabled with bit in |O_C|. ;
- 2.using sine squared acceleration and deceleration motion profiles.

If |GV| is changed after optimizing GPFFT, GPFFT has to be changed also inversely proportional.

ASCII -Command	GPFFT_X
Syntax Transmit	GPFFT [Data]
Syntax Receive	GPFFT <Data>
Type	Variable rw
Format	Float
DIM	-
Range	0 ... 1000
Default	1
Opmode	4,5,8
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3762 (hex)
PROFIBUS PNU:	1810 (dec) IND = 17 (d)
DPR Objekt Nr:	610

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Position control loop: feed forward for the current setpoint 2
-------------------	--

Description
see |PARCNFG|

ASCII -Command	GPFFTV
Syntax Transmit	GPFFTV [Data]
Syntax Receive	GPFFTV <Data>
Type	Variable rw
Format	Float
DIM	-
Range	32 Bit
Default	1
Opmode	All
Drive Status	-
Start Firmware	
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	386A (hex)
PROFIBUS PNU:	1674 (dec) IND = 33 (d)
DPR Objekt Nr:	874

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	2.1
EEPROM	Yes

Short Description	Viscous friction compensation
-------------------	-------------------------------

Description

This current feed forward is generated from the internal trajectory speed value and is valid for all all position loop modes (OPMODE=4...8). This setting is valid only for extenden feed forware functionality (FFTSW=2).

ASCII -Command	GPFFV
Syntax Transmit	GPFFV [Data]
Syntax Receive	GPFFV <Data>
Type	Variable rw
Format	Float
DIM	-
Range	0 ... 1000
Default	1
Opmode	4, 5, 8
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Position

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	296		
CAN Object No:	3545 (hex)		
PROFIBUS PNU:	1669 (dec) IND = 1 (de		
DPR Objekt Nr:	69		

Data Type BUS/DPR	Integer32
Weighting 10 ³	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Position Control Loop: Feed Forward for Velocity
-------------------	--

Description

This variable is used in the position control loop. Feed forward is used to ease the position controller task. A better setting for GPFFV means better utilization of the dynamic range of the position controller. The most favorable setting (usually about 1.0), depends on factors external to the drive such as friction, dynamic resistance, and stiffness. If GPFFV is set too low, the drive lags. If GPFFV is set too high, the drive oversteers.

ASCII -Command	GPFFV_X
Syntax Transmit	GPFFV [Data]
Syntax Receive	GPFFV <Data>
Type	Variable rw
Format	Float
DIM	-
Range	0 ... 1000
Default	1
Opmode	4, 5, 8
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Position

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	3763 (hex)		
PROFIBUS PNU:	1811 (dec) IND = 17 (d)		
DPR Objekt Nr:	611		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Position Control Loop: Feed Forward for Velocity 2
-------------------	--

Description
see |PARCNFG|

ASCII -Command	GU	Available in	S300/700
Syntax Transmit	GU [Data]	MMI	☐ CAN-Bus ☐
Syntax Receive	GU <Data>	PROFIBUS	☐ Sercos ☐
Type		SERCOS IDN:	
Format		CAN Object No:	
DIM		PROFIBUS PNU:	
Range		DPR Objekt Nr:	0
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	
Function Group		Weighting 10^3	

Last Change of this Object	
EEPROM	

Short Description	
-------------------	--

Description

comming soon

ASCII -Command	GUTN	Available in	S300/700
Syntax Transmit	GUTN [Data]	MMI	☐ CAN-Bus ☐
Syntax Receive	GUTN <Data>	PROFIBUS	☐ Sercos ☐
Type		SERCOS IDN:	
Format		CAN Object No:	
DIM		PROFIBUS PNU:	
Range		DPR Objekt Nr:	0
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	
Function Group		Weighting 10^3	
		Last Change of this Object	2.1
		EEPROM	
Short Description			

Description

comming soon

ASCII -Command	GV
Syntax Transmit	GV [Data]
Syntax Receive	GV <Data>
Type	Variable rw
Format	Float
DIM	-
Range	0.001 ... 369.2
Default	0.046
Opmode	0, 1
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	velocity

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	100		
CAN Object No:	3548 (hex)		
PROFIBUS PNU:	1672 (dec) IND = 1 (de		
DPR Objekt Nr:	72		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Velocity Control Loop: Proportional Gain
-------------------	--

Description

GV gives the proportional (ac) gain of the velocity control loop. This also affects |GVTN|. Compared with the SR 600 the dimension has changed to As/rad. $GV[SR300] = GV[SR600] * DIPEAK [in A] / 314.15rad/s$

Using the SR601 and $GV[SR600] = 1 \rightarrow GV[SR300] = 1 * 3A / 314.15rad/s = 0.010 As/rad$

Using the SR603 and $GV[SR600] = 1 \rightarrow GV[SR300] = 1 * 6A / 314.15rad/s = 0.019 As/rad$

Using the SR606 and $GV[SR600] = 1 \rightarrow GV[SR300] = 1 * 12A / 314.15rad/s = 0.038 As/rad$

Using the SR610 and $GV[SR600] = 1 \rightarrow GV[SR300] = 1 * 20A / 314.15rad/s = 0.064 As/rad$

Using the SR610-30 / 614 / 620 and $GV[SR600] = 1 \rightarrow GV[SR300] = 1 * 40A / 314.15rad/s = 0.127 As/rad$

Using the SR403 and $GV[SR400] = 1 \rightarrow GV[SR300] = 1 * 9A / 314.15rad/s = 0.029 As/rad$

Using the SR406 and $GV[SR400] = 1 \rightarrow GV[SR300] = 1 * 12A / 314.15rad/s = 0.038 As/rad$

Version 2.14

The maximum GV value was changed:

Maximum	Default
SR303 = 1107	= 0.028
SR306 = 1846	= 0.046
SR310 = 2461	= 0.062
SR341 = 553	= 0.014
SR343 = 923	= 0.023
SR346 = 1476	= 0.037

ASCII -Command	GV_X
Syntax Transmit	GV [Data]
Syntax Receive	GV <Data>
Type	Variable rw
Format	Float
DIM	-
Range	0.001 ... 369.2
Default	0.046
Opmode	0, 1
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	velocity

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	100		
CAN Object No:	3760 (hex)		
PROFIBUS PNU:	1808 (dec) IND = 17 (d)		
DPR Objekt Nr:	608		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Velocity Control Loop: Proportional Gain 2
-------------------	--

Description
siehe |PARCNFG|

ASCII -Command	GVFR
Syntax Transmit	GVFR [Data]
Syntax Receive	GVFR <Data>
Type	Variable rw
Format	Float
DIM	-
Range	0.0 .. 1.0
Default	1.0
Opmode	All
Drive Status	-
Start Firmware	1.00
Configuration	☐
Function Group	PI-PLUS

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		354B (hex)	
PROFIBUS PNU:		1675 (dec) IND = 1 (de	
DPR Objekt Nr:		75	

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	PI-PLUS Actual Velocity Feedforward
-------------------	-------------------------------------

Description

GVFR is a tuning variable of the velocity control loop which sets the feed-forward to feedback gain ratio for the Pseudo Derivative Feedback with Feed-Forward. (PDFF or PI+) . With GVFR 1 the behavior of the velocity control loop is like a standard PI controller. GVFR 0.65 is a value which suppresses step response overshoot.

ASCII -Command	GVFR_X
Syntax Transmit	GVFR [Data]
Syntax Receive	GVFR <Data>
Type	Variable rw
Format	Float
DIM	-
Range	0.0 .. 1.0
Default	1.0
Opmode	All
Drive Status	-
Start Firmware	1.00
Configuration	☐
Function Group	PI-PLUS

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	375E (hex)		
PROFIBUS PNU:	1806 (dec) IND = 17 (d)		
DPR Objekt Nr:	606		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	PI-PLUS Actual Velocity Feedforward
-------------------	-------------------------------------

Description
see |PARCNFG|

ASCII -Command	GVTN
Syntax Transmit	GVTN [Data]
Syntax Receive	GVTN <Data>
Type	Variable rw
Format	Float
DIM	ms
Range	0.0 , GV/62.5 .. 1000.0
Default	10
Opmode	0, 1
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	velocity

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	101		
CAN Object No:	354D (hex)		
PROFIBUS PNU:	1677 (dec) IND = 1 (de		
DPR Objekt Nr:	77		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Velocity Control Loop: I-Integration Time
-------------------	---

Description

This variable determines the integral-action time/integral time constant. Smaller motors permit shorter integration times. Larger motors or high moments of inertia in the load usually require integration times of 20ms or more. With GVTN=0ms, the I-component is switched off. If the GVTN value is too low, the drive runs roughly or strongly overshoots with high inertia loads. If the GVTN value is too high, the drive is too soft.

ASCII -Command	GVTN_X
Syntax Transmit	GVTN [Data]
Syntax Receive	GVTN <Data>
Type	Variable rw
Format	Float
DIM	ms
Range	0.0 , GV/62.5 .. 1000.0
Default	10
Opmode	0, 1
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	velocity

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	101		
CAN Object No:	375F (hex)		
PROFIBUS PNU:	1807 (dec) IND = 17 (d)		
DPR Objekt Nr:	607		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Velocity Control Loop: I-Integration Time 2
-------------------	---

Description
siehe [PARCNFG]

ASCII -Command	HALLDIR
Syntax Transmit	HALLDIR [Data]
Syntax Receive	HALLDIR <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 1
Default	0
Opmode	All
Drive Status	Disable
Start Firmware	1.00
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3550 (hex)
PROFIBUS PNU:	1680 (dec) IND = 1 (de
DPR Objekt Nr:	80

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.00
EEPROM	Yes

Short Description	Hall segment table number
-------------------	---------------------------

Description

In the S300 firmware there are 2 tables with hall segment numbers.

HALLDIR = 0: order of hall segments 1,5,4,6,2,3

HALLDIR = 1: order of hall segments 1,3,2,6,4,5

The correct table number can be determined by moving the motor in the positive direction (velocity > 0)
And checking the order of the hall segments with the macro command (M SR_HALL).

ASCII -Command	HDUMP
Syntax Transmit	HDUMP
Syntax Receive	HDUMP <Data>
Type	Multi-line Return Command
Format	String
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3551 (hex)
PROFIBUS PNU:	1681 (dec) IND = 1 (de
DPR Objekt Nr:	81

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Output all sin/cos (Hiperface) variables
-------------------	--

Description

List all sincos feedback variables stored in the encoders memory. (Hyperface or Endat)

ASCII -Command	HELP
Syntax Transmit	HELP <Data>
Syntax Receive	HELP <Data>
Type	Variable ro
Format	String
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☒ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Output Parameter Help Information
-------------------	-----------------------------------

Description

Using the parameter HELP <name> produces a display of help information for the ASCII parameter “name”. This help information includes input limits and both the actual and default values for the parameter.

e.g. HELP GV

GV act=6 min=0 max=1000 default=1

ASCII -Command	HICOFFS
Syntax Transmit	HICOFFS [Data]
Syntax Receive	HICOFFS <Data>
Type	Variable rw
Format	Integer16
DIM	mV
Range	-10000 .. 10000
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3552 (hex)
PROFIBUS PNU:	1682 (dec) IND = 1 (de
DPR Objekt Nr:	82

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Hiperface: Cosine-Offset (incremental track)
-------------------	--

Description

The HICOFFS command sets the offset correction (in mV) for the cosine signal of the incremental track. The command is only available when a sin/cos encoder has been selected as the feedback device (|FBTYPE|=2,4,7). Depending on the type of encoder used, the HICOFFS setting is stored in the EEPROM of the encoder (|FBTYPE|=2,4, command |HSAVE|). When using an encoder without a parameter channel (|FBTYPE|=7), and thus without an internal EEPROM, this setting will be saved in the EEPROM of the amplifier (command |SAVE|).

ASCII -Command	HIFACT1
Syntax Transmit	HIFACT1 [Data]
Syntax Receive	HIFACT1 <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	12000 .. 19000
Default	16384
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3553 (hex)
PROFIBUS PNU:	1683 (dec) IND = 1 (de
DPR Objekt Nr:	83

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Encoder

Short Description	Hiperface: Sin/Cos Gain Factor (incremental track)
-------------------	--

Description

The HIFACT1 command sets the amplitude scaling for the sine signal of the absolute track (SinCoder). The amplitude scaling is for the value $16384 = 1$.

The command is only available when a sin/cos encoder has been selected as the feedback device ($|FBTYPE|=2,4,7$). Depending on the type of encoder used, the HIFACT1 setting is stored in the EEPROM of the encoder ($|FBTYPE|=2,4$, command $|HSAVE|$). When using an encoder without a parameter channel ($|FBTYPE|=7$), and thus without an internal EEPROM, this setting will be saved in the EEPROM of the amplifier (command $|SAVE|$).

ASCII -Command	HISOFFS
Syntax Transmit	HISOFFS [Data]
Syntax Receive	HISOFFS <Data>
Type	Variable rw
Format	Integer16
DIM	mV
Range	-10000 .. 10000
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3554 (hex)
PROFIBUS PNU:	1684 (dec) IND = 1 (de
DPR Objekt Nr:	84

Data Type BUS/DPR	Integer16
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	Encoder

Short Description	Hiperface: Sin/Cos Offset (incremental track)
-------------------	---

Description

The HISOFFS command sets the offset correction (in mV) for the sine signal of the incremental track.

The command is only available when a sin/cos encoder has been selected as the feedback device (|FBTYPE|=2,4,7). Depending on the type of encoder used, the HISOFFS setting is stored in the EEPROM of the encoder (|FBTYPE|=2,4, command |HSAVE|).

When using an encoder without a parameter channel (|FBTYPE|=7), and thus without an internal EEPROM, this setting will be saved in the EEPROM of the amplifier (command |SAVE|).

ASCII -Command	HLIMIT1
Syntax Transmit	HLIMIT1 [Data]
Syntax Receive	HLIMIT1 <Data>
Type	Variable rw
Format	Integer32
DIM	
Range	0...2147483647
Default	0
Opmode	All
Drive Status	
Start Firmware	3.62
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	3896 (hex)
PROFIBUS PNU:	
DPR Objekt Nr:	918

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	2.2
EEPROM	Yes

Short Description	Software limit switch 1 for homing move
-------------------	---

Description

The parameter HLIMIT1 offers the possibility to limitate the move of the drive during the homing move. This parameter defines the maximal distance between the start point of the homing move and the position of the reference switch or hardware limit switch. When the reference switch is not reached within the distance HLIMIT1, the error F26 (Limit switch) is generated.

[HLIMIT2|,|HLIMIT3|,|ERRCODES|

ASCII -Command	HLIMIT2
Syntax Transmit	HLIMIT2 [Data]
Syntax Receive	HLIMIT2 <Data>
Type	Variable rw
Format	Integer32
DIM	
Range	0...2147483647
Default	0
Opmode	All
Drive Status	
Start Firmware	3.62
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	3897 (hex)
PROFIBUS PNU:	
DPR Objekt Nr:	919

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	2.2
EEPROM	Yes

Short Description	Software limit switch 2 for homing move
-------------------	---

Description

The parameter HLIMIT2 offers the possibility to limitate the move of the drive during the homing move. This parameter defines the maximal distance between the start point of the homing move and the position of the reference switch or hardware limit switch. When the reference switch is not reached within the distance HLIMIT2, the error F26 (Limit switch) is generated.

[HLIMIT1|,|HLIMIT3|,|ERRCODES|

ASCII -Command	HLIMIT3
Syntax Transmit	HLIMIT3 [Data]
Syntax Receive	HLIMIT3 <Data>
Type	Variable rw
Format	Integer32
DIM	
Range	0...2147483647
Default	0
Opmode	All
Drive Status	
Start Firmware	3.62
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	3898 (hex)
PROFIBUS PNU:	
DPR Objekt Nr:	920

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	2.2
EEPROM	Yes

Short Description	Software limit switch 3 for homing move
-------------------	---

Description

The parameter HLIMIT3 offers the possibility to limitate the move of the drive during the homing move. This parameter defines the maximal distance between the start point of the homing move and the position of the reference switch or hardware limit switch. When the reference switch is not reached within the distance HLIMIT3, the error F26 (Limit switch) is generated.

[HLIMIT1|,|HLIMIT2|,|ERRCODES|

ASCII -Command	HSAVE
Syntax Transmit	HSAVE
Syntax Receive	HSAVE
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3556 (hex)
PROFIBUS PNU:	1686 (dec) IND = 1 (de
DPR Objekt Nr:	86

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Hiperface: Save Parameters in Encoder
-------------------	---------------------------------------

Description

If |FBTYPE|=2 or =4 is set, the |HSAVE| command saves the variables for the encoder (HIPERFACE / EnDat) in the serial EEPROM of the encoder. With the setting |FBTYPE|=7, only the variables for the incremental track, as well as |MNUMBER| and |MPHASE| are saved in the serial EEPROM of the amplifier.

This command is only available if the amplifier has detected a sin/cos encoder (|FBTYPE| =2;4;7).

|FBTYPE| = 2 HIPERFACE (Stegmann)

|FBTYPE| = 4 EnDat (Heidenhain)

|FBTYPE| = 7 SINCOS – encoder without its own serial EEPROM

The HSAVE command saves the following variables.

|MNUMBER|*

|MPHASE|*

|HICOFFS|*

|HISOFFS|*

|HIFACT1|*

|MBRAKE|*

|MSERIALNO|*

* If |FBTYPE| = 7, these parameters are saved in the serial EEPROM of the amplifier.

Hiperface encoder, which have contents, can be erased by "HSAVE ERASE".

|FW| >=2.23

HSAVE BAM

This command is used to set the actual position within one turn to value zero.

ASCII -Command	HVER
Syntax Transmit	HVER
Syntax Receive	HVER <Data>
Type	Variable ro
Format	String
DIM	-
Range	max 50 ASCII Characters
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Basic Setup

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	3557 (hex)		
PROFIBUS PNU:	1687 (dec) IND = 1 (de		
DPR Objekt Nr:	87		

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Output the Hardware Version
-------------------	-----------------------------

Description

The HVER command returns the designation for the hardware version, in the following form:

“Drive 3xx Hardware Version (yy) zzzz”

xx - designation of the output stage (current rating)

yy - designation of the hardware version

zzzz - date of the first hardware revision

ASCII -Command	I
Syntax Transmit	I
Syntax Receive	I <Data>
Type	Variable ro
Format	Float
DIM	A
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Actual values

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	84		
CAN Object No:	3558 (hex)		
PROFIBUS PNU:	1688 (dec) IND = 1 (de		
DPR Objekt Nr:	88		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	No

Short Description	Current Monitor
-------------------	-----------------

Description

This variable returns the actual current value in amperes. This value is always positive.

ASCII -Command	I2TLIM
Syntax Transmit	I2TLIM [Data]
Syntax Receive	I2TLIM <Data>
Type	Variable rw
Format	Integer8
DIM	%
Range	0 .. 100
Default	80
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Current

Available in		S300/700	
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒

SERCOS IDN:	144
CAN Object No:	355A (hex)
PROFIBUS PNU:	1690 (dec) IND = 1 (de
DPR Objekt Nr:	90

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	I2T Warning
-------------------	-------------

Description

This variable defines a threshold for the I2T warning. As soon as the I2T values goes above this threshold, the warning, n01, is generated. This warning is passed on to a control system via a digital output (|OxMODE|=11). If the I2TLIM value is too low, the message appears too soon and the drive is not fully utilized. If the I2TLIM value is too high, limiting occurs at the same time as the message.

ASCII -Command	ICMD
Syntax Transmit	ICMD
Syntax Receive	ICMD <Data>
Type	Variable ro
Format	Float
DIM	A
Range	-DIPEAK .. DPEAK
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		355B (hex)	
PROFIBUS PNU:		1691 (dec) IND = 1 (de	
DPR Objekt Nr:		91	

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	No

Short Description	Current Setpoint
-------------------	------------------

Description

Shows the internal current setpoint.

ASCII -Command	ICMDVLIM
Syntax Transmit	ICMDVLIM [Data]
Syntax Receive	ICMDVLIM <Data>
Type	Variable rw
Format	Integer32
DIM	VUNIT
Range	0 .. VLIM
Default	0
Opmode	2,3
Drive Status	Disabled + Reset
Start Firmware	3.00
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3685 (hex)
PROFIBUS PNU:	1989 (dec) IND = 1 (de
DPR Objekt Nr:	389

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	2.1
EEPROM	Yes

Short Description	Velocity Limit in Current Control
-------------------	-----------------------------------

Description

This variable sets the required rated output continuous current. The adjustment is usually made to the standstill current for the connected motor. The value entered is limited to the lower of the rated current of the motor (|MICON|) or the rated current of the amplifier (|DICON|). This variable is used in the monitoring of the actual RMS current that is drawn. If the ICONT value is too low, the drive shows following errors and the torque is too low. If the ICONT value is too high, the motor can be thermally overloaded.

ASCII -Command	ID
Syntax Transmit	ID
Syntax Receive	ID <Data>
Type	Variable ro
Format	Float
DIM	A
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Actual values

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		355D (hex)	
PROFIBUS PNU:		1693 (dec) IND = 1 (de	
DPR Objekt Nr:		93	

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	No

Short Description	D-component of Current Monitor
-------------------	--------------------------------

Description

The D-axes component of the actual current value.

ASCII -Command	IDDUMP
Syntax Transmit	IDDUMP [Data]
Syntax Receive	IDDUMP <Data>
Type	Multi-Line Return Command
Format	String
DIM	
Range	
Default	
Opmode	All
Drive Status	-
Start Firmware	1.37
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	String
Weighting 10^3	

Last Change of this Object	1.3
EEPROM	No

Short Description	Output the number/names of Parameter-Objects
-------------------	--

Description

The command IDDUMP outputs the list of the object (parameter) numbers with the corresponding ASCII names.

The command “IDDUMP idno” gets the name of the ASCII parameter with the object number “idno”.

ASCII -Command	IDUMP
Syntax Transmit	IDUMP
Syntax Receive	IDUMP <Data>
Type	Multi-line Return Command
Format	String
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	355E (hex)		
PROFIBUS PNU:	1694 (dec) IND = 1 (de		
DPR Objekt Nr:	94		

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.8
EEPROM	-

Short Description	Output Current Limit List
-------------------	---------------------------

Description

This command returns a list of the current limit variables and their settings (see |CDUMP|).

ASCII -Command	IEXTT
Syntax Transmit	IEXTT [Data]
Syntax Receive	IEXTT <Data>
Type	Variabler w
Format	Float
DIM	A
Range	-DICONT .. +DICONT
Default	0
Opmode	All
Drive Status	-
Start Firmware	3.05
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3869 (hex)
PROFIBUS PNU:	1673 (dec) IND = 33 (d)
DPR Objekt Nr:	873

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	2.1
EEPROM	Yes

Short Description	Weight compensation
-------------------	---------------------

Description

IEXTT describes a weight compensation (constant current feed forward useful for vertical load)

ASCII -Command	IN
Syntax Transmit	IN
Syntax Receive	IN <Data>
Type	Multi-line Return Command
Format	String
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		3560 (hex)	
PROFIBUS PNU:		1696 (dec) IND = 1 (de	
DPR Objekt Nr:		96	

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	List Analog Voltage Values
-------------------	----------------------------

Description

The IN command returns the input voltages for the 8 A/D channels as counts (-4096 ... +4096).

Channel 0: Heat sink temperature

Channel 1: Ambient temperature

Channel 2: Regen power

Channel 3: I_U

Channel 4: Motor temperature

Channel 5: DC-link/DC-bus voltage [4096 counts = 1015 V]

Channel 6: Supply voltage [4096 counts = 800 V]

Channel 7: I_W

ASCII -Command	IN1
Syntax Transmit	IN1
Syntax Receive	IN1 <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Digital I/O

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		3561 (hex)	
PROFIBUS PNU:		1697 (dec) IND = 1 (de	
DPR Objekt Nr:		97	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Status of Digital Input 1
-------------------	---------------------------

Description
The status of the digital input INPUT1.

ASCII -Command	IN10	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☐
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer8	CAN Object No:	3704 (hex)
DIM		PROFIBUS PNU:	1716 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	516
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Status of Digital Input		

Description

see |IN5_20|

ASCII -Command	IN10MODE	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer8	CAN Object No:	3705 (hex)
DIM		PROFIBUS PNU:	1717 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	517
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☒	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Function of digital input		

Description
see |IN5_20MODE|

ASCII -Command	IN10TRIG	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer32	CAN Object No:	3706 (hex)
DIM		PROFIBUS PNU:	1718 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	518
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Variable for digital input		

Description
see |IN5_20TRIG|

ASCII -Command	IN11	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer8	CAN Object No:	3707 (hex)
DIM		PROFIBUS PNU:	1719 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	519
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Status of Digital Input		

Description

see |IN5_20|

ASCII -Command	IN11MODE	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer8	CAN Object No:	3708 (hex)
DIM		PROFIBUS PNU:	1720 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	520
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☒	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Function of digital input		

Description
see |IN5_20MODE|

ASCII -Command	IN11TRIG	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer32	CAN Object No:	3709 (hex)
DIM		PROFIBUS PNU:	1721 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	521
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Variable for digital input		

Description
see |IN5_20TRIG|

ASCII -Command	IN12	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer8	CAN Object No:	370A (hex)
DIM		PROFIBUS PNU:	1722 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	522
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Status of Digital Input		

Description

see |IN5_20|

ASCII -Command	IN12MODE	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer8	CAN Object No:	370B (hex)
DIM		PROFIBUS PNU:	1723 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	523
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☒	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Function of digital input		

Description
see |IN5_20MODE|

ASCII -Command	IN12TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	Integer32
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	370C (hex)
PROFIBUS PNU:	1724 (dec) IND = 17 (d)
DPR Objekt Nr:	524

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Variable for digital input
-------------------	----------------------------

Description
see |IN5_20TRIG|

ASCII -Command	IN13	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer8	CAN Object No:	370D (hex)
DIM		PROFIBUS PNU:	1725 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	525
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Status of Digital Input		

Description

see |IN5_20|

ASCII -Command	IN13MODE	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer8	CAN Object No:	370E (hex)
DIM		PROFIBUS PNU:	1726 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	526
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☒	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Function of digital input		

Description
see |IN5_20MODE|

ASCII -Command	IN13TRIG	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer32	CAN Object No:	370F (hex)
DIM		PROFIBUS PNU:	1727 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	527
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Variable for digital input		

Description
see |IN5_20TRIG|

ASCII -Command	IN14	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer8	CAN Object No:	3710 (hex)
DIM		PROFIBUS PNU:	1728 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	528
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Status of Digital Input		

Description

see |IN5_20|

ASCII -Command	IN14MODE	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer8	CAN Object No:	3711 (hex)
DIM		PROFIBUS PNU:	1729 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	529
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☒	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Function of digital input		

Description
see |IN5_20MODE|

ASCII -Command	IN14TRIG	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer32	CAN Object No:	3712 (hex)
DIM		PROFIBUS PNU:	1730 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	530
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Variable for digital input		

Description
see |IN5_20TRIG|

ASCII -Command	IN15	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer8	CAN Object No:	3713 (hex)
DIM		PROFIBUS PNU:	1731 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	531
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Status of Digital Input		

Description

see |IN5_20|

ASCII -Command	IN15MODE
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	Integer8
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3714 (hex)
PROFIBUS PNU:	1732 (dec) IND = 17 (d)
DPR Objekt Nr:	532

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Function of digital input
-------------------	---------------------------

Description
see |IN5_20MODE|

ASCII -Command	IN15TRIG	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer32	CAN Object No:	3715 (hex)
DIM		PROFIBUS PNU:	1733 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	533
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Variable for digital input		

Description
see |IN5_20TRIG|

ASCII -Command	IN16	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer8	CAN Object No:	3716 (hex)
DIM		PROFIBUS PNU:	1734 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	534
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Status of Digital Input		

Description

see |IN5_20|

ASCII -Command	IN16MODE	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer8	CAN Object No:	3717 (hex)
DIM		PROFIBUS PNU:	1735 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	535
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☒	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Function of digital input		

Description
see |IN5_20MODE|

ASCII -Command	IN16TRIG	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer32	CAN Object No:	3718 (hex)
DIM		PROFIBUS PNU:	1736 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	536
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Variable for digital input		

Description
see |IN5_20TRIG|

ASCII -Command	IN17	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer8	CAN Object No:	3719 (hex)
DIM		PROFIBUS PNU:	1737 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	537
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Status of Digital Input		

Description
see |IN5_20|

ASCII -Command	IN17MODE
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	Integer8
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	371A (hex)
PROFIBUS PNU:	1738 (dec) IND = 17 (d)
DPR Objekt Nr:	538

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Function of digital input
-------------------	---------------------------

Description
see |IN5_20MODE|

ASCII -Command	IN17TRIG	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer32	CAN Object No:	371B (hex)
DIM		PROFIBUS PNU:	1739 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	539
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Variable for digital input		

Description
see |IN5_20TRIG|

ASCII -Command	IN18	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer8	CAN Object No:	371C (hex)
DIM		PROFIBUS PNU:	1740 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	540
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Status of Digital Input		

Description

see |IN5_20|

ASCII -Command	IN18MODE	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer8	CAN Object No:	371D (hex)
DIM		PROFIBUS PNU:	1741 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	541
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☒	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Function of digital input		

Description
see |IN5_20MODE|

ASCII -Command	IN18TRIG	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer32	CAN Object No:	371E (hex)
DIM		PROFIBUS PNU:	1742 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	542
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Variable for digital input		

Description
see |IN5_20TRIG|

ASCII -Command	IN19	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer8	CAN Object No:	371F (hex)
DIM		PROFIBUS PNU:	1743 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	543
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Status of Digital Input		

Description

see |IN5_20|

ASCII -Command	IN19HCMD
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	String
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in	S300/700	
MMI	☐ CAN-Bus	☐
PROFIBUS	☐ Sercos	☐
SERCOS IDN:		
CAN Object No:	-	
PROFIBUS PNU:	no	
DPR Objekt Nr:		
Data Type BUS/DPR	-	
Weighting 10^3		

Last Change of this Object	1.2
EEPROM	

Short Description	Command buffer for high level
-------------------	-------------------------------

Description
see |IN2HCMD|

ASCII -Command	IN19LCMD	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☐
Syntax Receive		PROFIBUS	☐ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	String	CAN Object No:	-
DIM		PROFIBUS PNU:	no
Range		DPR Objekt Nr:	
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Command buffer for low level		

Description
see |IN2LCMD|

ASCII -Command	IN19MODE	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer8	CAN Object No:	3720 (hex)
DIM		PROFIBUS PNU:	1744 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	544
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☒	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Function of digital input		

Description
see |IN5_20MODE|

ASCII -Command	IN19TRIG	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer32	CAN Object No:	3721 (hex)
DIM		PROFIBUS PNU:	1745 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	545
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Variable for digital input		

Description
see |IN5_20TRIG|

ASCII -Command	IN1HCMD
Syntax Transmit	IN1HCMD [Data]
Syntax Receive	IN1HCMD <Data>
Type	Variable rw
Format	String
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3722 (hex)
PROFIBUS PNU:	1746 (dec) IND = 17 (d)
DPR Objekt Nr:	546

Data Type BUS/DPR	-
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	-

Short Description	Command buffer for high level
-------------------	-------------------------------

Description

The command IN1HCMD can be used to define an ASCII command sequence. This command sequence will always be carried out when a rising edge is detected at the input 1 that has been configured with the function |IN1MODE|=30,33
A command sequence consists of individual ASCII commands, separated by a semicolon (;)
The maximum length of this command sequence is 56 characters.

Example:

IN1HCMD |GV| 10; |GVTN| 15

If a LOW/HIGH edge is detected, the gain of the velocity control loop is set to 10 and the integral action time is set to 15 msec.

ASCII -Command	IN1LCMD
Syntax Transmit	IN1LCMD [Data]
Syntax Receive	IN1LCMD <Data>
Type	Variable rw
Format	String
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3723 (hex)
PROFIBUS PNU:	1747 (dec) IND = 17 (d)
DPR Objekt Nr:	547

Data Type BUS/DPR	-
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	-

Short Description	Command buffer for low level
-------------------	------------------------------

Description

The command IN1LCMD can be used to define an ASCII command sequence. This command sequence will always be carried out when a falling edge is detected at the input 1 that has been configured with the function |IN1MODE|=30,33. A command sequence consists of individual ASCII commands, separated by a semicolon (;). The maximum length of this command sequence is 56 characters.

Example:

IN1LCMD |GV| 5; |GVTN| 10

If a HIGH/LOW edge is detected, the gain of the velocity control loop is set to 5 and the integral action time is set to 10 msec.

ASCII -Command	IN1MODE
Syntax Transmit	IN1MODE [Data]
Syntax Receive	IN1MODE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 50
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☒
Function Group	Digital I/O

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	P 3000...3		
CAN Object No:	3562 (hex)		
PROFIBUS PNU:	1698 (dec) IND = 1 (de		
DPR Objekt Nr:	98		
Data Type BUS/DPR	Integer8		
Weighting 10^3			

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Function of Digital Input 1
-------------------	-----------------------------

Description

The IN1MODE command is used to configure the function of the digital input INPUT1. The amplifier must be switched off and then on again after an alteration of this parameter.
The following functions can be configured:

Zustand	Function	Description
IN1MODE=0	Off	The state of the input 1 is read and can be used via fieldbus or Slot card.
IN1MODE=1	Failure Reset	Software reset of the servo amplifier in the event of a fault. The high input signal is ignored, if the drive has no fault. All the functions and displays are set to the initial status. Parameters that are not stored in the EEPROM are erased, the parameter set that is stored in the EEPROM is loaded. If any of the error messages F01, F02, F03, F05, F08, F13, F16 or F19 (p.52) are present, then no software-reset will be carried out, just the error message will be deleted. This means that, for example, the encoder output signals are stable and can continue to be evaluated by the controls. When the input is high, while the auxillary 24V supply is switched on, the drive waits, before the input is set to low. This state is symbolised in the display. The first of the three display positions displays a "A".
IN1MODE=2	Off	
IN1MODE=3	Off	
IN1MODE=4	Off	
IN1MODE=5	Off	
IN1MODE=6	Off	
IN1MODE=7	Off	

IN1MODE=8	Analog In 1/Analog In 2	Switches over the setpoint inputs Analog In 1/2 at ANCNFG =0. This function is only effective if the analog set-point function 0,Xcmd=Analog In 1 has been selected. High level at the input : Analog In 2 (terminals X3/6,7) is active Low level at the input : Analog In 1 (terminals X3/4,5) is active
IN1MODE=9	MT_No_Bit	Here you can select the motion tasks that are stored in the servo amplifier (numbers 1...7) or the reference traverse/homing (0). The motion task number is presented externally at the digital inputs as a logical word, with a width of max. 3 bits . An input is required to start the motion task (INxMODE =17, Start_MT IO). If you wire up a reference/homing switch (INxMODE =12, Reference) and (also) want to start a following task (INxMODE =15, Start_MT Next) externally, the number of inputs that are available for selecting the motion tasks will be further reduced.
IN1MODE=10	Intg.Off	Switch off the integral component of the velocity controller, the P-gain remains at the set value, the actual- (rotational) velocity feedback remains in operation.
IN1MODE=11	v/Torq.Contr.	Bypasses the velocity controller. The analog setpoint is taken 1:1 as the setpoint for current control, i.e. change over from velocity control to current (torque) control. High-level at the input : torque control Low-level at the input : velocity control Depending on OPMODE , it changes between OPMODE =0 (low) and OPMODE =2 (high) or OPMODE =1 (low) and OPMODE =3 (high).
IN1MODE=12	Reference	home/reference switch located on machine
IN1MODE=13	digital encoder/SSI	Changeover of the encoder-emulation (position output) on connector X5. High level at the input : SSI-compatible position signals (ENCMODE =2) High level at the input : ROD-compatible position signals (ENCMODE =1)
IN1MODE=14	FError_clear	Clear the warning of a contouring error (display n03) or the response monitoring (display n04).
IN1MODE=15	Start_MT Next	The following task, that is defined in the motion task by "Start with I/O" is started. The target position of the present motion task must be reached before the following task can be started. (see also O_C tabel 3)
IN1MODE=16	Start_MT No x	Start a motion task that is stored in the servo amplifier, by giving the motion task number. After the function has been selected you can enter the motion task number as the auxiliary variable IN1TRIG . Motion task number "0" (IN1TRIG =0) initiates homing/reference traverse. A rising edge starts the motion task, a falling edge cancels the motion task. Only OPMODE 4 or 8

IN1MODE=17	Start_MT IO	Start_MT IO Start of the motion task that has the number that is presented, bit-coded, at the digital inputs (PSTOP/NSTOP/DIGITAL-IN1/DIGITAL-IN2, see function 9, MT_No_Bit). A rising edge starts the motion task a falling edge cancels the motion task by a STOP - command
IN1MODE=18	Ipeak2 x	Switch over to a second (lower) peak value of current. Scaled as x (0...100) % of the peak current of the instrument. After the function has been selected you can enter the percentage value as the auxiliary variable IN1TRIG . Make the conversion according to the following equation: IN1TRIG given in % of IPEAK
IN1MODE=19	Off	
IN1MODE=20	Start_Jog v=x	Start of the setup mode "Constant velocity" with a defined speed. After selecting the function, you can enter the speed in IN1TRIG . A rising edge starts the motion, a falling edge cancels the motion. This function works in position control, so OPMODE =4,5,6,8 has to be selected. The speed is given in units of the position controller given by VUNIT , the sign selects the moving direction.
IN1MODE=21	U_Mon.off	Turns off the undervoltage monitoring function of the servo amplifier. High = off Low = on
IN1MODE=22	MT Restart	Continues the motion task that was previously interrupted by a STOP - command.
IN1MODE=23	Start2_MT No x	Start of a motion task that is stored in the servo amplifier, with definition of the motion task number. After selecting the function, you can enter the motion task number in IN1TRIG Motion task number "0" starts the homing run. A rising edge starts the motion task. Warning ! The motion task does not stop automatically if the start signal is removed ! The motion task must be stopped by — a falling edge on another digital input (configured with 16, FStart_Nr x) — the ASCII command STOP — the STOP function via Bus or digital input

IN1MODE=24	Switch over OPMODE	The two different OPMODE s, that can be selected for switching over via the digital input, are written in the IN1TRIG help variable of the this input. The lower byte consists the OPMODE that should be available when the input has a negative edge. The higher byte consists the OPMODE that should be available when the input has a positive edge. When the drive is switched on, the OPMODE is set automatically to the corresponding state of the input. The contents of the help variable must be in decimal !! e.g.: Input1=low OPMODE =4 Input1=high OPMODE =8 IN1MODE=24 (Activate Input) IN1TRIG =2052 (Decimal 0804h) 2052 (Dec) = 0804 (Hex)
IN1MODE=25	Zero_latch	Sets the digital encoder zero pulse offset. The current position, depending on the digital encoder resolution (ENCOUT) that is set, is calculated at the rising edge and stored as NI-Offset in ENCZERO . After that, an automatic SAVE is generated. This function is used to perform an automatic setting of the zero pulse in one turn of the motor..
IN1MODE=26	Position Latch	A edge on this input latches the actual position. The position can then be read by LATCH1P32 (positive edge) or LATCH1N32 (negative edge). The actual 16-Bit position (absolute in one turn) can be read by LATCH1P16 (positive edge) and LATCH1N16 (negative edge). The status of the latching can be read by the equivalent bits of DRVSTAT . The min. cycle time for a low/high to high/low transaction is 500µs. The min. time between two latch pulses is 1 msec. In case IN1TRIG value is < 0, the motion task with the fitting number is executed.
IN1MODE=27	Emergency Stop	Low state on the input starts an emergency stop function, that is executed with the ramp DECSTOP . Independently of the selected OPMODE , in this phase, the drive stops in velocity control. When it has stopped, it switches over to the original mode.
IN1MODE=28	Starting Jogmode	OPMODE = 4,5,6,8 Firmware >= 0.73 A rising edge starts a jogmode with speed VJOG . A falling edge stopps the movement.
IN1MODE=29	Starting motion task / homing	Start_MT IO Start of the motion task that has the number that is presented, bit-coded, at the digital inputs (PSTOP/NSTOP/DIGITAL-IN1/DIGITAL-IN2, see function 9, MT_No_Bit). A falling ege does not stop motion.

IN1MODE=30	Command Buffer 1	A positive or negative edge on the input starts a command buffer. This command buffer contains separate ASCII objects, that are separated with semicolon (;). The command buffer for the positive edge is INH1CMD , the command buffer for the negative edge is IN1LCMD . The max. length of that buffers is 56 character for each. If a digital input is configured with INxMODE=30, this input will proceed in that way. When the drive is switched on, the Command buffer is set automatically started to the corresponding state of the input.
IN1MODE=33	see 30	Different from the functionality 30, the resulting answers of the commands are not suppressed, but are send to the seriell communication channel RS232. This setting can't be used in combination with GUI software.
IN1MODE=32	Brake	Warning ! With suspended loads, this function will lead to slipping of the axes ! A rising edge at the input triggers the braking output of the servo amplifier. This function is only available while the amplifier is disabled.
IN1MODE=35		
IN1MODE=36	Give Offset to Gearing Function	Gearing mode OPMODE =4. A high signal on the digital input configured with this INxMODE adds a difference velocity to the gearing. This allows a simple synchronisation of two axes. The difference velocity is given to IN1TRIG . The scaling is in 32Bit per revolution every 250µs. The difference velocity (n) must be known, then the IN1TRIG can be calculated: $IN1TRIG = n [rpm] * 2^{32} / (4000 * 60)$ example: n = 500 [U/min] $INxTRIG = 500 * 2^{32} / (4000 * 60) = 8947848$
IN1MODE=37		reserved
IN1MODE=38	Enable signal for following motion task	Definition of a motion task with following motion tasks. If INxMODE=15 is used (start of an following motion task via I/O), IN1MODE=38 can be used, to have an additional enable for the start of the following motion tasks. Means, that the following motion task is started, if once a rising edge on digital input 1 was detected and then the INxMODE=15 input is enabled to start the following motion task.

IN1MODE=39	Constant velocity for defined time	This function starts a constant velocity for a defined time. The parameters for velocity and time are given by IN1TRIG . The velocity is given by the lower 16 bit (scaling by VUNIT), bit 15 is the sign and defines the moving direction and the time by the upper 16 bit (given in msec) of the help variable IN1TRIG . A rising edge at INPUT1 changes the OPMODE to 0 (digital velocity) and gives the velocity that is given by IN1TRIG . After the defined time or a falling edge at INPUT1 is detected, the digital velocity setpoint is set to "0". After the actual velocity has reached "0" the OPMODE is automatically switched back to the old one. Example for defining the help variable IN1TRIG 1. Velocity = 1000 rpm time = 10 sec = 10000 msec IN1TRIG = 0x271003E8 = 655361000 2. Velocity = -500 rpm time = 10 msec IN1TRIG = 0x000afe0c = 720396
IN1MODE=40	Additional hardware input	The digital input works as an additional hardware input. Only if this input has a high signal, the power stage is enabled. This Function can be used by several inputs. In this case, the inputs are configured in series. All inputs have to be high to enable the power stage.
IN1MODE=41	Quick stop	If the input is going to low, the drive stops the motor using the DECSTOP ramp. If zero velocity is reached ($V < VEL0$), the power stage is disabled. While stopping the motor the bit 24 (0x01000000) in TRJSTAT is set. The input is read in the 250µs task.
IN1MODE=42	Activate/deactivate electronic gearing	Activate/deactivate electronic gearing in OPMODE = 4. This function is practical only with slave axis. A rising edge on the digital input starts the motion from 0 to the master speed and a falling edge changes the speed from master speed to 0. The ramp times can be set by ACCR for the acceleration and DECR for deceleration time.
IN1MODE=43	Activate/deactivate electronic gearing with position latch	Activate/deactivate electronic gearing in OPMODE = 4. This function is practical only with slave axis. A rising edge on the digital input starts the motion from 0 to the master speed and a falling edge changes the speed from master speed to 0. The ramp times can be set by ACCR for the acceleration and DECR for deceleration time. In contrast to IN1MODE = 42, the master position is latched at the rising edge of the input and the position delay caused by the ramp is compensated. IN1TRIG gives the possibility to add an position offset (in PGEAR units) to the latched position.
IN1MODE=44	reserved	
IN1MODE=45	reserved	
IN1MODE=46	reserved	
IN1MODE=47	reserved	
IN1MODE=48	reserved	

IN1MODE=49	emergency stop (sensorless)	(High active) By a going edge an emergency stop is activated (current controlled without feedback)
IN1MODE=50	emergency stop (sensorless)	(Low active) By a going edge an emergency stop is activated (current controlled without feedback)
IN1MODE=51	Master slave synchronisation by ENGAGE =6	
IN1MODE=52	reserved	
IN1MODE=53	Master slave synchronisation by ENGAGE =7	
IN1MODE=54	reserved	
IN1MODE=55	reserved	
IN1MODE=56	reserved	
IN1MODE=57	switch to second parameter set	see also command PARCNFG
IN1MODE=58	reserved	
IN1MODE=59	reserved	
IN1MODE=60	reserved	

ASCII -Command	IN1TRIG
Syntax Transmit	IN1TRIG [Data]
Syntax Receive	IN1TRIG <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	long int
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Digital I/O

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		3563 (hex)	
PROFIBUS PNU:		1699 (dec) IND = 1 (de	
DPR Objekt Nr:		99	

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Variable for IN1MODE
-------------------	----------------------

Description

Auxiliary trigger variable for |IN1MODE|. Certain settings of |IN1MODE| require you to specify an additional trigger level. See |IN1MODE| for further details.

ASCII -Command	IN2
Syntax Transmit	IN2
Syntax Receive	IN2 <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	3564 (hex)		
PROFIBUS PNU:	1700 (dec) IND = 1 (de		
DPR Objekt Nr:	100		

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Status of Digital Input 2
-------------------	---------------------------

Description
The status of the digital input INPUT2.

ASCII -Command	IN20	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer8	CAN Object No:	3722 (hex)
DIM		PROFIBUS PNU:	1746 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	546
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Status of digital input		

Description

see |IN5_20|

ASCII -Command	IN20HCMD
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	String
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in	S300/700		
MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐
SERCOS IDN:			
CAN Object No:	-		
PROFIBUS PNU:	no		
DPR Objekt Nr:			

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Command buffer for high level
-------------------	-------------------------------

Description
see |IN2HCMD|

ASCII -Command	IN20LCMD	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☐
Syntax Receive		PROFIBUS	☐ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	String	CAN Object No:	-
DIM		PROFIBUS PNU:	no
Range		DPR Objekt Nr:	
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Command buffer for low level		

Description
see |IN20LCMD|

ASCII -Command	IN20MODE	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer8	CAN Object No:	3723 (hex)
DIM		PROFIBUS PNU:	1747 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	547
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☒	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Function of digital input		

Description
see |IN5_20MODE|

ASCII -Command	IN20TRIG	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer32	CAN Object No:	3724 (hex)
DIM		PROFIBUS PNU:	1748 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	548
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Variable for digital input		

Description
see |IN5_20TRIG|

ASCII -Command	IN21MODE	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer8	CAN Object No:	3773 (hex)
DIM		PROFIBUS PNU:	1827 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	627
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☒	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	2.1
		EEPROM	
Short Description	Function of digital input		

Description

ASCII -Command	IN21TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	Integer32
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3774 (hex)
PROFIBUS PNU:	1828 (dec) IND = 17 (d)
DPR Objekt Nr:	628

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	2.1
EEPROM	

Short Description	Variable for digital input
-------------------	----------------------------

Description

ASCII -Command	IN22MODE	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer8	CAN Object No:	3776 (hex)
DIM		PROFIBUS PNU:	1830 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	630
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☒	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	2.1
		EEPROM	
Short Description	Function of digital input		

Description

ASCII -Command	IN22TRIG	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer32	CAN Object No:	3777 (hex)
DIM		PROFIBUS PNU:	1831 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	631
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	2.1
		EEPROM	
Short Description	Variable for digital input		

Description

ASCII -Command	IN2HCMD
Syntax Transmit	IN2HCMD [Data]
Syntax Receive	IN2HCMD <Data>
Type	Variable rw
Format	String
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	-
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	-

Short Description	Command buffer for high level
-------------------	-------------------------------

Description

The command IN2HCMD can be used to define an ASCII command sequence. This command sequence will always be carried out when a rising edge is detected at the input 2 that has been configured with the function |IN2MODE|=30,33

A command sequence consists of individual ASCII commands, separated by a semicolon (;)

The maximum length of this command sequence is 56 characters.

Example:

IN2HCMD |GV| 10; |GVTN| 15

If a LOW/HIGH edge is detected, the gain of the velocity control loop is set to 10 and the integral action time is set to 15 msec.

ASCII -Command	IN2LCMD
Syntax Transmit	IN2LCMD [Data]
Syntax Receive	IN2LCMD <Data>
Type	Variable rw
Format	String
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	-
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	-

Short Description	Command buffer for low level
-------------------	------------------------------

Description

The command IN2LCMD can be used to define an ASCII command sequence. This command sequence will always be carried out when a falling edge is detected at the input 2 that has been configured with the function |IN2MODE|=30,33. A command sequence consists of individual ASCII commands, separated by a semicolon (;). The maximum length of this command sequence is 56 characters.

Example:

IN2LCMD |GV| 5; |GVTN| 10

If a HIGH/LOW edge is detected, the gain of the velocity control loop is set to 5 and the integral action time is set to 10 msec.

