

**Type**  
**8692/8693/8792/8793/8750**  
CANopen

Objects

Document version 1.06

Supplement to Operating Instructions

## Contents

1	History .....	4
2	Overview.....	5
3	Objects.....	6
3.1	0x2000 Buerkert Device Description Object .....	6
3.2	0x2001 Device Communication Object .....	7
3.3	0x2002 User Configuration Object .....	7
3.4	0x2004 Device Status Object.....	8
3.5	0x2100 Get Mapping Function .....	9
3.6	0x2101 Locating Function.....	10
3.7	0x2102 Blockdownload Config Function .....	10
3.8	0x2103 Persistent Storage Function.....	10
3.9	0x210A Trigger Maintenance Function .....	10
3.10	0x2120 LED Modi.....	11
3.11	0x2122 LED Extern Color .....	11
3.12	0x2200 Buerkert Driver Archive .....	11
3.13	0x2220 EDS .....	11
3.14	0x2400 Sensor Type.....	12
3.15	0x2420 No Measure Values.....	12
3.16	0x2421 No Control Values .....	12
3.17	0x2422 No Calibration Values .....	12
3.18	0x2500 POS.....	13
3.19	0x2501 CMD .....	13
3.20	0x2502 CMDanalog.....	14
3.21	0x2503 SPanalog.....	14
3.22	0x2504 PVanalog .....	15
3.23	0x2505 MTMP.....	15
3.24	0x2507 P1 .....	16
3.25	0x2507 P2 .....	16
3.26	0x2540 CMDdigital .....	17
3.27	0x2541 SPdigital .....	17
3.28	0x2542 PVdigital.....	18
3.29	0x2542 MTEMPdigital.....	19
3.30	0x2C00 XControl.....	19
3.31	0x2C01 Display .....	20

3.32	0x2C02 PCONTROL .....	21
3.33	0x2C04 CHARACT.....	23
3.34	0x2C08 DIRCMD .....	23
3.35	0x2C09 DIRACT .....	23
3.36	0x2C0A CUTOFF.....	24
3.37	0x2C0B XLIMIT .....	24
3.38	0x2C0C XControl_User .....	24
3.39	0x2C0D XTIME .....	24
3.40	0x2C0E BININ .....	25
3.41	0x2C10 SAFEPOS.....	25
3.42	0x2C11 CHARACTy .....	25
3.43	0x2C12 CHARACT_kv .....	25
3.44	0x2C14 CHARleakp .....	26
3.45	0x2C15 CHARleakq .....	27
3.46	0x2C16 WMS .....	27
3.47	0x2C17 Simulation .....	28
3.48	0x2C18 Modeswitch .....	28
3.49	0x2C23 SensorBreak .....	29
3.50	0x2C39 F.Control .....	30
3.51	0x2C42 SP_UserUnit .....	32
3.52	0x2C43 PV_UserUnit .....	32
3.53	Baud rates.....	33
3.54	Cyclic data.....	33
3.55	Switching between position controller and process controller .....	33

# 1 History

Document version	Date	Changes
1.06	2022-07-19	Fix object index of PVanalog Added Static NodeID object 0x2002sub5 Added Device Boot Counter object 0x2004SubD Added cyclic objects for FMR P1 and P2 0x2507 and 0x2508 Added WMS objects 0x2C16subA, 0x2C16subC, 0x2C16subD and 0x2C16subE Removed FMRkvselect object 2C39sub4 Fixed Description of NamurStatus (reserved bits 4-7)
1.05	2021-03-01	Fix object index of PVanalog
1.04	2019-11-20	Added LED Extern Color object 0x2122
1.03	2019-07-08	Added Locating function object 0x2101 Added Maintenance Function object 0x210A Added Code protection object 2C01sub7 and and 2C01sub8
1.02	2018-07-26	Added NamurStatus object 0x2506 PVmin, PVmax, SPmin, SPmax moved to other Index
1.01	2018-02-01	Initial released version

## 2 Overview

Used datatypes:

UINT8	8 bit: unsigned integer
UINT16	16 bit: unsigned integer
UINT32	32 bit: unsigned integer
SINT16	16 bit: signed integer
REAL32	32 bit: float value IEEE 754
String	C-string

## 3 Objects

Column “access type” describes the general CAN open access rights.

