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Pressure transmitter for short ranges

Brief description

Pressure transmitters are used for evaluating pressures in liquids and gases. The pressure transmitter incorporates a capacitive ceramic sensor. The pressure is converted into an electrical signal.

Technical data

Reference conditions

To DIN 16086 and IEC 770/5.3

Ranges

See ordering data

Overload limit

Code	Range	Overload
412	0 to 50 mbar	-0.3/4 bar
414	0 to 100 mbar	-0.3/4 bar
415	0 to 160 mbar	5 bar
451	0 to 0.25 bar	6 bar
452	0 to 0.4 bar	6 bar
453	0 to 0.6 bar	10 bar
454	0 to 1.0 bar	10 bar

Bursting pressure

150 bar

Wetted components

Normally aluminium oxide Al₂O₃ (99.9%)
 stainless steel Mat. Ref. 1.4571
 FPM
 others to special order

Output

0.5 to 4.5 V min. burden 10 kΩ
 4 to 20 mA max. burden (U_B-12 V) + 0.02A

Burden error

< 0.15 %

Zero error

≤ 0.3 % of full scale

Output span tolerance

≤ 1.0 % of full scale

Ambient temperature error

Within the range -20 to +80 °C

(compensated temperature range)

zero: less than 0.1 %/10 °C typical

less than 0.3 %/10 °C max.

span: less than 0.1 %/10 °C typical

less than 0.2 %/10 °C max.

Deviation from characteristic

≤ 0.2 % of full scale

(after full-scale calibration)

Response time

≤ 10 msec

Stability per year

≤ 0.2 % of full scale

Supply

DC 12 to 30 V (with output 4 to 20 mA)

DC 5 V ±0.5 V (with output 0.5 to 4.5 V)

Residual ripple: The voltage peaks must not go above or below the values specified for the supply.

Max. current consumption:

for DC 5 V: 2 mA max.

for DC 24 V: 25 mA max.

Supply voltage error

≤ 0.01 %/V

(nominal supply voltage DC 24 V)

ratio metric for voltage supply

DC 5 V (±0.5 V)

Permitted ambient temperature

-20 to +80 °C

Storage temperature

-20 to +125 °C

Permitted medium temperature

-20 to +80 °C

Electromagnetic compatibility

Electrostatic discharge:

IEC 801-2 severity 4

(test voltage 15 kV)

Radiated electromagnetic field:

IEC 801-3 severity 3

Fast transients (burst):

IEC 801-4 severity 4

Immunity to voltage pulses (surge):

VDE 0843 Part 5 severity 2

Immunity to conductor-born interference induced by high-frequency fields:

VDE 0843 Part 6 severity 3 (U₀ = 3 V)

The pressure transmitter Type 404327 meets all requirements of EN 50082-2 (CE mark) for use in industrial areas.

Mechanical shock

100 g/1 msec



Mechanical vibration

20 g max. at 15 to 2000 Hz

Protection

With cable socket IP65 to EN 60529 (connecting cable diameter 5 mm min., 7 mm max.)

with attached cable IP67 to EN 60529

Housing

Stainless steel, Mat. Ref. 1.4571
 polycarbonate GF

Pressure connection

See ordering data, other connections to special order

Electrical connection

See ordering data

The connection variants with cable are fitted with 2 m PVC cable (other lengths to special order)

cable socket to DIN EN 175301-803, Form A, max. conductor cross-section 1.5 mm²;

or attached PVC cable

or terminal head

Nominal position

flat horizontal (pressure connection to the side)

Weight

0.35 to 0.55 kg (depending on version)

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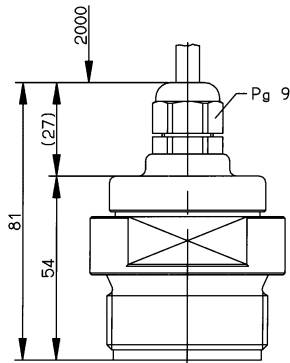
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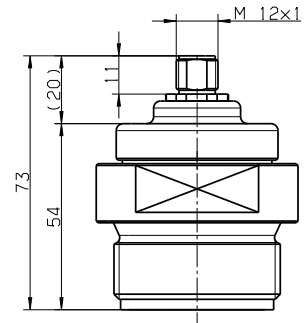
Dimensions

