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JUMO Process Control, Inc.
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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

Special features

- Measuring ranges as of 100 mbar
- High process reliability due to a seal-less welded measuring system
- Robust and maintenance-free measurement technology due to extreme overload resistance
- 60 % quicker device installation with the QUICKON quick-clamp technology
- Parts in contact with media are made of stainless steel

Description

The pressure transmitter is suitable for measuring aggressive liquids and can be used in harsh conditions.

The used silicon sensor can handle extreme overloading even in the lowest measuring ranges and is capable of handling millions of pressure cycles.

The device structure ensures optimum protection against process medium leakage.



Type 401011
with line socket



Type 401011
with M12 Plug connector

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Approval marks and certificates



Certificates for approved device versions are available for download on the manufacturer's website.

Technical data

Electrical safety

Requirements	DIN EN 61010-1 The device must be equipped with an electrical circuit that meets the requirements for "Limited-energy circuits".
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Electrical data

Reference conditions	DIN 16086, DIN EN 60770
Voltage supply U_B^a 4 to 20 mA, two-wire DC 0.5 to 4.5 V, three-wire DC 0 to 10 V, three-wire DC 1 to 5 V, three-wire DC 1 to 6 V, three-wire	DC 8 to 30 V, rated voltage supply DC 24 V DC 3 to 5.25 V, rated voltage supply DC 5 V, ratiometric output 10 to 90 % of the voltage supply DC 11.5 to 30 V, rated voltage supply DC 24 V DC 8 to 30 V, rated voltage supply DC 24 V DC 8 to 30 V, rated voltage supply DC 24 V
Current consumption 4 to 20 mA, two-wire DC 0.5 to 4.5 V, three-wire DC 0 to 10 V, three-wire DC 1 to 5 V, three-wire DC 1 to 6 V, three-wire	≤ 25 mA ≤ 2 mA ≤ 3 mA ≤ 3 mA ≤ 3 mA
Reverse voltage protection	Yes
Electrical circuit	SELV

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

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Inputs

Measuring range and accuracy

Measuring range	Linearity ^a	Accuracy at 20 °C ^c		Long-term stability ^b	Overload capacity	Burst pressure
mbar	% MSP ^e	% MSP	-20 to +100 °C ^d (80 °C)	% 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

Outputs

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

^a Further outputs are available upon request.

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Environmental influences

Admissible temperatures	
Measuring range	
100, 160, 250, -100 to +100 mbar	
Medium temperature	0 to 80 °C
Ambient temperature	0 to 80 °C
Storage temperature	-20 to +100 °C
Measuring range ≥ 0.4 bar	
Medium temperature	-20 to +100 °C
Ambient temperature	-20 to +100 °C
Storage temperature	-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	IEC 60068-2-6, IEC 60068-2-27
Vibration resistance	20 g at 10 to 2000 Hz
Shock resistance	50 g for 11 ms, 100 g for 1 ms
Electromagnetic compatibility (EMC)	DIN EN 61326-2-3
Interference emission	Class B ^a
Interference immunity	Industrial requirement
Protection type	DIN EN 60529
Attached cable	IP66 (relative pressure measuring range), IP67 (absolute pressure measuring range)
QUICKON ^b	IP66
M12 Plug connector ^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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Mechanical features

Materials

Sensor	Silicon sensor with stainless steel separating membrane (piezo-resistive)
Pressure transfer medium	Synthetic oil
Process connection	Stainless steel 304 ^a
Membranes	Stainless steel 316 L
Housing	Stainless steel 304
Attached cable	PBT-GF30, PVC, PE
QUICKON	PBT-GF30
M12 Plug connector	PBT-GF30, stainless steel 303
Bayonet connector	PBT-GF30
Line socket	PBT-GF30, PA, silicone

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

Device

Weight	80 g with process connection G 1/4
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Sensor