Column “Config-Client” marks the objects that are handled and transferred between the devices using the Config-Client.

### 3.1 0x2000 Buerkert Device Description Object

sub	name	description	access type	Config-Client
1	Device Name	Unique device name Used to identify the device in a bueS system by name (e.g. Buerkert Communicator) (linked to User Configuration Object)	RO	
2	Ident Number	Device ID No. (linked to Common Object)	RO	
3	Manufacture Date	(linked to Common Object)	RO	
4	Software Ident Number	ID No. of firmware	RO	
5	Software Version	Version No. of firmware	RO	
6	Hardware Version	Version No. of hardware	RO	
7	Serial Number	Serial No. device (linked to Common Object)	RO	
8	Product Code	Manufacturers product code (type number) (linked to Common Object)	RO	
9	Product Group	Buerkert specific product group like sensor, actuator, ... Used for bueS system configuration	RO	

### 3.2 0x2001

### Device Communication Object

sub	name	description	access type	Config- Client
1	Baudrate	<i>Specified by CANopen (details see attachment Baud rates)</i>	RW	x
2	Address	<i>Device address range 0..127 handled automatically in bueS mode</i>	RW	x
4	Reset	<i>Handles different device resets 1: Communication Reset 2: Node reset (device reset) 3: bueS reset 4: Factory reset 5: restart device in boot loader mode</i>	RW	
5	bueS Version	version number of the bueS driver	RO	
6	Rx error count	occurred Rx errors since devices lifetime	RO	
7	Rx error count max	maximal value of occurred Rx errors	RW	
8	Tx error count	occurred Tx errors since devices lifetime	RO	
9	Tx error count max	maximal value of occurred Tx errors	RW	
A	CAN operation status	operation status of CAN	RO	
C	Deallocation delay	delay[ms] that partner allocation waits after remove node before start search again	RW	x
D	EDS Version	Version of the EDS file		

### 3.3 0x2002

### User Configuration Object

sub	name	description	access type	Config- Client
1	Unique Device Name	<i>Taken over to Buerkert Device Description Object during device start.</i>	RW	x
2	Location Information	<i>Additional user information about the devices location</i>	RW	x
3	User Description	<i>Additional user information about the device</i>	RW	x
4	Displayed Device Name	<i>Device name which is displayed</i>	RW	x
5	Static NodeID	<i>Static CANopen Node ID of the device</i>	RW	x

## 3.4 0x2004

## Device Status Object

sub	name	description	access type	Config-Client
1	Device Status NamurNe107	Corresponds to the device status. <sup>1)</sup>	RO	
2	Device Temperature	Devices temperature in kelvin	RO	
3	Device Supply Voltage	Supply voltage in volt	RWR	
4	Operation Time_[s]	Devices operating time counter as seconds	RO	
5	Maximum Device Temperature	Maximum internal devices temperature in kelvin during devices lifetime	RO	
6	Minimum Device Temperature	Minimum internal devices temperature in kelvin during devices lifetime	RO	
7	Maximum Device Supply Voltage	Max value of devices power supply in volts since start-up	RO	
8	Minimum Device Supply Voltage	Max value of devices power supply in volts since start-up	RO	
D	Device Boot Counter	Boot counter	RO	
E	Trans Mem Status	Represents the status of the transferable memory (SIM card). 0:Unknown 1:MemoryAvailable 2:MemoryNotAvailable 3:MessageAcknowledged 4:MemoryOptional	RO	

1)

Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
reserved				Namur state: 0 – normal 1 – diagnose active 2 – maintenance required 3 – out of specification 4 – warning 5 - error			



## **3.5 0x2100**

## **Get Mapping Function**

Internal function

### 3.6 0x2101 Locating Function

Function for locating a device. Device LED flashes for several times by setting call/cancel to 1.

sub	name	description	access type	Config- Client
1	call/cancel	bueS internal function	RW	

### 3.7 0x2102 Blockdownload Config Function

Internal function

### 3.8 0x2103 Persistent Storage Function

Internal function

### 3.9 0x210A Trigger Maintenance Function

Put device into maintenance state. The blue Namur LED identifies the relevant device for maintenance by setting call/cancel to 1.