ASCII -Command	IN2MODE
Syntax Transmit	IN2MODE [Data]
Syntax Receive	IN2MODE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 50
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☒
Function Group	Digital I/O

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:		P 3000...3	
CAN Object No:		3565 (hex)	
PROFIBUS PNU:		1701 (dec) IND = 1 (de	
DPR Objekt Nr:		101	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Function of Digital Input 2
-------------------	-----------------------------

Description

The IN2MODE command is used to configure the function of the digital input INPUT2. The amplifier must be switched off and then on again after an alteration of this parameter.
The following functions can be configured:

Zustand	Function	Description
IN2MODE=0	Off	The state of the input 1 is read and can be used via fieldbus or Slot card.
IN2MODE=1	No function	
IN2MODE=2	Off	
IN2MODE=3	Off	
IN2MODE=4	Off	
IN2MODE=5	Off	
IN2MODE=6	Off	
IN2MODE=7	Off	
IN2MODE=8	selection Analog In 1 / 2	Switches over the setpoint inputs Analog In 1/2 at ANCNFG = 0. This function is only effective if the analog set-point function 0, Xcmd = Analog In 1 has been selected. High level at the input : Analog In 2 (terminals X3/6,7) is active Low level at the input : Analog In 1 (terminals X3/4,5) is active

IN2MODE=9	MT_No_Bit	Here you can select the motion tasks that are stored in the servo amplifier (numbers 1...7) or the reference traverse/homing (0). The motion task number is presented externally at the digital inputs as a logical word, with a width of max. 3 bits . An input is required to start the motion task (INxMODE =17, Start_MT IO). If you wire up a reference/homing switch (INxMODE =12, Reference) and (also) want to start a following task (INxMODE =15, Start_MT Next) externally, the number of inputs that are available for selecting the motion tasks will be further reduced.
IN2MODE=10	Intg.Off	Switch off the integral component of the velocity controller, the P-gain remains at the set value, the actual- (rotational) velocity feedback remains in operation.
IN2MODE=11	v/Torq.Contr.	Bypasses the velocity controller. The analog setpoint is taken 1:1 as the setpoint for current control, i.e. change over from velocity control to current (torque) control. High-level at the input : torque control Low-level at the input : velocity control Depending on OPMODE , it changes between OPMODE =0 (low) and OPMODE =2 (high) or OPMODE =1 (low) and OPMODE =3 (high).
IN2MODE=12	Reference	home/reference switch located on machine
IN2MODE=13	digital encoder/SSI	Changeover of the encoder-emulation (position output) on connector X5. High level at the input : SSI-compatible position signals (ENCMODE = 2) High level at the input : ROD-compatible position signals (ENCMODE = 1)
IN2MODE=14	FError_clear	Clear the warning of a contouring error (display n03) or the response monitoring (display n04).
IN2MODE=15	Start_MT Next	The following task, that is defined in the motion task by "Start with I/O" is started. The target position of the present motion task must be reached before the following task can be started. (see also O_C tabel 3)
IN2MODE=16	Start_MT No x	Start a motion task that is stored in the servo amplifier, by giving the motion task number. After the function has been selected you can enter the motion task number as the auxiliary variable IN2TRIG . Motion task number "0" (IN2TRIG =0) initiates homing/reference traverse. A rising edge starts the motion task, a falling edge cancels the motion task. Only OPMODE 4 or 8
IN2MODE=17	Start_MT IO	Start_MT IO Start of the motion task that has the number that is presented, bit-coded, at the digital inputs (PSTOP/NSTOP/DIGITAL-IN1/DIGITAL-IN2, see function 9, MT_No_Bit). A rising edge starts the motion task a falling edge cancels the motion task by a STOP - command

IN2MODE=18	Ipeak2 x	Switch over to a second (lower) peak value of current. Scaled as x (0...100) % of the peak current of the instrument. After the function has been selected you can enter the percentage value as the auxiliary variable IN2TRIG . Make the conversion according to the following equation: IN2TRIG given in % of IPEAK
IN2MODE=19	Off	
IN2MODE=20	Start_Jog v=x	Start of the setup mode "Constant velocity" with a defined speed. After selecting the function, you can enter the speed in IN2TRIG . A rising edge starts the motion, a falling edge cancels the motion. This function works in position control, so OPMODE =4,5,6,8 has to be selected. The speed is given in units of the position controller given by VUNIT , the sign selects the moving direction.
IN2MODE=21	U_Mon.off	Turns off the undervoltage monitoring function of the servo amplifier. High = off Low = on
IN2MODE=22	MT Restart	Continues the motion task that was previously interrupted by a STOP - command.
IN2MODE=23	Start2_MT No x	Start of a motion task that is stored in the servo amplifier, with definition of the motion task number. After selecting the function, you can enter the motion task number in IN2TRIG Motion task number "0" starts the homing run. A rising edge starts the motion task. Warning ! The motion task does not stop automatically if the start signal is removed ! The motion task must be stopped by — a falling edge on another digital input (configured with 16, FStart_Nr x) — the ASCII command STOP — the STOP function via Bus or digital input
IN2MODE=24	Switch over OPMODE	The two different OPMODE s, that can be selected for switching over via the digital input, are written in the IN2TRIG help variable of the this input. The lower byte consists the OPMODE that should be available when the input has a negative edge. The higher byte consists the OPMODE that should be available when the input has a positive edge. When the drive is switched on, the OPMODE is set automatically to the corresponding state of the input. The contents of the help variable must be in decimal !! e.g.: Input1=low OPMODE =4 Input1=high OPMODE =8 IN1MODE=24 (Activate Input) IN2TRIG =2052 (Decimal 0804h) 2052 (Dec) = 0804 (Hex)

IN2MODE=25	Zero_latch	Sets the digital encoder zero pulse offset. The current position, depending on the digital encoder resolution (ENCOUT) that is set, is calculated at the rising edge and stored as NI-Offset in ENCZERO . After that, an automatic SAVE is generated. This function is used to perform an automatic setting of the zero pulse in one turn of the motor..
IN2MODE=26	Position Latch	A edge on this input latches the actual position. The position can then be read by LATCH2P32 (positive edge) or LATCH2N32 (negative edge). The actual 16-Bit position (absolute in one turn) can be read by LATCH2P16 (positive edge) and LATCH2N16 (negative edge). The status of the latching can be read by the equivalent bits of DRVSTAT . The min. cycle time for a low/high to high/low transaction is 500µs. The min. time between two latch pulses is 1 msec. In case IN1TRIG value is <> 0, the motion task with the fitting number is executed.
IN2MODE=27	Emergency Stop	Low state on the input starts an emergency stop function, that is executed with the ramp DECSTOP . Independently of the selected OPMODE , in this phase, the drive stops in velocity control. When it has stopped, it switches over to the original mode.
IN2MODE=28	Starting Jogmode	OPMODE = 4,5,6,8 Firmware >= 0.73 A rising edge starts a jogmode with speed VJOG . A falling edge stopps the movement.
IN2MODE=29	Starting motion task / homing	Start_MT IO Start of the motion task that has the number that is presented, bit-coded, at the digital inputs (PSTOP/NSTOP/DIGITAL-IN1/DIGITAL-IN2, see function 9, MT_No_Bit). A falling ege does not stop motion.
IN2MODE=30	Command Buffer 1	A positive or negative edge on the input starts a command buffer. This command buffer contains separate ASCII objects, that are separated with semicolon (;). The command buffer for the positive edge is INH2CMD , the command buffer for the negative edge is IN2LCMD . The max. length of that buffers is 56 character for each. If a digital input is configured with INxMODE=30, this input will proceed in that way. When the drive is switched on, the Command buffer is set automatically started to the corresponding state of the input.
IN2MODE=33	see 30	Different from the functionality 30, the resulting answers of the commands are not suppressed, but are send to the seriell communication channel RS232. This setting can't be used in combination with GUI software.

IN2MODE=32	Brake	Warning ! With suspended loads, this function will lead to slipping of the axes ! A rising edge at the input triggers the braking output of the servo amplifier. This function is only available while the amplifier is disabled.
IN2MODE=35		
IN2MODE=36	Give Offset to Gearing Function	Gearing mode OPMODE =4. A high signal on the digital input configured with this INxMODE adds a difference velocity to the gearing. This allows a simple synchronisation of two axes. The difference velocity is given to IN2TRIG . The scaling is in 32Bit per revolution every 250µs. The difference velocity (n) must be known, then the IN2TRIG can be calculated: $IN2TRIG = n [rpm] * 2^{32} / (4000 * 60)$ example: n = 500 [U/min] $INxTRIG = 500 * 2^{32} / (4000 * 60) = 8947848$
IN2MODE=37		reserved
IN2MODE=38	Enable signal for following motion task	Definition of a motion task with following motion tasks. If INxMODE=15 is used (start of an following motion task via I/O), IN1MODE=38 can be used, to have an additional enable for the start of the following motion tasks. Means, that the following motion task is started, if once a rising edge on digital input 1 was detected and then the INxMODE=15 input is enabled to start the following motion task.
IN2MODE=39	Constant velocity for defined time	This function starts a constant velocity for a defined time. The parameters for velocity and time are given by IN2TRIG . The velocity is given by the lower 16 bit (scaling by VUNIT), bit 15 is the sign and defines the moving direction and the time by the upper 16 bit (given in msec) of the help variable IN2TRIG . A rising edge at INPUT1 changes the OPMODE to 0 (digital velocity) and gives the velocity that is given by IN2TRIG . After the defined time or a falling edge at INPUT1 is detected, the digital velocity setpoint is set to "0". After the actual velocity has reached "0" the OPMODE is automatically switched back to the old one. Example for defining the help variable IN2TRIG - Velocity = 1000 rpm time = 10 sec = 10000 msec IN2TRIG = 0x271003E8 = 655361000 - Velocity = -500 rpm time = 10 msec IN2TRIG = 0x000afe0c = 720396
IN2MODE=40	Additional hardware input	The digital input works as an additional hardware input. Only if this input has a high signal, the power stage is enabled. This Function can be used by several inputs. In this case, the inputs are configured in series. All inputs have to be high to enable the power stage.

IN2MODE=41	Quick stop	If the input is going to low, the drive stops the motor using the DECSTOP ramp. If zero velocity is reached ($V < VEL0$), the power stage is disabled. While stopping the motor the bit 24 (0x01000000) in TRJSTAT is set. The input is read in the 250µs task.
IN2MODE=42	Activate/deactivate electronic gearing	Activate/deactivate electronic gearing in OPMODE = 4. This function is practical only with slave axis. A rising edge on the digital input starts the motion from 0 to the master speed and a falling edge changes the speed from master speed to 0. The ramp times can be set by ACCR for the acceleration and DECR for deceleration time.
IN2MODE=43	Activate/deactivate electronic gearing with position latch	Activate/deactivate electronic gearing in OPMODE = 4. This function is practical only with slave axis. A rising edge on the digital input starts the motion from 0 to the master speed and a falling edge changes the speed from master speed to 0. The ramp times can be set by ACCR for the acceleration and DECR for deceleration time. In contrast to IN1MODE = 42, the master position is latched at the rising edge of the input and the position delay caused by the ramp is compensated. IN2TRIG gives the possibility to add an position offset (in PGEAR units) to the latched position.

ASCII -Command	IN2PM
Syntax Transmit	IN2PM [Data]
Syntax Receive	IN2PM <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0,1,2
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	362E (hex)
PROFIBUS PNU:	1902 (dec) IND = 1 (de
DPR Objekt Nr:	302

Data Type BUS/DPR	Integer8
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	
-------------------	--

Description

The IN2PM command is used to configure the function of a digital output during a motion task (motion block) sequence.

The function "NextInPos" is available if an I/O expansion card is used (terminal X11B4) or a digital output of the drive is configured with the function OxMODE=16. At the start of the first motion block (motion task), the "NextInPos" output is always set to 0. The response of the output during the execution of the motion block sequence depends on the configuration variable IN2PM.

IN2PM=0 – the output is inverted at the start of the next block.

IN2PM=1 – the output is set to 0 at the start of a motion block, and set to HIGH at the end of a motion block.

IN2PM=2 – the output is inverted at the end of a block.

With a sequence of motion blocks where the blocks are started immediately, only the IN2PM=0 or IN2PM=2 settings make sense. If the setting is IN2PM=1, the HIGH state is so short that it may not be registered at all by the external control system.

If a following task is started with the aid of an I/O (INxMODE=15), then the IN2PM=2 or IN2PM=1 setting should be used. With this setting, the end of a motion block is signaled by the HIGH state (IN2PM=1) or the change of state (IN2PM=2) at the "NextInPos" output. The external control system can then initialize the continuation of the motion task sequence via the "Start next task" input.

See also |IN1MODE| = 15

ASCII -Command	IN2TRIG
Syntax Transmit	IN2TRIG [Data]
Syntax Receive	IN2TRIG <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	long int
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Digital I/O

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		3566 (hex)	
PROFIBUS PNU:		1702 (dec) IND = 1 (de	
DPR Objekt Nr:		102	

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Variable for IN2MODE
-------------------	----------------------

Description

Auxiliary trigger variable for |IN2MODE|. Certain settings of |IN2MODE| require you to specify an additional trigger level. See |IN2MODE| for further details.

ASCII -Command	IN3
Syntax Transmit	IN3
Syntax Receive	IN3 <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	3567 (hex)		
PROFIBUS PNU:	1703 (dec) IND = 1 (de		
DPR Objekt Nr:	103		

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Status of Digital Input 3
-------------------	---------------------------

Description
The status of the digital input INPUT3.

ASCII -Command	IN3HCMD
Syntax Transmit	IN3HCMD [Data]
Syntax Receive	IN3HCMD <Data>
Type	Variable rw
Format	String
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	-
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	-

Short Description	Command buffer for high level
-------------------	-------------------------------

Description

The command IN3HCMD can be used to define an ASCII command sequence. This command sequence will always be carried out when a rising edge is detected at the input 3 that has been configured with the function |IN3MODE|=30,33

A command sequence consists of individual ASCII commands, separated by a semicolon (;)

The maximum length of this command sequence is 56 characters.

Example:

IN3HCMD |GV| 10; |GVTN| 15

If a LOW/HIGH edge is detected, the gain of the velocity control loop is set to 10 and the integral action time is set to 15 msec.

ASCII -Command	IN3LCMD
Syntax Transmit	IN3LCMD [Data]
Syntax Receive	IN3LCMD <Data>
Type	Variable rw
Format	String
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	-
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	-

Short Description	Command buffer for low level
-------------------	------------------------------

Description

The command IN3LCMD can be used to define an ASCII command sequence. This command sequence will always be carried out when a falling edge is detected at the input 3 that has been configured with the function |IN3MODE|=30,33. A command sequence consists of individual ASCII commands, separated by a semicolon (;). The maximum length of this command sequence is 56 characters.

Example:

IN3LCMD |GV| 5; |GVTN| 10

If a HIGH/LOW edge is detected, the gain of the velocity control loop is set to 5 and the integral action time is set to 10 msec.

ASCII -Command	IN3MODE
Syntax Transmit	IN3MODE [Data]
Syntax Receive	IN3MODE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 50
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☒
Function Group	Digital I/O

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	P 3000...3		
CAN Object No:	3568 (hex)		
PROFIBUS PNU:	1704 (dec) IND = 1 (de		
DPR Objekt Nr:	104		
Data Type BUS/DPR	Integer8		
Weighting 10^3			

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Function of Digital Input 3
-------------------	-----------------------------

Description

The IN3MODE command is used to configure the function of the digital input INPUT3. The amplifier must be switched off and then on again after an alteration of this parameter.
The following functions can be configured:

Zustand	Function	Description
IN3MODE=0	Off	The state of the input 1 is read and can be used via fieldbus or Slot card.
IN3MODE=1	Off	
IN3MODE=1	Reset	Software reset of the servo amplifier in the event of a fault. The high input signal is ignored, if the drive has no fault. All the functions and displays are set to the initial status. Parameters that are not stored in the EEPROM are erased, the parameter set that is stored in the EEPROM is loaded. If any of the error messages F01, F02, F03, F05, F08, F13, F16 or F19 (p.52) are present, then no software-reset will be carried out, just the error message will be deleted. This means that, for example, the encoder output signals are stable and can continue to be evaluated by the controls. When the input is high, while the auxillary 24V supply is switched on, the drive waits, before the input is set to low. This state is symbolised in the display. The first of the three display positions displays a "A".
IN3MODE=2	PSTOP	A low on the input disables the positive direction (clockwise if DIR =1, counterclockwise if DIR =0). At the same time, a warning "n10" is displayed. If a negative edge is recognised while the motor is running, the drive stops the motor in OPMODE =0 (velocity control with setpoint zero) using the DECSTOP ramp. When the motor has stopped, the old OPMODE is activated.

IN3MODE=3	NSTOP (4.78)	A low on the input disables the negative direction (clockwise if DIR =0, counterclockwise if DIR =1). At the same time, a warning "n11" is displayed. If a negative edge is recognised while the motor is running, the drive stops the motor in OPMODE =0 (velocity control with setpoint zero) using the DECSTOP ramp. When the motor has stopped, the old OPMODE is activated.
IN3MODE=4	PSTOP+Intg.Off	A low on the input disables the positive direction (clockwise if DIR =1, counterclockwise if DIR =0). At the same time, a warning "n10" is displayed. If a negative edge is recognised while the motor is running, the drive stops the motor in OPMODE =0 (velocity control with setpoint zero) using the DECSTOP ramp. When the motor has stopped, the old OPMODE is activated (without integral part in the velocity controller).
IN3MODE=5	NSTOP + Int. off	A low on the input disables the negative direction (counterclockwise if DIR =1, clockwise if DIR =0). At the same time, a warning "n11" is displayed. If a negative edge is recognised while the motor is running, the drive stops the motor in OPMODE =0 (velocity control with setpoint zero) using the DECSTOP ramp. When the motor has stopped, the old OPMODE is activated (without integral part in the velocity controller).
IN3MODE=6	PSTOP+NSTOP	A low on the input disables the positive and the negative direction. At the same time, a warning "n10" and "n11" is displayed. If a negative edge is recognised while the motor is running, the drive stops the motor in OPMODE =0 (velocity control with setpoint zero) using the DECSTOP ramp. When the motor has stopped, the old OPMODE is activated.
IN3MODE=7	P/Nstop+Intg.Off	A low on the input disables the positive and the negative direction. At the same time, a warning "n10" and "n11" is displayed. If a negative edge is recognised while the motor is running, the drive stops the motor in OPMODE =0 (velocity control with setpoint zero) using the DECSTOP ramp. When the motor has stopped, the old OPMODE is activated (without integral part in the velocity controller).
IN3MODE=8	selection Analog In 1 / 2	Switches over the setpoint inputs Analog In 1/2 at ANCNFG = 0. This function is only effective if the Analog In function = 0 Xcmd=Analog In 1 has been selected. High level at the input : Analog In 2 (terminals X3/6,7) is active Low level at the input : Analog In 1 (terminals X3/4,5) is active

IN3MODE=9	MT_No_Bit	Here you can select the motion tasks that are stored in the servo amplifier (numbers 1...7) or the reference traverse/homing (0). The motion task number is presented externally at the digital inputs as a logical word, with a width of max. 3 bits . An input is required to start the motion task (INxMODE =17, Start_MT IO). If you wire up a reference/homing switch (INxMODE =12, Reference) and (also) want to start a following task (INxMODE =15, Start_MT Next) externally, the number of inputs that are available for selecting the motion tasks will be further reduced.
IN3MODE=10	Intg.Off	Switch off the integral component of the velocity controller, the P-gain remains at the set value, the actual- (rotational) velocity feedback remains in operation.
IN3MODE=11	v/Torq.Contr.	Bypasses the velocity controller. The analog setpoint is taken 1:1 as the setpoint for current control, i.e. change over from velocity control to current (torque) control. High-level at the input : torque control Low-level at the input : velocity control Depending on OPMODE , it changes between OPMODE =0 (low) and OPMODE =2 (high) or OPMODE =1 (low) and OPMODE =3 (high).
IN3MODE=12	Reference	home/reference switch located on machine
IN3MODE=13	digital encoder/SSI	Changeover of the encoder-emulation (position output) on connector X5. High level at the input : SSI-compatible position signals (ENCMODE = 2) High level at the input : ROD-compatible position signals (ENCMODE = 1)
IN3MODE=14	FError_clear	Clear the warning of a contouring error (display n03) or the response monitoring (display n04).
IN3MODE=15	Start_MT Next	The following task, that is defined in the motion task by “Start with I/O” is started. The target position of the present motion task must be reached before the following task can be started. (see also O_C tabel 3)
IN3MODE=16	Start_MT No x	Start a motion task that is stored in the servo amplifier, by giving the motion task number. After the function has been selected you can enter the motion task number as the auxiliary variable IN3TRIG . Motion task number “0” (IN3TRIG =0) initiates homing/reference traverse. A rising edge starts the motion task, a falling edge cancels the motion task. Only OPMODE 4 or 8
IN3MODE=17	Start_MT IO	Start_MT IO Start of the motion task that has the number that is presented, bit-coded, at the digital inputs (PSTOP/NSTOP/DIGITAL-IN1/DIGITAL-IN2, see function 9, MT_No_Bit). A rising edge starts the motion task a falling edge cancels the motion task by a STOP - command

IN3MODE=18	Ipeak2 x	Switch over to a second (lower) peak value of current. Scaled as x (0...100) % of the peak current of the instrument. After the function has been selected you can enter the percentage value as the auxiliary variable IN3TRIG . Make the conversion according to the following equation: IN3TRIG given in % of IPEAK
IN3MODE=19	Off	
IN3MODE=20	Start_Jog v=x	Start of the setup mode "Constant velocity" with a defined speed. After selecting the function, you can enter the speed in IN3TRIG . A rising edge starts the motion, a falling edge cancels the motion. This function works in position control, so OPMODE =8 has to be selected. The speed is given in units of the position controller given by VUNIT , the sign selects the moving direction.
IN3MODE=21	U_Mon.off	Turns off the undervoltage monitoring function of the servo amplifier. High = off Low = on
IN3MODE=22	MT Restart	Continues the motion task that was previously interrupted by a STOP - command.
IN3MODE=23	Start2_MT No x	Start of a motion task that is stored in the servo amplifier, with definition of the motion task number. After selecting the function, you can enter the motion task number in IN3TRIG Motion task number "0" starts the homing run. A rising edge starts the motion task. Warning ! The motion task does not stop automatically if the start signal is removed ! The motion task must be stopped by — a falling edge on another digital input (configured with 16, FStart_Nr x) — the ASCII command STOP — the STOP function via Bus or digital input
IN3MODE=24	Switch over OPMODE	The two different OPMODE s, that can be selected for switching over via the digital input, are written in the IN3TRIG help variable of the this input. The lower byte consists the OPMODE that should be available when the input has a negative edge. The higher byte consists the OPMODE that should be available when the input has a positive edge. When the drive is switched on, the OPMODE is set automatically to the corresponding state of the input. The contents of the help variable must be in decimal !! e.g.: Input1=low OPMODE =4 Input1=high OPMODE =8 IN1MODE=24 (Activate Input) IN3TRIG =2052 (Decimal 0804h) 2052 (Dec) = 0804 (Hex)

IN3MODE=25	Zero_latch	Sets the digital encoder zero pulse offset. The current position, depending on the digital encoder resolution (ENCOUT) that is set, is calculated at the rising edge and stored as NI-Offset in ENCZERO . After that, an automatic SAVE is generated. This function is used to perform an automatic setting of the zero pulse in one turn of the motor..
IN3MODE=26		
IN3MODE=27	Emergency Stop	Low state on the input starts an emergency stop function, that is executed with the ramp DECSTOP . Independently of the selected OPMODE , in this phase, the drive stops in velocity control. When it has stopped, it switches over to the original mode.
IN3MODE=28	Starting Jogmode	ONLY OPMODE = 8 Firmware >= 0.73 A rising edge starts a jogmode with speed VJOG . A falling edge stopps the movement.
IN3MODE=29	Starting motion task / homing	Start_MT IO Start of the motion task that has the number that is presented, bit-coded, at the digital inputs (PSTOP/NSTOP/DIGITAL-IN1/DIGITAL-IN2, see function 9, MT_No_Bit). A falling ege does not stop motion.
IN3MODE=30	Command Buffer 1	A positive or negative edge on the input starts a command buffer. This command buffer contains separate ASCII objects, that are separated with semicolon (;). The command buffer for the positive edge is INH3CMD , the command buffer for the negative edge is IN3LCMD . The max. length of that buffers is 56 character for each. If a digital input is configured with INxMODE=30, this input will proceed in that way. When the drive is switched on, the Command buffer is set automatically started to the corresponding state of the input.
IN3MODE=32	Brake	Warning ! With suspended loads, this function will lead to slipping of the axes ! A rising edge at the input triggers the braking output of the servo amplifier. This function is only available while the amplifier is disabled.
IN3MODE=33	see 30	Different from the functionality 30, the resulting answers of the commands are not suppressed, but are send to the seriell communication channel RS232. This setting can't be used in combination with GUI software.
IN3MODE=35		.

IN3MODE=36	Give Offset to Gearing Function	Gearing mode OPMODE =4. A high signal on the digital input configured with this INxMODE adds a difference velocity to the gearing. This allows a simple synchronisation of two axes. The difference velocity is given to IN3TRIG . The scaling is in 32Bit per revolution every 250µs. The difference velocity (n) must be known, then the IN3TRIG can be calculated: $IN3TRIG = n [rpm] * 2^{32} / (4000 * 60)$ example: n = 500 [U/min] $INxTRIG = 500 * 2^{32} / (4000 * 60) = 8947848$
IN3MODE=37		reserved
IN3MODE=38	Enable signal for following motion task	Definition of a motion task with following motion tasks. If INxMODE=15 is used (start of an following motion task via I/O), IN1MODE=38 can be used, to have an additional enable for the start of the following motion tasks. Means, that the following motion task is started, if once a rising edge on digital input 1 was detected and then the INxMODE=15 input is enabled to start the following motion task.
IN3MODE=39	Constant velocity for defined time	This function starts a constant velocity for a defined time. The parameters for velocity and time are given by IN3TRIG . The velocity is given by the lower 16 bit (scaling by VUNIT), bit 15 is the sign and defines the moving direction and the time by the upper 16 bit (given in msec) of the help variable IN3TRIG . A rising edge at INPUT1 changes the OPMODE to 0 (digital velocity) and gives the velocity that is given by IN3TRIG . After the defined time or a falling edge at INPUT1 is detected, the digital velocity setpoint is set to "0". After the actual velocity has reached "0" the OPMODE is automatically switched back to the old one. Example for defining the help variable IN3TRIG - Velocity = 1000 rpm time = 10 sec = 10000 msec IN3TRIG = 0x271003E8 = 655361000 - Velocity = -500 rpm time = 10 msec IN3TRIG = 0x000afe0c = 720396
IN3MODE=40	Additional hardware input	The digital input works as an additional hardware input. Only if this input has a high signal, the power stage is enabled. This Function can be used by several inputs. In this case, the inputs are configured in series. All inputs have to be high to enable the power stage.
IN3MODE=41	Quick stop	If the input is going to low, the drive stops the motor using the DECSTOP ramp. If zero velocity is reached (V < VEL0), the power stage is disabled. While stopping the motor the bit 24 (0x01000000) in TRJSTAT is set. The input is read in the 250µs task.

IN3MODE=42	Activate/deactivate electronic gearing	Activate/deactivate electronic gearing in OPMODE = 4. This function is practical only with slave axis. A rising edge on the digital input starts the motion from 0 to the master speed and a falling edge changes the speed from master speed to 0. The ramp times can be set by ACCR for the acceleration and DECR for deceleration time.
IN3MODE=43	Activate/deactivate electronic gearing with position latch	Activate/deactivate electronic gearing in OPMODE = 4. This function is practical only with slave axis. A rising edge on the digital input starts the motion from 0 to the master speed and a falling edge changes the speed from master speed to 0. The ramp times can be set by ACCR for the acceleration and DECR for deceleration time In contrast to IN1MODE = 42, the master position is latched at the rising edge of the input and the position delay caused by the ramp is compensated. IN3TRIG gives the possibility to add an position offset (in PGEAR units) to the latched position.

ASCII -Command	IN3TRIG
Syntax Transmit	IN3TRIG [Data]
Syntax Receive	IN3TRIG <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	long int
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Digital I/O

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		3569 (hex)	
PROFIBUS PNU:		1705 (dec) IND = 1 (de	
DPR Objekt Nr:		105	

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Variable for IN3MODE
-------------------	----------------------

Description

Auxiliary trigger variable for |IN3MODE|. Certain settings of |IN3MODE| require you to specify an additional trigger level. See |IN3MODE| for further details.

ASCII -Command	IN4
Syntax Transmit	IN4
Syntax Receive	IN4 <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	356A (hex)		
PROFIBUS PNU:	1706 (dec) IND = 1 (de		
DPR Objekt Nr:	106		

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Status of Digital Input 4.
-------------------	----------------------------

Description
The status of the digital input INPUT4.

ASCII -Command	IN4HCMD
Syntax Transmit	IN4HCMD [Data]
Syntax Receive	IN4HCMD <Data>
Type	Variable rw
Format	String
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐

SERCOS IDN:	
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	-
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	-

Short Description	Command buffer for high level
-------------------	-------------------------------

Description

The command IN4HCMD can be used to define an ASCII command sequence. This command sequence will always be carried out when a rising edge is detected at the input 4 that has been configured with the function |IN4MODE|=30,33

A command sequence consists of individual ASCII commands, separated by a semicolon (;)

The maximum length of this command sequence is 56 characters.

Example:

IN4HCMD |GV| 10; |GVTN| 15

If a LOW/HIGH edge is detected, the gain of the velocity control loop is set to 10 and the integral action time is set to 15 msec.

ASCII -Command	IN4LCMD
Syntax Transmit	IN4LCMD [Data]
Syntax Receive	IN4LCMD <Data>
Type	Variable rw
Format	String
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	-
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	-

Short Description	Command buffer for low level
-------------------	------------------------------

Description

The command IN4LCMD can be used to define an ASCII command sequence. This command sequence will always be carried out when a falling edge is detected at the input 4 that has been configured with the function |IN4MODE|=30,33. A command sequence consists of individual ASCII commands, separated by a semicolon (;). The maximum length of this command sequence is 56 characters.

Example:

IN4LCMD |GV| 5; |GVTN| 10

If a HIGH/LOW edge is detected, the gain of the velocity control loop is set to 5 and the integral action time is set to 10 msec.

ASCII -Command	IN4MODE
Syntax Transmit	IN4MODE [Data]
Syntax Receive	IN4MODE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 50
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☒
Function Group	Digital I/O

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	P 3000...3		
CAN Object No:	356B (hex)		
PROFIBUS PNU:	1707 (dec) IND = 1 (de		
DPR Objekt Nr:	107		
Data Type BUS/DPR	Integer8		
Weighting 10^3			

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Function of Digital Input 4
-------------------	-----------------------------

Description

The IN4MODE command is used to configure the function of the digital input INPUT4.
The amplifier must be switched off and then on again after an alteration of this parameter.
The following functions can be configured:

Zustand / State	Function	Description
IN4MODE=0	Off	The state of the input 1 is read and can be used via fieldbus or Slot card.
IN4MODE=1	Off	
IN4MODE=2	PSTOP (4.78)	A low on the input disables the positive direction (clockwise if DIR =1, counterclockwise if DIR =0). At the same time, a warning "n10" is displayed. If a negative edge is recognised while the motor is running, the drive stops the motor in OPMODE =0 (velocity control with setpoint zero) using the DECSTOP ramp. When the motor has stopped, the old OPMODE is activated.
IN4MODE=3	NSTOP	A low on the input disables the negative direction (clockwise if DIR =0, counterclockwise if DIR =1). At the same time, a warning "n11" is displayed. If a negative edge is recognised while the motor is running, the drive stops the motor in OPMODE =0 (velocity control with setpoint zero) using the DECSTOP ramp. When the motor has stopped, the old OPMODE is activated.
IN4MODE=4	NSTOP + Int. off	A low on the input disables the negative direction (counterclockwise if DIR =1, clockwise if DIR =0). At the same time, a warning "n11" is displayed. If a negative edge is recognised while the motor is running, the drive stops the motor in OPMODE =0 (velocity control with setpoint zero) using the DECSTOP ramp. When the motor has stopped, the old OPMODE is activated (without integral part in the velocity controller).

IN4MODE=5	NSTOP+Intg. Off	A low on the input disables the negative direction (clockwise if DIR =0, counterclockwise if DIR =1). At the same time, a warning "n11" is displayed. If a negative edge is recognised while the motor is running, the drive stops the motor in OPMODE =0 (velocity control with setpoint zero) using the DECSTOP ramp. When the motor has stopped, the old OPMODE is activated (without integral part in the velocity controller).
IN4MODE=6	Off	
IN4MODE=7	Off	
IN4MODE=8	selection Analog In 1/ 2	Switches over the setpoint inputs Analog In 1/2 at ANCNFG = 0. This function is only effective if the analog set-point function 0,Xcmd=Analog In 1 has been selected. High level at the input : Analog In 2 (terminals X3/6,7) is active Low level at the input : Analog In 1 (terminals X3/4,5) is active
IN4MODE=9	MT_No_Bit	Here you can select the motion tasks that are stored in the servo amplifier (numbers 1...7) or the reference traverse/homing (0). The motion task number is presented externally at the digital inputs as a logical word, with a width of max. 3 bits . An input is required to start the motion task (INxMODE =17, Start_MT IO). If you wire up a reference/homing switch (INxMODE =12, Reference) and (also) want to start a following task (INxMODE =15, Start_MT Next) externally, the number of inputs that are available for selecting the motion tasks will be further reduced.
IN4MODE=10	Intg. Off	Switch off the integral component of the velocity controller, the P-gain remains at the set value, the actual- (rotational) velocity feedback remains in operation.
IN4MODE=11	v/Torq. Contr.	Bypasses the velocity controller. The analog setpoint is taken 1:1 as the setpoint for current control, i.e. change over from velocity control to current (torque) control. High-level at the input : torque control Low-level at the input : velocity control Depending on OPMODE , it changes between OPMODE =0 (low) and OPMODE =2 (high) or OPMODE =1 (low) and OPMODE =3 (high).
IN4MODE=12	Reference	home/reference switch located on machine
IN4MODE=13	digital encoder /SSI	Changeover of the encoder-emulation (position output) on connector X5. High level at the input : SSI-compatible position signals (ENCMODE = 2) High level at the input : ROD-compatible position signals (ENCMODE = 1)
IN4MODE=14	FError_clear	Clear the warning of a contouring error (display n03) or the response monitoring (display n04).
IN4MODE=15	Start_MT Next	The following task, that is defined in the motion task by "Start with I/O" is started. The target position of the present motion task must be reached before the following task can be started. (see also O_C tabel 3)

IN4MODE=16	Start_MT No x	Start a motion task that is stored in the servo amplifier, by giving the motion task number. After the function has been selected you can enter the motion task number as the auxiliary variable IN4TRIG . Motion task number “0” (IN4TRIG =0) initiates homing/reference traverse. A rising edge starts the motion task, a falling edge cancels the motion task. Only OPMODE 4 or 8
IN4MODE=17	Start_MT IO	Start_MT IO Start of the motion task that has the number that is presented, bit-coded, at the digital inputs (PSTOP/NSTOP/DIGITAL-IN1/DIGITAL-IN2, see function 9, MT_No_Bit). A rising edge starts the motion task a falling edge cancels the motion task by a STOP - command
IN4MODE=18	Ipeak2 x	Switch over to a second (lower) peak value of current. Scaled as x (0...100) % of the peak current of the instrument. After the function has been selected you can enter the percentage value as the auxiliary variable IN4TRIG . Make the conversion according to the following equation: IN4TRIG given in % of IPEAK
IN4MODE=19	Off	
IN4MODE=20	Start_Jog v=x	Start of the setup mode "Constant velocity" with a defined speed. After selecting the function, you can enter the speed in IN4TRIG . A rising edge starts the motion, a falling edge cancels the motion. This function works in position control, so OPMODE =8 has to be selected. The speed is given in units of the position controller given by VUNIT , the sign selects the moving direction.
IN4MODE=21	U_Mon.off	Turns off the undervoltage monitoring function of the servo amplifier. High = off Low = on
IN4MODE=22	MT Restart	Continues the motion task that was previously interrupted by a STOP - command.
IN4MODE=23	Start2_MT No x	Start of a motion task that is stored in the servo amplifier, with definition of the motion task number. After selecting the function, you can enter the motion task number in IN4TRIG Motion task number “0” starts the homing run. A rising edge starts the motion task. Warning ! The motion task does not stop automatically if the start signal is removed ! The motion task must be stopped by — a falling edge on another digital input (configured with 16, FStart_Nr x) — the ASCII command STOP — the STOP function via Bus or digital input

IN4MODE=24	Switch over OPMODE	The two different OPMODE s, that can be selected for switching over via the digital input, are written in the IN4TRIG help variable of the this input. The lower byte consists the OPMODE that should be available when the input has a negative edge. The higher byte consists the OPMODE that should be available when the input has a positive edge. When the drive is switched on, the OPMODE is set automatically to the corresponding state of the input. The contents of the help variable must be in decimal !! e.g.: Input1=low OPMODE =4 Input1=high OPMODE =8 IN1MODE=24 (Activate Input) IN4TRIG =2052 (Decimal 0804h) 2052 (Dec) = 0804 (Hex)
IN4MODE=25	Zero_latch	Sets the digital encoder zero pulse offset. The current position, depending on the digital encoder resolution (ENCOUT) that is set, is calculated at the rising edge and stored as NI-Offset in ENCZERO . After that, an automatic SAVE is generated. This function is used to perform an automatic setting of the zero pulse in one turn of the motor..
IN4MODE=26		
IN4MODE=27	Emergency Stop	Low state on the input starts an emergency stop function, that is executed with the ramp DECSTOP . Independently of the selected OPMODE , in this phase, the drive stops in velocity control. When it has stopped, it switches over to the original mode.
IN4MODE=28	Starting Jogmode	ONLY OPMODE = 8 Firmware >= 0.73 A rising edge starts a jogmode with speed VJOG . A falling edge stopps the movement.
IN4MODE=29	Starting motion task / homing	Start_MT IO Start of the motion task that has the number that is presented, bit-coded, at the digital inputs (PSTOP/NSTOP/DIGITAL-IN1/DIGITAL-IN2, see function 9, MT_No_Bit). A falling ege does not stop motion.
IN4MODE=30	Command Buffer 1	A positive or negative edge on the input starts a command buffer. This command buffer contains separate ASCII objects, that are separated with semicolon (;). The command buffer for the positive edge is INH4CMD , the command buffer for the negative edge is IN4LCMD . The max. length of that buffers is 56 character for each. If a digital input is configured with INxMODE=30, this input will proceed in that way. When the drive is switched on, the Command buffer is set automatically started to the corresponding state of the input.

IN4MODE=33	see 30	Different from the functionality 30, the resulting answers of the commands are not suppressed, but are send to the seriell communication channel RS232. This setting can't be used in combination with GUI software.
IN4MODE=32	Brake	Warning ! With suspended loads, this function will lead to slipping of the axes ! A rising edge at the input triggers the braking output of the servo amplifier. This function is only available while the amplifier is disabled.
IN4MODE=35		
IN4MODE=36	Give Offset to Gearing Function	Gearing mode OPMODE =4. A high signal on the digital input configured with this INxMODE adds a difference velocity to the gearing. This allows a simple synchronisation of two axes. The difference velocity is given to IN4TRIG . The scaling is in 32Bit per revolution every 250µs. The difference velocity (n) must be known, then the IN4TRIG can be calculated: $IN4TRIG = n [rpm] * 2^{32} / (4000 * 60)$ example: n = 500 [U/min] $INxTRIG = 500 * 2^{32} / (4000 * 60) = 8947848$
IN4MODE=37		reserved
IN4MODE=38	Enable signal for following motion task	Definition of a motion task with following motion tasks. If INxMODE=15 is used (start of an following motion task via I/O), IN1MODE=38 can be used, to have an additional enable for the start of the following motion tasks. Means, that the following motion task is started, if once a rising edge on digital input 1 was detected and then the INxMODE=15 input is enabled to start the following motion task.
IN4MODE=39	Constant velocity for defined time	This function starts a constant velocity for a defined time. The parameters for velocity and time are given by IN4TRIG . The velocity is given by the lower 16 bit (scaling by VUNIT), bit 15 is the sign and defines the moving direction and the time by the upper 16 bit (given in msec) of the help variable IN4TRIG . A rising edge at INPUT1 changes the OPMODE to 0 (digital velocity) and gives the velocity that is given by IN4TRIG . After the defined time or a falling edge at INPUT1 is detected, the digital velocity setpoint is set to "0". After the actual velocity has reached "0" the OPMODE is automatically switched back to the old one. Example for defining the help variable IN4TRIG - Velocity = 1000 rpm time = 10 sec = 10000 msec IN4TRIG = 0x271003E8 = 655361000 - Velocity = -500 rpm time = 10 msec IN4TRIG = 0x000afe0c = 720396

IN4MODE=40	Additional hardware input	The digital input works as an additional hardware input. Only if this input has a high signal, the power stage is enabled. This Function can be used by several inputs. In this case, the inputs are configured in series. All inputs have to be high to enable the power stage.
IN4MODE=41	Quick stop	If the input is going to low, the drive stops the motor using the DECSTOP ramp. If zero velocity is reached ($V < VEL0$), the power stage is disabled. While stopping the motor the bit 24 (0x01000000) in TRJSTAT is set. The input is read in the 250µs task.
IN4MODE=42	Activate/deactivate electronic gearing	Activate/deactivate electronic gearing in OPMODE = 4. This function is practical only with slave axis. A rising edge on the digital input starts the motion from 0 to the master speed and a falling edge changes the speed from master speed to 0. The ramp times can be set by ACCR for the acceleration and DECR for deceleration time.
IN4MODE=43	Activate/deactivate electronic gearing with position latch	Activate/deactivate electronic gearing in OPMODE = 4. This function is practical only with slave axis. A rising edge on the digital input starts the motion from 0 to the master speed and a falling edge changes the speed from master speed to 0. The ramp times can be set by ACCR for the acceleration and DECR for deceleration time. In contrast to IN1MODE = 42, the master position is latched at the rising edge of the input and the position delay caused by the ramp is compensated. IN4TRIG gives the possibility to add an position offset (in PGEAR1 units) to the latched position.

ASCII -Command	IN4TRIG
Syntax Transmit	IN4TRIG [Data]
Syntax Receive	IN4TRIG <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	long int
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Digital I/O

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	356C (hex)		
PROFIBUS PNU:	1708 (dec) IND = 1 (de		
DPR Objekt Nr:	108		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Variable for IN4MODE
-------------------	----------------------

Description
Auxiliary trigger variable for |IN4MODE|. Certain settings of |IN4MODE| require you to specify an additional trigger level. See |IN4MODE| for further details.

ASCII -Command	IN5	Available in	S300/700
Syntax Transmit	IN20MODE [Data]	MMI	☐ CAN-Bus ☒
Syntax Receive	IN20MODE <Data>	PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer8	CAN Object No:	36F5 (hex)
DIM		PROFIBUS PNU:	1701 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	501
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Status of digital input		

Description

see |IN5_20|

ASCII -Command	IN5_20
Syntax Transmit	IN5 ... IN20
Syntax Receive	IN5 ... IN20
Type	Variable ro
Format	Integer8
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Digital I/O

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		3561 (hex)	
PROFIBUS PNU:		1697 (dec) IND = 1 (de	
DPR Objekt Nr:		97	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Status of digital inputs 5 ...20
-------------------	----------------------------------

Description

The status of the digital input INPUTx. X = 5 ... 20

ASCII -Command	IN5_20MODE
Syntax Transmit	IN1MODE [Data]
Syntax Receive	IN1MODE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 50
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☒
Function Group	Digital I/O

Available in	S300/700	
MMI	☒	CAN-Bus ☒
PROFIBUS	☒	Sercos ☐
SERCOS IDN:		
CAN Object No:	3562 (hex)	
PROFIBUS PNU:	1698 (dec) IND = 1 (de	
DPR Objekt Nr:	98	
Data Type BUS/DPR	Integer8	
Weighting 10^3		

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Function of digital inputs 5 ...20
-------------------	------------------------------------

Description

The commands IN5MODE ... IN20MODE are used to set the mode of the digital inputs INPUT5 INPUT20.

4 digital inputs are given by the standard S300 hardware. 16 additional digital inputs can be controlled by the S300 firmware, so 20 digital inputs are available.

The digital I/O's are the 24V inputs (hardware) and the software I/O's (controlled by software : Fildbus, RS232, DPR-interface).

The possible combinations are:

S300 without I/O-extensioncard

1. hardware
input basic unit: 4 (IN1 - IN4)
2. software
virtual inputs: 16 (IN5 - IN20)

S300 with I/O-extensioncard

1. hardware
inputs basic unit: 4 (IN1 - IN4)
inputs extension card 14 (IN5 - IN18)
2. software
virtual inputs: 2 (IN19 - IN20)

All digital inputs can be set to several configurations.
The command INxMODE sets the used function. (x is the number of the used input).
In case Hilfswerte are necessary these parameters are set by command INxTRIG
(x = 5, 6,20)
see|IN5_20TRIG|

The input status can be monitored via command INx
(x = 5, 6,20)
see |IN5...20| .

Following settings are not possible:

INxMODE =

NSTOP/PSTOP-Function (INxMODE=2,3,4,5,6,7) only for x=3,4 .
Macro-Interrupt (INxMODE=19) only for x=2

Latch-Function (INxMODE=26,44,45,46) only for x=1,2
ASCII-Buffer (INxMODE=30,33) only for x=1...6

The PNU numbers are selected like

IN5MODE PNU 1702 (dec) IND 17 (dec)

IN6MODE PNU 1705 (dec) IND 17 (dec)

IN7MODE PNU 1708 (dec) IND 17 (dec)

:

:

:

IN20MODE PNU 1747 (dec) IND 17 (dec)

ASCII -Command	IN5_20TRIG
Syntax Transmit	IN1TRIG [Data]
Syntax Receive	IN1TRIG <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	long int
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Digital I/O

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	3563 (hex)		
PROFIBUS PNU:	1699 (dec) IND = 1 (de		
DPR Objekt Nr:	99		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Variable for digital inputs 5 ...20
-------------------	-------------------------------------

Description
Auxiliary trigger variable . Certain settings require you to specify an additional trigger level. See |IN5_20MODE| for further details.

ASCII -Command	IN5MODE
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	Integer8
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36F6 (hex)
PROFIBUS PNU:	1702 (dec) IND = 17 (d)
DPR Objekt Nr:	502
Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Function of digital input
-------------------	---------------------------

Description
see |IN5_20MODE|

ASCII -Command	IN5TRIG	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer32	CAN Object No:	36F7 (hex)
DIM		PROFIBUS PNU:	1703 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	503
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Variable for digital input		

Description
see |IN5_20TRIG|

ASCII -Command	IN6	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer8	CAN Object No:	36F8 (hex)
DIM		PROFIBUS PNU:	1704 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	504
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Status of digital input		

Description

see |IN5_20|

ASCII -Command	IN6MODE	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer8	CAN Object No:	36F9 (hex)
DIM		PROFIBUS PNU:	1705 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	505
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☒	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Function of digital input		

Description
see |IN5_20MODE|

ASCII -Command	IN6TRIG	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer32	CAN Object No:	36FA (hex)
DIM		PROFIBUS PNU:	1706 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	506
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Variable for digital input		

Description
see |IN5_20TRIG|

ASCII -Command	IN7	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer8	CAN Object No:	36FB (hex)
DIM		PROFIBUS PNU:	1707 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	507
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Status of digital input		

Description

see |IN5_20|

ASCII -Command	IN7MODE	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer8	CAN Object No:	36FC (hex)
DIM		PROFIBUS PNU:	1708 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	508
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☒	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Function of digital input		

Description
see |IN5_20MODE|

ASCII -Command	IN7TRIG	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer32	CAN Object No:	36FD (hex)
DIM		PROFIBUS PNU:	1709 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	509
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Variable for digital input		

Description
see |IN5_20TRIG|

ASCII -Command	IN8	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer8	CAN Object No:	36FE (hex)
DIM		PROFIBUS PNU:	1710 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	510
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Status of digital input		

Description

see |IN5_20|

ASCII -Command	IN8MODE	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer8	CAN Object No:	36FF (hex)
DIM		PROFIBUS PNU:	1711 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	511
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☒	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Function of digital input		

Description
see |IN5_20MODE|

ASCII -Command	IN8TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	Integer32
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3700 (hex)
PROFIBUS PNU:	1712 (dec) IND = 17 (d)
DPR Objekt Nr:	512

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Variable for digital input
-------------------	----------------------------

Description
see |IN5_20TRIG|

ASCII -Command	IN9	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer8	CAN Object No:	3701 (hex)
DIM		PROFIBUS PNU:	1713 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	513
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Status of digital input		

Description

see |IN5_20|

ASCII -Command	IN9MODE	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer8	CAN Object No:	3702 (hex)
DIM		PROFIBUS PNU:	1714 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	514
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☒	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Function of digital input		

Description
see |IN5_20MODE|

ASCII -Command	IN9TRIG	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer32	CAN Object No:	3703 (hex)
DIM		PROFIBUS PNU:	1715 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	515
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Variable for digital input		

Description
see |IN5_20TRIG|

ASCII -Command	INPOS
Syntax Transmit	INPOS
Syntax Receive	INPOS <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	356D (hex)		
PROFIBUS PNU:	1709 (dec) IND = 1 (de		
DPR Objekt Nr:	109		

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Status of In-Position Signal
-------------------	------------------------------

Description
The INPOS command returns the status of the IN-Position bit of the status register (|DRVSTAT|).
As long as the difference between the last target position (motion task) and the actual position (|PFB|) is within the width of the preset In-Position window (|PEINPOS|), a 1 is signalled, otherwise a 0.

see also |INPT0|

ASCII -Command	INPT0
Syntax Transmit	INPT [Data]
Syntax Receive	INPT <Data>
Type	Variable rw
Format	Integer16
DIM	ms
Range	1 .. 32000
Default	10
Opmode	8
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3630 (hex)
PROFIBUS PNU:	1904 (dec) IND = 1 (de
DPR Objekt Nr:	304

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.3
EEPROM	Yes

Short Description	In-Position Delay
-------------------	-------------------

Description

The INPT0 command defines a delay time for the In-Position signal. At the start of a motion block, the In-Position signal is removed, and the monitoring of the In-Position window is only activated again after the end of this preset time. This function is especially important for positioning tasks within the In-Position window. In such a case, it ensures that the In-Position signal is always removed for a definite time.

See also |INPOS|

ASCII -Command	INPT1
Syntax Transmit	INPT1 [Data]
Syntax Receive	INPT1 <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	0 ... 32000
Default	0
Opmode	4 ... 8
Drive Status	-
Start Firmware	1.0
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3521 (hex)
PROFIBUS PNU:	1633 (dec) IND = 1 (de
DPR Objekt Nr:	33

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	
-------------------	--

Description

The command INPT1 defines the delay time for the “IN POSITION” and “REFERENCE POINT SET” messages.

ASCII -Command	INS0
Syntax Transmit	INS0
Syntax Receive	INS0 <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	0, 1
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36BE (hex)
PROFIBUS PNU:	2046 (dec) IND = 1 (de
DPR Objekt Nr:	446

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	State of Input A0 of the I/O Option Card
-------------------	--

Description

INS0 is used to read input A0 (terminal 1) at the I/O option card. This input is normally used to select a motion task, but can be reassigned for general purpose mode by setting |IO11IN| = 2.

