

Pressure Transmitters with Ceramic Cell, Capacitive



Accuracy $\pm 0.2\%$ f.s.

Model

CTMc

Application

Pressure transmitters model CTMc are suitable for highly accurate measurement of atmosphere-based ("relative") pressure in ranges between 0-40 mbar to 0-60 bar and absolute pressure in ranges of 0-250 mbar to 0-60 bar of fluid or gaseous media that do not corrode 316 stainless steel (1.4404), FPM (fluorocarbon; Viton) and aluminum oxide ceramics Al_2O_3 .

The transmitters can be attached to chemical seals, e.g. for food and beverage industries (sanitary transmitters), please compare data sheets under catalogue heading 7.

Construction and Function

The medium pressure acts directly on a ceramic membrane that deflects under the influence of the pressure.

This deflection, related to the pressure, leads to a proportional change in electrical capacity that is measured directly at the electrodes of the ceramic cell (= the capacitor).

The electronics integrated into the housing transform the electrical signal into an electrical output signal of 4...20 mA.

Standard Configuration

Process connection 1/2" BSP resp. G 1/2 B acc. to EN 837-1, 316 stainless steel (1.4404)

Measuring cell Aluminum oxide ceramics Al_2O_3 (96%)

Sensor seal FPM (Viton, fluorocarbon)

Housing 316 stainless steel(1.4404)

Electrical connection Plug connection (EN 175301-803), 3 terminals and 1 ground terminal, grey, with knurled screw

Protection class IP 65 (EN 60529/IEC529)

Pressure ranges: (similar to EN 837-1):

(a) = absolute pressure, **(r)** = relative pressure,

üs = max. allowed pressure

Pressure Ranges	(r)	(a)	üs
*0-40 mbar	X		4 bar
*0-60 mbar	X		4 bar
0-100 mbar	X		4 bar
0-160 mbar	X		5 bar
0-250 mbar	X	X	6 bar
0-0.4 bar	X	X	6 bar
0-0.6 bar	X	X	10 bar
0-1 bar	X	X	10 bar
0-1.6 bar	X	X	18 bar

Pressure Ranges	(r)	(a)	üs
0-2.5 bar	X	X	25 bar
0-4 bar	X	X	25 bar
0-6 bar	X	X	40 bar
0-10 bar	X	X	40 bar
0-16 bar	X	X	40 bar
0-25 bar	X	X	60 bar
0-40 bar	X	X	60 bar
0-60 bar	X	X	100 bar

* Accuracy $\pm 0.5\%$ f.s.

Versions **(r)** with pressure ranges ≥ 40 mbar are also available as vacuum or compound ranges according to DIN EN.

Linearity < 0.2 % of full span
< 0.5 % for pressure ranges ≤ 60 mbar

Hysteresis < 0.2 % of full span

Temperature influence Zero point: approx. $\pm 0.15\%$ per 10 K
Span: approx. $\pm 0.1\%$ per 10 K

Temperature limitations Operation temp. -25 ... + 80 °C,
Membrane -40 ... + 100 °C,
< 0.5h to + 125 °C

Long term stability < 0.15 % p.a.



Safety features Short circuit proofed and reverse polarity protected

Output signal 4 ... 20 mA, 2-wire, (max. 30 mA)

Max. allowed working resistance (U_B -9 V)/0.02 A

Power supply 9...32 V DC

Fitting position Any, without reservation

Optional Special Configurations e.g.:

- Process connection 1/2" NPT, 1/4" BSP (respectively G 1/4 B), or aseptic connections, e.g. for food industries, upon request
- Process connection G 1/2 B (1/2" BSP) with inlet port orifice $\varnothing 11.8$ mm (.46")
- Other pressure ranges upon request
- Electrical connection PG 9 screwed cable gland with connection cable $\varnothing 5$ mm, IP 68; others upon request
- Electronics potted for vibration and humidity protection
- Measuring cell high-purity aluminum oxide ceramics Al_2O_3 (99.9%)
- Case material PVDF; others upon request
- Field case 304 stainl. steel (1.4301), model CTMcFG, IP 65, M16x1.5, process connection 316 stainless steel(1.4404), available also with pressure ranges 0-10 mbar and 0-25 mbar
- Other sensor seals, e.g. NBR ("buna N"), EPDM (diene rubber), fluor-silicone-caoutchouc; others upon request
- Other output signals upon request
- With attached digital display model DAA, acc. data sheet 9911

How to Order:

Please specify when ordering:

Model code: **CTMc**

Additional ordering code: **(r)** for relative pressure
(a) for absolute pressure or

Pressure range: See table left side, e.g. **0-10 bar**

Process connection: **G 1/2 B** (resp. 1/2" BSP)
(others compare above)

Output signal: **4-20 mA**

Special options: see above, others upon request

Examples for Ordering Information:

- CTMc (a), 0-10 bar, G 1/2 B, 4-20 mA
- CTMc (r), 0-16 bar, 1/2" BSP, 4-20 mA, with attached digital display DAA ... (see data sheet 9911...)



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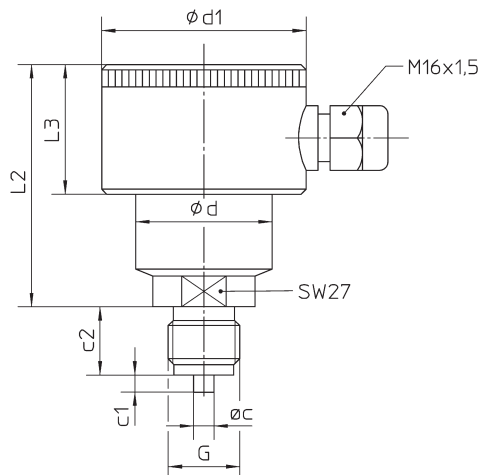
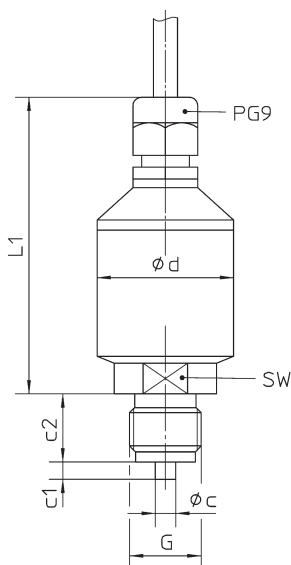
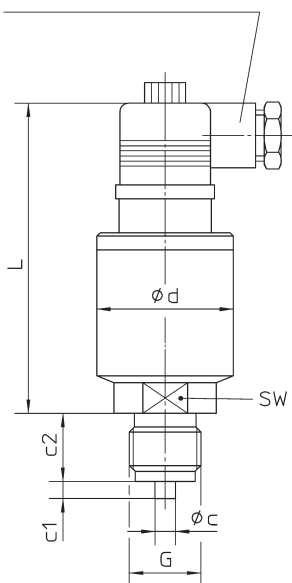
Electrical Connection, Dimensions and Weight, Working Instructions

Standard Version

Version PG 9

Special Version Field Case CTMcFG

Plug connector according to DIN EN 175 301-803



Dimensions (mm / inches) and Weight (kg / lb)

c	c1	c2	d	d1	G	L	L1	L2	L3	SW	Weight (approx.)
6	5	20	40	60	G ½ B	91	87	71	38	27	0,280
.24	.20	.79	1.57	2.36	½" BSP	3.58	3.43	2.80	1.50	1.06	0.620

Electrical Connection:

2-wire