sub	name	description	access type	Config- Client
1	call/cancel	bueS internal function	RW	

### 3.100x2120 LED Modi

sub	name	description	access type	data type	data memory	factory reset	device reset
0x0	LED Modi	<p>Select LED indicator</p> <p>Please refer to the operating instructions for a description of the possible indicator modes.</p> <p>0 – NAMUR mode</p> <p>1 – Valve mode* (position signal, no errors) *</p> <p>2 – Valve mode* + errors (red) *</p> <p>3 – Valve mode* + errors (red) + warnings (orange, yellow, blue) *</p> <p>4 – Fixed color mode configured by object 0x2122 (LED Extern Color))</p> <p>6 – (Top) LEDs off</p> <p>*Colors for valve mode are defined in object index 0x2121 Valve Mode Configuration</p>	RW	UI32	x	x	

### 3.11 0x2122 LED Extern Color

sub	name	description	access type	data type	data memory	factory reset	device reset																				
0x0	LED Extern Color	<p>Setting object 0x2120 LED Modi to 4 (Fixed Color) the color of TOP LEDs is controlled externally by writing a corresponding value to this object:</p> <table><tr><th>Value</th><th>TOP LED Color</th></tr><tr><td>0x10000001</td><td>White</td></tr><tr><td>0x10000006</td><td>Red</td></tr><tr><td>0x10000005</td><td>Orange</td></tr><tr><td>0x10000004</td><td>Yellow</td></tr><tr><td>0x10000002</td><td>Green</td></tr><tr><td>0x10000003</td><td>Blue</td></tr><tr><td>0x00FFFF00</td><td>Teal</td></tr><tr><td>0x00FF00FF</td><td>Pink</td></tr><tr><td>0x10000000</td><td>LEDs Off</td></tr></table>	Value	TOP LED Color	0x10000001	White	0x10000006	Red	0x10000005	Orange	0x10000004	Yellow	0x10000002	Green	0x10000003	Blue	0x00FFFF00	Teal	0x00FF00FF	Pink	0x10000000	LEDs Off	RW	UI32	x	x	
Value	TOP LED Color																										
0x10000001	White																										
0x10000006	Red																										
0x10000005	Orange																										
0x10000004	Yellow																										
0x10000002	Green																										
0x10000003	Blue																										
0x00FFFF00	Teal																										
0x00FF00FF	Pink																										
0x10000000	LEDs Off																										

### 3.120x2200 Buerkert Driver Archive

Internal object

### 3.13 0x2220 EDS

Internal object

### **3.14 0x2400**

### **Sensor Type**

Internal object

### **3.15 0x2420**

### **No Measure Values**

Internal object

### **3.16 0x2421**

### **No Control Values**

Internal object

### **3.17 0x2422**

### **No Calibration Values**

Internal object

## 3.180x2500 POS

sub	name	description	access type	Config-Client
1	Value	current position of valve in %	RWR	
2	Unit	0xFE000000 %	RO	
3	Name	POS objects name	RO	
4	Classification	0x000E bueS specific	RO	
5	Datatype	0x08 REAL32	RO	
6	Precision	bueS specific	RO	
7	Feature Group	0 bueS specific Used for automatic configuration in bueS systems	RW	x

## 3.190x2501 CMD

sub	name	description	access type	Config-Client
1	Value	Current position setpoint of the valve in %, which is used by position controller. This is the set point after the signal processing functions (CHARACT, DIR.CMD, SPLTRNG) are applied	RWR	
2	Unit	0xFE000000 %	RO	
3	Name	CMD* objects name	RO	
4	Classification	0x000E bueS specific	RO	
5	Datatype	0x08 REAL32	RO	
6	Precision	bueS specific	RO	
7	Feature Group	0 bueS specific Used for automatic configuration in bueS systems	RW	x

## 3.20 0x2502 CMDanalog

sub	name	description	access type	Config-Client
1	Value	Current position setpoint for the position controller from analog input in %.	RWR	
2	Unit	0xFE000000 %	RO	
3	Name	CMD analog objects name	RO	
4	Classification	0x000E bueS specific	RO	
5	Datatype	0x08 REAL32	RO	
6	Precision	bueS specific	RO	
7	Feature Group	0 bueS specific Used for automatic configuration in bueS systems	RW	x

