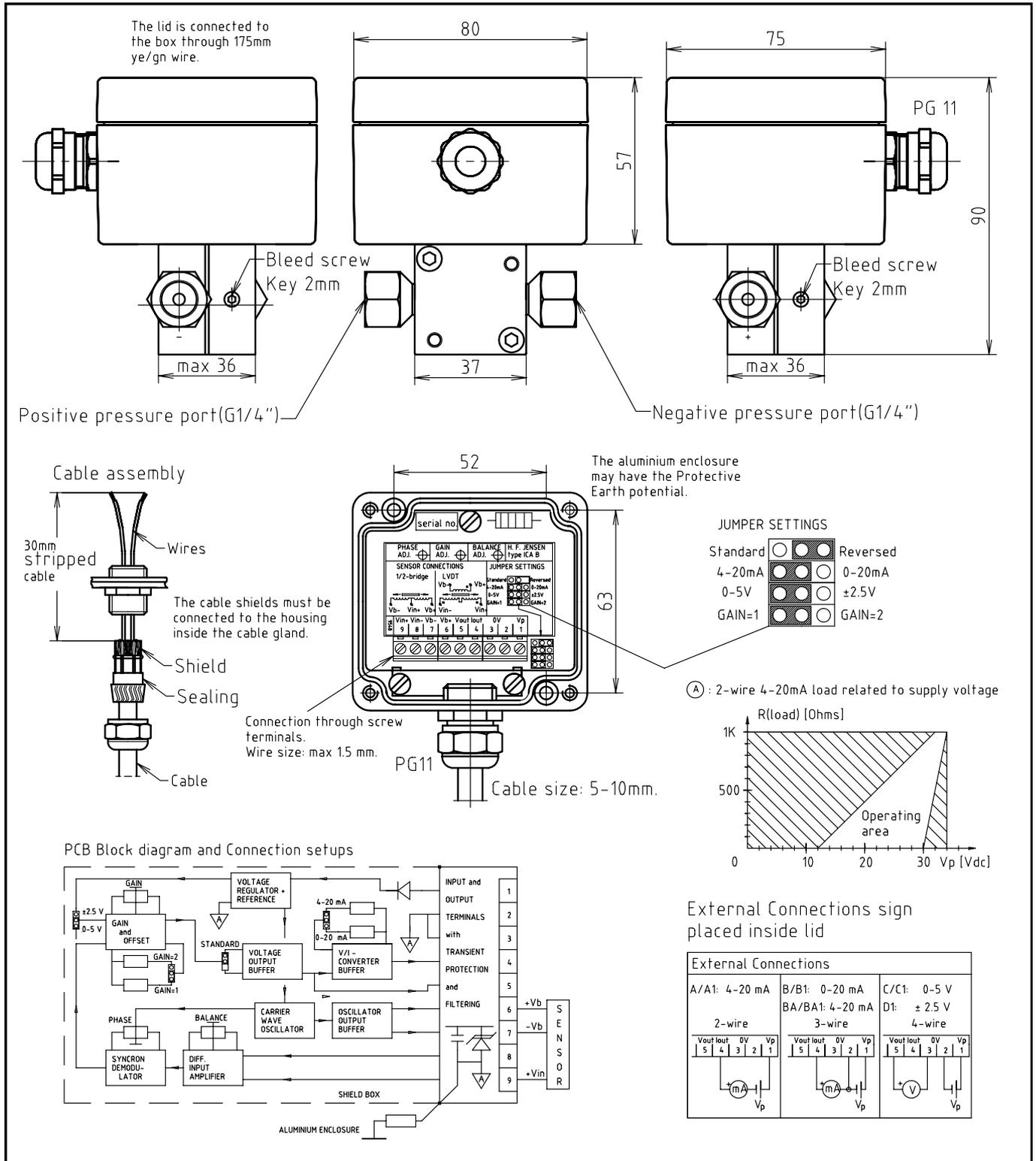


# DIFFERENTIAL PRESSURE TRANSMITTER TYPE PDR-IE



## DESCRIPTION

PDR-IE is a combination of differential pressure sensor based on variable reluctance and the signal conditioner ICAB consisting of an excitation oscillator, a true differential input amplifier, a phase sensitive demodulator, a low-pass filter and an output stage. The output signal can be configured by the user through the jumpers on top of the PCB. All connections are transient protected and a metal shield box covering all sensitive components ensures high electromagnetic compatibility. The electronics is mounted in an Al-box (IP65) on top of the sensor.

