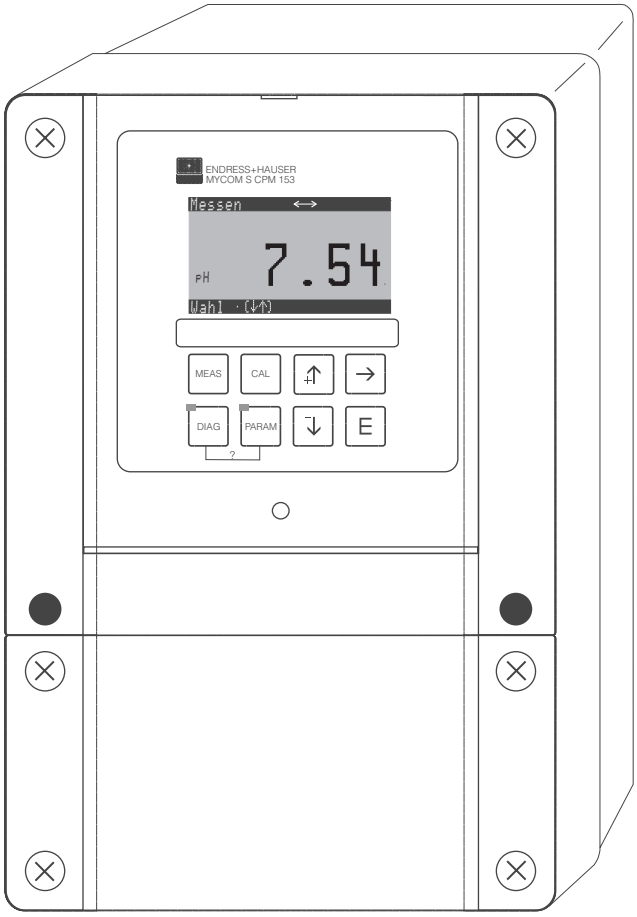
BA 298C/07/en/12.02
51507116
As of software version
CPM 153: 1.20
CLM 153id: 1.20
CLM 153cd: 1.20

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

Operating Instructions



Endress+Hauser
The Power of Know How

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1 Safety instructions

1.1 Designated use

The Transmitter Mycom S CXM 153 PROFIBUS® is a device for measuring the pH value or the redox potential or the conductivity. The PROFIBUS® interface allows the device to be operated using the Operating program Commuwin II at the PC via a PROFIBUS interface.

Using the device for any application other than that described could call into question the safety of persons, and of the entire measuring system, and is therefore not permitted.

The manufacturer accepts no liability for damage resulting from incorrect use or use other than that designated.

1.2 Installation, commissioning and operation

Note the following points:

- Installation, electrical connection, commissioning, operation and maintenance of the measuring system must be carried out exclusively by specially trained technical personnel.
  This personnel must be authorised to perform such work by the system operator.
- Technical personnel must have read and understood these Operating Instructions and must adhere to them.
- Before commissioning the entire measuring point, check all the connections for correctness. Ensure that electrical cables and hose connections are not damaged.
- Do not commission damaged products. Protect them against inadvertent commissioning. Mark the damaged product as defective.
- Faults at the measuring point may only be rectified by authorised and specially trained personnel.
- If faults cannot be rectified, you must take the products out of operation and protect them against inadvertent commissioning.
- Repairs not described in these Operating Instructions may only be carried out directly at the manufacturer's or by the Endress+Hauser service organisation.

1.3 Operational safety

The transmitter has been designed and tested according to the state of the art and left the factory in perfect functioning order.
Appropriate regulations and European standards have been taken into consideration.

As the user, you are responsible for ensuring the following safety regulations are observed:

- Regulations on explosion protection
- Installation regulations
- Local standards and regulations

In addition, the separate Ex-documentation also applies to Ex-systems. This is an integral part of these Operating Instructions.

1.4 Return

If the device has to be repaired, please return it *cleaned* to your nearest Endress+Hauser sales centre.
Please use the original packaging if possible.