## 3.21 0x2503 SPanalog

Only available for devices with process controller function

sub	name	description	access type	Config-Client
1	Value	Current process setpoint from analog input for the process controller.	RWR	
2	Unit	0xFE000000 bueS specific SI unit : NI/min Other units are handled by display or Buerkert Communicator	RO	
3	Name	SP* objects name	RO	
4	Classification	0x000E bueS specific	RO	
5	Datatype	0x08 REAL32	RO	
6	Precision	bueS specific	RO	
7	Feature Group	0 bueS specific Used for automatic configuration in bueS systems	RW	x

## 3.22 0x2504 PVanalog

Only available for devices with process controller function

sub	name	description	access type	Config-Client
1	Value	Current measured process value from analog input for the process controller.	RWR	
2	Unit	0xFE000000 bueS specific SI unit : Nl/min Other units are handled by display or Buerkert Communicator	RO	
3	Name	PV* objects name	RO	
4	Classification	0x000E bueS specific	RO	
5	Datatype	0x08 REAL32	RO	
6	Precision	bueS specific	RO	
7	Feature Group	0 bueS specific Used for automatic configuration in bueS systems	RW	x

## 3.23 0x2505 MTMP

Only available for devices with FMR function

sub	name	description	access type	Config-Client
1	Value	Current media temperature.	RWR	
2	Unit	0x00050000 K	RO	
3	Name	MTMP objects name	RO	
4	Classification	0x001D bueS specific	RO	
5	Datatype	0x08 REAL32	RO	
6	Precision	bueS specific	RO	
7	Feature Group	0 bueS specific Used for automatic configuration in bueS systems	RW	x

## 3.24 0x2507 P1

Only available for devices with FMR function

sub	name	description	access type	Config-Client
1	Value	Current measured pressure value from analog input for the flow controller.	RWR	
2	Unit	0x00220000 Pa	RO	
3	Name	P1 objects name	RO	
4	Classification	0x0017 bueS specific	RO	
5	Datatype	0x08 REAL32	RO	
6	Precision	bueS specific	RO	
7	Feature Group	0 bueS specific Used for automatic configuration in bueS systems	RW	x

## 3.25 0x2507 P2

Only available for devices with FMR function

sub	name	description	access type	Config-Client
1	Value	Current measured pressure value from analog input for the flow controller.	RWR	
2	Unit	0x00220000 Pa	RO	
3	Name	P2 objects name	RO	
4	Classification	0x0017 bueS specific	RO	
5	Datatype	0x08 REAL32	RO	
6	Precision	bueS specific	RO	
7	Feature Group	0 bueS specific Used for automatic configuration in bueS systems	RW	x



## 3.26 0x2540 CMDdigital

sub	name	description	access type	Config-Client
1	Value	Position controller set point in %	RWW	
2	Unit	0xFE000000 %	RO	
3	Name	CMD objects name	RO	
4	Classification	0x0003 bueS specific	RO	
5	Datatype	0x08 REAL32	RO	
6	Precision	bueS specific	RO	
7	Feature Group	0 bueS specific Used for automatic configuration in bueS systems	RW	x

## 3.27 0x2541 SPdigital

Only available for devices with process controller function

sub	name	description	access type	Config-Client
1	Value	Process controller set point	RWW	
2	Unit	0xFE000000 bueS specific SI unit : Nl/min Other units are handled by display or Buerkert Communicator	RO	
3	Name	SP objects name	RO	
4	Classification	0x0003 bueS specific	RO	
5	Datatype	0x08 REAL32	RO	
6	Precision	bueS specific	RO	
7	Feature Group	0 bueS specific Used for automatic configuration in bueS systems	RW	x

## 3.28 0x2542 PVdigital

Only available for devices with process controller function

sub	name	description	access type	Config- Client
1	Value	Current process value. Only applicable if PV-Input is BUS	RWW	
2	Unit	0xFE000000 bueS specific SI unit : Nl/min Other units are handled by display or Buerkert Communicator	RO	
3	Name	PV objects name	RO	
4	Classification	0x0003 bueS specific	RO	
5	Datatype	0x08 REAL32	RO	
6	Precision	bueS specific	RO	
7	Feature Group	0 bueS specific Used for automatic configuration in bueS systems	RW	x

