

JUMO AS

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Product data sheet

JUMO MIDAS Pressure Transmitter

Product data sheet

40.1001

Sales No.

43006710

Order code

401001/000-459-405-502-20-601-61



401001/000	model MIDAS; pressure transmitter
459	input 0...+10 bar g
405	output 4 to 20 mA 2-wire
502	process connection (not front flush) G 1/4 to DIN EN 837
20; 601	process connection material; seal material stainless steel; FPM
61	electrical connection with terminal box

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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 (Al₂O₃) 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,
 (Al₂O₃) 96%

seal: FPM or FFPM
 or CR

Output

4 – 20 mA

2-wire burden ≤ (U_B-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

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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 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 (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-	1+ 2-
Output 1 – (5)6 V 0 – 10 V 0.5 – 4.5 V		2 - 3 +	brown - yellow +	2- 3+	2- 3+
Supply (with output) 10 – 30 V DC (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

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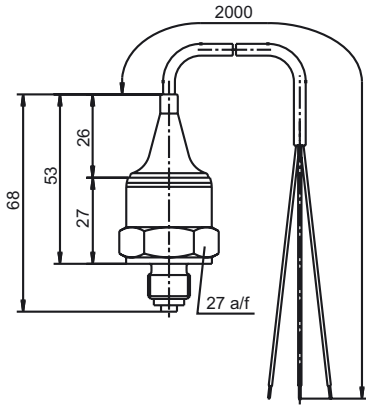
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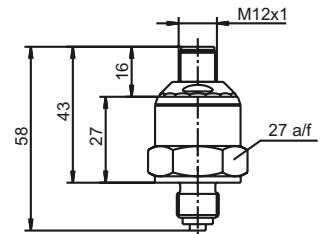


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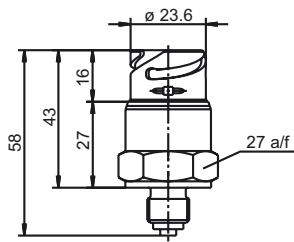
Electrical connections



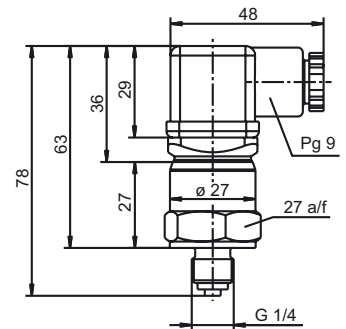
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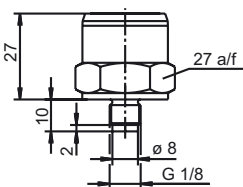


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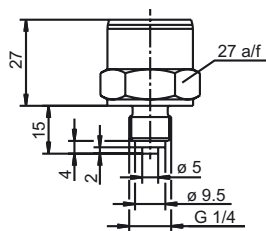


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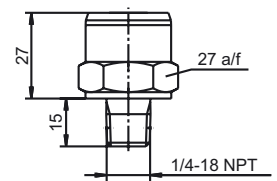
Process connections



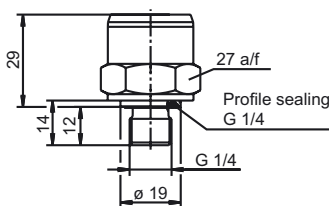
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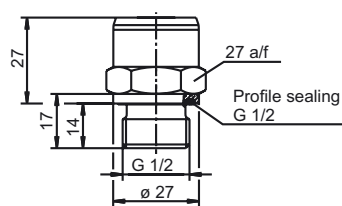
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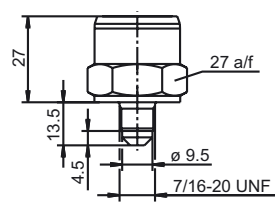
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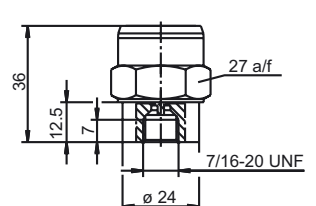
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Order details

- (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 FFPM¹
 - 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

¹ Material properties are similar to PTFE.

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	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		
Order code	<input type="text"/>	/	<input type="text"/>	-	<input type="text"/>	-	<input type="text"/>	-	<input type="text"/>	/	<input type="text"/>
Order example	401001	/	000	-	459	-	405	-	523	-	20 - 601 - 11 / 000

Accessories**Designation**

4-pole straight socket M12x1 with 2 m PVC cable
4-pole angled socket M12x1, with 2m PVC cable

Sales No.