Please enclose a duly completed Dangerous Goods Sheet (copy second-last page of these Operating Instructions) with both the packaging and the transportation documents.

1.5 Notes on safety conventions and icons

Warnings

Warning!
This symbol alerts you to hazards which could cause serious injuries, as well as damage to the instrument, if ignored.

Caution!
This symbol alerts you to possible faults which could arise from incorrect operation. They could cause damage to the instrument if ignored.

Note!
This symbol indicates important items of information.

Electrical symbols

Direct current
A terminal at which DC voltage is applied or through which DC flows.

Alternating current
A terminal at which (sine-form) alternating voltage is applied or through which AC flows.

Ground connection
A grounded terminal, which, from the user's point of view, is already grounded using a grounding system.

Protective earth terminal
A terminal which must be grounded before other connections may be set up.

Equipotential connection
A connection which must be connected to the grounding system of the equipment. This can be, for example, a potential matching line or a star-shaped grounding system, depending on national or company practice.

Double insulation
The equipment is protected with double insulation.

Alarm relay

Input

Output

2 Identification

2.1 Device designation

2.1.1 Nameplate

Compare the order code on the nameplate with the product structure in the standard Operating Instructions and your order.

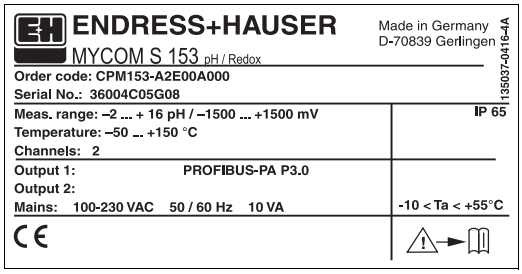

Fig. 1: Example of a nameplate for Mycom S PROFIBUS

2.2 Scope of delivery

The scope of delivery for Mycom S CXM 153 PROFIBUS comprises:
- 1 x transmitter Mycom S CXM 153 PROFIBUS
- 1 x standard Operating Instructions BA 233C/07/en (for CPM 153) or BA 234C/07/en (for CLM 153)
- In addition, the Ex Operating Instructions XA 233C/07/a3 for Ex devices
- 1 x Operating Instructions BA 298C/97/en “Field communication with PROFIBUS”

The scope of delivery for TopClean S CPC 30 PROFIBUS comprises:
- 1 x transmitter Mycom S CPM 153 PROFIBUS
- 1 x control unit CPG 30
- 1 x standard Operating Instructions BA 235C/07/en
- In addition, the Ex Operating Instructions XA 236C/07/a3 for Ex devices
- 1 x Operating Instructions BA 298C/97/en “Field communication with PROFIBUS”

The scope of delivery for TopCal S CPC 300 PROFIBUS comprises:
- 1 x transmitter Mycom S CPM 153 PROFIBUS
- 1 x control unit CPG 300
- 1 x standard Operating Instructions BA 236C/07/en
- In addition, the Ex Operating Instructions XA 236C/07/a3 for Ex devices
- 1 x Operating Instructions BA 298C/97/en “Field communication with PROFIBUS”

If you have any questions, please contact your supplier or your nearest Endress+Hauser sales centre (see the back page of these Operating Instructions).

2.3 Certificates and approvals

Declaration of conformity
The Transmitter fulfils the statutory requirements of the harmonised European standards. Endress+Hauser certifies the compliance with the standards by using the CE mark.

3 Installation

3.1 System setup

The complete system consists of the following components:

- Transmitter Mycom S CXM 153 PROFIBUS
- Segment coupler
- Programmable logic controller (PLC) or PC with Operating program Commuwin II
- PROFIBUS-PA terminating resistor
- Wiring incl. bus distributor

The maximum number of transmitters on one bus segment is determined by their current consumption, the power of the bus coupler and the required bus length.