## 3.29 0x2542 MTEMPdigital

Only available for devices with FMR function

sub	name	description	access type	Config-Client
1	Value	Current temperature of fluid	RWW	
2	Unit	0xFE000000 bueS specific SI unit : Nl/min Other units are handled by display or Buerkert Communicator	RO	
3	Name	MTEMPdigital objects name	RO	
4	Classification	0x0003 bueS specific	RO	
5	Datatype	0x08 REAL32	RO	
6	Precision	bueS specific	RO	
7	Feature Group	0 bueS specific Used for automatic configuration in bueS systems	RW	x

## 3.30 0x2C00 XControl

sub	name	description	access type	Config-Client
0x0F	TIMEopen	Time to open valve measured by last X.Tune	RO	
0x10	TIMEclose	Time to close valve measured by last X.Tune	RO	
0x14	TUNEflags	0 if last tune was successful	RW	
0x16	YBfric	Friction compensation parameter YB	RW	
0x17	YEfric	Friction compensation parameter YE	RW	

## 3.31 0x2C01 Display

sub	name	description	access type	Config- Client
0x05	Menu_Items	<i>Bitfield to Activate/Deactivate functions from ADD.FUNCTION menu</i> <i>Bit0 – Bit6: unused</i> <i>Bit7: CHARACT</i> <i>Bit8: CUTOFF</i> <i>Bit9: DIR.CMD</i> <i>Bit10: DIR.ACT</i> <i>Bit11: SPLTRNG</i> <i>Bit12: X.LIMIT</i> <i>Bit13: X.TIME</i> <i>Bit14: X.CONTROL</i> <i>Bit15: P.CONTROL (only 8693/8793)</i> <i>Bit16: SECURITY</i> <i>Bit17: SAFEPOS</i> <i>Bit18: SIG.ERROR</i> <i>Bit19: BINARY.IN</i> <i>Bit20: OUTPUT</i> <i>Bit21: CAL.USER</i> <i>Bit22: SET.FACTORY</i> <i>Bit23: SERVICE.BUES</i> <i>Bit24: EXTRAS</i> <i>Bit25: POS.SENSOR (only type 879X)</i> <i>Bit26: SERVICE</i> <i>Bit27: SIMULATION</i> <i>Bit28: DIAGNOSE</i> <i>Bit29: F.CONTROL (only with FMR option)</i>	RW	X
0x07	mCODEfunc	<i>Bitfield to lock menus (SECURITY function)</i> <i>Bit0: MAIN</i> <i>Bit1: MANU/AUTO</i> <i>Bit2: ADDFUNC</i> <i>Bit3: X.TUNE</i> <i>Bit4: P.Q'LIN</i> <i>Bit5: P.TUNE</i>	RW	X
0x08	mCODE	Code of SECURITY function 0-9999	RW	X
0x0C	SP_Manual	SP which is used when mPCONsetp (0x2C02sub9) is 0 (intern). Unit is bueS specific SI unit	RW	X

## 3.32 0x2C02 PCONTROL

Only available for devices with process controller function

sub	name	Description	access type	Config-Client
2	FTfgPV	Predefined filter setting Values for the process value input 0: Filter 0 (10 Hz) 1: Filter 1 (5 Hz) 2: Filter 2 (2 Hz) 3: Filter 3 (1 Hz) 4: Filter 4 (0,5 Hz) 5: Filter 5 (0,2 Hz) 6: Filter 6 (0,1 Hz) 7: Filter 7 (0,07 Hz) 8: Filter 8 (0,05 Hz) 9: Filter 9 (0,03 Hz)	RW	X
3	DBDp	Deadband of process controller in % (Scaled with PVmin and PVmax)	RW	X
4	KP	Proportional gain of the process controller	RW	X
5	TN	Integral action time of the process controller in	RW	X
6	TV	Derivative action time of the process controller in s	RW	X
7	X_0	Operating point of the process controller, position in %	RW	X
8	mPCONsetp	0: Input of the set-point value on the process level 1: Default of the set-point value via fieldbus input	RW	X
9	mPCONinp	Selecting the type of analog input for ProcessValue of the process controller 0:FMR (only if FMR device) 1:4-20 mA 2:Frequency 3:PT100 4:BUS (BueS/Fieldbus)	RW	X
0xA	mPcolnitMode	P.CO initialization mode 0: Standard 1: Bumpless 2: Zero-Init	RW	X
0xF	PT100offset_user	PT100 calibration offset	RW	X

