

SERIES T76



T76 series includes SMART electronic transmitters featuring extremely reduced size with 4÷20mA output and HART® digital communication protocol. Sensors are calibrated individually together with their own seal. Configurations and adjustments can be made locally by means of push buttons and display or remotely using HART® protocol compatible communicators.

APPLICATION FIELDS

T76 series transmitters are used in industrial and marine applications to detect pressure and level of liquids, gas and vapours. Our technical office is at your disposal for special applications.

TECHNICAL FEATURES

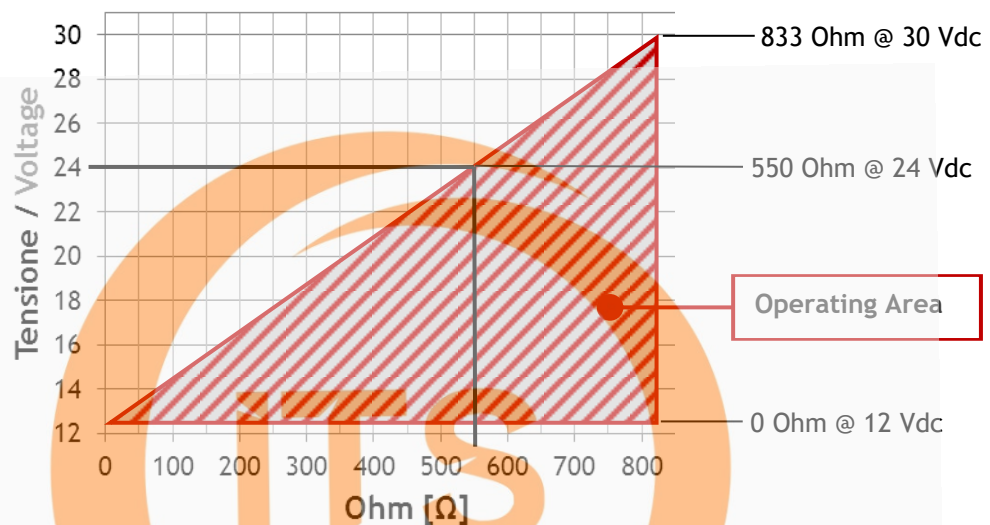
Electrical parameters

Supply: 12.5 ÷ 30 Vdc

Output signal: 4 ÷ 20 mA (max. 21 mA) + Hart® Rev6

Alarm values: 3.85 mA \ 21 mA

Maximum load: As per chart
220 Ω < R_L < 600 Ω (Hart®)



Measurement performance

Total accuracy (*): < 0.20 % FS (-25 ÷ 0 °C)
< 0.07 % FS (0 ÷ 80 °C)

Measured value update frequency: 4 ÷ 20 mA + Hart®: ≈ 1 s
Hart®: ≈ 500 ms (On request)

Polling time: 4 ÷ 20 mA + Hart®: ≈ 800 ms
Hart®: ≈ 500 ms (On request)

Response time: < 256 ms (Standard Hart®)

Notes

(*) Including hysteresis, non-linearity, non-conformity and non-repeatability (IEC 60770) Accuracy and drifts are given for instruments with integral sensor and diaphragm; they may vary according to sensor type and diameter, thickness and material of the diaphragm.

ENVIRONMENTAL FEATURES

Environmental Conditions

Temperature class:	-40 ÷ +85 °C T6: -40 °C ≤ Tamb ≤ 60 °C T5: -40 °C ≤ Tamb ≤ 75 °C
Process temperature:	-40 ÷ +85 °C Finned body: -40 ÷ 130 °C Capillary: -40 ÷ 280 °C
LCD working temperature:	-10 ÷ +65 °C
Storage temperature:	-40 ÷ +90 °C
Ingress protection degree:	IP65
Vibration Test:	in accordance with IEC 60068-2-6
Relative Humidity:	< 98% RH not condensing

