

# SUPPLEMENTARY INFORMATION

EN

Translation of the original instructions

## PROFIBUS-DP

DigiLine Transmitter



# Validity

- **Profibus-DP**

This supplementary information describes important variations to the standard product and is only valid together with its prevailing operating instructions.

## Applicable documents

Profibus-DP	Operating instructions
Operating instructions DigiLine gauges in standard version:	
CPT 200	PG 0021*
HPT 200	PG 0024*
MPT 200	PG 0025*
PPT 200	PG 0022*
RPT 200	PG 0023*
Declaration of Conformity	A component of this manual

\*also available at [www.pfeiffer-vacuum.com](http://www.pfeiffer-vacuum.com)

## Abbreviations

- PB:** Profibus version
- BA sensor:** Bayard-Alpert sensor
- CC sensor:** Cold cathode sensor
- HV:** High vacuum sensor

## Product description

### Function

The connection to a Profibus-DP system is possible via the connection designated "Profibus" (M12, B-coded). The interface is electrically isolated from the maximum supply voltage.

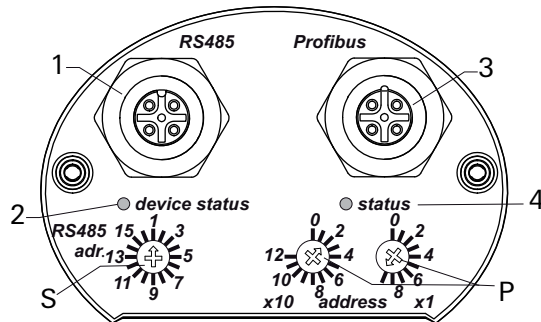


Fig. 1: Connections

- |   |                     |   |                                  |   |                                |
|---|---------------------|---|----------------------------------|---|--------------------------------|
| 1 | RS-485 interface    | 2 | Status LED                       | 3 | Profibus interface             |
| 4 | Profibus status LED | P | Profibus address selector switch | S | RS-485 address selector switch |

# Installation

## Configuring the connection

To start Profibus communication, the Profibus-DP must be configured by a Profibus master using the GSD file.

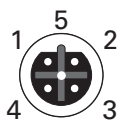
- Set a valid and unique Profibus interface address in decimal coding (1-125) using the address selector switches.
  - A new address is adopted only after a restart (supply voltage "Off/On").
- Fit rubber plugs at the address selector switches evenly and as deep as possible to achieve the stated protection class.

### Connection "Profibus"

Power is always supplied to the transmitter via the RS-485 connector (see operating instruction of the standard version).



<b>NOTICE</b>	
<b>Damage to the product</b>	
Only connect cables when de-energized.	
→ Never establish a connection using a live cable.	



Pin	Assignment
1	+5 V DC
2	RxD/TxD-N
3	GND (for Pin 1)
4	RxD/TxD-P
5	not connected

- Make Profibus connection using suitable Pfeiffer Vacuum accessories and cabling in compliance with the valid regulations.

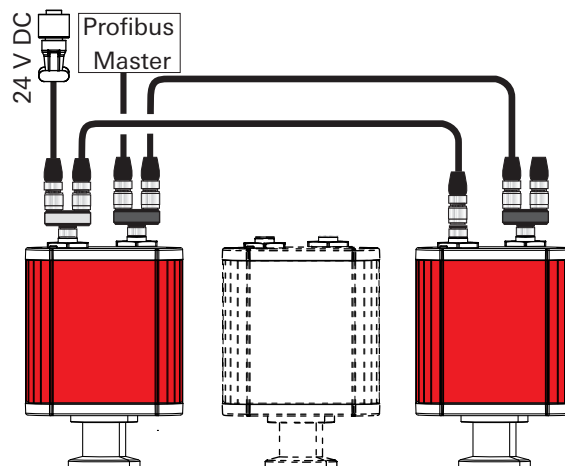


Fig. 2: Connections diagram - SPS

### Profibus status LED

State within 1s	Meaning
Off	Profibus on device side not active
Green flashing	Baud rate detected, no user data exchange
2 x green flashing	Fail-safe
Illuminated green	User data exchange
Red flashing	No Baud rate detected
2 x red flashing	Parameterization/configuration data incorrect
Illuminated red	Profibus not possible (invalid address, initialisation error)