<b>0x10</b>	SCALunit	<i>Unit of process controller</i> 0: l/s <sup>1</sup> 1: l/min <sup>1</sup> 2: l/h <sup>1</sup> 3: m <sup>3</sup> /min <sup>1</sup> 4: m <sup>3</sup> /h <sup>1</sup> 5: UG/s <sup>1</sup> 6: UG/min <sup>1</sup> 7: UG/h <sup>1</sup> 8: IG/s <sup>1</sup> 9: IG/min <sup>1</sup> 10: IG/h <sup>1</sup> 11: °C <sup>2</sup> 12: °F <sup>2</sup> 13: m/s 14: bar 15: mbar 16: psi 17: % 18: mm 19: m 20: Liter 21 : Nl/s 22 : Nl/min 23 : Nl/h 24: none	RW	X
<b>0x12</b>	SCALkfact	<i>PV-scaling if frequency input is used</i>	RW	X
<b>0x15</b>	SCALdp	<i>Decimal point of process controller scaling (0-3)</i>	RW	X
<b>0x16</b>	SCALdp_kfact	<i>Decimal point of process controller scaling when frequency input is used</i>	RW	X
<b>0x17</b>	PCONact	<i>Deactivate process controller via bueS/fieldbus</i> 0: process controller inactive 1: process controller active	RW	
<b>0x18</b>	PVmin	<i>Lower scaling point PV (bueS specific SI unit)</i>	RW	X
<b>0x19</b>	PVmax	<i>Upper scaling point PV (bueS specific SI unit)</i>	RW	X
<b>0x1A</b>	SPmin	<i>Lower scaling point SP (bueS specific SI unit)</i>	RW	X
<b>0x1B</b>	SPmax	<i>Upper scaling point SP (bueS specific SI unit)</i>	RW	X

<sup>1</sup> mPCONinp = 2 (Frequency) can only use values 0 - 10

<sup>2</sup> mPCONinp = 3 (PT100) can only use values 11 and 12

### 3.33 0x2C04 CHARACT

sub	name	description	access type	Config- Client
1	mCHARACT	<i>Charact curve selected</i> 0: No charact curve 1:Charact Curve 1:25 2:Charact Curve 1:33 3:Charact Curve 1:50 4:Charact Curve 25:1 5:Charact Curve 33:1 6:Charact Curve 50:1 7:FREE (See0x2C11 for definig the values) See User Manual for description of the function.	RW	X

### 3.34 0x2C08 DIRCMD

sub	name	description	access type	Config- Client
1	mDIRcmd	0: Rise (0V > 0%) 1: Fall (0V -> 100%) See User Manual for description of the function.	RW	X

### 3.35 0x2C09 DIRACT

sub	name	description	access type	Config- Client
1	mDIRact	0: direct effective direction (deaerated → 0 %; aerated 100 %) 1: inverse effective direction (deaerated → 100 %; aerated 0 %) See User Manual for description of the function.	RW	X

### 3.36 0x2C0A CUTOFF

sub	name	description	access type	Config- Client
1	CUTOFFmin	Lower CUTOFF level in %	RW	X
2	CUTOFFmax	Upper CUTOFF level in %	RW	X
3	mCUTOFFtype	0: CUTOFF function is based on SP 1: CUTOFF function is based on CMD See User Manual for description of the function.	RW	X

### 3.37 0x2C0B XLIMIT

sub	name	description	access type	Config- Client
1	POSmin	Lower position for X.LIMIT in %	RW	X
2	POSmax	Upper position for X.LIMIT in %	RW	X

### 3.38 0x2C0C XControl\_User

sub	name	description	access type	Config- Client
0x01	DBDx	Deadband of the position controller in %	RW	X
0x02	KPclose	Proportional gain for opening the valve	RW	X
0x03	KPopen	Proportional gain for closing the valve	RW	X

