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Pressure transmitter

JUMO MIDAS

Type 401001

Brief description

Pressure transmitters are used for measuring the relative (gauge) pressure in liquids and gases. The pressure transmitter incorporates a thick-film strain gauge as a measuring device. The pressure sensor has an aluminium-oxide (Al_2O_3) ceramic base material. The pressure is converted into an electrical signal.

Technical data

Reference conditions

to DIN 16 086 and IEC 770/5.3

Ranges

see order details

Overload limits

for ranges

0 — 40 bar 3 x full scale

ranges

0 — 60 to 0 — 100 bar 2 x full scale

Bursting pressure

ranges 0 — 40 bar $\leq 5 \times$ full scale

ranges

0 — 60 to 0 — 100 bar 3 x full scale

Parts in contact with medium

standard: st. steel, Mat. Ref. 1.4305,
(Al_2O_3) 96%

seal: Viton®(FPM) or Isolast®(FFPM)

Output

4 — 20 mA

2-wire burden $\leq (U_B - 10 \text{ V}) / 0.02 \text{ A}$

0.5 — 4.5 V burden $\geq 20 \text{ k}\Omega$

1 — (5)6 V burden $\geq 10 \text{ k}\Omega$

0 — 10 V burden $\geq 10 \text{ k}\Omega$

Burden error

< 0.5% max.

Zero offset

$\leq 0.3\%$ of full scale

Thermal hysteresis

$\leq \pm 0.8\%$ of full scale

Ambient temperature error

within range -20 to +85°C

(compensated temperature range)

zero: $\leq 0.02\%/^\circ\text{C}$ typical,
 $\leq 0.04\%/^\circ\text{C}$ max.

span: $\leq 0.02\%/^\circ\text{C}$ typical,
 $\leq 0.04\%/^\circ\text{C}$ max.

Deviation from characteristic

$\leq 0.5\%$ of full scale

(limit point adjustment)

Hysteresis

$\leq 0.2\%$ of full scale

Repeatability

$\leq 0.1\%$ of full scale

Response time

$\leq 3 \text{ msec}$ max.

Stability per year

$\leq 1\%$ of full scale

Supply

10 — 30 V DC (for output 4 — 20 mA
and 1 — (5)6 V)

5 V DC (for output 0.5 — 4.5 V)

11.5 — 30 V DC (for output 0 — 10 V)

Ripple: the voltage spikes must not go
above or below the values specified for the
supply

max. current drawn: approx. 25 mA

Supply voltage error

$\leq 0.02\%$ per V

(nominal supply voltage 24 V DC)

ratiometric with supply 5 V DC ($\pm 0.5 \text{ V}$)

Permissible ambient temperature

for version with plug:

-20 to +125°C

for version with attached cable:

-20 to +100°C

Storage temperature

-40 to +125°C

for version with attached cable

-20 to +100°C

Permissible temperature of medium

-30 to +125°C

Electromagnetic compatibility (EMC)

to EN 61 326

Mechanical shock

(to IEC 68-2-27)

100 g/1 msec

Mechanical vibration

(to IEC 68-2-6)

20 g max. at 15 — 2000 Hz



Type 401001/000-xxx-xxx-xx-xxx-61



Type 401001/000-xxx-xxx-xx-xxx-36

Protection

with terminal box

IP65 to EN 60 529

(diameter of connecting cable

5 mm min., 7 mm max.)

with connecting cable or

circular connector M 12 x 1

IP67 to EN 60 529

Housing

stainless steel, Mat. Ref. 1.4305

EPDM

Pressure connection

see order details;

other connections on request

Electrical connection

see order details

terminal box to DIN 43 650, style A,
conductor cross-section up to 1.5 mm²

or

attached 4-core PVC cable, length 0.5 m,
other lengths on request

or

4-pole circular connector, M12x1

Nominal position

any

Weight

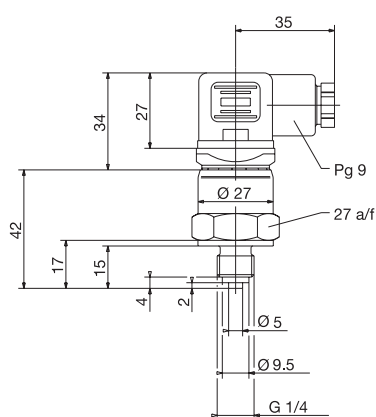
100 g

Electrical connection

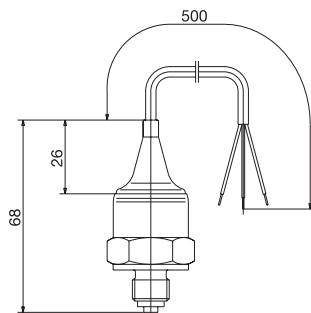
Connection		Terminal box	Terminals Cable	M12x1
Supply (with output) 10 – 30 V DC (1 – (5)6 V) 11.5 – 30 V DC (0 – 10 V) 5 V DC (0.5 – 4.5 V)		1 L+ 2 L-	white brown	1+ 2-
Output 1 – (5)6 V 0 – 10 V 0.5 – 4.5 V		2 - 3 +	brown yellow	2- 3+
Supply (with output) 10 – 30 V DC (4 – 20 mA, 2-wire)		1 L+ 2 L-	white brown	1+ 3-
Output 4 – 20 mA, 2-wire		1 + 2 - proportional current 4 – 20 mA in supply	white brown	1+ 3-

