



**Design Features**

- Small, solid design
- Wetted parts of stainless steel
- Measuring ranges 0...0.6 bar up to 0...4 bar
- Output signals: 4...20 mA 2-wire circuitry  
0...20 mA 3-wire circuitry  
0(2)...10 V 3-wire circuitry
- Explosion proof, EEx ia/ib

**Application**

The devices are used for natural-gas filter monitoring at transfer stations. A robust design allows use in tough environments. These transmitters have extensive circuitry which guarantees electromagnetic compatibility; they thus satisfy the noise immunity requirements as per current standards and guidelines.

**Design and Function**

The transmitter has a piezoresistive semiconductor measuring bridge as sensor. A compensation network ensures, to a large extent, the independence of the output signal from the process temperature. The output can be provided via a 2 or 3-wire circuit.

**Technical Data**

**Housing designs**

material-no.: 1.4301  
protection type: IP 65  
silicon cover plate for trimming potentiometers.  
Right angle plug as per DIN 43650 with cable threaded joint PG 11, cable diameter 6...10 mm

**Process connection**

2 x NPT 1/4 - 18, standard distance 54 mm, optional cutting ring screwing (Ermeto). Further models upon request

**Measuring system**

piezoresistive measuring bridge, protected by integrated stainless-steel diaphragm

**Filling material**

silicone oil

**Material**

diaphragm: stainless steel no. 1.4404  
cell: stainless steel no. 1.4404

**Weights**

standard housing: approx. 1030 g

**Allowed storage temperature**

-25...+80 °C

**Operating temperature range**

-25...+70 °C

**Compensated temperature range**

-10...+70 °C

**Temperature influence**

on zero point:  $\leq 0.05\%$  of meas. span /K  
on meas. span:  $\leq 0.05\%$  of meas. span /K

**Auxiliary energy supply**

standard version:  
· nominal voltage 24 V DC  
· function range  
2-wire circuitry 14...30 V DC  
3-wire circuitry 16...30 V DC  
· max.permiss.operating voltage 30 V DC  
Ex-version:  
· permiss. voltage range of 2-wire circuitry  
EEx ia IIC 15...20 V DC  
EEx ib IIC 14...30 V DC  
Ex-version:  
· permiss. voltage range of 3-wire circuitry  
EEx ia IIC 16...20 V DC  
EEx ib IIC 16...30 V DC

**Standard measuring ranges**

see order details

**Overload limits one sided and static excess pressure both sides**

see order details

**Signal output**

4...20 mA, 2-wire circuitry, standard. Other signals see order details

**Current limitation in output signal**

max. output current approx. 30 mA

**Supply voltage influence**

$\leq 0.2\%$  f.s. / 10 V

**Adjusting range**

zero point and measuring span approx.  $\pm 10\%$

**Response time**

$\leq 20$  ms

To be continued on page 2

## Technical Data (continued)

### Certificate of conformity

Ex-protection type EEx ia IIC T4/T5, EEx ib IIC T4/T5, PTB-No. Ex-92.C.2129X

### Burden

#### 2-wire circuitry

standard version  $R_a = \frac{U_b - 14 \text{ V}}{20 \text{ mA}}$  (KOhm)

version EEx ia  $R_a = \frac{U_b - 15 \text{ V}}{20 \text{ mA}}$  (KOhm)

version EEx ib  $R_a = \frac{U_b - 14 \text{ V}}{20 \text{ mA}}$  (KOhm)

#### 3-wire circuitry

all versions

with current output  $R_a = \frac{U_b - 9 \text{ V}}{20 \text{ mA}}$  (KOhm)

#### 3-wire circuitry

all versions

with voltage output  $I_a \leq 20 \text{ mA}$

$U_b$  = operating voltg

$R_a$  = max. permiss. burden resist (incl. line)

### Burden influence

for 500 Ohm burden of change:  $\leq 0.1 \%$  f.s.

