KA 298C/07/en/11.02
As of software version
CPM 153: 1.20
CLM 153id: 1.20
CLM 153cd: 1.20

PROFIBUS-PA
Field communication with Mycom S CXM 153 TopCal S CPC 300 TopClean S CPC 30

Brief operating instructions

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The Power of Know How

1 Setting the device address

The address must always be set in the case of a PROFIBUS-PA device. The process control system does not recognise the transmitter if the address is not set correctly.

All devices have the address 126 on leaving the factory. You can use this address for device function checking and for connecting to a PROFIBUS-PA network. You must change this address to be able to integrate additional devices.
The device address can be set via:

- Local operation,
- The PROFIBUS service Set_Slave_Add or
- The DIL switch in the device.

Note! Device addresses
- Valid device addresses are in the range 0... 126.
- Each address may only be given once in a PROFIBUS-PA network.
- The double arrow in the display indicates active communication with PROFIBUS.

1.1 Setting the device address via the Mycom S operating menu

Note!
You can only set the address via the software if DIL switch 8 is set to the software position. On leaving the factory, switch 8 is already set to software as shown in Fig. 1 (information on the DIL switch is provided in Section 1.3).

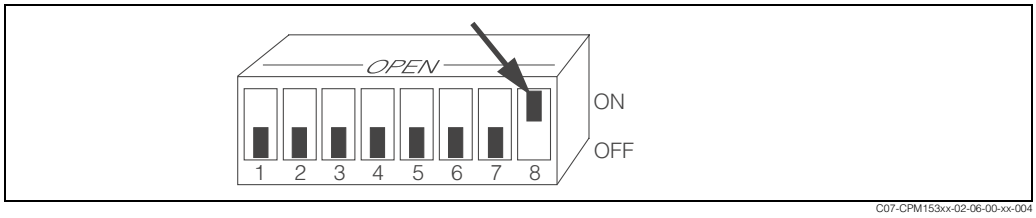
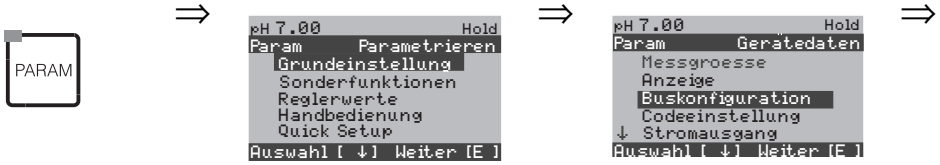


Fig. 1: DIL switch 8 must be set to "ON" to make operation via software possible.



CODE	DISPLAY	CHOICE (default = bold)	INFO	User set-tings
C1	pH 7.00 Hold Param Busadresse 000 0...126 Auswahl [↓] Weiter [E]	**0** 0 ... 126	**Entry of bus address** Each address may only be given once in a network.	

1.2 Setting the device address via PROFIBUS communication

The address is set via the Set_Slave_Add service.

1.3 Setting the device address via DIL switch (hardware setting)

Please proceed as follows to set the device address:

Loosen the six Phillips screws and remove the housing cover. The electronic module with the DIL switch is located in the top right of the housing cover.

- Set the device address (from 0 ... 126) at switches 1 to 7.
  (example: 18 = 2 + 16)
- You must set switch 8 to OFF when entering the device address via DIL switch.

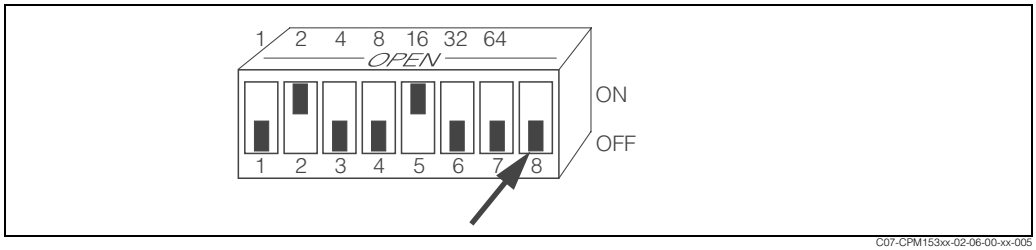


Fig. 2: Example for device address 18.
Switch 8 must be set to OFF if you are entering the address via DIL switch.

Then close the housing cover again.

2 Cyclic data exchange (Data_Exchange)

2.1 Block model of Mycom S CXM 153

In the PROFIBUS-PA configuration, all the device parameters are categorised according to their functional properties and tasks and are generally assigned to three different blocks. A block may be regarded as a container in which parameters and the associated functionalities are contained.

A PROFIBUS-PA device has the following block types (see also Fig. 3):

- *A Physical Block (device block)*
  The Physical Block contains all device-specific features of the unit.
- *One or more Transducer Blocks*
  The Transducer Block contains all the measuring and device-specific parameters of the device. The measuring principles (e.g. pH, temperature) are depicted in the Transducer Blocks in accordance with the PROFIBUS-PA Profile 3.0 Specification.
- *One or more function blocks*
  A function block contains the automation functions of the device. Mycom S contains Analog Input blocks by means of which the measured values can be scaled and examined for limit value overshoot.

A number of automation-related tasks can be implemented with these blocks. In addition to these blocks, a transmitter can have any number of additional blocks, for example several Analog Input function blocks if the transmitter makes more than one process variable available.

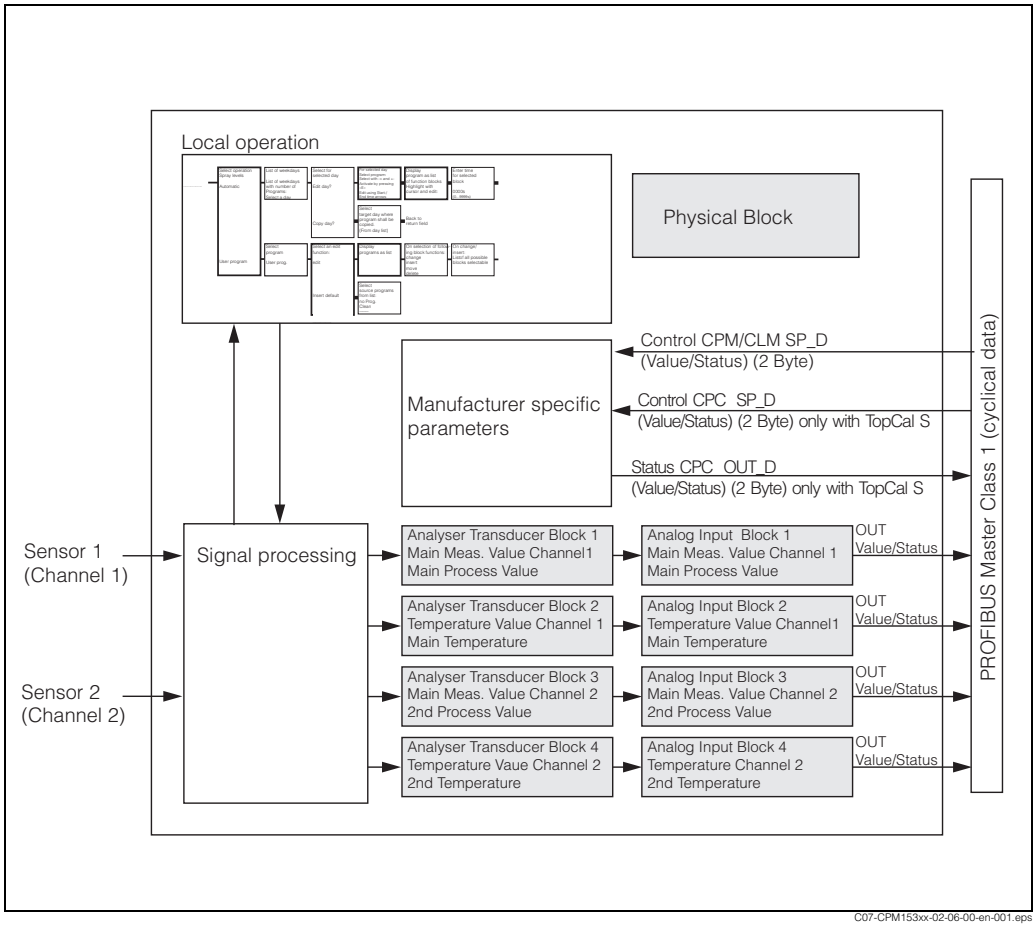


Fig. 3: Block model of Mycom S CXM 153. grey = profile blocks

2.2 Module for the cyclic data telegram

Mycom S CXM153 makes the following module available as input data (data from transmitter to PLC) for the cyclic data telegram (see also block model in Fig. 3):

1. Main Process Value
   This is the main measured value of channel 1
2. Main Temperature
   This is the temperature of channel 1
3. 2nd Process Value
   This is the process value of channel 2
4. 2nd Temperature
   This is the temperature of channel 2
5. Status CPC (only for TopCal S and TopClean S)
   This is the status information of a connected CPG
6. Control CPM/CLM
   With this parameter, the digital signals Ext. Hold, Chemoclean “Clean”, Chemoclean “User” and parameter set switching for CLM153 can be controlled by the PLC in Mycom S.
7. Control CPC (only for TopCal S and TopClean S)
   With this parameter, the digital signals can:
   – move assembly to measuring
   – move assembly to service
   – automatic start/stop
   – cleaning program selection (bin.0)
   – cleaning program selection (bin.1)
   – cleaning program selection (bin.2)
   be transmitted from the PLC to Mycom S.