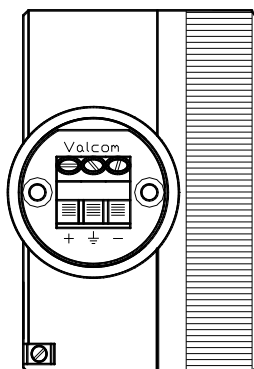
APPROVALS

Type approvals

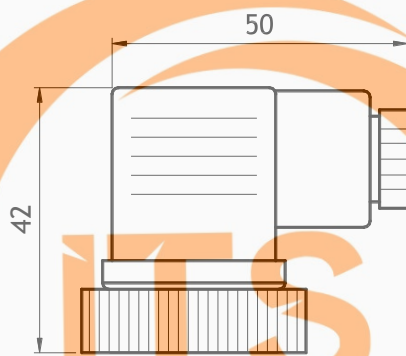
Directive 2014/34/EU (ATEX)	 II 1G Ex ia IIC T6, T5 Ga
Directive 2014/30/EU (EMC)	Adequate level of electromagnetic compatibility
Functional Safety	SIL2 SFF = 78.13 % PFH [Hours ⁻¹] = 9.2352 · 10 ⁻⁸ DC = λ _{DD} / (λ _{DD} + λ _{DU}) = 83.7 %
Marine type approval	In compliance with applicable requirements of RINA type approval system

ELECTRICAL WIRING

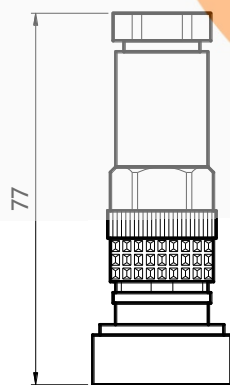
Transmitters are protected against reverse polarity.



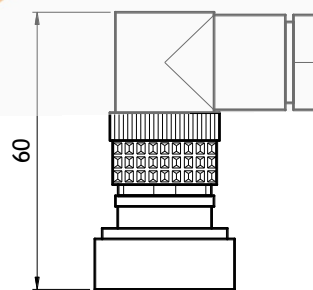
Three poles terminal board



Code 04
DIN 175301 PG9/PG13 3+1 poles IP65



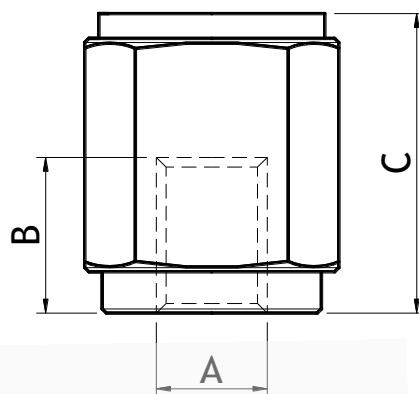
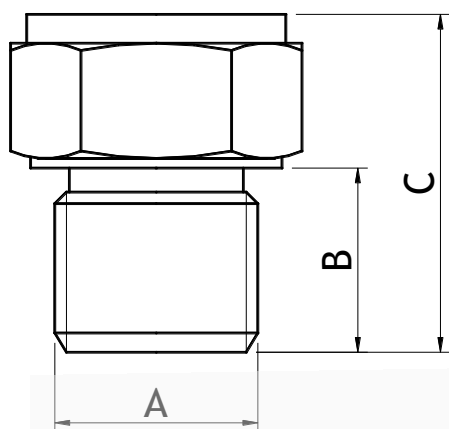
Code 01
Plug connector M12 IP67 straight



