QP-W92-002-LCD

Differential pressure sensors, type QP-W92-002/006

- **Active differential pressure sensors for water**
- **Analog output: 0..10Vdc or 4..20mA**
- **Power supply: AC/DC 24 Volt**
- **Measuring range adjustable (DIP switch)**
- **Elektrical wiring via M12 connector**
- **Process connection: 8mm cupper pipe**
- **Optional with LCD display**

Δp

water [bar]

Technical Data

Power supply :	24 V AC / DC (15 ... 32 V AC / DC)
Power consumption:	approx. 2 W / VA
Sensor ranges (selectable with DIP switch):	
PWD-1.0/2.5	0 – 1 bar (L) / 0 – 2.5 bar (H)
PWD-4.0/6.0	0 – 4 bar (L) / 0 – 6 bar (H)
Single-sided load threshold:	
PWD-1.0/2.5	5 bar
PWD-4.0/6.0	12 bar
Output (3 wire):	0 – 10 V (> 2,700 Ω) or 4 – 20 mA (< 500 Ω)
Optional display:	
PWD-1.0/2.5-D	LCD 4-digits
PWD-4.0/6.0-D	LCD 4-digits
Measurement error:	< 2,5 % of the sensor range at 25°C
Rated ambient temperature:	-20 – 70 °C
Rated medium temperature:	-20 – 100 °C
max. static positive pressure:	16 bar
Protection type:	IP 65
Housing:	polyamide PA 6.6
Housing dimensions:	90 x 75 x 62 mm

Function

Measures the pressure differential of non-corrosive fluids, e.g. water-glycole mixtures in heating systems between the supply flow and the return flow or between water filters.

Installation

All work (such as installation, electrical connection, startup, operation, and maintenance) must only be performed by sufficiently qualified tradesmen. The respectively applicable local rules and regulations (e.g. national building codes, electrical/VDE regulations, etc.) must be observed. Installers and operating entities are required to sufficiently familiarize themselves before startup. Read the product description before operating the equipment. Verify that the product can be used for the relevant application without restrictions. We are not liable for printing errors and changes after printing. Approved use implies compliance with operating and installation instructions. We are not liable for losses due to inappropriate uses. Unauthorized or inappropriate manipulations or modifications of the device render the operating permit, the product warranty and warranty claims null and void.

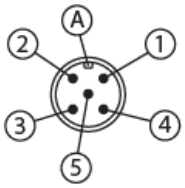
The pressure differential transmitter is mounted vertically to the wall or to mounting brackets on pipe assemblies and is connected to the pipe network with copper pipes. This is most appropriately accomplished with a special-purpose manometer isolation valve with venting (see page 3).

Attention: Process connections must always face down!

The unit is most appropriately connected to the pipe network with a 8 mm dia. copper pipe. For this purpose, special Ermeto threads are installed on the bottom of the housing. The transmitter is electrically connected with an M12 connector. Suitable transmitter cables are optionally available; see Data sheet No.15506.

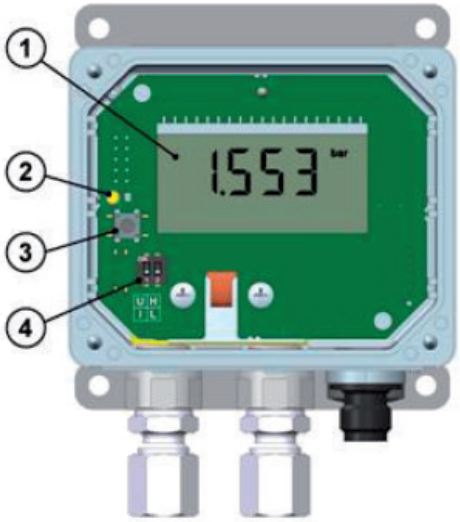
Electrical connection

M12 connector for power supply and analog output signal (5 pin, male). See Data sheet No. 15506 for suitable transmitter cables.



Pin	Signal name	
1	Power	+ Ub
2	I-Output (4…20 mA)	+ I-Sig
3	Power	– Ub
4	U-Output (0…10 V)	+ U-Sig
5	n.c.	
A	Coding	

Operating elements



No.	Description
1	Sensor value
2	Zeroing LED
3	Button - Zero setting
4	DIP switch output / sensor range

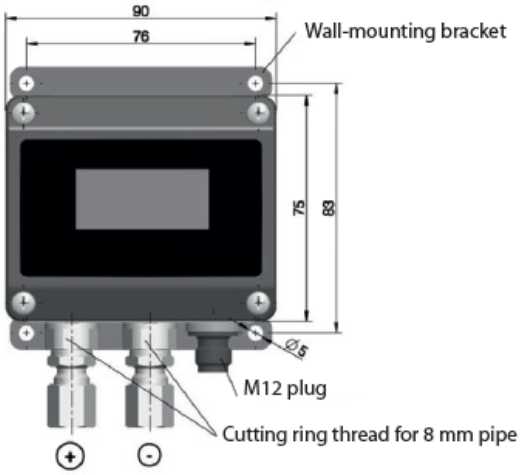
DIP switch 1 (output signal):
ON = 0 – 10 V (M12 connector Pin 2)
OFF = 4 – 20 mA (M12 connector r Pin 4)

