FISCHER
MESS- UND REGELTECHNIK

Type DE 70

General Description

The type DE 70 differential pressure transmitter uses a capacitance type sensor and modern microprocessor technology. It is ideally suited for differential pressure applications such as measurement of

- positive pressure,
- differential pressure,
- liquid level

where a high degree of accuracy is required.

It is optionally available in versions certified for use in hazardous locations.

Features

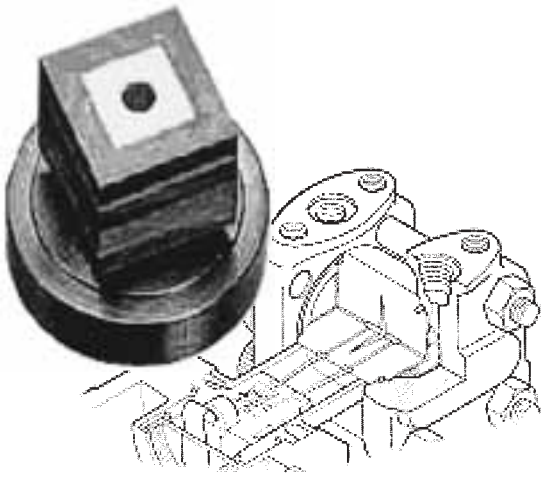
- robust, wear resistant sensor
- high resistance to corrosion
- low hysteresis
- not affected by fouling of pressure chambers
- capacitance type silicon sensor
- microprocessor technology

Principles of Operation

The type DE 70 differential pressure transmitter uses a silicon capacitance sensor with a bridge measuring circuit, the output of which changes when the pressure changes.

Modern microprocessor technology is used to convert the bridge output to a standard 4-20 mA signal, which permits the measured value to be transmitted over long distances. A hart interface is also available, using an optional communication module installed in the transmitter. With the hart interface, digitally transmitted pressure measurements, as well as the transmitter's set-up data can be read very accurately by simply connecting a compatible terminal device at any point along the length of the signal output loop. Also, the terminal device can also be used to re-configure the transmitter's set-up parameters: locally, or from a remote location.

The Measuring System



The DE 70 transmitter uses a precision silicon capacitance type pressure sensing element, which is manufactured under stringently controlled conditions. This sensor is rugged, resistant to effects of fatigue and overloading, and unaffected by pressure fluctuations. The sensor and microprocessor based signal proccessing ensure the highest possible accuracy and stability.

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Specifications

General

Measuring ranges	0–6 to 0 – 60 mbar. Max. static pressure: 32 bar 0–32 to 0 – 320 mbar. Max. static pressure: 140 bar 0–130 to 0 – 1300 mbar. Max. static pressure: 140 bar 0–500 to 0 – 5000 mbar. Max. static pressure: 140 bar 0–2 to 0 – 20 bar. Max. static pressure: 140 bar
Linearity	< 0.1 %
Hysteresis	< 0.1 %
Temperature coefficient	< 0.5 % / 10° C
Operating temperature ambient	– 10° to + 70 °C
Operating temperature media	0 to 80 °C
Protection class	IP 67

Electrical

Supply voltage	24 V DC (15 – 30 V DC)
Power consumption	Approx. 2 W
Dielectric strength	500 V AC
Output signal	4 – 20 mA
Output load	Max. 600 Ohm (Minimum 250 ohms with Communication Module installed).
Output current limit	25 mA
Built in display (optional)	Analog display with 0 – 100% scale Digital display (only with Communication Module option -K installed)