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

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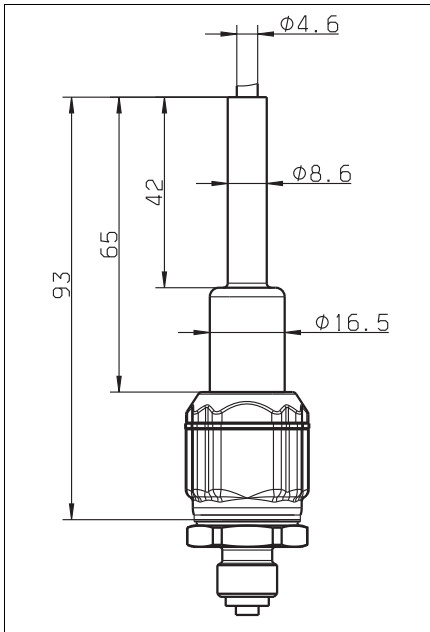
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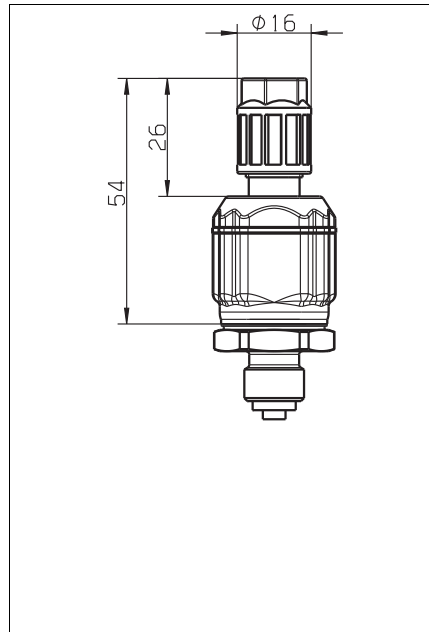
Dimensions