ASCII -Command	INS1	Available in	S300/700
Syntax Transmit	INS1	MMI	☐ CAN-Bus ☒
Syntax Receive	INS1 <Data>	PROFIBUS	☒ Sercos ☐
Type	Variable ro	SERCOS IDN:	
Format	Integer8	CAN Object No:	36BF (hex)
DIM	-	PROFIBUS PNU:	1647 (dec) IND = 17 (d)
Range	0, 1	DPR Objekt Nr:	447
Default	-		
Opmode	All	Data Type BUS/DPR	Integer8
Drive Status	-	Weighting 10^3	
Start Firmware	1.0		
Configuration	☐	Last Change of this Object	1.0
Function Group		EEPROM	No
Short Description	State of Input A1 of the I/O Option Card		

Description

INS1 is used to read input A1 (terminal 2 of X11A) at the I/O option card. This input is normally used to select a motion task, but can be reassigned for general purpose mode by setting |IO11IN| = 2.

ASCII -Command	INS2
Syntax Transmit	INS2
Syntax Receive	INS2 <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	0, 1
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36C0 (hex)
PROFIBUS PNU:	1648 (dec) IND = 17 (d)
DPR Objekt Nr:	448

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	State of Input A2 of the I/O Option Card
-------------------	--

Description

INS2 is used to read input A2 (terminal 3 of X11A) at the I/O option card. This input is normally used to select a motion task, but can be reassigned for general purpose mode by setting |IO11IN| = 2.

ASCII -Command	INS3
Syntax Transmit	INS3
Syntax Receive	INS3 <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	0, 1
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36C1 (hex)
PROFIBUS PNU:	1649 (dec) IND = 17 (d)
DPR Objekt Nr:	449

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	State of Input A3 of the I/O Option Card
-------------------	--

Description

INS3 is used to read input A3 (terminal 4 of X11A) at the I/O option card. This input is normally used to select a motion task, but can be reassigned for general purpose mode by setting |IO11IN| = 2.

ASCII -Command	INS4
Syntax Transmit	INS4
Syntax Receive	INS4 <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	0, 1
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36C2 (hex)
PROFIBUS PNU:	1650 (dec) IND = 17 (d)
DPR Objekt Nr:	450

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	State of Input A4 of the I/O Option Card
-------------------	--

Description

INS4 is used to read input A4 (terminal 5 of X11A) at the I/O option card. This input is normally used to select a motion task, but can be reassigned for general purpose mode by setting |IO11IN| = 2.

ASCII -Command	INS5
Syntax Transmit	INS5
Syntax Receive	INS5 <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	0, 1
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36C3 (hex)
PROFIBUS PNU:	1651 (dec) IND = 17 (d)
DPR Objekt Nr:	451

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	State of Input A5 of the I/O Option Card
-------------------	--

Description

INS5 is used to read input A5 (terminal 6 of X11A) at the I/O option card. This input is normally used to select a motion task, but can be reassigned for general purpose mode by setting |IO11IN| = 2.

ASCII -Command	INS6
Syntax Transmit	INS6
Syntax Receive	INS6 <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	0, 1
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36C4 (hex)
PROFIBUS PNU:	1652 (dec) IND = 17 (d)
DPR Objekt Nr:	452

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	State of Input A6 of the I/O Option Card
-------------------	--

Description

INS6 is used to read input A6 (terminal 7 of X11A) at the I/O option card. This input is normally used to select a motion task, but can be reassigned for general purpose mode by setting |IO11IN| = 2.

ASCII -Command	INS7	Available in	S300/700
Syntax Transmit	INS7	MMI	☐ CAN-Bus ☒
Syntax Receive	INS7 <Data>	PROFIBUS	☒ Sercos ☐
Type	Variable ro	SERCOS IDN:	
Format	Integer8	CAN Object No:	36C5 (hex)
DIM	-	PROFIBUS PNU:	1653 (dec) IND = 17 (d)
Range	0, 1	DPR Objekt Nr:	453
Default	-		
Opmode	All	Data Type BUS/DPR	Integer8
Drive Status	-	Weighting 10^3	
Start Firmware	1.0		
Configuration	☐	Last Change of this Object	1.0
Function Group		EEPROM	No
Short Description	State of Input A7 of the I/O Option Card		

Description

INS7 is used to read input A7 (terminal 8 of X11A) at the I/O option card. This input is normally used to select a motion task, but can be reassigned for general purpose mode by setting |IO11IN| = 2.

ASCII -Command	INS8
Syntax Transmit	INS8
Syntax Receive	INS8 <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	0, 1
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36C6 (hex)
PROFIBUS PNU:	1654 (dec) IND = 17 (d)
DPR Objekt Nr:	454

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	State of FSTART_IO of the I/O Option Card
-------------------	---

Description

INS8 is used to read input FSTART_IO (terminal 2 of X11B) at the I/O option card. This input is normally used to start a motion task, but can be reassigned for general purpose mode by setting |IO11IN| = 2.

ASCII -Command	INTERPOL
Syntax Transmit	INTERPOL [Data]
Syntax Receive	INTERPOL <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 1, 2
Default	0
Opmode	5,6
Drive Status	Disabled + Reset
Start Firmware	3.00
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐

SERCOS IDN:	
CAN Object No:	3684 (hex)
PROFIBUS PNU:	1988 (dec) IND = 1 (de
DPR Objekt Nr:	388

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	2.1
EEPROM	Yes

Short Description	Type of Interpolation in OPMODE 5 and 6
-------------------	---

Description

INTERPOL defines the type of interpolation for external trajectory mode ([OPMODE] 5 and 6). This functionality can only be used, selecting the synchronization that can be activated by [SYNCSRC].

- 0: Linear Interpolation
- 1: Spline Interpolation

ASCII -Command	IOLINK
Syntax Transmit	IOLINK [Data]
Syntax Receive	IOLINK <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	32 Bits
Default	0
Opmode	All
Drive Status	Disable + Reset
Start Firmware	3.18
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3883 (hex)
PROFIBUS PNU:	1699 (dec) IND = 33 (d)
DPR Objekt Nr:	899

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	2.1
EEPROM	Yes

Short Description	connection between a digital out- and input
-------------------	---

Description

Creates an internal connection between a digital output and the corresponding digital input.
Every bit of the IOLINK variable corresponds to the pair of digital inputs/outputs.

e.g.

IOLINK 5

Bit0=1 digital input 1 is connected to the digital output 1.

Bit2=1 digital input 3 is connected to the digital output 3.

In combination with INxMODE/OxMODE commands, this function allows realization of small control tasks without participation of external PLC.

ASCII -Command	IPEAK
Syntax Transmit	IPEAK [Data]
Syntax Receive	IPEAK <Data>
Type	Variable rw
Format	Float
DIM	A
Range	0.0 ... DIPEAK
Default	IMAX
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Current

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	92		
CAN Object No:	356E (hex)		
PROFIBUS PNU:	1710 (dec) IND = 1 (de		
DPR Objekt Nr:	110		

Data Type BUS/DPR	Integer32
Weighting 10 ³	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Application Peak Current
-------------------	--------------------------

Description

IPEAK sets the peak rated current |IPEAKP| and |IPEAKN| of the application (RMS value). The value to be entered is limited to the lower of the peak rated current of the motor (|MIPEAK|) or amplifier (|DIPEAK|). If the IPEAK value is too low, the drive shows following errors and the peak torque is too low. If the IPEAK value is too high, the motor is endangered.

ASCII -Command	IPEAKN
Syntax Transmit	IPEAKN [Data]
Syntax Receive	IPEAKN <Data>
Type	Variable rw
Format	Float
DIM	A rms
Range	0.0 ... DIPEAK
Default	IMAX
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	356F (hex)
PROFIBUS PNU:	1711 (dec) IND = 1 (de
DPR Objekt Nr:	111

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	negative motor peak rms current
-------------------	---------------------------------

Description

Negative motor peak rms current. Can be reduced to |DICONT| or |MICONT| in I2T fallback condition

ASCII -Command	IPEAKP
Syntax Transmit	IPEAKP [Data]
Syntax Receive	IPEAKP <Data>
Type	Variable rw
Format	Float
DIM	A rms
Range	0 ... DIPEAK
Default	IMAX
Opmode	All
Drive Status	+
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3594 (hex)
PROFIBUS PNU:	1748 (dec) IND = 1 (de
DPR Objekt Nr:	148

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	positive motor peak rms current
-------------------	---------------------------------

Description

Positive motor peak rms current. Can be reduced to [DICONT] or [MICONT] in I2T fallback condition

ASCII -Command	IQ
Syntax Transmit	IQ
Syntax Receive	IQ <Data>
Type	Variable ro
Format	Float
DIM	A
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Actual values

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		3570 (hex)	
PROFIBUS PNU:		1712 (dec) IND = 1 (de	
DPR Objekt Nr:		112	

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	No

Short Description	Q-Component of Current Monitor
-------------------	--------------------------------

Description

The Q-axes component of the actual current value.

ASCII -Command	IQFILTK
Syntax Transmit	IQFILTK [Data]
Syntax Receive	IQFILTK <Data>
Type	Variable rw
Format	Float
DIM	
Range	0 .. 2.5
Default	0
Opmode	1,2
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in	S300/700
MMI	☒ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	3889 (hex)
PROFIBUS PNU:	1705 (dec) IND = 33 (d)
DPR Objekt Nr:	905

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	2.1
EEPROM	Yes

Short Description	Gain factor for slip compensation. Used in V/f Control
-------------------	--

Description

Gain factor for slip compensation. Used in V/f Control.
100% Slip compensation: IQFILTK = 1

$$s(iq) = iq * IQFILTK * s_R / (MICONT * MCOSPHI)$$
$$s_R = MFR - (MVR * MPOLES) / (60 * 2)$$

ASCII -Command	IQFILTTAU
Syntax Transmit	IQFILTTAU [Data]
Syntax Receive	IQFILTTAU <Data>
Type	Variable rw
Format	Integer16
DIM	ms
Range	0 .. 2000
Default	200
Opmode	1,2
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in	S300/700
MMI	☒ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	388A (hex)
PROFIBUS PNU:	1706 (dec) IND = 33 (d)
DPR Objekt Nr:	906

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	2.1
EEPROM	Yes

Short Description	Low-pass filter time constant for slip compensation
-------------------	---

Description

Low-pass filter time constant for slip compensation. Used in V/f Control.
Iq is low-pass filtered (smoothed) before it is used for slip compensation.

ASCII -Command	ISCALE1
Syntax Transmit	ISCALE1 [Data]
Syntax Receive	ISCALE1 <Data>
Type	Variable rw
Format	Float
DIM	A/10V
Range	0 ... 30
Default	15
Opmode	3
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Analog I/O

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		3571 (hex)	
PROFIBUS PNU:		1713 (dec) IND = 1 (de	
DPR Objekt Nr:		113	

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Scaling of Analog Current Setpoint 1
-------------------	--------------------------------------

Description

Defines the scaling for the analog setpoint input 1 (if it is a current setpoint in |OPMODE| = 3). The current value that is set here corresponds to the maximum input voltage (10V).

ASCII -Command	ISCALE2
Syntax Transmit	ISCALE2 [Data]
Syntax Receive	ISCALE2 <Data>
Type	Variable rw
Format	Float
DIM	A/10V
Range	0 ... 30
Default	15
Opmode	3
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Analog I/O

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		3572 (hex)	
PROFIBUS PNU:		1714 (dec) IND = 1 (de	
DPR Objekt Nr:		114	

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Scaling of Analog Current Setpoint 2
-------------------	--------------------------------------

Description

Defines the scaling for the analog setpoint input 2 (if it is a current setpoint in |OPMODE| = 3). The current value that is set here corresponds to the maximum input voltage (10V).

ASCII -Command	ISTFR
Syntax Transmit	ISTFR [Data]
Syntax Receive	ISTFR <Data>
Type	Variable rw
Format	Float
DIM	A
Range	0 ... DIPEAK
Default	0
Opmode	0, 1, 4...8
Drive Status	Disable
Start Firmware	1.30
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36A4 (hex)
PROFIBUS PNU:	2020 (dec) IND = 1 (de
DPR Objekt Nr:	420

Data Type BUS/DPR	Integer32
Weighting 10 ³	*

Last Change of this Object	1.1
EEPROM	Yes

Short Description	Current Limit for velocity-dependent friction compensation
-------------------	--

Description

The two parameters ISTFR and |VSTFR| define the friction compensation curve. If ISTFR is set to 0 the function is inactive. The friction compensation changes the additional current from -ISTFR to ISTFR if the velocity changes from -VSTFR to VSTFR. The current is added before the velocity filter, so the filter applies also to the friction compensation.

It is a configuration parameter if it is changed from "0" to another value, other changes can be done online.

|V|=0 -> IFRICT = 0

V= 50% of VSTFR -> IFRICT = 50% of ISTFR

V>=VSTFR -> IFRICT = ISTFR

V= -50% of VSTFR -> IFRICT = -50% of ISTFR

V<=-VSTFR -> IFRICT = -ISTFR

ASCII -Command	J
Syntax Transmit	J [Data]
Syntax Receive	J <Data>
Type	Command
Format	Float
DIM	rpm (velocity) / ms (Time)
Range	-15000.0 .. 15000.0 (=velocity),long int (Time)
Default	-
Opmode	0
Drive Status	Enabled
Start Firmware	1.0
Configuration	☐
Function Group	Oscilloscope/Service

Available in	S300/700
MMI	☒ CAN-Bus ☐
PROFIBUS	☐ Sercos ☒
SERCOS IDN:	36
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Service Function: Constant Velocity
-------------------	-------------------------------------

Description

The command "J <n> <t>" can be used to define a constant velocity <n> (in rpm) for a defined time <t> (in msec). If the <t> entry is missing, the drive runs continuously.

ASCII -Command	K
Syntax Transmit	K
Syntax Receive	K
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	Enabled
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	3573 (hex)		
PROFIBUS PNU:	1715 (dec) IND = 1 (de		
DPR Objekt Nr:	115		

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Kill (=Disable)
-------------------	-----------------

Description
The K (Kill) command is a short form command of the “[DIS]” command.

ASCII -Command	KC
Syntax Transmit	KC [Data]
Syntax Receive	KC <Data>
Type	Variable rw
Format	Float
DIM	-
Range	0.0 .. 1.0
Default	1.0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Current

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	3574 (hex)		
PROFIBUS PNU:	1716 (dec) IND = 1 (de		
DPR Objekt Nr:	116		

Data Type BUS/DPR	Integer32
Weighting 10 ³	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	I-Controller Prediction Constant
-------------------	----------------------------------

Description

KC is a tuning variable of the current loop. For compensation of time delay a predicted current value can be used in addition to the measured motor current. KC 1 switches the current prediction on, KC 0.5 sets it to 50% and KC 0 switches it off. Disabling the current prediction can cause an unstable current loop.

Depending to function |FILTMODE| KC selects different algorithms . By setting |FILTMODE|=1 (Default) the usually prädiktion is used, with setting |FILTMODE| =2 the Smith Predictor is switched on. If the Smith Predictors is on the proportional gain of the current controller |MLGQ| can increase, in case the settings |ML| and |MRS| are tuned well .

ASCII -Command	KC_X
Syntax Transmit	KC [Data]
Syntax Receive	KC <Data>
Type	Variable rw
Format	Float
DIM	-
Range	0.0 .. 1.0
Default	1.0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Current

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	3764 (hex)		
PROFIBUS PNU:	1812 (dec) IND = 17 (d)		
DPR Objekt Nr:	612		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	I-Controller Prediction Constant 2
-------------------	------------------------------------

Description
see |PARCNFG|

ASCII -Command	KEYLOCK
Syntax Transmit	KEYLOCK [Data]
Syntax Receive	KEYLOCK <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 1, 2
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	3575 (hex)		
PROFIBUS PNU:	1717 (dec) IND = 1 (de		
DPR Objekt Nr:	117		

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Locks the push buttons
-------------------	------------------------

Description

If KEYLOCK=1, operation of the amplifier from the keys on the front panel is inhibited.
The display functions of the instrument (error messages, warnings) remain active.

ASCII -Command	KTN
Syntax Transmit	KTN [Data]
Syntax Receive	KTN <Data>
Type	Variable rw
Format	Float
DIM	ms
Range	0.2 ... 2
Default	0.6
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Current

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	107 + 120		
CAN Object No:	362F (hex)		
PROFIBUS PNU:	1903 (dec) IND = 1 (de		
DPR Objekt Nr:	303		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Current Controller Integral-Action Time
-------------------	---

Description

The integral-action time (integration time constant) of the current control loop.

ASCII -Command	KTN_X
Syntax Transmit	KTN [Data]
Syntax Receive	KTN <Data>
Type	Variable rw
Format	Float
DIM	ms
Range	0.2 ... 2
Default	0.6
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Current

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	107 + 120		
CAN Object No:	3765 (hex)		
PROFIBUS PNU:	1813 (dec) IND = 17 (d)		
DPR Objekt Nr:	613		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Current Controller Integral-Action Time 2
-------------------	---

Description
see |PARCNFG|

ASCII -Command	LASTWMASK
Syntax Transmit	LASTWMASK
Syntax Receive	LASTWMASK <Data>
Type	Variable ro
Format	Integer32
DIM	-
Range	long int
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36CE (hex)
PROFIBUS PNU:	1662 (dec) IND = 17 (d)
DPR Objekt Nr:	462

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Fault history of WMASK
-------------------	------------------------

Description

[WMASK] gives the possibility to create a mask to change warnings to errors. If the F24 occurs, LASTWMASK displays the warnings that caused the error.

ASCII -Command	LATCH1N16
Syntax Transmit	LATCH16N
Syntax Receive	LATCH16N <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	2.03
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3680 (hex)
PROFIBUS PNU:	1984 (dec) IND = 1 (de
DPR Objekt Nr:	384

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Latched 16-bit Position (negative edge)
-------------------	---

Description

The LATCH1N16 command returns the position where latching was performed by the last negative (falling) edge on digital input 1 (|IN1MODE|=26). The position value is absolute within one turn, and is given out in the internal units (counts 0 ... 65535). In order to get the absolute 32-bit position in SI units (taking account of the position control loop resolution |PGEAR1|/|PGEAR0|), the command |LATCH1N32| should be used.

The commands LATCH1N16 and |LATCH1N32| have the effect of erasing the status bit 23 “negative latch made” in the status register |TRJSTAT|.

ASCII -Command	LATCH1N32
Syntax Transmit	LATCH1N32
Syntax Receive	LATCH1N32 <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☒
SERCOS IDN:	131
CAN Object No:	357D (hex)
PROFIBUS PNU:	1725 (dec) IND = 1 (de
DPR Objekt Nr:	125

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Latched 32-bit Position (negative edge)
-------------------	---

Description

The LATCH1N32 command returns the position where latching was performed by the last negative (falling) edge on digital input 1 (|IN1MODE|=26). The position value is absolute within 4096 turns, and is given out in microns (taking account of the position control loop resolution |PGEAR1|/|PGEARO|). To obtain an absolute position within one turn, the |LATCH1N16| command should be used.

The commands |LATCH1N16| and LATCH1N32 have the effect of erasing the status bit 23 “negative latch made” in the status register |TRJSTAT|.

ASCII -Command	LATCH1P16
Syntax Transmit	LATCH1P16
Syntax Receive	LATCH1P16 <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		367F (hex)	
PROFIBUS PNU:		1983 (dec) IND = 1 (de	
DPR Objekt Nr:		383	

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Latched 16-bit Position (positive edge)
-------------------	---

Description

The LATCH1P16 command returns the position where latching was performed by the last positive (rising) edge on digital input 1 (|IN1MODE|=26). The position value is absolute within one turn, and is given out in the internal units (counts 0 ... 65535). In order to get the absolute 32-bit position in SI units (taking account of the position control loop resolution |PGEAR1|/|PGEARO|), the command |LATCH1P32| should be used.

The commands LATCH1P16 and |LATCH1P32| have the effect of erasing the status bit 20 "positive latch made" in the status register |DRVSTAT|.

ASCII -Command	LATCH1P32
Syntax Transmit	LATCH1P32
Syntax Receive	LATCH1P32 <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	130		
CAN Object No:	357C (hex)		
PROFIBUS PNU:	1724 (dec) IND = 1 (de		
DPR Objekt Nr:	124		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Latched 32-bit Position (positive edge)
-------------------	---

Description

The LATCH1P32 command returns the position where latching was performed by the last positive (rising) edge on digital input 1 (|IN1MODE|=26). The position value is absolute within 4096 turns, and is given out in microns (taking account of the position control loop resolution |PGEAR1|/|PGEARO|). To obtain an absolute position within one turn, the |LATCH1P16| command should be used.

The commands |LATCH1P16| and LATCH1P32 have the effect of erasing the status bit 20 “positive latch made” in the status register |DRVSTAT|.

ASCII -Command	LATCH2N16
Syntax Transmit	LATCH2N16
Syntax Receive	LATCH2N16 <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3579 (hex)
PROFIBUS PNU:	1721 (dec) IND = 1 (de
DPR Objekt Nr:	121

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Latched 16-bit Position (negative edge)
-------------------	---

Description

The LATCH2N16 command returns the position where latching was performed by the last negative (falling) edge on digital input 2 (|IN2MODE|=26). The position value is absolute within one turn, and is given out in the internal units (counts 0 ... 65535). In order to get the absolute 32-bit position in SI units (taking account of the position control loop resolution |PGEAR1|/|PGEAR0|), the command LATCH2N32 should be used.

The commands LATCH2N16 and |LATCH2N32| have the effect of erasing the status bit 23 “negative latch made” in the status register |TRJSTAT|.

ASCII -Command	LATCH2N32
Syntax Transmit	LATCH2N32
Syntax Receive	LATCH2N32 <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☒
SERCOS IDN:	133
CAN Object No:	357B (hex)
PROFIBUS PNU:	1723 (dec) IND = 1 (de
DPR Objekt Nr:	123

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Latched 32-bit Position (negative edge)
-------------------	---

Description

The LATCH2N32 command returns the position where latching was performed by the last negative (falling) edge on digital input 2 (|IN2MODE|=26). The position value is absolute within 4096 turns, and is given out in microns (taking account of the position control loop resolution |PGEAR1|/|PGEARO|). To obtain an absolute position within one turn, the |LATCH2N16| command should be used.

The commands |LATCH2N16| and LATCH2N32 have the effect of erasing the status bit 23 “negative latch made” in the status register |TRJSTAT|.

ASCII -Command	LATCH2P16
Syntax Transmit	LATCH2P16
Syntax Receive	LATCH2P16 <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		3578 (hex)	
PROFIBUS PNU:		1720 (dec) IND = 1 (de	
DPR Objekt Nr:		120	

Data Type BUS/DPR	Integer16
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	-

Short Description	Latched 16-bit Position (positive edge)
-------------------	---

Description

The LATCH2P16 command returns the position where latching was performed by the last positive (rising) edge on digital input 2 (|IN2MODE|=26). The position value is absolute within one turn, and is given out in the internal units (counts 0 ... 65535). In order to get the absolute 32-bit position in SI units (taking account of the position control loop resolution |PGEAR1|/|PGEAR0|), the command |LATCH2P32| should be used.

The commands LATCH2P16 and |LATCH2P32| have the effect of erasing the status bit 20 "positive latch made" in the status register |DRVSTAT|.

ASCII -Command	LATCH2P32
Syntax Transmit	LATCH2P32
Syntax Receive	LATCH2P32 <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	132		
CAN Object No:	357A (hex)		
PROFIBUS PNU:	1722 (dec) IND = 1 (de		
DPR Objekt Nr:	122		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Latched 32-bit Position (positive edge)
-------------------	---

Description

The LATCH2P32 command returns the position where latching was performed by the last positive (rising) edge on digital input 2 (|IN2MODE|=26). The position value is absolute within 4096 turns, and is given out in microns (taking account of the position control loop resolution |PGEAR1|/|PGEARO|). To obtain an absolute position within one turn, the |LATCH2P16| command should be used.

The commands |LATCH2P16| and LATCH2P32 have the effect of erasing the status bit 20 "positive latch made" in the status register |DRVSTAT|.

ASCII -Command	LDUMP	Available in	S300/700
Syntax Transmit	LDUMP [data]	MMI	☐ CAN-Bus ☐
Syntax Receive	LDUMP <Data>	PROFIBUS	☐ Sercos ☐
Type	Multi-line Return Command	SERCOS IDN:	
Format	String	CAN Object No:	-
DIM	-	PROFIBUS PNU:	no
Range	-	DPR Objekt Nr:	
Default	-	Data Type BUS/DPR	-
Opmode	All	Weighting 10^3	
Drive Status	-	Last Change of this Object	1.0
Start Firmware	1.0	EEPROM	-
Configuration	☐		
Function Group	-		
Short Description	Parameter Output of Motor Data		

Description

The command LDUMP <name> can be used to output the parameters for the motor data set <name> from the internal database. The <name> that is entered must be a valid motor designation from the motor database (see |MDBLIST|). If the <name> parameter is not entered, the motor parameters that are loaded at present will be displayed.

ASCII -Command	LED1
Syntax Transmit	LED1 [Data]
Syntax Receive	LED1 <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 ... 127
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	357E (hex)		
PROFIBUS PNU:	1726 (dec) IND = 1 (de		
DPR Objekt Nr:	126		

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	State of Display 1 Segment
-------------------	----------------------------

Description

IN PREPARATION !

The command LED1 returns the present status (7-segment code) of the segment in LED1 (left).

Bit-assignment for a 7-segment display:

- Bit 0 (0x01, 1) segment A (top)
- Bit 1 (0x02, 2) segment B (top right)
- Bit 2 (0x04, 4) segment C (bottom right)
- Bit 3 (0x08, 8) segment D (bottom)
- Bit 4 (0x10, 16) segment E (bottom left)
- Bit 5 (0x20, 32) segment F (top left)
- Bit 6 (0x40, 64) segment G (center)

A write action LED1 <code> produces the defined code on the display.

This only makes sense if the internal display output has been switched off (LEDSTAT 0).

It is not possible to output a decimal point.

ASCII -Command	LED2
Syntax Transmit	LED2 [Data]
Syntax Receive	LED2 <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 ... 127
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	357F (hex)		
PROFIBUS PNU:	1727 (dec) IND = 1 (de		
DPR Objekt Nr:	127		

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	State of Display 2 Segment
-------------------	----------------------------

Description

IN PREPARATION !

The command LED2 returns the present status (7-segment code) of the segment in LED2 (center).

Bit-assignment for a 7-segment display:

- Bit 0 (0x01, 1) segment A (top)
- Bit 1 (0x02, 2) segment B (top right)
- Bit 2 (0x04, 4) segment C (bottom right)
- Bit 3 (0x08, 8) segment D (bottom)
- Bit 4 (0x10, 16) segment E (bottom left)
- Bit 5 (0x20, 32) segment F (top left)
- Bit 6 (0x40, 64) segment G (center)

A write action LED2 <code> produces the defined code on the display.

This only makes sense if the internal display output has been switched off (LEDSTAT 0).

It is not possible to output a decimal point.

ASCII -Command	LED3
Syntax Transmit	LED3 [Data]
Syntax Receive	LED3 <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 ...127
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in		S300/700	
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐

SERCOS IDN:	
CAN Object No:	3580 (hex)
PROFIBUS PNU:	1728 (dec) IND = 1 (de
DPR Objekt Nr:	128

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	State of Display 3 Segment
-------------------	----------------------------

Description

IN PREPARATION !

The command LED3 returns the present status (7-segment code) of the segment in LED2 (right).
Bit-assignment for a 7-segment display:

- Bit 0 (0x01, 1) segment A (top)
- Bit 1 (0x02, 2) segment B (top right)
- Bit 2 (0x04, 4) segment C (bottom right)
- Bit 3 (0x08, 8) segment D (bottom)
- Bit 4 (0x10, 16) segment E (bottom left)
- Bit 5 (0x20, 32) segment F (top left)
- Bit 6 (0x40, 64) segment G (center)

A write action LED3 <code> produces the defined code on the display.
This only makes sense if the internal display output has been switched off (LEDSTAT 0).
It is not possible to output a decimal point.

ASCII -Command	LEDSTAT
Syntax Transmit	LEDSTAT [Data]
Syntax Receive	LEDSTAT <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	0 ... 16
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	3581 (hex)		
PROFIBUS PNU:	1729 (dec) IND = 1 (de		
DPR Objekt Nr:	129		

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Display page
-------------------	--------------

Description

IN PREPARATION !

The variable LEDSTAT shows the number of the present “display page”.
 Altering the LEDSTAT variable makes it possible the change the display via the serial interface.
 The assignments are as follows:
 LEDSTAT=0 Display is switched off
 LEDSTAT=1 Status display
 LEDSTAT=2 Fieldbus address
 LEDSTAT=3 CAN Baud rate
 LEDSTAT=4 Parameter S01 (Kp velocity control loop)
 LEDSTAT=5 Parameter S02 (Tn velocity control loop)
 LEDSTAT=6 Parameter S03 (setpoint offset)
 LEDSTAT=7 Parameter S04 (motor number)
 LEDSTAT=8 Parameter S05 (encoder selection)
 LEDSTAT=9 Parameter S06 (brake selection)
 LEDSTAT=10 Parameter S07 (Multidrive selection, from software 3.00)
 LEDSTAT=11 Load data from the EEPROM
 LEDSTAT=12 Save data in the EEPROM
 LEDSTAT=13 Set default values (from software 3.00)
 LEDSTAT=14 New configuration of the amplifier ([M_RESET], from software 3.00)
 LEDSTAT=15 Error messages
 LEDSTAT=16 Serial number

ASCII -Command	LIST	Available in	S300/700
Syntax Transmit	LIST	MMI	☐ CAN-Bus ☒
Syntax Receive	LIST <Data>	PROFIBUS	☒ Sercos ☐
Type	Multi-line Return Command	SERCOS IDN:	
Format	String	CAN Object No:	3582 (hex)
DIM	-	PROFIBUS PNU:	1730 (dec) IND = 1 (de
Range	-	DPR Objekt Nr:	130
Default	-		
Opmode	All		
Drive Status	-		
Start Firmware	1.0		
Configuration	☐	Data Type BUS/DPR	-
Function Group	-	Weighting 10^3	
		Last Change of this Object	1.0
		EEPROM	No
Short Description	List All ASCII Commands		

Description
All those commands are listed which can be used for to the present motor/amplifier configuration. ASCII commands that require specific hardware (e.g. Hiperface/Endat, Profibus,Sercos) will only be displayed if the corresponding hardware has been recognized correctly.

ASCII -Command	LOAD
Syntax Transmit	LOAD
Syntax Receive	LOAD
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	3583 (hex)		
PROFIBUS PNU:	1731 (dec) IND = 1 (de		
DPR Objekt Nr:	131		

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Load parameters from serial EEPROM
-------------------	------------------------------------

Description
The LOAD command loads the parameters from the serial EEPROM. All parameter changes that have been made since the last [SAVE] command (save in the serial EEPROM) will be lost.

ASCII -Command	M
Syntax Transmit	M [Data]
Syntax Receive	M <Data>
Type	Variable rw
Format	String
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	
Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Read/write Macro Variable
-------------------	---------------------------

Description

The M command can be used to access any internal macro variable.

Macro variables are variables which can be used by the macro routines. They are called by name within a macro routine. The complete variable information (name, address) is managed in the form of a table. There are two types of macro variable.

1. System variables – these variables are determined by the firmware, and are fixed. Both the names and the addresses for such variables are constant within a given firmware version. The table with the data for the variables is within the programming area, so that the system variables can be accessed at any time.

2. User variables – these variables are set up in the macro routines during the initialization phase of the amplifier. The availability of a specific variable, or its physical address, depends on the amplifier configuration. The table with the information for the variables is set up in the RAM, and is normally only required during the compilation of the macro programs (initialization phase). After the initialization has been concluded, the table is removed from the memory. In this case, it is not possible to access the user variables through the M command.

If the parameter setting MSG=2 is found when the amplifier is switched on, then the table for the user variables is kept in the memory. In this case, it will also be possible to access the user variables through the M command.

The M command can be used in one of three forms:

1. “M” – a list of all the system and user variables is generated

2. “M name” – an information line is generated for the variable <name>, in the following form:

“name [TYPE] address FORMAT=value”

The individual elements are interpreted as follows:

name = name of the macro variable

TYPE = variable type (SYSTEM or USER)

address = physical address of the variable (hexadecimal format)

FORMAT = variable type (BYTE,WORD,LONG,STRING), the suffix FAST means that the variable is stored in the internal (fast) RAM

Value = variable contents (in hexadecimal format, or as ASCII string, depending on FORMAT)

3. “M name value” – the number “value” is entered in the variable “name”

The entry for “value” must be made as a decimal number. If the character sequence “0x” is added as a prefix, the number can be entered in hexadecimal format.

ASCII -Command	M_RESET
Syntax Transmit	M_RESET
Syntax Receive	M_RESET
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	Disable
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	35A9 (hex)
PROFIBUS PNU:	1769 (dec) IND = 1 (de
DPR Objekt Nr:	169

Data Type BUS/DPR	-
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	-

Short Description	Recompile Macro Programs
-------------------	--------------------------

Description

All macro programs are compiled and started when the amplifier is switched on. The compilation of the macro programs is managed by configuration variables. The values for these configuration variables must be fixed before the compilation procedure is started. If the value of a configuration variable is altered at a later time, this change will only take effect with the next compilation of the macro programs. This means, that after changing a configuration variable, this change should first be stored in the EEPROM (see |SAVE| command) and the amplifier should then be switched off and on again.

The M_RESET command offers an alternative. This command is used to force a new compilation of the macro programs, without having to switch the amplifier off and on again. Since this function, unlike that performed during the initialization phase, is carried out while the interrupts are enabled, it takes longer to complete (about 5 min).

ASCII -Command	MAXTEMPE
Syntax Transmit	MAXTEMPE [Data]
Syntax Receive	MAXTEMPE <Data>
Type	Variable rw
Format	Integer16
DIM	Centigrade Degrees
Range	10 .. 80
Default	70
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	205		
CAN Object No:	3584 (hex)		
PROFIBUS PNU:	1732 (dec) IND = 1 (de		
DPR Objekt Nr:	132		

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Ambient Temperature Switch off Threshold
-------------------	--

Description

The ambient temperature value for switching off the power stage and opening the BTB / RTO contact. If the drive temperature (as given by |TEMPE|) exceeds this value, the drive faults (F13).

ASCII -Command	MAXTEMPH
Syntax Transmit	MAXTEMPH [Data]
Syntax Receive	MAXTEMPH <Data>
Type	Variable rw
Format	Integer16
DIM	Centigrade Degrees
Range	20 ... 85
Default	70
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☐	Sercos	☒
SERCOS IDN:	203		
CAN Object No:	3585 (hex)		
PROFIBUS PNU:	1733 (dec) IND = 1 (de		
DPR Objekt Nr:	133		

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Heat Sink Temperature Switch off Threshold
-------------------	--

Description
The heat sink temperature for switching off. If the heat sink temperature (as given by |TEMPH|) exceeds this value, the drive faults.

ASCII -Command	MAXTEMPM
Syntax Transmit	MAXTEMPM [Data]
Syntax Receive	MAXMTEMP <Data>
Type	Variable rw
Format	Float
DIM	Ohms
Range	0.0 .. 6000.0
Default	300
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	3586 (hex)		
PROFIBUS PNU:	1734 (dec) IND = 1 (de		
DPR Objekt Nr:	134		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Motor Temperature Switch off Threshold
-------------------	--

Description

The motor temperature for switching off (defined by the resistance in ohms).

ASCII -Command	MBPDRVSTAT
Syntax Transmit	MBPDRVSTAT [Data]
Syntax Receive	MBPDRVSTAT <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	0 .. 15
Default	0
Opmode	All
Drive Status	-
Start Firmware	3.00
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	368D (hex)
PROFIBUS PNU:	1997 (dec) IND = 1 (de
DPR Objekt Nr:	397

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	2.1
EEPROM	Yes

Short Description	State of the Modbus+ Network
-------------------	------------------------------

Description
MBPDRVSTAT gives the state of the Modbus+ network of the drive. The bit 3 can be written by the drive and can be saved. If the bit is set, Modbus+ network errors are indicated at the drive.

ASCII -Command	MBRAKE
Syntax Transmit	MBRAKE [Data]
Syntax Receive	MBRAKE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 2
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☒
Function Group	Motor

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	3587 (hex)		
PROFIBUS PNU:	1735 (dec) IND = 1 (de		
DPR Objekt Nr:	135		

Data Type BUS/DPR	Integer8
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Select Motor Holding Brake
-------------------	----------------------------

Description

MBRAKE enables the brake function for a 24V holding brake in the motor directly from the servo amplifier.

MBRAKE = 0 Brake function is disabled

MBRAKE = 1 Brake function is enabled. The output at the BRAKE terminal is 24V if the ENABLE signal is present (brake off) and 0V if the ENABLE signal is missing (brake activated).

MBRAKE = 2 If the wake&shake mode is activated (|FBTYPE| = 7 or 8) the holding brake is deactivated after the wake&shake mode .

ASCII -Command	MCFW
Syntax Transmit	MCFW [Data]
Syntax Receive	MCFW <Data>
Type	Variable rw
Format	Float
DIM	-
Range	1 .. 2
Default	1
Opmode	All
Drive Status	-
Start Firmware	3.00
Configuration	☐
Function Group	

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	-		
PROFIBUS PNU:	no		
DPR Objekt Nr:			

Data Type BUS/DPR	Integer32
Weighting 10 ³	*

Last Change of this Object	2.1
EEPROM	Yes

Short Description	The Correction Factor of the Field Weakening
-------------------	--

Description

This command is only for the induction motor mode ($|MTYPE| = 3$).

The correction factor of the field weakening.

This correction factor is introduced to compensate the nonlinearity of the magnetizing inductance since the magnetizing current is decreased according to the rotor mechanical velocity during the field weakening.

ASCII -Command	MCOSPHI
Syntax Transmit	MCOSPHI [Data]
Syntax Receive	MCOSPHI <Data>
Type	Variable rw
Format	Float
DIM	
Range	0.5 .. 1
Default	0.8
Opmode	1,2
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	3887 (hex)
PROFIBUS PNU:	1703 (dec) IND = 33 (d)
DPR Objekt Nr:	903

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	2.1
EEPROM	Yes

Short Description	Power Factor (cos phi) of the induction motor
-------------------	---

Description

Power Factor (cos phi) of the induction motor.
Used in V/f Control scheme to calculate the rated slip s_R for slip compensation.

$$s(iq) = iq * IQFILTK * s_R / (MICONT * MCOSPHI)$$

$$s_R = MFR - (MVR * MPOLES) / (60 * 2)$$

ASCII -Command	MDBCNT
Syntax Transmit	MDBCNT
Syntax Receive	MDBCNT <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	1 .. 127
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Motor

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	3588 (hex)		
PROFIBUS PNU:	1736 (dec) IND = 1 (de		
DPR Objekt Nr:	136		

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Number of Motor Data Sets
-------------------	---------------------------

Description

MDBCNT returns the number of motor data sets that can be loaded for the present combination of output stage + feedback. A change of the feedback setting |FBTYPE| is used, for instance, to ensure that only the data sets for resolver motors or EnDat motors are used.

ASCII -Command	MDBGET
Syntax Transmit	MDBGET
Syntax Receive	MDBGET <Data>
Type	Command
Format	String
DIM	-
Range	1 .. MDBCNT
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Motor

Available in	S300/700	
MMI	☒	CAN-Bus ☒
PROFIBUS	☒	Sercos ☐
SERCOS IDN:		
CAN Object No:	3589 (hex)	
PROFIBUS PNU:	1737 (dec) IND = 1 (de	
DPR Objekt Nr:	137	
Data Type BUS/DPR	-	
Weighting 10^3		

Last Change of this Object	1.0
EEPROM	-

Short Description	Get Actual Motor Data Set
-------------------	---------------------------

Description

The MDBGET command generates an information line (directory entry) for the latest motor data set that was selected with the [MDBSET] command. The information line consists of the following elements:

data set number, motor name, motor number, motor family

The individual elements are interpreted as follows:

Data set number: the number for the data set within the motor database. This number can be used to address a motor data set with the [MDBSET] command. This number is increased automatically at every MDBGET call.

Motor name: a symbolic motor designation (max. length 12 characters).

Motor number: a number that can be used to uniquely identify a particular motor. This number is used to load a data set from the motor database with the [MNUMBER] command.

Motor family: an additional designation (for internal use only).

The group of commands [MDBCNT],[MDBSET],MDBGET can be used by an external control system, to read out the contents of the motor database. The procedure is as follows:

1. Read out the number of available data sets, using the [MDBCNT] command.
2. Set the data set pointer to the first data set, using the [MDBSET] 1 command.
3. Read out the first directory entry, using the MDBGET command.
4. Repeat step 3 until the number of available data sets ([MDBCNT]) has been read.

The [MDBLIST] command offers an alternative. This command can be used to display the complete list.

ASCII -Command	MDBLIST
Syntax Transmit	MDBLIST [*]
Syntax Receive	MDBLIST <Data>
Type	Multi-line Return Command
Format	String
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	
Data Type BUS/DPR	-
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	No

Short Description	List of Motor Data Sets
-------------------	-------------------------

Description

The MDBLIST command returns the list of contents for the motor database (for the present combination of output stage + feedback). One motor database entry is displayed per line on the screen, in the following format:
motor name, motor number, motor family, amplifier designation

The individual elements are interpreted as follows:

Motor name: a symbolic motor designation (max. length 12 characters).

Motor number: a number that can be used to uniquely identify a particular motor. This number is used to load a data set from the motor database with the |MNUMBER| command.

Motor family: an additional designation (for internal use only).

If |PROMPT| 2 is set, a formatted output appears, which is especially suitable for terminal display.

The MDBLIST * command can be used to display the complete list of contents for the motor database. The difference to the output generated by MDBLIST is that the contents also include motor data sets that are not suitable for the present combination of output stage and feedback. These data sets will be displayed, but they cannot be loaded.

Compared with the MDBLIST output, the MDBLIST * output has been enlarged by the columns "Amplifier designation" and "Feedback". These designations can be used to find out for which output stage or |FBTYPE| setting this data set was created.

Amplifier designation 6xx, where xx = current rating

Feedback: 0=Resolver, 2=Hiperface, 4=Endat

ASCII -Command	MDBSET
Syntax Transmit	MDBSET [Data]
Syntax Receive	MDBSET <Data>
Type	Command
Format	Integer16
DIM	-
Range	1 .. MDBCNT
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Motor

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	358A (hex)		
PROFIBUS PNU:	1738 (dec) IND = 1 (de		
DPR Objekt Nr:	138		

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Set Actual Motor Data Set
-------------------	---------------------------

Description

The MDBSET command can be used to address a specific data set from the motor database. The subsequent |MDBGET| command provides the directory entry for the selected motor data set (see |MDBGET| description).

ASCII -Command	MFR
Syntax Transmit	MFR [Data]
Syntax Receive	MFR <Data>
Type	Variable rw
Format	Integer16
DIM	Hz
Range	10 .. 500
Default	50
Opmode	1,2
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in	S300/700
MMI	☒ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	3885 (hex)
PROFIBUS PNU:	1701 (dec) IND = 33 (d)
DPR Objekt Nr:	901

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	2.1
EEPROM	Yes

Short Description	Rated frequency of the induction motor
-------------------	--

Description

Rated frequency of the induction motor.

Used in V/f Control scheme to calculate the rated slip s_R for slip compensation.

$$s(iq) = iq * IQFILTK * s_R / (MICONT * MCOSPHI)$$

$$s_R = MFR - (MVR * MPOLES) / (60 * 2)$$

ASCII -Command	MH
Syntax Transmit	MH
Syntax Receive	MH
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	8
Drive Status	Enabled
Start Firmware	1.0
Configuration	☐
Function Group	Setting-up Mode

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		358D (hex)	
PROFIBUS PNU:		1741 (dec) IND = 1 (de	
DPR Objekt Nr:		141	

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Start Homing
-------------------	--------------

Description

The MH (move home) command is used to start a homing movement (reference traverse) via the serial interface. Homing type, direction and speed are taken from the |NREF|, |DREF| and |VREF| parameters.
See also |SETREF| especially for |OPMODE| 1...6.

ASCII -Command	MI2T
Syntax Transmit	MI2T [Data]
Syntax Receive	MI2T <Data>
Type	Variable ro
Format	Integer8
DIM	%
Range	0 ... 100
Default	-
Opmode	All
Drive Status	
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	35A4 (hex)
PROFIBUS PNU:	1764 (dec) IND = 1 (de
DPR Objekt Nr:	164

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Motor I2T load
-------------------	----------------

Description

This variable returns the average current as a percentage of the continuous current (see [MICON]). The average current is filtered with the time constant [MTIME].

ASCII -Command	MICONT
Syntax Transmit	MICONT [Data]
Syntax Receive	MICONT <Data>
Type	Variable rw
Format	Float
DIM	A
Range	10% of DICON, .. 2* DICON
Default	DICON
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Motor

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	111 + 196		
CAN Object No:	358E (hex)		
PROFIBUS PNU:	1742 (dec) IND = 1 (de		
DPR Objekt Nr:	142		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Motor Continuous Current Rating
-------------------	---------------------------------

Description

This parameter limits the continues current of the amplifier, depending on the maximum continuous current rating of the motor.

ASCII -Command	MICONT_X
Syntax Transmit	MICONT [Data]
Syntax Receive	MICONT <Data>
Type	Variable rw
Format	Float
DIM	A
Range	10% of DICON, .. 2* DICON
Default	DICON
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Motor

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	111 + 196		
CAN Object No:	3770 (hex)		
PROFIBUS PNU:	1824 (dec) IND = 17 (d)		
DPR Objekt Nr:	624		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Motor Continuous Current Rating
-------------------	---------------------------------

Description
see |PARCNFG|

ASCII -Command	MIMR
Syntax Transmit	MIMR [Data]
Syntax Receive	MIMR <Data>
Type	Variable rw
Format	Float
DIM	A
Range	
Default	MICONT / 10
Opmode	All
Drive Status	-
Start Firmware	1.37
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	366B (hex)
PROFIBUS PNU:	1963 (dec) IND = 1 (de
DPR Objekt Nr:	363

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.2
EEPROM	Yes

Short Description	current command D-part
-------------------	------------------------

Description

If a asynchron motor is used |MTYPE| = 3 a D-part for the current is stucked in.

ASCII -Command	MIPEAK
Syntax Transmit	MIPEAK [Data]
Syntax Receive	MIPEAK <Data>
Type	Variable rw
Format	Float
DIM	A
Range	10% of DIPEAK, .. 2*DIPEAK
Default	DIPEAK
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Motor

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	109		
CAN Object No:	358F (hex)		
PROFIBUS PNU:	1743 (dec) IND = 1 (de		
DPR Objekt Nr:	143		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Motor Peak Current Rating
-------------------	---------------------------

Description

MIPEAK limits the |IPEAK| setting of the amplifier, depending on the maximum peak current rating of the motor. The peak current should not exceed 4 times the rated current (|MICON|) of the motor. The actual value is also determined by the peak current (|DIPEAK|) of the servo amplifier used (defines the maximum value for the entry of |IPEAK| in the current controller).

ASCII -Command	MIPEAK_X
Syntax Transmit	MIPEAK [Data]
Syntax Receive	MIPEAK <Data>
Type	Variable rw
Format	Float
DIM	A
Range	10% of DIPEAK, .. 2*DIPEAK
Default	DIPEAK
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Motor

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	109		
CAN Object No:	3771 (hex)		
PROFIBUS PNU:	1825 (dec) IND = 17 (d)		
DPR Objekt Nr:	625		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Motor Peak Current Rating
-------------------	---------------------------

Description
see |PARCNFG|

ASCII -Command	MJ
Syntax Transmit	MJ [Data]
Syntax Receive	MJ <Data>
Type	Variable rw
Format	Float
DIM	kgcm^2
Range	0.01 ... 1000
Default	3
Opmode	All
Drive Status	
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	35AB (hex)
PROFIBUS PNU:	1771 (dec) IND = 1 (de
DPR Objekt Nr:	171

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Motor inertia
-------------------	---------------

Description

Motor inertia

MJ is in kg in case of a linear motor.

ASCII -Command	MJ_X	Available in	S300/700
Syntax Transmit	MJ [Data]	MMI	☐ CAN-Bus ☒
Syntax Receive	MJ <Data>	PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Float	CAN Object No:	376B (hex)
DIM	kgcm^2	PROFIBUS PNU:	1819 (dec) IND = 17 (d)
Range	0.01 ... 1000	DPR Objekt Nr:	619
Default	3	Data Type BUS/DPR	Integer32
Opmode	All	Weighting 10^3	*
Drive Status		Last Change of this Object	1.8
Start Firmware	1.0	EEPROM	Yes
Configuration	☐		
Function Group			
Short Description	Motor inertia 2		

Description
see |PARCNFG|

ASCII -Command	MJOG
Syntax Transmit	MJOG
Syntax Receive	MJOG
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	8
Drive Status	Enabled
Start Firmware	1.0
Configuration	☐
Function Group	Setting-up Mode

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	3591 (hex)		
PROFIBUS PNU:	1745 (dec) IND = 1 (de		
DPR Objekt Nr:	145		

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Start Jog Mode
-------------------	----------------

Description

MJOG starts the jog mode via the serial interface (OPMODE 8 only). The velocity in the jog mode is taken from |VJOG| (with ± sign). Jog mode is defined as a continuous motion at a constant velocity. This type of operation is started without a reference point being set (without homing). The hardware limit switches are monitored. Software limit switches are only monitored if a reference point is set (the drive has been homed). Acceleration and deceleration ramps are taken from the settings for homing (see |ACCR|, |DECR|, and |VJOG|).

ASCII -Command	MKT
Syntax Transmit	MKT [Data]
Syntax Receive	MKT <Data>
Type	Variable rw
Format	Float
DIM	-
Range	0.0 .. 10.0
Default	1.0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		3593 (hex)	
PROFIBUS PNU:		1747 (dec) IND = 1 (de	
DPR Objekt Nr:		147	

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Motor KT
-------------------	----------

Description

The torque constant of the motor in Nm/A.

This parameter is used for sensorless control. The value can be online checked according to the following equation:

$$K_t = 60 * \text{SQRT}(3) * U_i / (2 * \text{PI} * n)$$

U_i induced voltage of the motor

n actual rotor velocity

ASCII -Command	MKT_X
Syntax Transmit	MKT [Data]
Syntax Receive	MKT <Data>
Type	Variable rw
Format	Float
DIM	-
Range	0.0 .. 10.0
Default	1.0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	376E (hex)		
PROFIBUS PNU:	1822 (dec) IND = 17 (d)		
DPR Objekt Nr:	622		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Motor KT
-------------------	----------

Description
see |PARCNFG|

ASCII -Command	ML
Syntax Transmit	L [Data]
Syntax Receive	L <Data>
Type	Variable rw
Format	Float
DIM	mH
Range	0 .. 100
Default	1
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3577 (hex)
PROFIBUS PNU:	1719 (dec) IND = 1 (de
DPR Objekt Nr:	119

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Stator Inductance of the Motor
-------------------	--------------------------------

Description
The parameter describes the stator inductance between phase and phase in mH.