Elektrical connection

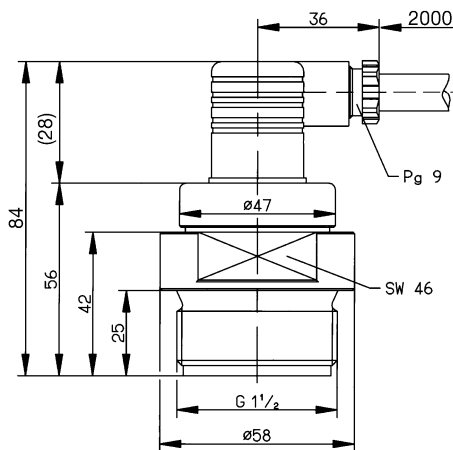
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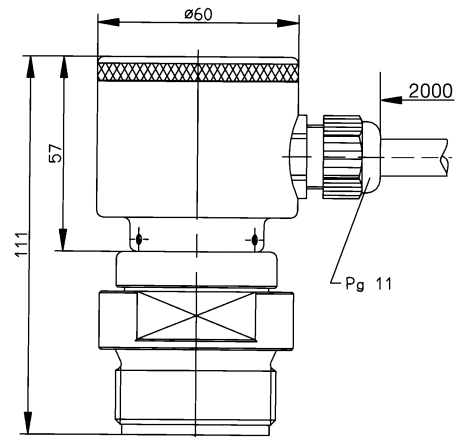
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Type 404327/.....-570-61



Type 404327/.....-570-75



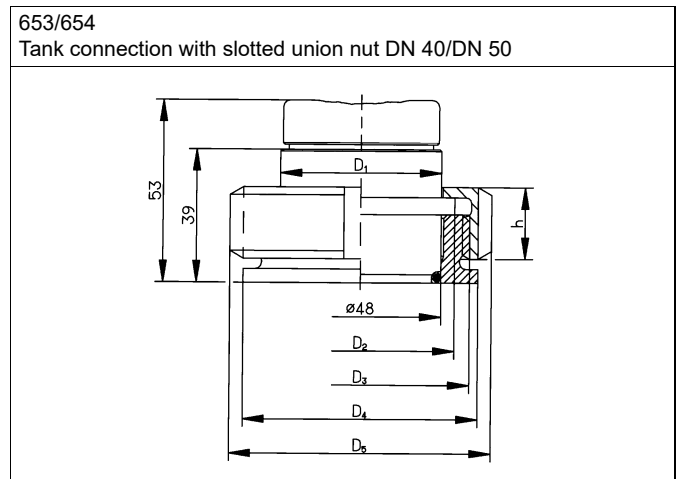
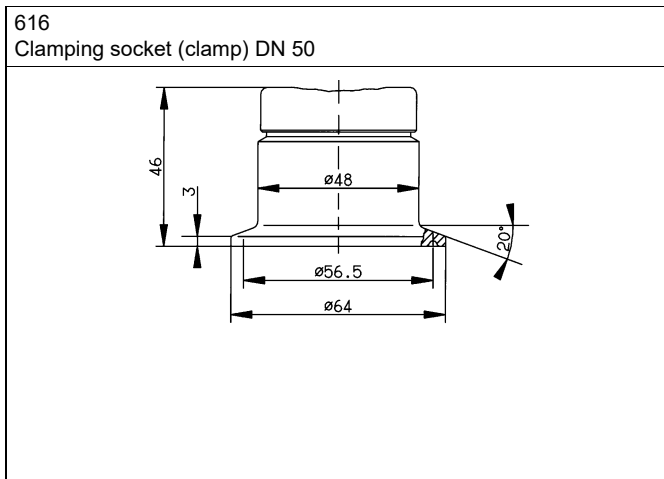
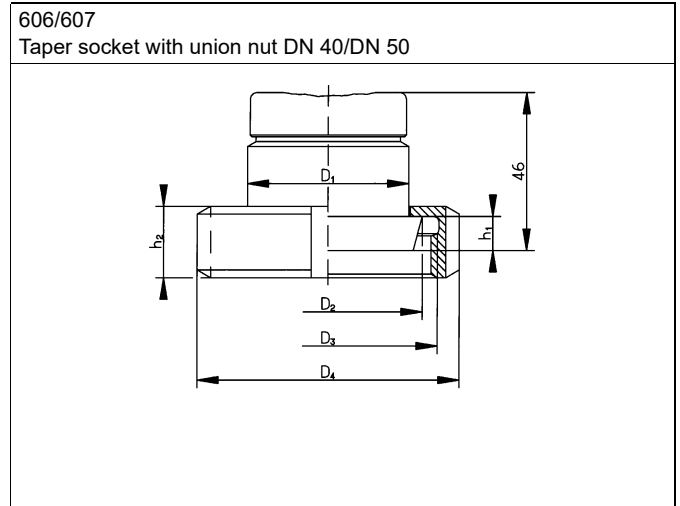
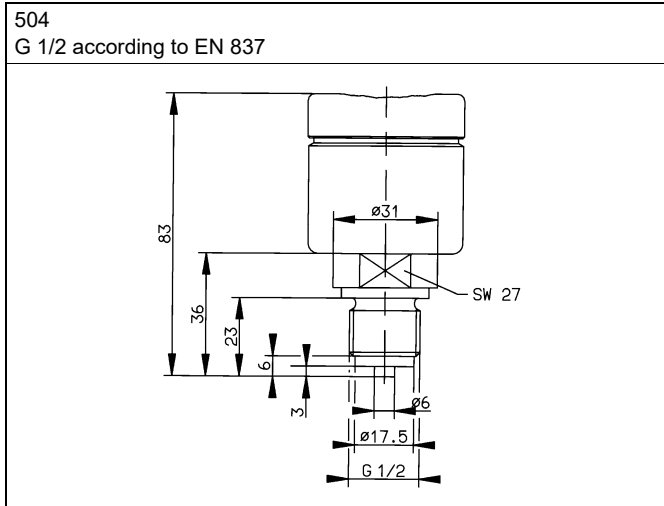
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Process connection