## Electromagnetic Compatibility (EMC) Test

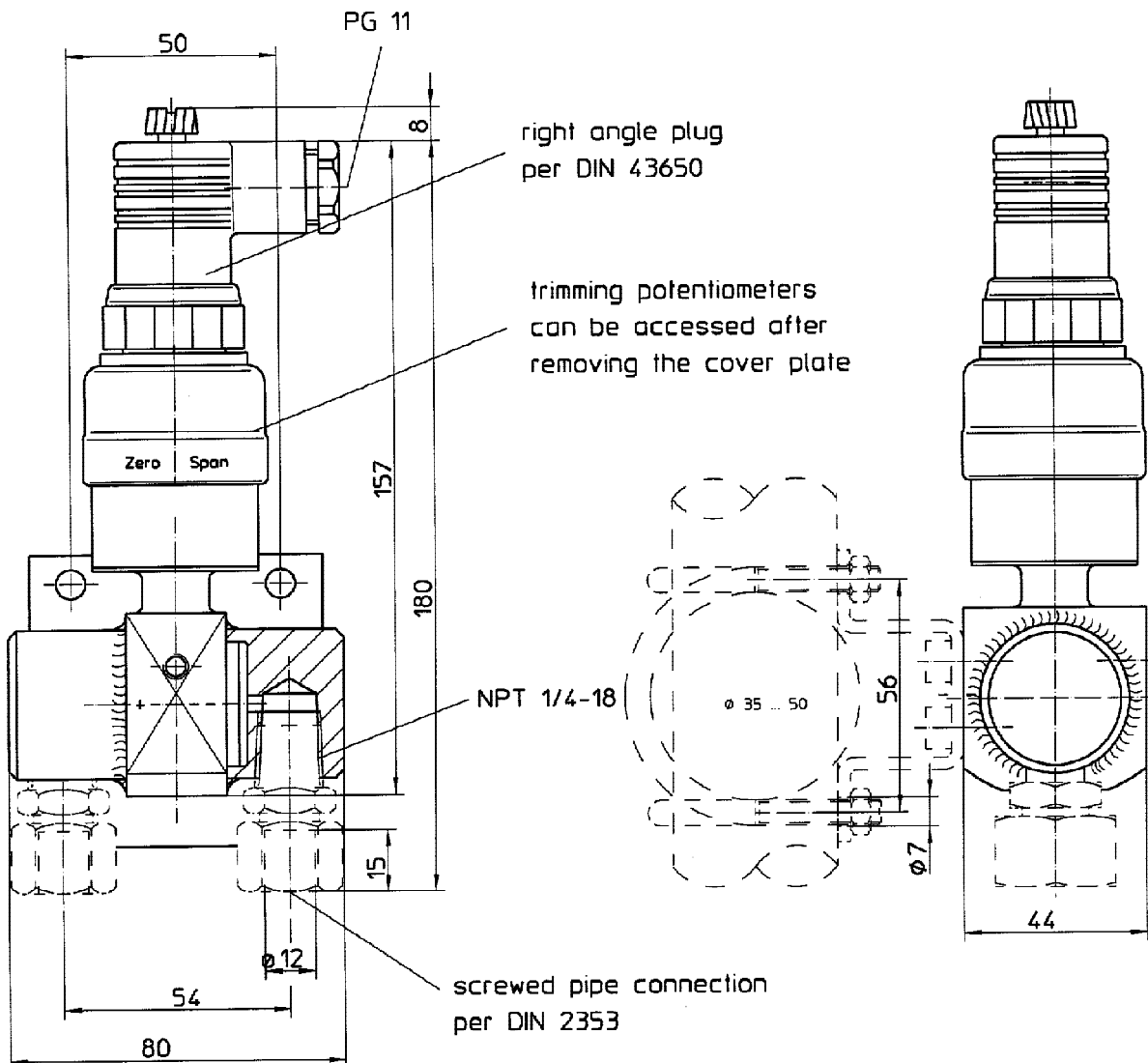
influence of mains supply tolerances	no influence
influence of mains interruption	no influence full reliability performance when supply is restored
switching-on current $< 15 I_N$	$< 3.5 I_N$
transient single impulses on supply lines 1.2/50 $\mu$ S, impedanz 42 Ohm duration 10 min. series 6/min impulse height: 1 KV sym. / 2 KV asym.	device fully operational after test
transient overvoltages on supply / data lines as impulse groups (bursts) impulse times 5/50 ns burst frequency 5 KHz burst times 15/300 ms voltage asym/unasym. 2 KV	no impairment as a result of interference