2.2.1 Maximum configuration of the input data of Mycom S to the PLC

Using the Data_Exchange service, a PLC can read the described input data as cyclic data from the transmitter Mycom S. The cyclic data telegram for the maximum configuration of Mycom S has the following structure:

Index input data	Data	Access	Data format / comments	Configuration data
0 ... 4	Analog Input block 1 “Main Process Value” (pH 1 / cond. 1)	read	Measured value (32-bit floating point number; IEEE-754) Status byte; encoding see status code table on Page 18	0x42, 0x84, 0x08, 0x05 or 0x42, 0x84, 0x81, 0x81 or 0x94
5 ... 9	Analog Input block 2 “Main Temperature” (Temperature 1)	read	Measured value (32-bit floating point number; IEEE-754) Status byte; encoding see status code table on Page 18	0x42, 0x84, 0x08, 0x05 or 0x42, 0x84, 0x81, 0x81 or 0x94
10 ... 14	Analog Input block 3 “2nd Process Value” (pH 2 / cond. 2)	read	Measured value (32-bit floating point number; IEEE-754) Status byte; encoding see status code table on Page 18	0x42, 0x84, 0x08, 0x05 or 0x42, 0x84, 0x81, 0x81 or 0x94
15 ... 19	Analog Input block 4 “2nd Temperature” (Temperature 2)	read	Measured value (32-bit floating point number; IEEE-754) Status byte; encoding see status code table on Page 18	0x42, 0x84, 0x08, 0x05 or 0x42, 0x84, 0x81, 0x81 or 0x94

Index input data	Data	Access	Data format / comments	Configuration data
20 ... 21	Status CPC (OUT_D) Value 0000 0001 0000 0010 0000 0100 0000 1000 0001 0000 0010 0000 0100 0000 1000 0000 (only for TopCal S and TopClean S) Status	read	 Byte (Bit coded) Assembly in “Measure” position Assembly in “Service” position reserved reserved Program running Cleaning program status (bin.0) Cleaning program status (bin.1) Cleaning program status (bin.2) (Function description see BA 235C/07/en and 236C/07/en) Status Byte (80h = OK)	0x42, 0x81, 0x05, 0x05 or 0x42, 0x81, 0x83, 0x81 or 0x91

IEEE-754 floating point number:

	Byte n		Byte n+1		Byte n+2	Byte n+3
	Bit 7	Bit 6 Bit 0	Bit 7	Bit 6 Bit 0	Bit 7 Bit 0	Bit 7 Bit 0
	Sign	$2^7\ 2^6\ 2^5\ 2^4\ 2^3\ 2^2\ 2^1$	2^0	$2^{-1}\ 2^{-2}\ 2^{-3}\ 2^{-4}\ 2^{-5}\ 2^{-6}\ 2^{-7}$	$2^{-8}\ 2^{-9}\ 2^{-10}\ 2^{-11}\ 2^{-12}\ 2^{-13}\ 2^{-14}\ 2^{-15}$	$2^{-16}\ 2^{-17}\ 2^{-18}\ 2^{-19}\ 2^{-20}\ 2^{-21}\ 2^{-22}\ 2^{-23}$
		Exponent		Mantissa	Mantissa	Mantissa

Formula: $\text{Value} = (-1)^{\text{sign}} * 2^{(\text{exponent} - 127)} * (1 + \text{mantissa})$

Example: 40 F0 00 00 h = 0100 0000 1111 0000 0000 0000 0000 0000 b

$\text{Value} = (-1)^0 * 2^{(129 - 127)} * (1 + 2^{-1} + 2^{-2} + 2^{-3})$

$= 1 * 2^2 * (1 + 0.5 + 0.25 + 0.125)$

$= 1 * 4 * 1.875$

$= 7.5$

2.2.2 Maximum configuration of the output data of the PLC to Mycom S

The data of the PLC to the transmitter (output data) have the following structure:

Index output data	Data	Access	Data format / comments	Configuration data
0 ... 1	Control CPM / CLM (SP_D) Value 0000 0001 E1 0000 0010 E2 0000 0100 E3 0000 1000 0001 0000 0010 0000 0100 0000 1000 0000 Status	write	 Byte Ext. Hold ChemoClean “Clean” ChemoClean “User” reserved reserved reserved reserved reserved Status Byte (80h = Good - OK: Value is adopted	0x82, 0x81, 0x05, 0x05 or 0x82, 0x81, 0x84, 0x82 or 0xA1

Index output data	Data	Access	Data format / comments	Configuration data
2 ... 3	Control CPC (SP_D) Value 0000 0001 0000 0010 0000 0100 0000 1000 0001 0000 0010 0000 0100 0000 1000 0000 (only for TopCal S and TopClean S) Status	write	 Byte Assembly in “Measure” position Assembly in “Service” position Automatic start/stop reserved reserved Cleaning program selection (bin.0) Cleaning program selection (bin.1) Cleaning program selection (bin.2) (Function description see BA 235C/07/en and 236C/07/en) Status Byte (80h = Good - OK: Value is adopted	0x82, 0x81, 0x05, 0x05 or 0x82, 0x81, 0x84, 0x82 or 0xA1

You can control the external hold and the ChemoClean functions in the device by means of the digital inputs (E1, E2, E3).

In addition, you can also switch the parameter sets for CLM 153 (see above: data under index 0 of the output data). In doing so, you can use the CommuWin matrix field V4H2 to select whether to control the digital inputs via the wires connected in the device or via a byte in the cyclic data telegram (PROFIBUS) (0: control via binary inputs (= default), 1: control via cyclic data telegram).

The control options depend on the set number of digital inputs (cf Operating Instructions for Mycom S CLM 153, BA 234C/07/en under “parameter sets”).

Number of binary inputs	Binary inputs			Function
	E1 (Bit 0)	E2 (Bit 1)	E3 (Bit 2)	
0 (Inputs 1, 2 and 3 active)	1	–	–	Hold on
	0	–	–	Hold off
	0	1	0	ChemoClean Clean
	0	0	1	ChemoClean User
	0	1	1	No options
	0	0	0	
1 (Inputs 1 and 2 active) (only for CLM 153)	1	–	–	Hold on
	0	–	–	Hold off
	0	0	–	Parameter set 1
	0	1	–	Parameter set 2
2 (Inputs 1 and 2 active) (only for CLM 153)	0	0	–	Parameter set 1
	0	1	–	Parameter set 2
	1	0	–	Parameter set 3
	1	1	–	Parameter set 4

The data byte has the following appearance:

Bit 7 - 3	Bit 2	Bit 1	Bit 0
Reserved	Encoding of inputs as per table above		

2.2.3 Customising the cyclic data telegram

You can customise the cyclic telegram to better meet the requirements of a process. The tables above represent the maximum contents of the cyclic data telegram.
If you do not want to use all the cyclic data of Mycom S, you can use the device configuration (Chk_Cfg) to eliminate individual data blocks from the cyclic telegram via the PLC software. Shortening the telegram improves the data throughput rate of a PROFIBUS-PA system. You should only keep those blocks active which you process further in the system. You can do this by means of a ”negative” selection in the configuration tool.
To achieve the correct structure of the cyclic data telegram, the PROFIBUS master must send the identification FREE_PLACE (00h) for the non-active blocks.

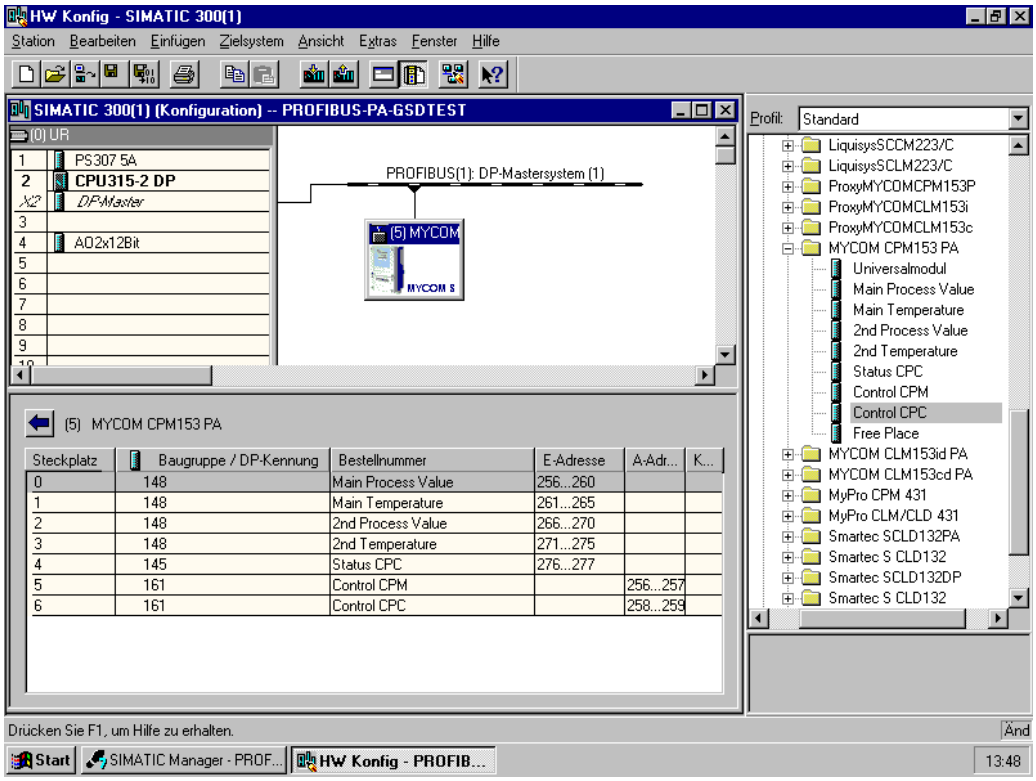
Configuration examples

The configuration of a PROFIBUS-DP system is normally effected in the following manner:

1. The field devices (Mycom S) which are to be configured are integrated into the configuration program of the automation system via the PROFIBUS-DP network. The GSD file is used here. Measured variables required can be configured off-line using the configuration software.
2. The automation system's user program will have to be programmed now. On the one hand, the input and output data are controlled in the user program and on the other hand the location of the measured variables is defined so that they can be processed further. An additional measured value configuration module may have to be used in the case of automation systems which do not support the IEEE-754 floating point format. It may also be necessary to change the byte sequence (byte swapping) depending on the type of data management employed in the automation system (little-endian format or big-endian format).
3. When configuration has been completed, this will be transferred to the automation.
4. The system can be started now. The automation system will establish a connection to the configured devices. The device parameters which are relevant for the process can now be set using a class 2 master, e.g. with Commuwin II.