ASCII -Command	ML_X
Syntax Transmit	L [Data]
Syntax Receive	L <Data>
Type	Variable rw
Format	Float
DIM	mH
Range	0 .. 100
Default	1
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	376D (hex)
PROFIBUS PNU:	1821 (dec) IND = 17 (d)
DPR Objekt Nr:	621

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Stator Inductance of the Motor
-------------------	--------------------------------

Description
see |PARCNFG|

ASCII -Command	MLGC
Syntax Transmit	MLGC [Data]
Syntax Receive	MLGC <Data>
Type	Variable rw
Format	Float
DIM	ratet to MLGQ
Range	0.2 .. 1.0
Default	0.7
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Current

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	3595 (hex)		
PROFIBUS PNU:	1749 (dec) IND = 1 (de		
DPR Objekt Nr:	149		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Current Control loop Adaptive Gain (Q-component at rated current)
-------------------	---

Description

The current control loop includes an adaptive alteration of the gain that depends on the current. The MLGC parameter defines the relative gain referred to |MLGQ| for continuous current.

MLGC = 0.8 means that the gain of the current control loop for continuous current is 80% of |MLGQ|. A linear interpolation is made for the gain from current = 0 up to current = |MICON|.

ASCII -Command	MLGC_X
Syntax Transmit	MLGC [Data]
Syntax Receive	MLGC <Data>
Type	Variable rw
Format	Float
DIM	ratet to MLGQ
Range	0.2 .. 1.0
Default	0.7
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Current

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	3767 (hex)		
PROFIBUS PNU:	1815 (dec) IND = 17 (d)		
DPR Objekt Nr:	615		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Current Control loop Adaptive Gain (Q-component at rated current)
-------------------	---

Description
see |PARCNFG|

ASCII -Command	MLGD
Syntax Transmit	MLGD [Data]
Syntax Receive	MLGD <Data>
Type	Variable rw
Format	Float
DIM	ratet to MLGQ
Range	0.4 .. 1.0
Default	0.7
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Current

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	119		
CAN Object No:	3596 (hex)		
PROFIBUS PNU:	1750 (dec) IND = 1 (de		
DPR Objekt Nr:	150		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Adaptive Gain for Current Control loop, D-component
-------------------	---

Description

The D-component of the current control loop (field component). The MLGD parameter defines the relative gain referred to |MLGQ|.

MLGC = 0.6 means that the gain of the current control loop D-component is 60% of |MLGQ|.

ASCII -Command	MLGD_X
Syntax Transmit	MLGD [Data]
Syntax Receive	MLGD <Data>
Type	Variable rw
Format	Float
DIM	ratet to MLGQ
Range	0.4 .. 1.0
Default	0.7
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Current

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	119		
CAN Object No:	3768 (hex)		
PROFIBUS PNU:	1816 (dec) IND = 17 (d)		
DPR Objekt Nr:	616		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Adaptive Gain for Current Control loop, D-component
-------------------	---

Description
see |PARCNFG|

ASCII -Command	MLGP
Syntax Transmit	MLGP [Data]
Syntax Receive	MLGP <Data>
Type	Variable rw
Format	Float
DIM	ratet to MLGQ
Range	0.1 .. 1.0
Default	0.4
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Current

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	3597 (hex)		
PROFIBUS PNU:	1751 (dec) IND = 1 (de		
DPR Objekt Nr:	151		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Current Control loop Adaptive Gain (Q-component at peak current)
-------------------	--

Description

The current control loop includes an adaptive alteration of the gain that depends on the current. The MLGP parameter defines the relative gain referred to |MLGQ| for peak current.

MLGP = 0.6 means that the gain of the current control loop for peak current is 60% of |MLGQ|. A linear interpolation is made for the gain from current = |MICONT| up to current = |MIPEAK|.

ASCII -Command	MLGP_X
Syntax Transmit	MLGP [Data]
Syntax Receive	MLGP <Data>
Type	Variable rw
Format	Float
DIM	ratet to MLGQ
Range	0.1 .. 1.0
Default	0.4
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Current

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	3769 (hex)		
PROFIBUS PNU:	1817 (dec) IND = 17 (d)		
DPR Objekt Nr:	617		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Current Control loop Adaptive Gain (Q-component at peak current)
-------------------	--

Description
see |PARCNFG|

ASCII -Command	MLGQ
Syntax Transmit	MLGQ [Data]
Syntax Receive	MLGQ <Data>
Type	Variable rw
Format	Float
DIM	-
Range	3 .. 1800
Default	60
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Current

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	106		
CAN Object No:	3598 (hex)		
PROFIBUS PNU:	1752 (dec) IND = 1 (de		
DPR Objekt Nr:	152		
Data Type BUS/DPR	Integer32		
Weighting 10^3	*		

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Absolute Gain of Current Control loop
-------------------	---------------------------------------

Description

MLGQ gives the proportional (ac) gain of the current control loop. This also affects |MLGC|, |MLGP| and |MLGD| KTN. Compared with the SR 600 the dimension has changed to V/A. The calculation from a SR600 gain is depending of the drive rating:

$MLGQ[SR300] = MLGQ[SR600] * 480 \text{ V} / DIPEAK[in \text{ A}]$.

Using the SR 601 DIPEAK is 3A: $MLGQ[SR600] = 1 \rightarrow MLGQ[SR300] = 1 * 480 \text{ V} / 3 \text{ A} = 160 \text{ V/A}$

Using the SR 603 DIPEAK is 6A: $MLGQ[SR600] = 1 \rightarrow MLGQ[SR300] = 1 * 480 \text{ V} / 6 \text{ A} = 80 \text{ V/A}$

Using the SR 606 DIPEAK is 13A: $MLGQ[SR600] = 1 \rightarrow MLGQ[SR300] = 1 * 480 \text{ V} / 12 \text{ A} = 40 \text{ V/A}$

Using the SR 610 DIPEAK is 20A: $MLGQ[SR600] = 1 \rightarrow MLGQ[SR300] = 1 * 480 \text{ V} / 20 \text{ A} = 24 \text{ V/A}$

Using the SR 610/30 / 614 / 620 DIPEAK is 40A: $MLGQ[SR600] = 1 \rightarrow MLGQ[SR300] = 1 * 480 \text{ V} / 40 \text{ A} = 12 \text{ V/A}$

Using the SR 640 DIPEAK is 80A: $MLGQ[SR600] = 1 \rightarrow MLGQ[SR300] = 1 * 480 \text{ V} / 80 \text{ A} = 6 \text{ V/A}$

Using the SR 670 DIPEAK is 160A: $MLGQ[SR600] = 1 \rightarrow MLGQ[SR300] = 1 * 480 \text{ V} / 160 \text{ A} = 3 \text{ V/A}$

Using the SR 403 DIPEAK is 9A: $MLGQ[SR400] = 1 \rightarrow MLGQ[SR300] = 1 * 480 \text{ V} / 9 \text{ A} = 53 \text{ V/A}$

Using the SR 406 DIPEAK is 12A: $MLGQ[SR400] = 1 \rightarrow MLGQ[SR300] = 1 * 480 \text{ V} / 12 \text{ A} = 40 \text{ V/A}$

An estimated value for MLGQ is $3000 * L[in \text{ H}]$ Driving a 10 mH Motor MLGQ will be round 30 V/A

$MLGQ = 3000 * L \text{ (L in H)}$

ASCII -Command	MLGQ_X
Syntax Transmit	MLGQ [Data]
Syntax Receive	MLGQ <Data>
Type	Variable rw
Format	Float
DIM	-
Range	3 .. 1800
Default	60
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Current

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	106		
CAN Object No:	376A (hex)		
PROFIBUS PNU:	1818 (dec) IND = 17 (d)		
DPR Objekt Nr:	618		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Absolute Gain of Current Control loop
-------------------	---------------------------------------

Description
see |PARCNFG|

ASCII -Command	MNAME
Syntax Transmit	MNAME [Data]
Syntax Receive	MNAME <Data>
Type	Variable rw
Format	String
DIM	-
Range	max 12 ASCII Characters
Default	Blanks
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Motor

Available in	S300/700
MMI	☒ CAN-Bus ☐
PROFIBUS	☐ Sercos ☒
SERCOS IDN:	141
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Motor Name
-------------------	------------

Description

The MNAME parameter is directly related to the motor number [MNUMBER].
When a motor data set is loaded from the motor database ([MNUMBER] command), the motor designation MNAME is also transferred. If a customer-specific motor designation is to be defined, then this can be done with the MNAME command.
When the motor name is altered, the motor number ([MNUMBER]) is set to 0, to indicate a customer-specific motor data set.

ASCII -Command	MNUMBER
Syntax Transmit	MNUMBER [Data]
Syntax Receive	MNUMBER <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	int
Default	0
Opmode	All
Drive Status	Disabled
Start Firmware	1.0
Configuration	☐
Function Group	Motor

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	P 3046		
CAN Object No:	3599 (hex)		
PROFIBUS PNU:	1753 (dec) IND = 1 (de		
DPR Objekt Nr:	153		

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Motor Number
-------------------	--------------

Description

The command “MNUMBER nr” is used to load a motor data set with the number “nr” from the motor database. If MNUMBER 0 is entered, then no data set will be loaded, but the variable MNUMBER will simply be set to 0. This setting indicates a customer-specific motor data set.

ASCII -Command	MONITOR1
Syntax Transmit	MONITOR1 [Data]
Syntax Receive	MONITOR1 <Data>
Type	Variable ro
Format	Integer16
DIM	mV
Range	-10000 ..10000
Default	-
Opmode	All
Drive Status	
Start Firmware	3.57
Configuration	☐
Function Group	

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	359A (hex)		
PROFIBUS PNU:	1754 (dec) IND = 1 (de		
DPR Objekt Nr:	154		

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	2.1
EEPROM	No

Short Description	Monitor 1 Output voltage
-------------------	--------------------------

Description

The actual value of the output voltage from Monitor 1.

ASCII -Command	MONITOR2
Syntax Transmit	MONITOR2 [Data]
Syntax Receive	MONITOR2 <Data>
Type	Variable ro
Format	Integer16
DIM	mV
Range	-10000 ..10000
Default	-
Opmode	All
Drive Status	-
Start Firmware	3.57
Configuration	☐
Function Group	

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	359B (hex)		
PROFIBUS PNU:	1755 (dec) IND = 1 (de		
DPR Objekt Nr:	155		

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	2.1
EEPROM	No

Short Description	Monitor 2 Output voltage
-------------------	--------------------------

Description

The actual value of the output voltage from Monitor 2.

ASCII -Command	MOVE
Syntax Transmit	MOVE [Data]
Syntax Receive	MOVE <Data>
Type	Command
Format	Integer16
DIM	-
Range	0 ... 300
Default	0
Opmode	8
Drive Status	Enabled
Start Firmware	1.0
Configuration	☐
Function Group	Position Data

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		3642 (hex)	
PROFIBUS PNU:		1922 (dec) IND = 1 (de	
DPR Objekt Nr:		322	

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Start Motion Task
-------------------	-------------------

Description

The command "MOVE nr" starts the motion task "nr" from the motion task memory.
If the command is used without a parameter, then the number of the most recently started task will be displayed.

ASCII -Command	MPHASE
Syntax Transmit	MPHASE [Data]
Syntax Receive	MPHASE <Data>
Type	Variable rw
Format	Integer16
DIM	Electrical Degrees
Range	0 .. 360
Default	0
Opmode	All
Drive Status	Disabled
Start Firmware	1.0
Configuration	☐
Function Group	Feedback

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	359C (hex)		
PROFIBUS PNU:	1756 (dec) IND = 1 (de		
DPR Objekt Nr:	156		

Data Type BUS/DPR	Integer16
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Motor Phase, Feedback Offset
-------------------	------------------------------

Description

The MOTOR PHASE parameter is handled in different ways, depending on the type of feedback (|FBTYPE|) that is used.

|FBTYPE|=0 resolver

MPHASE is saved in the serial EEPROM of the amplifier (|SAVE| command) and is transferred after every power-on of the amplifier.

|FBTYPE|=2, 4 Hiperface/Endat

MPHASE is saved in the serial EEPROM of the encoder (|HSAVE| command) and is read out from the encoder after every power-on of the amplifier. So if an encoder is exchanged, the MPHASE setting goes with the encoder. When a new encoder is fitted, the MPHASE value must be re-established and stored in the encoder (|HSAVE| command).

|FBTYPE|=7 sin/cos encoder without an internal EEPROM

MPHASE will be determined automatically at the first enable of the output stage (Wake & Shake)

It is not necessary to make a separate determination of the MPHASE value, or to save it.

ASCII -Command	MPHASE2
Syntax Transmit	MPHASE2 [Data]
Syntax Receive	MPHASE2 <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	0 ... 359, 1000
Default	1000
Opmode	All
Drive Status	-
Start Firmware	6.35
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3536 (hex)
PROFIBUS PNU:	1654 (dec) IND = 1 (de
DPR Objekt Nr:	54

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	
EEPROM	Yes

Short Description	Commutationfineadjustment
-------------------	---------------------------

Description

Defines the MPHASE setting after the homing move. A value between 0 and 359 activates the function for setting the MPHASE value after the homing move is done The value MPHASE2 is written to the MPHASE parameter because the MPHASE parameter, which is calculated during W&S, can be imprecise.

The setting MPHASE2 1000 switches this function off.

ASCII -Command	MPITCH	Available in	S300/700
Syntax Transmit	MPITCH [Data]	MMI	☐ CAN-Bus ☐
Syntax Receive	MPITCH <Data>	PROFIBUS	☐ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer32	CAN Object No:	351E (hex)
DIM	um	PROFIBUS PNU:	1630 (dec) IND = 1 (de
Range		DPR Objekt Nr:	30
Default	32000	Data Type BUS/DPR	Integer32
Opmode	All	Weighting 10^3	
Drive Status	-	Last Change of this Object	1.0
Start Firmware	0.67	EEPROM	Yes
Configuration	☐		
Function Group			
Short Description	pole pair pitch for linear motor		

Description

The command MPITCH defines the pole - pair pitch for a linear motor.

ASCII -Command	MPKD
Syntax Transmit	MPKD [Data]
Syntax Receive	MPKD <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	-
Default	10000
Opmode	All
Drive Status	-
Start Firmware	2.53
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3870 (hex)
PROFIBUS PNU:	1680 (dec) IND = 33 (d)
DPR Objekt Nr:	880

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	2.0
EEPROM	Yes

Short Description	D-Term for the commutation alignment PID position loop
-------------------	--

Description

D-Term for the commutation alignment PID position loop (|CALCMP|)

ASCII -Command	MPKI
Syntax Transmit	MPKI [Data]
Syntax Receive	MPKI <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	-
Default	1000
Opmode	All
Drive Status	-
Start Firmware	2.53
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3871 (hex)
PROFIBUS PNU:	1681 (dec) IND = 33 (d)
DPR Objekt Nr:	881

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	2.0
EEPROM	Yes

Short Description	I-Integration Time for the commutation alignment PID position loop (CALCMP)
-------------------	---

Description

I-Integration Time for the commutation alignment PID position loop (|CALCMP|)

ASCII -Command	MPKP
Syntax Transmit	MPKP [Data]
Syntax Receive	MPKP <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	-
Default	600
Opmode	All
Drive Status	-
Start Firmware	2.53
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3872 (hex)
PROFIBUS PNU:	1682 (dec) IND = 33 (d)
DPR Objekt Nr:	882

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	2.0
EEPROM	Yes

Short Description	Proportional gain for the commutation alignment PID position loop (CALCMP)
-------------------	--

Description

Proportional gain for the commutation alignment PID position loop (|CALCMP|)

ASCII -Command	MPOLES
Syntax Transmit	MPOLES [Data]
Syntax Receive	MPOLES <Data>
Type	Variable rw
Format	Integer8
DIM	Poles
Range	0, 2, 4, 6, .. , 256
Default	6
Opmode	All
Drive Status	Disabled
Start Firmware	1.0
Configuration	☐
Function Group	Motor

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		359D (hex)	
PROFIBUS PNU:		1757 (dec) IND = 1 (de	
DPR Objekt Nr:		157	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Number of Motor Poles
-------------------	-----------------------

Description

The number of motor poles per turn of the motor.

MPOLES = 0 is not saved into the drive. The setting MPOLES =0 is also not monitored in the MMI.

Linear Motors:

The standard setting for linear motors is MPOLES = 2.

An exception is if enclines is not an integer value for the pole pitch distance (|MPITCH|). In this case a differnt value for enclines and |MPOLES| is required. Contact our technical support.

ASCII -Command	MPOLES_X
Syntax Transmit	MPOLES [Data]
Syntax Receive	MPOLES <Data>
Type	Variable rw
Format	Integer8
DIM	Poles
Range	0, 2, 4, 6, .. , 256
Default	6
Opmode	All
Drive Status	Disabled
Start Firmware	1.0
Configuration	☐
Function Group	Motor

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	3766 (hex)		
PROFIBUS PNU:	1814 (dec) IND = 17 (d)		
DPR Objekt Nr:	614		

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Number of Motor Poles
-------------------	-----------------------

Description
see |PARCNFG|

ASCII -Command	MPR
Syntax Transmit	MPR [Data]
Syntax Receive	MPR <Data>
Type	Variable rw
Format	Integer16
DIM	W
Range	100 .. 10000
Default	500
Opmode	All
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in	S300/700		
MMI	☒	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐
SERCOS IDN:			
CAN Object No:	-		
PROFIBUS PNU:	no		
DPR Objekt Nr:			

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	2.1
EEPROM	Yes

Short Description	Rated output power of the motor
-------------------	---------------------------------

Description
Rated output power of the motor

Used for calculation of |MTR|

ASCII -Command	MPTIME
Syntax Transmit	MPTIME [Data]
Syntax Receive	MPTIME <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	-
Default	500
Opmode	All
Drive Status	-
Start Firmware	2.53
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3873 (hex)
PROFIBUS PNU:	1683 (dec) IND = 33 (d)
DPR Objekt Nr:	883

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	2.0
EEPROM	Yes

Short Description	Alignment time for the commutation alignment PID position loop (CALCMP)
-------------------	---

Description
Alignment time for the commutation alignment PID position loop (|CALCMP|)

ASCII -Command	MRESBW
Syntax Transmit	MRESBW [Data]
Syntax Receive	MRESBW <Data>
Type	Variable rw
Format	Integer16
DIM	Hz
Range	50 .. 2000
Default	300
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Feedback

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		35A0 (hex)	
PROFIBUS PNU:		1760 (dec) IND = 1 (de	
DPR Objekt Nr:		160	

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Resolver Bandwidth
-------------------	--------------------

Description

MRESBW is a tuning parameter that sets the bandwidth (in Hz) of the inner control loop. A high value (>800 Hz) results in a fast (low phase lag) and noisy velocity signal. A low value (<400 Hz) results in a slow (higher phase lag) and smooth velocity signal. The default value of 600 Hz is a compromise between phase lag and noise. The phase lag can be reduced by providing the acceleration feed forward signal ($|VLO| = 1$).

With a wide bandwidth, the drive responds more rapidly to control loop deviations and there is a smaller following error (reduced lag). A very wide bandwidth only makes sense with low moments of inertia, low KP, and very high acceleration values. A narrower bandwidth produces a filter effect. The rotational velocity and positional control are smoother (encoder equivalent output is quieter as well).

For the sensorless drive, the Luenberger Observer is used as the adaptive controller. Therefore, the parameter MRESBW corresponds to the bandwidth of the adaptive controller. It is normally set between 25 and 100 Hz.

ASCII -Command	MRESPOLES
Syntax Transmit	MRESPOLES [Data]
Syntax Receive	MRESPOLES <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	2, 4, .. 32
Default	2
Opmode	All
Drive Status	Disabled
Start Firmware	1.0
Configuration	☐
Function Group	Feedback

Available in		S300/700	
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		35A1 (hex)	
PROFIBUS PNU:		1761 (dec) IND = 1 (de	
DPR Objekt Nr:		161	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Number of Resolver Poles (Multispeed)
-------------------	---------------------------------------

Description

The number of resolver poles (multispeed resolver) per turn.

ASCII -Command	MRS
Syntax Transmit	MRS [Data]
Syntax Receive	MRS <Data>
Type	Variable rw
Format	Float
DIM	Ohms
Range	0 .. 100
Default	1
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3686 (hex)
PROFIBUS PNU:	1990 (dec) IND = 1 (de
DPR Objekt Nr:	390

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Winding Resistance of the Stator Phase-Phase
-------------------	--

Description

The parameter describes the stator winding resistance phase-phase in Ohm

ASCII -Command	MRS_X
Syntax Transmit	MRS [Data]
Syntax Receive	MRS <Data>
Type	Variable rw
Format	Float
DIM	Ohms
Range	0 .. 100
Default	1
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	376C (hex)
PROFIBUS PNU:	1820 (dec) IND = 17 (d)
DPR Objekt Nr:	620

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Winding Resistance of the Stator Phase-Phase
-------------------	--

Description
see |PARCNFG|

ASCII -Command	MSERIALNO
Syntax Transmit	MSERIALNO [Data]
Syntax Receive	MSERIALNO <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	Long Int
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36A3 (hex)
PROFIBUS PNU:	2019 (dec) IND = 1 (de
DPR Objekt Nr:	419

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Serial no of the motor for encoder feedback
-------------------	---

Description

MSERIALNO give the possibility to add a serial number of the motor. It is stored in the encoder with parameter channel (EnDAT or Hiperface) of the motor by typing in [HSAVE].

MSERIALNO gives the serial number of the connected motor with encoder feedback.

This command can only be used, if a motor with encoder is connected.

ASCII -Command	MSG
Syntax Transmit	MSG [Data]
Syntax Receive	MSG <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 1, 2
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Communication

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		35A2 (hex)	
PROFIBUS PNU:		1762 (dec) IND = 1 (de	
DPR Objekt Nr:		162	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Enable / Disable All Messages via RS232
-------------------	---

Description

If "MSG 2" is set, then the execution of the individual initialization steps will be signaled through the serial interface when the amplifier is switched on (initialization phase). This setting should only be used for test purposes (e.g. during commissioning). Since the drive setup software Drive.exe only works with the setting "MSG 1", the "MSG 2" setting can only be implemented with the help of a terminal program (not in the terminal window of the operating program).

ASCII -Command	MSLBRAKE
Syntax Transmit	MSLBRAKE [Data]
Syntax Receive	MSLBRAKE <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	1 .. 32
Default	8
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3671 (hex)
PROFIBUS PNU:	1969 (dec) IND = 1 (de
DPR Objekt Nr:	369

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	DEC ramp at sensorless emergency stop
-------------------	---------------------------------------

Description

If the feedback unit trips (Fault F04, F08 or F25), it is impossible to stop the motor with the standard commutation. Therefore a sensorless stop is implemented. It is not possible to define a ramp, because it depends on the friction and inertia of the system. MSLBRAKE offers the possibility to change the emergency ramp in this case. The lower MSLBRAKE is, the lower is the deceleration of the motor.

ASCII -Command	MSPEED
Syntax Transmit	MSPEED [Data]
Syntax Receive	MSPEED <Data>
Type	Variable rw
Format	Float
DIM	rpm
Range	0.0 .. 12000.0
Default	3000
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Motor

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	113		
CAN Object No:	35A3 (hex)		
PROFIBUS PNU:	1763 (dec) IND = 1 (de		
DPR Objekt Nr:	163		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Maximum Rated Motor Velocity
-------------------	------------------------------

Description

The MSPEED sets the upper limit for the following amplifier parameters: |VLIM|, |VLIMN|, 5/6 * |VOSPD|.

Details are shown at parameter |VUNIT| .

ASCII -Command	MTANGLP
Syntax Transmit	MTANGLP [Data]
Syntax Receive	MTANGLP <Data>
Type	Variable rw
Format	Integer16
DIM	Electrical Degrees
Range	0 .. 45
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Motor

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		35A5 (hex)	
PROFIBUS PNU:		1765 (dec) IND = 1 (de	
DPR Objekt Nr:		165	

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Current Lead
-------------------	--------------

Description

The current-dependent phase lead that is applied to make use of the reluctance torque at motor peak current (|MIPEAK|).

ASCII -Command	MTIME
Syntax Transmit	MTIME [Data]
Syntax Receive	MTIME <Data>
Type	Variable rw
Format	Float
DIM	s
Range	1 ... 600
Default	16
Opmode	All
Drive Status	
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	35AC (hex)
PROFIBUS PNU:	1772 (dec) IND = 1 (de
DPR Objekt Nr:	172

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Motor thermal time constant
-------------------	-----------------------------

Description

Motor thermal time constant to calculate [MI2T] with [MICON]

ASCII -Command	MTIME_X
Syntax Transmit	MTIME [Data]
Syntax Receive	MTIME <Data>
Type	Variable rw
Format	Float
DIM	s
Range	1 ... 600
Default	16
Opmode	All
Drive Status	
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	376F (hex)
PROFIBUS PNU:	1823 (dec) IND = 17 (d)
DPR Objekt Nr:	623

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Motor thermal time constant
-------------------	-----------------------------

Description
see |PARCNFG|

ASCII -Command	MTMUX
Syntax Transmit	MTMUX [Data]
Syntax Receive	MTMUX <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	0 ... 300
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	365B (hex)
PROFIBUS PNU:	1947 (dec) IND = 1 (de
DPR Objekt Nr:	347

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Presetting for motion task that is processed later
-------------------	--

Description

The command MTMUX presets the number of a motion task that is then prepared to work with commands |O_P|,|O_V|,|O_C|,|O_ACC1|,|O_DEC1|,|O_FT|,|O_FN|. All this commands then have access to the selected motion task.

MTMUX work only with motion tasks no. 0, 201 ... 300.

MTMUX is not stored in EEPROM. While start-up of the drive, MTMUX is automatically set to "0".

ASCII -Command	MTR
Syntax Transmit	MTR [Data]
Syntax Receive	MTR <Data>
Type	Variable rw
Format	-
DIM	ms
Range	20 ... 1000
Default	100
Opmode	All
Drive Status	
Start Firmware	1.37
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	366C (hex)
PROFIBUS PNU:	1964 (dec) IND = 1 (de
DPR Objekt Nr:	364

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.37
EEPROM	Yes

Short Description	
-------------------	--

Description
Rotor time constant for calculation of the magnetic rotor flux and the gap

ASCII -Command	MTYPE
Syntax Transmit	MTYPE [Data]
Syntax Receive	MTYPE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	1 ... 4
Default	1
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☒
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	35A6 (hex)
PROFIBUS PNU:	1766 (dec) IND = 1 (de
DPR Objekt Nr:	166

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Motor Type
-------------------	------------

Description

MTYPE sets the drive control algorithms to different motor types as follows:

MTYPE = 1: permanent magnet motor

MTYPE = 2: permanent magnet motor with Id current control

The one case is for the linear permanent magnet motor, the other case is for the sensorless drive of permanent magnet motor.

MTYPE = 3: asynchronous motor (Induction motor)

ASCII -Command	MUR
Syntax Transmit	MUR [Data]
Syntax Receive	MUR <Data>
Type	Variable rw
Format	Integer16
DIM	V
Range	100 .. 500
Default	230
Opmode	1,2
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in	S300/700
MMI	☒ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	3886 (hex)
PROFIBUS PNU:	1702 (dec) IND = 33 (d)
DPR Objekt Nr:	902

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	2.1
EEPROM	Yes

Short Description	
-------------------	--

Description

ASCII -Command	MVANGLB
Syntax Transmit	MVANGLB [Data]
Syntax Receive	MVANGLB <Data>
Type	Variable rw
Format	Float
DIM	rpm
Range	0 .. 15000
Default	3000
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Motor

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	35A7 (hex)		
PROFIBUS PNU:	1767 (dec) IND = 1 (de		
DPR Objekt Nr:	167		

Data Type BUS/DPR	Float
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Velocity-dependent Lead (Start Phi)
-------------------	-------------------------------------

Description

This is a compensation for the inductive phase shift between the motor voltage and the motor current at high velocitys. With defined voltage relationships, it permits a higher torque at the final limit velocity. Alternatively, the achievable final limit velocity can be increased by up to 30%. Depending on the motor velocity, the phase shift (commutation angle) is increased linearly from the Start Phi point up to the Limit Phi value (|MVANGLF|) at the final limit velocity. The most favorable setting depends on the type of motor and the final limit velocity.

See also |MVANGLF|.

ASCII -Command	MVANGLF
Syntax Transmit	MVANGLF [Data]
Syntax Receive	MVANGLF <Data>
Type	Variable rw
Format	Integer16
DIM	Electrical Degrees
Range	0 .. 45
Default	20
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Motor

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		35A8 (hex)	
PROFIBUS PNU:		1768 (dec) IND = 1 (de	
DPR Objekt Nr:		168	

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Velocity-dependent Lead (Limit Phi)
-------------------	-------------------------------------

Description

This is a compensation for the inductive phase shift between the motor voltage and the motor current at high velocity. With defined voltage relationships, this permits a higher torque at the final limit velocity. Alternatively, the achievable final limit velocity can be increased by up to 30%. Depending on the motor velocity, the phase shift is increased linearly from the Start Phi point (|MVANGLB|) up to the End Phi value at the final limit velocity. The most favorable setting depends on the type of motor and the final limit velocity.

See also |MVANGLB|.

ASCII -Command	MVANGLP
Syntax Transmit	MVANGLP [Data]
Syntax Receive	MVANGLP <Data>
Type	Variable rw
Format	Integer16
DIM	Electrical Degrees
Range	0 .. 60
Default	20
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		3592 (hex)	
PROFIBUS PNU:		1746 (dec) IND = 1 (de	
DPR Objekt Nr:		146	

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Velocity-dependent Lead (Commutation Angle)
-------------------	---

Description

The inductive phase shift between the motor current and the motor voltage is compensated at high velocities. With the given voltage conditions, a higher torque is achieved at the velocity limit.

Alternatively, the achievable velocity limit is increased by 30%. The phase shift is increased linearly from a value of 0 degrees at |MVANGLB| up to a final value of |MVANGLF| degrees at |VLIM|. The optimum setting depends on the type of motor and velocity limit.

ASCII -Command	MVER
Syntax Transmit	MVER [Data]
Syntax Receive	MVER <Data>
Type	Variable ro
Format	Float32
DIM	-
Range	
Default	
Opmode	All
Drive Status	-
Start Firmware	2.14
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3861 (hex)
PROFIBUS PNU:	1665 (dec) IND = 33 (d)
DPR Objekt Nr:	865

Data Type BUS/DPR	Float32
Weighting 10^3	

Last Change of this Object	1.5
EEPROM	No

Short Description	Version of the motor data base
-------------------	--------------------------------

Description

This variable includes the version of the motor data base.

ASCII -Command	MVR
Syntax Transmit	MVR [Data]
Syntax Receive	MVR <Data>
Type	
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	366D (hex)
PROFIBUS PNU:	1965 (dec) IND = 1 (de
DPR Objekt Nr:	365

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Nominal speed of asynchron motor
-------------------	----------------------------------

Description

Rated speed of the induction motor.

Significance depends on mode of operation:

1. Normal operation of the induction machine (with sensor):

MVR defines the beginning of field for the induction machine. Above this speed, the nominalD-current (MIMR) is lowered. MVR = 0 disables field weakening

2. V/f control (no sensor):

Used to calculate V/f trajectory.

ASCII -Command	NONBTB
Syntax Transmit	NONBTB [Data]
Syntax Receive	NONBTB <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 1
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☒
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		35AA (hex)	
PROFIBUS PNU:		1770 (dec) IND = 1 (de	
DPR Objekt Nr:		170	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Mains-BTB Check On/Off
-------------------	------------------------

Description

If the AC main power is missing, then the output stage will produce a fault message F16 (Mains-RTO) if the drive is enabled. To disable this response set NONBTB = 1. In the case the drive is powered direct by DC power this setting is required.

See also [UVLTMODE].

ASCII -Command	NREF
Syntax Transmit	NREF [Data]
Syntax Receive	NREF <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 20
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Setting-up Mode

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	P 3027		
CAN Object No:	35AD (hex)		
PROFIBUS PNU:	1773 (dec) IND = 1 (de		
DPR Objekt Nr:	173		
Data Type BUS/DPR	Integer8		
Weighting 10^3			

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Homing Mode
-------------------	-------------

Description

For linear movements, before a positioning movement can be started, a homing operation must be carried out. The reference point set in this operation is valid until the next hardware reset of the amplifier. An attempt to start positioning without a reference point being set causes a warning (LCD display n09). Any previously-set reference point is cancelled before the homing operation begins. A preset zero-point offset is taken into account for the position output and display. Exception: Homing=5. In this case, the true current position is displayed. You can shift the zero-crossing point of the motor shaft within one turn by using |ENCZERO|. Zero-point recognition: The reference point is set to the first zero-crossing point of the feedback unit (zero mark) after recognition of the reference switch transition. Two-pole resolvers and all encoders have just one zero-crossing per turn, so the positioning at the zero mark is unambiguous within a motor turn. For four-pole resolvers, there are two zero-crossings per turn. For six-pole resolvers, there are three zero-crossings per turn. If the transition of the reference switch lies very close to the zero-crossing point of the feedback unit, the positioning to the zero mark can vary by one motor turn. The repetition accuracy of homing operations made without zero-point recognition depends on the traversing velocity and the mechanical design of the reference or limit switch. For homing modes 1 and 3, a digital input must be configured as a zero-mark input (home position) (|INxMODE|=12 or I/O expansion card). For homing modes 2 and 4, a digital input must be configured as a hardware limit switch (see also |IN3MODE| or |IN4MODE|). For homing modes 1, 2, 3, 4, 5, and 7, the setting of the zero-pulse offset for the Encoder Equivalent Output (EEO) output is taken into account (the zero point is set so both the output of the zero pulse and the display of the zero position appear at zero-pulse offset). The setting of the reference offset (|ROFFS|) is taken into account for all homing modes. The zero point is assigned to a freely chosen absolute position value.

If a multiturn encoder is used, every homing move can be started. If the homing move is ready, |RSOFFS| is calculated automatically and a |SAVE| command is executed.

Wenn the drive is switched off and on, the drive has the same position.

See also |REFMODE|, |VREF|

Zustand	Short Description	Additional Description
NREF=0	Set Reference at actual position	The actual position becomes the reference point (the target and the actual position are set to ROFFS). The distance between the actual and the target position is lost.

NREF=1	Traverse to the reference switch with zero-mark recognition.	The drive starts a move using DREF , until a positive edge at the reference switch is detected. Then the distance to the next zero point of the resolver is calculated and a move to this position is started. If the reference switch is present (input signal = high), a move in the opposite direction of DREF is started until a negative edge is detected. Then the homing move is started. If a hardware limit switch is detected (start of the homing move behind the reference switch), the direction is changed and a move is started, until a positive and a negative level edge is detected at the reference switch. Then the homing move is started. At the end of the homing move, the target and the actual position are set to ROFFS .
NREF=2	Move to hardware limit-switch, with zero-mark recognition.	The drive starts a move using DREF until the hardware limit switch is reached. Then the direction is changed and the drive moves to the next zero point of the resolver. At the end of the homing move, the target and the actual position are set to ROFFS .
NREF=3	Move to reference switch, without zero-mark recognition.	The drive starts a move using DREF , until a positive edge at the reference switch is detected. The position at the edge of the reference move is equivalent to ROFFS . Then the drive stops. If the reference switch is present (input signal = high), a move in the opposite direction of DREF is started until a negative edge is detected. Then the homing move is started. If a hardware limit switch is detected (start of the homing move behind the reference switch), the direction is changed and a move is started, until a positive and a negative level edge is detected at the reference switch. Then the homing move is started. The real stop position is not the edge of the reference switch and depends on the selected speed and the deceleration ramp.
NREF=4	Move to hardware limit-switch, without zero-mark recognition.	The drive starts a move using DREF , until the hardware limit switch is detected. Then the direction is changed and a move is started until the hardware limit switch is high again. The position at the edge of the hardware limit switch is equivalent to ROFFS . Then the drive stops. The real stop position is not the edge of the hardware limit switch and depends on the selected speed and the deceleration ramp.
NREF=5	Move to the next zero-mark of the feedback unit.	Homing to the next zero point of the resolver. The moving direction is given by variable DREF . DREF =0 negative DREF =1 positive DREF =2 the direction is given by the shortest distance.
NREF=6	Set Reference at actual position, without loosing target position	The actual position becomes the reference point (the position setpoint and the actual position are set to ROFFS). The difference to NREF=0 is, that the distance between target and actual position is not lost (position error).

NREF=7	Move to mechanical stop with zero-mark recognition	When the homing mode 7 is started, the peak current limit threshold IPEAK is set to REFIP (peak current for the homing mode in A) in the direction given by DREF (DREF =0 positive, DREF =1 negative). When the drive moves the motor, the contouring error is monitored and if the error becomes higher than PEMAX / 2 (half of the contouring error window), the direction is changed and a move to the next zero point of the resolver is started. The motor stops in that position and sets the actual and the target position to ROFFS . The peak current of the drive is set back to the original value of IPEAK .
NREF=8	Move to absolute SSI-position	When a homing mode 8 is started, the actual position of an external Multiturn SSI encoder (selected by GEARMODE) is read, calculated with GEARI and GEARO to internal counts and an offset value ROFFSSSI is added. The result is a target position for a motion task that is started. When the target position is reached, the IN-POSITION bit is set. This function is done for a gantry application with multiturn encoder feedback and coupling of the two drive using SSI multiturn,
NREF=9	Move to mechanical stop without zero-mark recognition	When the homing mode 9 is started, the peak current limit threshold IPEAK is set to REFIP (peak current for the homing mode in A) in the direction given by DREF (DREF =0 positive, DREF =1 negative). When the drive moves the motor, the contouring error is monitored and if the error becomes higher than PEMAX / 2 (half of the contouring error window), this position is used to set the actual and the target position to ROFFS . The peak current of the drive is set back to the original value of IPEAK .

ASCII -Command	NREFMT
Syntax Transmit	NREFMT [Data]
Syntax Receive	NREFMT <Data>
Type	Variable rw
Format	Integer16
DIM	
Range	0 ... 511
Default	0
Opmode	8
Drive Status	
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36D2 (hex)
PROFIBUS PNU:	1666 (dec) IND = 17 (d)
DPR Objekt Nr:	466

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Homing wih following motion task
-------------------	----------------------------------

Description

The command NREFMT will automatically start a motion task at the end of homing.

The parameter NREFMT is a bit-variable (16 bit)

FEDCBA9876543210
xxxxxxxxcnnnnnnnn

Bits 0..7 (nnnnnnnn) number of the automatic started motion task
number = 0 no motion task will be started.

Bit 8 =0 motion task nn will be startet after the motor stopped. The bits "homing active=0" and "homing finnished=1" are set before motion task nn is started.

=1 motion task nn starts immediately. The bits "homing active=0" and "homing finnished=1" are set after motion task nn is finnished.

ASCII -Command	O_ACC
Syntax Transmit	O_ACC1 [Data]
Syntax Receive	O_ACC1 <Data>
Type	Variable rw
Format	Integer32
DIM	ms, mm/sec ^2
Range	0 ... 2147483647
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	35B7 (hex)		
PROFIBUS PNU:	1783 (dec) IND = 1 (de		
DPR Objekt Nr:	183		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Acceleration Time 1 for Motion Task 0
-------------------	---------------------------------------

Description

The command O_ACC1 can be used to define the acceleration ramp for motion task 0 (direct motion block). The scaling of the acceleration time depends on the |PGEARI|, |PGEARO| and |O_C| parameters.

1. Bit 12 of the motion task control variable |O_C| is = 0.
The acceleration time is given in milliseconds for acceleration from 0 to the target speed |O_V|.
2. Bit 12 of the motion task control variable |O_C| is = 1.
The acceleration is given in mm/sec². The resulting run-up time is calculated at the start of the motion task.

Note: If the resolution is set to 1 (|PGEARI|=|PGEARO|) then internal units (counts) will be used for the speed, position and acceleration. In this case, O_ACC1 is interpreted as a run-up time in msec.

ASCII -Command	O_C
Syntax Transmit	O_C [Data]
Syntax Receive	O_C <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	int
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	35B9 (hex)		
PROFIBUS PNU:	1785 (dec) IND = 1 (de		
DPR Objekt Nr:	185		
Data Type BUS/DPR	Integer32		
Weighting 10^3			

Last Change of this Object	1.0
EEPROM	No

Short Description	Control Variable for Motion Task 0
-------------------	------------------------------------

Description

The O_C command defines the type of motion task for the local motion task 0 (direct motion task).

A bit-variable (32 bits) is transferred as the parameter. The individual bits of this variable are interpreted as follows:

see also |o_c_3|

Bit	Significance	Meaning
0	0x0001	Bit for the type of motion task (relative or absolute) (see table 2)
1	0x0002	Bit for the type of the relative motion task (see table 2)
2	0x0004	Bit for the type of the relative motion task (see table 2)
3	0x0008	=0 no next motion task, at the end of the motion task, the drive stops. =1 Next motion task selected, at the end of the motion task, automatically the next motion task is started. The number of the next motion task is given by O_FN This function is only available with linear acceleration.
4	0x0010	Bit for the type of next motion task (see table 3)
5	0x0020	Bit for the type of next motion task (see table 3)
6	0x0040	Bit for the type of next motion task (see table 3)
7	0x0080	Bit for the type of next motion task (see table 3)
8	0x0100	Bit for the type of next motion task (see table 3)
9	0x0200	=0 The motion task is executed via the internal trajectory generator. =1 A stored lookup table profile is started. The table has to be stored in the flash of the drive. O_TAB gives the number of the selected table. The sum of O_ACC and O_DEC gives the moving time of the profile in ms, independent of ACCUNIT .

10	0x0400	=0 The profile is executed in the given direction. =1 The profile is executed in the inverse direction.
11	0x0800	reserved
12	0x1000	reserved
13	0x2000	=0 The target position and target speed of the motion task are in [IncrementsPRBASE] and [InkrementPRBASE / 250us]. They are not internal calculated in other units. The unit IncrementsPRBASE means one turn is equal 2^{PRBASE} increments. =1 The target position and target speed is given in SI units. There must be a calculation with PGEARI and PGEARO to get the internal counts (see also O_S , O_V , PGEARI , PGEARO). If VUNIT <> 0 the speed is given in VUNIT
14	0x4000	=0 The speed that is given in the motion task is the target speed. =1 The target speed is given by the analog setpoint 1. When a motion task is started, the analog input is read and becomes the target speed of the motion task (Scaling: $10V = VSCALE1 $). The absolute of Analog In 1 is used.
15	0x8000	Bit 3 of the type of the relative motion task (see separate table)
16	0x10000	If bit 16 is set a table motion task is started. Bit 9 has to be set to 0.
17	0x20000	=1 Position setpoint in internal increments and in 32 bit format. one turn is equal 2^{32} increments. The speed is monitored in increments 32/250µs.
Table 2		Type of relative/absolute Motion Task
Bit 15/2/1/0	Meaning	
xxx0	Absolute Motion Task, the position value in the motion task is the new target position	
x001	Relative Motion Task, the position value in the motion task is added to the old target position. The target position depends on the IN-POSITION message: IN-POSITION=1 target position = last target position + relative position of the motion task IN-POSITION = 0 target position = actual position + relative position of the motion task	
x011	Relative Motion Task, the position value in the motion task is added to the old target position. target position = last target position + relative position of the motion task	
x101	Relative Motion Task, the position value in the motion task is added to the actual position. target position = actual position + relative position of the motion task	

0111	Relative Motion Task, the position value in the motion task is added to the old target position. target position = last latched position at the positive edge of the input + relative position of the motion task (see object LATCH1P32 , LATCH1N32 , LATCH1P16 , LATCH1N16 , LATCH2P32 , ...)
1111	Relative Motion Task, the position value in the motion task is added to the old target position. target position = latched position at the negative edge of the input + relative move of the motion task (see object LATCH32N)
Table 3 Type of Next motion task	
Bit 8/7/6/5/4	Meaning
00000	Switch over to next motion task with stop. The drive stops at the target position of the actual motion task. Then it starts the next motion task in the sequence.
00001	Switch over to next motion task without stop. The drive moves to the target position with target speed of the actual motion task. Then it starts the next motion task in the sequence.
10001	Switch over to next motion task without stop. The drive calculates the brake point, that the speed of the motor at target position becomes the speed of the next motion task in the sequence.
00010	Switch over to next motion task with stop. The drive stops at the target position of the actual motion task. The next motion task in the sequence is started, if the digital input selected by INxMODE =15 is switched to low.
00110	Switch over to next motion task with stop. The drive stops at the target position of the actual motion task. The next motion task in the sequence is started, if the digital input selected by INxMODE =15 is switched to high.
01000	Switch over to next motion task with stop. The drive stops at the target position of the actual motion task. The next motion task in the sequence is started after the selected delay time defined by O_FT).
01010	Switch over to next motion task with stop. The drive stops at the target position of the actual motion task. The next motion task in the sequence is started after the selected delay time defined by O_FT) or if the digital input selected by INxMODE =15 is set to low.

01110	Switch over to next motion task with stop. The drive stops at the target position of the actual motion task. The next motion task in the sequence is started after the selected delay time defined by O_FT) or if the digital input selected by INxMODE =15 is set to high.
-------	--

ASCII -Command	O_DEC
Syntax Transmit	O_DEC1 [Data]
Syntax Receive	O_DEC1 <Data>
Type	Variable rw
Format	Integer32
DIM	ms, mm/sec ^2
Range	0 ... 2147483647
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	35BA (hex)		
PROFIBUS PNU:	1786 (dec) IND = 1 (de		
DPR Objekt Nr:	186		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Braking Time 1 for Motion Task 0
-------------------	----------------------------------

Description

The command O_DEC1 can be used to define the deceleration (braking) ramp for motion task 0 (direct motion task). The scaling of the deceleration/braking time depends on the |PGEARI|, |PGEARO| and |O_C| parameters.

1. Bit 12 of the motion task control variable |O_C| is = 0.
The braking time is given in milliseconds for deceleration from target speed |O_V| down to 0.
2. Bit 12 of the motion task control variable |O_C| is = 1.
The deceleration is given in mm/sec². The resulting run-down time is calculated at the start of the motion task.

Note: If the resolution is set to 1 (|PGEARI|=|PGEARO|) then internal units (counts) will be used for the speed, position and acceleration. In this case, O_DEC1 is interpreted as a run-down time in msec.

ASCII -Command	O_FN
Syntax Transmit	O_FN [Data]
Syntax Receive	O_FN <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	0, 1, .., 180, 192 .. 255
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		35BC (hex)	
PROFIBUS PNU:		1788 (dec) IND = 1 (de	
DPR Objekt Nr:		188	

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Next Task Number for Motion Task 0
-------------------	------------------------------------

Description

The command O_FN can be used to define the number of the following motion block. This number is only used if bit 3 (next block activated) of the motion block control word is set to 1.

The motion block number can have the following values:

0 - direct motion block

1 ... 180 motion block from the Flash EEPROM

192 ... 255 motion block from the RAM

ASCII -Command	O_FT
Syntax Transmit	O_FT [data]
Syntax Receive	O_FT <data>
Type	Variable rw
Format	Integer16
DIM	ms
Range	1 .. 32767
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		35BD (hex)	
PROFIBUS PNU:		1789 (dec) IND = 1 (de	
DPR Objekt Nr:		189	

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Delay before Next Motion Task
-------------------	-------------------------------

Description

This parameter can be used to delay the start of the next motion task (if one is defined). This parameter is only evaluated if bit 3 (next task activated) and bit 7 (delay time activated) of the motion task control word are set.

ASCII -Command	O_P
Syntax Transmit	O_P [data]
Syntax Receive	O_P <data>
Type	Variable rw
Format	Integer64
DIM	-
Range	long int
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		35BE (hex)	
PROFIBUS PNU:		1790 (dec) IND = 1 (de	
DPR Objekt Nr:		190	

Data Type BUS/DPR	Integer64
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Target Position/Path for Motion Task 0
-------------------	--

Description

The command O_P can be used to define the target position for motion block 0 (direct motion block). Depending on the type of motion task (absolute or relative) this parameter will be interpreted as an absolute target position or a relative path movement. The scaling of the position depends on the |PGEARI|, |PGEARO|, |PRBASE| and |O_C| parameters.

1. Bit 13 of the motion block control word = 0 (given in internal units)

The position /path is given in counts.

Scaling: |PRBASE|=20 -> 1048576 increments per turn

|PRBASE|=16 -> 65536 increments per turn

2. Bit 13 of the motion block control variable is = 1 (taking the resolution into account)

The position is converted according to the following formula:

Position [increments] = |O_P| * |PGEARO| / |PGEARI|

Note: If the resolution is set to 1 (|PGEARI|=|PGEARO|*2^|PRBASE|) then internal units (counts) will be used for the speed, position and acceleration.

ASCII -Command	O_TAB	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☐
Syntax Receive		PROFIBUS	☐ Sercos ☐
Type		SERCOS IDN:	
Format		CAN Object No:	35B8 (hex)
DIM		PROFIBUS PNU:	1784 (dec) IND = 1 (de
Range		DPR Objekt Nr:	184
Default			
Opmode			
Drive Status			
Start Firmware	1.0		
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.0
		EEPROM	
Short Description	select acceleration profile table		

Description
see also >> GUI Onlinehelp >> Acceleration Profile Tables

ASCII -Command	O_V
Syntax Transmit	O_V [data]
Syntax Receive	O_V <data>
Type	Variable rw
Format	Integer32
DIM	-
Range	long int
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	35BF (hex)		
PROFIBUS PNU:	1791 (dec) IND = 1 (de		
DPR Objekt Nr:	191		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Target Speed for Motion Task 0
-------------------	--------------------------------

Description

The command O_V can be used to define the target speed for motion block 0 (direct motion block). The scaling of the speed depends on the |PGEARI|, |PGEARO|, |PRBASE| and |O_C| parameters.

1. Bit 13 of the motion block control word = 0 (given in internal units)

The speed is given in counts.

Scaling: |PRBASE|=20 -> 140/32 increments per rpm

|PRBASE|=16 -> 140/512 increments per rpm

2. Bit 13 of the motion block control variable is = 1 (taking the resolution into account)

The speed is given in the actual VUNIT - units.

On |VUNIT| =0 or 5 the speed is converted according to the following formula:

Speed [increments] = |O_P| * |PGEARO| / |PGEARI| / 4000

Note: If the resolution is set to 1 (PGEARI=PGEARO) then internal units (counts) will be used for the speed.

