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**JUMO Process Control, Inc.**  
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# JUMO MIDAS DP10

## Differential pressure transmitter

### Brief description

This differential pressure transmitter measures the pressure in liquid and gaseous media. The difference between the two pressures is converted into an analog output signal. The piezo-resistive silicon sensor is built into a stainless steel housing.

### Technical data

Unless further specified, all the following percentage values refer to the measurement span.

#### Reference conditions

as per DIN 16086 and EN 60 770

#### Measuring ranges

Measuring range	Max. system pressure <sup>2</sup>	Max. overload on both sides <sup>2</sup>	Max. single-sided overload		Bursting pressure	Overall error <sup>3</sup> (% of full scale)	Long-term stability (per annum)
			+ side	- side			
0 to 0.4 bar	5 bar	7.5 bar	7.5 bar	5 bar	≥ 60 bar	≤ 2.5 % <sup>4</sup>	≤ 0.6 %
0 to 0.6 bar						≤ 2.5 % <sup>4</sup>	
0 to 1 bar						≤ 2.3 % <sup>4</sup>	
0 to 1.6 bar	10 bar	15 bar	15 bar	10 bar	≥ 60 bar	≤ 2.0 % <sup>4</sup>	≤ 0.6 %
0 to 2.5 bar						≤ 2.0 % <sup>4</sup>	
0 to 4 bar	30 bar <sup>1</sup>	45 bar	15 bar	10 bar	≥ 60 bar	≤ 1.8 % <sup>4</sup>	≤ 0.4 %
0 to 6 bar			25 bar			≤ 1.8 % <sup>4</sup>	
0 to 10 bar			30 bar			≤ 1.5 % <sup>4</sup>	
0 to 16 bar			30 bar			≤ 1.5 % <sup>4</sup>	



Type 401050/000-xxx-xxx-xxx-xx-xxx-61

#### Parts in contact with medium<sup>5</sup>

stainless steel, Mat. Ref. 1.4571  
 stainless steel, Mat. Ref. 1.4435  
 stainless steel, Mat. Ref. 1.4305  
 plastic, PBT GF30 or  
 plastic, PA66  
 Seal: FPM

#### Output

4 to 20 mA 2-wire  
 burden ≤ (U<sub>B</sub>-10 V)/0.02A  
 0.5 to 4.5 V ratiometric  
 burden ≥ 20 kΩ  
 0 to 10 V 3-wire  
 burden ≥ 20 kΩ

#### Zero offset

≤ 0.3%

#### Thermal hysteresis

(within the compensated range -15 to +85 °C)  
 for measuring ranges ≤ 0.6 bar: ≤ ± 1 %  
 for measuring ranges > 0.6 bar: ≤ ± 0.5 %

<sup>1</sup> Maximum ambient temperature 60°C

<sup>2</sup> For simultaneous pressure on both + and - sides

<sup>3</sup> The total error includes errors due to linearity, hysteresis, reproducibility and temperature drift over the range from -15 to +85°C.

<sup>4</sup> Of full scale

<sup>5</sup> The customer must test the compatibility with the medium being measured.

<sup>6</sup> If the medium is water at temperatures above 50 °C, then pipes or hoses must be used to separate the transmitter from the process. E. g. for water at 85 °C, at least 200 mm long (depending on the ambient temperature).

® Bayer Material Science

### Approvals and approval marks (see technical data)



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**Step response**

for current output ≤ 3 msec  
 for voltage output ≤ 10 msec

**Supply voltage**

DC 10 to 30 V (for 4 to 20 mA output)  
 DC 5 V ±0.5 V (for 0.5 — 4.5 V output)  
 DC 11.5 to 30 V (for 0 to 10 V output)  
 Ripple: the voltage peaks must not go outside the limits specified for the supply.  
 Max. current drawn: 25 mA

**Supply voltage error**

≤ 0.02 % per V for 4 to 20 mA output

**Nominal supply voltage**

DC 24 V  
 ratiometric for 0.5 to 4.5 V output

**Operating temperature**

Aambient: -20 to +80 °C  
 Medium: -15 to +100 °C<sup>6</sup>  
 Storage: -50 to +100 °C