Pos.	DN	D ₁	D ₂	D ₃	D ₄	h ₁	h ₂
606	40	Ø 48	Ø 48	RD 65 × 1/6	Ø 78	10	21
607	50	Ø 61	Ø 68.5	RD 78 × 1/6	Ø 92	11	22

Pos.	DN	D ₁	D ₂	D ₃	D ₄	D ₅	h
653	40	Ø 48	Ø 56	RD 65 × 1/6	Ø 70	78	21
654	50	Ø 61	Ø 68.5	RD 78 × 1/6	Ø 84	92	22

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
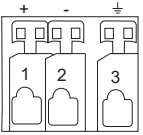






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Connection diagram

The connection diagram in the data sheet provides preliminary information about the connection options. For the electrical connection, only use the installation instructions or the operating manual. The knowledge and the correct technical compliance with the safety information and warnings contained in these documents are mandatory for mounting, electrical connection, and startup as well as for safety during operation.

Connection	Terminal assignment				
					
	12 Attached cable	61 Cable socket	75 Terminal head	36 Round plug M12 × 1	
Voltage supply DC 12 to 30 V DC 5 V		White Grey	1+ 2-	1+ 2-	1+ 3-
Output 0.5 to 4.5 V		Yellow Grey	3+ 2-		4+ 3-
Output 4 to 20 mA, two-wire		White Grey Proportional current 4 to 20 mA in voltage supply	1+ 2-	1+ 2-	1+ 3-
Protection conductor				3 	2
Screen		Black			
Warning: Earth the device (pressure connection and/or screen)!					

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Order details

	(1) Basic type
404327	Pressure transmitter with capacitive ceramic sensor
	(2) Input
412	0 to 50 mbar relative pressure
414	0 to 100 mbar relative pressure
415	0 to 160 mbar relative pressure
451	0 to 0.25 bar relative pressure
452	0 to 0.4 bar relative pressure
453	0 to 0.6 bar relative pressure
454	0 to 1 bar relative pressure
999	Special input range relative pressure
	(3) Output
405	4 to 20 mA, two-wire
412	0.5 to 4.5 V, three-wire
	(4) Process connection
504	G 1/2 according to DIN EN 837
570	G 1 1/2 front-flush DIN EN ISO 228-1
606	Taper socket with union nut DN 40 DIN 11851 (dairy pipe fitting)
607	Taper socket with union nut DN 50 DIN 11851 (dairy pipe fitting)
616	Clamping socket (clamp) DN 50 DIN 32676 (2" ISO 2852)
653	Tank connection with slotted union nut DN 40
654	Tank connection with slotted union nut DN 50
	(5) Material process connection
26	CrNi (stainless steel), mat.-ref. 1.4571
	(6) Electrical connection
12	Attached cable
36	Round plug M12 × 1
61	Cable socket DIN EN 175301-803, form A ^a
75	Terminal head ^b

^a The cable socket is supplied with 2 m cable as standard.

^b The terminal head is supplied with 2 m cable as standard and is only available with 4 to 20 mA (output 405).

Order code	(1)	/	(2)	-	(3)	-	(4)	-	(5)	-	(6)
Order example	404327	/	...	-	...	-	...	-	26	-	..

Accessories

Description	Part No.
Socket M12, 4-pole, with 5 m control cable	00512341