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Pressure transmitter Type 4362

Brief description

Pressure transmitters are used to measure pressures in liquids and gases. The pressure is converted into an electrical signal.

Type designation

4362-242

4362 Pressure transmitter

-106 output 1 — (5) 6 V
-010 output 0 — 10 V
-020 output 0 — 20 mA*
-420 output 4 — 20 mA*
-242 output 4 — 20 mA*
2-wire

* under development

Extra codes

/ 23 terminal box to DIN 43 650,
Form A
/ 73 with attached connecting cable
/ 91 absolute pressure
/ 93 special ranges
/113 pressure connection G $\frac{1}{2}$ B ($\frac{1}{2}$ " pipe)

Order example

Pressure transmitter

Type 4362-242/91

range 0 — 4 bar

Ranges

Gauge pressure (bar)	Absolute pressure/91 (bar)
16*	0 — 2.5
25*	0 — 4
40*	0 — 6
60*	0 — 10
100	0 — 16
160	0 — 25
250	0 — 40
400	0 — 60
600	
1000	

* Absolute pressure sensors calibrated for gauge pressure (to 300 m a.m.s.l.)

Technical data

Housing

stainless steel, Mat.Ref. 1.4301
polycarbonate (GF)

Parts in contact with medium

stainless steel, Mat.Ref. 1.4571;
stainless steel diaphragm, Mat.Ref. 1.4401
for ranges above 60 bar
stainless steel, Mat.Ref. 1.4542

Pressure connection

normally:
G $\frac{1}{4}$ B ($\frac{1}{4}$ " pipe) to DIN 16 288
code /113:
G $\frac{1}{2}$ B ($\frac{1}{2}$ " pipe) to DIN 16 288
other connections on request

Electrical connection

normally:
terminal box to DIN 43 650, Form C,
up to 0.75 mm² conductor cross-section
Pg7 gland
code /23:
terminal box to DIN 43 650, Form A,
up to 1.5 mm² conductor cross-section
Pg9 gland
code /73:
attached 5-core screened PVC cable with
internal pressure equilibration tubing,
length 2 m,
other lengths on request

Supply U_B

10 — 30 V DC for version -242
11.5 — 30 V DC for versions up to 100 bar
13 — 30 V DC for versions from 100 bar

Ripple

The voltage spikes must not take the voltage outside the range specified for the supply voltage.

max. current loading: 30 mA

Supply voltage error

≤ 0.2 % per 10 V

Output signal

1 — 6 V
0 — 10 V
0 — 20 mA
4 — 20 mA
4 — 20 mA
2-wire

burden ≥ 10 kΩ
burden ≤ $\frac{U_B - 11 V}{0.02 A}$
burden ≤ $\frac{U_B - 9.5 V}{0.02 A}$

Burden error

≤ 0.15 %

Characteristic

linear

Deviation from characteristic after start of range adjustment

≤ 0.5 %, according to DIN 16 086

Zero offset

≤ 0.5 %

Overload limit

to DIN 16 086

2 x full scale
1.5 x full scale
for ranges 160 bar and above

Bursting pressure

≥ 5 x full scale
for ranges up to 25 bar
≥ 3 x full scale
for ranges up to 400 bar
≥ 2 x full scale
for ranges above 600 bar

Permissible ambient temperature

-40 to +100 °C
-30 to + 90 °C with code /73

Permissible temperature of medium

-40 to +125 °C



Technical data

Temperature coefficient of zero

within range 0 — 100°C
 $\leq 0.2\%/10^\circ\text{C}$ typical,
 $\leq 0.4\%/10^\circ\text{C}$ max.

Temperature coefficient of span

$\leq 0.2\%/10^\circ\text{C}$ typical,
 $\leq 0.4\%/10^\circ\text{C}$ max.