Electrical connection

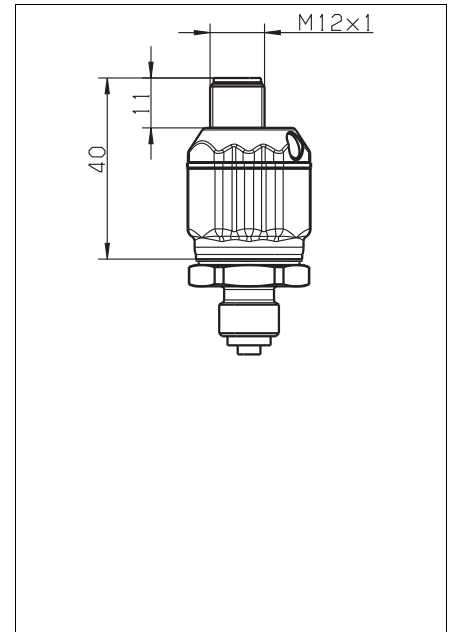
Attached cable



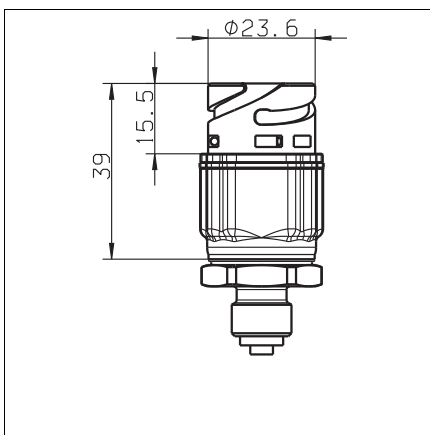
QUICKON



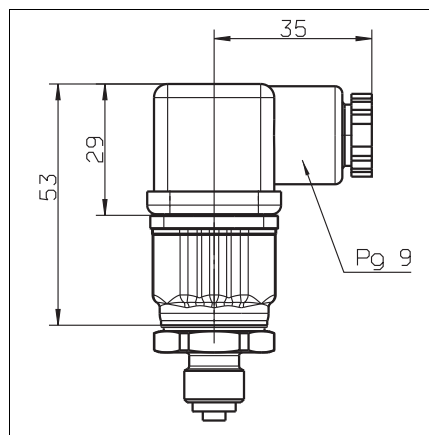
M12 Plug connector M12



Bayonet connector

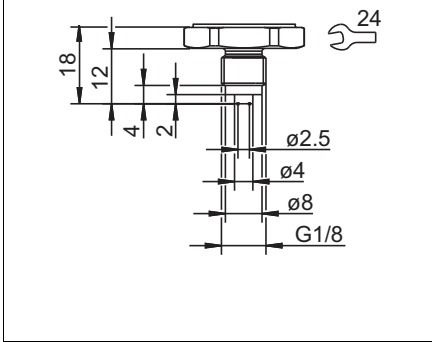


Line socket

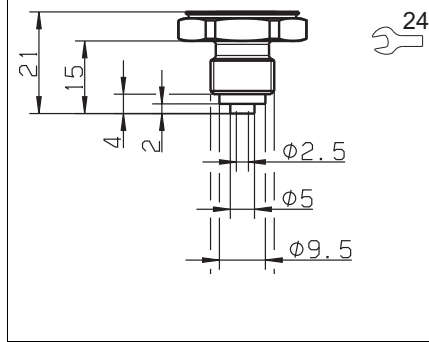


Process connections

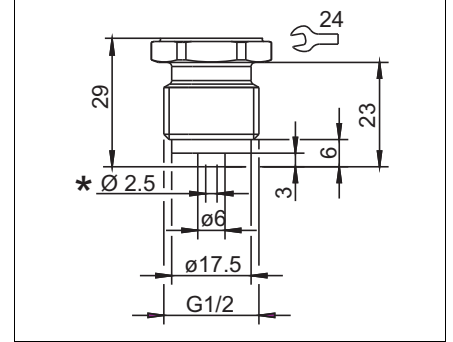
G 1/8 DIN EN 837



G 1/4 DIN EN 837

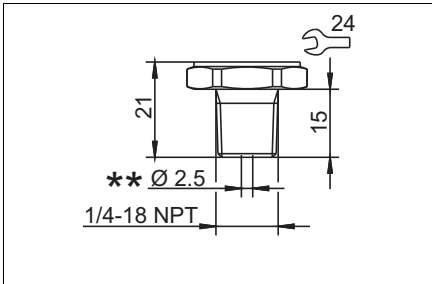


G 1/2 DIN EN 837



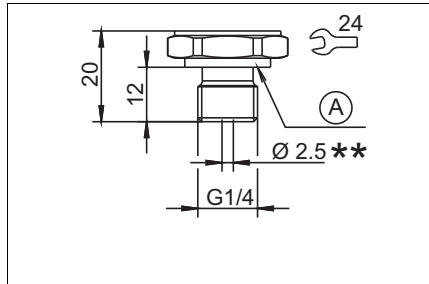
* Extra code 630 pressure channel
Ø 12 mm

1/4" – 18 NPT DIN EN 837



** Extra code 630 pressure channel
Ø 8 mm

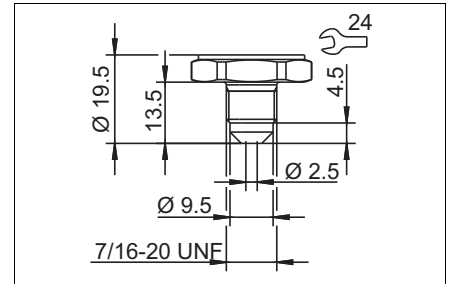
G 1/4 DIN 3852-11



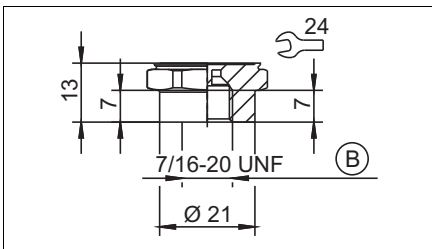
** Extra Code 630 pressure channel
Ø 8 mm