**Electromagnetic compatibility (EMC)**

as per EN 61326  
 interference emission: Class B  
 interference immunity: to industrial requirements

**Mechanical shock**

(to IEC 68-2-27)  
 100 g/1 msec

**Mechanical vibration**

(to IEC 68-2-6)  
 ≤ 20 g for 15 to 2000 Hz

**Enclosure protection**

(to EN 60529)  
 with round connector M12 × 1: IP67  
 with bayonet to DIN 72585: IP67  
 with fixed cable: IP67

**Process connection**

2× G 1/8 internal thread  
 adapters for pipes and hoses: see order details

**Electrical connection**

see order details  
 round connector M12 × 1  
 or  
 bayonet connector DIN 72585  
 or  
 fixed cable, 2 m  
 (other lengths upon request)

**Operating position**

Any  
 (deviations from the nominal operating position can cause an error of up to 2 mbar)

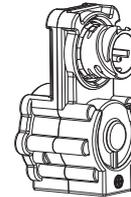
**Weight**

180 g  
 (approx. 220 g with mounting bracket)

**Fixing options**

- 3 holes on housing bottom
- mounting bracket (accessory)
- on measurement lines (e.g. 6 × 1 pipe)

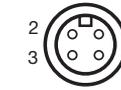
**Nominal position**



**Approvals and approval marks**

EAC	Testing agency Certificates/certification numbers Inspection basis Valid for	«Промтехконтроль» EAЭС N RU Д-DE.PA01.B.80830/21 TR TS 020/2011 Type 401009
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**Electrical connection**

		 Bayonet connector	 Round connector	Cable
Voltage output				
Supply voltage DC 11.5 to 30 V (with output 0 to 10 V) DC 5 V ±0.5 V (with output 0.5 to 4.5 V)		1 L+ 2 L-		white L+ brown L-
Output 0 to 10 V 0.5 to 4.5 V		2 - 3 +		brown - black +
Current output				
Supply voltage DC 10 to 30 V			1 + 3 -	white L+ brown L-
Output 4 to 20 mA (2-wire)			1 + 3 -	white L+ brown L-