### 3.39 0x2C0D XTIME

sub	name	description	access type	Config- Client
1	XTIMEopen	Limited opening time of the valve in s	RW	X
2	XTIMEclose	Limited closing time of the valve in s	RW	X



## 3.40 0x2C0E BININ

sub	name	description	access type	Config- Client
1	mBINfunc	Binary input function 0: Safepos 1: Hand/Auto 2: start X.Tune 3: X.CO/P.CO 4: LeakChar (FMR)	RW	X
2	mBINtype	0: Active high 1: Active low	RW	X

## 3.41 0x2C10 SAFEPOS

sub	name	description	access type	Config- Client
1	mSAFEpos	Position used as safepos in %	RW	X

## 3.42 0x2C11 CHARACTy

sub	name	description	access type	Config- Client
0x01... 0x15	sub01 ... sub15	user-defined charact in 5% steps (0%, 5%, ..., 100%) It is used when object 0x2C04sub01 is set to "FREE"	RW	X

## 3.43 0x2C12 CHARACT\_kv

Only for FMR-devices

sub	name	description	access type	Config- Client
0x01... 0x15	sub01 ... sub15	<i>user-defined kv charact in 5% steps (0%, 5%, ..., 100%)</i>	RW	X

## 3.44 0x2C14 CHARleakp

Only for FMR-devices

sub	name	description	access type	Config- Client
0x01... 0x15	sub01 ... sub15	<i>CHARleakp 5% steps (0%, 5%, ..., 100%)</i>	RW	X

## 3.45 0x2C15 CHARleakq

Only for FMR-devices

sub	name	description	access type	Config- Client
0x01... 0x15	sub01 ... sub15	CHARleakq 5% steps (0%, 5%, ..., 100%)	RW	X

## 3.46 0x2C16 WMS

sub	name	description	access type	Config- Client
0x01	RemoteType	0: dDIGITAL 1: dANALOG	RW	X
0x02	mTANcorr_activ	1: TAN-Correction is active 0: TAN-Correction is inactive	RW	X
0x03	AlphaPosSens	Used angle for TAN-Correction (+/-°)	RW	X
0x0A	ADpos_cont	Continuous measurement value of the position	RO	
0x0C	MeasurementRange	Measurement range of the position sensor	RO	
0x0D	Sensortype	0: linear 1: rotatory with zero crossing 2: rotatory NAMUR	RO	
0x0E	WMSunit	reserved	RO	

## 3.47 0x2C17 Simulation

sub	name	description	access type	Config- Client
0x01	SIM_Ks	Proportional gain of simulated process	RW	X
0x02	SIM_Ts	Time constant in s of simulated process	RW	X
0x03	SIM_amp	Amplitude in % of simulated CMD	RW	X
0x04	SIM_per	Period in s of simulated CMD	RW	X
0x05	SIM_off	Offset in % of simulated CMD	RW	X
0x06	xSIMactiv	1: Activate actuator simulation 0: Deactivate actuator simulation	RW	
0x07	pSIMactiv	1: Activate process simulation 0: Deactivate process simulation	RW	
0x08	SP_MODactiv	Activate CMD simulation 0: extern (simulation off) 1: Sinus 2: Square 3: Triangle 4: mixed	RW	

## 3.48 0x2C18 Modeswitch

sub	name	description	access type	Config- Client
0x01	zOPmode	Get the current operating mode 0: Auto 1: Manual mode 2: X.Tune 9: P.Q.Lin 10 : P.Tune	RO	
0x0C	startTune	Start Tune via fieldbus 2: X.Tune 9: P.Q.Lin 10 : P.Tune  startTune is set back from device 0:TUNE successfully started 255:TUNE could not be started  Tune has finished when zOPmode changed back to Auto or Manual mode. Get result of last tune by reading object TUNEflags (2C00sub14))	RW	

## 3.49 0x2C23 SensorBreak

sub	name	description	access type	Config- Client
<b>0x02</b>	mERRpinp_func	0: signal break detection of PV inactive 1: signal break detection of PV active	RW	X
<b>0x04</b>	mSPOSpinp_func	0: no safepos when PV signal break detected 1: safepos when PV signal break detected Requires that mERRpinp_func is activated	RW	X