2.2.4 *Configuration examples with Simatic HW-Konfig*

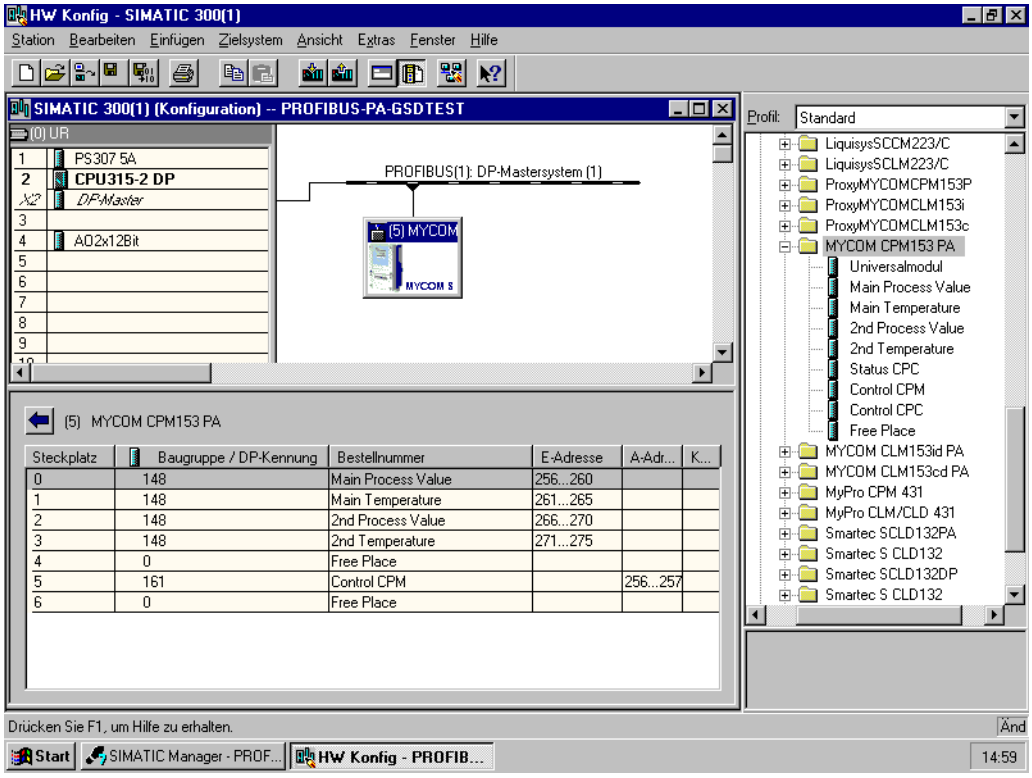
Total configuration Mycom S CPM 153 with TopCal S with manufacturer-specific GSD file



Byte length (Input)	Byte length (Output)	Data blocks	Status	Access	GSD Block description	GSD Extended block code	GSD Standard block code
0 ... 4	–	Analog Input Block 1 (pH Channel 1)	active	read	Main Process Value	0x42, 0x84, 0x08, 0x05	0x94
5 ... 9	–	Analog Input Block 2 (Temperature Channel 1)	active	read	Main Temperature	0x42, 0x84, 0x08, 0x05	0x94
10 ... 14	–	Analog Input Block 3 (pH Channel 2)	active	read	2nd Process Value	0x42, 0x84, 0x08, 0x05	0x94
15 ... 19	–	Analog Input Block 4 (Temperature Channel 2)	active	read	2nd Temperature	0x42, 0x84, 0x08, 0x05	0x94
20 ... 21	–	Status CPC (OUT_D)	active	read	Status CPC	0x42, 0x81, 0x05, 0x05	0x91
	0 ... 1	Control CPM (SP_D)	active	write	Control CPM	0x82, 0x81, 0x05, 0x05	0xA1
	2 ... 3	Control CPC (SP_D)	active	write	Control CPC	0x82, 0x81, 0x05, 0x05	0xA1

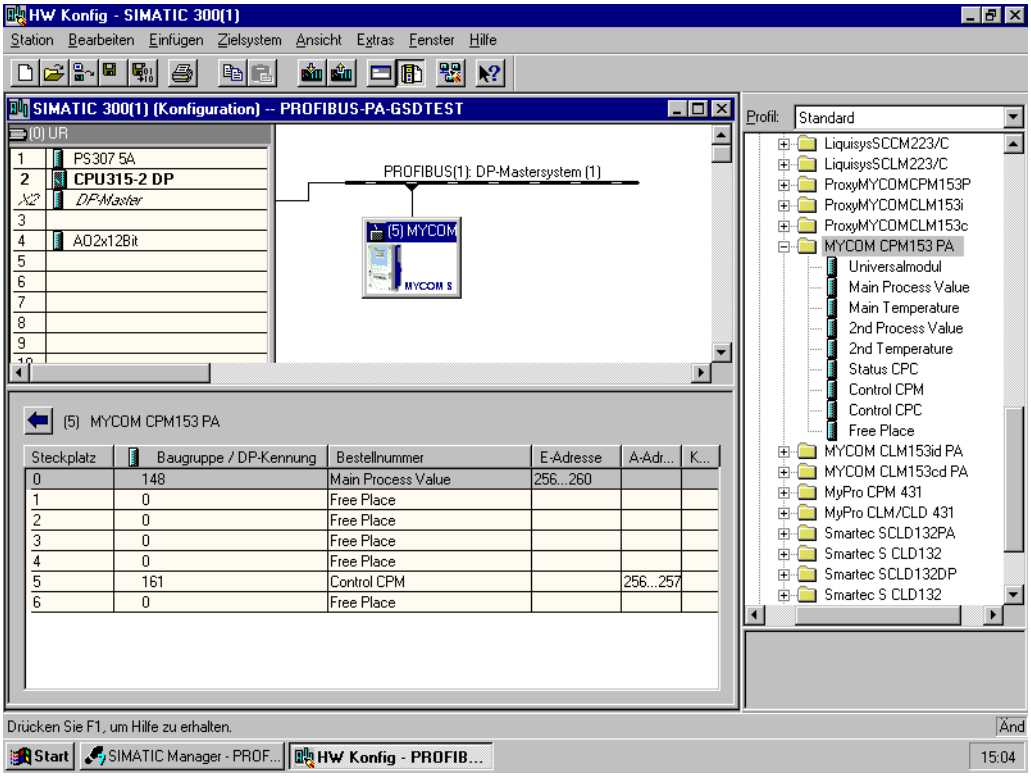
With this configuration, all data blocks supported by Mycom S CPM 153 with TopCal S are set active . Explanation to Status CPC, Control CPM and Control CPC → Page 5

Complete configuration of Mycom S CPM 153 without TopCal S
Replacement of measuring variable by blanks ("Free Place") via manufacturer-specific GSD file



Byte length (Input)	Byte length (Output)	Data blocks	Status	Access	GSD Block description	GSD Extended block code	GSD Standard block code
0 ... 4	–	Analog Input Block 1 (pH Channel 1)	active	read	Main Process Value	0x42, 0x84, 0x08, 0x05	0x94
5 ... 9	–	Analog Input Block 2 (Temperature Channel 1)	active	read	Main Temperature	0x42, 0x84, 0x08, 0x05	0x94
10 ... 14	–	Analog Input Block 3 (pH Channel 2)	active	read	2nd Process Value	0x42, 0x84, 0x08, 0x05	0x94
15 ... 19	–	Analog Input Block 4 (Temperatur e Channel 2)	active	read	2nd Temperature	0x42, 0x84, 0x08, 0x05	0x94
–	–	Blank	inactive	–	Free Place	0x00	0x00
	0 ... 1	Control CPM (SP_D)	active	write	Control CPM	0x82, 0x81, 0x05, 0x05	0xA1
–	–	Blank	inactive	–	Free Place	0x00	0x00

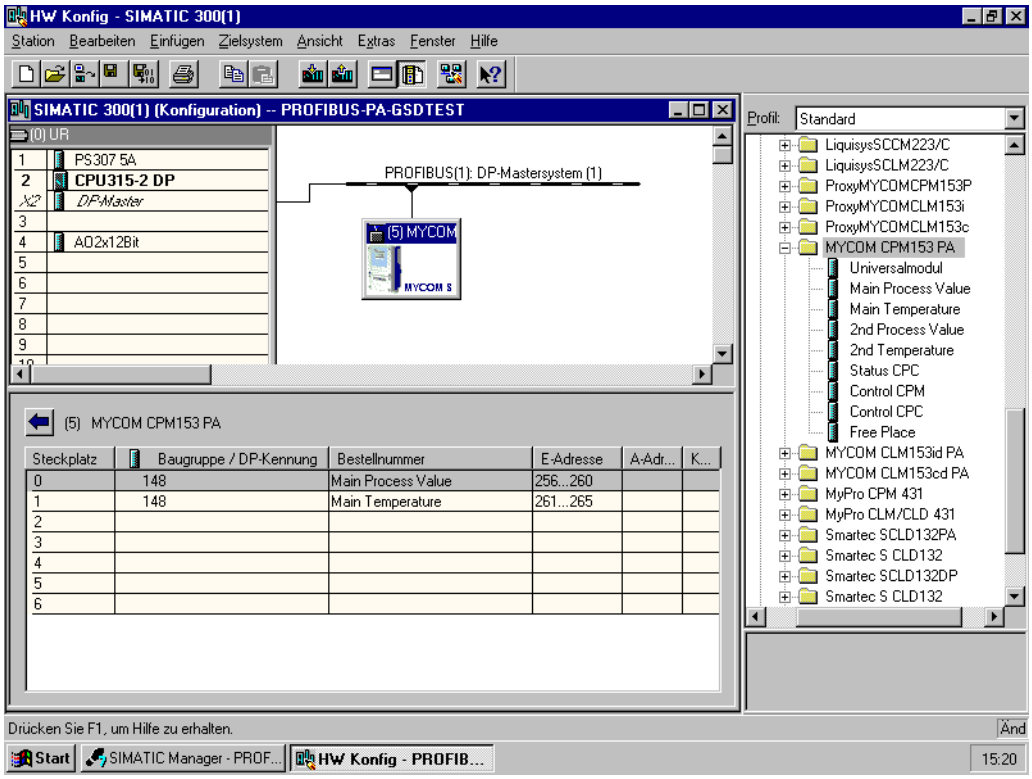
Partial configuration of Mycom S CPM 153
Replacement of measuring variables by blanks ("Free Place") via manufacturer-specific GSD file



Byte length (Input)	Byte length (Output)	Data blocks	Status	Access	GSD Block description	GSD Extended block code	GSD Standard block code
0 ... 4	–	Analog Input Block 1 (pH Channel 1)	active	read	Main Process Value	0x42, 0x84, 0x08, 0x05	0x94
–	–	Blank	inactive	–	Free Place	0x00	0x00
–	–	Blank	inactive	–	Free Place	0x00	0x00
–	–	Blank	inactive	–	Free Place	0x00	0x00
–	–	Blank	inactive	–	Free Place	0x00	0x00
	0 ... 1	Control CPM (SP_D)	active	write	Control CPM	0x82, 0x81, 0x05, 0x05	0xA1
–	–	Blank	inactive	–	Free Place	0x00	0x00

With this configuration, only the main process value (pH Channel 1) and the manufacturer-specific control of Mycom S CPM 153 (Control CPM) are set active.