Note!
More detailed information on planning and commissioning a PROFIBUS system can be found in the Operating Instructions BA 198F/00/en. This can be supplied by your nearest Endress+Hauser sales centre (see the back page of these Operating Instructions).

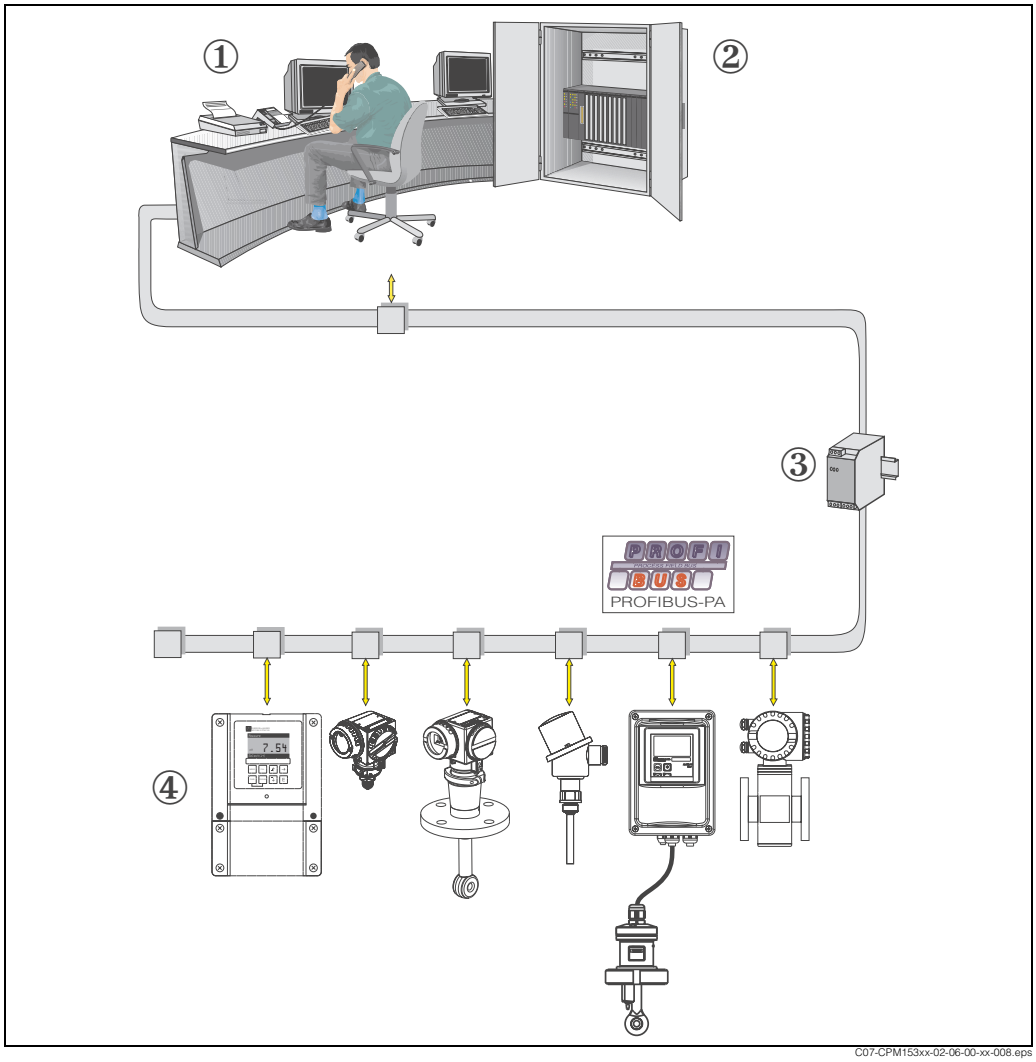

Fig. 2: Measuring systems with PROFIBUS interface

1 PC with operating program Commuwin II
2 PLC
3 Segment coupler
4 Mycom S CXM 153 PROFIBUS

3.2 Post-installation check

After installing the transmitter, carry out the following checks:

Device condition and specifications	**Note**
Is the transmitter undamaged?	Visual inspection
Installation	**Note**
Are the measuring point number and the labelling correct?	Visual inspection
Process environment / process conditions	**Note**
Is the measuring device protected against moisture and direct sunlight?	For outdoor installation, the weather protection cover CYY 101 is required (s. Accessories).