## 3.50 0x2C39

## F.Control

sub	name	description	access type	Config-Client
0x01	FMRtemp	Temperature of medium	RW	X
0x02	FMRdens	Density of medium	RW	X
0x03	FMRdiam	Diameter of valve	RW	X
0x05	FMRsens	Source of medium temperature 0: Manual (2C29sub1) 1: analog input 2: BueS/fieldbus (2542sub1)	RW	X
0x06	mPCONleak	0: Leakage inactive 1: Leakage active	RW	X
0x07	FMRp1p2_min	Lower pressure for P1/P2 in bar	RW	X
0x08	FMRp1p2_max	Upper pressure for P1/P2 in bar	RW	X
0x09	FMRtmp_min	Lower temperature in °C	RW	X
0x0A	FMRtmp_max	Upper temperature in °C	RW	X
0x0B	FMRkvs	Kvs value of the valve in m³/h	RW	X
0x0C	mValveSelection	Selection of KV characteristic  Valve type 2301 0: DN15-8 1: DN15-10 2: DN15-15 3: DN25-15 4: DN25-20 5: DN25-25 6: DN40-25 7: DN40-32 8: DN40-40 9: DN50-32 10: DN50-40 11: DN50-50 12: DN65-40 13: DN65-50 14: DN65-65 15: DN80-50 16: DN80-65 17: DN80-80 18: DN100-65 19: DN100-80 20: DN100-100 21: DN80 bellow 22: DN100 bellow  Valve type 2712 23: DN15-8 24: DN15-10 25: DN15-15 26: DN25-15 27: DN25-20 28: DN25-25 29: DN40-25 30: DN40-32 31: DN40-40	RW	X

		32: DN50-32		
		33: DN50-40		
		34: DN50-50		
		35: DN65-40		
		36: DN65-50		
		37: DN65-65		
		38: DN80-50		
		39: DN80-65		
		40: DN80-80		
		41: DN100-65		
		42: DN100-80		
		43: DN100-100		
		44: DN80 bellow		
		45: DN100 bellow		
		46: Free		

### 3.51 0x2C42 SP\_UserUnit

sub	name	description	access type	Config- Client
	SP_UserUnit	SP in user unit which is shown on display	RWW	

### 3.52 0x2C43 PV\_UserUnit

sub	name	description	access type	Config- Client
	PV_UserUnit	PV in user unit which is shown on display	RWW	



## Attachment

### 3.53 Baud rates

The used baud rate can be set in Baudrate in the Device Communication Object (0x2001sub1). Supported baud rates are specified in the EDS-file.

Possible values are:

- 0: 1000 kbit/s
- 1: 800 kbit/s (not supported)
- 2: 500 kbit/s (default)
- 3: 250 kbit/s
- 4: 125 kbit/s
- 5: 100 kbit/s (not supported)
- 6: 50 kbit/s
- 7: 20 kbit/s (not supported)
- 8: 10 kbit/s (not supported)

### 3.54 Cyclic data

#### RPDOs (receive data)

- 1. Receive PDO Mapping Parameter 0:
  - Sub1: CMDdigital (object 2540sub1)
  - Sub2: SPdigital (object 2541sub1)
- 2. Receive PDO Mapping Parameter 1:
  - Sub1: PVdigital (object 2542sub1)
  - Sub2: MTEMPdigital (object 2543sub1)

#### TPDOs (transmit data)

- 1. Transmit PDO Mapping Parameter 0:
  - Sub1: POS (object 2500sub1)
  - Sub2: CMD (object 2501sub1)
- 2. Transmit PDO Mapping Parameter 1:
  - Sub1: CMDanalog (object 2502sub1)
  - Sub2: SPanalog (object 2503sub1)
- 3. Transmit PDO Mapping Parameter 2:
  - Sub1: PVanalog (object 2504sub1)
  - Sub2: SP (object 2C1Asub3)

### 3.55 Switching between position controller and process controller

The process controller has to be first activated via the ADD.FUNCTION menu. You can then switch between P.CO and X.CO via object PCONact (2C02sub17)