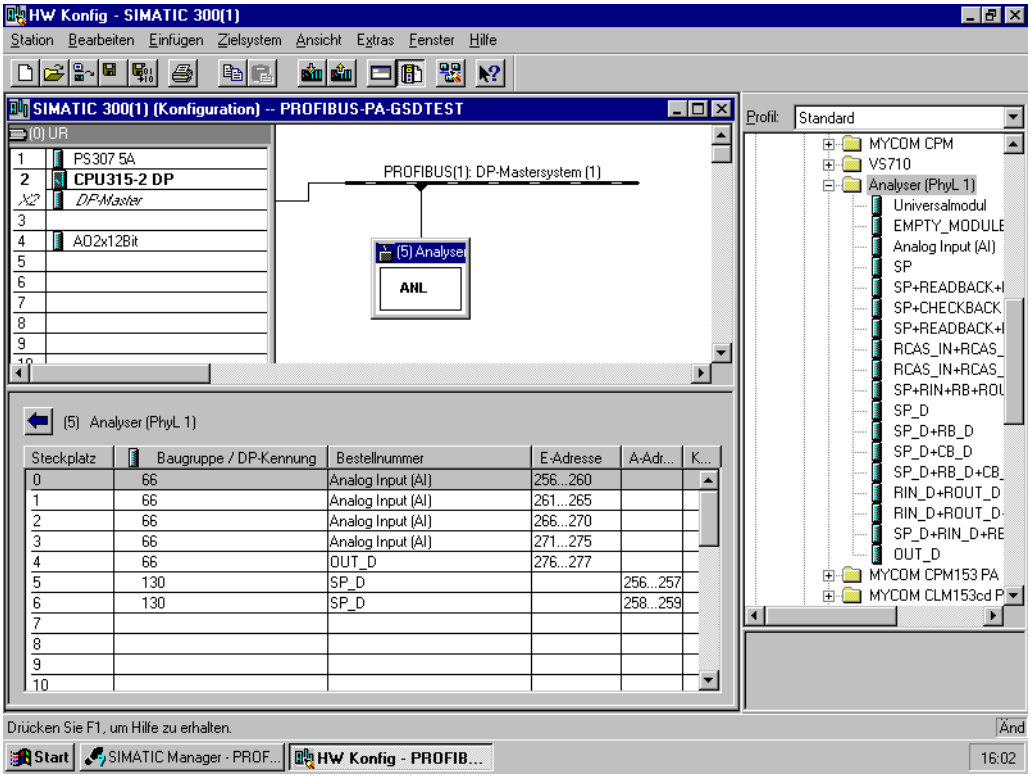
Partial configuration of Mycom S CPM 153
Replacement of measured variables without blanks via manfacturer-specific GSD file



Byte length (Input)	Byte length (Output)	Data blocks	Status	Access	GSD Block description	GSD Extended block code	GSD Standard block code
0 ... 4	–	Analog Input Block 1 (pH Channel 1)	active	read	Main Process Value	0x42, 0x84, 0x08, 0x05	0x94
5 ... 9	–	Analog Input Block 2 (Temperature Channel 1)	active	read	Main Temperature	0x42, 0x84, 0x08, 0x05	0x94

With this configuration, the measuring values of Channel 1 (pH and temperature) are transmitted. If no other measured variables are required, the blanks are obsolete, but only in case that no manufacturer-specific control is used.

Complete configuration of Mycom S CPM 153 via profile GSD file PA139750.gsd

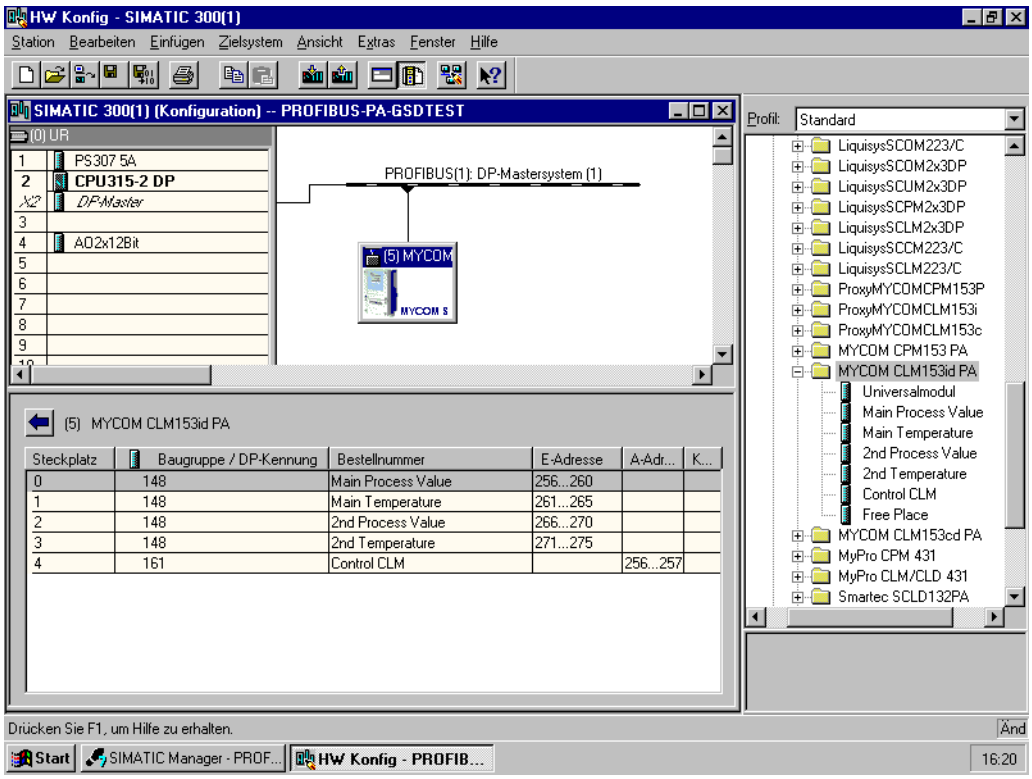


Byte length (Input)	Byte length (Output)	Data blocks	Status	Access	GSD Block description	GSD Extended block code	GSD Standard block code
0 ... 4	–	Analog Input Block 1 (pH Channel 1)	active	read	AI	0x42, 0x84, 0x08, 0x05	–
5 ... 9	–	Analog Input Block 2 (Temp. Channel 1)	active	read	AI	0x42, 0x84, 0x08, 0x05	–
10 ... 14	–	Analog Input Block 3 (pH Channel 2)	active	read	AI	0x42, 0x84, 0x08, 0x05	–
15 ... 19	–	Analog Input Block 4 (Temp. Channel 2)	active	read	AI	0x42, 0x84, 0x08, 0x05	–
20 ... 21	–	Status CPC	active	read	OUT_D	0x42, 0x81, 0x05, 0x05	–
	0 ... 1	Control CPM	active	write	SP_D	0x82, 0x81, 0x05, 0x05	–
	2 ... 3	Control CPC	active	write	SP_D	0x82, 0x81, 0x05, 0x05	–

With this configuration, all data blocks supported by Mycom S CPM 153 are set active.

Note!
With this GSD file, you can configurate a maximum range of 4 AI blocks, one parameter OUT_D and 2 parameters SP_D with Mycom S CPM 153. The AI blocks are always assigned to the following measured variables:
AI 1 = pH Channel 1
AI 2 = Temperature Channel 1
AI 3 = pH Channel 2
AI 4 = Temperature Channel 2
Thus the measuring variables agree with the configuration of field devices of other manufacturers.

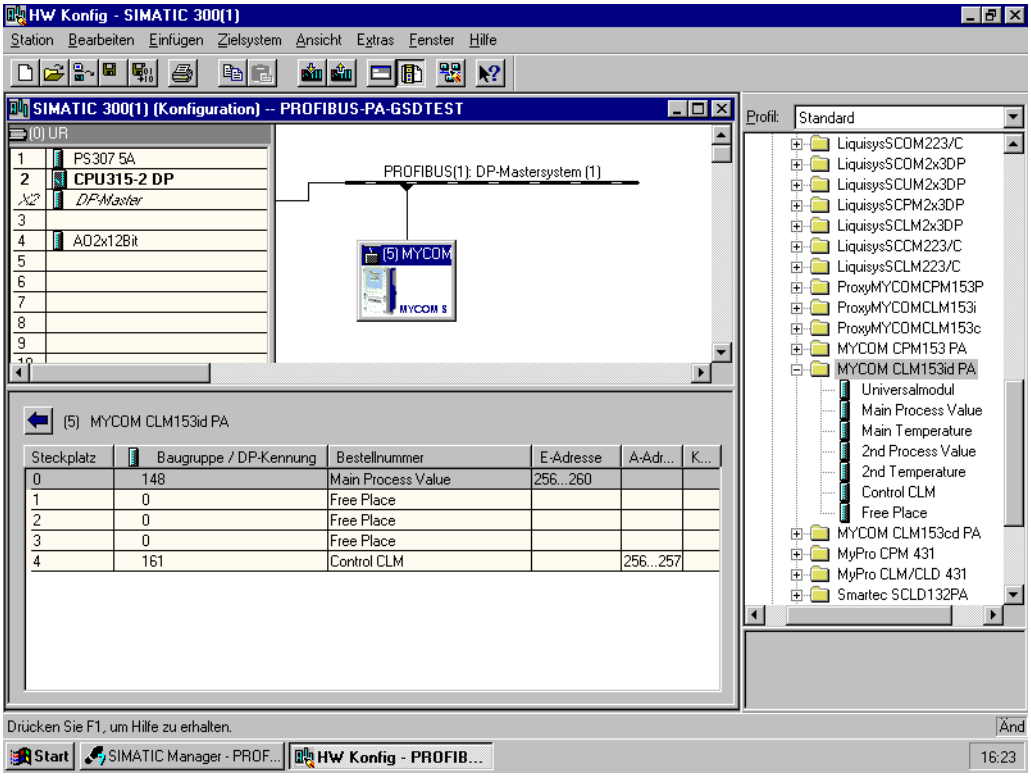
Complete configuration of Mycom S CLM 153
via manufacturer-specific GSD file



Byte length (Input)	Byte length (Output)	Data blocks	Status	Access	GSD Block description	GSD Extended block code	GSD Standard block code
0 ... 4	–	Analog Input Block 1 (Lf Channel 1)	active	read	Main Process Value	0x42, 0x84, 0x08, 0x05	0x94
5 ... 9	–	Analog Input Block 2 (Temperature Channel 1)	active	read	Main Temperature	0x42, 0x84, 0x08, 0x05	0x94
10 ... 14	–	Analog Input Block 3 (Lf Channel 2)	active	read	2nd Process Value	0x42, 0x84, 0x08, 0x05	0x94
15 ... 19	–	Analog Input Block 4 (Temperature Channel 2)	active	read	2nd Temperature	0x42, 0x84, 0x08, 0x05	0x94
	0 ... 1	Control CLM (SP_D)	active	write	Control CLM	0x82, 0x81, 0x05, 0x05	0xA1

