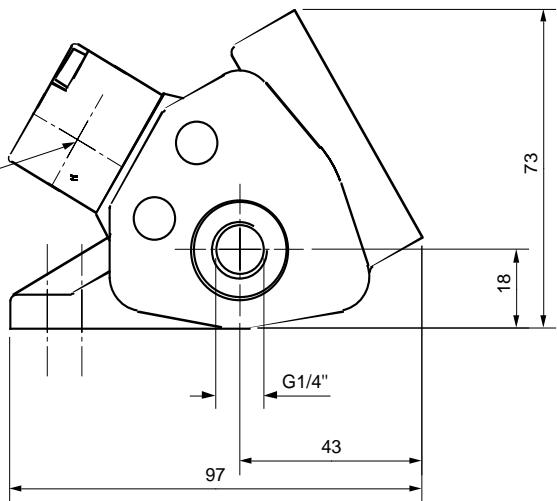
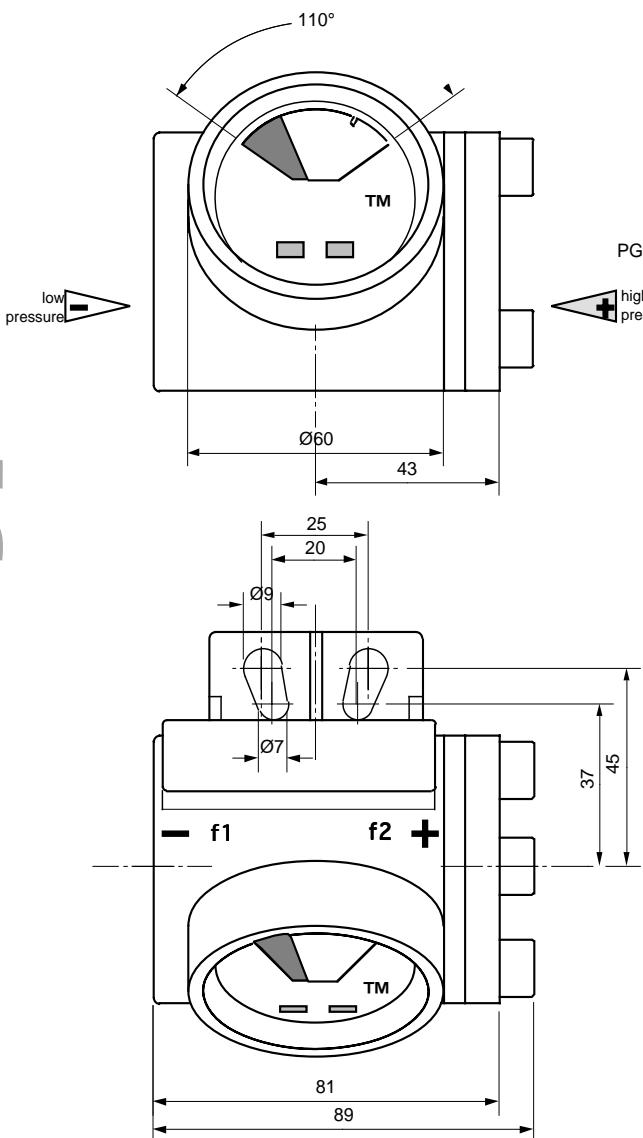


# Type 5.01



### Data:

Working pressure: max. 100 bar  
Working temperature:  
Medium max. 150°C  
at device max. 120°C

#### Application

The deltaP - Differential Pressure Indicators are used for the monitoring of a variable pressure difference via an optical display and electrical contacts in up to two points.

#### Description

A piston, hermetically sealed, moves against the effect of a calibrated measuring spring. The piston's position is transmitted magnetically, which means without friction, to an indicating display and in addition to Reed-contacts for electrical signals. In the range of 10...100%  $\Delta p$ , monitored by 0... 110° display-angle, the red part of the display becomes visible. In the standard version at 75%  $\Delta p$  (mark in the display) usually the first (f1), at 100%  $\Delta p$  the second (f2) Reed-contact is switched. The switching points are engraved into the display.