ASCII -Command	O1
Syntax Transmit	O1 [data]
Syntax Receive	O1 <data>
Type	Variable rw
Format	Integer8
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Digital I/O

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	P 3036 ... 7		
CAN Object No:	35AE (hex)		
PROFIBUS PNU:	1774 (dec) IND = 1 (de		
DPR Objekt Nr:	174		

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	State of Digital Output 1
-------------------	---------------------------

Description

S300:

The O1 command returns the state of the digital output 1 (0 = Low,1 = High).

If no function (|O1MODE|=0) is assigned to digital output 1 , then the High/Low state can be given out at output 1 by using the command "O1 1" or "O1 0".

S700:

The O1 command returns the state of the digital output 1 (0 = Low,1 = High).

If the function (|O1MODE|=23) is assigned to digital output 1 , then the High/Low state can be given out at output 1 by using the command "O1 1" or "O1 0".

ASCII -Command	O10	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	373A (hex)
DIM		PROFIBUS PNU:	1770 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	570
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☒	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	State of digital output		

Description
see |O3_18|

ASCII -Command	O10MODE	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	373B (hex)
DIM		PROFIBUS PNU:	1771 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	571
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☒	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Function of digital output		

Description
see |O3_18MODE|

ASCII -Command	O10TRIG	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	373C (hex)
DIM		PROFIBUS PNU:	1772 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	572
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Auxiliary Variable for digital output		

Description
see |O3_18TRIG|

ASCII -Command	O11	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	373D (hex)
DIM		PROFIBUS PNU:	1773 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	573
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	State of digital output		

Description
see |O3_18|

ASCII -Command	O11MODE	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	373E (hex)
DIM		PROFIBUS PNU:	1774 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	574
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☒	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Function of digital output		

Description
see |O3_18MODE|

ASCII -Command	O11TRIG	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	373F (hex)
DIM		PROFIBUS PNU:	1775 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	575
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Auxiliary Variable for digital output		

Description
see |O3_18TRIG|

ASCII -Command	O12	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	3740 (hex)
DIM		PROFIBUS PNU:	1776 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	576
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	State of digital output		

Description
see |O3_18|

ASCII -Command	O12MODE	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	3741 (hex)
DIM		PROFIBUS PNU:	1777 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	577
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☒	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Function of digital output		

Description
see |O3_18MODE|

ASCII -Command	O12TRIG	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	3742 (hex)
DIM		PROFIBUS PNU:	1778 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	578
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Auxiliary Variable for digital output		

Description
see |O3_18TRIG|

ASCII -Command	O13	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	3743 (hex)
DIM		PROFIBUS PNU:	1779 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	579
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	State of digital output		

Description
see |O3_18|

ASCII -Command	O13MODE	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	3744 (hex)
DIM		PROFIBUS PNU:	1780 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	580
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☒	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Function of digital output		

Description
see |O3_18MODE|

ASCII -Command	O13TRIG	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	3745 (hex)
DIM		PROFIBUS PNU:	1781 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	581
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Auxiliary Variable for digital output		

Description
see |O3_18TRIG|

ASCII -Command	O14	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	3746 (hex)
DIM		PROFIBUS PNU:	1782 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	582
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	State of digital output		

Description
see |O3_18|

ASCII -Command	O14MODE	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	3747 (hex)
DIM		PROFIBUS PNU:	1783 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	583
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☒	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Function of digital output		

Description
see |O3_18MODE|

ASCII -Command	O14TRIG	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	3748 (hex)
DIM		PROFIBUS PNU:	1784 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	584
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Auxiliary Variable for digital output		

Description
see |O3_18TRIG|

ASCII -Command	O15	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	3749 (hex)
DIM		PROFIBUS PNU:	1785 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	585
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	State of digital output		

Description
see |O3_18|

ASCII -Command	O15MODE	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	374A (hex)
DIM		PROFIBUS PNU:	1786 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	586
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☒	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Function of digital output		

Description
see |O3_18MODE|

ASCII -Command	O15TRIG	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	374B (hex)
DIM		PROFIBUS PNU:	1787 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	587
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Auxiliary Variable for digital output		

Description
see |O3_18TRIG|

ASCII -Command	O16	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	374C (hex)
DIM		PROFIBUS PNU:	1788 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	588
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☒	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	State of digital output		

Description
see |O3_18|

ASCII -Command	O16MODE	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	374D (hex)
DIM		PROFIBUS PNU:	1789 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	589
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☒	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Function of digital output		

Description
see |O3_18MODE|

ASCII -Command	O16TRIG	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	374E (hex)
DIM		PROFIBUS PNU:	1790 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	590
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Auxiliary Variable for digital output		

Description
see |O3_18TRIG|

ASCII -Command	O17	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	374F (hex)
DIM		PROFIBUS PNU:	1791 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	591
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☒	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	State of digital output		

Description
see |O3_18|

ASCII -Command	O17MODE	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	3750 (hex)
DIM		PROFIBUS PNU:	1792 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	592
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☒	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Function of digital output		

Description
see |O3_18MODE|

ASCII -Command	O17TRIG	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	3751 (hex)
DIM		PROFIBUS PNU:	1793 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	593
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Auxiliary Variable for digital output		

Description
see |O3_18TRIG|

ASCII -Command	O18	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	3752 (hex)
DIM		PROFIBUS PNU:	1794 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	594
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	State of digital output		

Description
see |O3_18|

ASCII -Command	O18MODE
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3753 (hex)
PROFIBUS PNU:	1795 (dec) IND = 17 (d)
DPR Objekt Nr:	595

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Function of digital output
-------------------	----------------------------

Description
see |O3_18MODE|

ASCII -Command	O18TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3754 (hex)
PROFIBUS PNU:	1796 (dec) IND = 17 (d)
DPR Objekt Nr:	596

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Auxiliary Variable for digital output
-------------------	---------------------------------------

Description
see |O3_18TRIG|

ASCII -Command	O1MODE
Syntax Transmit	O1MODE [Data]
Syntax Receive	O1MODE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 50
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☒
Function Group	Digital I/O

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	P 3005 ... 6		
CAN Object No:	35AF (hex)		
PROFIBUS PNU:	1775 (dec) IND = 1 (de		
DPR Objekt Nr:	175		
Data Type BUS/DPR	Integer8		
Weighting 10^3			

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Function of Digital Output 1
-------------------	------------------------------

Description

The O1 command returns the state of the digital output 1 (0 = Low, 1 = High).

If no function is assigned to digital output 1 (O1MODE=0), then the High/Low state can be given out at output 1 by using the command "[O1| 1" or "[O1| 0".

Zustand	Function	Description
O1MODE=0	Off	OFF The state of the digital output 1 can be set/cleared by RS232/Fieldbus or Slot board
O1MODE=1	v_act< O1TRIG	As long as the absolute value for the motor velocity is lower than a preset value (O1TRIG), a HIGH-signal will be output. After the function has been selected you can enter the velocity in rpm in O1TRIG . The output is high, if V < O1TRIG and becomes low, if V > O1TRIG + 0.01 * MSPEED .
O1MODE=2	v_act> O1TRIG	As long as the absolute value for the motor velocity is higher than a preset value (O1TRIG), a HIGH-signal will be output. After the function has been selected you can enter the velocity in rpm in O1TRIG . The output is high, if V > O1TRIG and becomes low, if V < O1TRIG + 0.01 * MSPEED .
O1MODE=3	Mains-RTO	This signals the operational readiness of the SERVOSTAR™ 600 power output stage. After switching on the mains supply, a HIGH-signal is output until the DC-link circuit is fully charged up. A LOW-signal is output when the charging of the DC-link circuit is finished. If the DC-link voltage falls below VBUSMIN value, then a HIGH-signal will be output. The "Undervoltage" monitoring is inactive.
O1MODE=4	Regen off	Signals if the preset regen power (screen page "Basic Setup") is exceeded.

O1MODE=5	Sw_limit	This produces a HIGH-signal if a software limit-switch is reached (a preset function of the corresponding position register, set to “SW limit-switch 1” or “SW limit-switch 2” – the function is defined in the screen page “Position”). A motion task in the opposite direction resets the output.
O1MODE=6	Pos.>x	If the position (angular position of the motor shaft) exceeds a preset value (O1TRIG), a HIGH-signal will be output. After the function has been selected, you can enter the signaling position in increment (a number or fraction of motor turns N) as O1TRIG . Make the calculation according to the following equation: $x = 1048576 * N * \text{Inkr.}$ Maximum possible entry value: $x = 2^{31} = 2147483648$, this corresponds to $N = 2048$
O1MODE=7	InPos	When the target position for a motion task has been reached (the InPosition window PEINPOS), this is signaled by the output of a HIGH-signal. A cable break will not be detected. The width of the InPosition window for all the valid motion tasks is entered in the “Position data” screen page. If a sequence of motion tasks is performed one after another, then the signal for reaching the final position of the motion-task sequence will be output (target position of the last motion task). Signaling that the target position of each motion task has been reached, in a sequence of motion tasks, can be achieved with the function “16, Next_InPos”.
O1MODE=8	I_act< O1TRIG	The output is a HIGH-signal, as long as the absolute r.m.s. value of the actual current is lower than a defined value in mA (O1TRIG). After the function has been selected, you can enter the current value as O1TRIG in mA.
O1MODE=9	I_act> O1TRIG	The output is a HIGH-signal, as long as the absolute r.m.s. value of the actual current is higher than a defined value in mA (O1TRIG). After the function has been selected, you can enter the current value as O1TRIG in mA.
O1MODE=10	Error	If the position goes outside the preset contouring-error window, this is indicated by a LOW-signal. The width of the contouring-error window (PEMAX) is entered in the screen page “Position” for all the valid motion tasks.
O1MODE=11	I2T	If the preset I2T monitoring threshold (I2TLIM) is reached (screen page “Current”) this is indicated by a HIGH-signal.
O1MODE=12		
O1MODE=13		
O1MODE=14		
O1MODE=15		

O1MODE=16	Next-InPos	The start of each motion task in an automatically executed sequence of motion tasks is signalled by an inversion of the output signal. The output produces a Low signal at the start of the first motion task of the motion task sequence. The type of message can be set by IN2PM
O1MODE=17	Error/Warn	The output produces a HIGH-signal if an error or a warning message is signaled by the servo amplifier. A list of the error messages can be found under ERRCODE . n32 has no effect to the output.
O1MODE=18	Error	The output produces a HIGH-signal if an error is signaled by the servo amplifier. A list of the error messages can be found under ERRCODE
O1MODE=19	DC_Link> O1TRIG	A HIGH-signal is output if the actual value of the DC-link voltage is higher than a defined value in volts (O1TRIG). After the function has been selected, you can enter the voltage value as O1TRIG in Volt..
O1MODE=20	DC_Link < O1TRIG	A HIGH-signal is output if the actual value of the DC-link voltage is lower than a defined value in volts (O1TRIG). After the function has been selected, you can enter the voltage value in O1TRIG in Volt.
O1MODE=21	ENABLE	A HIGH-signal is output if the servo amplifier is enabled. To obtain the enable, the external Hardware Enable signal must be present, the Enable status must be set in the setup software (or via the fieldbus interface) and no errors must be present that would cause an automatic internal disabling of the servo amplifier. If function OxMODE = is selected, the enable signal is high, if the line voltage is applied and the charging of the link capacitors is finished. The drive is disabled, if the DC-link voltage goes under the threshold VBUSMIN .
O1MODE=22	Zero_pulse	The zero mark/pulse (HIGH-signal) is indicated by the encoder-emulation. This function is only use-ful at very low velocities. $V_{max} = 15000 / ENCOUT $ e.g. ENCOUT =256 Pulses/Rev $V_{max} = 58 \text{ rpm}$ O1TRIG can be used to stretch the zero pulse length in positive direction. Important: The used LSB have to be set to 1, allowed O1TRIG values are only 2^{n-1} (n=1....32) example O1TRIG=1,3,7,15,31...). The calculation is done by formula $O1TRIG / 2^{32} * 360^\circ$. Example 1: O1TRIG=1073741823 = 0x3FFFFFFF. $1073741823 * 360^\circ / 2^{32} = 90^\circ \rightarrow$ A HIGH signal is monitored on 0 - 90° Example 2: O1TRIG = 134217727 = 0x7FFFFFFF $134217727 * 360^\circ / 2^{32} = 11,25^\circ \rightarrow$ A HIGH signal is monitored on 0 - 11,25°

O1MODE=23	Slot-DPR	This configuration enables the possibility to output a state from the Slot board (mem DPR Slot Board Offset 0x3E4). If no Slot board is available, this configuration is equal to O1MODE=0. If a Device-Net option board is plugged in the drive, this setting enables access of Device-Net to digital output 1
O1MODE=24	Ref_OK	The output signals High, if a reference point is available. Reference traverse (homing) has been carried out, or a reference point has been set. (see NREF)
O1MODE=28		
O1MODE=29		- .
O1MODE=30		
O1MODE=31	Analog In 1 < O1TRIG	The output is high, if the Analog In voltage at Analog In 1 is lower than the threshold O1TRIG . The auxiliary variable O1TRIG is given in mV (with sign).
O1MODE=32	Analog In 1 > O1TRIG	The output is high, if the Analog In voltage at Analog In 1 is higher than the threshold O1TRIG . The auxiliary variable O1TRIG is given in mV (with sign).
O1MODE=33	Analog In 2 < O1TRIG	The output is high, if the Analog In voltage at Analog In 2 is lower than the threshold O1TRIG . The auxiliary variable O1TRIG is given in mV (with sign).
O1MODE=34	Analog In 2 > O1TRIG	The output is high, if the Analog In voltage at Analog In 2 is higher than the threshold O1TRIG . The auxiliary variable O1TRIG is given in mV (with sign).
O1MODE=35	Internal Enable	The state of the internal ENABLE signal is mirrored on the digital output. If the settings are: MBRAKE =0, STOPMODE =0 and ACTFAULT =0, the function is similar to O1MODE =21. If one of the three variables is "1", the output changes to low, when the drives starts to dec to "0". If O1MODE =21, the output is low, if the drive has stopped and has disabled the output stage.
O1MODE=36	Logical OR: DRVSTAT - O1TRIG	This function makes a OR operation between the Bit-variable DRVSTAT and a Bit mask given by O1TRIG . The result is present at output 1.
O1MODE=37	Logical AND: DRVSTAT - O1TRIG	This function makes a AND operation between the Bit-variable DRVSTAT and a Bit mask given by O1TRIG . The result is present at output 1.
O1MODE=38	Logical OR: TRJSTAT - O1TRIG	This function makes a OR operation between the Bit-variable TRJSTAT and a Bit mask given by O1TRIG . The result is present at output 1.
O1MODE=39	Logical AND: TRJSTAT - O1TRIG	This function makes a AND operation between the Bit-variable TRJSTAT and a Bit mask given by O1TRIG . The result is present at output 1.
O1MODE=40	Logical OR: POSRSTAT - O1TRIG	This function makes a OR operation between the Bit-variable POSRSTAT and a Bit mask given by O1TRIG . The result is present at output 1.
O1MODE=41	Logical AND: POSRSTAT - O1TRIG	This function makes a AND operation between the Bit-variable POSRSTAT and a Bit mask given by O1TRIG . The result is present at output 1.

O1MODE=42	Internal temperature warning	This function enables a temperature warning. If one of the three internal measured temperatures reaches the trip level, the digital output ist set to high. After the selected delay time given in O1TRIG the drive generates a error message and disables the output stage. The delay time has the range 0...30000 msec and effects following temperatures: Motor temperature TEMPM , threshold MAXTEMPM Heatsink temperature TEMPH , Threshold MAXTEMPH Ambient temperature TEMPE , threshold MAXTEMPE
O1MODE=43	The sign of the actual velocity	OUTPUT1 = 1 V < - VEL0 OUTPUT1 = 0 V > - VEL0
O1MODE=44	Velocity In-Position (active high)	The output 1 is set, if the absolute of the difference between the internal velocity command and the actual velocity is smaller than O1TRIG . The size of the window (O1TRIG) is given in valid velocity units (VUNIT).
O1MODE=45	Velocity In-Position (aktive low)	The output 1 is set, if the absolute of the difference between the internal velocity command and the actual velocity is bigger than O1TRIG . The size of the window (O1TRIG) is given in valid velocity units (VUNIT). (4.30)
O1MODE=46	Current in Window (low active)	The digital output 1 is set, if the absolute of the difference between current command and actual value is smaller than the window, defined by O1TRIG . The window is given in mA.
O1MODE=47	Current not in Window (low active)	The digital output 1 is set, if the absolute of the difference between current command and actual value is greater than the window, defined by O1TRIG . The window is given in mA.
O1MODE=48	Logical NOR: DRVSTAT - O1TRIG	This function makes a inverted OR operation between the Bit-variable DRVSTAT and a Bit mask given by O1TRIG . The result is present at output 1.
O1MODE=49	Logical NAND: DRVSTAT - O1TRIG	This function makes a inverted AND operation between the Bit-variable DRVSTAT and a Bit mask given by O1TRIG . The result is present at output 1.
O1MODE=50	Logical NOR: TRJSTAT - O1TRIG	This function makes a inverted OR operation between the Bit-variable TRJSTAT and a Bit mask given by O1TRIG . The result is present at output 1.
O1MODE=51	Logical NAND: TRJSTAT - O1TRIG	This function makes a AND operation between the Bit-variable TRJSTAT and a Bit mask given by O1TRIG . The result is present at output 1.
O1MODE=52	Logical AND: POSRSTAT - O1TRIG	same as O1MODE = 41 but the output is for PTBASE * 250 us on high level
O1MODE=53		

O1MODE=54	prepared for moving	version >=1.21 The output is high if all following conditions are true software-enable set no error DC link loaded (VBUS > VBUSMIN) no contouring error (Warnung n03)
O1MODE=55	Actual master-slave status	Version >=2.13 Output=1 The slave is in master/slave modus. This can be: 1. synchroize up to the master speed 2. following the master-position 3. Declutch the master slave mode Ausgang=0 - None of the master slave modes is active. The master pulses are ignored.1 see also function INxMODE =42,43
O1MODE=56	Actual master-slave status	Output=1 OPMODE =4 AND within 16 ms no new master command value AND the absolute value of the following error PE smaller than value PEINPOS

ASCII -Command	O1TRIG
Syntax Transmit	O1TRIG [Data]
Syntax Receive	O1TRIG <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	long int
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Digital I/O

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	P 3007 ...8		
CAN Object No:	35B0 (hex)		
PROFIBUS PNU:	1776 (dec) IND = 1 (de		
DPR Objekt Nr:	176		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Auxiliary Variable for O1MODE
-------------------	-------------------------------

Description
The function of the auxiliary variable O1TRIG depends on the configuration of |O1MODE|. see |O1MODE|

ASCII -Command	O2
Syntax Transmit	O2 [Data]
Syntax Receive	O2 <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	P 3036 ... 7		
CAN Object No:	35B1 (hex)		
PROFIBUS PNU:	1777 (dec) IND = 1 (de		
DPR Objekt Nr:	177		

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	State of Digital Output 2
-------------------	---------------------------

Description
see |O1|

ASCII -Command	O2MODE
Syntax Transmit	O2MODE [Data]
Syntax Receive	O2MODE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 50
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☒
Function Group	Digital I/O

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	P 3005 ... 6		
CAN Object No:	35B2 (hex)		
PROFIBUS PNU:	1778 (dec) IND = 1 (de		
DPR Objekt Nr:	178		
Data Type BUS/DPR	Integer8		
Weighting 10^3			

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Function of Digital Output 2
-------------------	------------------------------

Description

The O2MODE command can be used to configure the function of the digital output OUT2. The amplifier must be switched off and then on again after an alteration of this parameter.
The following functions can be configured:

Zustand	Function	Description
O2MODE=0	Off	OFF The state of the digital output 1 can be set/cleared by RS232/Fieldbus or Slot board
O2MODE=1	v_act< O2TRIG	As long as the absolute value for the motor velocity is lower than a preset value (O2TRIG), a HIGH-signal will be output. After the function has been selected you can enter the velocity in rpm in O2TRIG . The output is high, if V < O2TRIG and becomes low, if V > O2TRIG + 0.01 * MSPEED .
O2MODE=2	v_act> O2TRIG	As long as the absolute value for the motor velocity is higher than a preset value (O2TRIG), a HIGH-signal will be output. After the function has been selected you can enter the velocity in rpm in O2TRIG . The output is high, if V > O2TRIG and becomes low, if V < O2TRIG + 0.01 * MSPEED .
O2MODE=3	Mains-RTO	This signals the operational readiness of the SERVOSTAR™ 600 power output stage. After switching on the mains supply, a HIGH-signal is output until the DC-link circuit is fully charged up. A LOW-signal is output when the charging of the DC-link circuit is finished. If the DC-link voltage falls below VBUSMIN value, then a HIGH-signal will be output. The “Undervoltage” monitoring is inactive.
O2MODE=4	Regen off	Signals if the preset regen power (screen page “Basic Setup”) is exceeded.

O2MODE=5	Sw_limit	This produces a HIGH-signal if a software limit-switch is reached (a preset function of the corresponding position register, set to “SW limit-switch 1” or “SW limit-switch 2” – the function is defined in the screen page “Position”). A motion task in the opposite direction resets the output.
O2MODE=6	Pos.>x	If the position (angular position of the motor shaft) exceeds a preset value (O2TRIG), a HIGH-signal will be output. After the function has been selected, you can enter the signaling position in increment (a number or fraction of motor turns N) as O2TRIG . Make the calculation according to the following equation: $x = 1048576 * N * \text{Inkr.}$ Maximum possible entry value: $x = 2^{31} = 2147483648$, this corresponds to $N = 2048$
O2MODE=7	InPos	When the target position for a motion task has been reached (the InPosition window PEINPOS), this is signaled by the output of a HIGH-signal. A cable break will not be detected. The width of the InPosition window for all the valid motion tasks is entered in the “Position data” screen page. If a sequence of motion tasks is performed one after another, then the signal for reaching the final position of the motion-task sequence will be output (target position of the last motion task). Signaling that the target position of each motion task has been reached, in a sequence of motion tasks, can be achieved with the function “16, Next_InPos”.
O2MODE=8	I_act< O2TRIG	The output is a HIGH-signal, as long as the absolute r.m.s. value of the actual current is lower than a defined value in mA (O2TRIG). After the function has been selected, you can enter the current value as O2TRIG in mA.
O2MODE=9	I_act> O2TRIG	The output is a HIGH-signal, as long as the absolute r.m.s. value of the actual current is higher than a defined value in mA (O2TRIG). After the function has been selected, you can enter the current value as O2TRIG in mA.
O2MODE=10	Error	If the position goes outside the preset contouring-error window, this is indicated by a LOW-signal. The width of the contouring-error window (PEMAX) is entered in the screen page “Position” for all the valid motion tasks.
O2MODE=11	I2T	If the preset I2T monitoring threshold (I2TLIM) is reached (screen page “Current”) this is indicated by a HIGH-signal.
O2MODE=12		.
O2MODE=13		
O2MODE=14		
O2MODE=15		

O2MODE=16	Next-InPos	The start of each motion task in an automatically executed sequence of motion tasks is signalled by an inversion of the output signal. The output produces a Low signal at the start of the first motion task of the motion task sequence. The type of message can be set by IN2PM
O2MODE=17	Error/Warn	The output produces a HIGH-signal if an error or a warning message is signaled by the servo amplifier. A list of the error messages can be found under ERRCODE . n32 has no effect to the output.
O2MODE=18	Error	The output produces a HIGH-signal if an error is signaled by the servo amplifier. A list of the error messages can be found under ERRCODE
O2MODE=19	DC_Link> O2TRIG	A HIGH-signal is output if the actual value of the DC-link voltage is higher than a defined value in volts (O2TRIG). After the function has been selected, you can enter the voltage value as O2TRIG in Volt..
O2MODE=20	DC_Link < O2TRIG	A HIGH-signal is output if the actual value of the DC-link voltage is lower than a defined value in volts (O2TRIG). After the function has been selected, you can enter the voltage value in O2TRIG in Volt.
O2MODE=21	ENABLE	A HIGH-signal is output if the servo amplifier is enabled. To obtain the enable, the external Hardware Enable signal must be present, the Enable status must be set in the setup software (or via the fieldbus interface) and no errors must be present that would cause an automatic internal disabling of the servo amplifier. If function OxMODE = is selected, the enable signal is high, if the line voltage is applied and the charging of the link capacitors is finished. The drive is disabled, if the DC-link voltage goes under the threshold VBUSMIN .
O2MODE=22	Zero_pulse	The zero mark/pulse (HIGH-signal) is indicated by the encoder-emulation. This function is only use-ful at very low velocities. $V_{max} = 15000 / ENCOUT $ e.g. ENCOUT =256 Pulses/Rev $V_{max} = 58 \text{ rpm}$ O2TRIG can be used to stretch the zero pulse length in positive direction. Important: The used LSB have to be set to 1, allowed O2TRIG values are only 2^{n-1} (n=1....32) example O2TRIG=1,3,7,15,31...). The calculation is done by formula $O2TRIG / 2^{32} * 360^\circ$. Example 1: O2TRIG=1073741823 = 0x3FFFFFFF. $1073741823 * 360^\circ / 2^{32} = 90^\circ \rightarrow$ A HIGH signal is monitored on 0 - 90° Example 2: O2TRIG = 134217727 = 0x7FFFFFFF $134217727 * 360^\circ / 2^{32} = 11,25^\circ \rightarrow$ A HIGH signal is monitored on 0 - 11,25°

O2MODE=23	Slot-DPR	This configuration enables the possibility to output a state from the Slot board (mem DPR Slot Board Offset 0x3E4). If no Slot board is available, this configuration is equal to O2MODE=0. If a Device-Net option board is plugged in the drive, this setting enables access of Device-Net to digital output 1
O2MODE=24	Ref_OK	The output signals High, if a reference point is available. Reference traverse (homing) has been carried out, or a reference point has been set. (see NREF)
O2MODE=28		
O2MODE=29		
O2MODE=30		
O2MODE=31	Analog In 1 < O2TRIG	The output is high, if the Analog In voltage at Analog In 1 is lower than the threshold O2TRIG . The auxiliary variable O2TRIG is given in mV (with sign).
O2MODE=32	Analog In 1 > O2TRIG	The output is high, if the Analog In voltage at Analog In 1 is higher than the threshold O2TRIG . The auxiliary variable O2TRIG is given in mV (with sign).
O2MODE=33	Analog In 2 < O2TRIG	The output is high, if the Analog In voltage at Analog In 2 is lower than the threshold O2TRIG . The auxiliary variable O2TRIG is given in mV (with sign).
O2MODE=34	Analog In 2 > O2TRIG	The output is high, if the Analog In voltage at Analog In 2 is higher than the threshold O2TRIG . The auxiliary variable O2TRIG is given in mV (with sign).
O2MODE=35	Internal Enable	The state of the internal ENABLE signal is mirrored on the digital output. If the settings are: MBRAKE =0, STOPMODE =0 and ACTFAULT =0, the function is similar to O1MODE =21. If one of the three variables is "1", the output changes to low, when the drives starts to dec to "0". If O1MODE =21, the output is low, if the drive has stopped and has disabled the output stage.
O2MODE=36	Logical OR: DRVSTAT - O2TRIG	This function makes a OR operation between the Bit-variable DRVSTAT and a Bit mask given by O2TRIG . The result is present at output 1.
O2MODE=37	Logical AND: DRVSTAT - O2TRIG	This function makes a AND operation between the Bit-variable DRVSTAT and a Bit mask given by O2TRIG . The result is present at output 1.
O2MODE=38	Logical OR: TRJSTAT - O2TRIG	This function makes a OR operation between the Bit-variable TRJSTAT and a Bit mask given by O2TRIG . The result is present at output 1.
O2MODE=39	Logical AND: TRJSTAT - O2TRIG	This function makes a AND operation between the Bit-variable TRJSTAT and a Bit mask given by O2TRIG . The result is present at output 1.
O2MODE=40	Logical OR: POSRSTAT - O2TRIG	This function makes a OR operation between the Bit-variable POSRSTAT and a Bit mask given by O2TRIG . The result is present at output 1.
O2MODE=41	Logical AND: POSRSTAT - O2TRIG	This function makes a AND operation between the Bit-variable POSRSTAT and a Bit mask given by O2TRIG . The result is present at output 1.

O2MODE=42	Internal temperature warning	This function enables a temperature warning. If one of the three internal measured temperatures reaches the trip level, the digital output ist set to high. After the selected delay time given in O2TRIG the drive generates a error message and disables the output stage. The delay time has the range 0...30000 msec and effects following temperatures: Motor temperature TEMPM , threshold MAXTEMPM Heatsink temperature TEMPH , Threshold MAXTEMPH Ambient temperature TEMPE , threshold MAXTEMPE
O2MODE=43	The sign of the actual velocity	OUTPUT1 = 1 V < - VEL0 OUTPUT1 = 0 V > - VEL0
O2MODE=44	Velocity In-Position (active high)	The output 1 is set, if the absolute of the difference between the internal velocity command and the actual velocity is smaller than O2TRIG . The size of the window (O2TRIG) is given in valid velocity units (VUNIT).
O2MODE=45	Velocity In-Position (aktive low)	The output 1 is set, if the absolute of the difference between the internal velocity command and the actual velocity is bigger than O2TRIG . The size of the window (O2TRIG) is given in valid velocity units (VUNIT).
O2MODE=46	Current in Window (low active)	The digital output 1 is set, if the absolute of the difference between current command and actual value is smaller than the window, defined by O2TRIG . The window is given in mA.
O2MODE=47	Current not in Window (low active)	The digital output 1 is set, if the absolute of the difference between current command and actual value is greater than the window, defined by O2TRIG . The window is given in mA.
O2MODE=48	Logical NOR: DRVSTAT - O2TRIG	This function makes a inverted OR operation between the Bit-variable DRVSTAT and a Bit mask given by O2TRIG . The result is present at output 1.
O2MODE=49	Logical NAND: DRVSTAT - O2TRIG	This function makes a inverted AND operation between the Bit-variable DRVSTAT and a Bit mask given by O2TRIG . The result is present at output 1.
O2MODE=50	Logical NOR: TRJSTAT - O2TRIG	This function makes a inverted OR operation between the Bit-variable TRJSTAT and a Bit mask given by O2TRIG . The result is present at output 1.
O2MODE=51	Logical NAND: TRJSTAT - O2TRIG	This function makes a AND operation between the Bit-variable TRJSTAT and a Bit mask given by O2TRIG . The result is present at output 1.
O2MODE=52	Logical AND: POSRSTAT - O2TRIG	same as O2MODE = 41 but the output is for PTBASE * 250 us on high level
O2MODE=53		

O2MODE=54	prepared for moving	version >=1.21 The output is high if all following conditions are true software-enable set no error DC link loaded (VBUS > VBUSMIN) no contouring error (Warnung n03)
O2MODE=55	master slave status	Version >=2.13: The function O2MODE=55 monitors the actual master slave status at the slave axis. Output=1 The slave is in master/slave modus. This can be: 1. synchroize up to the master speed 2. following the master-position 3. Declutch the master slave mode Ausgang=0 - None of the master slave modes is active. The master pulses are ignored.1 see also function INxMODE =42,43
O2MODE=56	master slave status	Output=1 OPMODE =4 AND within 16 ms no new master command value AND the absolute value of the following error PE smaller than value PEINPOS

ASCII -Command	O2TRIG
Syntax Transmit	O2TRIG [Data]
Syntax Receive	O2TRIG <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	long int
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Digital I/O

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	P 3007 ...8		
CAN Object No:	35B3 (hex)		
PROFIBUS PNU:	1779 (dec) IND = 1 (de		
DPR Objekt Nr:	179		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Auxiliary Variable for O2MODE
-------------------	-------------------------------

Description

The function of the auxiliary variable O2TRIG depends on the configuration of [O2MODE].
see [O2MODE]

ASCII -Command	O3	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	3725 (hex)
DIM		PROFIBUS PNU:	1749 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	549
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	State of digital output		

Description
see |O3_18|

ASCII -Command	O3_18
Syntax Transmit	O1 [data]
Syntax Receive	O1 <data>
Type	Variable rw
Format	Integer8
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Digital I/O

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		35AE (hex)	
PROFIBUS PNU:		1774 (dec) IND = 1 (de	
DPR Objekt Nr:		174	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	State of Digital Output 1
-------------------	---------------------------

Description

The O1 command returns the state of the digital output 1 (0 = Low,1 = High).

If no function is assigned to digital output 1 (|O1MODE|=0), then the High/Low state can be given out at output 1 by using the command "O1 1" or "O1 0".

ASCII -Command	O3_18MODE
Syntax Transmit	O1MODE [Data]
Syntax Receive	O1MODE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 50
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☒
Function Group	Digital I/O

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		35AF (hex)	
PROFIBUS PNU:		1775 (dec) IND = 1 (de	
DPR Objekt Nr:		175	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	2.1
EEPROM	Yes

Short Description	Function of Digital Output 1
-------------------	------------------------------

Description

The O1 command returns the state of the digital output 1 (0 = Low, 1 = High).

If no function is assigned to digital output 1 (O1MODE=0), then the High/Low state can be given out at output 1 by using the command "[O1| 1" or "[O1| 0".

ASCII -Command	O3_18TRIG
Syntax Transmit	O1TRIG [Data]
Syntax Receive	O1TRIG <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	long int
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Digital I/O

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	35B0 (hex)		
PROFIBUS PNU:	1776 (dec) IND = 1 (de		
DPR Objekt Nr:	176		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Auxiliary Variable for O1MODE
-------------------	-------------------------------

Description

The function of the auxiliary variable O1TRIG depends on the configuration of |O1MODE|. see |O1MODE|

ASCII -Command	O3MODE	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	3726 (hex)
DIM		PROFIBUS PNU:	1750 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	550
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☒	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Function of digital output		

Description
see |O3_18MODE|

ASCII -Command	O3TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3727 (hex)
PROFIBUS PNU:	1751 (dec) IND = 17 (d)
DPR Objekt Nr:	551

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Auxiliary Variable for digital output
-------------------	---------------------------------------

Description
see |O3_18TRIG|

ASCII -Command	O4	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	3728 (hex)
DIM		PROFIBUS PNU:	1752 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	552
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	State of digital output		

Description
see |O3_18|

ASCII -Command	O4MODE	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	3729 (hex)
DIM		PROFIBUS PNU:	1753 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	553
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☒	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Function of digital output		

Description
see |O3_18MODE|

ASCII -Command	O4TRIG	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	372A (hex)
DIM		PROFIBUS PNU:	1754 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	554
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Auxiliary Variable for digital output		

Description
see |O3_18TRIG|

ASCII -Command	O5	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	372B (hex)
DIM		PROFIBUS PNU:	1755 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	555
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	State of digital output		

Description
see |O3_18|

ASCII -Command	O5MODE	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	372C (hex)
DIM		PROFIBUS PNU:	1756 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	556
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☒	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Function of digital output		

Description
see |O3_18MODE|

ASCII -Command	O5TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	372D (hex)
PROFIBUS PNU:	1757 (dec) IND = 17 (d)
DPR Objekt Nr:	557

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Auxiliary Variable for digital output
-------------------	---------------------------------------

Description
see |O3_18TRIG|

ASCII -Command	O6	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	372E (hex)
DIM		PROFIBUS PNU:	1758 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	558
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	State of digital output		

Description
see |O3_18|

ASCII -Command	O6MODE	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	372F (hex)
DIM		PROFIBUS PNU:	1759 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	559
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☒	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Function of digital output		

Description
see |O3_18MODE|

ASCII -Command	O6TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3730 (hex)
PROFIBUS PNU:	1760 (dec) IND = 17 (d)
DPR Objekt Nr:	560

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Auxiliary Variable for digital output
-------------------	---------------------------------------

Description
see |O3_18TRIG|

ASCII -Command	O7	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	3731 (hex)
DIM		PROFIBUS PNU:	1761 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	561
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	State of digital output		

Description
see |O3_18|

ASCII -Command	O7MODE	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	3732 (hex)
DIM		PROFIBUS PNU:	1762 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	562
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☒	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Function of digital output		

Description
see |O3_18MODE|

ASCII -Command	O7TRIG	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	3733 (hex)
DIM		PROFIBUS PNU:	1763 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	563
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Auxiliary Variable for digital output		

Description
see |O3_18TRIG|

ASCII -Command	O8	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	3734 (hex)
DIM		PROFIBUS PNU:	1764 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	564
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	State of digital output		

Description
see |O3_18|

ASCII -Command	O8MODE	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	3735 (hex)
DIM		PROFIBUS PNU:	1765 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	565
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☒	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Function of digital output		

Description
see |O3_18MODE|

ASCII -Command	O8TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3736 (hex)
PROFIBUS PNU:	1766 (dec) IND = 17 (d)
DPR Objekt Nr:	566

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Auxiliary Variable for digital output
-------------------	---------------------------------------

Description
see |O3_18TRIG|

ASCII -Command	O9	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	3737 (hex)
DIM		PROFIBUS PNU:	1767 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	567
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	State of digital output		

Description
see |O3_18|

ASCII -Command	O9MODE	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format		CAN Object No:	3738 (hex)
DIM		PROFIBUS PNU:	1768 (dec) IND = 17 (d)
Range		DPR Objekt Nr:	568
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☒	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.2
		EEPROM	
Short Description	Function of digital output		

Description
see |O3_18MODE|

ASCII -Command	O9TRIG
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3743 (hex)
PROFIBUS PNU:	1779 (dec) IND = 17 (d)
DPR Objekt Nr:	579

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	

Short Description	Auxiliary Variable for digital output
-------------------	---------------------------------------

Description
see |O3_18TRIG|

ASCII -Command	OCOPY
Syntax Transmit	OCOPY <Data> [- Data] <data>
Syntax Receive	OCOPY <Data> <Data>
Type	Command
Format	Integer8 Integer8
DIM	-
Range	0,1,...,180,192..255
Default	-
Opmode	8
Drive Status	Enabled (only RAM) / Disabled
Start Firmware	1.0
Configuration	☐
Function Group	Parameter Motion Task

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	-
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	No

Short Description	Save/copy Motion Tasks
-------------------	------------------------

Description

The OCOPY command can be used to copy motion tasks from one storage location to another. The motion block number can have the following values:

0 - direct/local motion block

1 ... 200 motion blocks from the ROM. The ROM motion blocks are stored in a segment of the internal Flash EEPROM. They remain in the amplifier memory even after the 24V supply has been switched off. Write access to these motion blocks is only permitted if the output stage has been disabled.

201 ... 300 motion blocks from the RAM. The RAM motion blocks can also be written while the output stage is enabled. But the contents of these motion blocks will be lost if the 24V supply is switched off. When the controller is switched on, the RAM motion blocks will be initialized with the contents of ROM motion blocks 1 ... 64.

e.g.

OCOPY 0 1 save the local motion block (direct motion block /RAM) as ROM motion task 1

(The output stage must be inhibited while this command is carried out)

OCOPY 1 201 copy the first ROM motion block to the RAM (number 201)

OCOPY 1 - 16 201 copy ROM motion blocks 1 ... 16 to the RAM (201 ... 216)

ASCII -Command	OLIST
Syntax Transmit	OLIST [Data] [Data]
Syntax Receive	OLIST <Data>
Type	Multi-line Return Command
Format	String
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	List of Motion Task Data
-------------------	--------------------------

Description

The command "OLIST x number" is used to output the contents of "number" motion blocks (= motion orders) one after another, starting with block "x". The interpretation and sequence of the parameters that are shown corresponds to the parameters of the |ORDER| command.

If the "number" parameter is missing, then just the contents of motion block "x" will be shown.

If both the "x" and the "number" parameter are missing, then the contents of all the valid motion blocks will be shown (i.e. motion blocks with valid data and correct checksums).

ASCII -Command	OPMODE
Syntax Transmit	OPMODE [Data]
Syntax Receive	OPMODE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 1, .., 8
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Amplifier

Available in	S300/700	
MMI	☒	CAN-Bus ☒
PROFIBUS	☒	Sercos ☒
SERCOS IDN:	32 + 33	
CAN Object No:	35B4 (hex)	
PROFIBUS PNU:	1780 (dec) IND = 1 (de	
DPR Objekt Nr:	180	
Data Type BUS/DPR	Integer8	
Weighting 10^3		

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Operating Mode
-------------------	----------------

Description

The OPMODE command is used to set the operating mode (basic function) for the amplifier. This operating mode can be changed over at any time, through the fieldbus interface or the digital I/O (|INxMODE|=24). The following settings are possible:

Zustand	Short Description	Description
OPMODE=0	Velocity control -digital command	Digital (rotational) velocity There are different possibilities to generate a velocity command: - RS232 Interface ("J" command) - Fieldbus Interface (PROFIBUS, CANopen, SERCOS, DPR Slot boards)
OPMODE=1	Velocity control -analog command	Analog (rotational) velocity The velocity setpoint is generated by the Analog In s 1/2. The configuration is done with ANCNFG and INxMODE =8.
OPMODE=2	Current control -digital command	Digital torque The current setpoint can be generated by: - RS232 Interface ("T" command) - Fieldbus Interface (PROFIBUS, CANopen, SERCOS, DPR Slot boards)
OPMODE=3	Current control -analog command	Analog torque The current command is generated by the Analog In s 1/2. The configuration is done with ANCNFG and INxMODE =8.
OPMODE=4	Electronic Gearing (Master/Slave)	Position: electr. gearing The target position is generated by an external encoder. The type of the activated interface is selected by GEARMODE .

OPMODE=5	External Trajectory	Position: ext. position nodes The target position is generated by fieldbus (PROFIBUS, CANopen or DRP Slot board). The cycle time for writing the new position can be selected with the command PTBASE in 250µs steps. The position controller brings the actual position to the new target position in the selected time. When using ANCNFG=8, the target position is given by the Analog In 1. The analog voltage is read every 250µs and is used as target position for the position controller. The scaling of the analog input voltage is done with SRND and ERND . Before this function is active, a homing move has to be completed.
OPMODE=6	SERCOS control	SERCOS control
OPMODE=7	Reserved	
OPMODE=8	Motion Tasks	Position: motion blocks This setting allows the starting of motion tasks and also the homing moves.

ASCII -Command	OPTION
Syntax Transmit	OPTION
Syntax Receive	OPTION <Data>
Type	Variable ro
Format	Integer16
DIM	-
Range	int (=Word)
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		35B5 (hex)	
PROFIBUS PNU:		1781 (dec) IND = 1 (de	
DPR Objekt Nr:		181	

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	2.2
EEPROM	No

Short Description	Option Slot ID
-------------------	----------------

Description

The OPTION command returns the identification for the slot card that has been detected. The following IDs are possible at present:

H0000 no slot card detected

H01xx I/O-expansion card

H0Cxx PROFIBUS

H03xx SERCOS

H06xx kundenspezifisch

H8100 kundenspezifisch

H8200 kundenspezifisch

H8300 kundenspezifisch

H88xx EtherCat

The least significant 8 bits (xx) indicate the hardware revision of the corresponding card.

ASCII -Command	ORDER
Syntax Transmit	ORDER [Data1...Data10]
Syntax Receive	ORDER <Data1...Data10>
Type	Command
Format	Integer32 ... Integer32
DIM	-
Range	0 .. 200, 201 .. 300
Default	-
Opmode	8
Drive Status	Enabled (only RAM) / Disabled
Start Firmware	1.0
Configuration	☐
Function Group	Parameter Motion Task

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	
Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Set Motion Task Parameters
-------------------	----------------------------

Description

The ORDER command can be used to define any RAM/ROM motion task (= order). The ORDER command can be used in one of three forms:

ORDER the contents of the direct motion task (nr = 0) are shown
 ORDER nr the contents of motion task number "nr" are shown
 ORDER nr o_p o_v o_c o_acc o_dec o_tab reserved o_fn o_ft = definition of motion task "nr"

The "nr" parameter specifies the number of the motion task that is to be defined. The motion task number can have the following values:

0 - direct/local motion task

1 ... 200 motion tasks from the ROM.

The ROM motion tasks are stored in a segment of the internal Flash EEPROM. They remain in the amplifier memory even after the 24V supply has been switched off. Write access to these motion tasks is only permitted if the output stage has been disabled.

201 ... 300 motion tasks from the RAM.

The RAM motion tasks can also be written while the output stage is enabled. But the contents of these motion tasks will be lost if the 24V supply is switched off. When the controller is switched on, the RAM motion tasks will be initialized with the contents of ROM motion tasks 1 ... 100.

The individual elements o_p ... o_ft have the same interpretation as the corresponding ASCII commands.

|O_P| target position/path for the motion task
 |O_V| target speed/velocity
 |O_C| type of motion task (control word)
 |O_ACC1| acceleration ramp /starting acceleration
 |O_DEC1| braking ramp / deceleration
 |O_TAB| number of the lookup table

|O_FN| number of following motion tasks
 |O_FT| delay before starting next motion task

ASCII -Command	OTUNE	Available in	S300/700
Syntax Transmit	OTUNE [Data]	MMI	☐ CAN-Bus ☐
Syntax Receive	OTUNE <Data>	PROFIBUS	☐ Sercos ☐
Type	Command	SERCOS IDN:	
Format	-	CAN Object No:	-
DIM	-	PROFIBUS PNU:	no
Range	100 ... 800 Hz	DPR Objekt Nr:	
Default	250	Data Type BUS/DPR	-
Opmode	All	Weighting 10^3	
Drive Status	-	Last Change of this Object	1.0
Start Firmware	1.0	EEPROM	No
Configuration	☐		
Function Group			
Short Description	optimizing function VLO parameter		

Description
The command “OTUNE [data]” starts an optimizing function for the VLO (parameter for the Luenberger Velocity Observer) at the frequency “data” Hz.

ASCII -Command	OVERRIDE
Syntax Transmit	OVERRIDE [Data]
Syntax Receive	OVERRIDE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 3
Default	0
Opmode	8
Drive Status	-
Start Firmware	1.0
Configuration	☒
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☒
SERCOS IDN:	108
CAN Object No:	35B6 (hex)
PROFIBUS PNU:	1782 (dec) IND = 1 (de
DPR Objekt Nr:	182
Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Override Function for Motion Tasks
-------------------	------------------------------------

Description

The override function can be used to influence the speed/velocity for a motion block, reference movements and jog mode through the analog/digital interface. When this function is activated, the analog command is read every millisecond and used for scaling the velocity for the motion block.

Analog input=10V motion block velocity = the target velocity that is programmed in the motion block

Analog input=5V motion block velocity = 50% of the programmed target velocity

The override function does not work with sin^2 curves.

The following settings are possible:

OVERRIDE=0 override function is switched off

OVERRIDE=1 analog input 1 input is activated for the override function

OVERRIDE=2 analog input 2 input is activated for the override function

OVERRIDE=3 Digital interface is activated for the override function. The digital Interface can be: Sercos, CAN, PROFIBUS, DPR , RS 232 and all other field busses.
see |DOVERRIDE|.

> Firmware 1.37

OVERRIDE=4 Limiting of the motion task speed by the master speed

In case motion tasks are used in electronic gearing the motion task speed is limited in a way, so that the sign of the slave speed (master + motion task) is not inverted.

Example 1: Master-Speed (PSPEED1) = +1000

The motion task speed (PSPEED3) is limited to (-1000...PVMAX)

Example 2: Master-Speed (PSPEED1) = -2000

The motion task speed (PSPEED3)) is limited to (-PVMAX...+2000).

OVERRIDE=5 Limiting of the motion task speed by the positive master speed

In case of negative master speed command the motion task speed is set to 0 .

Example 1: Master-Speed (PSPEED1) = +1000

The motion task speed (PSPEED3) is limited to (-1000...PVMAX)

Example 2: Master-Speed (PSPEED1) = -2000

The motion task speed (PSPEED3)) is limited to 0.

OVERRIDE=6 Limiting of the motion task speed by the negative master speed

In case of positive master speed command the motion task speed is set to 0 .

Example 1: Master-Speed (PSPEED1) = +1000
The motion task speed (PSPEED3) is limited to 0.

Example 2: Master-Speed (PSPEED1) = -2000
The motion task speed (PSPEED3) is limited to (-PVMAX ... +2000).

Bei positiver Master-Geschwindigkeit wird die Fahrsatz-Geschwindigkeit auf 0 begrenzt.

Beispiel 1: Master-Geschwindigkeit (PSPEED1) = +1000
die Fahrsatz-Geschwindigkeit (PSPEED3) wird auf 0 begrenzt.

Beispiel 2: Master-Geschwindigkeit (PSPEED1) = -2000
die Fahrsatz-Geschwindigkeit (PSPEED3) wird auf den Bereich (-PVMAX...+2000) begrenzt.

ASCII -Command	P1
Syntax Transmit	
Syntax Receive	
Type	
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3644 (hex)
PROFIBUS PNU:	1924 (dec) IND = 1 (de
DPR Objekt Nr:	324

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Fast Position Register
-------------------	------------------------

Description
see |P1_P16|

ASCII -Command	P1_P16
Syntax Transmit	P1 [Data]
Syntax Receive	P1 <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	long int
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	(hex)
PROFIBUS PNU:	1924 (dec) IND = 1 (de
DPR Objekt Nr:	

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Fast Position Register 1 ... 16
-------------------	---------------------------------

Description

The variables P1 ... P16 contain the position values for the position thresholds 1 ... 16.
The scaling of the position depends on the |PGEARI|, |PGEARO|, |PRBASE| parameters, and is calculated according to the following formula:

$$P[\text{increments}] = P[\text{entered}] * |PGEARO| / |PGEARI|$$

1048576 increments/turn at |PRBASE|=20
65536 increments/turn at |PRBASE|=16

see also description of |WPOS|, |WPOSE|, |WPOSP|, |WPOSX|, |POSRSTAT|

The object number is given for P1. The other object numbers up to P16 are the next ones.