## SPECIFICATIONS

Standard ranges	$\pm 50$ mbar, $\pm 100$ mbar, $\pm 200$ mbar, $\pm 500$ mbar, $\pm 1$ bar, $\pm 2$ bar, $\pm 5$ bar and $\pm 10$ bar
Non-linearity and hysteresis	$< \pm 0.5$ %
Overpressure	200% FS with less than 0.5% zero shift.
Line pressure	200 bar max. less than 1,5% FS zero shift/100bar
Pressure media	Corrosive liquids and gasses both sides, compatible with AISI 410 ( Werkstoff-Nr 1.4006 )
Output signals	Selected by jumpers beside the terminals
- A/A1	4-20 mA <sub>DC</sub> , 2-wire, R <sub>L</sub> : see diagram, C <sub>L</sub> < 1 $\mu$ F.
- B/B1	0-20 mA <sub>DC</sub> , 3-wire, R <sub>L</sub> < 700 $\Omega$ , C <sub>L</sub> < 1 $\mu$ F
- BA/BA1	4-20 mA <sub>DC</sub> , 3-wire, R <sub>L</sub> < 700 $\Omega$ , C <sub>L</sub> < 1 $\mu$ F
- C/C1	0-5 V <sub>DC</sub> , 4-wire, R <sub>L</sub> > 5 k $\Omega$ , C <sub>L</sub> < 1 $\mu$ F
- D1 (D-configuration not available)	$\pm 2.5$ V <sub>DC</sub> , 4-wire, R <sub>L</sub> > 20 k $\Omega$ , C <sub>L</sub> < 1 $\mu$ F
Power requirement	12-30 V <sub>DC</sub> , 4 mA <sub>DC</sub> + output signal current
Supply voltage rejection	min. 86 dB between 12 and 30 V <sub>DC</sub>
Response time (0-100 %)	6 msec
Output signal ripple	< 0,05 % p-p of FSO
GAIN adjustment	$\pm 10$ % of FSO
PHASE adjustment	0 - 180 degrees.
BALANCE adjustment	$\pm 10$ % of FSO
Temperature range	-25 °C to +85 °C (media must not freeze)
Temperature coefficient	< 0.07 %/°C of FSO
Pressure connections	G 1/4"
Electrical connections	Screw terminals max.1.5 mm <sup>2</sup> , cable diameter 5 to 10 mm
Environmental conditions	
- electromagnetic immunity	According to EN 50082-2 (generic industrial standard)
- electromagnetic emission	According to EN 50081-2 (generic industrial standard)
Weight	0.75 kg
Protection class	IP65

## INSTALLATION

Mount the transmitter directly to a base. Remove the protection caps and connect pressure supplies to the pressure ports. Bleeding screws allows complete liquid filling for dynamic measurements. Check the jumper setting according to the application and connect the transmitter following the *External Connections* diagram. Use only shielded cables for connection. The cable shield should be connected both inside the cable gland of the transmitter and to the EMC-reference of the associated electronics.

## ADJUSTMENT

The transmitter is factory calibrated with reference to the requested output signal and type sign, and followed by a *Certificate of Accuracy*. Calibration should be checked after service performed by the user or according to a user maintenance procedure. The output signal can be changed by moving the jumpers on the PCB. Calibration is within 2 %. To recalibrate, let sensor be depressurized. With jumper setting GAIN=1: BALANCE to the 50 % output signal value (0 V<sub>DC</sub> in the D1-configuration) or with GAIN=2: BALANCE to the 0 % output signal value. Apply FS pressure and adjust to largest output with PHASE. Adjust to 100 % output signal value with GAIN. Check output with sensor in minimum state and repeat if necessary. A new offset is adjusted with BALANCE.

## ORDERING INFORMATION

PDR x IE x

"X"	A/BA	A1/BA1	B	B1	C	C1	D1
SETUP	GAIN=2	GAIN=1	GAIN=2	GAIN=1	GAIN=2	GAIN=1	GAIN=1
-FS	4 mA	4 mA	0 mA	0 mA	0 V	0 V	-2.5 V
0 bar	4 mA	12 mA	0 mA	10 mA	0 V	2.5 V	0 V
+FS	20 mA	20 mA	20 mA	20 mA	5 V	5 V	+2.5 V

Pressure range (bar): 0.05 - 0.1 - 0.2 - 0.5 - 1 - 2 - 5 - 10