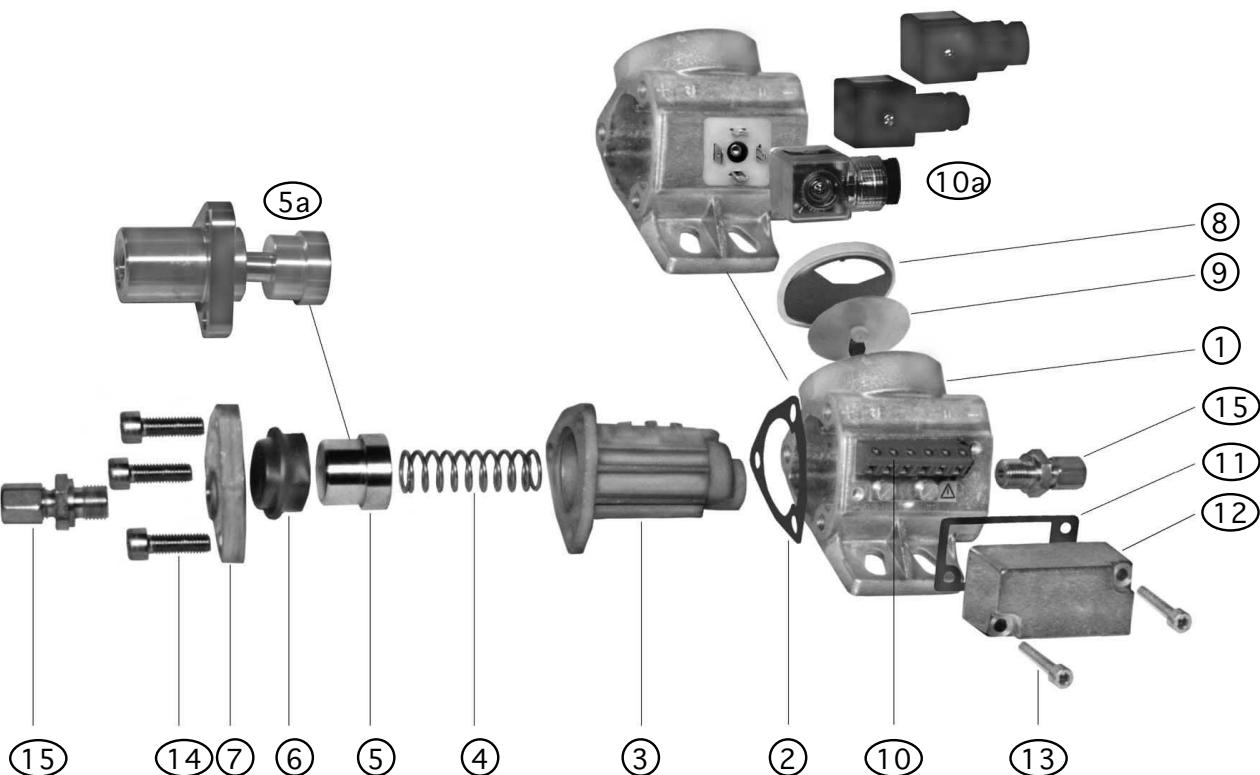
#### Connection

Connection should be done workmanlike , to ensure proper function. The device is prepared for G1/4" - pipe-connectors. Sealing can be done with gaskets, PTFE-Tape or glue. The low pressure is to be connected to the side marked with "-", the high pressure to the side marked with "+".

Electrical connection: see special supplement



# Type 5.01



Nr.	Bezeichnung	Material / Bezeichnung	optional
1	Casing	GK AISI 12	
2	Gasket for casing		
3	Cylinder	CrNi precision-cast, W.St.-Nr. 1.4450	
4	Measuring spring	W.St.-Nr. 1.4310	Special materials
5	Piston with ring-magnet	CrNi-Stahl W.St.-Nr. 1.4435, Bariumferrit	Sonderwerkstoffe
5a	High-pressure- diaphragm	CrNi-steel, W.St.-Nr. 1.4435	
6	Rolling diaphragm	Perbunan	Viton, EP
7	Cover	CrNi precision-cast, W.St.-Nr. 1.4450	
8	Display	Polycarbonat (Makrolon)	
9	Display disc (red/blue) with magnet	Al ,Ms, Bariumferrit	
10	Clamp	Plastics, Ms (tin surface)	Plug systems
10a	Plugs	DIN 43650	others on request
11	Gasket for cover	Perbunan	
12	Cover	GK AISI 12	
13	Screw	DIN 912 M5x25 A2, CrNi-steel	
14	Screw	DIN 912 M8x25 A2 CrNi-steel	
15	G 1/4" pipe connector	CrNi-steel, W.St.-Nr. 1.4571	

**Maintenance** deltaP - Differential pressure indicators generally need no maintenance.

Though the rolling diaphragm can be damaged because of aging or very high differential pressure loads.



*If the rolling diaphragm or the gasket is damaged the differential pressure can't be monitored correctly!*

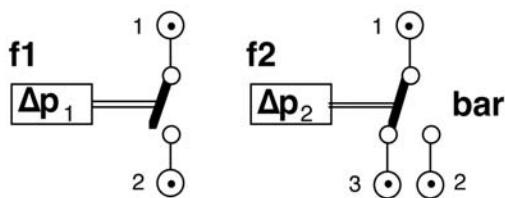
Herewith it can come because of the narrow fit size to an only slight by-pass flow through the inside of the indicator. However the instrument interior can pollute thereby. If constant differential pressure should be indicated during an unusually long time it is advisable to check the instrument interior for pollution and especially to check the rolling diaphragm or gasket for damages. If necessary the instruments interior and the connection pipings are to be cleaned and the gaskets changed. When installing the rolling diaphragm it is to be paid attention of fitting the nipples in the bottom of the diaphragm to the piston's side.