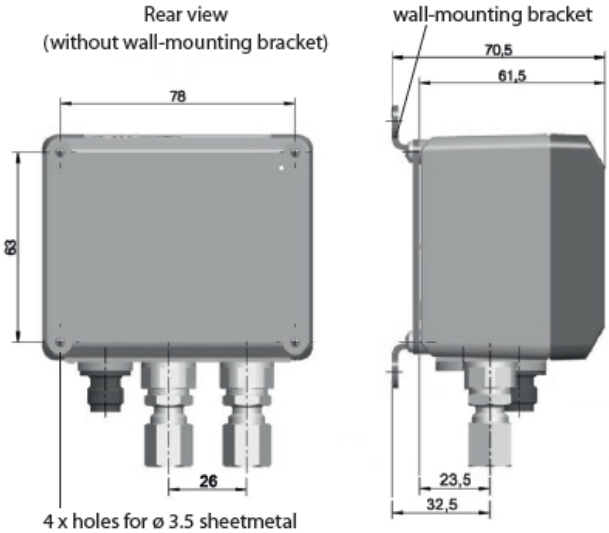
DIP switch 2 (sensor range):
ON = wide sensor range (0 – 2.5 or 0 – 6 bar)
OFF = narrow sensor range (0 – 1 or 0 – 4 bar)

Zero setting adjustment

Press and hold the button in the unpressurized state until the yellow „Zeroing LED" lights up. This signals that the measurement value display has been set to zero.

Dimensioned drawings





The four screws on back can be loosened to remove the wall-mounting bracket.

Dimensions in mm

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Optional valve block for installation and servicing (to be ordered separately)

Valve block for PWD

Configured with air bleed valve **PWD-VB4ms**
4-way lock

Installation and Handling

1. All valves are closed at delivery.
2. Open the valve I (Equalization Valve / Bypass) and the two shut-off valves II before connecting the impulse lines.
3. Assemble the PWD, and then type Pressure on the line.
4. Open valve III (vent valve) to vent the entire measuring system.
5. Close valve III then again.
6. Close the equalization valve I. The differential pressure will be displayed.
7. The two shut-off valves II remain open.

Dismounting

8. Equalization valve I opens.
9. The two shut-off valves are closed II.
10. The device-side fittings are solved and the PWD may be removed.

Technical Data

Weight:	approx. 650 g
Rated ambient temperature:	-30 – 70 °C
Rated medium temperature:	-30 – 70 °C
Rated storage temperature:	-50 – 80 °C
Nominal pressure:	PN40
Nominal width:	DN3
Pressure connection:	
process side:	inside thread G¼
device side:	connection shank Ø 8 mm
Housing:	Brass (CuZn40Pb2)
Handwheels:	nickel-plated brass (sealable or removeable)
O ring:	FKM

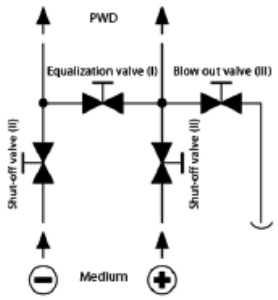
In a block housing four valve assemblies are arranged with which the leads closed process side and gauge side a pressure equalization can be established.

The VB4 has a vent valve for the measuring line and the valve block.
The valves are designed with metal sealing. In the valve spindles are rotatably mounted balls that seal wear-free to the block housing. The valve stems are sealed to the outside with O-rings.

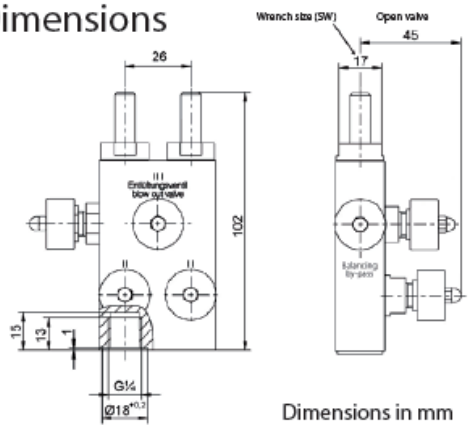
The handwheels can be sealable or removeable for security.

Functional diagram

VB4 (with air bleed valve)



Dimensions



Dimensions in mm

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Ordering information

Type	Measuring range	Signal	LCD
QP-W92-002 ▲	0 ..1 bar / 0 ..2,5 bar	0 .. 10Vdc or 4 .. 20mA	-
QP-W92-002-LCD	0 ..1 bar / 0 ..2,5 bar	0 .. 10Vdc or 4 .. 20mA	■
QP-W92-006	0 ..4 bar / 0 ..6 bar	0 .. 10Vdc or 4 .. 20mA	-
QP-W92-006-LCD	0 ..4 bar / 0 ..6 bar	0 .. 10Vdc oR 4 .. 20mA	■

Connection cables M12 (to be ordered separately)

Angled connector

QP.W.ST.H02	2m	▲
QP.W.ST.H05	5m	
QP.W.ST.H10	10m	

Straight connector

QP.W.ST.G02	2m
QP.W.ST.G05	5m
QP.W.ST.G10	10m

▲ standard