Code 02
Plug connector M12 IP67 90° angle

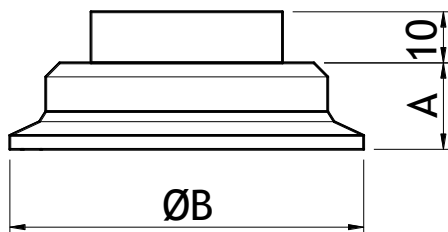
PROCESS CONNECTIONS

Standard screws



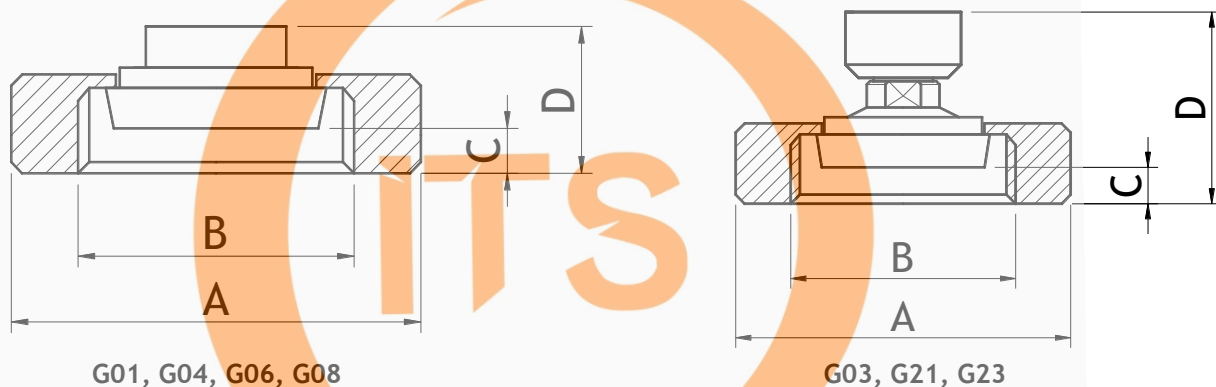
Code	A	B [mm]	C [mm]	Ex. Ch.
S06	1/4" G-M	14	38	27
S07	1/4" G-F	14	35	27
S08	1/4" NPT-M	14	39	27
S09	1/4" NPT-F	14	35	27
S22	3/8" G-M	16	41	27
S26	1/2" G-M	18	45	27
S28	1/2" G-F	20	41	27
S30	1/2" NPT-M	20	45	27
S31	1/2" NPT-F	20	43	27
S39	1/2" G-M Flush diaphragm Ø18.5	16	32	27
S51	3/4" G-M	20	48	32
S52	3/4" G-M Flush diaphragm	20	48	32
S56	1" G-M Flush diaphragm	20	33.5	41
S58	1" G-M	20	32	41
S81	2" G-M	25	44	41

Triclamp



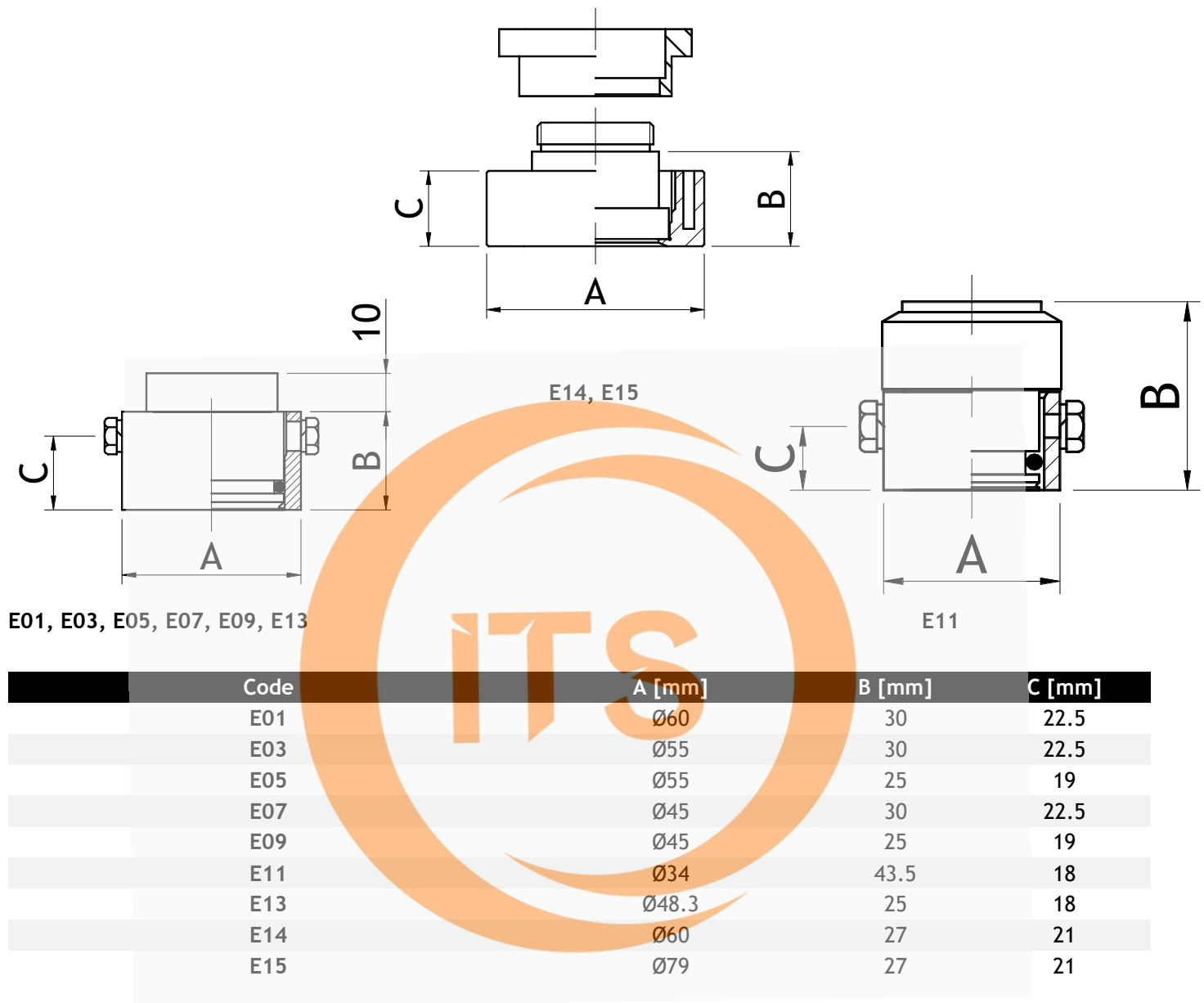
Code	DN	A [mm]	B [mm]
T00	1"	15.5	50.4
T02	1" 1/2	15.5	50.4
T03	2"	15.5	64
T04	2" 1/2	15.5	77.4
T05	3"	15.5	91
T06	4"	15.5	119