# Type 5.01

standard-type with clamp-box

### CIRCUIT DIAGRAM:



### ATTENTION:



Electrical connection of the Differential pressure indicator is to be done by specialists (e.g. electricians) to prevent damages. In any case the connection cables are to be separated from mains supply before.

### CABLE PREPARATION:

Before connection prepare the cable ends with tin or cable end sleeves.

### CONTACTS:

The contacts are switched according to the above-mentioned circuit diagram. The respective differential pressure, engraved into the display ( $\Delta p_1$ ,  $\Delta p_2$ ) controls the contacts (f1, f2). Each contact is associated a clamp on the reverse of the differential pressure indicator. This is protected with a sealed aluminum cover.

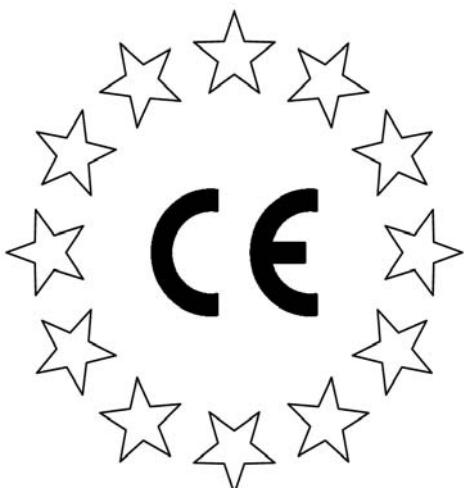
The clamp description is found on the the plate and on the upper side of the casing.

Connection to earth can be either made via the clamps or the brass-screws which hold the plate. At loss of these screws they are absolutely to replace, because they serve simultaneously as fastening bolts for the plate.

### CONNECTION:

Before connection to the clamps, the cable must be led through any kind of PG-11 cable screw, the cluminum cover and it's gasket. Subsequently the cables can be connected according to the above-mentioned circuit diagram. The max. tightening moment is 2Nm.

Finally the aluminum cover is to be screwed with the casing.



### Electrical Data:

Contact	f1	f2
switching ability	max. W	120
switching ability	max. VA	120
switching voltage	max. V $\leq$	250
switching current	max. A	3
constant current	max. A	5
Voltage-proof up to	V	800
volume resistance	max. m $\Omega$	100
isolation resistance	typ. $\Omega$	$10^{11}$
cable diameter	max. mm $^2$	1,5

high-voltage-tested against earth up to 1350 VAC

Isolation protection class IP 65



## Additional Information about Differential Pressure Indicator Type deltaP 5.01-x,x-f2.x,x Eex.T4

The Differential Pressure Indicator Type 5.01-x,x-f2.x,x Eex.T4 holds at proper usage and an intrinsically safe circuit no effective mechanically or electrically generated risks for ignition. According EN50020 the Differential Pressure Indicator is - conducted to an intrinsically safe circuit – a passive component and therefore an ordinary electrical equipment without own potential for ignitions. In compliance with art. 1 (3) of the Guideline RL/94/9EG it does not come under this guideline.

### **Electrical Connection**

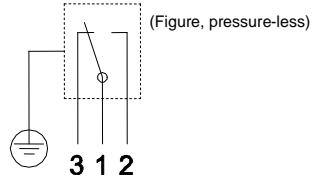
The Differential Pressure Indicator has to be connected with an approved intrinsically safe circuit. The given upper limits, shown at *Technical Data*, are not allowed to be exceeded.

Installation and initial start-up has to be done by experts only!

Before installation ensure that:

- the device isn't damaged,
- the upper limiting values of any connectors can not be exceeded,
- the connecting cables are intact and the cables are at zero potential,
- the polarity of the cables is correct.

Connection has to be done as shown in this circuit diagram:



### **Technical Data**

Switching Function	Change-over contact
Max. Voltage U <sub>i</sub>	30 VDC
Max. Current I <sub>i</sub>	165 mA
Max. Switching Power P <sub>i</sub>	0,9 W
Capacity of open contacts C <sub>i</sub>	1 pF
Protection Code	IP65

The internal inductivity is negligible.

Allowed cross-section of cables                    0,5 ... 1,5 mm<sup>2</sup>, use end sleeves for strands!

### **Temperatures**

Medium Temperature	Ambient Temperature	Temperature-Code	max. Surface Temperature
-10 ... +120°C	-20 ... + 80°C	T4	135°C
-10 ... +100°C	-20 ... + 80°C	T5	100°C
-10 ... + 85°C	-20 ... + 80°C	T6	85°C

Medium Temperature: Temperature of the medium inside

Ambient Temperature: Temperature, in the ambient of the Differential Pressure Indicator

Temperatur-Code: Shows the max. surface temperature

Using the device in explosion hazard areas caused by combustible dusts consider the max. medium temperature instead of the max. allowed surface temperature.

Additional heating of the device, e.g. caused by radiation, is strictly forbidden. If necessary, actions to prevent from have to be implemented.

### **Safety Advice**

The device has to be switched off completely when safe operation can not be ensured! For repair the device has to be sent back to our factory. If the device is opened except of described conducting and maintenance work, guarantee expires.