ASCII -Command	P10
Syntax Transmit	
Syntax Receive	
Type	
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	364D (hex)
PROFIBUS PNU:	1933 (dec) IND = 1 (de
DPR Objekt Nr:	333

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Fast Position Register
-------------------	------------------------

Description
see |P1_P16|

ASCII -Command	P11
Syntax Transmit	
Syntax Receive	
Type	
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	364E (hex)
PROFIBUS PNU:	1934 (dec) IND = 1 (de
DPR Objekt Nr:	334

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Fast Position Register
-------------------	------------------------

Description
see |P1_P16|

ASCII -Command	P12	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type		SERCOS IDN:	
Format		CAN Object No:	364F (hex)
DIM		PROFIBUS PNU:	1935 (dec) IND = 1 (de
Range		DPR Objekt Nr:	335
Default			
Opmode			
Drive Status			
Start Firmware	1.0		
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.0
		EEPROM	
Short Description	Fast Position Register		

Description

see |P1_P16|

ASCII -Command	P13	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type		SERCOS IDN:	
Format		CAN Object No:	3650 (hex)
DIM		PROFIBUS PNU:	1936 (dec) IND = 1 (de
Range		DPR Objekt Nr:	336
Default			
Opmode			
Drive Status			
Start Firmware	1.0		
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.0
		EEPROM	
Short Description	Fast Position Register		

Description

see |P1_P16|

ASCII -Command	P14
Syntax Transmit	
Syntax Receive	
Type	
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3651 (hex)
PROFIBUS PNU:	1937 (dec) IND = 1 (de
DPR Objekt Nr:	337

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Fast Position Register
-------------------	------------------------

Description
see |P1_P16|

ASCII -Command	P15	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type		SERCOS IDN:	
Format		CAN Object No:	3652 (hex)
DIM		PROFIBUS PNU:	1938 (dec) IND = 1 (de
Range		DPR Objekt Nr:	338
Default			
Opmode			
Drive Status			
Start Firmware	1.0		
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.0
		EEPROM	
Short Description	Fast Position Register		

Description

see |P1_P16|

ASCII -Command	P16	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type		SERCOS IDN:	
Format		CAN Object No:	3653 (hex)
DIM		PROFIBUS PNU:	1939 (dec) IND = 1 (de
Range		DPR Objekt Nr:	339
Default			
Opmode			
Drive Status			
Start Firmware	1.0		
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.0
		EEPROM	
Short Description	Fast Position Register		

Description

see |P1_P16|

ASCII -Command	P2
Syntax Transmit	
Syntax Receive	
Type	
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3645 (hex)
PROFIBUS PNU:	1925 (dec) IND = 1 (de
DPR Objekt Nr:	325

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Fast Position Register
-------------------	------------------------

Description
see |P1_P16|

ASCII -Command	P3
Syntax Transmit	
Syntax Receive	
Type	
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3646 (hex)
PROFIBUS PNU:	1926 (dec) IND = 1 (de
DPR Objekt Nr:	326

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Fast Position Register
-------------------	------------------------

Description
see |P1_P16|

ASCII -Command	P4
Syntax Transmit	
Syntax Receive	
Type	
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3647 (hex)
PROFIBUS PNU:	1927 (dec) IND = 1 (de
DPR Objekt Nr:	327

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Fast Position Register
-------------------	------------------------

Description
see |P1_P16|

ASCII -Command	P5
Syntax Transmit	
Syntax Receive	
Type	
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3648 (hex)
PROFIBUS PNU:	1928 (dec) IND = 1 (de
DPR Objekt Nr:	328

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Fast Position Register
-------------------	------------------------

Description
see |P1_P16|

ASCII -Command	P6
Syntax Transmit	
Syntax Receive	
Type	
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3649 (hex)
PROFIBUS PNU:	1929 (dec) IND = 1 (de
DPR Objekt Nr:	329

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Fast Position Register
-------------------	------------------------

Description
see |P1_P16|

ASCII -Command	P7
Syntax Transmit	
Syntax Receive	
Type	
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	364A (hex)
PROFIBUS PNU:	1930 (dec) IND = 1 (de
DPR Objekt Nr:	330

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Fast Position Register
-------------------	------------------------

Description
see |P1_P16|

ASCII -Command	P8	Available in	S300/700
Syntax Transmit		MMI	☐ CAN-Bus ☒
Syntax Receive		PROFIBUS	☒ Sercos ☐
Type		SERCOS IDN:	
Format		CAN Object No:	364B (hex)
DIM		PROFIBUS PNU:	1931 (dec) IND = 1 (de
Range		DPR Objekt Nr:	331
Default			
Opmode			
Drive Status			
Start Firmware	1.0		
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.0
		EEPROM	
Short Description	Fast Position Register		

Description

see |P1_P16|

ASCII -Command	P9
Syntax Transmit	
Syntax Receive	
Type	
Format	
DIM	
Range	
Default	
Opmode	
Drive Status	
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	364C (hex)
PROFIBUS PNU:	1932 (dec) IND = 1 (de
DPR Objekt Nr:	332

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Fast Position Register
-------------------	------------------------

Description
see |P1_P16|

ASCII -Command	PARCNFG
Syntax Transmit	PARCNFG [Data]
Syntax Receive	PARCNFG <Data>
Type	Variable rw
Format	Integer32
DIM	
Range	
Default	
Opmode	All
Drive Status	Disable
Start Firmware	2.11
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	375D (hex)
PROFIBUS PNU:	1805 (dec) IND = 17 (d)
DPR Objekt Nr:	605

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Configuration of parameter sets switching functions
-------------------	---

Description

The command PARCNFG is used to select the function for the second parameter group. This group contains the parameters |GP|,|GPFFT|,|GPFFV|,|GV|,|GVFR|,|GVTN|,|KC|,|KTN|,|MICON|,|MIPEAK|,|MJ|,|MKT|,|ML|,|MLGC|,|MLGD|,|MLGP|,|MLGQ|,|MPOLES|,|MRS|,|MTIME| with the ending _X.

Selection of the active parameters

The selection can be activated by a digital input or via an internal function.

By dig. Input

The function INxMODE=57 is used for this process. Only one digital input setting 57 is allowed otherwise a warning n24 – parameter error is monitored.

Also the command PARCNFG has to be auf 0 or warning n24 is activated . The digital input level selects the parameter group

- Low: main parameter group
- High: second parameter group

Automatic mode

PARCNFG = 0x0000 always standard parameters
 PARCNFG = 0x0001 second parameter group for the Wake&Shake-process.
 PARCNFG = 0x0002 second parameter group active during motion tasks, homing or jog mode.
 PARCNFG = 0x0004 second parameter group is used for |OPMODE| =4..8. |OPMODE| 0...3 are using parameter group 1.

Siehe auch |PARDUMP|, |PARRST|

ASCII -Command	PARDUMP
Syntax Transmit	PARDUMP [Data]
Syntax Receive	PARDUMP <Data>
Type	Variable r
Format	String
DIM	
Range	
Default	-
Opmode	All
Drive Status	-
Start Firmware	2.11
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	String
Weighting 10^3	

Last Change of this Object	1.8
EEPROM	No

Short Description	List of switchable parameter sets
-------------------	-----------------------------------

Description

The ASCII parameter PARDUMP lists all drive parameters that are included in the switchable parameter set.

The output looks like this:

```
GP 0.1 (GP_X 0.2)
GV 1.5 (GV_X 3)
Data Set 1 activ
```

The first parameter in every line ist the ascii parameter from the main parameter set.
The parameter in brackets is the ascii parameter from the second (shadow) parameter set.
The last line indicates the currently active parameter set.

ASCII -Command	PARRST	Available in	S300/700
Syntax Transmit	PARRST [Data]	MMI	☐ CAN-Bus ☐
Syntax Receive	PARRST <Data>	PROFIBUS	☐ Sercos ☐
Type		SERCOS IDN:	
Format		CAN Object No:	-
DIM		PROFIBUS PNU:	no
Range		DPR Objekt Nr:	
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	-
Function Group		Weighting 10^3	
		Last Change of this Object	1.8
		EEPROM	
Short Description	second parameter set = main parameter set		

Description
The ASCII parameter PARRST resets all parameters of the second (shadow) parameter set to the values of the main parameter set.
See also |PARCNFG|, |PARDUMP|

ASCII -Command	PASS
Syntax Transmit	PASS [Data]
Syntax Receive	PASS <Data>
Type	Variable w
Format	Integer32
DIM	-
Range	-2147483648...2147483647
Default	0
Opmode	
Drive Status	
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	36D5 (hex)		
PROFIBUS PNU:	1669 (dec) IND = 17 (d)		
DPR Objekt Nr:	469		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Password Input
-------------------	----------------

Description

This variable defines the value of the password. When the password function is activ (|PASSX| = y) the change of parameter is only possible after the setting of a valid password value "PASS y"

ASCII -Command	PASSCNFG
Syntax Transmit	PASSCNFG [Data]
Syntax Receive	PASSCNFG <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 2
Default	0
Opmode	
Drive Status	
Start Firmware	3.00
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36D8 (hex)
PROFIBUS PNU:	1672 (dec) IND = 17 (d)
DPR Objekt Nr:	472

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	2.1
EEPROM	

Short Description	Password Function
-------------------	-------------------

Description
The command PASSCNFG sets the passwort-function.(see also [PASS], [PASSX])

PASSCNFG=0 all parameter writing procedures are locked

PASSCNFG=1 only parameter SAVE is locked

ASCII -Command	PASSX
Syntax Transmit	PASSX [Data]
Syntax Receive	PASSX <Data>
Type	Variable w
Format	Integer32
DIM	
Range	-2147483648...2147483647
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36D4 (hex)
PROFIBUS PNU:	1668 (dec) IND = 17 (d)
DPR Objekt Nr:	468

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	activate password function
-------------------	----------------------------

Description

PASSX activates the password function

PASSX=0 password function switched off

PASSX=y password function switched on.

The change of all parametera is only possible after the setting of a valid password "[PASS] y".

ASCII -Command	PBAL
Syntax Transmit	PBAL
Syntax Receive	PBAL <Data>
Type	Variable ro
Format	Integer32
DIM	W
Range	0 .. 1500
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Actual values

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	35C0 (hex)		
PROFIBUS PNU:	1792 (dec) IND = 1 (de		
DPR Objekt Nr:	192		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Actual Regen Power
-------------------	--------------------

Description
The actual value of average regen power.

ASCII -Command	PBALMAX
Syntax Transmit	PBALMAX [Data]
Syntax Receive	PBALMAX <Data>
Type	Variable rw
Format	Integer32
DIM	W
Range	see Manual
Default	
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Basic Setup

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	35C1 (hex)		
PROFIBUS PNU:	1793 (dec) IND = 1 (de		
DPR Objekt Nr:	193		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Maximum Regen Power
-------------------	---------------------

Description

This parameter can be used to limit the continuous power dissipated in the regen resistor.
If the actual value of the power in the regen resistor exceeds the preset maximum value, then the regen resistor is switched off. This may trigger the fault message "Overvoltage" as a result. If the maximum value is too high, the regen resistor may be overloaded.

Defaultwerte:

with PBALRES = 0		
SR 303,	SR 341	20 W
SR 306, SR 310, SR 343, SR 346		50 W
with PBALRES >= 1		
SR 303,	SR 341	300W
SR 306, SR 310, SR 343, SR 346		1000 W

ASCII -Command	PBALRES
Syntax Transmit	PBALRES [Data]
Syntax Receive	PBALRES <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 ... 200
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☒
Function Group	Basic Setup

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		35C2 (hex)	
PROFIBUS PNU:		1794 (dec) IND = 1 (de	
DPR Objekt Nr:		194	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Select Regen Resistor
-------------------	-----------------------

Description

This parameter can be used to select whether the internal (0) or an external (> 0) regen resistor should be used. The value > 0 sets the regen resistor in ohm.

Note: The allowed resistor value depends to the used drive type. Look into the installation manuel for the data, please.

It affects the |PBALMAX| parameter.

ASCII -Command	PBAUD
Syntax Transmit	PBAUD
Syntax Receive	PBAUD <Data>
Type	Variable ro
Format	Float
DIM	kBaud
Range	1.0 .. 12000.0
Default	-
Opmode	-
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	35C3 (hex)		
PROFIBUS PNU:	1795 (dec) IND = 1 (de		
DPR Objekt Nr:	195		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	No

Short Description	Profibus Baud Rate
-------------------	--------------------

Description

The PBAUD command reads out the present PROFIBUS baud rate. The baud rate is provided by the master (control system). The Drive detects the baud rate automatically.

The following settings are possible (in kbaud/kbps):

12000
6000
3000
1500
500
187.5
93.75
45.45
19.2
9.6

ASCII -Command	PE
Syntax Transmit	PE
Syntax Receive	PE <Data>
Type	Variable ro
Format	Integer32
DIM	µm
Range	long int
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	189		
CAN Object No:	35C5 (hex)		
PROFIBUS PNU:	1797 (dec) IND = 1 (de		
DPR Objekt Nr:	197		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Actual Following Error
-------------------	------------------------

Description
The following error |OPMODE| = 8 or contouring error |OPMODE| = 5 or 6 is the momentary difference between the position command and the actual position and is displayed in the same units as the position control loop (|PGEARI| / |PGEARO|).

See description of |PFB| , |PEMAX|, |PUNITS|

ASCII -Command	PEINPOS
Syntax Transmit	PEINPOS [Data]
Syntax Receive	PEINPOS <Data>
Type	Variable rw
Format	Integer32
DIM	PUNIT
Range	long int
Default	4000
Opmode	>=4
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Position Data

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	35C6 (hex)		
PROFIBUS PNU:	1798 (dec) IND = 1 (de		
DPR Objekt Nr:	198		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	In-Position Window
-------------------	--------------------

Description

If the distance between the actual position and the target position during the execution of an internal motion block is less than the window width that has been set, then the In-Position signal is generated (status message, digital output).
The In-Position window is entered in the same units as the position control loop (|PGEARI| / |PGEARO|).
See description of |PFB|

ASCII -Command	PEMAX
Syntax Transmit	PEMAX [Data]
Syntax Receive	PEMAX <Data>
Type	Variable rw
Format	Integer32
DIM	µm
Range	long int
Default	262144
Opmode	>=4
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Position

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	159		
CAN Object No:	35C7 (hex)		
PROFIBUS PNU:	1799 (dec) IND = 1 (de		
DPR Objekt Nr:	199		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Max. Following Error
-------------------	----------------------

Description

If the momentary following or contouring error (|PE|) goes beyond the maximum value set, the motion is stopped and the following error warning (n03) or contouring error fault (F03) is generated. The motion block can only be continued (|CONTINUE|) or restarted after the warning has been acknowledged (|CLRFAULT|, digital input |INxMODE|=14). PEMAX=0 switches off the following error monitoring.

If a following error occurs, negative values do not result in a stop of the axis. The status bit and warning are still there. Starting a motion task or a following error reset is quitting the following error bit.

ASCII -Command	PFB
Syntax Transmit	PFB
Syntax Receive	PFB <Data>
Type	Variable ro
Format	Integer32
DIM	µm
Range	long int
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Actual values

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	51		
CAN Object No:	35C8 (hex)		
PROFIBUS PNU:	1800 (dec) IND = 1 (de		
DPR Objekt Nr:	200		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Actual Position from Feedback Device
-------------------	--------------------------------------

Description

The PFB command returns the actual value of the position (from the position control loop feedback). The unit for the position value depends on the |PGEARI|, |PGEARO| and |PRBASE| settings.

$PFB = \text{Position} * |PGEARI| / |PGEARO|$

whereby:

Position = position value in increments, 1048576/turn for |PRBASE|=20, 65536/turn for |PRBASE|=16

|PGEARI|, |PGEARO| - resolution of position control loop

Note: If the resolution is set to 1 (|PGEARI|=|PGEARO|) then the PFB command provides internal units (counts).

If the position information of an external encoder is evaluated (|EXTPOS|=1,2,3), then this information can be displayed by using the |PFB0| command.

ASCII -Command	PFB0
Syntax Transmit	PFB0
Syntax Receive	PFB0 <Data>
Type	Variable ro
Format	Integer32
DIM	Counts
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Actual values

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	53		
CAN Object No:	35C9 (hex)		
PROFIBUS PNU:	1801 (dec) IND = 1 (de		
DPR Objekt Nr:	201		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Position from External Encoder
-------------------	--------------------------------

Description

The PFB0 command returns the actual position, calculated from the position information provided by an external encoder. The position is only derived from an external encoder if the configuration variable |EXTPOS| is set to 1,2,3. The unit for the position value depends on the |PGEARI|, |PGEARO| and |ENCIN| settings.

$$PFB0 = \text{Position} * |PGEARI| / |PGEARO|$$

whereby:

Position = position value in increments

|PGEARI|, |PGEARO| - resolution of position control loop

Note: If the resolution is set to 1 (|PGEARI|=|PGEARO|) then the PFB0 command provides internal units (counts).

ASCII -Command	PFBHI
Syntax Transmit	PHBHI [Data]
Syntax Receive	PHBHI <Data>
Type	Variable ro
Format	Integer32
DIM	-
Range	32 Bit
Default	-
Opmode	All
Drive Status	-
Start Firmware	3.05
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3876 (hex)
PROFIBUS PNU:	1686 (dec) IND = 33 (d)
DPR Objekt Nr:	886

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	2.0
EEPROM	No

Short Description	
-------------------	--

Description

ASCII -Command	PGEARI
Syntax Transmit	PGEARI [Data]
Syntax Receive	PGEARI <Data>
Type	Variable rw
Format	Integer32
DIM	µm
Range	long int
Default	10000
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☐
Function Group	Position Data

Available in	S300/700	
MMI	☒	CAN-Bus ☒
PROFIBUS	☒	Sercos ☐
SERCOS IDN:		
CAN Object No:	35CA (hex)	
PROFIBUS PNU:	1802 (dec) IND = 1 (de	
DPR Objekt Nr:	202	
Data Type BUS/DPR	Integer32	
Weighting 10^3		

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Position Resolution (Numerator)
-------------------	---------------------------------

Description

Description:

The parameter PGEARI is used in conjunction with the |PGEARO| parameter to convert the internal position and speed from increments into user-defined units. The PGEARI parameter contains the number of user-defined units that are counted at |PGEARO| turns. The user decides which unit is used by the formula $PGEARI/|PGEARO|$.

1. Example:

If a band-conveyer moves 3cm by one turn of the rotor shaft and the operator wants to use the unit mm, the value of $PGEARI/|PGEARO|$ must be 30000. It is advisable to set PGEARI=30000 and |PGEARO|=1. The position can now be adjusted in mm.

If a gearing is connected previous to the band-conveyer with a ratio of 3:1, the user just needs to set |PGEARO|=3. Also odd-numbered values of the ratio are possible (e.g. 2.5:1). For that purpose PGEARI must be multiplied with 2 and |PGEARO| with 5.

2. Example

A motion task should be driven by a certain speed. Therefore Bit 13 of the motion task controllword o_c has to be set on 1. For that purpose the parameter o_v describes the target speed in the user-defined unit/sec. To get the target speed in SI-units use the following formula:

$$o_v = 10000; PGEARI = 1000, |PGEARO| = 1$$

$$n [rev \cdot sec^{-1}] = o_v / (PGEARI / |PGEARO|)$$

Examples to explain the

Resolution = $|PGEARI| / |PGEARO|$:

Linearmotor	>>>>	1
Turntable	>>>>	2
Turntable extern driven	>>>>	3
Spindel	>>>>	4
Beltdrive	>>>>	5

ASCII -Command	PGEARO
Syntax Transmit	PGEARO [Data]
Syntax Receive	PGEARO <Data>
Type	Variable rw
Format	Integer32
DIM	µm
Range	long int
Default	1048576
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☐
Function Group	Position Data

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	35CB (hex)		
PROFIBUS PNU:	1803 (dec) IND = 1 (de		
DPR Objekt Nr:	203		

Data Type BUS/DPR	Integer32
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Position Resolution (Denominator)
-------------------	-----------------------------------

Description

Description:

The parameter PGEARO is used in conjunction with the |PGEARI| parameter to convert the control loop position and speed from user-defined units into internal increments.

The PGEARO parameter contains in combination with |PRBASE| the number of increments that are moved if the path to be moved has a length of |PGEARI|.

The conversion is made according to the following formula:

$$\text{Position[increments]} = \text{Position[user-defined unit]} * \text{PGEARO} * 2^{|PRBASE|} / |PGEARI|$$

$$\text{Velocity[increments/250us]} = \text{Velocity[user-defined unit]} * \text{PGEARO} * 2^{|PRBASE|} / (|PGEARI| * 4000)$$

If |PGEARI| = PGEARO * 2^{|PRBASE|}, then there will be no conversion from user-defined units into increments. In this case, the position and velocity must be given in increments.

Position: 1 turn = 2^{|PRBASE|} increments

Velocity: speed [rpm] * 2^{|PRBASE|} / (4000 * 60)

For an example: see |PGEARI|

ASCII -Command	PIOBUF
Syntax Transmit	PIOBUF
Syntax Receive	PIOBUF <Data>
Type	Variable rw
Format	String
DIM	-
Range	-
Default	-
Opmode	-
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	35CC (hex)		
PROFIBUS PNU:	1804 (dec) IND = 1 (de		
DPR Objekt Nr:	204		

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Profibus data
-------------------	---------------

Description

This command reads out the present PROFIBUS input and output buffers. The output buffer handles the data flow from the control system to the Drive, and the input buffer handles the data flow from the Drive to the control system. Each buffer is 20 bytes long (telegram length) and is put together from the PKW section (8 bytes. i.e. 4 words) and the PZD section (12 bytes, 6 words). The individual bytes are in hexadecimal format.

PIOBUF provides 20 bytes of output buffer in the first line, and 20 bytes of input buffer in the second line.

If the communication over the PROFIBUS is interrupted or faulty, then a fault message “ERR [PIOBUF] NO DATA EXCHANGE SPC3 - INTERRUPT” is generated.

ASCII -Command	PMODE
Syntax Transmit	PMODE [Data]
Syntax Receive	PMODE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 1, 2
Default	1
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☒
Function Group	Basic Setup

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	35CD (hex)		
PROFIBUS PNU:	1805 (dec) IND = 1 (de		
DPR Objekt Nr:	205		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Line Phase Mode
-------------------	-----------------

Description

PMODE=0 single phase operation (current limit) not available on S 34x.
 PMODE=1 three phase operation, current limited and warning n05 in case of network phase missing
 PMODE=2 three phase operation, error message F19 in case of DC bus break down
 PMODE=3 three phase operation, current limit in case of network phase missing

Default-setting: PMODE=1

If the current limiting is activated, it only applies to periods of acceleration. A braking operation can still be carried out at full current.

ASCII -Command	PNOID
Syntax Transmit	PNOID
Syntax Receive	PNOID <Data>
Type	Variable ro
Format	Integer32
DIM	-
Range	-
Default	-
Opmode	-
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	35CE (hex)		
PROFIBUS PNU:	1806 (dec) IND = 1 (de		
DPR Objekt Nr:	206		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	PROFIBUS ID
-------------------	-------------

Description

The PNOID command reads out the identification number of the Drive. This number is used for the unique identification of the Drive as a participant in the PROFIBUS network. The ID is allocated and managed by the PROFIBUS User Organization. This instrument ID is also part of the GSD (base data for the instrument).

PNOID returns the identification number 045D (hexadecimal).

ASCII -Command	POSCNFG
Syntax Transmit	POSCNFG [Data]
Syntax Receive	POSCNFG <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 1
Default	0
Opmode	8
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☒
Function Group	Position Data

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	35CF (hex)		
PROFIBUS PNU:	1807 (dec) IND = 1 (de		
DPR Objekt Nr:	207		

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Axes Type
-------------------	-----------

Description

Use the axis type to select whether the axis is treated as a linear or rotary axis. This variable does not imply that the motor is a linear or rotary motor, but instead, affects the way the software limit switches are used by the Firmware. The software limit switches are treated in different ways, depending on the selection. The possible settings are:

POSCNFG=0	Linear Axes	Axes with a limited range of movement. The zero position for position tracking is fixed by a homing operation. With this setting, a set reference point is a precondition to be able to implement motion blocks. After the homing movement (setting the reference point) has been completed, the position is continuously tracked for the control loop, and remains valid until the amplifier is switched off. In case a multiturn absolute feedback is used a reference move after drive switch on is not necessary. see also ROFFS
-----------	-------------	---

POSCNFG=1	Modulo Axis	Axes with a limited range of movement. The minimum position is SRND and the maximum position is ERND -1. If the maximum position ERND -1 is reached, it automatically switches over to SRND . The absolute target positions have to be in the defined range. If a motion task is started, which has an absolute position outside the range, a warning "n08" is displayed (wrong motion task). Relative moves are calculated in a way, that the target position always is in the defined range. A positioning in an axis like this, gives two possibilities of direction to the target position. DREF gives the possibility to restrict the direction if an absolute motion task type is selected. This axis type also needs a homing move. In case a multiturn absolute feedback is used a reference move after drive switch on is not necessary. see also ROFFS
POSCNFG=2	reserved	

ASCII -Command	POSRSTAT
Syntax Transmit	POSRSTAT [Data]
Syntax Receive	POSRSTAT <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3643 (hex)
PROFIBUS PNU:	1923 (dec) IND = 1 (de
DPR Objekt Nr:	323

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Status of Fast Position Registers 1 ... 16
-------------------	--

Description

The variable POSRSTAT returns the present status of the fast position registers.
This variable can be considered as a 32-bit variable, whereby the lower 16 bits (bits 0 ... 15) are used for the status information of position registers P1 ... P16.
Bit=0 position signaling inactive
Bit=1 position signaling active (position overrun for |WPOSP|=0 or underrun for |WPOSP|=1).

See also |WPOS|

ASCII -Command	PPOTYP
Syntax Transmit	PPOTYP
Syntax Receive	PPOTYP <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	2
Default	2
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		35D0 (hex)	
PROFIBUS PNU:		1808 (dec) IND = 1 (de	
DPR Objekt Nr:		208	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Profibus PPO Type
-------------------	-------------------

Description

PPOTYP reads the PROFIBUS DP telegram type. The amplifier supports telegram type 2 (telegram consists of 10 words (20 bytes) and is divided into a PKW section (4 words) and a PZD section (6 words)). PPOTYP returns the value, 2.

ASCII -Command	PRBASE
Syntax Transmit	PRBASE [Data]
Syntax Receive	PRBASE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	1 ... 32
Default	20
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☒
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☒
SERCOS IDN:	79 + 116
CAN Object No:	35D1 (hex)
PROFIBUS PNU:	1809 (dec) IND = 1 (de
DPR Objekt Nr:	209

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Position Resolution
-------------------	---------------------

Description

Description:

The Servostar 300 works with an internal 64Bit variable for counting the number of turns of the rotor shaft and for the internal position resolution. The upper 32Bit are disposed for counting the number of turns, the lower 32 Bit are acting for the internal position resolution. External controller are working mostly with 32Bit variables. Therefore 32Bit of the 64Bit variable must be copied in an internal 32Bit variable.

PRBASE defines, how many Bits of this 32 Bit variable are acting for the position resolution. The remaining Bits are used for counting the number of turns. The resolution is only activated when the amplifier is switched off and then on again.

PRBASE=20:

20Bits are available for the internal position resolution. With the remaining 12 Bits, the Servostar can count $2^{12}=4096$ $\approx$ ± 2047 turns.

PRBASE=16:

16Bits are available for the internal position resolution. With the remaining 16 Bits, the Servostar can count $2^{16}=65536$ $\approx$ ± 32767 turns.

Example:

Internal 64Bit variable: : 0x00000012 15E3A455
Number of turns Position

Internal 32Bit variable at PRBASE=20 : 0x01215E3A

Internal 32Bit variable at PRBASE=16 : 0x001215E3

ASCII -Command	PRD
Syntax Transmit	PRD
Syntax Receive	PRD <Data>
Type	Variable ro
Format	Integer32
DIM	Counts
Range	0 .. 1048575
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Actual values

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	35D2 (hex)		
PROFIBUS PNU:	1810 (dec) IND = 1 (de		
DPR Objekt Nr:	210		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	20-bit Position Feedback
-------------------	--------------------------

Description

The PRD command returns a 20-bit position (absolute within one turn) that is derived from the signals of the feedback device ([FBTYPE]). Unlike the position from the position control loop, PFB, this position cannot be altered.
PRD is not related to [PRBASE]

ASCII -Command	PROMPT
Syntax Transmit	PROMPT [Data]
Syntax Receive	PROMPT <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	0, 1, 2, 3
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Communication

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	35D3 (hex)		
PROFIBUS PNU:	1811 (dec) IND = 1 (de		
DPR Objekt Nr:	211		

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Select RS232 Protocol
-------------------	-----------------------

Description

The PROMPT parameter can be used to set the protocol for the RS232 transmission.
The following settings are possible:

PROMPT=0	No Echo	The data that is received through the RS232 interface is not automatically echoed (transmitted). There is no output of the prompt (-->) symbol.
PROMPT=1	"-->" plus Echo	The data that is received through the RS232 interface is automatically echoed (transmitted). The prompt (-->) symbol is given for inputting data.
PROMPT=2	Terminal Mode	This setting is the same as PROMPT=1 except: 1. If a CR(Enter) command is typed in at the beginning of the line, the last command is repeated. 2. Some commands (like DUMP) output more than one line of information. In this cases, the output is automatically stopped after one page.

PROMPT=3	"-->" plus Echo plus Checksum	This setting is the same as PROMPT=1 except an additional checksum is transmitted and checked in both directions to prevent wrong data. All character of a command are summed (Modulo 256 without CR). example: Command string : " ADDR 1<CR>" generate Checksum: "A" = 0x41 "D" = 0x44 "D" = 0x44 "R" = 0x52 " " = 0x20 "1" = 0x31 The sum is: 0x16C Modulo 256: 0x6C = 108 (Dec) First Character: 108/16 + 0x30 = 0x36 = "6" Sec. Character: 108%16 + 0x30 = 0x3C = "<" The command string is: "ADDR 16<" <CR> When the command string is received, the same calculation is done and the last two characters in front of the <CR> are compared with the received data. If the checksum is ok, the ACK (0x06) is send, if no NACK (0x15) is send.
----------	-------------------------------	---

ASCII -Command	PSTATE
Syntax Transmit	PSTATE
Syntax Receive	PSTATE <Data>
Type	Variable ro
Format	String
DIM	-
Range	-
Default	-
Opmode	-
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	35D4 (hex)		
PROFIBUS PNU:	1812 (dec) IND = 1 (de		
DPR Objekt Nr:	212		

Data Type BUS/DPR	-
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	No

Short Description	Profibus Status
-------------------	-----------------

Description

The command PSTATE reads out the present status of the PROFIBUS communication. The first value that is shown provides the SPC3 WATCHDOG status, the second value provides the PROFIBUS DP-status.

SPC3 WATCHDOG status

0 = baud rate search

1 = check baud rate

2 = DP mode, i.e. the bus watchdog is active

PROFIBUS-DP status

0 = wait for parameterization, performed by the master

1 = wait for configuration, performed by the master

2 = data exchange

3 = fault – the cause could, for instance, have been a faulty parameterization telegram in the data transfer phase.

Productive data can only be received, i.e. data exchanged for the PKW and PZD sections of the Drive, when the SPC3 WATCHDOG status has the value 2, and the PROFIBUS-DP status has the value 2.

ASCII -Command	PSTEP
Syntax Transmit	PSTEP [Data]
Syntax Receive	PSTEP <Data>
Type	Variable rw
Format	Integer16 Integer32 Integer16 Integer32
DIM	ms (DurationN) / Velocity Units (velocityN)
Range	Duration:0 to 32767; Velocity:-PVMAX to +PVMAX
Default	-
Opmode	8
Drive Status	Enabled
Start Firmware	2.32
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	Integer16 Integer32 Int
Weighting 10^3	

Last Change of this Object	1.9
EEPROM	-

Short Description	Service Operation (PSTEP Command)
-------------------	-----------------------------------

Description

S700 and S300 |FW| > 2.32:

The PSTEP command is used to implement a service function through the operating mode "motion tasks" (|OPMODE|=8). The command can be used in the following forms.

1. PSTEP

The command provides the present settings for the service function.

2. PSTEP T1 V1

A digital setpoint V1 (|VUNIT|s) is provided for time T1 (in msec). After T1 has elapsed, the digital setpoint is set to 0.

3. PSTEP T1 V1 T2 V2

A digital setpoint V1 (|VUNIT|s) is provided for time T1 (in msec). After T1 has elapsed, a digital setpoint V2 (|VUNIT|s) is provided for time T2 (in msec). After T2 has elapsed, the T1/V1 cycle starts again. This command can be used to create an endless reversing operation.

e.g. PSTEP 1000 10000 1000 -10000

The service operation can always be cancelled by using the |STOP| command.

For this service operation, the acceleration / deceleration ramps |ACCR| and |DECR| are active.

The "motion tasks" operating mode is a precondition for executing the PSTEP command.

ASCII -Command	PTARGET
Syntax Transmit	PTARGET
Syntax Receive	PTARGET <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	long int
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3654 (hex)
PROFIBUS PNU:	1940 (dec) IND = 1 (de
DPR Objekt Nr:	340

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Last Target Position
-------------------	----------------------

Description

The command PTARGET can be used to request the target position for the last motion task that was started (and possibly already interrupted). This position is accepted as a new target position, as soon as the |CONTINUE| command is executed (to continue the last motion task).

ASCII -Command	PTBASE
Syntax Transmit	PTBASE [Data]
Syntax Receive	PTBASE <Data>
Type	Variable rw
Format	Integer8
DIM	1/4 ms
Range	1 ... 127
Default	4
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	35D4 (hex)
PROFIBUS PNU:	1813 (dec) IND = 1 (de
DPR Objekt Nr:	213

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Time base for the external trajectory
-------------------	---------------------------------------

Description

The PTBASE parameter is used to define the interpolation time for the external trajectory ($|OPMODE|=5$). The time is set in 250 microsecond steps, and defined the time period in which the drive should reach the next position command. Since the internal position control loop works in 250 microsecond steps, an interpolation of the given position command (external trajectory) is also given in 250 microsecond steps.

For SERCOS the scalling is PTBASE 2=250us, PTBASE 4 = 500us...

ASCII -Command	PTMIN
Syntax Transmit	PTMIN [Data]
Syntax Receive	PTMIN <Data>
Type	Variable rw
Format	Integer16
DIM	>> ACCUNIT
Range	3 .. 126000
Default	3150
Opmode	8
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Position Data

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		35D6 (hex)	
PROFIBUS PNU:		1814 (dec) IND = 1 (de	
DPR Objekt Nr:		214	

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Min. Acceleration Ramp for Motion Tasks
-------------------	---

Description

The minimum acceleration ramp PTMIN defines the minimum time that is permitted for a velocity change from 0 to |PVMAX|. Regardless of how the acceleration value is entered (milliseconds, SI units), the acceleration that is used is limited to |PVMAX| / PTMIN at the start of a motion task.

With the help of the |PVMAX| and PTMIN parameters it is possible to control the behavior of the system, especially during the commissioning phase, without having to alter the individual motion tasks.

ASCII -Command	PUNIT
Syntax Transmit	PUNIT [Data]
Syntax Receive	PUNIT <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	0 ... 15
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☒
Function Group	

Available in	S300/700	
MMI	☒	CAN-Bus ☒
PROFIBUS	☒	Sercos ☐
SERCOS IDN:		
CAN Object No:	3660 (hex)	
PROFIBUS PNU:	1952 (dec) IND = 1 (de	
DPR Objekt Nr:	352	
Data Type BUS/DPR	Integer32	
Weighting 10^3		

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Set Resolution of the Position
-------------------	--------------------------------

Description

PUNIT enables a systemwide setting for the unit of position for the position controller. The following settings are possible:

PUNIT=0	internal Unit (user specific)
PUNIT=1	1 dm (0.1 m)
PUNIT=2	1 cm (0.01 m)
PUNIT=3	1 mm
PUNIT=4	0.1 mm
PUNIT=5	0.01 mm
PUNIT=6	1 µm
PUNIT=7	0.1 µm
PUNIT=8	0.01 µm
PUNIT=9	1 nm
PUNIT=10	0.1 nm
PUNIT=11	inch.
PUNIT=12	°

The parameter PUNIT is only used for the MMI. It calculates different units for the MMI. All internal calculations (position controller resolution |PGEARI| and motion tasks are not effected.

IF PUNIT=0 there is no difference to older firmware versions. The unit is defined only by |PGEARI|.

e.g: |PGEARI|=360 (Unit = Degree)
|PGEARI|=3600 (Unit= 0.1 Degree)

ASCII -Command	PV
Syntax Transmit	PV
Syntax Receive	PV <Data>
Type	Variable ro
Format	Integer32
DIM	VUNIT
Range	long int
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in		S300/700	
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		35D7 (hex)	
PROFIBUS PNU:		1815 (dec) IND = 1 (de	
DPR Objekt Nr:		215	

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Actual Velocity (Position Control Loop)
-------------------	---

Description

The actual velocity (position control loop) can be requested by using the PV command.
The scaling of the velocity depends on the |PGEARI|, and |PGEARO| parameters.

ASCII -Command	PVMAX
Syntax Transmit	PVMAX [Data]
Syntax Receive	PVMAX <Data>
Type	Variable rw
Format	Integer32
DIM	VUNIT
Range	0 .. VLIM
Default	10000
Opmode	8
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Position Data

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	35D8 (hex)		
PROFIBUS PNU:	1816 (dec) IND = 1 (de		
DPR Objekt Nr:	216		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Max. Velocity for Position Control
-------------------	------------------------------------

Description

The parameter PVMAX defines the maximum velocity that is permitted for a motion task. When a motion task is started, the target velocity for the motion task is limited to the value of PVMAX.

With the help of the PVMAX and |PTMIN| parameters it is possible to control the behavior of the system, especially during the commissioning phase, without having to alter the individual motion tasks.

When used together with the |PVMAXN| parameter, it is possible to implement a directionally-dependent velocity limit. The PVMAX determines the maximum velocity for positive and negative directions together. By making a subsequent entry for |PVMAXN|, the limit for the negative direction can be set separately.

See |VLIM| , |PVMAXP|, |PVMAXN|

ASCII -Command	PVMAXN
Syntax Transmit	PVMAXN [Data]
Syntax Receive	PVMAXN <Data>
Type	Variable rw
Format	Integer32
DIM	VUNIT
Range	0 .. VLIM
Default	10000
Opmode	8
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		35D9 (hex)	
PROFIBUS PNU:		1817 (dec) IND = 1 (de	
DPR Objekt Nr:		217	

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Max. (Negative) Velocity for Position Control
-------------------	---

Description

The parameter PVMAXN defines the maximum velocity (in the negative direction) that is permitted for a motion task. When a motion task is started, the target velocity for the motion task is limited to the value of PVMAXN.

When the maximum velocity for the positive direction (|PVMAX|) is defined, the PVMAXN parameter is set to the |PVMAX| value at the same time. So, if a separate setting is required for the negative direction of movement, the value for PVMAXN must be entered separately, afterwards.

With the help of the |PVMAX|, |PTMIN| and PVMAXN parameters it is possible to control the behavior of the system, especially during the commissioning phase, without having to alter the individual motion tasks.

ASCII -Command	PVMAXP
Syntax Transmit	PVMAX [Data]
Syntax Receive	PVMAX <Data>
Type	Variable rw
Format	Integer32
DIM	VUNIT
Range	0 .. VLIM
Default	10000
Opmode	8
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Position Data

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		35DB (hex)	
PROFIBUS PNU:		1819 (dec) IND = 1 (de	
DPR Objekt Nr:		219	

Data Type BUS/DPR	Integer32
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Max. (positive) Velocity for Position Control
-------------------	---

Description

The parameter PVMAXN defines the maximum velocity (in the negative direction) that is permitted for a motion task. When a motion task is started, the target velocity for the motion task is limited to the value of PVMAXN.

When the maximum velocity for the positive direction (|PVMAX|) is defined, the PVMAXN parameter is set to the |PVMAX| value at the same time. So, if a separate setting is required for the negative direction of movement, the value for PVMAXN must be entered separately, afterwards.

With the help of the |PVMAX|, |PTMIN| and PVMAXN parameters it is possible to control the behavior of the system, especially during the commissioning phase, without having to alter the individual motion tasks.

ASCII -Command	READY
Syntax Transmit	READY
Syntax Receive	READY <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	0, 1
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	35DD (hex)		
PROFIBUS PNU:	1821 (dec) IND = 1 (de		
DPR Objekt Nr:	221		

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Status of the Software Enable
-------------------	-------------------------------

Description
Requests the status of the internal software enable.
READY = 0 Disabled
READY = 1 Enabled

ASCII -Command	RECDONE
Syntax Transmit	RECDONE
Syntax Receive	RECDONE <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	0, 1
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Oscilloscope

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	35DE (hex)		
PROFIBUS PNU:	1822 (dec) IND = 1 (de		
DPR Objekt Nr:	222		

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Scope: Recording Done
-------------------	-----------------------

Description

The RECDONE command can be used to request the status of the SCOPE recording. The command returns a 1 if the recording is finished and the data can now be requested with the [GET] command.

ASCII -Command	RECING	Available in	S300/700
Syntax Transmit	RECING	MMI	☒ CAN-Bus ☒
Syntax Receive	RECING <Data>	PROFIBUS	☒ Sercos ☐
Type	Variable ro	SERCOS IDN:	
Format	Integer8	CAN Object No:	35DF (hex)
DIM	-	PROFIBUS PNU:	1823 (dec) IND = 1 (de
Range	0, 1	DPR Objekt Nr:	223
Default	-		
Opmode	All	Data Type BUS/DPR	Integer8
Drive Status	-	Weighting 10^3	
Start Firmware	1.0		
Configuration	☐	Last Change of this Object	1.0
Function Group	Oscilloscope	EEPROM	No
Short Description	Scope: Recording in Progress		

Description

Returns a 1 if the recording is active. At the end of a recording, or if the recording has not started, a 0 is returned.

ASCII -Command	RECOFF
Syntax Transmit	RECOFF
Syntax Receive	RECOFF
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Oscilloscope

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	35E0 (hex)		
PROFIBUS PNU:	1824 (dec) IND = 1 (de		
DPR Objekt Nr:	224		

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Scope: Cancel Scope Recording
-------------------	-------------------------------

Description

RECOFF stops the SCOPE recording (if started). State after RECOFF: |RECRDY|=1, |RECING|=0, |RECDONE|=0.

ASCII -Command	RECORD
Syntax Transmit	RECORD [Data]
Syntax Receive	RECORD <Data>
Type	Variable rw
Format	String
DIM	-
Range	1 .. 10000 (=Time); 1 .. 1024(=Points); ASCII String (=
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Oscilloscope

Available in	S300/700
MMI	☒ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Scope: Capture Data for Recording
-------------------	-----------------------------------

Description

The RECORD command can be used to define the data for the next SCOPE recording. The command is used in the following form.

RECORD time number var1 [var2] [var3] [var4]

time: the sampling interval in 250 µs- steps

number: the number of sample points to be recorded.

The maximum possible number depends on the number and size of the variables to be recorded.

If the number entered is too large, it will automatically be limited (when recording Long/Float variables, a maximum of 512 sample points can be recorded).

var1,var2,var3 - names of the variables to be recorded. Apart from the names for macro variables, the following names can be used.

[I] - actual value of current

[ICMDVAL] - setpoint for current

[PE] - following error

[V] - actual value of velocity

[VCMD] - setpoint for velocity

[VBUS] - DC-bus (DC-link) voltage

[PFB] - actual position

ASCII -Command	RECRDY
Syntax Transmit	RECRDY
Syntax Receive	RECRDY <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	0, 1
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Oscilloscope

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		35E1 (hex)	
PROFIBUS PNU:		1825 (dec) IND = 1 (de	
DPR Objekt Nr:		225	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Scope: Status of RECORD Function
-------------------	----------------------------------

Description

After the recording has been made trigger-ready by |RECORD| / |RECTRIG|, the RECRDY command generates a 0. As soon as the trigger condition defined by RECRDY is fulfilled, and the recording starts, RECRDY generates a 1.
(RECRDY=0 means "waiting for trigger event")

ASCII -Command	RECTRIG
Syntax Transmit	RECTRIG [Data]
Syntax Receive	RECTRIG <Data>
Type	Variable rw
Format	String
DIM	-
Range	ASCII String (=Mode); Depends upon Mode (=Level); 0
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Oscilloscope

Available in	S300/700
MMI	☒ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐

SERCOS IDN:	
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	-
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	No

Short Description	Scope: Activate Recording Function
-------------------	------------------------------------

Description

The RECTRIG command prepares the SCOPE function for a data recording.
The command is used in the following form.

RECTRIG mode level location direction

mode: designates the name of a variable that is to be used to trigger the recording. If the designation IMM is used, the recording starts immediately. In this case, the parameters “level”, “location” and “direction” do not have to be specified.

level: specifies the value of the variable that has to be reached to trigger the recording.

location: give the number of points that are to be recorded previous to the moment of the trigger event.

direction: specifies in which direction the value must pass the threshold “level” of the “mode” variable in order to trigger the recording.

direction=0 falling (variable value falls below threshold level)

direction=1 rising (variable value goes above threshold level)

ASCII -Command	REFIP
Syntax Transmit	REFIP [Data]
Syntax Receive	REFIP <Data>
Type	Variable rw
Format	Float
DIM	A
Range	0.0 .. min(IPEAK,IPEAKN)
Default	min(IPEAK,IPEAKN,DICONT/2)
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	35E2 (hex)		
PROFIBUS PNU:	1826 (dec) IND = 1 (de		
DPR Objekt Nr:	226		

Data Type BUS/DPR	Integer32
Weighting 10 ³	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Peak Rated Current for Homing 7
-------------------	---------------------------------

Description

The REFIP parameter can be used to set the peak current for homing to a stop. When Homing mode 7 is started (homing to a stop and searching for a zero mark), |IPEAK|, the normal value for peak current, is set to the value REFIP. When the homing movement is finished, the |IPEAK| parameter is reset to the previous (normal) value.

REFIP is also used for the wake & shake procedure (|FBTYPE|=7,8). It sets the current limit for the first phase (rough angle adjustment). The second wake & shake phase is done by the |IPEAK| setting.

ASCII -Command	REFIP2
Syntax Transmit	
Syntax Receive	
Type	Variable rw
Format	Float32
DIM	
Range	0 ...IPEAK
Default	IPEAK
Opmode	
Drive Status	
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36E3 (hex)
PROFIBUS PNU:	1683 (dec) IND = 17 (d)
DPR Objekt Nr:	483

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	

Short Description	Peak Rated Current for Commutation process
-------------------	--

Description
REFIP2 limits the peak current during the wake & shake procedure.
After wake & shake is finished the current is reset to the |IPEAK| value.

>>> see also |REFIP|

ASCII -Command	REFLS
Syntax Transmit	REFLS [Data]
Syntax Receive	REFLS <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	0, 1, 2, 3
Default	0
Opmode	8
Drive Status	-
Start Firmware	1.0
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	365D (hex)
PROFIBUS PNU:	1949 (dec) IND = 1 (de
DPR Objekt Nr:	349

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Effect HW-limitswitches by homing
-------------------	-----------------------------------

Description

REFLS defines the drive behavior when activating a hardware limit during a homing move.

REFLS=0 Change direction at NSTOP and PSTOP

REFLS=1 Change direction at PSTOP, create error message F26 (limit switch) at NSTOP

REFLS=2 Change direction at NSTOP, create error message F26 (limit switch) at PSTOP

REFLS=3 Create error message F26 (limit switch) at NSTOP and PSTOP

REFLS used when /NREF/ (homing mode) = 1 or 3

ASCII -Command	REFMODE
Syntax Transmit	REFMODE [Data]
Syntax Receive	REFMODE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 7
Default	0
Opmode	8
Drive Status	-
Start Firmware	1.0
Configuration	☒
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	363C (hex)
PROFIBUS PNU:	1916 (dec) IND = 1 (de
DPR Objekt Nr:	316

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	2.2
EEPROM	Yes

Short Description	Source of the Zero Pulse in Homing Mode
-------------------	---

Description

The command REFMODE selects the source of the zero pulse in homing mode.

REFMODE=0 Resolver- or singleturn encoder-zero, Zero crossing per rev of a multiturn encoder / at |EXTPOS|=1 Data-Pin connector X1

- REFMODE=1 digital INPUT1
- REFMODE=2 digital INPUT2
- REFMODE=3 digital INPUT3
- REFMODE=4 digital INPUT4
- REFMODE=5 Data-Pin of connector X1
- REFMODE=6 Zero pulse of the connector X5
- REFMODE=7 Zero crossing of the absolute multiturn encoder (per rev)

ASCII -Command	REFNOFFS
Syntax Transmit	REFNOFFS [Data]
Syntax Receive	REFNOFFS <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	0 ... 360
Default	90
Opmode	-
Drive Status	-
Start Firmware	2.51
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐

SERCOS IDN:	
CAN Object No:	386D (hex)
PROFIBUS PNU:	1677 (dec) IND = 33 (d)
DPR Objekt Nr:	877

Data Type BUS/DPR	Integer16
Weighting 10 ³	

Last Change of this Object	1.9
EEPROM	Yes

Short Description	position of analog zero puls
-------------------	------------------------------

Description

To get a better reference position accuracy the external zero pulse can be used additional. The input is selecte by REFMODE. The S300/S700 has two different methods to use an external zero pulse:

1. Edge detection of the zero pulse REFNOFFS=0

If the edge is detected the position is reset ([ROFFS]), the motor slows down and returns to the position of the edge detection position.

If the reference motion is to fast the accuracy of this method isn't good.

2. Edge detection of the zero pulse with additional analoge positioning REFNOFFS=1...360

The accuracy of this methode is not influenced by the reference speed, but it can only be used with feedbacks that includes sine cosine signals. The zero pulse is only to detect the sine cosine cycle.

ASCII -Command	REFNPOS
Syntax Transmit	REFNPOS [Data]
Syntax Receive	REFNPOS <Data>
Type	Variable ro
Format	Integer16
DIM	
Range	0 ... 359
Default	0
Opmode	All
Drive Status	-
Start Firmware	2.51
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	386E (hex)
PROFIBUS PNU:	1678 (dec) IND = 33 (d)
DPR Objekt Nr:	878

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.9
EEPROM	No

Short Description	external zero pulse offset inside sine/c0sine cycle
-------------------	---

Description

Only S700

Position of the external zeropuls (|REFMODE|, |REFNOFFS|) within an encoder periode.
See also (|REFNOFFS|)

ASCII -Command	REFPOS
Syntax Transmit	REFPOS [Data]
Syntax Receive	REFPOS <Data>
Type	Variable ro
Format	Integer32
DIM	Counts
Range	0 ... 1048576
Default	-
Opmode	8
Drive Status	-
Start Firmware	2.14
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	35E3 (hex)
PROFIBUS PNU:	1827 (dec) IND = 1 (de
DPR Objekt Nr:	227

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.3
EEPROM	No

Short Description	Reference Switch Position
-------------------	---------------------------

Description

The REFPOS command returns the position (20-bit, within one turn) to be used for detecting the “Reference criterion” during the homing movement. The “Reference criterion” depends on |NREF|, the type of homing movement.

- |NREF|=0,5,6 REFPOS = position for starting the homing movement
|NREF|=1,3 REFPOS = position for detecting the rising edge of the reference switch
|NREF|=2,4 REFPOS = position for detecting the falling edge of the reference switch
|NREF|=7 REFPOS = position for detecting a stop ($|PE| > |PEMAX| / 2$)
|NREF|=8 REFPOS is not altered

ASCII -Command	REMOTE
Syntax Transmit	REMOTE
Syntax Receive	REMOTE <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	0 .. 1
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Digital I/O

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		35E4 (hex)	
PROFIBUS PNU:		1828 (dec) IND = 1 (de	
DPR Objekt Nr:		228	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Status of the Hardware Enable
-------------------	-------------------------------

Description

The REMOTE command indicates the state of the hardware enable input .
1 indicates a High state of the inputs (hardware enable is set), a 0 indicates a Low state.

