

Pressure Measurement

Transmitters for basic requirements

SITRANS P200 for gauge and absolute pressure

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Technical specifications

Application	Liquids, gases and vapors
Gauge and absolute pressure measurement	
Mode of operation	
Measuring principle	Piezo-resistive measuring cell (ceramic diaphragm)
Measured variable	Gauge and absolute pressure
Inputs	
Measuring range	
- Gauge pressure - Metric - US measuring range - Absolute pressure - Metric - US measuring range	1 ... 60 bar (15 ... 870 psi) 15 ... 1000 psi 0.6 ... 16 bar a (10 ... 232 psia) 10 ... 300 psia
Output	
Current signal	4 ... 20 mA
• Load	($U_B - 10\text{ V}$) / 0.02 A
• Auxiliary power U_B	DC 7 ... 33 V (10 ... 30 V for Ex)
Voltage signal	0 ... 10 V DC
• Load	$\geq 10\text{ k}\Omega$
• Auxiliary power U_B	12 ... 33 V DC
• Power consumption	< 7 mA at 10 k Ω
Characteristic curve	Linear rising
Measuring accuracy	
Error in measurement at limit setting incl. hysteresis and reproducibility	- Typical: 0.25 % of full-scale value - Maximum: 0.5 % of full-scale value
Step response time T_{99}	< 5 ms
Long-term stability	
• Lower range value and measuring span	0.25 % of full-scale value/year
Influence of ambient temperature	
• Lower range value and measuring span	0.25 %/10 K of full-scale value
• Influence of power supply	0.005 %/V
Conditions of use	
Process temperature with gasket made of:	
• FPM (Standard)	-15 ... +125 °C (+5 ... +257 °F)
• Neoprene	-35 ... +100 °C (-31 ... +212 °F)
• Perbunan	-20 ... +100 °C (-4 ... +212 °F)
• EPDM	-40 ... +145 °C (-40 ... +293 °F), usable for drinking water
Ambient temperature	-25 ... +85 °C (-13 ... +185 °F)
Storage temperature	-50 ... +100 °C (-58 ... +212 °F)
Degree of protection (to EN 60529)	- IP 65 with connector per EN 175301-803-A - IP 67 with M12 connector - IP 67 with cable - IP 67 with cable quick screw connection
Electromagnetic compatibility	- acc. IEC 61326-1/-2/-3 - acc. NAMUR NE21, only for ATEX versions and with a max. measuring deviation $\leq 1\%$

Design	
Weight	Approx. 0.090 kg (0.198 lb)
Process connections	See dimension drawings
Electrical connections	- Connector per EN 175301-803-A Form A with cable inlet M16x1.5 or 1/2-14 NPT or Pg 11 - M12 connector 2 or 3-wire (0.5 mm²) cable ($\varnothing \pm 5.4\text{ mm}$) - Quickon cable quick screw connection
Wetted parts materials	
• Measuring cell	Al ₂ O ₃ - 96 %
• Process connection	Stainless steel, mat. No. 1.4404 (SST 316 L)
• Gasket	- FPM (Standard) - Neoprene - Perbunan - EPDM
Non-wetted parts materials	
• Enclosure	Stainless steel, mat. No. 1.4404 (SST 316 L)
• Rack	Plastic
• Cables	PVC
Certificates and approvals	
Classification according to pressure equipment directive (PED 97/23/EC)	For gases of fluid group 1 and liquids of fluid group 1; complies with requirements of article 3, paragraph 3 (sound engineering practice)
Lloyd's Register of Shipping (LR)	12/20010
Germanischer Lloyd (GL)	GL19740 11 HH00
American Bureau of Shipping (ABS)	ABS_11_HG 789392_PDA
Bureau Veritas (BV)	BV 271007A0 BV
Det Norske Veritas (DNV)	A 12553
Drinking water approval (ACS)	ACS 11 ACC NY 055
GOST	GOST-R
Underwriters Laboratories (UL)	
• for USA and Canada	UL 20110217 - E34453
• worldwide	IEC UL DK 21845
Explosion protection	
Intrinsic safety "i" (only with current output)	Ex II 1/2 G Ex ia IIC T4 Ga/Gb Ex II 1/2 D Ex ia IIIC T125 °C Da/Db
EC type-examination certificate	SEV 10 ATEX 0146
Connection to certified intrinsically-safe resistive circuits with maximum values:	$U_i \leq 30\text{ V DC}$; $I_i \leq 100\text{ mA}$; $P_i \leq 0.75\text{ W}$
Effective internal inductance and capacity for versions with plugs per EN 175301-803-A and M12	$L_i = 0\text{ nH}$; $C_i = 0\text{ nF}$

3ME1565

Wetted parts materials: Ceramic and stainless steel + sealing material

Non-wetted parts materials: stainless steel

► Available ex stock

◆ We can offer shorter delivery times for configurations designated with the Quick Ship Symbol ◆. For details see page 9/5 in the appendix.

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Selection and ordering data

Article No.

