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JUMO MIDAS S06

OEM-Pressure Transmitter – Low Pressure

Applications

- HVAC (heating, ventilating, and air conditioning)
- Filter technology
- Mechanical and plant engineering
- Level measurement
- Bubble-through method
- Packaging industry



Type 401011
with line socket **with M12 connector**

Brief description

The JUMO MIDAS S06 pressure transmitter is already available with measuring ranges as of 100 mbar. The used silicon sensor can handle extreme overloading even in the lowest measuring ranges and is capable of handling millions of pressure cycles.

The fully welded and therefore seal-free measuring system made of high-grade stainless steel allows this device to be used in almost all media, even when the conditions are rough.

The structure ensures optimum protection against process medium leakage.

Customer benefits

- **Economic**
  A high degree of automation (digital compensation and calibration of sensor module) reduces production time and manufacturing costs.
- **Process reliability**
  The piezoresistive silicon sensor has a high level of overload protection and long-term stability. The full final inspection in the fully automated measuring and calibration facility ensures that each pressure transmitter is of high quality.
- **Time-saving, uncomplicated, and versatile**
  The installation of the measuring device requires little work and the electrical installation is simple. The modular structure allows universal use in almost any application.

Special features

- Measuring ranges as of 100 mbar
- Suitable for measuring aggressive liquids
- High degree of process reliability due to a welded measuring system with no seals
- Robust and maintenance-free measurement technology thanks to extreme overload resistance
- 60 % quicker device installation with the QUICKON quick-clamp technology
- Parts in contact with media are made of stainless steel

Approvals and approval marks (see technical data)

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Technical data

General Information

Reference conditions	DIN 16086 and DIN EN 60770
Sensor	
Material	Silicon sensor with stainless steel separating membrane (piezo-resistive)
Pressure transfer medium	Synthetic oil
Admissible load changes	> 10 million
Mounting position	Any
Calibration position	Device stands upright, process connection at the bottom
Zero point offset depending on position	≤ 1.5 mbar, process connection at the top

Measuring range and accuracy

Measuring range	Linearity[a]	Accuracy at		Long-term stability[b]	Overload capacity	Burst pressure
		20 °C[c]	-20 to +100 °C[d] (80 °C)			
mbar	% MSP[e]	% MSP	% MSP	% MSP per year	bar	bar
0 to 100 mbar relative pressure	0.35	1.2	2[f]	< 1.0	-0.4 to +0.4	-0.6 to +0.6
0 to 160 mbar relative pressure	0.3	0.8	1.9[f]		-0.7 to +0.7	-1 to +1
0 to 0,25 bar relative pressure	0.3	0.8	1.8[f]		-1 to +1	-1 to +1.5
0 to 0,4 bar relative pressure	0.3	0.7	1.7	< 0.4	-1 to +1.6	-1 to +2
0 to 0,6 bar relative pressure	0.3	0.7	1.6		-1 to +2.4	-1 to +3.6
-100 to +100 mbar relative pressure	0.3	1	2[f]		-0.4 to +0.4	-0.6 to +0.6
-400 to +400 mbar relative pressure	0.3	0.7	1.7		-1 to +1.6	-1 to +2

[a] Linearity according to limit point setting

[b] Reference conditions EN 61298-1

[c] Includes: linearity, hysteresis, repeatability, deviation of measuring range initial value and measuring range end value

[d] Includes: linearity, hysteresis, repeatability, deviation of measuring range initial value and measuring range end value, thermal effect on measuring range start and measuring span

[e] MSP = measuring span

[f] Maximum admissible ambient and medium temperature 0 to 80 °C

Output

Analog output[a]	
Current	
Output 405	4 to 20 mA, two-wire
Voltage	
Output 412	DC 0.5 to 4.5 V, three-wire, ratiometric 10 to 90 % of the voltage supply
Output 415	DC 0 to 10 V, three-wire
Output 418	DC 1 to 5 V, three-wire
Output 420	DC 1 to 6 V, three-wire
Step response T_{90}	≤ 5 ms
Burden	
Current	$R_L \leq (U_B - 8\ V) \div 0.02\ A\ (\Omega)$
4 to 20 mA, two-wire	
Voltage	
DC 0.5 to 4.5 V, three-wire	$R_L \geq 5\ k\Omega$
DC 0 to 10 V, three-wire	$R_L \geq 10\ k\Omega$
DC 1 to 5 V, three-wire	$R_L \geq 10\ k\Omega$
DC 1 to 6 V, three-wire	$R_L \geq 10\ k\Omega$

[a] Further outputs are available upon request.