Welding Nuts



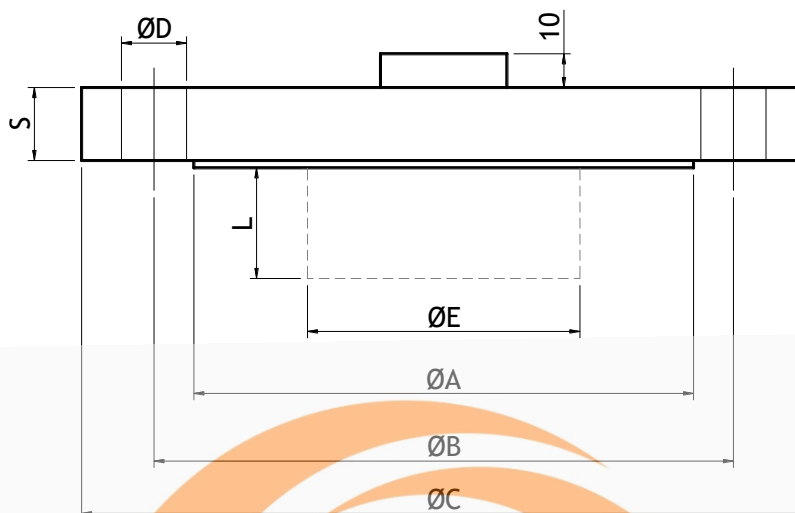
Code	A [mm]	B	C [mm]	D [mm]
G01	Ø63	DIN DN25	8	31
G03	Ø70	DIN DN32	8	53.5
G04	Ø78	DIN DN40	8	37
G06	Ø92	DIN DN50	8	34
G08	Ø112	DIN DN65	9	36
G21	Ø74	SMS DN38	17	62.5
G23	Ø84	SMS DN51	26	62.5