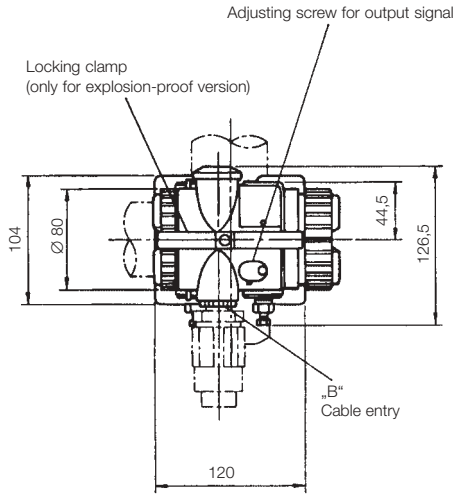
Connections

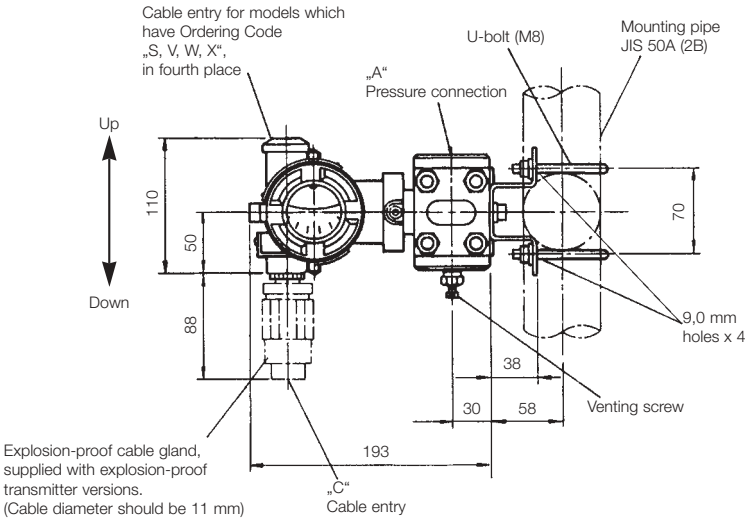
Electrical connections	Internal terminal block
Pressure connection	2 x 1/4" NPT
Spül- und Entlüftungsanschluss	Optional

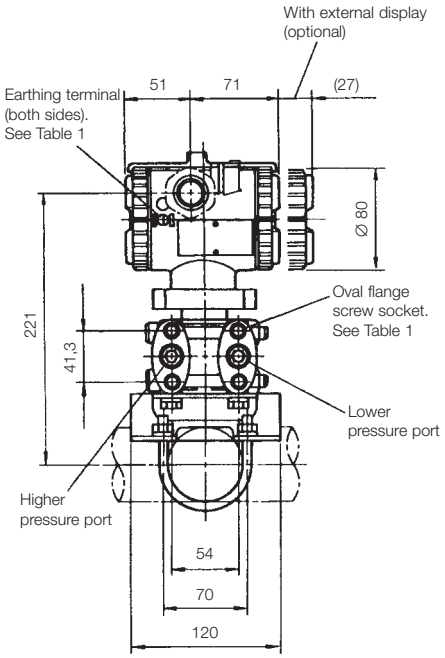
Materials

Parts in contact with media	Stainless steel 316 L (1.4404)
Seals	Viton. Optional: Teflon
Electronics housing	Aluminium, surface coated
CE marking	For the product DE70 it is hereby declared that it corresponds with theEMC Directive 2004/108/EC and is tested in compliance with the fharmonic standards EN 61326-1 : 2006 and EN 61326-2-3 : 2006.

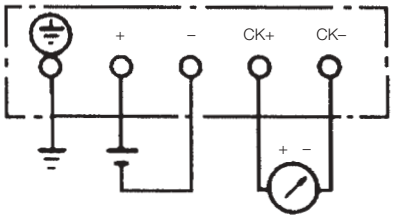
Dimensional Drawings







Electrical connections



Ordering Code

Differential Pressure Transmitter

Type DE 70 [ ] **X** [ ][ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] **0**

Communication Module

Without communications module ▷ H
With communications module ▷ K

Pressure connection: 1/4 NPT(F) 7/16 UNF

Range

0– 6 mbar	to	60 mbar	1	2
0– 32 mbar	to	320 mbar	3	3
0–130 mbar	to	1,3 bar	3	5
0– 0,5 bar	to	5 bar	3	6
0– 2 bar	to	20 bar	3	7

Display

Without display ▷ A
With analog display scale: 0 –100% ▷ B
With digital display (only with option -K installed) ▷ L

Hazardous location approval

Not approved for hazardous locations ▷ A
Intrinsically safe per E Ex i a II C T5/T6 ▷ K
Explosion-proof per Ex d II CT5/T6 ▷ X

Mounting bracket kit

Without mounting bracket kit ▷ A
With mounting bracket kit (stainless steel) ▷ C

Instrument tag plate

Without tag plate ▷ Y
Stainless tag plate with customer application data ▷ B

Sensor filling liquid

Silicone oil ▷ Y
Fluorinated oil for oxygen service ▷ A

O-ring seals

Viton ▷ A
Teflon ▷ C

Pressure casing fasteners

Cr-Mo bolts/nuts ▷ A
Stainless steel (304/304) bolts/nuts ▷ E

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