4 Wiring

4.1 Electrical connection

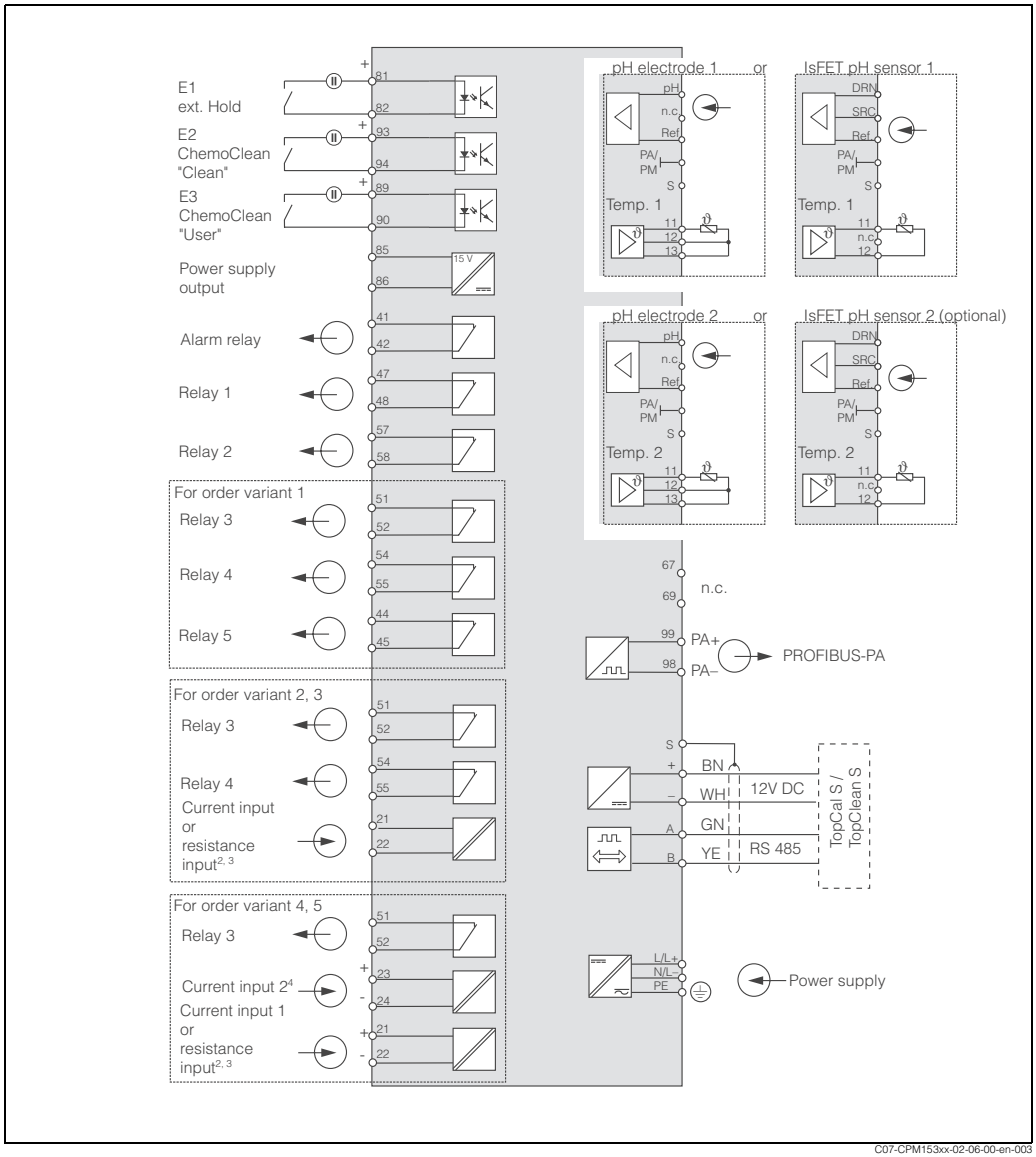

Fig. 3: Electrical connection Mycom S CXM 153 PROFIBUS-PA

4.1.1 Electrical connection PA-device

The bus cable can be connected to the transmitter with or without an M12 connector. The bus cable is connected as follows:

1. Loosen the four Phillips screws and remove the housing cover.
2. Guide the cable through the opened cable entry into the connection compartment.
3. Connect the cable cores of the bus cable to the terminal block as shown in Fig. 4. Reversing has no effect on operation.
4. Tighten the cable gland.

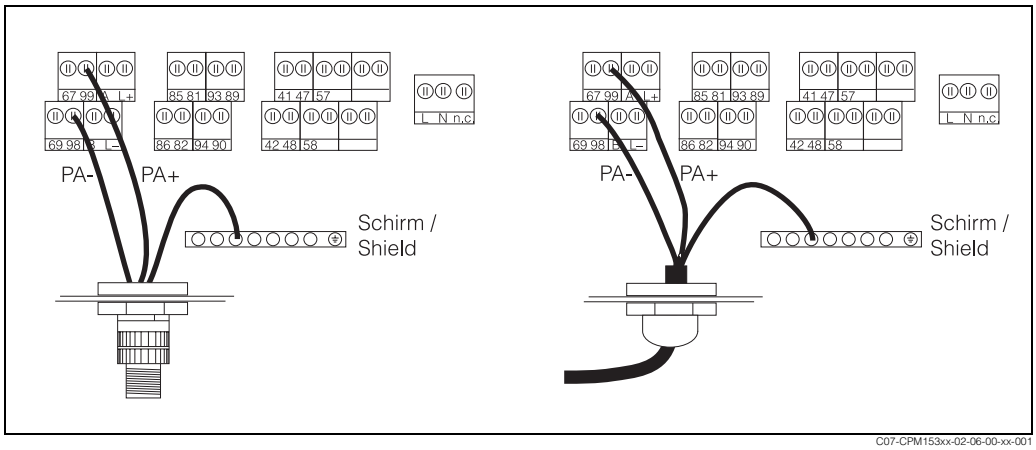

Fig. 4: Transmitter bus cable connection Mycom S-PA

Left: connection with M12 connector
Right: connection without M12 connector

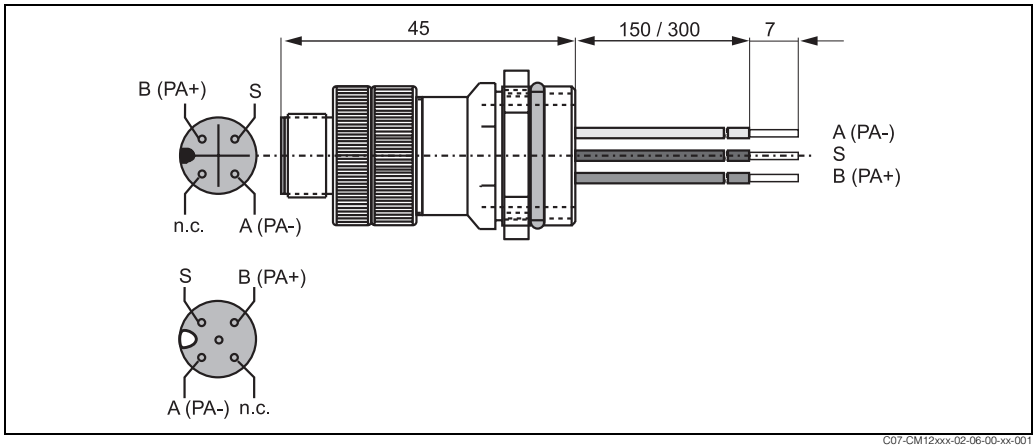

Fig. 5: M12 connector with socket

4.2 Post-connection check

Perform the following checks after completing electrical installation of the measuring device:

Device condition and specifications	**Note**
Is the measuring device or the cable damaged externally?	Visual inspection
Electrical connection	**Note**
Does the supply voltage match the specifications on the nameplate?	CXM 153: 100 V ... 230 V AC long-range 24 V AC / DC
Do the cables used fulfil the required specifications?	Use a genuine E+H cable for electrode/sensor connection, see “Accessories” section in the standard Operating Instructions
Are the mounted cables strain-relieved?	
Is the cable type route completely isolated?	Along the whole cable length, run the power supply and signal line cables separately to avoid any mutual influence. Separate cable channels are best.
No loops and cross-overs in the cable run?	
Are the power supply and signal cables correctly connected?	
Are all screw terminals firmly tightened?	
For connection with potential matching (PML): Is the PML connected to the medium or the buffer solution?	✎ Note! During calibration, insert the PML into the buffer solution.
Are all the cable entries installed, tightened and sealed? Cable run with “water trap”?	“Water trap”: cable circuit hanging down so that water can drip off.
Are all the housing covers installed and firmly tightened?	Check seals for damage.

5 Operation

5.1 Display and operating elements

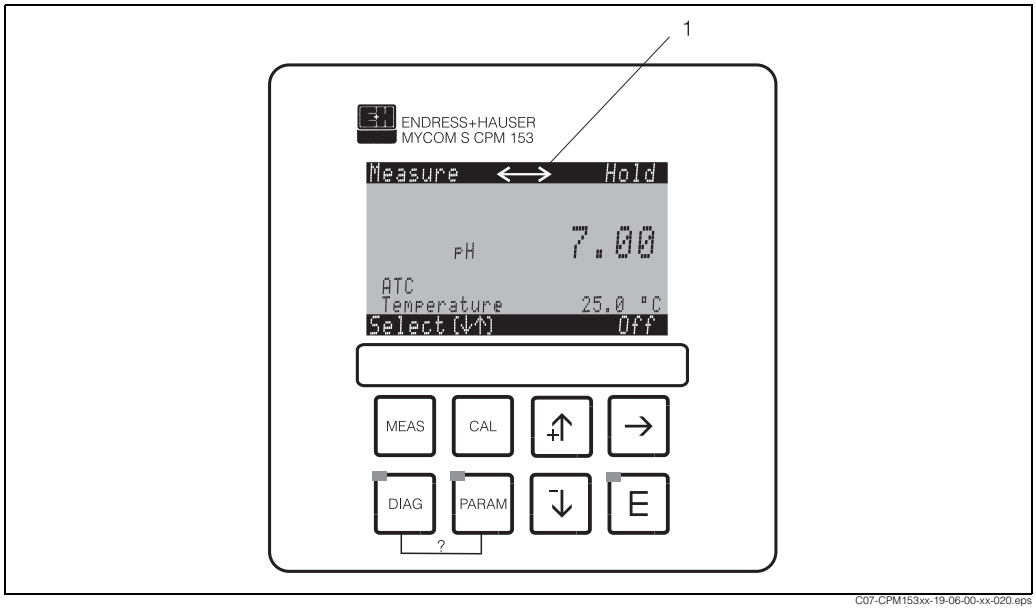

Fig. 6: User interface Mycom S CXM 153

1 Display symbol for active communication via PROFIBUS interface

Please refer to the standard Operating Instructions for an explanation of the key assignment and the other icons and symbols.

5.2 Local operation

In general, all control fields from the standard menu (see standard Operating Instructions BA 233C/07/en, BA 234C/07/en, BA 235C/07/en, BA236C/07en) can be accessed via local operation apart from the following:

- Current outputs 1 and 2
- Continuous controller (current output assignment)
- Error current
- Hold current
- Current simulation