With this configuration, all data blocks supported by Mycom S CLM 153 are set active.
Explanation to Control CLM → Page 5

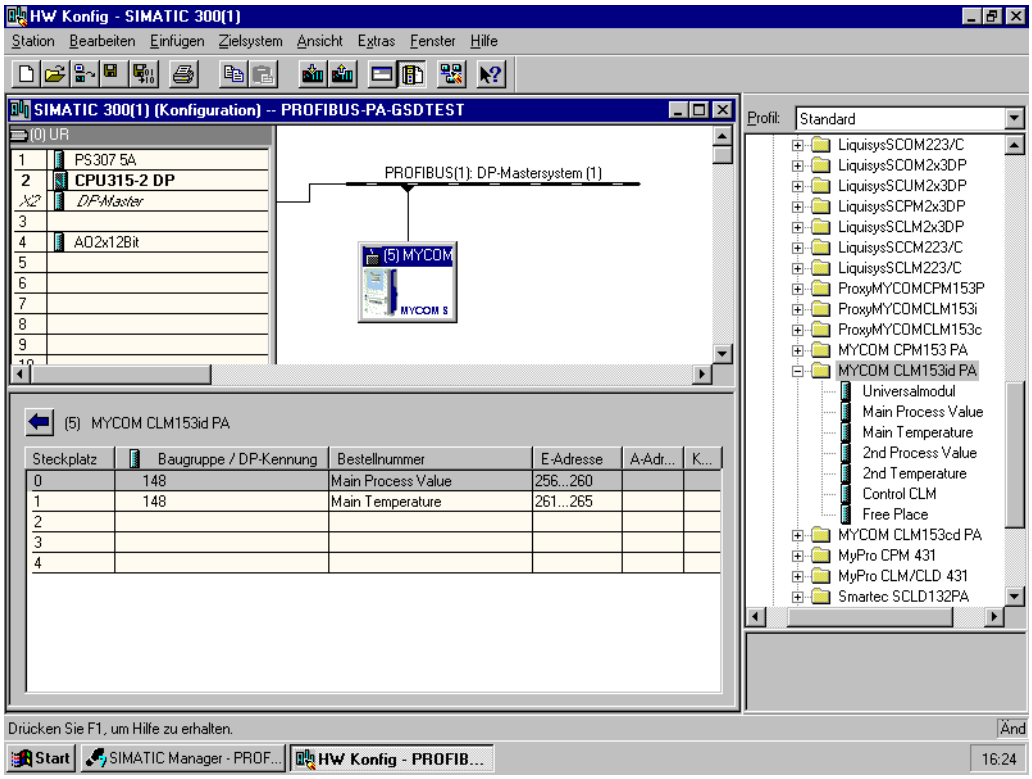
Partial configuration of Mycom S CLM 153
Replacement of measured variables by blanks ("Free Place") via manufacturer-specific GSD file



Byte length (Input)	Byte length (Output)	Data blocks	Status	Access	GSD Block description	GSD Extended block code	GSD Standard block code
0 ... 4	–	Analog Input Block 1 (Cond. Channel 1)	active	read	Main Process Value	0x42, 0x84, 0x08, 0x05	0x94
–	–	Blank	inactive	–	Free Place	0x00	0x00
–	–	Blank	inactive	–	Free Place	0x00	0x00
–	–	Blank	inactive	–	Free Place	0x00	0x00
	0 ... 1	Control CLM (SP_D)	active	write	Control CLM	0x82, 0x81, 0x05, 0x05	0xA1

With this configuration, only the main process value (Cond. Channel 1) and the manufacturer-specific control of Mycom S CLM 153 (Control CLM) are set active.

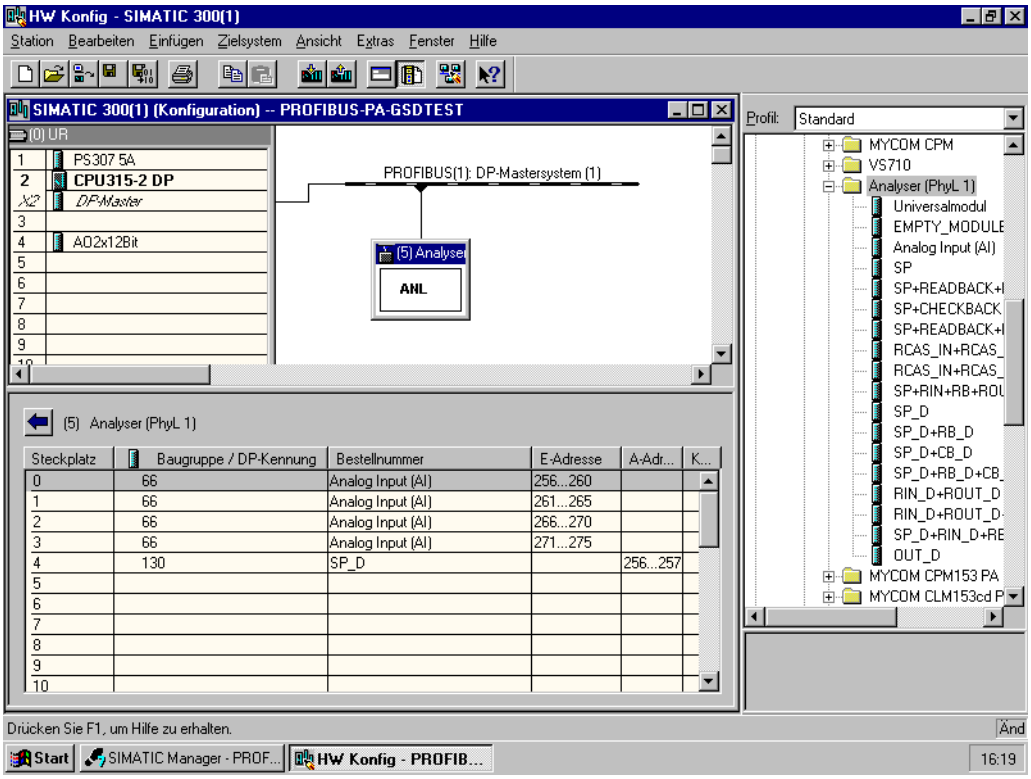
Partial configuration of Mycom S CLM 153
Replacement of measured variables without blank via manfacturer-specific GSD file



Byte length (Input)	Byte length (Output)	Data blocks	Status	Access	GSD Block description	GSD Extended block code	GSD Standard block code
0 ... 4	–	Analog Input Block 1 (Cond. Channel 1)	active	read	Main Process Value	0x42, 0x84, 0x08, 0x05	0x94
5 ... 9	–	Analog Input Block 2 (Temperature Channel 1)	active	read	Main Temperature	0x42, 0x84, 0x08, 0x05	0x94

With this configuration, the measuring values of Channel 1 (Cond. and temperature) are transmitted. If no other measured variables are required, the blanks are obsolete, but only in case that no manufacturer-specific control is used.

Complete configuration of Mycom S CLM 153
via profile GSD file PA139750.gsd



Byte length (Input)	Byte length (Output)	Data blocks	Status	Access	GSD Block description	GSD Extended block code	GSD Standard block code
0 ... 4	–	Analog Input Block 1 (Cond. Channel 1)	active	read	Main Process Value	0x42, 0x84, 0x08, 0x05	–
5 ... 9	–	Analog Input Block 2 (Temperature Channel 1)	active	read	Main Temperature	0x42, 0x84, 0x08, 0x05	–
10 ... 14	–	Analog Input Block 3 (Cond. Channel 2)	active	read	2nd Process Value	0x42, 0x84, 0x08, 0x05	–
15 ... 19	–	Analog Input Block 4 (Temperature Channel 2)	active	read	2nd Temperature	0x42, 0x84, 0x08, 0x05	–
	0 ... 1	Control CLM (SP_D)	active	write	Control CLM	0x82, 0x81, 0x05, 0x05	–

With this configuration, all data blocks supported by Mycom S CLM 153 are set active.

Note!
With this GSD file, you can configurate a maximum range of 4 AI blocks and one parameter SP_D with Mycom S CLM 153. The AI blocks are always assigned to the following measured variables:
AI 1 = Cond. Channel 1
AI 2 = Temperature Channel 1
AI 3 = Cond. Channel 2
AI 4 = Temperature Channel 2
Thus the measuring variables agree with the configuration of field devices of other manufacturers.

2.2.5 Status codes for the OUT parameter of the Analog Input block

Status code	Device status	Meaning	Limits
0x00 0x01 0x02 0x03	BAD	non-specific	OK LOW_LIM HIGH_LIM CONST
0x04 0x05 0x06 0x07	BAD	configuration error	OK LOW_LIM HIGH_LIM CONST
0x08	BAD	not connected Block nicht angeschlossen (keine Messwerte vorhanden)	OK
0x0C 0x0D 0x0E 0x0F	BAD	device failure	OK LOW_LIM HIGH_LIM CONST
0x10 0x11 0x12 0x13	BAD	sensor failure	OK LOW_LIM HIGH_LIM CONST
0x1C 0x1D 0x1E 0x1F	BAD	Out of service (Target Mode of the AI block OUT OF SRVICE)	OK LOW_LIM HIGH_LIM CONST
0x40 0x41 0x42 0x43	UNCERTAIN	non-specific	OK LOW_LIM HIGH_LIM CONST
0x47	UNCERTAIN	last usable value	CONST
0x4B	UNCERTAIN	substitute set (substitute value of failsafe status)	CONST
0x4F	UNCERTAIN	initial value (initial value of failsafe status)	CONST
0x50 0x51 0x52 0x53	UNCERTAIN	sensor conversion not accurate (measured value of sensor too inaccurate)	OK LOW_LIM HIGH_LIM CONST
0x5C 0x5D 0x5E 0x5F	UNCERTAIN	configuration error	OK LOW_LIM HIGH_LIM CONST
0x60 0x61 0x62 0x63	UNCERTAIN	simulated value	OK LOW_LIM HIGH_LIM CONST

Status code	Device status	Meaning	Limits
0x64 0x65 0x66 0x67	UNCERTAIN	sensor calibration	OK LOW_LIM HIGH_LIM CONST
0x80 0x83	GOOD	ok (measuring system OK)	OK CONST
0x84 0x87	GOOD	update event (change of parameters)	OK CONST
0x89 0x8A	GOOD	active advisory alarm (priority < 8) (warning: early warning limit exceeded)	LOW_LIM HIGH_LIM
0x8D 0x8E	GOOD	active critical alarm (priority > 8) (critical alarm: alarm limit exceeded)	LOW_LIM HIGH_LIM
0xA4 0xA5 0xA6 0xA7	GOOD	maintenance required	OK LOW_LIM HIGH_LIM CONST

3 Acyclic data exchange

Acyclic data transmission is used to transfer parameters during commissioning, during maintenance or to display other measured variables that are not contained in the useful cyclic data traffic.
Generally, a distinction is made between Class 1 and Class 2 master connections. Depending on the implementation of the transmitter, it is possible to simultaneously establish several Class 2 connections.