Welding Rings



PROCESS CONNECTIONS

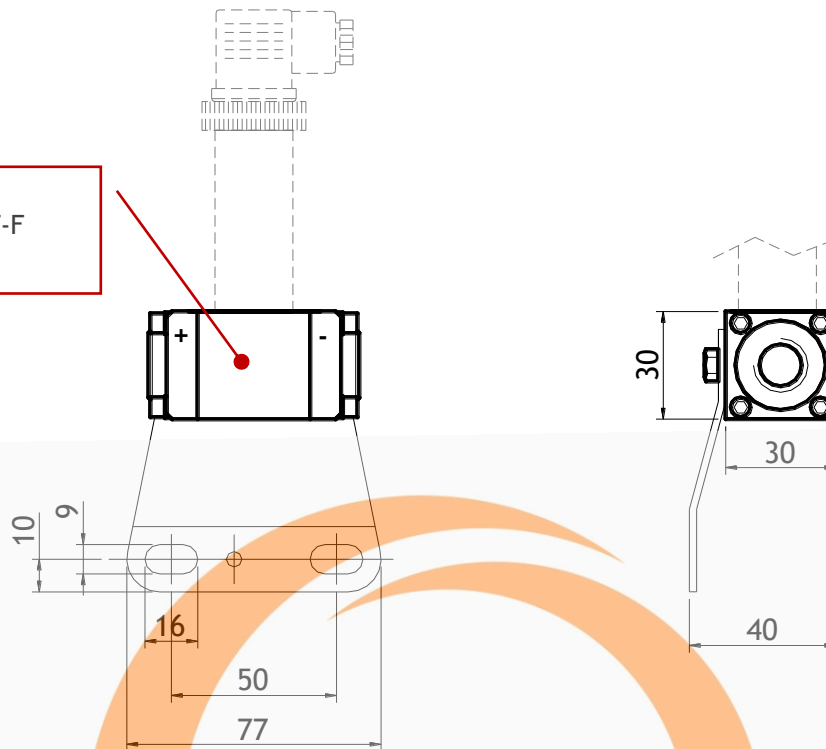
Standard flanges



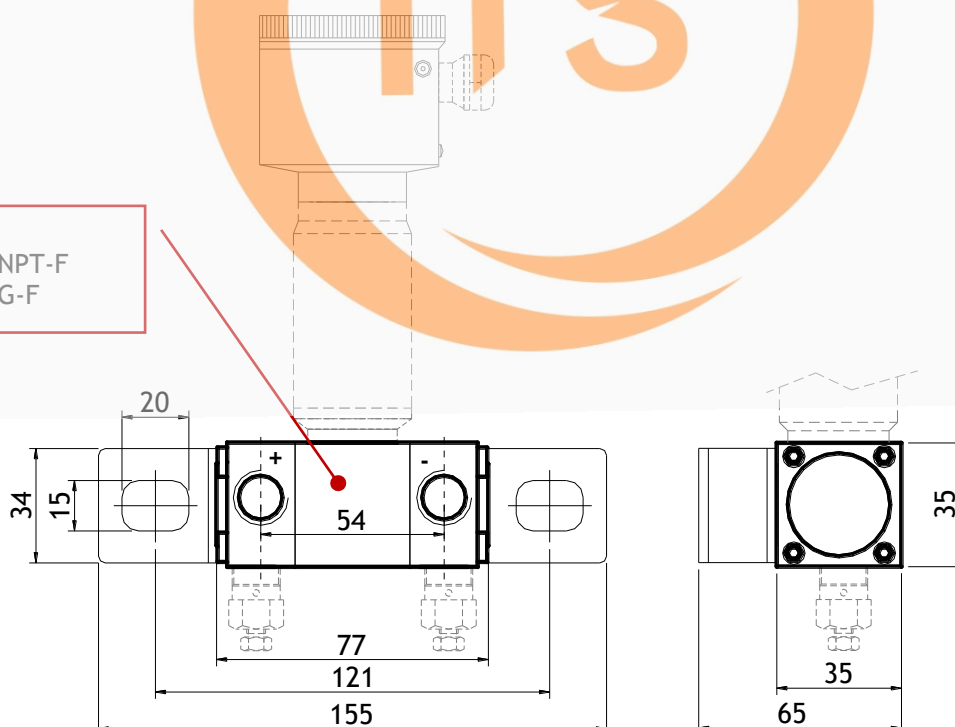
Code	DN	PN	ØA [mm]	ØB [mm]	ØC [mm]	ØD [mm]	S [mm]
F21	15	10/16	45	65	95	14	14
F22	15	25/40	45	65	95	14	16
F23	20	10/40	58	75	105	14	18
F24	25	10/16	68	85	115	14	16
F26	25	25/40	68	85	115	14	18
F29	40	10/16	88	110	150	18	16
F32	40	25/40	88	110	150	18	18
F33	50	10/16	102	125	165	18	18
F35	50	25/40	102	125	165	18	20
F36	50	10/25	102	125	165	18	20
F41	65	10/40	122	145	185	18	22
F42	80	6	128	150	190	18	16
F43	80	10	138	160	200	18	20
F44	80	10/16	138	160	200	18	20
F49	80	25/40	138	160	200	18	24
F52	100	16	158	180	220	18	20
F55	100	40	162	190	235	22	24
F57	100	64	170	200	250	25	30
F71	1"	ANSI 150	51	79.5	108	16	14.5
F73	1" 1/2	ANSI 150	73	98.5	127	16	17.5
F75	2"	ANSI 150	92	120.5	152	19	19
F79	3"	ANSI 150	127	152.5	191	19	24
F83	3"	ANSI 300	127	168.3	210	22	28.6
F85	4"	ANSI 150	157.2	190.5	228.6	19	23.8
F87	4"	ANSI 300	157.2	200	254	22	31.7
F89	6"	ANSI 150	215.9	241.3	279.4	22	25.4

