

Klinger Smart 451DP

Differential Pressure transmitter

Klinger Field 451 is a family of pressure and differential pressure transmitters intended for measuring tasks in all kinds of industry.

The differential pressure transmitter is delivered in measuring ranges from 15 mbar up to 70 bar with a standard accuracy better than 0.2%.

The output signal is analog (4... 20 mA DC) with HART protocol, with display of measured value on local display (backlit).

The Transmitter housing is standard aluminum, but can be supplied in stainless steel - just as an Exi version is available for demanding applications.

Sensor with temperature compensation

The sensor is a closed unit, based on the capacitive principle - and delivered as a metal cell with a membrane in several materials.

The sensor is temperature compensated with a built-in RTD that ensures high measurement accuracy in the entire application range -20 to +93°C.

Calibration certificate

You choose between 5 different measuring cells / ranges, and then the transmitter can be adjusted to exactly the measuring range you want.

Regardless of which range you order it in, a calibration certificate (5 points) is supplied in accordance with the selected measuring range.

If you choose Klinger Smart 451 for your next measurement task you get:

- A robust transmitter with great flexibility.
- High measurement accuracy in a large measuring range.
- Easy setting without the use of additional tools.



Transmitteren are delivered with LCD display.

Klinger Smart 451 highlights:

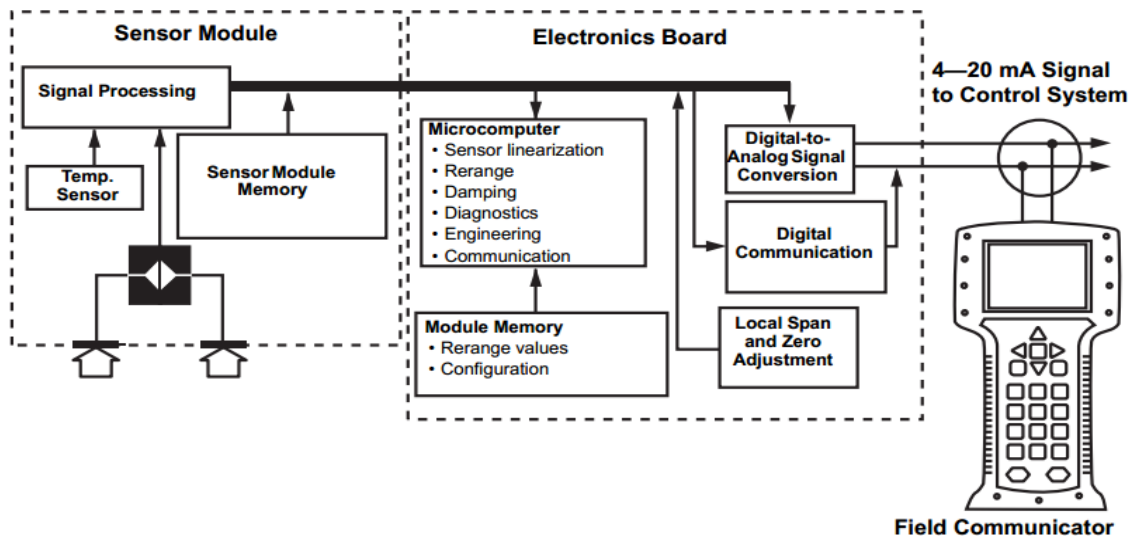
- Ranges dP from 15 mbar to 70 bar .
- High accuracy, standard 0,2% (option 0,1%).
- Easy setting without the use of additional tools.
- PU-coated aluminium housing
- HART communication as standard.

Technical data

Design:	Compact transmitter / industrial housing												
Materials/housing :	Aluminium (Coated PU)												
Ingress Protection :	IP 65 acc. to EN 60529												
Electrical conn. :	Klemmerække i separat klemmeboks												
Weight:	Alu version: 2.500 g												
Process conn. :	NPT ¼ female, NPT ½ female												
Sensor materials :	Stainless Steel 1.4404 (316L) Hastelloy C-276 Monel or Tantalum												
Sensor:	Capacitiv sensor w. Temperature compensation (-20 .. +93 °C)												
Ranges:	<table> <tr> <td>Sensor 1</td> <td>0 ... 13 mbar up to 75 mbar</td> </tr> <tr> <td>Sensor 2</td> <td>0 ... 62 mbar up to 374 mbar</td> </tr> <tr> <td>Sensor 3</td> <td>0 ... 311 mbar up to 1,8 bar</td> </tr> <tr> <td>Sensor 4</td> <td>0 ... 1,2 bar up to 6,9 bar</td> </tr> <tr> <td>Sensor 5</td> <td>0 ... 3,5 bar up to 20 bar</td> </tr> <tr> <td>Sensor 6</td> <td>0 ... 12 bar up to 69 bar</td> </tr> </table> <p>Actual measuring range can be adjusted within the above limits At factory setting, calibration certificate is included</p>	Sensor 1	0 ... 13 mbar up to 75 mbar	Sensor 2	0 ... 62 mbar up to 374 mbar	Sensor 3	0 ... 311 mbar up to 1,8 bar	Sensor 4	0 ... 1,2 bar up to 6,9 bar	Sensor 5	0 ... 3,5 bar up to 20 bar	Sensor 6	0 ... 12 bar up to 69 bar
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Sensor 4	0 ... 1,2 bar up to 6,9 bar												
Sensor 5	0 ... 3,5 bar up to 20 bar												
Sensor 6	0 ... 12 bar up to 69 bar												
Statical pressure:	10...140 bar - depending on the sensor												
Accuracy:	(Lin./Hyst./Rep.) ≤ 0.2 % adjusted Range optional: ≤ 0.1 %												
Output:	4-20mA / HART protocol Other - on request												
Power supply:	24VDC (10...30 V DC)												
Temperature:	Ambient: -20...80 °C Media: -20...93 °C Storage: -40...100 °C												
Display:	Intelligent LCD / backlit												
Ex-protection:	Option: Intrinsically safe type Ex iaIICT6 Flameproof safe Ex dIIBT4												