## Modules

### Input data (Gauge -->Profibus master)

Byte	0	1	2	3	4					5		
Bit					7	6	5	4	3	2	1	0
	actual pressure				status bits							ACK
Byte	Bit	Description	CPT	HPT	MPT	PPT	RPT					
0-3		Actual pressure value rounded to nearest number to IEEE 754	✓	✓	✓	✓	✓					
status bits	0	Degas active or filament switched off	0	✓	✓	0	0					
	1	Pressure value in output data: underrange/overrange	✓	✓	✓	✓	✓					
	2	Command in output data supported	✓	✓	✓	✓	✓					
	3	Correction factor Pi in output data: underrange/overrange	0	✓	✓	✓	✓					
	4	Correction factor BA/CC in output data: underrange/overrange	0	✓	✓	0	0					
	5	Invalid command in output data	✓	✓	✓	✓	✓					
	6	Actual pressure value is overrange	✓	✓	✓	✓	✓					
	7	Actual pressure value is underrange	✓	✓	✓	✓	✓					
5 ACK		Command in output data confirmed	✓	✓	✓	✓	✓					

### Output data (Profibus master-->gauge)

Byte	0	1	2	3	4	5	6	7	8
Bit									
	pressure				CMD	Corr Pi		Corr BA/KK	
Byte	Value	Description	CPT	HPT	MPT	PPT	RPT		
0-3		Pressure value for adjusting rounded to nearest number to IEEE 754	✓	✓	✓	✓	✓		
CMD command value	0	No command	✓	✓	✓	✓	✓		
	1	Activate Degas	-	✓	-	-	-		
	2	Adjusting low pressure, "pressure" includes pressure adjusting value	✓	✓	✓	✓	✓		
	3	Adjusting high pressure, "pressure" includes pressure adjusting value	-	✓	✓	✓	✓		
	4	Setting correction factors, "Corr Pi" and "Corr BA/CC" includes correction factors	-	✓	✓	✓	✓		
	5	HV off	-	✓	✓	-	-		
	6	HV on	-	✓	✓	-	-		
5-6	Corr Pi	Correction factor Pi [0.01] (1-800 corresponds to 0.01-8.00)	-	✓	✓	✓	✓		
7-8	Corr BA/KK	Correction factor BA/CC [0.01] (1-800 corresponds to 0.01-8.00)	-	✓	✓	-	-		

### Diagnostics data

Byte	Bit	Description
0-5		see Profibus specification
6		5
7-9		do not evaluate
10	0	Internal communication error
	1	Missing or defective sensor
	2	Memory defective
	3	Unrecognised module (wrong gauge)
	4-7	0

## Control via interface

Function	Command	CPT	HPT	MPT	PPT	RPT
Activate Degas	⇒ Write command <b>0</b> in output data. ⇒ Write command <b>Degas</b> in output data.	-	✓	-	-	-
Adjust pressure	⇒ Write command <b>0</b> in output data. ⇒ Write <b>pressure value</b> in output data (see chapter: Adjusting the gauge). ⇒ Write command for <b>low/high pressure</b> in output data (not valid for CPT 200).	✓	✓	✓	✓	✓
HV on/off	⇒ Write command <b>0</b> in output data. ⇒ Write command <b>filament off/on</b> in output data.	-	✓	✓	-	-
Set correction factors	⇒ Write command <b>0</b> in output data. ⇒ Write valid <b>correction factors</b> in output data. ⇒ Write <b>command for correction factors</b> in output data.	-	✓	✓	✓	✓
Set switch mode	⇒ Select <b>switching characteristics</b> via the Profibus parameterization data	-	✓	✓	-	✓

## Accessories

Designation	
Y-Connector M12B to Profibus	P 4723 015
Y-Connector with cable M12B to Profibus, 0.5 m	P 4723 018
Termination resistor M12B for Profibus	P 4723 030
Plug and socket M12B for Profibus	PM 051 927 -T

## Technical data

Parameter	CPT 200 PB
Interfaces	RS-485, Profibus DP
Supply: power consumption	3 W

Parameter	RPT 200 PB
Interfaces	RS-485, Profibus DP
Supply: power consumption	4 W

Parameter	PPT 200 PB
Interfaces	RS-485, Profibus DP
Supply: power consumption	4 W

Parameter	HPT 200 PB
Interfaces	RS-485, Profibus DP
Supply: power consumption	10.5 W

Parameter	MPT 200 PB
Interfaces	RS-485, Profibus DP
Supply: power consumption	4.5 W



# Declaration of conformity

We hereby declare that the product cited below satisfies all relevant provisions according to the following **EC directives**:

- **Electromagnetic Compatibility 2014/30/EU**
- **Low Voltage 2014/35/EU**

**DigiLine**  
**Profibus-DP**

Harmonised standards and national standards and specifications which have been applied:

EN 61326-1: 2013 Group 1 / Class B  
EN 50581: 2012

Signature:

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2017-02-01

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