Terminal assignment**Dimensions**

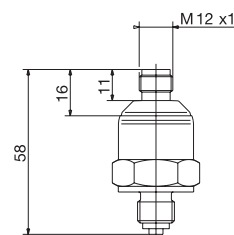
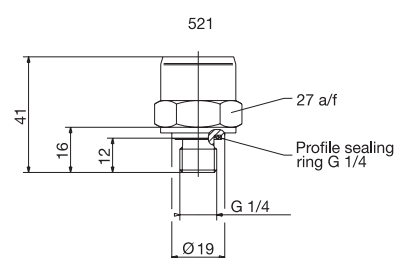
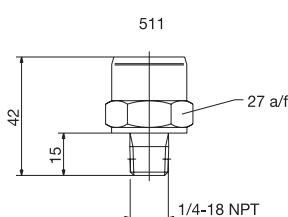
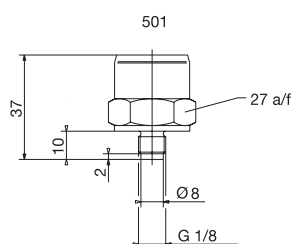
401001/000-XXX-XXX-502-20-601-61



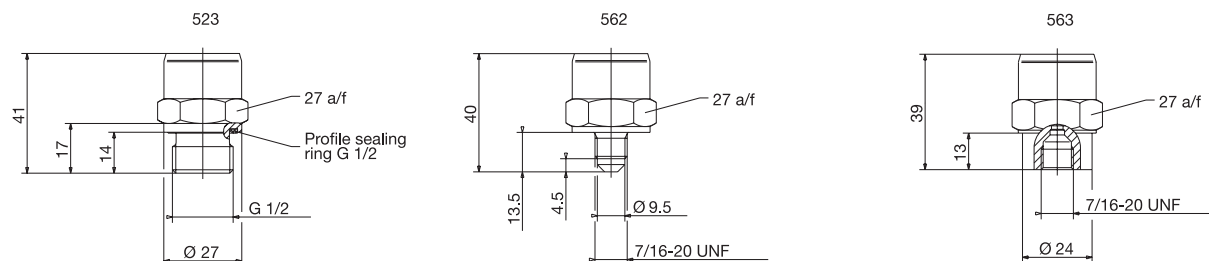
401001/000-XXX-XXX-502-20-601-11



401001/000-XXX-XXX-502-20-601-36

**Process connections**

Process connections



Order details

Basic type

401001 Pressure transmitter JUMO MIDAS

Basic type extensions

/000 none

/999 special version

Input

455 0 1.6 bar gauge pressure

456 0 2.5 bar gauge pressure

457 0 4 bar gauge pressure

458 0 6 bar gauge pressure

459 0 10 bar gauge pressure

460 0 16 bar gauge pressure

461 0 25 bar gauge pressure

462 0 40 bar gauge pressure

463 0 60 bar gauge pressure

464 0 100 bar gauge pressure

479 -1 0.6 bar gauge pressure

480 -1 1.5 bar gauge pressure

481 -1 3 bar gauge pressure

482 -1 5 bar gauge pressure

483 -1 9 bar gauge pressure

484 -1 15 bar gauge pressure

485 -1 24 bar gauge pressure

999 special range

Output

405 4 — 20 mA 2-wire

412 0.5 — 4.5 V 3-wire

415 0 — 10 V 3-wire

418 1 — 5 V 3-wire

420 1 — 6 V 3-wire

Process connection (not front-flush)

501 G 1/8 to EN 837

502 G 1/4 to EN 837

511 1/4-18 NPT to EN 837

521 G 1/4 to DIN 3852 T11

523 G 1/2 to DIN 3852 T11

562 7/16 UNF

563 7/16 internal UNF, with valve seating

Material of process connection

20 stainless steel

46 brass (on request)

							Material for seal
						601	Viton® (FPM)
						602	Neoprene® (FPM)
						604	Isolast® (FPM, material properties are similar to PTFE)
						999	special material
							Electrical connection
						11	attached cable 0.5 m
						36	circular connector M 12 x 1
						61	terminal box

401001 / - - - - - - **Order code**

Accessories

Designation	Sales No.
4-pole straight socket M12x1 with 2 m PVC cable	40/00404565
4-pole angled socket M12x1, with 2m PVC cable	40/00409334