

## JUMO MIDAS Pressure transmitter

### 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 2 m,  
other lengths on request  
or  
4-pole circular connector, M12x1





### Nominal position

any

### Weight

100 g

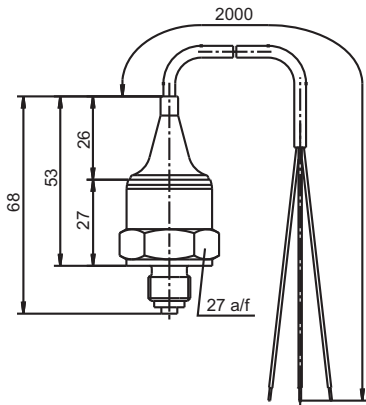
## Electrical connection

Connection			Terminals			
			Terminal box 61	Cable 11	M12x1 36	Bayonet 53
Supply 10 – 30 V DC 11.5 – 30 V DC 5 V DC	(with output) (1 – (5)6 V) (0 – 10 V) (0.5 – 4.5 V)		1 L+ 2 L-	white + brown -	1+ 2-	1+ 2-
Output 1 – (5)6 V 0 – 10 V 0.5 – 4.5 V			2 - 3 +	brown - yellow +	2- 3+	2- 3+
Supply 10 – 30 V DC	(with output) (4 – 20 mA, 2-wire)		1 L+ 2 L-	white + brown -	1+ 3-	1+ 3-
Output 4 – 20 mA, 2-wire			1 + 2 -	white brown	1+ 3-	1+ 3-

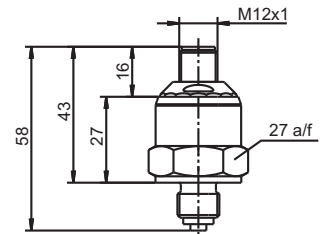
proportional current 4 – 20 mA  
in supply

## Dimensions

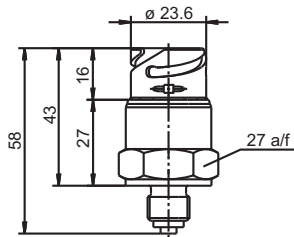
### Electrical connections



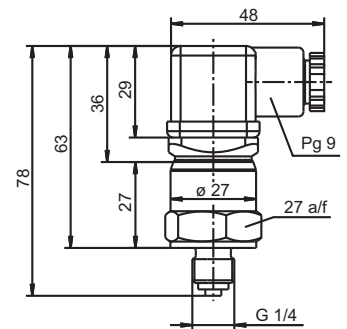
11



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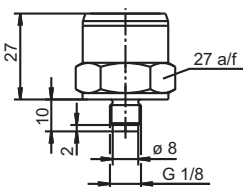


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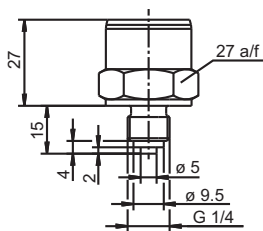


61

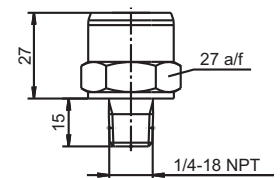
### Process connections



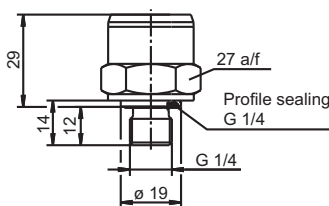
501



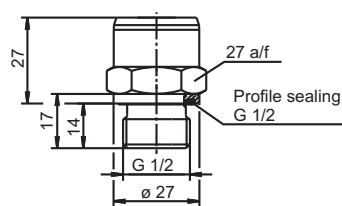
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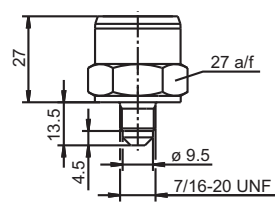
511



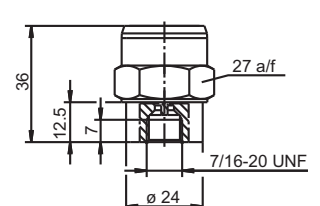
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562



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## Order details

- (1) Basic type**  
401001 Pressure transmitter JUMO MIDAS
- (2) Basic type extensions**  
000 none  
999 special version
- (3) 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 Sondermessbereich
- (4) 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
- (5) 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
- (6) Material of process connection**  
20 stainless steel  
46 brass (on request)
- (7) Material for seal**  
601 FPM  
602 CR  
604 FFPM<sup>1</sup>  
999 special material
- (8) Electrical connection**  
11 attached cable 2 m  
36 circular connector M 12 x 1  
61 terminal box
- (9) Extra Codes**  
000 none  
591 throttle in pressure duct  
624 free from oil and grease

<sup>1</sup> Material properties are similar to PTFE.