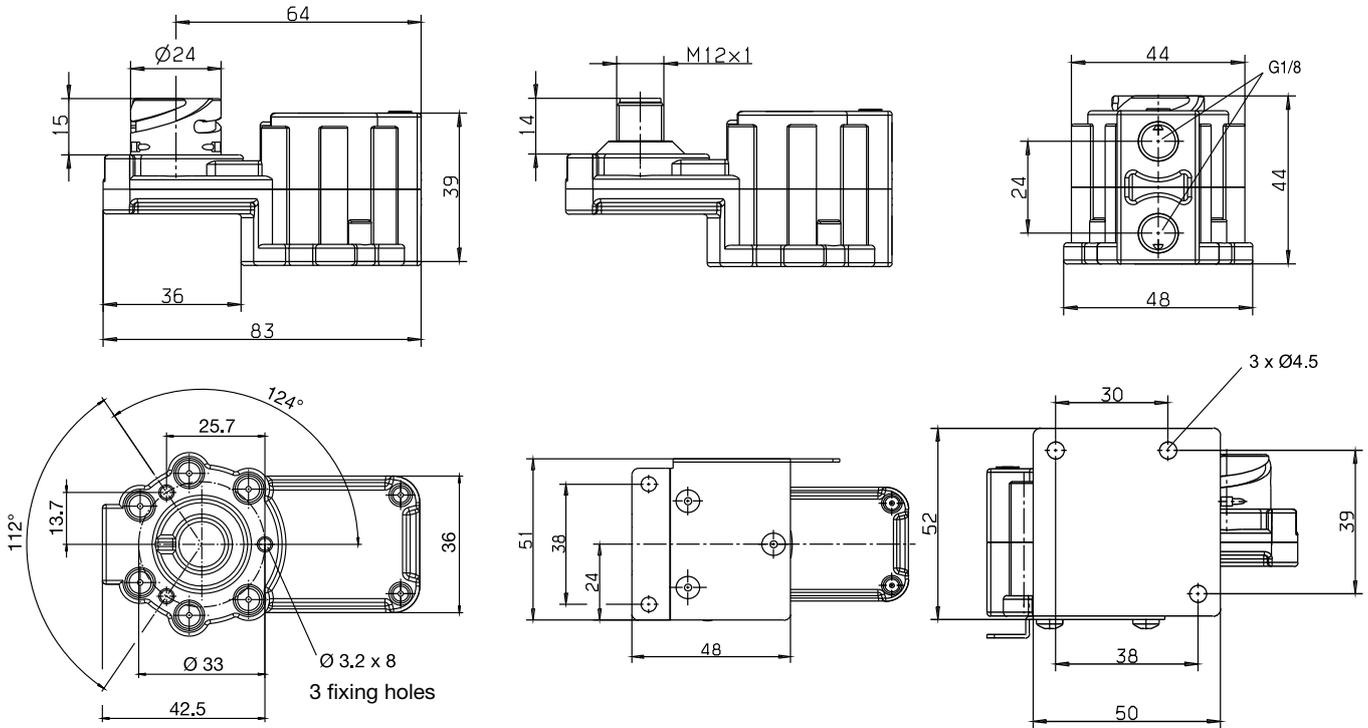
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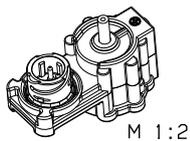
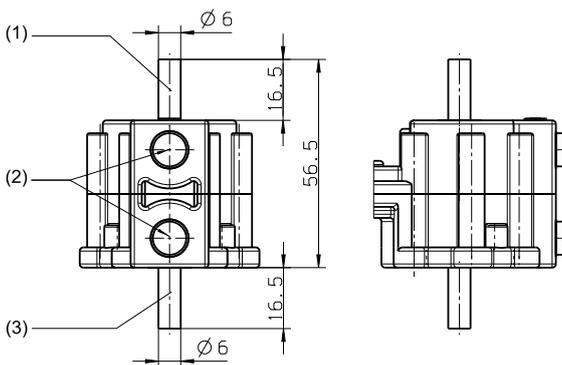


**Dimensions**



**Process connection**

297  
 Stainless steel tube, 6 mm diameter



- (1) + Side
- (2) No use
- (3) - Side

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**Order details**

- (1) Basic type**  
401050 JUMO MIDAS DP 10 – Differential pressure transmitter
- (2) Basic type extensions**  
000 None  
999 Special version
- (3) Input for differential pressure**  
452 0 to 0.4 bar  
453 0 to 0.6 bar  
454 0 to 1.0 bar  
455 0 to 1.6 bar  
456 0 to 2.5 bar  
457 0 to 4 bar  
458 0 to 6 bar  
459 0 to 10 bar  
460 0 to 16 bar  
999 Special measuring range
- (4) Output**  
405 4 to 20 mA 2-wire  
412 0.5 to 4.5 V 3-wire  
415 0 to 10 V 3-wire
- (5) Process connection<sup>1</sup>**  
297 Stainless steel tube, 6mm dia., stainless steel 1.4571  
305 Screwed pipe joint, 6mm dia., stainless steel 1.4571/FPM  
306 Screwed pipe joint, 6mm dia., brass  
593 2× G 1/8 to EN 837
- (6) Housing material**  
68 PBT
- (7) Seal material**  
601 FPM
- (8) Electrical connection**  
11 Fixed cable, 2 m  
36 Round connector M 12 x 1  
53 Bayonet connector to DIN 72585
- (9) Extra codes**  
000 None

Order code                    (1) / (2) - (3) - (4) - (5) - (6) - (7) - (8) / (9)  
 Order example                401050 / 000 - 454 - 405 - 593 - 68 - 601 - 36 / 000

**Accessories**

Designation	Part no.
4-pole straight connector M12 x 1 with 2m PVC cable	00404585
4-pole angled connector M12x1 with 2m PVC cable	00409334
Angled mounting bracket	00448193
Straight mounting bracket	00490132
Bayonet jack with 3m cable	00463392

<sup>1</sup> other process connections on request.