## EMC-Test (continued)

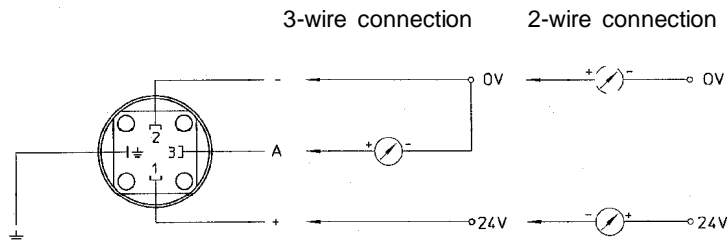
narrow band, low frequency interference frequency 50 Hz ... 10 KHz signal 3 V <sub>RMS</sub>	no influence
static electricity discharge, ESD test potential: 6 KV on housing number: 10 discharges	device fully operational after test
electromagnetic irradiation field strength 10 V/m (3 V/m) frequency range: 10 KHz ... 500 MHz	max. deviation $< 0.2 \%$
own reradiation / radio interference	no reradiation

Information on other models upon request  
or see to order details.

## Dimension



## Connection diagram



## Mounting and operating instructions

The devices have been adjusted at the factory for vertical mounting. Should the devices require re-adjustment you may access the internal potentiometers for zero point and span underneath the red cover.

The specified protection types are only achieved, when the cable diameters correspond with the specified nominal sizes of the sealing inserts, and the screwings have been screwed tight. Hand-screw the centrally mounted fixing screws on right angle plugs.

**Electrical equipment in hazardous areas should only be installed and commissioned by competent personnel.** Modifications to devices, connections and seals destroy the ex-proofing and the guarantee. The complete cable run, both inside and outside the hazardous areas in intrinsically safe circuits, should be equipotentially bonded. The limit values detailed in the certificate of conformity are to be observed.

The certified EMC measures will only be effective if the earthing connections is correctly made. Observe the "special conditions" detailed in the test certificate for devices with construction type approval for connection to zone 0.

## Order Details - please give additional specifications for models not listed -

Differential pressure transmitter for filter monitoring				differential nominal pressure	overload limits one-sided (+side or -side)	static excess pressure (both sides)	order code
design	· standard	CP1310		0...0.6 bar	6 bar	75 bar	A1052
	· explosion-proof	CP1311		0...1 bar	10 bar	75 bar	A1053
measuring range	· per table		.....	0...1.6 bar	10 bar	75 bar	A1054
output signal	· 4...20 mA, 2-wire		H1	0...2.5 bar	16 bar	75 bar	A1055
	· 0...20 mA, 3-wire		H2	0...4 bar	16 bar	75 bar	A1056
	· 0...10 V, 3-wire		H4				
	· 2...10 V, 3-wire		H5				
	· 0...5 V, 3-wire		H6				
<b>additional features (to be indicated in case of need, only)</b>							
process connection	with screwed pipe per DIN 2353 (Ermeto-self-tapping screw)	· 6 mm		K11			
		· 8 mm		K12			
		· 10 mm		K13			
		· 12 mm		K14			
type of ex-protection (for explosion proof only)	· EEx ib IIC T4			S61			
	· EEx ia IIC T4			S62			
	· EEx ib IIC T5			S63			
	· EEx ia IIC T5			S64			
assembly set	· mounting clip					V2	
<b>Order Code (example)</b>		CP1310	A1053	H1			