- Two Class 2 masters are permitted with Mycom S. This means that two Class 2 masters can access Mycom S at the same time. However, you must make certain that they do not both attempt to *write* to the same data. Otherwise the data consistency can no longer be guaranteed.
- When a Class 2 master reads parameters, it sends a request telegram to the transmitter specifying the device address, the slot/index and the expected record length. The transmitter answers with the requested record if the record exists and is the correct length (byte).
- When a Class 2 master writes parameters, it transmits the address of the transmitter, the slot and index, length information (byte) and the record. The transmitter acknowledges this write job after completion. A Class 2 master can access the blocks that are shown in the illustration.

3.1 Slot/index tables

The device parameters (instructions) are listed in the following tables. You can access these parameters by means of the slot and index number.
The individual blocks each comprise standard parameters, block parameters and manufacturer-specific parameters to an extent.

Device management (CW II = CommuWin II)

Parameter	E+H matrix (CW II)	Slot	Index	Size (bytes)	Type	Acc.	Store
DIR_OBJECT HEADER		1	0	12	Array of unsigned16	r	Cst.
COMP_LIST_DIR_ENTRIES		1	1	32	Array of unsigned16	r	Cst.
COMP_DIR_ENTRIES_CONTINUES		1	2	12	Array of unsigned16	r	Cst.

Physical Block

Parameter	E+H matrix (CW II)	Slot	Index	Size (bytes)	Type	Acc.	Store
Standard parameters							
BLOCK_OBJECT		1	160	20	DS-32*	r	C
ST_REV		1	161	2	Unsigned16	r	N
TAG_DESC		1	162	32	Octetstring	r, w	S
STRATEGY		1	163	2	Unsigned16	r, w	S
ALERT_KEY		1	164	1	Unsigned8	r, w	S
TARGET_MODE		1	165	1	Unsigned8	r, w	S
MODE_BLK Actual Permitted Normal		1	166	3	DS-37* Unsigned8 Unsigned8 Unsigned8	r	 N Cst Cst
ALARM_SUM		1	167	8	DS-42*	r	D
Block parameters							
SOFTWARE_REVISION		1	168	16	Visible string	r	Cst
HARDWARE_REVISION		1	169	16	Visible string	r	Cst
DEVICE_MAN_ID		1	170	2	Unsigned16	r	Cst
DEVICE_ID		1	171	16	Visible string	r	Cst
DEVICE_SER_NUM		1	172	16	Visible string	r	Cst
DIAGNOSIS		1	173	4	Octetstring	r	D
DIAGNOSIS_EXTENSION		1	174	6	Octetstring	r	D
DIAGNOSIS_MASK		1	175	4	Octetstring	r	Cst
DIAGNOSIS_MASK_EXTENSION		1	176	6	Octetstring	r	Cst
DEVICE_CERTIFICATION		1	177	32	Visible string	r	N
WRITE_LOCKING		1	178	2	Unsigned16 0: acyclic refused 2457: writeable	r, w	N
FACTORY_RESET		1	179	2	Unsigned16 0x8000: Sensor reset Calibration data 0x8001: Set up data reset Setting data 0x0001: PNO defaults All data 2506: warm-start 2712: reset bus addr.	r, w	S
DESCRIPTOR		1	180	32	Octetstring	r, w	S
DEVICE_MESSAGE		1	181	32	Octetstring	r, w	S
DEVICE_INSTALL_DATE		1	182	16	Octetstring	r, w	S
LOCAL_OP_ENABLE		1	183	1	Unsigned8 0: disabled 1: enabled	r, w	N

Parameter	E+H matrix (CW II)	Slot	Index	Size (bytes)	Type	Acc.	Store
IDENT_NUMBER_SELECTOR		1	184	1	Unsigned8 0: profile specific 1: manufacturer specific P 3.0 2: manufacturer specific P 2.0 128: manufacturer specific P 2.0 CLM152 ind/cond switchable	r, w	S
HW_WRITE_PROTECTION		1	185	1	Unsigned8 0: unprotected 1: protected	r	D
DEVICE_CONFIGURATION		1	196	32	Visible string	r	N
INIT_STATE		1	197	1	Unsigned8 2: run 5: maintenance	r, w	S
DEVICE_STATE		1	198	1	Unsigned8 2: run 5: maintenance	r, w	D
GLOBAL_STATUS		1	199	2	Unsigned16	r	D
Gap		1	200 - 207				
E+H parameters							
ACTUAL_ERROR	VAH2	1	208	2	Unsigned16	r	D
LAST_ERROR	VAH3	1	209	2	Unsigned16	r	D
UPDOWN_FEATURES_SUPP		1	210	1	Octetstring	r	C
DEVICE_BUS_ADRESS	VAH1	1	213	1	Signed8	r	N
SET_UNIT_TO_BUS	VAH9	1	214	1	Unsigned8 0: off 1: clear	r, w	D
CLEAR_LAST_ERROR	VAH4	1	215	1	Unsigned8 0: off 1: clear	r, w	D

Analyser Transducer block

The Analyser Transducer block appears twice in MYCOM S (four times with two-channel device). These are distributed to slots 1 – 4 in the following order:

1. Main measured value channel 1 (Main Process Value)
2. Temperature measured value channel 1 (Main Temperature)
3. Main measured value channel 2 (2nd Process Value)
4. Temperature measured value channel 2 (2nd Temperature)

Parameter	E+H matrix (CW II)	Slot	Index	Size (bytes)	Type	Acc.	Store
Standard parameters							
BLOCK_OBJECT		1 - 4	100	20	DS-32*	r	C
ST_REV		1 - 4	101	2	Unsigned16	r	N
TAG_DESC		1 - 4	102	32	Octetstring	r, w	S
STRATEGY		1 - 4	103	2	Unsigned16	r, w	S
ALERT_KEY		1 - 4	104	1	Unsigned8	r, w	S
TARGET_MODE		1 - 4	105	1	Unsigned8	r, w	S
MODE_BLK Actual Permitted Normal		1 - 4	106	3	DS-37* Unsigned8 Unsigned8 Unsigned8	r	 N Cst Cst
ALARM_SUM		1 - 4	107	8	DS-42*	r	D
Block parameters							
COMPONENT_NAME		1 - 4	108	32	Octetstring	r, w	S
PV		1 - 4	109	12	DS-60*	r	D
PV_UNIT		1 - 4	110	2	Unsigned16	r, w	S
PV_UNIT_TEXT		1 - 4	111	8	Visible string	r, w	S
ACTIVE_RANGE		1 - 4	112	1	Unsigned8 1: Range 1	r, w	S
AUTORANGE_ON		1 - 4	113	1	Boolean	r, w	S
SAMPLING_RATE		1 - 4	114	4	Time_difference	r, w	S
Gap reserved PNO		1 - 4	115 - 124				
NUMBER_OF_RANGES		1 - 4	125	1	Unsigned8	r	N
RANGE_1		1 - 4	126	8	DS-61*	r, w	N

Analog Input block

The Analog Input block appears twice in MYCOM S (four times with two-channel device). These are distributed to slots 1 – 4 in the following order:

1. Main measured value channel 1 (Main Process Value)
2. Temperature measured value channel 1 (Main Temperature)
3. Main measured value channel 2 (2nd Process Value)
4. Temperature measured value channel 2 (2nd Temperature)

Parameter	E+H matrix (CW II)	Slot	Index	Size (bytes)	Type	Acc.	Store
Standard parameters							
BLOCK_OBJECT		1 - 4	16	20	DS-32*	r	C
ST_REV		1 - 4	17	2	Unsigned16	r	N
TAG_DESC		1 - 4	18	32	Octetstring	r, w	S
STRATEGY		1 - 4	19	2	Unsigned16	r, w	S
ALERT_KEY		1 - 4	20	1	Unsigned8	r, w	S
TARGET_MODE		1 - 4	21	1	Unsigned8	r, w	S
MODE_BLK Actual Permitted Normal		1 - 4	22	3	DS-37* Unsigned8 Unsigned8 Unsigned8	r	 N Cst Cst
ALARM_SUM		1 - 4	23	8	DS-42*	r	D
BATCH		1 - 4	24	10	DS-67*	r, w	S
Gap		1 - 4	25				
Block parameters							
OUT		1 - 4	26	5	DS-33*	r	D
PV_SCALE		1 - 4	27	8	Float	r, w	S
OUT_SCALE		1 - 4	28	11	DS-36*	r, w	S
LIN_TYPE		1 - 4	29	1	Unsigned8	r, w	S
CHANNEL		1 - 4	30	2	Unsigned16	r, w	S
PV_FTIME		1 - 4	32	4	Float	r, w	S
FSAFE_TYPE		1 - 4	33	1	Unsigned8	r, w	S
FSAFE_VALUE		1 - 4	34	4	Float	r, w	S
ALARM_HYS		1 - 4	35	4	Float	r, w	S
HI_HI_LIM		1 - 4	37	4	Float	r, w	S
HI_LIM		1 - 4	39	4	Float	r, w	S
LO_LIM		1 - 4	41	4	Float	r, w	S
LO_LO_LIM		1 - 4	43	4	Float	r, w	S
HI_HI_ALM		1 - 4	46	16	DS-39*	r	D
HI_ALM		1 - 4	47	16	DS-39*	r	D
LO_ALM		1 - 4	48	16	DS-39*	r	D
LO_LO_ALM		1 - 4	49	16	DS-39*	r	D
SIMULATE		1 - 4	50	6	DS-50*	r, w	S
VIEW_1		1 - 4	61	18	Unsigned8	r	D

Manufacturer-specific parameters Mycom S CPM 153 and TopCal S CPC 300 (CommuWin II matrix)

