



# 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<sub>2</sub>O<sub>3</sub>) 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 ≤ 5 x 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<sub>2</sub>O<sub>3</sub>) 96%

seal: FPM or FFPM  
or CR

##### Output

4 – 20 mA

2-wire burden ≤ (U<sub>B</sub>-10 V) / 0.02A

0.5 – 4.5 V burden ≥ 20 kΩ

1 – (5)6 V burden ≥ 10 kΩ

0 – 10 V burden ≥ 10 kΩ

##### Burden error

< 0.5% max.

##### Zero offset

≤ 0.3% of full scale

##### Thermal hysteresis

≤ ± 0.8% of full scale

##### Ambient temperature error

within range -20 to +85°C

(compensated temperature range)

zero: ≤ 0.02%/°C typical,  
≤ 0.04%/°C max.

span: ≤ 0.02%/°C typical,  
≤ 0.04%/°C max.

##### Deviation from characteristic

≤ 0.5% of full scale

(limit point adjustment)

##### Hysteresis

≤ 0.2% of full scale

##### Repeatability

≤ 0.1% of full scale

##### Response time

≤ 3 msec max.

##### Stability per year

≤ 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

≤ 0.02% per V

(nominal supply voltage 24 V DC)

ratiometric with supply 5 V DC (±0.5 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 mm<sup>2</sup>  
 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			Terminals		
			Terminal box	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 -	white brown	1+ 3-
			proportional current 4 – 20 mA in supply		

**Terminal assignment**

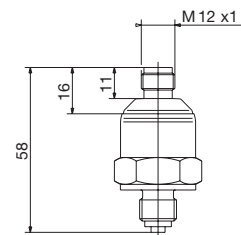
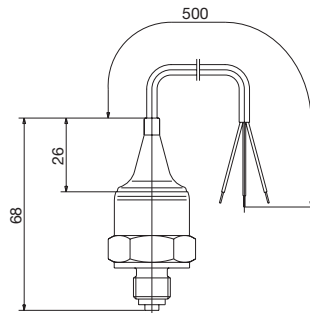
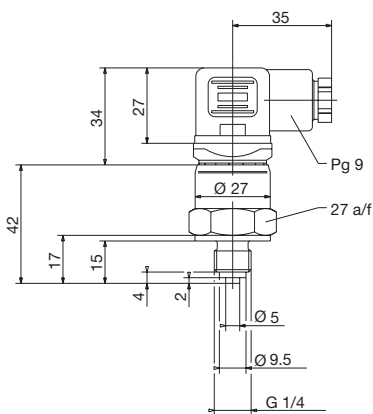


**Dimensions**

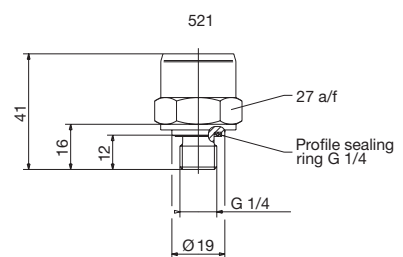
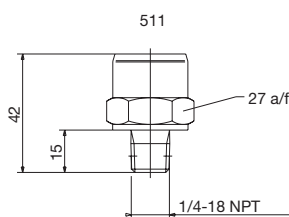
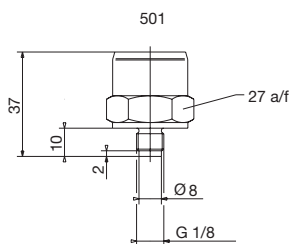
401001/000-XXX-XXX-502-20-601-61

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

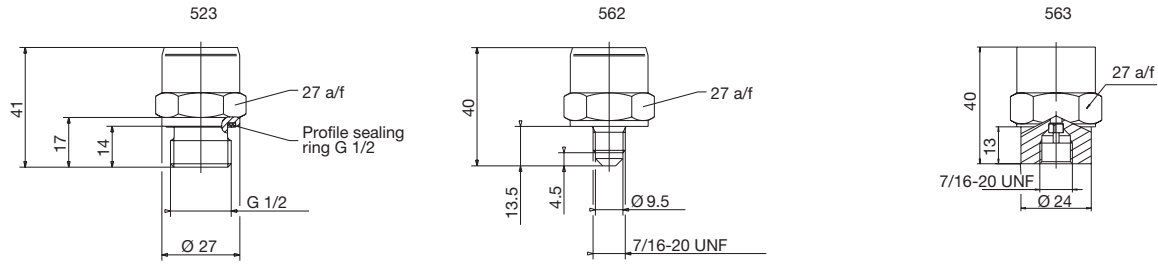
401001/000-XXX-XXX-502-20-601-36



**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)

							<b>Material for seal</b>
							601 FPM
							602 CR
							604 FFPM (material properties are similar to PTFE)
							999 special material
							<b>Electrical connection</b>
							11 attached cable 0.5 m
							36 circular connector M 12 x 1
							61 terminal box
							<b>Extra Codes</b>
							000 none
							591 throttle in pressure duct
							624 free from oil and grease

401001 / [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] / 000 **Order code**

### Accessories

Designation	Sales No.
4-pole straight socket M12x1 with 2 m PVC cable	40/00404585
4-pole angled socket M12x1, with 2m PVC cable	40/00409334