A Profile seal G 1/4

7/16" – 20 UNF



7/16" – 20 UNF interior with valve core handle



B Valve core handle

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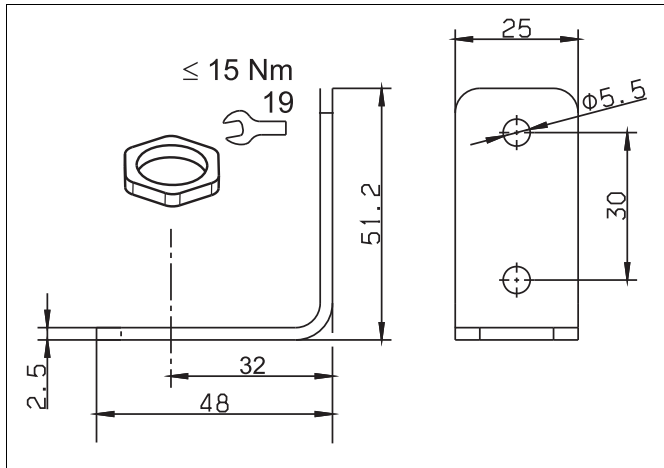
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Mounting kit

Mounting bracket with hexagon nut

Part no. 00578663



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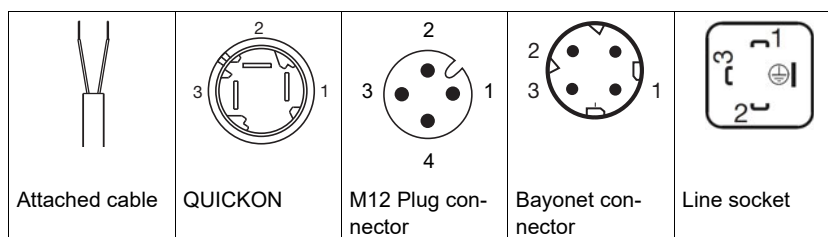
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Connection elements

The connection diagram in the data sheet provides information on product selection.

For the electrical connection, only use the installation instructions or the operating manual.



Terminal assignment

Designation	Description	Assignment				
Output 4 to 20 mA, two-wire Voltage supply DC 8 to 30 V	$U_B/S+$	WH (white)	1	1	1	1
	0 V/S-	BN (brown)	3	3	2	2
Output DC 0.5 to 4.5 V, ratiometric Voltage supply DC 3 to 5.25 V	U_B	WH (white)	1	1	1	1
	0 V/S-	BN (brown)	2	2	2	2
	S+	GN (green)	3	3	3	3
Output DC 0 to 10 V, three-wire Voltage supply DC 11.5 to 30 V	U_B	WH (white)	1	1	1	1
	0 V/S-	BN (brown)	2	2	2	2
	S+	GN (green)	3	3	3	3
Output DC 1 to 5 V, three-wire Output DC 1 to 6 V, three-wire Voltage supply DC 8 to 30 V	U_B	WH (white)	1	1	1	1
	0 V/S-	BN (brown)	2	2	2	2
	S+	GN (green)	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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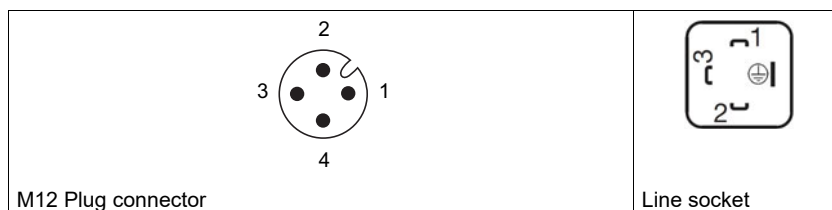
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Connection examples

Assignment variants electrical connection, extra code 933

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



Designation	Description	Assignment			
		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.

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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 DIN EN 837
502	G 1/4 DIN EN 837
504	G 1/2 DIN EN 837
511	1/4" – 18 NPT DIN EN 837
521	G 1/4 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	M12 Plug connector
53	Bayonet connector DN 72585
61	Line socket DIN EN 175301-803, Form A
	(8) Extra codes
000	None
061	UL approval
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 M12 Plug connector 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.