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Mechanical features

Material	
Process connection	Stainless steel 304[a]
Membranes	Stainless steel 316 L
Housing	Stainless steel 304
Attached cable	PBT-GF30, PVC, PE
QUICKON	PBT-GF30
Round plug M12 × 1	PBT-GF30, stainless steel 303
Bayonet connector	PBT-GF30
Line socket	PBT-GF30, PA, silicone
Weight	80 g with process connection G 1/4

[a] Pressure transmitters with process connection G 1/4 are supplied with an FPM seal. Note the medium durability of the seal material!

Environmental influences

Admissible temperatures	Measuring range 100, 160, 250, -100 to +100 mbar	Measuring range ≥ 0,4 bar
Medium temperature	0 to 80 °C	-20 to +100 °C
Ambient temperature	0 to 80 °C	-20 to +100 °C
Storage temperature	-20 to +100 °C	-20 to +100 °C
Admissible humidity		
Operation	100 % rel. humidity including condensation on the device outer case	
Storage	90 % rel. humidity without condensation	
Admissible mechanical load		
Vibration resistance	20 g at 10 to 2000 Hz, according to IEC 60068-2-6	
Shock resistance	50 g for 11 ms, 100 g for 1 ms, according to IEC 60068-2-27	
Electromagnetic compatibility	According to EN 61326-2-3	
Interference emission	Class B[a]	
Interference immunity	Industrial requirement	
Protection type for electrical connection	According to EN 60529	
Attached cable	IP66 for realtive pressure measuring range, IP67 for absolute pressure measuring range	
QUICKON[b]	IP66	
Round plug M12 × 1[c]	IP66	
Bayonet connector[c]	IP67	
Line socket[c, d]	IP65	

[a] The product is suitable for industrial use as well as for households and small businesses.

[b] Connecting cable diameter, minimum 3.5 mm, maximum 6 mm

[c] The protection type is only achieved with a suitable mounted counter piece.

[d] Connecting cable diameter, minimum 6 mm, maximum 8 mm

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Electrical data

Voltage supply U_B[a]	
4 to 20 mA, two-wire	DC 8 to 30 V, rated voltage supply DC 24 V
DC 0.5 to 4.5 V, three-wire	DC 3 to 5.25 V, rated voltage supply DC 5 V, ratiometric output 10 to 90 % of the voltage supply
DC 0 to 10 V, three-wire	DC 11.5 to 30 V, rated voltage supply DC 24 V
DC 1 to 5 V, three-wire	DC 8 to 30 V, rated voltage supply DC 24 V
DC 1 to 6 V, three-wire	DC 8 to 30 V, rated voltage supply DC 24 V
Current consumption	
4 to 20 mA, two-wire	≤ 25 mA
DC 0.5 to 4.5 V, three-wire	≤ 2 mA
DC 0 to 10 V, three-wire	≤ 3 mA
DC 1 to 5 V, three-wire	≤ 3 mA
DC 1 to 6 V, three-wire	≤ 3 mA
Reverse voltage protection	Yes
Electrical circuit	SELV
Requirements	The device must be equipped with an electrical circuit that meets the requirements of EN 61010-1 with regard to "Limited-energy circuits".

[a] Residual ripple: the voltage peaks must not exceed or fall below the specified voltage supply values!

Approvals and approval marks

EAC	
Testing agency	«Промтехконтроль»
Certificates/certification numbers	ЕАЭС N RU Д-DE.PA01.B.80830/21
Inspection basis	TR TS 020/2011
Valid for	Type 401011

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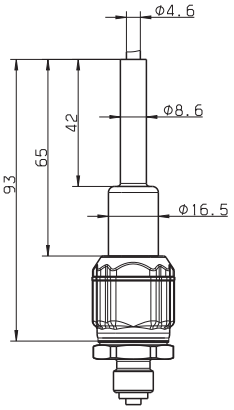
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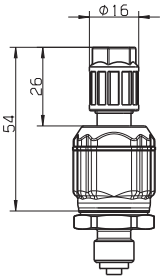
Dimensions

Electrical connection

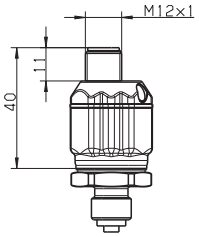
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Attached cable