Construction



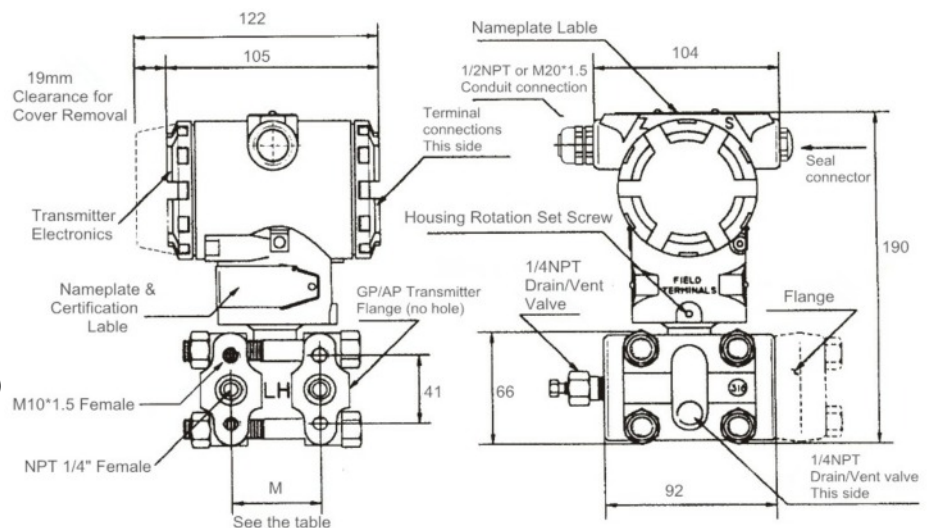
Dimensions

Standard version:

Transmitter housing: Aluminium (coated)
Stainless Steel

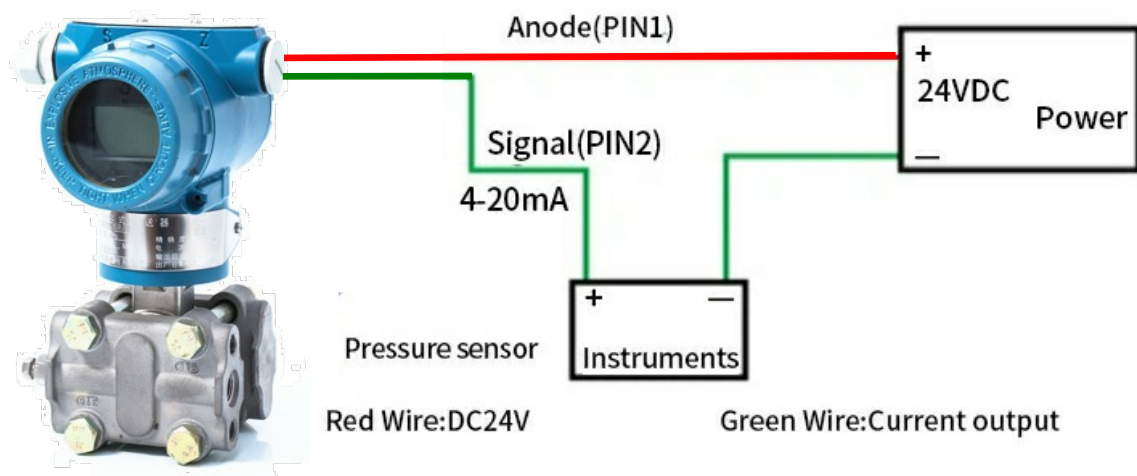
Wetted Parts: SS 316L
Hastelloy C
Monel
Tantal

Weight: app. 2.500 g (Alu hus)



Electrical connection

2-wire current output wiring diagram



Product type

Klinger Smart 451DP

Code	Pressure type
DP	Differential pressure

Code	Measurement range
3	0 ... 13 mbar til 75 mbar
4	0 ... 62 mbar til 374 mbar
5	0 ... 311 mbar til 1,8 bar
6	0 ... 1,2 bar til 6,9 bar
7	0 ... 3,5 bar til 20 bar
8	0 ... 12 bar til 69 bar

Code	Output signal
E	4 — 20mA Standard Damping is adjustable
S	4 — 20mA Intelligent with HART Protocol

Code	Material of Wetted parts
	Flange connector Exhaust/Discharge valve Isolated diaphragm
22	SUS 304 SUS 304 SUS 316L
23	SUS 304 SUS 304 Hastelloy C
24	SUS 304 SUS 304 Monel
25	SUS 304 SUS 304 Tantalum

Code	Max working pressure (bar)
A	10
B	40
C	100 for range 3: C = 68,9 bar
D	140

Code	Appendix and additional function
M1	0-100% linear meter
M3	3 1/2LCD Display
M4	3 1/2LED Display
M5	LCD intelligent display (only for output "S")
B1	Tube bending bracket
B2	Plate bending bracket
B3	Tube flat bracket
D0	Tail end discharge valve (general type)
D1	Side discharge valve over the pressure chamber
D2	Side discharge valve under the pressure chamber
Y	1/4 — 18NPT Female thread connector
N	1/2 — 14NPTFemale thread connector
J	M20×1.5 T-shaped Male thread connector (Omissible)
i	Intrinsically safe type iaII CT6
d	Flameproof safe dII BT4



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