ASCII -Command	RESOLVER
Syntax Transmit	RESOLVER [Data]
Syntax Receive	RESOLVER <Data>
Type	Variable rw
Format	Integer8
DIM	
Range	0 ... 2
Default	1
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐

SERCOS IDN:	
CAN Object No:	3520 (hex)
PROFIBUS PNU:	1632 (dec) IND = 1 (de
DPR Objekt Nr:	32

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Resolver excitation gain adjust +/- 20%
-------------------	---

Description

RESOLVER 0 will reduce the excitation by 20%.
RESOLVER 2 will increase the excitation by 20%.

ASCII -Command	RESPHASE
Syntax Transmit	RESPHASE [Data]
Syntax Receive	RESPHASE <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	+/-90 bei S300 (+/-511 bei S700)
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	35E5 (hex)		
PROFIBUS PNU:	1829 (dec) IND = 1 (de		
DPR Objekt Nr:	229		

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Resolver Phase
-------------------	----------------

Description
Please refer to the ASCII command [CALCRP].

ASCII -Command	RK
Syntax Transmit	RK [Data]
Syntax Receive	RK <Data>
Type	Variable rw
Format	Integer16
DIM	Counts
Range	12000 ..19000
Default	16384
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		35E6 (hex)	
PROFIBUS PNU:		1830 (dec) IND = 1 (de	
DPR Objekt Nr:		230	

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Gain Adjust for Resolver Sine Signal
-------------------	--------------------------------------

Description

The RK parameter can be used to correct any amplitude difference that may exist between the sine and cosine signals from the resolver. The relationships are as follows:

RK = 16384 no alteration of the amplitude of the sine signal

RK < 16384 sine signal amplitude is reduced

RK > 16384 sine signal amplitude is increased

An incorrect setting of this correction factor will result in velocity/velocity variations (ripple) which are strongly dependent on the position.

The |CALCRK| command enables an automatic determination of the correction factor RK.

This value will not be changed by a parameter download, since it only depends on the equipment.

ASCII -Command	ROFFS
Syntax Transmit	ROFFS [Data]
Syntax Receive	ROFFS <Ddata>
Type	Variable rw
Format	Integer32
DIM	µm
Range	long int
Default	0
Opmode	8
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Setting-up Mode

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	52		
CAN Object No:	35E7 (hex)		
PROFIBUS PNU:	1831 (dec) IND = 1 (de		
DPR Objekt Nr:	231		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Reference Offset
-------------------	------------------

Description

The ROFFS parameter is used for Resolver or single-turn encoder (homing to reference point is possible)

The ROFFS parameter can be used to assign a freely chosen absolute position as the reference position (zero position) that will be reached at the end of a homing movement.

The scaling of the position depends on the settings for |PGEARI|, |PGEARO|, |PRBASE|.

If the resolution is set to 1 (|PGEARI|=|PGEARO|), then internal units (counts) will be used.

ASCII -Command	ROFFSABS
Syntax Transmit	ROFFSABS [Data]
Syntax Receive	ROFFSABS <Ddata>
Type	Variable rw
Format	Integer32
DIM	µm
Range	long int
Default	0
Opmode	8
Drive Status	-
Start Firmware	0.39
Configuration	☐
Function Group	Setting-up Mode

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	3656 (hex)		
PROFIBUS PNU:	1942 (dec) IND = 1 (de		
DPR Objekt Nr:	342		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Reference Offset
-------------------	------------------

Description

The ROFFSABS parameter is used with an absolute encoder (multi-turn, homing to reference point is also possible)
The ROFFSABS sets an offset to the absolute encoder position. This procedure is executed by drive power on. The parameter must be saved in the EEPROM (using the |SAVE| command) after every alteration of the ROFFSABS variable, and the amplifier must then be switched off and on again (|COLDSTART| command).

Example:

If a position 10000 (|PFB|) is shown when the amplifier is switched on with ROFFSABS = 0, ROFFSABS = -10000 will shift the position to the value 0.

ASCII -Command	ROFFSSSI
Syntax Transmit	ROFFSSSI [Data]
Syntax Receive	ROFFSSSI <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	INT32
Default	0
Opmode	All
Drive Status	-
Start Firmware	2.28
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3864 (hex)
PROFIBUS PNU:	1668 (dec) IND = 33 (d)
DPR Objekt Nr:	868

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	2.1
EEPROM	Yes

Short Description	SSI absolute position offset
-------------------	------------------------------

Description

This parameter defines the SSI position offset for the |NREF|=8 homing move.

ASCII -Command	RS232T
Syntax Transmit	RS232T [Data]
Syntax Receive	RS232T <Data>
Type	Variable rw
Format	Integer16
DIM	ms
Range	1 .. 5000
Default	2500
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		35E8 (hex)	
PROFIBUS PNU:		1832 (dec) IND = 1 (de	
DPR Objekt Nr:		232	

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	RS232 Watch Dog
-------------------	-----------------

Description

If the monitoring of the serial interface is activated (RS232 watchdog), then the RS232T command can be used to set the time for the watchdog timer.
See also |ACTRS232|

ASCII -Command	RSTVAR
Syntax Transmit	RSTVAR
Syntax Receive	RSTVAR
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	Disabled
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	262		
CAN Object No:	35E9 (hex)		
PROFIBUS PNU:	1833 (dec) IND = 1 (de		
DPR Objekt Nr:	233		

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Restore Variables (Default Values)
-------------------	------------------------------------

Description

The RSTVAR command resets all parameters / variables to the default settings. The parameters which are stored in the EEPROM are not immediately affected by this. The default settings only become permanent when the [SAVE] command is used (save parameters in the EEPROM).

In case configuration settings had been changed [SAVE] and [COLDSTART] is required.

ASCII -Command	S
Syntax Transmit	S
Syntax Receive	S
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Oscilloscope/Service

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	35EA (hex)		
PROFIBUS PNU:	1834 (dec) IND = 1 (de		
DPR Objekt Nr:	234		

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Stop Motor and Disable Drive
-------------------	------------------------------

Description
The S command stops the drive (using the braking ramp |DECSTOP|). As soon as the velocity/velocity falls below the standstill threshold (|VEL0|) the output stage is disabled.
The S command corresponds to the command |K| (or |DIS|) if the |STOPMODE| option is set to 1.

ASCII -Command	SAVE
Syntax Transmit	SAVE
Syntax Receive	SAVE
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Amplifier

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	264		
CAN Object No:	35EB (hex)		
PROFIBUS PNU:	1835 (dec) IND = 1 (de		
DPR Objekt Nr:	235		

Data Type BUS/DPR	-
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	-

Short Description	Save Data in EEPROM
-------------------	---------------------

Description

The SAVE command stores the present settings of the amplifier parameters in the serial EEPROM. At the same time, the checksum for the parameter field is updated and also saved in the serial EEPROM. The save process takes about 2 seconds. During this time, the 24V supply for the amplifier must not be switched off. If this supply voltage is switched off during the save process, this may result in invalid data (or none) being saved in the serial EEPROM. A checksum error will be detected at the next power-on of the equipment, and the fault message F09 will be generated.

Furthermore, all the amplifier parameters will be reset to the default values. In order to reset the F09 fault, the SAVE command must be used once more, and the amplifier must be switched off and on again.

A SAVE command is set, if an absolute feedback is used and a homing is executed. The reference offset is calculated and the command SAVE is set.

ASCII -Command	SBAUD
Syntax Transmit	SBAUD [Data]
Syntax Receive	SBAUD <Data>
Type	Variable rw
Format	Integer8
DIM	MBaud
Range	2, 4, 8, 16
Default	4
Opmode	All
Drive Status	-
Start Firmware	1.00
Configuration	☒
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		35EC (hex)	
PROFIBUS PNU:		1836 (dec) IND = 1 (de	
DPR Objekt Nr:		236	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Sercos: Baud Rate
-------------------	-------------------

Description

This parameter sets the transmission rate for SERCOS in MBAUD.

ASCII -Command	SDLY
Syntax Transmit	SDLY [Data]
Syntax Receive	SDLY <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	0 ... 100 000
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.31
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	3757 (hex)
PROFIBUS PNU:	1799 (dec) IND = 17 (d)
DPR Objekt Nr:	599

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.1
EEPROM	Yes

Short Description	Start delay
-------------------	-------------

Description

SDLY sets the start delay for the program execution.
After the boot up the RTO function and the supervisor program execution will be delayed for SDLY msec.

See also |ERRCODES| F10

ASCII -Command	SERCERR
Syntax Transmit	SERCERR [Data]
Syntax Receive	SERCERR <Data>
Type	Variable ro
Format	Integer32
DIM	-
Range	0 ... 8
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700		
MMI	☐	CAN-Bus	☐
PROFIBUS	☐	Sercos	☐
SERCOS IDN:			
CAN Object No:	-		
PROFIBUS PNU:	no		
DPR Objekt Nr:			

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Wrong access to SERCOS command
-------------------	--------------------------------

Description

The command SERERR displays an error generated by an wrong access with the command SERCOS to an IDN.

See also object SERCOS.

ASCII -Command	SERCLIST	Available in	S300/700
Syntax Transmit	SERCLIST [Data]	MMI	☐ CAN-Bus ☐
Syntax Receive	SERCLIST <Data>	PROFIBUS	☐ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer32	CAN Object No:	-
DIM	-	PROFIBUS PNU:	no
Range	0 ... 8	DPR Objekt Nr:	
Default	0	Data Type BUS/DPR	Integer32
Opmode	All	Weighting 10^3	
Drive Status	-	Last Change of this Object	1.0
Start Firmware	1.0	EEPROM	No
Configuration	☐		
Function Group			
Short Description	Access to IDN list		

Description
The command SERCLIST enables the access to an element of the IDN list. After that, the IDN can be read by command SERCOS.
See also object SERCOS.

ASCII -Command	SERCOS	Available in	S300/700
Syntax Transmit	SERCOS [Data]	MMI	☐ CAN-Bus ☐
Syntax Receive	SERCOS <Data>	PROFIBUS	☐ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer32	CAN Object No:	-
DIM	-	PROFIBUS PNU:	no
Range	0 .. 8	DPR Objekt Nr:	
Default	0	Data Type BUS/DPR	-
Opmode	All	Weighting 10^3	
Drive Status	-	Last Change of this Object	1.0
Start Firmware	1.0	EEPROM	No
Configuration	☐		
Function Group			
Short Description	Read the Data of an Sercos IDN		

Description

Gives the contents of an Sercos IDN. Write access changes the selected number of the IDN, read access gives the contents of the selected IDN. If the selected IDN is a list, only the list value where |SERCLIST| points to is displayed. If SERCOS generates an error (e.g. wrong IDN number), |SERCERR| is set to "1" and a value of "0" is displayed.

ASCII -Command	SERCSET
Syntax Transmit	SERCSET [Data]
Syntax Receive	SERCSET <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	Long Int
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☒
SERCOS IDN:	43 + P3028
CAN Object No:	3691 (hex)
PROFIBUS PNU:	2001 (dec) IND = 1 (de
DPR Objekt Nr:	401
Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	2.1
EEPROM	No

Short Description	Set Sercos / EtherCAT Settings
-------------------	--------------------------------

Description

The object SERCSET gives the possibility to change some of the Sercos or EtherCAT settings. Changes have to be saved in the EEPROM and effect at the next start-up of the drive. The not described bits effect other Sercos settings. In so far, this command should only be used in combination with the MMI. See also Sercos IDN Manual.

Attention: If the fieldbus is switched, the unuesed bits have to be erased!

By using EtherCAT fieldbus, the meaning of the bits is as follows:

Bit 0-15: reserve

Bit 16 (0x0001 0000) = 1: Bootstrap over master activate a coldstart of the amplifier

Bit 17 (0x0002 0000) = 1: Control of warning n17

Bit 18 (0x0004 0000) = 1: if Bit 17 is set, 10 telegramms fail to appear, before the synchronisation will be lost

Bit 19 (0x0008 0000) = 1: in fault state - during reset a coldstart is executet - F29 will be set

Bit 20 (0x0010 0000) = 1: actual values will be written in 250 ms instead of interrupt (faster)

Bit 21 (0x0020 0000) = 1: Bit 5 in statusword will be updatet at source of the quickstop as well (so hardware- and software limit switch)

Bit 22-31: reserve

By using SERCOS fieldbus, the meaning of the bits is as follows:

Bit	Significane	Meaning
0	0x0000 0001	= 1: IDN 3015 Hardware Limit Switch Effect
1	0x0000 0002	= 1: IDN 3016 CLRFAULT Command Effect
2	0x0000 0004	= 1: IDN 3028 switch on procedure HW & SW - Enable
3	0x0000 0008	= 1: IDN 3052 acceleration feed forward
4-11	0x0000 0FF0	= 1: IDN 55 polarity Target Position, Bit 8 Hardware Limit Switch
12-15	0x0000 F000	=1: IDN 43 polarity Target Speed
16	0x0001 0000	= 1: SLEN binary
17	0x0002 0000	= 1: MST Check für DMS
18	0x0004 0000	= 1: IDN 3059 external feed forward only current
19	0x0008 0000	= 1: IDN 3059 external feed forward speed and current

20	0x0010 0000	= 1: IDN 3040 quadrature interpolation
21	0x0020 0000	= 1: Control of OPMODE switch of (FW 3.55)
22	0x0040 0000	reserve
23	0x0080 0000	= 1: Switches Bit 3 in the AT-Status off
24-31	0xFF00 0000	= 1: IDN 76

ASCII -Command	SERIALNO
Syntax Transmit	SERIALNO
Syntax Receive	SERIALNO <Data>
Type	Variable ro
Format	Integer32
DIM	-
Range	10 ASCII characters
Default	Factory default
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Basic Setup

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		35EF (hex)	
PROFIBUS PNU:		1839 (dec) IND = 1 (de	
DPR Objekt Nr:		239	

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Drive Serial Number
-------------------	---------------------

Description

Serial number of drive amplifier.

ASCII -Command	SETREF
Syntax Transmit	SETREF
Syntax Receive	SETREF
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in		S300/700	
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐

SERCOS IDN:	
CAN Object No:	35F0 (hex)
PROFIBUS PNU:	1840 (dec) IND = 1 (de
DPR Objekt Nr:	240

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Set Reference Point
-------------------	---------------------

Description

The SETREF command is used to declare the present position as the reference point (i.e. the actual position is set to the value of |ROFFS|) and to set the bit that permits the execution of motion blocks.

The SETREF command corresponds to the execution of a homing to a reference with |NREF|=0.

ASCII -Command	SKIP1SP
Syntax Transmit	SKIP1SP [Data]
Syntax Receive	SKIP1SP <Data>
Type	Variable rw
Format	Integer16
DIM	rpm
Range	0 .. 3000
Default	0
Opmode	1,2
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in	S300/700
MMI	☒ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	388B (hex)
PROFIBUS PNU:	1707 (dec) IND = 33 (d)
DPR Objekt Nr:	907

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	2.1
EEPROM	Yes

Short Description	Skip Speed 1
-------------------	--------------

Description

Skip Drehzahl 1.

Wird in der U/f Steuerung verwendet um den Betrieb in einem Drehzahlbereich (durch SKIP1W festgelegt) um diese Drehzahl zu vermeiden.

Resonanzen können so ausgeblendet werden.

Siehe auch |SKIP1W|, |SKIP2SP|, |SKIP2W|.

ASCII -Command	SKIP1W
Syntax Transmit	SKIP1SP [Data]
Syntax Receive	SKIP1SP <Data>
Type	Variable rw
Format	Integer16
DIM	rpm
Range	0 .. 500
Default	0
Opmode	1,2
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in	S300/700
MMI	☒ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	388C (hex)
PROFIBUS PNU:	1708 (dec) IND = 33 (d)
DPR Objekt Nr:	908

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	2.1
EEPROM	Yes

Short Description	Skip Width 1
-------------------	--------------

Description
Skip Width 1.
Used in V/f Control scheme to avoid operation in the speed range (+/- 0.5 * SKIP1W) around SKIP1SP.
This way resonances can be masked out.
See: |SKIP1SP|, |SKIP2SP|, |SKIP2W|.

ASCII -Command	SKIP2SP
Syntax Transmit	SKIP1SP [Data]
Syntax Receive	SKIP1SP <Data>
Type	Variable rw
Format	Integer16
DIM	rpm
Range	0 .. 3000
Default	0
Opmode	1,2
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in	S300/700
MMI	☒ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	388D (hex)
PROFIBUS PNU:	1709 (dec) IND = 33 (d)
DPR Objekt Nr:	909

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	2.1
EEPROM	Yes

Short Description	Skip Speed 2
-------------------	--------------

Description
Skip Speed 2.
Used in V/f Control scheme to avoid operation in a speed range (defined by SKIP2W) around this speed.
This way resonances can be masked out.
See: |SKIP2W|, |SKIP1SP|, |SKIP1W|.

ASCII -Command	SKIP2W	Available in	S300/700
Syntax Transmit	SKIP1SP [Data]	MMI	☒ CAN-Bus ☐
Syntax Receive	SKIP1SP <Data>	PROFIBUS	☐ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer16	CAN Object No:	388E (hex)
DIM	rpm	PROFIBUS PNU:	1710 (dec) IND = 33 (d)
Range	0 .. 500	DPR Objekt Nr:	910
Default	0	Data Type BUS/DPR	Integer16
Opmode	1,2	Weighting 10^3	
Drive Status		Last Change of this Object	2.1
Start Firmware		EEPROM	Yes
Configuration	☐		
Function Group			
Short Description	Skip Width 2		

Description

Skip Width 2.
Used in V/f Control scheme to avoid operation in the speed range (+/- 0.5 * SKIP2W) around SKIP2SP.
This way resonances can be masked out.
See: |SKIP2SP|, |SKIP1SP|, |SKIP1W|.

ASCII -Command	SLEN
Syntax Transmit	SLEN [Data]
Syntax Receive	SLEN <Data>
Type	Variable rw
Format	Integer8
DIM	m
Range	0 .. 45
Default	5
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		35F2 (hex)	
PROFIBUS PNU:		1842 (dec) IND = 1 (de	
DPR Objekt Nr:		242	

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Sercos Optical Range
-------------------	----------------------

Description

This parameter can be used to set the optical range (in meters) for a standardized 1mm² plastic optical fiber cable.

ASCII -Command	SLOTIO
Syntax Transmit	SLOTIO
Syntax Receive	SLOTIO <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	35F3 (hex)		
PROFIBUS PNU:	1843 (dec) IND = 1 (de		
DPR Objekt Nr:	243		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	I/O-Expansion Card: I/O States
-------------------	--------------------------------

Description

The SLOTIO command returns the states of the inputs and outputs on the I/O-expansion card (slot card) in the format Hxxxxxxxx

Bit number	Bit combination	Input/Output	Description
0	0x00000001	Input	Bit 0 Motion block number (A0)
1	0x00000002	Input	Bit 1 Motion block number (A1)
2	0x00000004	Input	Bit 2 Motion block number (A2)
3	0x00000008	Input	Bit 3 Motion block number (A3)
4	0x00000010	Input	Bit 4 Motion block number (A4)
5	0x00000020	Input	Bit 5 Motion block number (A5)
6	0x00000040	Input	Bit 6 Motion block number (A6)
7	0x00000080	Input	Bit 7 Motion block number (A7)
8	0x00000100	Input	Reference switch
9	0x00000200	Input	Acknowledge Contouring error
10	0x00000400	Input	Start next motion block
11	0x00000400	Input	Start jog mode
12	0x00001000	Input	Continue a motion block
13	0x00002000	Input	Start motion block no. A0 ... A7
14	0x00004000	Output	"In-Position" signal
15	0x00008000	Output	"In-Position2" signal (next)
16	0x00010000	Output	Contouring error
17	0x00020000	Output	"Position register 1" signal
18	0x00040000	Output	"Position register 2" signal
19	0x00080000	Output	"Position register 3" signal
20	0x00100000	Output	"Position register 4" signal
21	0x00200000	Output	"Position register 5" signal
22	0x00400000	Status	24Volt - On
23	0x00800000	Status	Slot fault
24...31			Reserve

ASCII -Command	SMNUMBER
Syntax Transmit	SMNUMBER [Data]
Syntax Receive	SMNUMBER <Data>
Type	Variable r
Format	Integer16
DIM	-
Range	0 .. 32767
Default	0
Opmode	-
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3695 (hex)
PROFIBUS PNU:	2005 (dec) IND = 1 (de
DPR Objekt Nr:	405

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Stored Motor Number in the feedback Device
-------------------	--

Description
IN PREPARATION !

SMNUMBER gives the motor number, that is stored in the feedback device (EnDAT or HIPERFACE).

This Object makes sense with |FBTYPE| = 2 or 4, otherwise "0" is returned.

ASCII -Command	SOFTIN
Syntax Transmit	SOFTIN [Data]
Syntax Receive	SOFTIN <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	Integer32
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.00
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	354E (hex)
PROFIBUS PNU:	1678 (dec) IND = 1 (de
DPR Objekt Nr:	78

Data Type BUS/DPR	Integer32
Weighting 10 ³	

Last Change of this Object	1.3
EEPROM	No

Short Description	Input variable for digital software inputs INPUT5...INPUT20
-------------------	---

Description

The bit variable SOFTIN describes the actual state of the virtual digital inputs INPUT5 ... INPUT20
The relation between the Bit number and the digital input is as follows:

Bit0 INPUT5
Bit1 INPUT6
....
BIT15 INPUT20

The write access to the parameter SOFTIN affects directly the state of the corresponding digital input
For example:

SOFTIN 5 : the digital inputs INPUT5 and INPUT7 becomes the state high

The function of the virtual digital inputs can be configured by the commands IN5MODE...IN20MODE

In case that an external I/O slot card is used, only a reduced number of virtual inputs is available INPUT19...INPUT20)

ASCII -Command	SOFTOUT
Syntax Transmit	SOFTOUT [Data]
Syntax Receive	SOFTOUT <Data>
Type	Variable ro
Format	Integer32
DIM	-
Range	Integer32
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.00
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	354F (hex)
PROFIBUS PNU:	1679 (dec) IND = 1 (de
DPR Objekt Nr:	79

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.3
EEPROM	No

Short Description	State variable for the virtual digital Outputs
-------------------	--

Description

The bit variable SOFTOUT describes the actual state of the virtual digital outputs |OUTPUT3| ... |OUTPUT18|

The relation between the Bit number and the digital output is as follows:

Bit0 |OUTPUT3|

Bit1 |OUTPUT4|

....

BIT15 |OUTPUT18|

The function of the virtual digital outputs can be configured by the commands |O3MODE|...|O18MODE|

In case that an external I/O slot card is used, only a reduced number of virtual outputs is available OUTPUT11...OUTPUT18)

ASCII -Command	SPHAS
Syntax Transmit	SPHAS
Syntax Receive	SPHAS <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.67
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	35F4 (hex)
PROFIBUS PNU:	1844 (dec) IND = 1 (de
DPR Objekt Nr:	244

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Sercos Phase
-------------------	--------------

Description

Shows the present Sercos phase.

- Phase 0 Close ring and reset
- Phase 1 Drive identification
- Phase 2 Communication initialization
- Phase 3 Parameter initialization
- Phase 4 Ready for operation

ASCII -Command	SRND
Syntax Transmit	SRND [Data]
Syntax Receive	SRND <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	-
Default	- 2^31
Opmode	-
Drive Status	-
Start Firmware	1.0
Configuration	☒
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3637 (hex)
PROFIBUS PNU:	1911 (dec) IND = 1 (de
DPR Objekt Nr:	311

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Start Position of Modulo Axes
-------------------	-------------------------------

Description

The SRND parameter is used to define the start of the range of movement for a modulo axes (|POSCNFG|=2). The end of the range can be set by the |ERND| command. All positioning operations are made in the positioning range <SRND...|ERND|-1>. The entry for SRND is made in SI units (taking account of |PGEAR1|, |PGEARO|).

ASCII -Command	SSIGRAY
Syntax Transmit	SSIGRAY [Data]
Syntax Receive	SSIGRAY <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0,1
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	35F6 (hex)
PROFIBUS PNU:	1846 (dec) IND = 1 (de
DPR Objekt Nr:	246

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	SSI format selection
-------------------	----------------------

Description

The command is used to select the SSI format

- SSIGRAY 0 = Binär
SSIGRAY 1 = Gray

ASCII -Command	SSIINV
Syntax Transmit	SSIINV [Data]
Syntax Receive	SSIINV <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 3
Default	0
Opmode	All
Drive Status	Disable
Start Firmware	3.55
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	35F7 (hex)
PROFIBUS PNU:	1847 (dec) IND = 1 (de
DPR Objekt Nr:	247

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	2.1
EEPROM	Yes

Short Description	polarity of SSI Clock
-------------------	-----------------------

Description

nur S300:

The behavior of the SSI interface at X5.

The SSIINV command has different interpretations, depending on whether the SSI is configured as an output or an input.

1. SSI output

SSIINV = 0: normal clock level

SSIINV = 1: inverted clock level

SSIINV = 2: normal clock level, only 12 Bit resolution

SSIINV = 3: inverted clock level, only 12 Bit resolution

ASCII -Command	SSIRESOL
Syntax Transmit	SSIRESOL [Data]
Syntax Receive	SSIRESOL <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	32 Bits
Default	0
Opmode	All
Drive Status	Disable + Reset
Start Firmware	3.07
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	387B (hex)
PROFIBUS PNU:	1691 (dec) IND = 33 (d)
DPR Objekt Nr:	891

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	2.1
EEPROM	Yes

Short Description	resolution of the SSI Linear encoder
-------------------	--------------------------------------

Description

Defines the resolution of the SSI Linear encoder (FBTYPE=26/28).

This parameter includes the number of counts delivered by the SSI encoder pro motor polpitch.

e.g.

SSI-Resolution 1µm

Polpitch 28 mm = 28000 µm

ENCLINES=1000

SSIRESOL=28

ASCII -Command	SSIRESOL
Syntax Transmit	SSIRESOL [Data]
Syntax Receive	SSIRESOL <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	32 Bit
Default	0
Opmode	All
Drive Status	Disable + Reset
Start Firmware	3.07
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	387B (hex)
PROFIBUS PNU:	1691 (dec) IND = 33 (d)
DPR Objekt Nr:	891

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	2.0
EEPROM	Yes

Short Description	resolution of the SSI Linear encoder
-------------------	--------------------------------------

Description

Defines the resolution of the SSI Linear encoder (|FBTYPE|=26). This parameter includes the number of counts delivered by the SSI encoder per motor pitch. e.g. SSI-Resolution 1µmPitch 28 mm = 28000 µmSSIRESOL=28000

ASCII -Command	SSIREVOL
Syntax Transmit	SSIREVOL [Data]
Syntax Receive	SSIREVOL <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0 .. 16
Default	4
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	
PROFIBUS PNU:	
DPR Objekt Nr:	281

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	2.2
EEPROM	Yes

Short Description	Number of multiturn bits (SSI)
-------------------	--------------------------------

Description

The command SSIREVOL defines the number of multiturn-bits by the SSI – transmission (receive)
In combination with command SSIRXD all bits in the SSI-telegramm are defined.

SSIRXD – all SSI-bits

SSIREVOL – bits for multiturn-information

Bits per feedback turn = SSIRXD - SSIREVOL

Default value S700: 12

ASCII -Command	SSIRXD
Syntax Transmit	SSIRXD [Data]
Syntax Receive	SSIRXD <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	1 ... 33
Default	24
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	365E (hex)
PROFIBUS PNU:	1950 (dec) IND = 1 (de
DPR Objekt Nr:	350

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Sets the number of received SSI-bits
-------------------	--------------------------------------

Description

The command ‘SSIRXD’ sets the number of received SSI-bits .

REGISTER max. 32 bit

number of bits:

1	=>	SSIRXD 1
2	=>	SSIRXD 2
...		
32	=>	SSIRXD 32
33	=>	SSIRXD 33

ASCII -Command	SSITOUT
Syntax Transmit	SSITOUT [Data]
Syntax Receive	SSITOUT <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 1
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3661 (hex)
PROFIBUS PNU:	1953 (dec) IND = 1 (de
DPR Objekt Nr:	353

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Transmit Timeout SSI
-------------------	----------------------

Description

The command SSITOUT sets the monoflop - timeout of the SSI - transmission.

Timeout:

13us => SSITOUT 0

3us => SSITOUT 1

ASCII -Command	SSTAT
Syntax Transmit	SSTAT [Data]
Syntax Receive	SSTAT <Data>
Type	Variable ro
Format	String
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☒
SERCOS IDN:	95
CAN Object No:	35FA (hex)
PROFIBUS PNU:	1850 (dec) IND = 1 (de
DPR Objekt Nr:	250

Data Type BUS/DPR	String
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	status of the Sercos interface as text string
-------------------	---

Description

Presents the actual status of the Sercos interface, as a text string.

ASCII -Command	STAGECODE
Syntax Transmit	-
Syntax Receive	STAGECODE <Data>
Type	Variable r
Format	Integer8
DIM	-
Range	1, 2, ..., 19
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3682 (hex)
PROFIBUS PNU:	1986 (dec) IND = 1 (de
DPR Objekt Nr:	386

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Power Stage Identification
-------------------	----------------------------

Description

Give the identification of the power stage-

STAGECODE=0	not allowed (Hardware error)
STAGECODE=1	S 303
STAGECODE=2	S 306
STAGECODE=3	S 310
STAGECODE=4	S 341
STAGECODE=5	S 343
STAGECODE=6	S 346

ASCII -Command	STAT
Syntax Transmit	STAT
Syntax Receive	STAT
Type	Variable ro
Format	Integer16
DIM	-
Range	int (=Word)
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700	
MMI	☒	CAN-Bus ☒
PROFIBUS	☒	Sercos ☐
SERCOS IDN:		
CAN Object No:	35FB (hex)	
PROFIBUS PNU:	1851 (dec) IND = 1 (de	
DPR Objekt Nr:	251	
Data Type BUS/DPR	Integer16	
Weighting 10^3		

Last Change of this Object	1.0
EEPROM	No

Short Description	Drive Status Word
-------------------	-------------------

Description

The STAT command provides a 16-bit status word in hexadecimal format (Hxxxx).

Bit Value Interpretation

0	0x0001	=0 if output stage is enabled =1 output stage disabled
1	0x0002	=0 if controller is ready for operation (BTB) =1 fault present
2	0x0004	reserve
3	0x0008	=1 if service function is active =0 no service function active
4	0x0004	reserve
5	0x0020	=1 after a hardware reset, is cancelled by CLRHR
6	0x0040	=1 configuration variable was altered (SAVE and COLDSTART) =0 no configuration variable altered
7	0x0080	=1 safety relay is active (AS-Option) =0 safety relay is not active
8	0x0100	=1 discrepancy between RAM and EEPROM parameters (cancelled by SAVE command). =0 RAM and EEPROM parameters are the same
9	0x0200	=1 slot-expansion card is available =0 slot-expansion card is not available
10	0x0400	=1 RAM parameter modified (cancelled by DUMP command) =0 no change in RAM parameters since the last DUMP .
11...15		Reserve

Bits 5, 6, 8 and 10 are used for an external signal that internal parameters have been changed

Bit 5 hardware reset

Bit 5 is set if the parameters are copied from the serial EEPROM to the RAM (this happens after a hardware reset of a LOAD command). If this bit is set, all the parameters should be requested by the parameterization software (|DUMP| command) and bit 5 should be cancelled by the |CLRHR| command.

Bit 6 configuration variable was altered

Any alteration of a configuration variable (a variable that makes it necessary to recompile the macro, i.e. to reset the amplifier) means that this bit will be set to 1. If this bit is set, the parameterization software should generate a |SAVE| / |COLDSTART| command (controller reset) at a suitable moment. Bit 6 is only cancelled by a hardware reset (|COLDSTART|).

Bit 8 discrepancy between EEPROM and RAM parameters

Any alteration of a RAM parameter means that this bit is set to 1. If this bit is set, the parameterization software should generate a |SAVE| command (save the data in the EEPROM) at a suitable moment (e.g. on exiting the program). This bit is cancelled by a |SAVE| command.

Bit 10 RAM parameters modified

Any alteration of a RAM parameter through a parameterization channel other than the RS232 means that this bit is set to 1. If this bit is set, the parameterization software should generate a |DUMP| command (read all data) at a suitable moment. This bit is

cancelled by a |DUMP| command.

ASCII -Command	STATCODE
Syntax Transmit	STATCODE
Syntax Receive	STATCODE <Data>
Type	Command
Format	String
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Drive Status

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	385E (hex)		
PROFIBUS PNU:	1662 (dec) IND = 33 (d)		
DPR Objekt Nr:	862		

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	-

Short Description	Plain Text Warnings
-------------------	---------------------

Description
The warnings are displayed as plain text.

See also |STATCODES|

ASCII -Command	STATCODE *
Syntax Transmit	STATCODE *
Syntax Receive	STATCODE <Data>
Type	Command
Format	Integer32
DIM	-
Range	0 .. 0xFFFFFFFF
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☒ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	
Data Type BUS/DPR	-
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	-

Short Description	Status Variable "Warnings"
-------------------	----------------------------

Description

The STATCODE * command returns the internal warnings in the form of a bit-variable.
The assignments for the individual bits can be seen in the following table.

Bit	Display	Meaning
0 / 0x00000001	n01	=1 I2T Threshold override
1 / 0x00000002	n02	=1 Regen message
2 / 0x00000004	n03	=1 Contouring error
3 / 0x00000008	n04	=1 watchdog limit reached
4 / 0x00000010	n05	=1 Line phase missing
5 / 0x00000020	n06	=1 Software limit switch 1 active
6 / 0x00000040	n07	=1 Software limit switch 2 active
7 / 0x00000080		=1 Wrong motion task started Bit is set if a not defined motion task was selected, the target position is out of range (software limit switches) or wrong (out of range) settings for ACCR , DECR are used .
If a FW >=2.31 is used the checksum of the table motion task is active, this means the conversion tool 4.0 is necessary. In case a table motion task is created by an older conversion version it will effect a n08 warning. The warning gets also active, if AUTOHOME is used or a digital input is selected as reference input (for example IN1MODE 16) and OPMODE <> 4 or 8. Starting a not existing table motion task can also be the reason (FW > 2.14)		
8 / 0x00000100	n09	=1 Reference point not set
9 / 0x00000200	n10	=1 PSTOP active
10 / 0x00000400	n11	=1 NSTOP active
11 / 0x00000800	n12	=1 Default motor settings loaded

12 / 0x00001000	n13	=1 Slot warning (I/O extension board)
13 / 0x00002000	n14	=1 sincos commutation (wake & shake) not completed, will be canceled when the amplifier is enabled and wake & shake is carried out
14 / 0x00004000	n15	
15 / 0x00008000	n16	Is active, if one or more of the warnings n17...n31 are active.
16 / 0x00010000	n17	Fieldbus-Sync is not locked
17 / 0x00020000	n18	Using Multiturn encoder feedback, a overrun over the maximum number of resolutions (+/- 2048) was detected
19	n191	The motion task ramps are limited (range overflow on motion task data)
20	n20	Invalid motion task
21	n21	PLC program error (for details see plc code)
22	n22	max. motortemperatur reached (the user can shut down the process before the temperature error will interrupt the process immediately)
23	n23	Sin Cos Feedback warning level reached see also VWM
24	n24	Bit is set to 1, if during boot up process the plausibility check is negative see also ERRPARAM
25	n25	Reserved
26	n26	Reserved
27	n27	Reserved
28	n28	Reserved
29...30	n29 ..n31	Reserved
31 / 0x80000000	n32	=1 Beta version of the firmware

ASCII -Command	STATIO
Syntax Transmit	STATIO
Syntax Receive	STATIO <Data>
Type	Variable ro
Format	7 x Integer8
DIM	-
Range	0,1 (=State)
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Digital I/O

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		35FC (hex)	
PROFIBUS PNU:		1852 (dec) IND = 1 (de	
DPR Objekt Nr:		252	

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	I/O Status
-------------------	------------

Description

The STATIO command returns the actual state of the digital inputs and outputs of the servo amplifier, in the following sequence.
IN1 IN2 IN3 IN4 ENABLE OUT1 OUT2

A 0 at the appropriate position means that the corresponding input/output is in the Low state, a 1 signifies the High state.

ASCII -Command	STATUS
Syntax Transmit	STATUS
Syntax Receive	STATUS <Data>
Type	Variable ro
Format	Integer16 Integer32 Integer16 Integer16 Integer16
DIM	-
Range	int (=Word); long int (=DoubleWord)
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Drive Status

Available in	S300/700	
MMI	☒	CAN-Bus ☒
PROFIBUS	☒	Sercos ☐
SERCOS IDN:		
CAN Object No:	35FD (hex)	
PROFIBUS PNU:	1853 (dec) IND = 1 (de	
DPR Objekt Nr:	253	
Data Type BUS/DPR	-	
Weighting 10^3		

Last Change of this Object	1.0
EEPROM	No

Short Description	Detailed amplifier status
-------------------	---------------------------

Description

The STATUS command returns the detailed status information in the form of a 5 status variables in hexadecimal format.

Word no. 1 Format Hxxxx

Bit 0 =0 if hardware enable is set (ENABLE input = 24V)

Bit 1 =0 if software enable is set

Bit 2 reserve

Bit 3 =0 if amplifier is ready for operation (BTB / no fault)

Word no. 2 Format Hxxxx

Bits 0 ... 31 fault variable (see |ERRCODE|)

Word no. 3 Format Hxxxx

Word no. 4 Format Hxxxx

=0 no service function active

=1 service function "constant current/velocity" is active

=2 jog mode |MJOX| is active

Word no. 5 Format Hxxxx

Bit Value Interpretation

0 0x0001 =1 motion block / homing movement / jog mode is active

1 0x0002 =1 reference point set

2 0x0004 =1 reference switch occupied (home position)

3 0x0008 =1 IN-POSITION signal

4 0x0010 =1 position has been latched (positive edge)

5 0x0020 =1 homing in progress

6 0x0040 =1 jog mode is running

7 0x0080 =1 position has been latched (negative edge)

8 ... 15 reserve

ASCII -Command	STEP
Syntax Transmit	STEP [Data]
Syntax Receive	STEP <Data>
Type	Variable rw
Format	Integer16 Float Integer16 Float
DIM	ms (DurationN) / rpm (velocityN)
Range	Duration:0 to 32767; velocity:-VLIM to +VLIM
Default	Duration:1000; velocity1/2: 100/-100
Opmode	0
Drive Status	Enabled
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	Integer16 Float Integer
Weighting 10^3	

Last Change of this Object	1.9
EEPROM	-

Short Description	Step Service Operation
-------------------	------------------------

Description

Only S700:

The STEP command is used to implement a service function through the operating mode “digital velocity control” (OPMODE|=0). The command can be used in the following forms.

1. STEP

The command provides the present settings for the service function.

2. STEP T1 V1

A digital setpoint V1 (RPM) is provided for time T1 (in msec). After T1 has elapsed, the digital setpoint is set to 0.

3. STEP T1 V1 T2 V2

A digital setpoint V1 (RPM) is provided for time T1 (in msec). After T1 has elapsed, a digital setpoint V2 (RPM) is provided for time T2 (in msec). After T2 has elapsed, the T1/V1 cycle starts again. This command can be used to create an endless reversing operation.

e.g. STEP 1000 500 1000 -500

The service operation can always be cancelled by using the |STOP| command.

The “digital velocity control” operating mode is a precondition for implementing the STEP command.

ASCII -Command	STOP
Syntax Transmit	STOP
Syntax Receive	STOP
Type	Command
Format	-
DIM	-
Range	-
Default	-
Opmode	All
Drive Status	Enabled
Start Firmware	1.0
Configuration	☐
Function Group	Position Data

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		35FE (hex)	
PROFIBUS PNU:		1854 (dec) IND = 1 (de	
DPR Objekt Nr:		254	

Data Type BUS/DPR	-
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	-

Short Description	adjust setpoint to 0
-------------------	----------------------

Description

The STOP command breaks off the drive movement. The response of the drive varies according to the operating mode that is valid at the moment.

1. |OPMODE|=0 (digital velocity control)

The STOP command has the effect of setting the velocity setpoint to 0.

The drive brakes along the preset braking ramp for the velocity control loop (|DEC|).

2. |OPMODE|=2 (digital current control)

The STOP command has the effect of setting the current setpoint to 0.

The drive coasts down.

3. |OPMODE|=8 (internal motion tasks)

The STOP command has the effect of breaking off the present motion task (jog mode / homing movement).

The drive brakes along the decel ramp that is defined in the motion task. The motion task can be restarted by |CONTINUE| or digital input defined with |INxMODE|=22.

The STOP command has no function in the |OPMODE|=1,3,4,5,6,7 operating modes.

ASCII -Command	STOPMODE
Syntax Transmit	STOPMODE [Data]
Syntax Receive	STOPMODE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 1
Default	1
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☒
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	35FF (hex)
PROFIBUS PNU:	1855 (dec) IND = 1 (de
DPR Objekt Nr:	255

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Brake Response for Disable
-------------------	----------------------------

Description

STOPMODE defines the response of the drive to a disabling of the output stage.

The following settings are possible:

STOPMODE=0 the output stage is immediately disabled, and the drive coasts down.

STOPMODE=1 the drive is run down under velocity control to velocity 0 (|DECDIS| ramp). When the velocity falls below the standstill threshold |VEL0|, the output stage is disabled.

The output stage will also be disabled if the |VEL0| velocity is not reached within 5 seconds (a 5-second time-out).

ASCII -Command	SWCNFG
Syntax Transmit	SWCNFG [Data]
Syntax Receive	SWCNFG <Data>
Type	Variable rw
Format	Unsigned16
DIM	-
Range	0 .. 65536
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☒
Function Group	Position Data

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	P 3004		
CAN Object No:	3600 (hex)		
PROFIBUS PNU:	1856 (dec) IND = 1 (de		
DPR Objekt Nr:	256		

Data Type BUS/DPR	Unsigned16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Configuration of software limit switches
-------------------	--

Description

Configuration of software limit switches

The SWCNFG variable can be considered as a bit-variable. The individual bits are interpreted as follows:

- Bit 0 =1 Software limit switch 1 active
- Bit 1 =1 Software limit switch 2 active

The software limit sitches are acting only after a homing is done.

see also |SWE1|, |SWE2|

ASCII -Command	SWE1	Available in	S300/700
Syntax Transmit	SWE1 [Data]	MMI	☒ CAN-Bus ☒
Syntax Receive	SWE1 <Data>	PROFIBUS	☒ Sercos ☒
Type	Variable rw	SERCOS IDN:	50
Format	Integer32	CAN Object No:	3604 (hex)
DIM	-	PROFIBUS PNU:	1860 (dec) IND = 1 (de
Range	long int	DPR Objekt Nr:	260
Default	0	Data Type BUS/DPR	Integer32
Opmode	All	Weighting 10^3	
Drive Status	-	Last Change of this Object	1.0
Start Firmware	1.0	EEPROM	Yes
Configuration	☐		
Function Group	Position Data		
Short Description	SW limit switch (smallest position)		

Description

The variable SWE1 contains the position value for the limit switch..
The scaling of the position depends on the |PGEARI| / |PGEARO| / |PRBASE| parameters, and is calculated according to the following formula:

$$SWE1[increments] = SWE1[input] * |PGEARO| / |PGEARI|$$

1048576 increments/turn for |PRBASE|=20
65536 increments/turn for |PRBASE|=16

$$SWE1 < |SWE2|$$

see also description of |SWCNFG|

ASCII -Command	SWE2
Syntax Transmit	SWE2 [Data]
Syntax Receive	SWE2 <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	long int
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Position Data

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	49		
CAN Object No:	3606 (hex)		
PROFIBUS PNU:	1862 (dec) IND = 1 (de		
DPR Objekt Nr:	262		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	SW limit switch (biggest position)
-------------------	------------------------------------

Description

The variable SWE2 contains the position value for the limit switch.
The scaling of the position depends on the |PGEARI| / |PGEARO| / |PRBASE| parameters, and is calculated according to the following formula:

$$SWE2[increments] = SWE2[input] * |PGEARO| / |PGEARI|$$

1048576 increments/turn for |PRBASE|=20
65536 increments/turn for |PRBASE|=16

$$|SWE1| < SWE2$$

see also description of |SWCNFG|

ASCII -Command	SYNCSRC
Syntax Transmit	SYNCSRC [Data]
Syntax Receive	SYNCSRC <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	0, 1, 2, 3
Default	0
Opmode	All
Drive Status	Disable + Reset (Coldstart)
Start Firmware	1.0
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3683 (hex)
PROFIBUS PNU:	1987 (dec) IND = 1 (de
DPR Objekt Nr:	387

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	source for the synchronization
-------------------	--------------------------------

Description

This parameter defines the source for the synchronization of the control loops to the external fieldbus.

- 0: No synchronization
- 1: (reserved) synchronization via Sercos
- 2: Synchronization via KS3000 Fire-Wire option board
- 3: Synchronization via CANopen
- 4: old DPR card
- 5: new DPR card (e.g. EtherCAT wire card)
- 6: new DPR card with Aquarius Protokoll (EtherCat)

ASCII -Command	T
Syntax Transmit	T [Data]
Syntax Receive	T <Data>
Type	Command
Format	Float
DIM	A
Range	-DIPEAK .. DIPEAK
Default	-
Opmode	2
Drive Status	Enabled
Start Firmware	1.0
Configuration	☐
Function Group	Oscilloscope/Service

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	360E (hex)		
PROFIBUS PNU:	1870 (dec) IND = 1 (de		
DPR Objekt Nr:	270		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	-

Short Description	Digital current setpoint
-------------------	--------------------------

Description

The “T” command can be used to define a constant current setpoint <i> (in A).
This current setpoint remains effective until a new T / |STOP| / |OPMODE| command is executed.

ASCII -Command	TASK
Syntax Transmit	TASK
Syntax Receive	TASK <Data>
Type	Variable ro
Format	String
DIM	-
Range	max 80 ASCII Characters
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	360F (hex)
PROFIBUS PNU:	1871 (dec) IND = 1 (de
DPR Objekt Nr:	271

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Task workload
-------------------	---------------

Description
The TASK command shows the loading for the individual firmware tasks.
The figures signify the number of functions performed per second.

ASCII -Command	TBRAKE
Syntax Transmit	TBRAKE [Data]
Syntax Receive	TBRAKE <Data>
Type	Variable rw
Format	Integer16
DIM	ms
Range	10 .. 10000
Default	100
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	366E (hex)
PROFIBUS PNU:	1966 (dec) IND = 1 (de
DPR Objekt Nr:	366

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Disable Delaytime with Holding Brake
-------------------	--------------------------------------

Description

TBRAKE defines a disable delay time with holding brake.

If the drive is disabled, it controls the holding brake if selected. After the motor is stopped, the holding brake is switched off and a delay timer (value is TBRAKE) is started. When the time is gone, the drive is disabled.

ASCII -Command	TBRAKE0
Syntax Transmit	TBRAKE0 [Data]
Syntax Receive	TBRAKE0 <Data>
Type	Variable rw
Format	Integer16
DIM	ms
Range	-10 .. 10000
Default	20
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	366F (hex)
PROFIBUS PNU:	1967 (dec) IND = 1 (de
DPR Objekt Nr:	367

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Enable Delaytime with Holding Brake
-------------------	-------------------------------------

Description

The parameter TBRAKE0 defines a reaction time of the holding brake when the drive is enabled.
If the drive is enabled (hardware/software enable) the drive controls the holding brake. During the selected time TBRAKE0, the internal velocity setpoint is set to 0. After the time when the brake is open, the setpoint is accepted internally and the motor can run.

Important !

If the value TBRAKE0 is to big, this can cause on a vertical axis a fall down.

If the TRBAKE0 is set to values <0, the internal setpoint is activated before the holding brake is open.

ASCII -Command	TEMPE
Syntax Transmit	TEMPE
Syntax Receive	TEMPE <Data>
Type	Variable ro
Format	Integer32
DIM	Centigrade Degrees
Range	-20 .. 90
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Actual values

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	3610 (hex)		
PROFIBUS PNU:	1872 (dec) IND = 1 (de		
DPR Objekt Nr:	272		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Ambient Temperature
-------------------	---------------------

Description

Displays the present internal temperature in °C.

ASCII -Command	TEMPH
Syntax Transmit	TEMPH
Syntax Receive	TEMPH <Data>
Type	Variable ro
Format	Integer32
DIM	Centigrade Degrees
Range	-20 .. 90
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Actual values

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	384		
CAN Object No:	3611 (hex)		
PROFIBUS PNU:	1873 (dec) IND = 1 (de		
DPR Objekt Nr:	273		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Heat Sink Temperature
-------------------	-----------------------

Description

Displays the present heat sink temperature in °C.

ASCII -Command	TEMPM
Syntax Transmit	TEMPM
Syntax Receive	TEMPM <Data>
Type	Variable ro
Format	Integer32
DIM	Ohms
Range	0 .. 10000
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		3612 (hex)	
PROFIBUS PNU:		1874 (dec) IND = 1 (de	
DPR Objekt Nr:		274	

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Motor Temperature
-------------------	-------------------

Description

Indicates the motor temperature, in the form of the resistance of the temperature sensor (in ohms).

ASCII -Command	TRJSTAT
Syntax Transmit	TRJSTAT
Syntax Receive	TRJSTAT <Data>
Type	Variable ro
Format	Integer32
DIM	-
Range	0 .. 0xFFFFFFFF
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Drive Status2

Available in	S300/700	
MMI	☒	CAN-Bus ☒
PROFIBUS	☒	Sercos ☐
SERCOS IDN:		
CAN Object No:	3613 (hex)	
PROFIBUS PNU:	1875 (dec) IND = 1 (de	
DPR Objekt Nr:	275	
Data Type BUS/DPR	Integer32	
Weighting 10^3		

Last Change of this Object	1.0
EEPROM	No

Short Description	Status2 Information
-------------------	---------------------

Description

The TRJSTAT command returns the internal status information in the form of a bit-variable.

The status information is primarily used for internal functions. Only the bits that are marked by an "*" can be used for external functions (control system).

Bits 16 ... 20 are also mirrored in the |DRVSTAT| status variable.