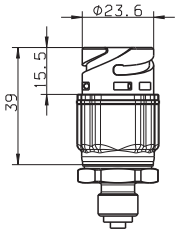
23
QUICKON



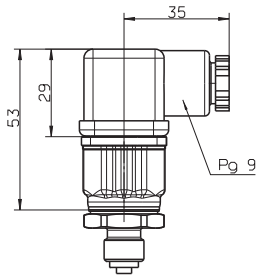
36
Round plug M12 × 1



53
Bayonet connector



61
Line socket



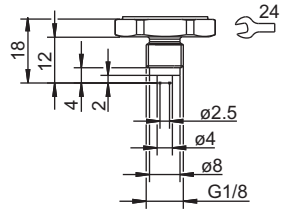
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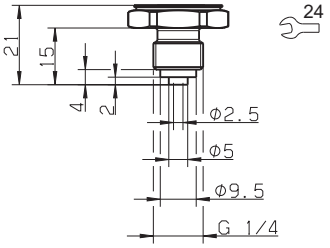
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Process connection

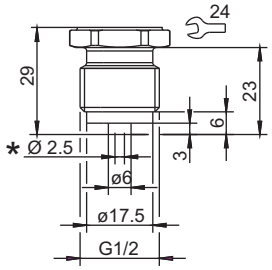
501
G 1/8



502
G 1/4

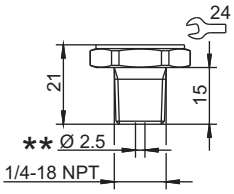


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G 1/2



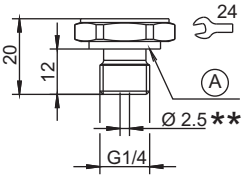
* Extra code 630 pressure channel Ø 12 mm

511
1/4-18NPT



** Extra code 630 pressure channel Ø 8 mm

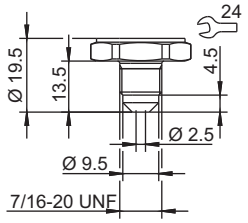
521
G 1/4



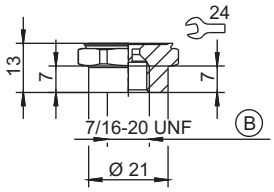
** Extra Code 630 pressure channel Ø 8 mm

A Profile seal G 1/4

562
7/16-20UNF



563
7/16-20UNF interior



B With valve core handle

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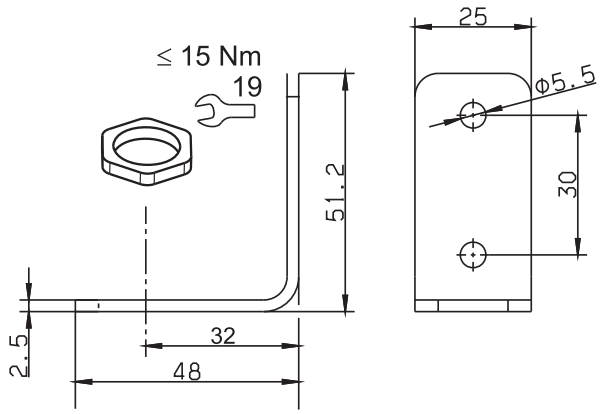
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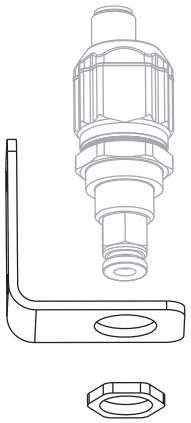
Mounting kit

Accessories

Part no. 00578663



Mounting example
Part no. 00578663



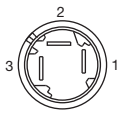
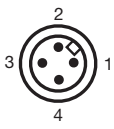
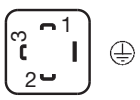
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Connection diagram

The connection diagram in the data sheet provides preliminary information about the connection options. For the electrical connection, only use the installation instructions or the operating manual. The knowledge and the correct technical compliance with the safety information and warnings contained in these documents are mandatory for mounting, electrical connection, and startup as well as for safety during operation.

Connection		**Terminal assignment** (figure: connection to the pressure transmitter)				
						
		11 Attached cable	23 QUICKON	36 Round plug M12 × 1	53 Bayonet connector	61 Line socket
4 to 20 mA, two-wire						
Voltage supply DC 8 to 30 V	U_B/S+	WH	1	1	1	1
	0 V/S-	BN	3	3	2	2
DC 0.5 to 4.5 V, ratiometric						
Voltage supply DC 3 to 5.25 V Ratiometric output 10 to 90 % of the voltage supply	U_B	WH	1	1	1	1
	0 V/S-	BN	2	2	2	2
	S+	GN	3	3	3	3
DC 0 to 10 V, three-wire						
Voltage supply DC 11.5 to 30 V	U_B	WH	1	1	1	1
	0 V/S-	BN	2	2	2	2
	S+	GN	3	3	3	3
DC 1 to 5 V, three-wire **DC 1 to 6 V, three-wire**						
Voltage supply DC 8 to 30 V	U_B	WH	1	1	1	1
	0 V/S-	BN	2	2	2	2
	S+	GN	3	3	3	3
Functional bonding conductor FB[a]		-	-	4	-	

[a] The pressure transmitter has to be connected to the potential equalization system of the plant through the electrical connection or process connection.