Parameter	E+H matrix (CW II)	Slot	Index	Size (bytes)	Type	Acc.	Store
Main measured value channel 1	V0H0	5	100	4	Float	r	D
Temperature value channel 1	V0H1	5	101	4	Float	r	D
Hold status	V0H2	5	102	1	Unsigned8 0: off 1: on	r	D
Damping pH/redox	V0H3	5	103	1	Unsigned8 0 ... 30 sec	r, w	S
Unit channel 1	V0H4	5	104	1	Unsigned8 59: pH 36: mV 57: %	r	D
Main measured value channel 2	V0H5	5	105	4	Float	r	D
Temperature value channel 2	V0H6	5	106	4	Float	r	D
Damping temperature	V0H7	5	107	1	Unsigned8 0 ... 30 sec	r, w	S
Unit channel 2	V0H8	5	108	1	Unsigned8 59: pH 36: mV 57: %	r	D
Unit temperature	V0H9	5	109	1	Unsigned8 32: °C 33: °F	r	D
Current error	V2H0	5	110	4	Visible string	r	D
Manual hold	V2H1	5	111	1	Unsigned8 0: off 1: on	r, w	S
Version	V2H2	5	112	1	Unsigned8 0: TopCal 1: TopClean 2: Mycom153 3: Mycom153	r	D
Reset	V2H6	5	113	1	Unsigned8 0: off 1: on	r, w	D
Zero point channel 1	V3H0	5	114	4	Float	r	N
Slope channel 1	V3H1	5	115	4	Float	r	N
Time channel 1	V3H3	5	116	5	Visible string	r	N
Date channel 1	V3H4	5	117	8	Visible string	r	N
Zero point channel 2	V3H5	5	118	4	Float	r	N
Slope channel 2	V3H6	5	119	4	Float	r	N
Time channel 2	V3H8	5	120	5	Visible string	r	N
Date channel 2	V3H9	5	121	8	Visible string	r	N

Parameter	E+H matrix (CW II)	Slot	Index	Size (bytes)	Type	Acc.	Store
Active program TopCal / TopClean	V4H0	5	122	1	Unsigned8 TOPCAL: 0: NoSelection 1: Clean 2: CleanC 3: CleanS 4: CleanCS 6: UserProg1 7: UserProg2 8: UserProg3 TOPCLEAN: 0: NoSelection 1: Clean 3: CleanS 6: UserProg1 7: UserProg2 8: UserProg3	r, w	S
Automatic TopCal / TopClean	V4H1	5	123	1	Unsigned8 0: off 1: on	r, w	S
Ext. control TopCal / TopClean	V4H2	5	124	1	Unsigned8 0: off 1: on	r, w	S
Hold source	V4H3	5	125	1	Unsigned8 0: off 1: on	r, w	S
Assembly position	V4H4	5	126	1	Unsigned8 0: Measure 1: Service 2: NotDefined	r, w	S
Active program ChemoClean	V5H0	5	127	1	Unsigned8 0: NoSelection 1: CCleanProg 2: CCleanIntPrg 3: CCleanUser	r, w	S
Automatic ChemoClean	V5H1	5	128	1	Unsigned8 0: off 1: on	r, w	S
Ext. control ChemoClean	V5H2	5	129	1	Unsigned8 0: off 1: on	r, w	S
Controller on / off	V6H0	5	130	1	Unsigned8 0: off 1: on	r, w	S
Setpoint	V6H1	5	131	4	Float	r, w	S
Set value	V6H2	5	132	2	Unsigned16	r	D
Unit setpoint	V6H4	5	133	1	Unsigned8 59: pH 36: mV 57: % 32: °C 33: °F	r	N
Unit limit value (LV) 1	V6H5	5	134	1	Unsigned8 59: pH 36: mV 57: % 32: °C 33: °F	r	N

Parameter	E+H matrix (CW II)	Slot	Index	Size (bytes)	Type	Acc.	Store
Unit limit value (LV) 2	V6H6	5	135	1	Unsigned8 59: pH 36: mV 57: % 32: °C 33: °F	r	N
Unit limit value (LV) 3	V6H7	5	136	1	Unsigned8 59: pH 36: mV 57: % 32: °C 33: °F	r	N
Unit limit value (LV) 4	V6H8	5	137	1	Unsigned8 59: pH 36: mV 57: % 32: °C 33: °F	r	N
Unit limit value (LV) 5	V6H9	5	138	1	Unsigned8 59: pH 36: mV 57: % 32: °C 33: °F	r	N
Limit value 1 on / off	V7H0	5	139	1	Unsigned8 0: off 1: on	r, w	S
Limit value 2 on / off	V7H1	5	140	1	Unsigned8 0: off 1: on	r, w	S
Limit value 3 on / off	V7H2	5	141	1	Unsigned8 0: off 1: on	r, w	S
Limit value 4 on / off	V7H3	5	142	1	Unsigned8 0: off 1: on	r, w	S
Limit value 5 on / off	V7H4	5	143	1	Unsigned8 0: off 1: on	r, w	S
Limit 1 alarm threshold	V7H5	5	144	4	Float	r, w	S
Limit 2 alarm threshold	V7H6	5	145	4	Float	r, w	S
Limit 3 alarm threshold	V7H7	5	146	4	Float	r, w	S
Limit 4 alarm threshold	V7H8	5	147	4	Float	r, w	S
Limit 5 alarm threshold	V7H9	5	148	4	Float	r, w	S
Limit 1 switch-off point	V8H0	5	149	4	Float	r, w	S
Limit 2 switch-off point	V8H1	5	150	4	Float	r, w	S
Limit 3 switch-off point	V8H2	5	151	4	Float	r, w	S
Limit 4 switch-off point	V8H3	5	152	4	Float	r, w	S
Limit 5 switch-off point	V8H4	5	153	4	Float	r, w	S
Limit 1 switch-on point	V8H5	5	154	4	Float	r, w	S
Limit 2 switch-on point	V8H6	5	155	4	Float	r, w	S
Limit 3 switch-on point	V8H7	5	156	4	Float	r, w	S
Limit 4 switch-on point	V8H8	5	157	4	Float	r, w	S

Parameter	E+H matrix (CW II)	Slot	Index	Size (bytes)	Type	Acc.	Store
Limit 5 switch-on point	V8H9	5	158	4	Float	r, w	S
Serial number sensor	V9H0	5	159	4	Unsigned32	r	C
Lower limit sensor	V9H1	5	160	4	Float	r	C
Upper limit sensor	V9H2	5	161	4	Float	r	C
SW version	VAH5	5	162	2	Unsigned16	r	C
HW version	VAH6	5	163	2	Unsigned16	r	C
Unit zeropoint channel 1	V3H2	5	164	1	Unsigned8 59: K_unit_pH 36: K_unit_mV	r	D
Unit zeropoint channel 2	V3H7	5	165	1	Unsigned8 59: K_unit_pH 36: K_unit_mV	r	D
Setpoint buffer 1	–	5	166	4	Float	r	D
Actual value buffer 1	–	5	167	4	Float	r	D
Setpoint - actual value buffer 1	V9H4	5	168	4	Float	r	D
Temperature buffer 1	–	5	169	4	Float	r	D
Time buffer 1	V9H5	5	170	5	Visiblestring	r	D
Date buffer 1	V9H6	5	171	8	Visiblestring	r	D
Setpoint buffer 2	–	5	172	4	Float	r	D
Actual value buffer 2	–	5	173	4	Float	r	D
Setpoint - actual value buffer 2	V9H7	5	174	4	Float	r	D
Temperature buffer 2	–	5	175	4	Float	r	D
Time buffer 2	V9H8	5	176	5	Visiblestring	r	D
Date buffer 2	V9H9	5	177	8	Visiblestring	r	D

Manufacturer-specific parameters Mycom S CLM 153 (CommuWin II-Matrix)

Parameter	E+H matrix (CW II)	Slot	Index	Size (bytes)	Type	Acc.	Store
Main measured value channel 1	V0H0	5	100	4	Float	r	D
Temperature value channel 1	V0H1	5	101	4	Float	r	D
Hold status	V0H2	5	102	1	Unsigned8 0: off 1: on	r	D
Damping cond.	V0H3	5	103	1	Unsigned8 1 ... 30 sec	r, w	S
Unit channel 1	V0H4	5	104	1	Unsigned8 57: % 66: mS/cm 67: µS/cm only cond: 241: kΩ/cm 242: MΩ/cm	r	D
Main measured value channel 2	V0H5	5	105	4	Float	r	D
Temperature value channel 2	V0H6	5	106	4	Float	r	D
Damping temperature	V0H7	5	107	1	Unsigned8 1 ... 30 sec	r, w	S

Parameter	E+H matrix (CW II)	Slot	Index	Size (bytes)	Type	Acc.	Store
Unit channel 2	V0H8	5	108	1	Unsigned8 57: % 66: mS/cm 67: µS/cm only cond: 241: kΩ/cm 242: MΩ/cm	r	D
Unit temperature	V0H9	5	109	1	Unsigned8 32: °C 33: °F	r	D
Current error	V2H0	5	110	4	Visible string	r	D
Manual hold	V2H1	5	111	1	Unsigned8 0: off 1: on	r, w	S
Reset	V2H6	5	112	1	Unsigned8 0: off 1: on	r, w	D
Cell constant channel 1	V3H0	5	113	4	Float	r	N
Installation factor channel 1	V3H1	5	114	4	Float	r	N
Airset value channel 1	V3H2	5	115	4	Float	r	N
Time channel 1	V3H3	5	116	6	Visible string	r	N
Date channel 1	V3H4	5	117	8	Visible string	r	N
Cell constant channel 2	V3H5	5	118	4	Float	r	N
Installation factor channel 2	V3H6	5	119	4	Float	r	N
Airset value channel 2	V3H7	5	120	4	Float	r	N
Time channel 2	V3H8	5	121	6	Visible string	r	N
Date channel 2	V3H9	5	122	8	Visible string	r	N
Active parameter set	V4H0	5	123	1	Unsigned8 1 ... 4	r	S
Number of binary inputs	V4H1	5	124	1	Unsigned8 0: no binary inputs 1: 1 bin. input 2: 2 bin. inputs	r, w	S
Selection for control of binary inputs via device or via PROFIBUS	V4H2	5	125	1	Unsigned8 0: bin. inputs 1: PROFIBUS cycl. data	r, w	S
Active program ChemoClean	V5H0	5	126	1	Unsigned8 0: NoSelection 1: CCleanProg 2: CCleanIntPrg 3: CCleanUser	r, w	S
Automatic ChemoClean	V5H1	5	127	1	Unsigned8 0: off 1: on	r, w	S
Ext. control ChemoClean	V5H2	5	128	1	Unsigned8 0: off 1: on	r, w	S
Controller on / off	V6H0	5	129	1	Unsigned8 0: off 1: on	r, w	S
Setpoint	V6H1	5	130	4	Float	r, w	S
Set value	V6H2	5	131	2	Unsigned16	r	D

