Technical Information
TI 071R/09/en
Mat.-Nr.: 510 01194

PROFIBUS-PA Display
RID 261 PROFIBUS-PA

Display of process values and set point alarms on PROFIBUS-PA systems

PROFI® PROCESS FIELD BUS

Applications

- Direct connection to any point in a PROFIBUS-PA network according to IEC 1158-2
- Display of process values and alarm set point infingements
- Passive display of the cyclic data transfer (input or output data)
- ATEX certification for application in hazardous areas

Features and benefits

- Measured value display in accessible areas
- 7 digit LC display
- Simple addressing using DIP switches
- Power supply from the PROFIBUS-PA
- Maximum current consumption 11 mA
- Wall or stand pipe mounting
- Ingress protection classification IP 66

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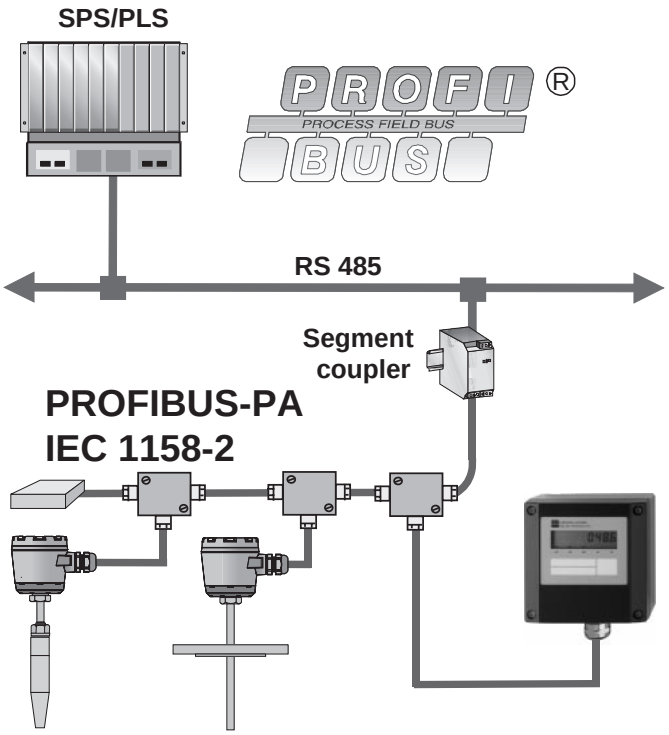
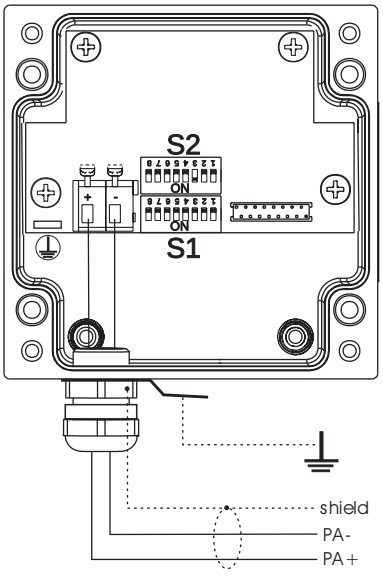
Operation and system construction

Measurement principle	Display of process information (e.g. measured value and alarm condition), for the field bus user (e.g. sensor or actuator) connected to the PROFIBUS-PA network. Process value is displayed as a 7 digit number, process condition is displayed using set point markers.
System construction	Microcontrolled front end display with PROFIBUS-PA interface and LC display.
Block diagram	

Input

Protocol	PROFIBUS-PA in accordance to EN 50170 Volume 2, Transmission to IEC 1158-2
Data	5 Byte, input or output data (process value and alarm condition display)
Process value	4 Byte, 32-Bit floating point number (IEEE-754)
Alarm display	1 Byte, status PROFIBUS-PA profile V3.0
PA function	Listener
Transmission rate of PROFIBUS-PA	31.25 kBit/s
Physical level	IEC 1158-2

Power supply

Electrical connections	 **Attention:** Connect the shield with the PG glands conductively.

Power supply	Powered from PROFIBUS-PA non-EEx: 9...32 V_{DC} Powered from PROFIBUS-PA EEx: 9...15 V_{DC}
Power consumption	< 1 W_{DC}
Current consumption	10 mA ±1 mA **Attention:** The current consumption of max. 11 mA by the RID 261 PROFIBUS-PA Display must be taken into account when planning the PROFIBUS-PA network!