DIFFERENTIAL CELLS

Code
S18 - 1/4" NPT-F
S19 - 1/4" G-F



Code
S16 - 1/4" NPT-F
S17 - 1/4" G-F



ORDERING CODE

T76 Smart transmitter

01 Type of measure

A	Absolute Pressure
B	Barometric Pressure
C	Relative Pressure
D	Differential Pressure

02 Sensor type

CI	Ceramic Integral
CR	Ceramic Remote
PI	Piezoresistive Integral
PR	Piezoresistive Remote

03 Measuring range

P01	0,35 bar	Piezo	Overpressure: 0.5 bar
P02	0.7 bar	Piezo	Overpressure: 1.4 bar
P03	2 bar	Piezo	Overpressure: 4 bar
P04	3.5 bar	Piezo	Overpressure: 7 bar
P05	10 bar	Piezo	Overpressure: 20 bar
P06	20 bar	Piezo	Overpressure: 40 bar
P21	0.06 bar	Piezo	Overpressure: 4 bar
P22	0.35 bar	Piezo	Overpressure: 10 bar
P23	1 bar	Piezo	Overpressure: 20 bar
P24	2.5 bar	Piezo	Overpressure: 40 bar
P25	5 bar	Piezo	Overpressure: 50 bar
P26	10 bar	Piezo	Overpressure: 60 bar
P27	30 bar	Piezo	Overpressure: 150 bar
P28	100 bar	Piezo	Overpressure: 200 bar
P29	200 bar	Piezo	Overpressure: 600 bar
P30	400 bar	Piezo	Overpressure: 800 bar
P51	0.01 bar	Piezo	No overpressure
P52	0.055 bar	Piezo	No overpressure
P53	0.206 bar	Piezo	No overpressure
N01	0.35 bar	Piezo	Overpressure: 0.7 bar
N02	1 bar	Piezo	Overpressure: 2 bar
N03	3.5 bar	Piezo	Overpressure: 7 bar
N04	10 bar	Piezo	Overpressure: 20 bar
N05	35 bar	Piezo	Overpressure: 70 bar
M01	0.35 bar	Piezo	Overpressure: 0.7 bar
M02	1 bar	Piezo	Overpressure: 2 bar
M03	2 bar	Piezo	Overpressure: 4 bar
M04	3.5 bar	Piezo	Overpressure: 7 bar
M05	10 bar	Piezo	Overpressure: 20 bar
M06	35 bar	Piezo	Overpressure: 70 bar
M07	100 bar	Piezo	Overpressure: 150 bar
M08	350 bar	Piezo	Overpressure: 700 bar
M09	1000 bar	Piezo	Overpressure: 1500 bar
C01	1 bar	Ceramic	Overpressure: 2 bar
C02	2 bar	Ceramic	Overpressure: 4 bar
C03	5 bar	Ceramic	Overpressure: 10 bar
C04	10 bar	Ceramic	Overpressure: 15 bar
C05	20 bar	Ceramic	Overpressure: 35 bar
C06	60 bar	Ceramic	Overpressure: 100 bar
C07	100 bar	Ceramic	Overpressure: 200 bar
C08	400 bar	Ceramic	Overpressure: 650 bar
H01	0.35 bar	Piezo	Overpressure: 0.7 bar
H02	1 bar	Piezo	Overpressure: 2 bar
H03	3.5	Piezo	Overpressure: 7 bar
H04	10	Piezo	Overpressure: 20 bar
H05	20	Piezo	Overpressure: 40 bar
ZZZ	Special		

NOTES

- 1) Negative or compound ranges are possible.
- 2) In case of vacuum applications must be necessary to use P01 ÷ P06 sensors.