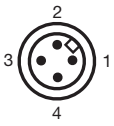
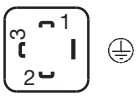
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Assignment variants electrical connection, extra code 933

Please provide the assignment variant in plain text with the order details (for example "B1")!

Connection		**Terminal assignment** (figure: connection to the pressure transmitter)			
					
		36 Round plug M12 × 1			61 Line socket
Assignment variants		**B1**	**B2**	**B3**	**B4**
4 to 20 mA, two-wire					
Voltage supply DC 8 to 30 V	U_B/S+	1	4		2
	0 V/S-	2	1		1
DC 0 to 10 V, three-wire					
Voltage supply DC 11.5 to 30 V	U_B	1	1	1	3
	0 V/S-	3	4	2	2
	S+	4	2	4	1
DC 1 to 5 V, three-wire **DC 1 to 6 V, three-wire**					
Voltage supply DC 8 to 30 V	U_B	1	1	1	3
	0 V/S-	3	4	2	2
	S+	4	2	4	1
Functional bonding conductor FB[a]		-	-	-	

[a] The pressure transmitter has to be connected to the potential equalization system of the plant through the electrical connection or process connection.

Color coding: connecting cable round plug M12 × 1	1 BN	Brown
	2 WH	White
	3 BU	Blue
	4 BK	Black
The color coding is **only** valid for A-coded standard cables!		

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Order details

	(1)	**Basic type**
401011/000		JUMO MIDAS S06 - OEM pressure transmitter – Low pressure
	(2)	**Input**
414		0 to 100 mbar relative pressure
415		0 to 160 mbar relative pressure
451		0 to 0,25 bar relative pressure
452		0 to 0,4 bar relative pressure
453		0 to 0,6 bar relative pressure
446		-100 to +100 mbar relative pressure
447		-400 to +400 mbar relative pressure
999		Special measuring range for relative pressure
	(3)	**Output**
405		4 to 20 mA, two-wire
412		DC 0.5 to 4.5 V, three-wire
415		DC 0 to 10 V, three-wire
418		DC 1 to 5 V, three-wire
420		DC 1 to 6 V, three-wire
	(4)	**Process connection**
501		G 1/8 according to DIN EN 837
502		G 1/4 according to DIN EN 837
504		G 1/2 according to DIN EN 837
511		1/4-18 NPT according to DIN EN 837
521		G 1/4 according to DIN 3852-11
562		7/16-20 UNF
563		7/16-20 UNF inside, with valve core handle
	(5)	**Process connection material**
20		CrNi (stainless steel)
	(6)	**Electrical connection**
11		Attached cable[a]
23		QUICKON
36		Round plug M12 × 1
53		Device connector bayonet DN 72585
61		Line socket DIN EN 175301-803, Form A
	(8)	**Extra codes**
000		None
591		Restrictor in pressure channel
624		Oil and grease free
630		Enlarged pressure channel[b]
933		Assignment variant electrical connection
950		Railway application[c]
954		Technical passport

[a] The standard cable length is 2 m. Further lengths are available upon request.

[b] An enlarged pressure channel is only available with process connections 1/4-18 NPT and G 1/4.

[c] The devices are tested to railway standard EN 50155:2017. Extra code 950 can only be selected for devices with output 4 to 20 mA and round plug M12 × 1 or line socket DIN EN 175301-803, form A. Note on EMC: If interference is caused by high-frequency fields (DIN EN 61000-4-3), deviations of up to 3 % of the MSP may occur at certain frequencies.

	(1)		**(2)**		**(3)**		**(4)**		**(5)**		**(6)**		**(7)**	
Order code		-		-		-		-		-		/		, ...[a]
Order example	401011/000	-	454	-	405	-	504	-	20	-	61	/	591	

[a] List extra codes in sequence, separated by commas.

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Stock versions

Order code	Part no.
401011/000-451-405-502-20-61/000	00543760
401011/000-451-405-504-20-61/000	00547882
401011/000-414-405-502-20-61/000	00535655
401011/000-414-405-504-20-61/000	00558996

Accessories

Designation	Part no.
Line socket, straight, 4-pole, M12 × 1, 2 m	00404585
Line socket, angled, 4-pole, M12 × 1, 2 m	00409334
Line socket, pressure compensation, 4-pole, M12 × 1, 5 m	00512341