Application conditions

Installation conditions

Installation angle	No limit

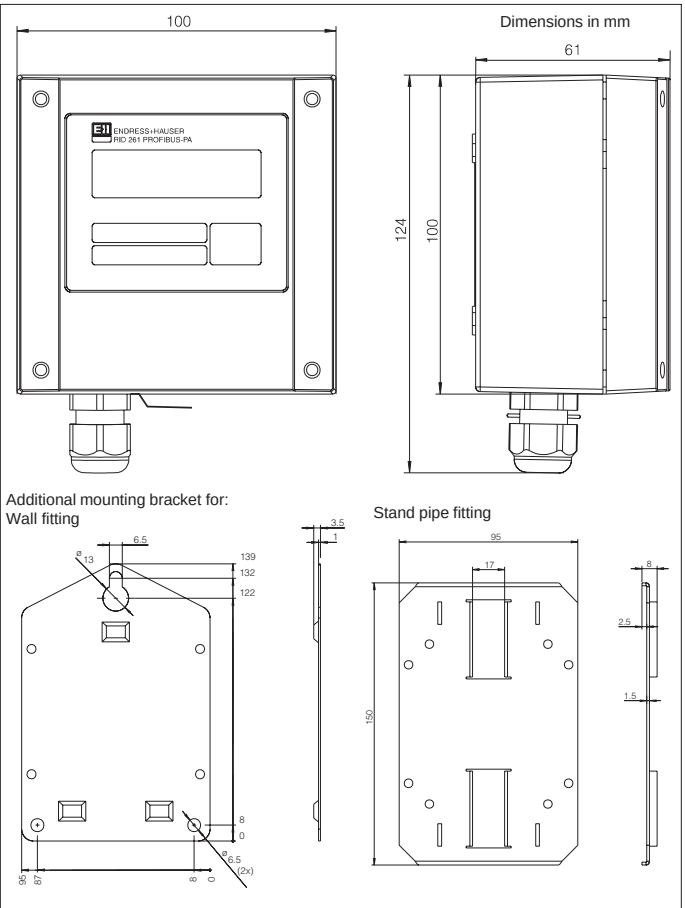
Ambient conditions

Ambient temperature	-25...+60 °C (for EEx area see Ex protection)
Storage temperature	-25...+70 °C
Climatic class	To EN 60 654-1, Class C1
Ingress protection	IP 66
Vibration protection	IEC 60 654-3, v<3 mm/s, 1<f<150 Hz

EMC immunity

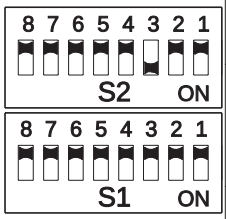
EMC	Interference immunity and emission according to EN 61 326-1

Mechanical construction

Dimensions	
Weight	Approx. 0.6 kg
Materials	Housing in die cast aluminium, surface cintered Wall/stand pipe brackets: St. St. 1.4301 Tension strip: St. St. 1.4301
Terminals (screw terminals)	≤ 2.5 mm^2
Cable entries	Bus cable: PG 13.5 cable gland (for 5...9 mm cable diameter) or NPT 1/2 " cable gland or Field bus connector (WDM) 150 mm

Display and operating system

Operating elements

DIP switches	Description
	S2/8: Off=Input data, On=Output data, Factory default: Input data
	S2/1-7: Binary coded Bus address [0...126], Factory default: Bus address 4 (S2/3 = on)
	S1/1-8: Binary coded Offset in Byte [0...244], Factory default: No offset
The 7 lower pins (PIN1 to PIN7) of the address DIP switch (S2) specify the user field bus address, from which the process value is to be read. The range on PROFIBUS-PA is 0...125. PIN8 of the address DIP switch (S2) sets if the values to be displayed are output data (PIN8=1, e.g. control actuator) or input data (PIN8=0, e.g. sensor process value). Using the 8 pins of the offset DIP switch (S1) the offset is set up. The offset indicates the point in the data telegram (on sensors with a process value = 0 e.g. temperature sensor) where the process value to be displayed (4 Byte process value, 1 Byte status) starts. The range on PROFIBUS-PA is 0...245 Byte.	
Factory default	1. sensor process value in address 4

Display elements LC display

Display	7digit LC display, 7.5 mm character height

Display	Description
	**Start:** Display after Reset
	**Process value:** Number (poss. with negative prefix) with maximum 3 decimal points and OK marks indicating process value status is OK
	**Process value with alarm markings:** Process value status OK or UNCERTAIN alarm condition (from PROFIBUS-PA profile V3.0)
	**Error:** Process value status contains status BAD, no defined value or no valid process value
	**No process value:** Process value transmission is interrupted, no valid process value
	**no Co:** 10 s no valid process value

	Value range	Display	Comments
Display range	0...9,999.999	1234.567	
	10,000...99,999.99	12345.67	
	100000...999,999.9	123456.7	
	1,000,000...9,999.999	1234567	
	> 9,999.999	8888888	Flashes at 1 Hz
Up-date	< 1 / s		

Certification

CE mark	This unit complies with the legal requirements laid out within the EU regulations.

Certificate number	DMT 99 ATEX 062
Max. ambient temperature	T5 = +60°C

Peak values in fault condition	
Input voltage	15 V
Short circuit current	31 mA
Capacitance	$C_i \cong 0$ µF
Inductance	$L_i \leq 2$ µH

How to order

RID 261 PROFIBUS-PA

Display of process values and alarm conditions.
PROFIBUS-PA interface to IEC 1158-2.
7 digit LC display. Set up using DIP switches

Certification
A - Version for non-Ex areas
B - DMT 99 ATEX 062

Cable entry
1 - PG 13.5 cable glands
2 - NPT 1/2 inch cable gland
3 - Fieldbus unit connector (WDM) 150 mm

Accessories
1 - No accessories required
2 - Wall fitting bracket
3 - Stand pipe fitting bracket

RID261-				⇐ Order code

Acccessories

Wall fitting bracket	51000946
Stand pipe fitting bracket	51000924
Fieldbus unit connector (WDM) 150 mm	51000400

Additional documentation

Operating manual	BA 098/R/09/
ATEX Safety instrutions	XA 002R/09/

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