Response time

$\leq 3\text{msec}$

Mechanical vibration

20g max. at 15 — 2000Hz

Mechanical shock

100g / 4msec

Nominal position

any

Protection

IP65 to EN 60 529
 min. connecting cable dia. 5mm
 IP67 to EN 60 529
 for code /73

Weight

0.2kg

Electromagnetic compatibility

Electrostatic discharge

VDE 0843-2/severity 4
 (test voltage 15kV)

Transient disturbance (burst)

VDE 0843-4/severity 4
 (test voltage on I/O line 2kV)

Electromagnetic fields

VDE 0843-3/severity 3
 (test field strength 10V/m)

Immunity to impulse voltage (surge)

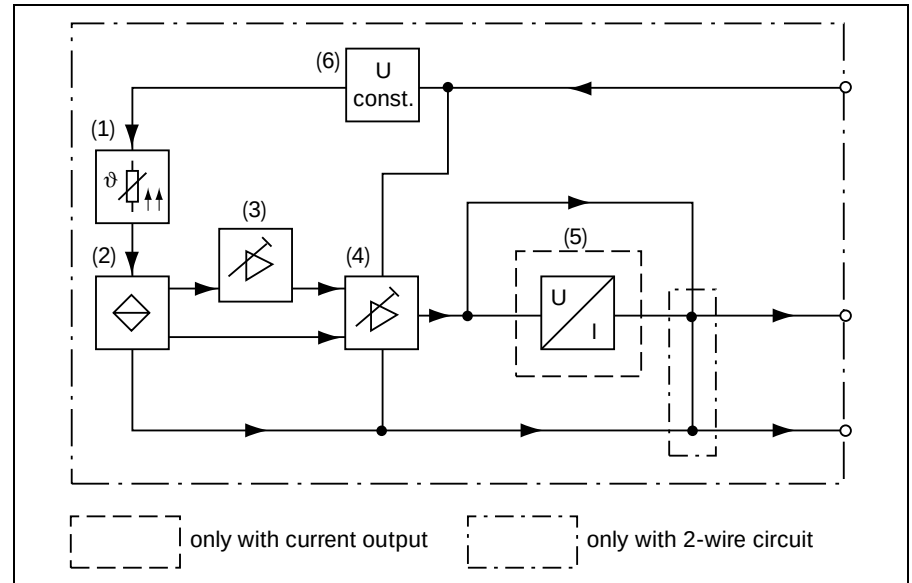
VDE 0843-5/severity 2
 (test voltage 1kV on I/O line,
 with R_{is} 42Ω)

Immunity to conductor-borne interference

VDE 0843-6/severity 2
 (emf · 10V)

The Type 4362 pressure transmitter thus fulfills all the requirements of EN 50082-2 (CE mark) for use in industrial areas.

Block diagram



Description of function

The pressure of the medium acts on the separating diaphragm¹ of the piezo-resistive pressure transmitter. The separating diaphragm transfers the pressure through a liquid to the silicon diaphragm with doped resistance bridge (2). This resistance bridge operates on the piezo-resistive principle. It is connected to a constant voltage supply (6) through a temperature compensation circuit (1). The output signal of the resistance bridge is amplified in a differential amplifier with a high input impedance (4). The span is adjusted with a span trimmer. The amplifier (3) with adjustable gain enables zero adjustment. With current output 0 — 20mA or 4 — 20mA, the output signal is converted to a proportional current in the U/I converter (5).

¹ for ranges > 60bar, the pressure is applied directly to the measurement diaphragm of a thin-film sensor.

Connection chart

Connection		Terminals	
		plug	cable
Supply 11.5 — 30V DC	 L+	1	white
		2	grey
Output 0 — 10V (1 — 6V)	 -	2	grey
		3	yellow
Output 0 — 20mA	 -	2	grey
		3	yellow
Output 4 — 20mA	 -	2	grey
		3	yellow
Output 2-wire		proportional current 4 — 20mA in supply	
Protective earth			
Screen			black

Dimensions