40/00404585
40/00409334

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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 (Al₂O₃) 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,
 (Al₂O₃) 96%

seal: FPM or FFPM
 or CR

Output

4 – 20 mA

2-wire burden ≤ (U_B-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

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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 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 (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-	1+ 2-
Output 1 – (5)6 V 0 – 10 V 0.5 – 4.5 V		2 - 3 +	brown - yellow +	2- 3+	2- 3+
Supply (with output) 10 – 30 V DC (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

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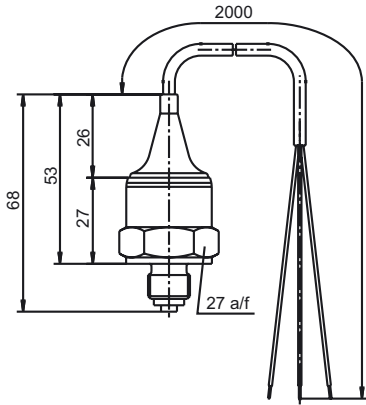
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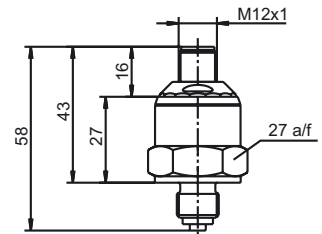


Dimensions

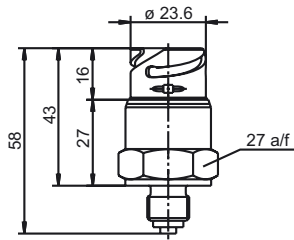
Electrical connections



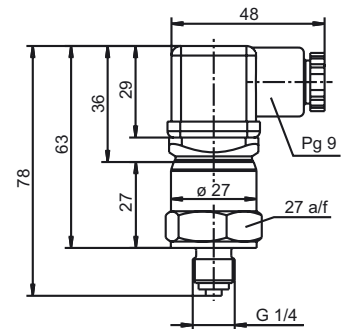
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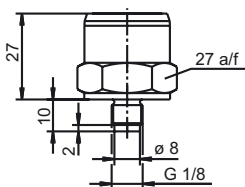


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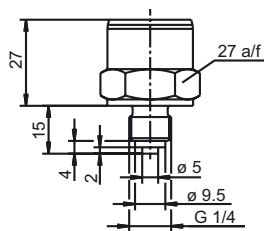


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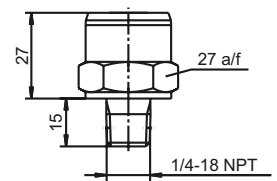
Process connections



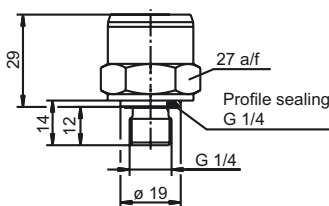
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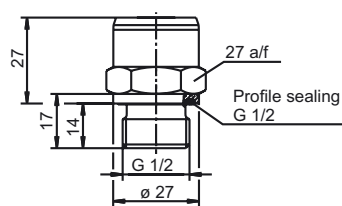
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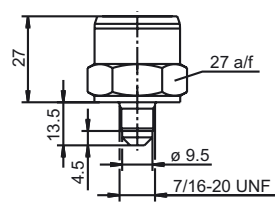
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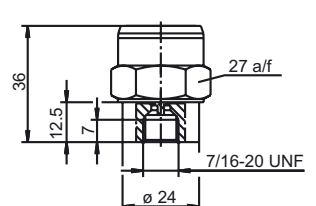
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Order details

- (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 FFPM¹
 - 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

¹ Material properties are similar to PTFE.

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	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		
Order code	<input type="text"/>	/	<input type="text"/>	-	<input type="text"/>	-	<input type="text"/>	-	<input type="text"/>	/	<input type="text"/>
Order example	401001	/	000	-	459	-	405	-	523	-	20 - 601 - 11 / 000

Accessories**Designation**

4-pole straight socket M12x1 with 2 m PVC cable
4-pole angled socket M12x1, with 2m PVC cable

Sales No.

40/00404585
40/00409334