ORDERING CODE

04 Filling oil	
	1 Siliconic Oil for high temperature -40/+308°C
	6 Fluoride and Inert Oil -40/+200°C
	8 Standard siliconic Oil -40/+200°C
	9 Oil for food use -10/+220°C
	N No filling
05 Process temperature limits	
	B -40 ÷ 85°C Standard
	D -40 ÷ 120°C Finned body for piezoresistive sensor
	F -40 ÷ 130°C Finned body for ceramic sensor
	H -40 ÷ 280°C Capillary
	I -20 ÷ 80°C
06 Housing material and type	
	E01 Bottom connection
	E02 Back connection
	Z99 Special
07 Process connection	
	... See section "Process connections"
	Z99 Special
08 Extension length	
	L04 Diaphragm extension < 200 mm
	L10 Diaphragm extension < 500 mm
	Z99 Special
09 Sensor material (diaphragm)	
	A AISI 316
	E Ceramic
	K Hastelloy C
	Q Titanium
	Z Special
10 Process gasket material	
	C EPDM
	D FKM Viton
	G PTFE
	T All welded
11 Wetted parts material	
	A AISI 316
	B AISI 316 L
	I Aluminium anodized
	L Titanium
	N Hastelloy C
	R Brass
	V PTFE coating



ORDERING CODE

12 Electrical connection	
☐	01 Plug connector M12 IP67 straight
☐	02 Plug connector M12 IP67 90° angle
☐	04 Connector DIN 43650 PG9 3+1 poles IP65
☐	10 Fixed terminals 3 poles
☐	19 AISI 316 Cable gland PG9 IP67 for cable $\varnothing$ 5 ÷ 7 mm
☐	20 AISI 316 Cable gland PG13 IP67 for cable $\varnothing$ 8 ÷ 12 mm
☐	36 AISI 316 nipple 1/2" G-F
☐	37 AISI 316 nipple 1/ 2" NPT-F
☐	39 AISI 316 nipple M20x1.5-F
☐	99 Special
13 Electrical output	
☐	A Current output 4÷20 mA 2 wires + HART
14 Ex type approval	
☐	A2  II 1G Ex ia IIC T6, T5 Ga
☐	N0 No Ex certification
15 Options and accessories	
☐	02 Marine type approval
☐	21 SIL Certificate
☐	10 5 points calibration report
☐	01 Test and material report according to EN 10204
☐	12 Degreasing
☐	R4 Finned pipe HTx4 (T<150° C)
☐	R7 Cooling syphon Sch Std in AISI 316 Tmax=235° C
☐	RC Nickel plated brass nipple for 4x6 mm plastic pipe
☐	RD Nickel plated brass nipple for 8x10 mm metallic pipe
☐	NN No options



ACCESSORIES



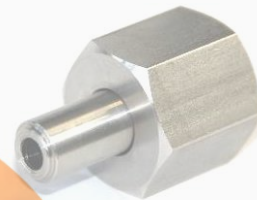
Cod. R7/R8
Cooling Syphon



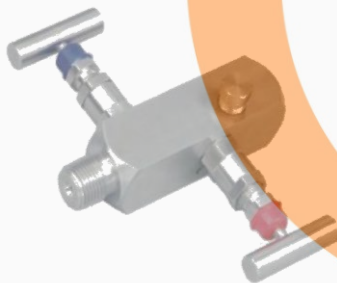
Cod. S3
Pulsation dampener



Cod. OV
Overpressure protection



Cod. N0/N1/N2
Welding nipple



Cod. M2
2 ways and 1 or 2 valves manifold



Cod. Z9
Clamp bracket for wall mounting



Serie / Series T7V
Field digital indicator

and MORE

- Wall mounting bracket
- SS 316 capillary L=...m
- Armoured capillary