Bit	Significance	Meaning
0	0x00000001	=1 the output INPOS2 is updated every msec
1	0x00000002	=1 At the end of the actual motion task, the drive outputs no IN-POSITION signal (a motion task sequence was activated).
2*	0x00000004	=1 Toggle Bit "Motion task finished". Is toggled at the end of a motion task. The toggling of the Bit is done, if the target position is reached and the profile generator is switched off. This is different to the functionality of the IN-POSITION Bit. When the drive is switched on, this Bit is set to low.
3...15		Reserved
16*	0x00010000	=1 Motion task active (position control) Is set, if a motion task is started(motion task, Jog, Homing). Is cleared, if a motion task has finished or is stopped (STOP).
17*	0x00020000	=1 Reference point set Is set, if the homing move has successfully finished or if the feedback device is a multturn encoder. Is cleared, when a homing move is started. see also bit no. 21
18*	0x00040000	=1 Home position Is high, if the homing switch is active, otherwise low.
19*	0x00080000	=1 In-Position Is set, if the difference between the actual position and the target position is smaller than PEINPOS . Is cleared, if the distance is greater.

20*	0x00100000	=1 Position latch activated (positive latch) Is set, if a positive edge at Latch input 2 (configured by IN2MODE =26) was detected. Is cleared, if the position is read by LATCH2P16 / LATCH2P32 .
21*	0x00200000	=1 Homing move is active Is set, if a Homing move was started. Is cleared, if the homing move is successful or stopped (STOP).
22*	0x00400000	=1 Jog move active Is set, if a Jog move is started. Is cleared, if the Jog move is stopped.
23	0x00800000	=1 Position latch activated (negative latch) Is set, if a negative edge at Latch input 2 (configured by IN2MODE =26) was detected. Is cleared, if the position is read by LATCH2N16 / LATCH2N32 .
24	0x01000000	=1 Emergency stop active Is set, if an emergency stop has occurred (DEC-phase after an error, active hardware limit switches, Input configured as Emergency stop with level low.
25	0x02000000	=1 position latch at input1 (positive transition), if a rising edge at input 1 is detected, when input1 is defined as latch input (IN1MODE =26). Is reset, if the latched position is read by LATCH1P16 or LATCH1P32 .
26	0x04000000	=1 position latch at input1 (negative transition), if a falling edge at input 1 is detected, when input1 is defined as latch input (IN1MODE =26). Is reset, if the latched position is read by LATCH1N16 or LATCH1N32 .
27	0x20000000	Amplifier is in acceleration stage of a motion task
28	0x40000000	Amplifier is in deceleration stage of a motion task

ASCII -Command	TRUN
Syntax Transmit	TRUN
Syntax Receive	TRUN <Data>
Type	Variable ro
Format	String
DIM	hhhhh:mm
Range	00000:00 to 99999:45
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Basic Setup

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		3614 (hex)	
PROFIBUS PNU:		1876 (dec) IND = 1 (de	
DPR Objekt Nr:		276	

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Run-time counter in min
-------------------	-------------------------

Description

The run-time counter shows the operating life of the amplifier (if the 24V is applied) in minutes.

The internal resolution of the run-time counter is 1 second.

Since the run-time counter value is included in the serial EEPROM of the amplifier, it is only updated in the EEPROM every 8 minutes. So switching off the 24V supply can cause a loss in the record of up to 8 minutes.

ASCII -Command	TRUNS
Syntax Transmit	TRUN
Syntax Receive	TRUN <Data>
Type	Variable ro
Format	String
DIM	hhhhh:mm
Range	00000:00 to 99999:45
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Basic Setup

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		3614 (hex)	
PROFIBUS PNU:		1876 (dec) IND = 1 (de	
DPR Objekt Nr:		276	

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Run-time counter in s
-------------------	-----------------------

Description

FW >=1.61

The run-time counter shows the operating life of the amplifier (if the 24V is applied) in seconds.

The internal resolution of the run-time counter is 1 second.

Since the run-time counter value is included in the serial EEPROM of the amplifier, it is only updated in the EEPROM every 8 minutes. So switching off the 24V supply can cause a loss in the record of up to 8 minutes.

ASCII -Command	TSTEP
Syntax Transmit	TSTEP [Data]
Syntax Receive	TSTEP <Data>
Type	Variable rw
Format	Integer16 Float Integer16 Float
DIM	ms (DurationN) / As (CurrentN)
Range	Duration:0 to 32767; Current:IPEAKN to IPEAKP
Default	-
Opmode	2
Drive Status	Enabled
Start Firmware	2.32
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	Integer16 Float Integer
Weighting 10 ³	

Last Change of this Object	1.9
EEPROM	No

Short Description	Service operation torque steps
-------------------	--------------------------------

Description

S700 and S300 |FW| > 2.32:

The TSTEP command is used to implement a service function through the operating mode "digital torque control" (|OPMODE|=2). The command can be used in the following forms.

1. TSTEP

The command provides the present settings for the service function.

2. TSTEP T1 C1

A digital setpoint C1 (Amperes) is provided for time T1 (in msec). After T1 has elapsed, the digital setpoint is set to 0.

3. TSTEP T1 C1 T2 C2

A digital setpoint C1 (Amperes) is provided for time T1 (in msec). After T1 has elapsed, a digital setpoint C2 (Amperes) is provided for time T2 (in msec). After T2 has elapsed, the T1/C1 cycle starts again. This command can be used to create an endless reversing operation (rectangular torque progression and triangular velocity progression; T1 and T2 have to be selected as short as the motor cannot be accelerated beyond +/-|VOSPD|, otherwise the error F08 is generated).

e.g. TSTEP 100 0.5 100 -0.5

The service operation can always be cancelled by using the |STOP| command.

The "digital torque control" operating mode is a precondition for executing the TSTEP command.

ASCII -Command	UCOMP
Syntax Transmit	UCOMP [Data]
Syntax Receive	UCOMP <Data>
Type	Variable rw
Format	Integer32
DIM	PUNIT
Range	
Default	0
Opmode	8
Drive Status	-
Start Firmware	2.14
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3631 (hex)
PROFIBUS PNU:	1905 (dec) IND = 1 (de
DPR Objekt Nr:	305

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.3
EEPROM	Ja

Short Description	Backlash Compensation
-------------------	-----------------------

Description

For many applications it is necessary to approach motion block positions from one direction only (to avoid backlash errors arising from the interplay of the rack and pinion). To do this, at the start of a motion block the target position for the motion block is shifted by a correction value, and the motion block is only started for the real target value when this corrected position has been reached. The behavior of this function is controlled by the UCOMP parameter. The value of this parameter is the size of the correction, the sign shows the direction in which the correction is to be made. If the sign is positive, the correction is only made for positive velocities (i.e. the target position is always approached from the right), if it is negative, the correction is only made for negative velocities. This function is switched off if UCOMP is set to 0 (default setting).

e.g.

1. Actual position = 0, target position = 1000, UCOMP = 100 -> the drive moves to position 1100, reverses, and stops at position 1000.
2. Actual position = 1000, target position = 0, UCOMP = 100 -> the drive moves directly to position 0
3. Actual position = 1000, target position = 0, UCOMP = -100 -> the drive moves to position -100, reverses, and stops at position

ASCII -Command	UMAX	Available in	S300/700
Syntax Transmit	UMAX [Data]	MMI	☐ CAN-Bus ☐
Syntax Receive	UMAX <Data>	PROFIBUS	☐ Sercos ☐
Type		SERCOS IDN:	
Format		CAN Object No:	
DIM		PROFIBUS PNU:	
Range		DPR Objekt Nr:	0
Default			
Opmode			
Drive Status			
Start Firmware			
Configuration	☐	Data Type BUS/DPR	
Function Group		Weighting 10^3	

Last Change of this Object	2.1
EEPROM	

Short Description	
-------------------	--

Description

comming soon

ASCII -Command	UPDATE
Syntax Transmit	UPDATE [Data]
Syntax Receive	UPDATE
Type	Command
Format	-
DIM	Name
Range	ALL,USER,TABLE,PROG,PORDER,MBASE,Lookup
Default	-
Opmode	All
Drive Status	Disabled
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	
Data Type BUS/DPR	-
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	-

Short Description	Program Update via RS232
-------------------	--------------------------

Description

The UPDATE command makes it possible to program the internal Flash EEPROM via the serial interface.

Procedure for a software update:

1. Connect the amplifier to the serial interface of a PC.
2. Start the terminal program HINT2.EXE COM2: 38400 (the computer should be booted in DOS mode).
This establishes the connection between the PPC and the command interpreter of the Drive. To check the connection, enter the LIST command. The response should be a list of all the available commands, shown on the screen.
3. Enter the command |UPDATE| ALL xxxx in the command line.
xxxx - Name of the firmware file that is to be programmed. Take care that the file xxx for programming is in the active directory. If no file name is entered, then the name ALL is used as a default.

Attention !!! When the drive is programmed with ALL, the loaded motion tasks are deleted. Save motion tasks before programming the firmware.

The programming takes about 40 minutes.

The addresses that are programmed are displayed during the programming procedure. If the display remains static, but the download has not been completed (this problem has been observed on several PCs), then operate the ENTER key. The programming will then carry on.

If the programming procedure is interrupted, then the amplifier will report this in the monitor program at the next power-on (a “-” sign in the first position of the display).

In this case, the download can be restarted by the following command sequence:

X: xxxx

xxxx - Name of the firmware file to be programmed.

Procedure for loading a motor database:

A standard motor database is included as a subset of the firmware. If a customer-specific motor database is required, then it can be loaded after the firmware has been programmed.

This requires the following command:

|UPDATE| MBASE xxxx

xxxx - Name of the motor database file that is to be programmed. Take care that the file xxx for programming is in the active directory. If no file name is entered, then the name MBASE is used as a default.

ASCII -Command	UVLTMODE
Syntax Transmit	UVLTMODE [Data]
Syntax Receive	UVLTMODE <Data>
Type	Variable rw
Format	Integer8
DIM	-
Range	0, 1
Default	1
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☒
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3617 (hex)
PROFIBUS PNU:	1879 (dec) IND = 1 (de
DPR Objekt Nr:	279

Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Undervoltage Mode
-------------------	-------------------

Description

The configuration variable UVLTMODE activates or inhibits the undervoltage monitoring of the amplifier.
If the monitoring is activated (UVLTMODE=1), then the fault message F05 (undervoltage) is generated as soon as the DC-bus voltage falls below the undervoltage threshold |VBUSMIN| and the output stage is activated .

ASCII -Command	V
Syntax Transmit	V
Syntax Receive	V <Data>
Type	Variable ro
Format	FLOAT
DIM	MSPEED
Range	-15000 .. 15000
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Actual values

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	40		
CAN Object No:	3618 (hex)		
PROFIBUS PNU:	1880 (dec) IND = 1 (de		
DPR Objekt Nr:	280		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Actual Velocity
-------------------	-----------------

Description
The present velocity of the motor.

ASCII -Command	VBUS
Syntax Transmit	VBUS
Syntax Receive	VBUS <Data>
Type	Variable ro
Format	Integer32
DIM	V
Range	0 .. 900
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Actual values

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	380		
CAN Object No:	361A (hex)		
PROFIBUS PNU:	1882 (dec) IND = 1 (de		
DPR Objekt Nr:	282		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	DC-bus voltage
-------------------	----------------

Description

The present voltage of the DC-bus.

ASCII -Command	VBUSBAL
Syntax Transmit	VBUSBAL [Data]
Syntax Receive	VBUSBAL <Data>
Type	Variable rw
Format	Integer16
DIM	- / V
Range	0, 1, 2, 3, 40 ... 750
Default	2
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☒
Function Group	Basic Setup

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	361B (hex)		
PROFIBUS PNU:	1883 (dec) IND = 1 (de		
DPR Objekt Nr:	283		

Data Type BUS/DPR	Integer16
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Maximum Line Voltage
-------------------	----------------------

Description

This setting is for the maximum permissible voltage for the motor. For instance, if a motor that is rated for a 400V supply is connected to the amplifier, then the setting must be VBUSBAL = 2 (400V). This sets regen and overvoltage thresholds in the amplifier to acceptable values for the motor. This ensures that the motor windings are not damaged.

VBUSBAL - Setting in the range of 40 to 750 are used to choose the maximum network voltage.
In this case ist $|VBUSMAX| = 1,2 \times VBUSBAL$

VBUSBAL=0 (115 V) $|VBUSMAX|=235V$
 VBUSBAL=1 (230 V) $|VBUSMAX|=455V$
 VBUSBAL=2 (400 V) $|VBUSMAX|=800V$
 VBUSBAL=3 (480 V) $|VBUSMAX|=900V$

[illegible]

ASCII -Command	VBUSMAX
Syntax Transmit	VBUSMAX
Syntax Receive	VBUSMAX <Data>
Type	Variable ro
Format	Integer32
DIM	V
Range	235, 455, 800, 900
Default	
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	361C (hex)		
PROFIBUS PNU:	1884 (dec) IND = 1 (de		
DPR Objekt Nr:	284		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Maximum DC-bus Voltage
-------------------	------------------------

Description

The VBUSMAX parameter shows the value for the monitoring threshold for the fault message F02 (overvoltage). This fault message is generated as soon as the DC-bus voltage goes above the value of VBUSMAX. The VBUSMAX threshold depends on the setting for |VBUSBAL|.

VBUSBAL=0 (115 V) |VBUSMAX|=235V
 VBUSBAL=1 (230 V) |VBUSMAX|=455V
 VBUSBAL=2 (400 V) |VBUSMAX|=800V
 VBUSBAL=3 (480 V) |VBUSMAX|=900V

ASCII -Command	VBUSMIN
Syntax Transmit	VBUSMIN [Data]
Syntax Receive	VBUSMIN <Data>
Type	Variable rw
Format	Integer16
DIM	V
Range	30 .. 800
Default	100
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	361D (hex)		
PROFIBUS PNU:	1885 (dec) IND = 1 (de		
DPR Objekt Nr:	285		

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Minimum DC-bus Voltage
-------------------	------------------------

Description

VBUSMIN defines the lower threshold for monitoring the DC-bus voltage. The fault message F05 (undervoltage) is generated as soon as the DC-bus voltage goes below this threshold. Undervoltage monitoring is only active under the following conditions.

1. Output stage is enabled
2. Monitoring is activated |UVLTMODE|=1
3. MAINSBTB function is not active (|OxMODE|<3)
4. The switch-off of the monitoring function by a digital input (|INxMODE|=21) is not active.

ASCII -Command	VBW
Syntax Transmit	VBW
Syntax Receive	VBW
Type	Command
Format	-
DIM	-
Range	0
Default	0
Opmode	0
Drive Status	Enabled
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	-
Weighting 10 ³	

Last Change of this Object	1.0
EEPROM	-

Short Description	Generate Bode Diagram
-------------------	-----------------------

Description

VBW [fmin] [fmax] [sample] [switch]

Velocity BandWidth

Using the function VBW the Drive calculates a velocity loop Bode plot. Default are 30 samples (sample) between 20 Hz (fmin) and 800 Hz (fmax). Output are the gain in db and the phase shift in degree of the open loop and the closed loop of the velocity controller. Using |MSG| 2 the results are immediately shown. Standard is to query the data with the |GET| command. To use the function VBW the drive should be in |OPMODE| 0 and enabled. The shaft will move only a few degree. In case of resonance load velocity overshoot can cause a Fault which can result in an uncontrolled coasting of the motor.

[switch] = 1: Filter switched off
 GV reduced to 20%
 GVTN reduced to 50 ms

ASCII -Command	VCMD
Syntax Transmit	VCMD
Syntax Receive	VCMD <Data>
Type	Variable ro
Format	Float
DIM	MSPEED
Range	-VMAX .. VMAX
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Actual values

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		361E (hex)	
PROFIBUS PNU:		1886 (dec) IND = 1 (de	
DPR Objekt Nr:		286	

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	No

Short Description	Internal Velocity Setpoint in RPM
-------------------	-----------------------------------

Description

The VCMD variable contains the internal velocity setpoint (after the ramp generator) in RPM.

Depending on the operating mode that is set (|OPMODE|=0), this value is either provided directly and digitally (fieldbus, slot card) or derived from the analog velocity setpoint (|OPMODE|=1).

For operating modes that do not use a velocity control loop (|OPMODE|=2,3) the VCMD variable has the value V of the actual velocity.

ASCII -Command	VCOMM
Syntax Transmit	VCOMM [Data]
Syntax Receive	VCOMM <Data>
Type	Variable rw
Format	Float
DIM	[VUNIT]
Range	0 .. 1.2 * MSPEED
Default	1500
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	365A (hex)
PROFIBUS PNU:	1946 (dec) IND = 1 (de
DPR Objekt Nr:	346

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Velocity Threshold for Commutation error
-------------------	--

Description

The command VCOMM defines the threshold for the commutation error function.

The definition of an commutation error is that the sign of the actual current has the right relationship to the sign of the change of the velocity of the motor. This indicates a run-away of the motor and causes a disable of the output stage.

This commutation error is supervised, if the actual velocity is above the VCOMM threshold. To disable the function, VCOMM has to be set to |VLIM|.

ASCII -Command	VCTIME
Syntax Transmit	VCTIME [Data]
Syntax Receive	VCTIME <Data>
Type	Variable rw
Format	Intger32
DIM	ms
Range	0 ... 100
Default	24
Opmode	All
Drive Status	-
Start Firmware	2.31
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3867 (hex)
PROFIBUS PNU:	1671 (dec) IND = 33 (d)
DPR Objekt Nr:	871

Data Type BUS/DPR	Intger32
Weighting 10^3	

Last Change of this Object	1.9
EEPROM	No

Short Description	Commutation error time
-------------------	------------------------

Description

VCTIME defines a commutation error surveillance time

Conditions for a commutation error have to be fulfilled for VCTIME msec before an error F25 is generated.

ASCII -Command	VEL0
Syntax Transmit	VEL0 [Data]
Syntax Receive	VEL0 <Data>
Type	Variable rw
Format	Float
DIM	-
Range	
Default	5
Opmode	All
Drive Status	
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3620 (hex)
PROFIBUS PNU:	1888 (dec) IND = 1 (de
DPR Objekt Nr:	288

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Standstill Threshold
-------------------	----------------------

Description

The VEL0 (Velocity "0") parameter defines the velocity threshold (in RPM) for the standstill signal.

The standstill signal is required for the following functions:

1. Standstill signal in the status register |DRVSTAT|.
2. If the brake is configured (|MBRAKE|=1), then, if the output stage is disabled, first of all the velocity is reduced to 0, and the brake is only applied after the velocity has fallen below the standstill threshold.
3. If the |ACTFAULT| option is activated (active braking in the event of a fault), or the |STOPMODE| option (active braking if the output stage is disabled), then the standstill threshold defines the velocity below which the output stage will actually be disabled.

The minimum VEL0 value is changed from 0 rpm to 1 rpm in |FW| >= 2.14

ASCII -Command	VER
Syntax Transmit	VER [*]
Syntax Receive	VER <Data>
Type	Variable ro
Format	String
DIM	-
Range	max 50 ASCII Characters
Default	-
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Basic Setup

Available in	S300/700
MMI	☒ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	-
PROFIBUS PNU:	no
DPR Objekt Nr:	

Data Type BUS/DPR	-
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Firmware Version
-------------------	------------------

Description

The command VER returns the version designation and the date of creation for the firmware.

The expanded form of the command (VER *) returns a version list for the various firmware and hardware components.

- Version of the basic firmware
- Hardware revision
- CPLD version
- CAN: firmware version
- Version of the motor database (MDB)
- Profibus/Sercos firmware version

ASCII -Command	VINPOS
Syntax Transmit	VINPOS [Data]
Syntax Receive	VINPOS <Data>
Type	Variable rw
Format	Float
DIM	
Range	
Default	10
Opmode	All
Drive Status	-
Start Firmware	1.37
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3856 (hex)
PROFIBUS PNU:	1654 (dec) IND = 33 (d)
DPR Objekt Nr:	854

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.2
EEPROM	Yes

Short Description	Velocity within InPosition window
-------------------	-----------------------------------

Description

VINPOS command defines the size of the velocity InPosition windows for the VINPOS state message (Bit 1 in DRVSTAT2). As long as the difference between the last target velocity (VCMD) and the actual velocity (V) is within the width of the velocity InPosition window (VINPOS), a 1 is signalled, otherwise a 0. The signal change is not signalled before the new state was valid at least |INPT0| msec.

ASCII -Command	VJOG
Syntax Transmit	VJOG [Data]
Syntax Receive	VJOG <Data>
Type	Variable rw
Format	Integer32
DIM	see VUNIT
Range	-500008 ... 500008
Default	10000
Opmode	8
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Setting-up Mode

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		3621 (hex)	
PROFIBUS PNU:		1889 (dec) IND = 1 (de	
DPR Objekt Nr:		289	

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Speed for Jog Mode
-------------------	--------------------

Description

Jog mode is effectively an endless motion task, and is implemented by the internal position control loop. The sign for the speed indicates the direction for jog operation. The scaling of the velocity is given in position control loop units, and depends on the |PGEARI| and |PGEARO| parameters.

ASCII -Command	VLIM
Syntax Transmit	VLIM [Data]
Syntax Receive	VLIM <Data>
Type	Variable rw
Format	Float
DIM	(> VUNIT)
Range	0.0 .. MSPEED
Default	3000
Opmode	0, 1
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	velocity

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	91		
CAN Object No:	358C (hex)		
PROFIBUS PNU:	1740 (dec) IND = 1 (de		
DPR Objekt Nr:	140		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Max. velocity
-------------------	---------------

Description

The VLIMN parameter defines the maximum velocity for the negative direction (velocity control loop) in units defined by |VUNIT|. VLIM is also used for limiting the following parameters:

1. |MVANGLB| <= 0.9*VLIM
2. |MSPEED| >= VLIM
3. |PVMAX| <= (VLIM * |PGEARI| * 2^|PRBASE|) / (60 * |PGEARO|)

When used together with the |VLIMN| parameter, it is possible to implement a directionally-dependent rotational velocity limit. The VLIM command determines the maximum velocity for both positive and negative directions. By making a subsequent entry for |VLIMN|, the limit for the negative direction can be set separately.

ASCII -Command	VLIMN
Syntax Transmit	VLIMN [Data]
Syntax Receive	VLIMN <Data>
Type	Variable rw
Format	Float
DIM	(> VUNIT)
Range	0.0 .. MSPEED
Default	3000
Opmode	0, 1
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	velocity

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☒
SERCOS IDN:	39
CAN Object No:	3623 (hex)
PROFIBUS PNU:	1891 (dec) IND = 1 (de
DPR Objekt Nr:	291

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Max. negative velocity
-------------------	------------------------

Description

The VLIMN parameter defines the maximum velocity for the negative direction (velocity control loop) in units defined by [VUNIT]. VLIMN is also used for limiting [PVMAXN]:

$$PVMAXN \leq (VLIMN * |PGEARI| * 2^{PRBASE}) / (60 * |PGEARO|)$$

When used together with the [VLIMP] parameter, it is possible to implement a directionally-dependent rotational velocity limit. The [VLIMP] command determines the maximum velocity for the positive direction.

ASCII -Command	VLIMP
Syntax Transmit	VLIM [Data]
Syntax Receive	VLIM <Data>
Type	Variable rw
Format	Float
DIM	(> VUNIT)
Range	0.0 .. MSPEED
Default	3000
Opmode	0, 1
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	velocity

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	38		
CAN Object No:	3622 (hex)		
PROFIBUS PNU:	1890 (dec) IND = 1 (de		
DPR Objekt Nr:	290		

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Max. velocity
-------------------	---------------

Description

The VLIMN parameter defines the maximum velocity for the positiv direction (velocity control loop) in units defined by |VUNIT|. VLIMPis also used for limiting |PVMAXN|:
 $PVMAXP \leq (VLIMP * |PGEARI| * 2^{PRBASE}) / (60 * |PGEARO|)$

When used together with the |VLIMN| parameter, it is possible to implement a directionally-dependent rotational velocity limit. The |VLIMN| command determines the maximum velocity for the negative direction.

ASCII -Command	VLO
Syntax Transmit	VLO [Data]
Syntax Receive	VLO <Data>
Type	Variable rw
Format	Float
DIM	-
Range	0 ... 30
Default	1
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	363D (hex)
PROFIBUS PNU:	1917 (dec) IND = 1 (de
DPR Objekt Nr:	317

Data Type BUS/DPR	Integer32
Weighting 10 ³	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Software resolver/digital converter feedforward
-------------------	---

Description

VLO is a parameter of the Luenberger Velocity Observer. To reduce the delay of the derivation the observer can be served with the torque component of the current. The effective inertia is estimated by the gain of the velocity loop (GV). Setting VLO to zero the acceleration will not influence the observer. With a value of 1 the acceleration is full enabled. With VLO 0.5 the Observer will use 50% of the acceleration torque. Reducing VLO can result in an instable velocity loop.

ASCII -Command	VMUL
Syntax Transmit	VMUL [Data]
Syntax Receive	VMUL <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	0 .. 65535
Default	1
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	3626 (hex)		
PROFIBUS PNU:	1894 (dec) IND = 1 (de		
DPR Objekt Nr:	294		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Velocity scale factor
-------------------	-----------------------

Description

VMUL is required by many fieldbus systems (PROFIBUS,CANBUS), since some fieldbus protocols only permit speed values in 16-bit format.The VMUL parameter is used to scale the speed (position control loop) for jog mode and motion tasks. This scaling factor can then be used to expand the 16-bit speed value from the fieldbus to give the internal 32-bit value.

See also: manual for PROFIBUS, CANBUS

ASCII -Command	VOHPD	Available in	S300/700
Syntax Transmit	VOLPD [Data]	MMI	☐ CAN-Bus ☐
Syntax Receive	VOLPD <Data>	PROFIBUS	☐ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Float	CAN Object No:	-
DIM		PROFIBUS PNU:	no
Range	0 .. 10	DPR Objekt Nr:	
Default	0	Data Type BUS/DPR	Integer32
Opmode	All	Weighting 10^3	*
Drive Status		Last Change of this Object	2.1
Start Firmware		EEPROM	Yes
Configuration	☐		
Function Group			
Short Description	Higher order velocity-observer high-pass damping		

Description
Higher order velocity-observer high-pass damping

See also |MRESBW|, |VOLPD|, |VOHPD|

ASCII -Command	VOHPF	Available in	S300/700
Syntax Transmit	VOHPF [Data]	MMI	☐ CAN-Bus ☐
Syntax Receive	VOHPF <Data>	PROFIBUS	☐ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer32	CAN Object No:	-
DIM	Hz	PROFIBUS PNU:	no
Range	0 .. 10000	DPR Objekt Nr:	
Default	0	Data Type BUS/DPR	Integer32
Opmode	All	Weighting 10^3	
Drive Status		Last Change of this Object	2.1
Start Firmware		EEPROM	Yes
Configuration	☐		
Function Group			
Short Description	Higher order velocity-observer high-pass frequency		

Description
Higher order velocity- observer high-pass frequency

See also |MRESBW|, |VOLPD|, |VOHPD|

ASCII -Command	VOLPD	Available in	S300/700
Syntax Transmit	VOLPD [Data]	MMI	☐ CAN-Bus ☐
Syntax Receive	VOLPD <Data>	PROFIBUS	☐ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Float	CAN Object No:	-
DIM		PROFIBUS PNU:	no
Range	0 .. 10	DPR Objekt Nr:	
Default	0	Data Type BUS/DPR	Integer32
Opmode	All	Weighting 10^3	*
Drive Status		Last Change of this Object	2.1
Start Firmware		EEPROM	Yes
Configuration	☐		
Function Group			
Short Description	Higher order velocity-observer low-pass damping		

Description

Higher order velocity-observer low-pass damping

If VOLPD is set to a nonzero value, the higher order velocity observer is activated and used instead of the regular observer. MRESBW then defines the low-pass-filter frequency and VOLPD its damping.

See also |MRESBW|, |VOHPF|, |VOHPD|.

ASCII -Command	VOSPD
Syntax Transmit	VOSPD [Data]
Syntax Receive	VOSPD <Data>
Type	Variable rw
Format	Float
DIM	rpm
Range	0.0 .. 1.2*MSPEED
Default	3600
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	velocity

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☒
SERCOS IDN:	P 3021
CAN Object No:	3627 (hex)
PROFIBUS PNU:	1895 (dec) IND = 1 (de
DPR Objekt Nr:	295

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Overspeed
-------------------	-----------

Description

The VOSPD parameter sets the overspeed threshold. As soon as the actual velocity exceeds this limit, the fault message F08 (overspeed) is generated and the output stage is disabled.

ASCII -Command	VOSPDREF
Syntax Transmit	VOSPDREF [Data]
Syntax Receive	VOSPDREF <Data>
Type	Variable rw
Format	Float
DIM	rpm
Range	0.0 .. 1.2 * MSPEED
Default	0
Opmode	All
Drive Status	Disable + Reset
Start Firmware	3.15
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3882 (hex)
PROFIBUS PNU:	1698 (dec) IND = 33 (d)
DPR Objekt Nr:	898

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	2.1
EEPROM	Yes

Short Description	Overspeed limit for homing phase
-------------------	----------------------------------

Description

This parameter defines the overspeed limit value during the homing phase.
 In the case of VOSPDREF=0 the main overspeed limit VOSPD is activ.
 After the homing move is done , the VOSPDREF becomes inactiv.
 In the case that no homing move is required the VOSPDREF can be deactivated by writing the 0 value.

ASCII -Command	VREF
Syntax Transmit	VREF [Data]
Syntax Receive	VREF <Data>
Type	Variable rw
Format	Integer32
DIM	(>VUNIT)
Range	0 ... VLIM/VLIMN
Default	10000
Opmode	8
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Setting-up Mode

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☒
SERCOS IDN:	41		
CAN Object No:	3628 (hex)		
PROFIBUS PNU:	1896 (dec) IND = 1 (de		
DPR Objekt Nr:	296		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Speed for homing
-------------------	------------------

Description

The VREF is used to define the velocity value (VREF>0) for homing to a reference. The direction of the reference is taken from the |DREF| variable.

The scaling of the velocity is given in position control loop units, and depends on the |PGEARI| and |PGEARO| parameters.

ASCII -Command	VREF0
Syntax Transmit	VREF0 [Data]
Syntax Receive	VREF0 <Data>
Type	Variable rw
Format	Float
DIM	-
Range	0.01 .. 2.0
Default	0.125
Opmode	8
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3698 (hex)
PROFIBUS PNU:	2008 (dec) IND = 1 (de
DPR Objekt Nr:	408
Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Homing mode reduction factor
-------------------	------------------------------

Description

IN PREPARATION !

The parameter VREF0 reduces the homing speed, after the load reaches e.g. the reference switch, while searching for a zero pulse of an external encoder.

The selection of the source of the zero pulse can be selected by [REFMODE].

The second homing speed can be reduced by VREF0 in % of [VREF].

Example 1:

[REFMODE]=1 Zeropulse via digital input 1
 [NREF]=1 Homing move with reference switch with zero pulse
 [VREF]=10000 Homing speed 10000 µm/sec
 VREF0=0.2 Reduction of the speed to 2000 µm/sec

Starting a homing move, the drive starts to find the reference switch with the speed of 10000 µm/sec. If the reference switch was found, the speed is reduced to 2000 µm/sec and then the search for the zero pulse is started. If the zero pulse was recognised at digital input 1(high level), the homing move is stopped.

Example 2:

[REFMODE]=2 Zero pulse via digiatl input 2
 [NREF]=5 Zero pulse in one turn of the motor
 [VREF]=10000
 VREF0=0.2

The criteria for the search of the zero pulse is fulfilled, so the reference move is directly started with 2000 µm/sec.

ASCII -Command	VSCALE1
Syntax Transmit	VSCALE1 [Data]
Syntax Receive	VSCALE1 <Data>
Type	Variable rw
Format	Integer16
DIM	VUNIT / 10 Vs
Range	-15000 .. 15000
Default	3000
Opmode	1
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Analog I/O

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		3629 (hex)	
PROFIBUS PNU:		1897 (dec) IND = 1 (de	
DPR Objekt Nr:		297	

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	SW1 velocity scaling factor
-------------------	-----------------------------

Description

If the analog input 1 is used as the setpoint input for velocity control, then the VSCALE1 parameter can be used to set the scaling of the input voltage.

A 10V velocity setpoint input at input 1 produces a velocity of VSCALE1.

Attention: VSCALE1/VSCALE2 may not be smaller than 2UPM!

ASCII -Command	VSCALE2
Syntax Transmit	VSCALE2 [Data]
Syntax Receive	VSCALE2 <Data>
Type	Variable rw
Format	Integer16
DIM	rpm / 10 Vs
Range	-15000 .. 15000
Default	3000
Opmode	1
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	Analog I/O

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:		362A (hex)	
PROFIBUS PNU:		1898 (dec) IND = 1 (de	
DPR Objekt Nr:		298	

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	SW2 velocity scaling factor
-------------------	-----------------------------

Description

If the analog input 2 is used as the setpoint input for velocity control, then the VSCALE2 parameter can be used to set the scaling of the input voltage.

A 10V velocity setpoint input at input SW2 produces a velocity of VSCALE2.

Attention: VSCALE1/VSCALE2 may not be smaller than 2UPM!

ASCII -Command	VSTART
Syntax Transmit	VSTART [Data]
Syntax Receive	VSTART <Data>
Type	Variable rw
Format	Float
DIM	
Range	0 .. 1
Default	0.05
Opmode	1,2
Drive Status	
Start Firmware	
Configuration	☐
Function Group	

Available in	S300/700
MMI	☒ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	3888 (hex)
PROFIBUS PNU:	1704 (dec) IND = 33 (d)
DPR Objekt Nr:	904

Data Type BUS/DPR	Integer32
Weighting 10 ³	*

Last Change of this Object	2.1
EEPROM	Yes

Short Description	Starting Voltage for V/f Control
-------------------	----------------------------------

Description

Starting Voltage for V/f Control (induction motor).
 Given as a fraction of the nominal voltage.
 Used to calculate V/f trajectory at lower speeds.
 Voltage when velocity command is 0 (J = 0).

ASCII -Command	VSTFR
Syntax Transmit	VSTFR [Data]
Syntax Receive	VSTFR <Data>
Type	Variable rw
Format	Float
DIM	VUNIT
Range	0 ... 230 UPM
Default	0
Opmode	0, 1, 4 ... 8
Drive Status	-
Start Firmware	1.30
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36A5 (hex)
PROFIBUS PNU:	2021 (dec) IND = 1 (de
DPR Objekt Nr:	421

Data Type BUS/DPR	Integer32
Weighting 10^3	*

Last Change of this Object	1.1
EEPROM	Yes

Short Description	Velocity for max. friction compensation
-------------------	---

Description
see |ISTFR|

ASCII -Command	VTUNE
Syntax Transmit	VTUNE [Data]
Syntax Receive	VTUNE <Data>
Type	rw
Format	Integer16 Float
DIM	Ms (DurationN) / rpm (velocityN)
Range	0..32767
Default	
Opmode	0
Drive Status	Enable
Start Firmware	3.65
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☐
PROFIBUS	☐ Sercos ☐
SERCOS IDN:	
CAN Object No:	
PROFIBUS PNU:	
DPR Objekt Nr:	

Data Type BUS/DPR	Integer16 Float
Weighting 10^3	

Last Change of this Object	2.2
EEPROM	-

Short Description	Autotuning Velocity Loop
-------------------	--------------------------

Description

The step height and –duration can be set according to the machine:

1. VTUNE

Without parameters, the velocity set point varies between +100rpm and -100 for the duration of 400ms.

2. VTUNE T1 V1

The velocity set point varies between +V1 and –V1 (rpm) for the duration T1 (ms)

The slope of the steps is defined by ACC and DEC.

For best results the slope should be set as steep as possible (Observe machine constraints !).

The process can be stopped ant any time using the STOP command.

ASCII -Command	VUNIT
Syntax Transmit	VUNIT [Data]
Syntax Receive	VUNIT <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	0 .. 8
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☒
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	365F (hex)
PROFIBUS PNU:	1951 (dec) IND = 1 (de
DPR Objekt Nr:	351
Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	Yes

Short Description	Systemwide Definition of Velocity / Speed
-------------------	---

Description

VUNIT gives the systemwide definition of velocity / speed resolution. This parameter effects all parameters that are related to velocity of the velocity controller and speed of the position controller.

VUNIT = 0 gives velocity in RPM (example |OPMODE| = 0)

gives speed in $\mu\text{m}/\text{sec}$ (example |OPMODE| = 8).

VUNIT = 1 Unit = RPM

VUNIT = 2 Unit = Rad/Sec

VUNIT = 3 Unit = Degree/Sec

VUNIT = 4 Unit = increments in PRBASE-format / 250 μs

example: PRBASE = 24

$1500\text{U}/\text{min} = 25\text{U}/\text{s} = 25 \cdot 2^4 / 4000 \text{ IncrPRBASE} / 250\mu\text{s} = 104857 \text{ IncrPRBASE} / 250\mu\text{s}$

VUNIT = 5 Unit = |PUNIT| / Sec

VUNIT = 6 Unit = |PUNIT| / Min

VUNIT = 7 Unit = 1000 * |PUNIT| / Sec

VUNIT = 8 Unit = 1000 * |PUNIT| / Min

Remark:

1. All parameters that are related to velocity have a fixed format of 32 Bit with 3 fractional digits. This causes a problem with some of the VUNIT settings (especially VUNIT=6), related to the resolution of the position controller (|PGEARI|), that not the full range of speed can be used. Under this condition, a different setting of VUNIT is necessary.

2. All parameters that are related to speed have a fixed format of 32 Bit with no fractional digits. This causes a problem with some of the VUNIT settings (especially VUNIT=3) to give fractional digits. Under this condition, a different setting of VUNIT is necessary.

Definition of the Calculation factors

VUNIT=1 1 UPM = $1048576 \cdot 32 / (4000 \cdot 60)$ ≈ 139.8 Counts

VUNIT=2 1 Rad/sec = $1048576 \cdot 32 / (4000 \cdot 2 \cdot \pi)$ ≈ 1335 Counts

VUNIT=3 1 Grad/sec = $1048576 \cdot 32 / (4000 \cdot 360)$ ≈ 23.3 Counts

VUNIT=4 1 Counts/250 μs = 32 Counts

VUNIT=5 1 |PUNIT| / sec = |PGEARO| / (125 * |PGEARI|)

VUNIT=6 1 |PUNIT| / min = (|PGEARO| * 60) / (125 * |PGEARI|)

VUNIT=7 1000 |PUNIT| / sec = |PGEARO| / (125 * |PGEARI| * 1000)

VUNIT=8 1000 |PUNIT| / min = (|PGEARO| * 60) / (125 * |PGEARI| * 1000)

ASCII -Command	VWM
Syntax Transmit	VWM [Data]
Syntax Receive	VWM <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	0 ... 1500
Default	400
Opmode	All
Drive Status	-
Start Firmware	1.35
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3759 (hex)
PROFIBUS PNU:	1801 (dec) IND = 17 (d)
DPR Objekt Nr:	601

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.2
EEPROM	No

Short Description	limit value for SinCos voltage
-------------------	--------------------------------

Description

VWM defines the limit value for n23 warning (SinCos voltage too low). This warning can be used to get a message when a SinCos encoder (linear unit) becomes dirty

ASCII -Command	WMASK
Syntax Transmit	WMASK [Data]
Syntax Receive	WMASK <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	-21474836470 ... 21474836470
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700		
MMI	☒	CAN-Bus	☒
PROFIBUS	☒	Sercos	☐
SERCOS IDN:			
CAN Object No:	363E (hex)		
PROFIBUS PNU:	1918 (dec) IND = 1 (de		
DPR Objekt Nr:	318		

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Warning as fault mask
-------------------	-----------------------

Description

The WMASK parameter can be used to reconfigure a warning as the fault message F24.

The WMASK parameter is a bit-variable, with bit assignments that correspond to the |STATCODE *| status variable. The bit that is set within the WMAKS variable means that the corresponding warning bit in the |STATCODE *| variable should generate an F24 fault message, as well as a warning. Unlike warnings, a fault message results in the disabling of the output stage, and the opening of the BTB contact. A reconfiguration of a warning to a fault message can be especially relevant for the following warnings: contouring/following error, threshold detection, hardware limit switch. The value has to be entered in decimal.

See also |LASTWMASK|

ASCII -Command	WPOS
Syntax Transmit	WPOS
Syntax Receive	WPOS <Data>
Type	Variable ro
Format	Integer8
DIM	-
Range	0, 1, 2
Default	0
Opmode	All
Drive Status	Disabled + Reset (Coldstart)
Start Firmware	1.0
Configuration	☒
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☒
SERCOS IDN:	P 3041
CAN Object No:	3636 (hex)
PROFIBUS PNU:	1910 (dec) IND = 1 (de
DPR Objekt Nr:	310
Data Type BUS/DPR	Integer8
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Enable position registers
-------------------	---------------------------

Description

Going above/below a position is detected and signaled by the position register within 1 millisecond. The functional range can be set to continually or once.

The fast position registers are enabled through the WPOS configuration variable.

WPOS=0 Position register disabled

WPOS=1 Position register enabled, no spontaneous CAN message on change of status.

WPOS=2 Position register enabled, spontaneous CAN message on change of status (this setting is only via CAN-Bus possible).

Changes of the WPOS variable between 0 and >0 can only be made offline (|SAVE| and |COLDSTART|), a change between 1 and 2 can also be made online.

There is a total of 16 position registers P1 ... P16, that can be configured with the help of 3 control variables. The position signals are indicated through a status variable. All control/status variables can be considered as 32-bit variables, whereby the lower 16 bits (bits 0 ... 15) are used for the configuration of the position registers P1 ... P16.

Control variables:

|WPOSE| Enable/disable a position register

Bit=0 the corresponding position register is not monitored

Bit=1 the position register is monitored

|WPOSP| Polarity for the position signaling

Bit=0 Position signal is generated on going above/beyond (overrun) the position

Bit=1 Position signal is generated on going below/behind (underrun) the position

|WPOSX| – Type of position monitoring

Bit=0 position is monitored continuously

Bit=1 position is monitored once. When the position signal is generated, the corresponding enable bit (WPOSE) is set to 0, so that the monitoring is disabled for this position register,

Status variable:

|POSRSTAT| (z_data.Posrstat) – Position signaling

Bit=0 position signaling inactive

Bit=1 position signaling active (position overrun for |WPOSP|=0 or underrun for |WPOSP|=1).

Position register:

The position registers 1 to 16 can be accessed by the ASCII command P1 ... P16. Position values are displayed in the same units as the position control loop (|PGEARI| / |PGEARO| conversion).

The variables that are required for the fast position registers (|WPOSE|, |WPOSP|, |WPOSX|, P1 ... P16) can be saved in the serial EEPROM by using the SAVE command. Those position registers P1 ... P16 which are not used should be set to 0 (since the default value for a position register is 0, no space will be occupied in the serial EEPROM).

The individual position signals from the status register |POSRSTAT| can be output from the digital outputs of the motherboard.

|OxMODE|=40

This function is used to produce the result of a logical OR operation (on the bit-variable |POSRSTAT| and a bit-mask from the auxiliary variable |OxTRIG|) at the digital output x.

|OxMODE|=41

This function is used to produce the result of a logical AND operation (on the bit-variable |POSRSTAT| and a bit-mask from the auxiliary variable |OxTRIG|) at the digital output x.

ASCII -Command	WPOSE
Syntax Transmit	WPOSE
Syntax Receive	WPOSE <Data>
Type	Variable ro
Format	Integer32
DIM	-
Range	0 ..65535
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☒
SERCOS IDN:	P 3042
CAN Object No:	363F (hex)
PROFIBUS PNU:	1919 (dec) IND = 1 (de
DPR Objekt Nr:	319

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Enable fast position registers 1 ... 16
-------------------	---

Description

The bit-variable WPOSE is used to configure the fast position registers P1 ... P16 individually. The WPOSE variable can be considered as a 32-bit variable, whereby the lower 16 bits (bits 0 ... 15) are used for the configuration of the position registers P1 ... P16.

Bit=0 the corresponding position register is not monitored

Bit=1 the position register is monitored

See also |WPOS|

ASCII -Command	WPOSP
Syntax Transmit	WPOSP [Data]
Syntax Receive	WPOSP <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	0 .. 65535
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	-

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☒
SERCOS IDN:	P 3043
CAN Object No:	3640 (hex)
PROFIBUS PNU:	1920 (dec) IND = 1 (de
DPR Objekt Nr:	320

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Polarity of fast position registers 1 ... 16
-------------------	--

Description

The bit-variable WPOSP is used to configure the fast position registers P1 ... P16 individually. The WPOSP variable can be considered as a 32-bit variable, whereby the lower 16 bits (bits 0 ... 15) are used for the configuration of the position registers P1 ... P16.

Bit=0 Position signal is generated on going above/beyond (overrun) the position
 Bit=1 Position signal is generated on going below/behind (underrun) the position

See also |WPOS|

ASCII -Command	WPOSX
Syntax Transmit	WPOSX [Data]
Syntax Receive	WPOSX <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	0 ... 65535
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3641 (hex)
PROFIBUS PNU:	1921 (dec) IND = 1 (de
DPR Objekt Nr:	321

Data Type BUS/DPR	Integer32
Weighting 10^3	

Last Change of this Object	1.0
EEPROM	No

Short Description	Mode of fast position registers 1 ... 16
-------------------	--

Description

The bit-variable WPOSX can be used to configure the fast position registers |P1| ... |P16| individually. The WPOSX variable can be considered as a 32-bit variable, whereby the lower 16 bits (bits 0 ... 15) are used for the configuration of the position registers P1 ... P16.

Bit=0 Position is monitored permanently

Bit=1 Position is monitored once. If a 1 is set the Enable-Bit |WPOSE| is set to 0, so the monitor function is disabled .

See also |WPOS|

ASCII -Command	WSAMPL
Syntax Transmit	WSAMPL [Data]
Syntax Receive	WSAMPL <Data>
Type	Variable rw
Format	Integer32
DIM	-
Range	0 ... 2 ³¹ -1
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36D1 (hex)
PROFIBUS PNU:	1665 (dec) IND = 17 (d)
DPR Objekt Nr:	465

Data Type BUS/DPR	Integer32
Weighting 10 ³	

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Minimum move of W&S mode
-------------------	--------------------------

Description

WSAMPL sets the minimum movement for W&S - function in |FBTYPE| = 7 and 8. The units are internal counts. If WSAMPL = 0, the calculation is automatically done with |ENCLINES|.

see also |WSLOOP|

ASCII -Command	WSCNFG	Available in	S300/700
Syntax Transmit	WSCNFG [Data]	MMI	☐ CAN-Bus ☒
Syntax Receive	WSCNFG <Data>	PROFIBUS	☒ Sercos ☐
Type	Variable rw	SERCOS IDN:	
Format	Integer32	CAN Object No:	3874 (hex)
DIM	-	PROFIBUS PNU:	1684 (dec) IND = 33 (d)
Range	-	DPR Objekt Nr:	884
Default	-		
Opmode	All	Data Type BUS/DPR	Integer32
Drive Status	-	Weighting 10^3	
Start Firmware	2.53		
Configuration	☒		
Function Group			

Last Change of this Object		2.0
EEPROM	Yes	

Short Description	Type of commutation alignment
-------------------	-------------------------------

Description
The configuration parameter WSCNFG defines the type of the commutation alignment used for |FBTYPE|=7,8,16,17,19,21

WSCNFG=0	Method 1:	Standard Wake & Shake
WSCNFG=1	Method 2:	commutation alignment by PID position control loop (CALCMP)
WSCNFG=2	Method 3:	commutation alignment by fixed commutation vector (ZERO)

ASCII -Command	WSLOOP
Syntax Transmit	WSLOOP [Data]
Syntax Receive	WSLOOP <Data>
Type	Variable rw
Format	Integer16
DIM	-
Range	1 ... 50
Default	5
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36E2 (hex)
PROFIBUS PNU:	1682 (dec) IND = 17 (d)
DPR Objekt Nr:	482

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.8
EEPROM	Yes

Short Description	W&S Loops
-------------------	-----------

Description
Max. number of Wake&Shake repeats |MPHASE| is calculated as mean value of all W&S repeats

see also |WSAMPL|

ASCII -Command	WSTIME
Syntax Transmit	WSTIME [Data]
Syntax Receive	WSTIME <Data>
Type	Variable rw
Format	Integer16
DIM	ms
Range	0 ... 100
Default	0
Opmode	All
Drive Status	-
Start Firmware	1.0
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	36D0 (hex)
PROFIBUS PNU:	1664 (dec) IND = 17 (d)
DPR Objekt Nr:	464

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	1.8
EEPROM	Yes

Short Description	Operation time of the W&S - function
-------------------	--------------------------------------

Description

WSTIME defines the operation time of the W&S - function in |FBTYPE| = 7 and 8. The different current vectors are switched on for this time and the move distance is proportional to the WSTIME value. See also |WSAMPL|. If WSTIME is set to "0", the calculation depends on the value of |GV| and is done automatically.

ASCII -Command	WSTIME2
Syntax Transmit	WSTIME2 [Data]
Syntax Receive	WSTIME2 <Data>
Type	Variable rw
Format	Integer16
DIM	ms
Range	0 .. 500
Default	0
Opmode	All
Drive Status	-
Start Firmware	2.26
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3863 (hex)
PROFIBUS PNU:	1667 (dec) IND = 33 (d)
DPR Objekt Nr:	867

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	2.1
EEPROM	Yes

Short Description	W&S delay time
-------------------	----------------

Description

WSTIME2 defines the delay time of the W&S - function for FBTYPE = 7 and 8. This time is a delay time between the switching of different current vectors during the wake & shake procedure. The default value for this delay is 1 msec (WSTIME2=0). This time should be increased in the case of movement interferences between single current vectors.

ASCII -Command	WSTIME3
Syntax Transmit	WSTIME3 [Data]
Syntax Receive	WSTIME3 <Data>
Type	Variable rw
Format	Integer16
DIM	ms
Range	0 .. 500
Default	0
Opmode	All
Drive Status	-
Start Firmware	2.31
Configuration	☐
Function Group	

Available in	S300/700
MMI	☐ CAN-Bus ☒
PROFIBUS	☒ Sercos ☐
SERCOS IDN:	
CAN Object No:	3865 (hex)
PROFIBUS PNU:	1669 (dec) IND = 33 (d)
DPR Objekt Nr:	869

Data Type BUS/DPR	Integer16
Weighting 10^3	

Last Change of this Object	2.1
EEPROM	Yes

Short Description	W&S delay time
-------------------	----------------

Description

Sales and Service

We are committed to quality customer service. In order to serve in the most effective way, please contact your local sales representative for assistance.

If you are unaware of your local sales representative, please contact us.

Europe

Danaher Motion Customer Support Europe

Internet www.DanaherMotion.com

E-Mail support@danahermotion.com

Tel.: +49(0)203 - 99 79 - 0

Fax: +49(0)203 - 99 79 - 216

North America

Danaher Motion Customer Support North America

Internet www.DanaherMotion.com

E-Mail DMAC@danahermotion.com

Phone: +1 - 540 - 633 - 3400

Fax: +1 - 540 - 639 - 4162