Parameter	E+H matrix (CW II)	Slot	Index	Size (bytes)	Type	Acc.	Store
Unit setpoint	V6H4	5	132	1	Unsigned8 57: % 66: mS/cm 67: µS/cm only cond: 241: kΩ/cm 242: MΩ/cm	r	N
Unit limit value (LV) 1	V6H5	5	133	1	Unsigned8 57: % 66: mS/cm 67: µS/cm only cond: 241: kΩ/cm 242: MΩ/cm	r	N
Unit limit value (LV) 2	V6H6	5	134	1	Unsigned8 57: % 66: mS/cm 67: µS/cm only cond: 241: kΩ/cm 242: MΩ/cm	r	N
Unit limit value (LV) 3	V6H7	5	135	1	Unsigned8 57: % 66: mS/cm 67: µS/cm only cond: 241: kΩ/cm 242: MΩ/cm	r	N
Unit limit value (LV) 4	V6H8	5	136	1	Unsigned8 57: % 66: mS/cm 67: µS/cm only cond: 241: kΩ/cm 242: MΩ/cm	r	N
Unit limit value (LV) 5	V6H9	5	137	1	Unsigned8 57: % 66: mS/cm 67: µS/cm only cond: 241: kΩ/cm 242: MΩ/cm	r	N
Limit value 1 on / off	V7H0	5	138	1	Unsigned8 0: off 1: on	r, w	S
Limit value 2 on / off	V7H1	5	139	1	Unsigned8 0: off 1: on	r, w	S
Limit value 3 on / off	V7H2	5	140	1	Unsigned8 0: off 1: on	r, w	S
Limit value 4 on / off	V7H3	5	141	1	Unsigned8 0: off 1: on	r, w	S
Limit value 5 on / off	V7H4	5	142	1	Unsigned8 0: off 1: on	r, w	S
Limit 1 alarm threshold	V7H5	5	143	4	Float	r, w	S
Limit 2 alarm threshold	V7H6	5	144	4	Float	r, w	S

Parameter	E+H matrix (CW II)	Slot	Index	Size (bytes)	Type	Acc.	Store
Limit 3 alarm threshold	V7H7	5	145	4	Float	r, w	S
Limit 4 alarm threshold	V7H8	5	146	4	Float	r, w	S
Limit 5 alarm threshold	V7H9	5	147	4	Float	r, w	S
Limit 1 switch-off point	V8H0	5	148	4	Float	r, w	S
Limit 2 switch-off point	V8H1	5	149	4	Float	r, w	S
Limit 3 switch-off point	V8H2	5	150	4	Float	r, w	S
Limit 4 switch-off point	V8H3	5	151	4	Float	r, w	S
Limit 5 switch-off point	V8H4	5	152	4	Float	r, w	S
Limit 1 switch-on point	V8H5	5	153	4	Float	r, w	S
Limit 2 switch-on point	V8H6	5	154	4	Float	r, w	S
Limit 3 switch-on point	V8H7	5	155	4	Float	r, w	S
Limit 4 switch-on point	V8H8	5	156	4	Float	r, w	S
Limit 5 switch-on point	V8H9	5	157	4	Float	r, w	S
Serial number sensor	V9H0	5	158	4	Unsigned32	r	C
Lower limit sensor	V9H1	5	159	4	Float	r	C
Upper limit sensor	V9H2	5	160	4	Float	r	C
SW version	VAH5	5	161	2	Unsigned16	r	C
HW version	VAH6	5	162	2	Unsigned16	r	C
Sensor type	V9H3	5	163	1	Unsigned8 0 = inductive 1 = conductive	r	C

Data strings

Some data types (e.g. DS-33) are marked with an asterisk (*) in the slot/index table. These data types are data strings which are structured as per the PROFIBUS-PA Specification Part 1, Version 3.0. They consist of several elements which are additionally addressed via a sub-index, as shown in the following example.

Parameter type	Sub-index	Type	Size (byte)
DS-33	1	Float	4
	5	Unsigned8	1

4 Configuration with PROFIBUS

4.1 Device Master Files and type files

The device is ready for system integration once commissioning has been effected via the local display or the Class 2 master (Commuwin II). The PROFIBUS-PA system requires a description of the device parameters, e.g. output data, input data, data format, data volume and supported transmission rate, so that it can integrate the field devices into the bus system.
These data are contained in a Device Master File (GSD file) which is placed at the disposal of the PROFIBUS-PA master while the communication system is being commissioned.
Device bitmaps can also be integrated. These appear as icons in the network tree.
The Profile 3.0 Device Master File (GSD) allows field devices from various manufacturers to be exchanged without having to reconfigure.

The following three Device Master Files with different functionalities are available:

- **Manufacturer-specific GSD with Profile 3.0 functionality:**
  This GSD guarantees the unlimited functionality of the field device. Device-specific process parameters and functions are therefore available.
- **Manufacturer-specific GSD backward compatible with Mycom 152 (Profile 2.0):**
  With this GSD, the cyclic data are compatible with Mycom 152. In this way, Mycom S 153 can also be used in systems with Mycom 152 without the need to reconfigure the automation system.
- **Profile GSD:**
  If a system is configured with profile GSDs, it is possible to exchange devices that are supplied by various manufacturers. It is, however, essential that the cyclic process values follow the same sequence.

Example:
Mycom S supports the profile *PA139750.gsd* (IEC 61158-2). This GSD comprises AI blocks. The AI blocks are always assigned to the following measured variables:

AI 1 = Main Process Value,
AI 2 = Main Temperature,
AI 3 = 2nd Process Value,
AI 4 = 2nd Temperature.

This guarantees that the first measured variable agrees with the field devices of other manufacturers.

Note!

- Prior to configuration, decide which GSD you want to use to operate the system.
- You can change the setting by means of a Class 2 master (under Physical Block - Parameter Ident_Number_Selector).

Mycom S supports the following GSD files

Device name	Ident_number_Selector	ID number	GSD	Type file	Bitmaps
Mycom S – backward compatible with Mycom 152:					
Mycom S-PA CPM153 (functionality like CPM 152)	2	1508 Hex	EH__1508.gsd	EH_1508x.200	EH1508_d.bmp EH1508_n.bmp EH1508_s.bmp
Mycom S-PA CLM153-ind. (functionality like CLM 152-ind.)	2	1509 Hex	EH__1509.gsd	EH_1509x.200	EH1509_d.bmp EH1509_n.bmp EH1509_s.bmp
Mycom S-PA CLM153-cond. (functionality like CLM 152-cond.)	2	150B Hex	EH__150B.gsd	EH_150Bx.200	EH150B_d.bmp EH150B_n.bmp EH150B_s.bmp
Mycom S-PA CLM 153-cond. or ind. (functionality like CLM 152-cond./ind. switchable)	128	1513 Hex	EH__1513.gsd	EH_1513x.200	EH1513_d.bmp EH1513_n.bmp EH1513_s.bmp
Mycom S – only Profile 3.0 functionality:					
Mycom S-PA CPM153, CLM153-ind/-cond. (only profile functionality)	0	9750 Hex	PA139750.gsd	---	PA_9750n.bmp
Mycom S – manufacturer-specific functions with Profile 3.0 functionality:					
Mycom S-PA CPM153 additional cyclic data for digital I/O (TopCal S, ext. hold, Clean)	1	1539 Hex	EH3x1539.gsd	EH31539x.200	EH1539_d.bmp EH1539_n.bmp EH1539_s.bmp
Mycom S-PA CLM153-ind. additional cyclic data for digital I/O (parameter set switching)	1	1537 Hex	EH3x1537.gsd	EH31537.200	EH1537_d.bmp EH1537_n.bmp EH1537_s.bmp
Mycom S-PA CLM153-cond. additional cyclic data for digital I/O (parameter set switching)	1	1535 Hex	EH3x1535.gsd	EH31535x.200	EH1535_d.bmp EH1535_n.bmp EH1535_s.bmp

Note!
Each device is assigned an identification number (ID No.) by the Profibus User Organisation (PNO). The name of the Device Master File is derived from this. For Endress+Hauser, this ID starts with the manufacturer ID 15xx. In order to ensure clarity, the GSD names (with the exception of type files) at Endress+Hauser are as follows:

EH3_15xx
EH = Endress + Hauser
3 = Profile 3.0
_ = Standard identification
15xx = ID No.

EH3x15xx
EH = Endress + Hauser
3 = Profile 3.0
x = Advanced identification
15xx = ID No.

The GSDs for all Endress+Hauser devices can be acquired via:
- Internet (E+H): http://www.endress.com
  Products / Process Solutions / PROFIBUS / GSD files
- Internet (PNO): http://www.profibus.com
  GSD library
- On CD-ROM from E+H: order number 50097200

Contents structure of GSD files from Endress+Hauser

For the E+H transmitter with PROFIBUS interface, you receive all the data needed for configuration with one exe-file. Once unpacked, this file automatically creates the following structure:

At the top level, you have the measuring parameters available for the transmitter. Beneath this, you can find:

- "Revision x.xx" folder:
  This ID stands for the special device version. Device-specific bitmaps can be found in the "BMP" and "DIB" subdirectories.
- "Info" folder:
  Information relating to the transmitter and any dependencies in the device software. *Please read this information carefully before configuring.*
- "GSD" folder:
  The GSDs are located in the "Extended" and "Standard" sub-directories (see also note below).
- "TypDat" folder:
  The type files with the extension ".200" can be found here.

Standard and extended formats

The modules of some GSDs are transmitted with an extended identification (e.g. 0x42, 0x84, 0x08, 0x05). These GSDs can be found in the "Extended" folder.
The GSDs that have a standard identification (e.g. 0x94) can be found in the "Standard" folder.

Note!
When integrating transmitters, always use the GSDs with the extended identification first. However, if integration fails with these GSDs use the standard GSD. This distinction is a result of a specific implementation in the master systems.

Working with GSD / type files

The GSDs must be integrated into the automation system. Depending on the software that is being used, the GSD files can be copied to the program-specific directory or can be read into the database using the import function within the configuration software.
Example 1:
In the case of the configuration software Siemens STEP 7 (Siemens PLC S7-300 / 400), copy the files to the subdirectory
...\ siemens \ step7 \ s7data \ gsd.
The bitmap files also belong to the GSDs. These bitmap files are used to display the measuring points in image form. Load the bitmap files to the directory ...\ siemens \ step7 \ s7data \ nsbmp.
Example 2:
If you have a PLC Siemens S5 where the PROFIBUS-DP network is configured with the configuration software COM ET 200, you will have to use the type files (extension "x.200").
If you are using configuration software other than that referred to above, ask your PLC manufacturer which directory you should use.

Compatibility of Profile version 2.0 and 3.0 devices

It is possible to operate Profile 2.0 and 3.0 devices with different GSDs in one system using one master as the cyclic data for the automation system in both profile versions are compatible.

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