Order code

SITRANS P 200 pressure transmitters for pressure and absolute pressure for general applications

7MF1565- - - - -

Accuracy typ. 0.25 %

Wetted parts materials: Ceramic and stainless steel + sealing material

Non-wetted parts materials: stainless steel

Output signal

4 ... 20 mA; two-wire system; power supply 7 ... 33 V DC (10 ... 30 V DC for ATEX versions) ▶

0 ... 10 V; three-wire system; power supply 12 ... 33 V DC

Explosion protection (only 4 ... 20 mA)

None ▶

With explosion protection Ex ia IIC T4 ▶

Electrical connection

Connector per DIN EN 175301-803-A, stuffing box thread M16 (with coupling) ▶

Round connector M12 per IEC 61076-2-101 (not for gauge pressure ranges ≤ 16 bar)

Connection via fixed mounted cable, 2m (not for type of protection "Intrinsic safety i")

Quickon cable quick screw connection PG9 (not for type of protection "Intrinsic safety i")

Connector per DIN EN 175301-803-A, stuffing box thread 1/2"-14 NPT (with coupling)

Connector per DIN EN 175301-803-A, stuffing box thread PG11 (with coupling)

Fixed mounted cable, length 5 m

Special version

Process connection

G½" male per EN 837-1 (½" BSP male) (standard for metric pressure ranges mbar, bar) ▶

G½" male thread and G1/8" female thread

G¼" male per EN 837-1 (¼" BSP male)

7/16"-20 UNF male

¼"-18 NPT male (standard for pressure ranges inH₂O and psi)

¼"-18 NPT female

½"-14 NPT male

½"-14 NPT female

7/16"-20 UNF female

M20x1.5 male

Special version

Sealing material between sensor and enclosure

Viton (FPM, standard) ▶

Neoprene (CR)

Perbunan (NBR)

EPDM

Special version

Version

Standard version ▶

Further designs

Supplement the Article No. with "-Z" and add Order code.

Manufacturer's test certificate M per IEC 60770-2 (calibration certificate) supplied

Oxygen application, oil and grease-free cleaning

(only in conjunction with the sealing material Viton between sensor and enclosure and not with explosion protection version)

▶ Available ex stock

■ We can offer shorter delivery times for configurations designated with the Quick Ship Symbol ■. For details see page 9/5 in the appendix.

C11

E10

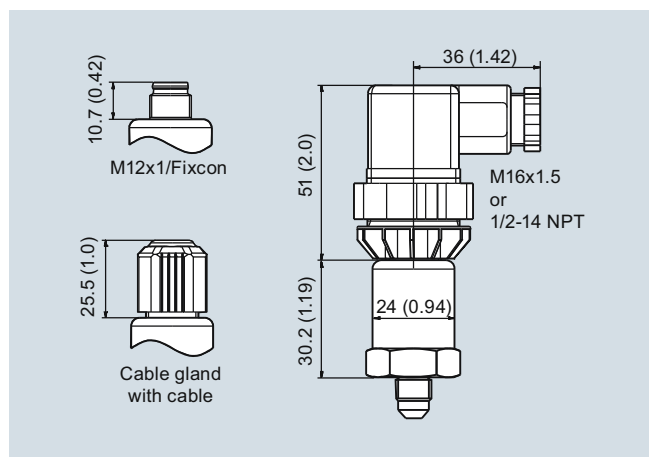
Pressure Measurement

Transmitters for basic requirements

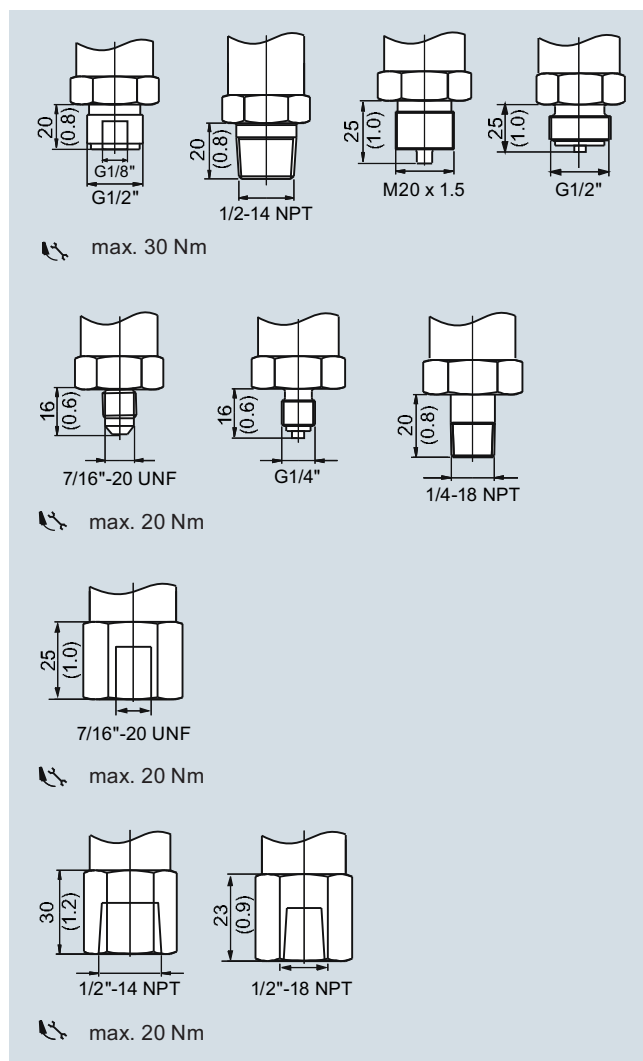
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Dimensional drawings



SITRANS P200, electrical connections, dimensions in mm (inch)



SITRANS P200, process connections, dimensions in mm (inch)

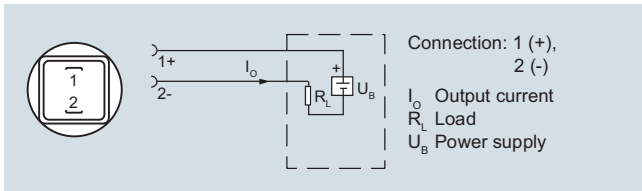
Pressure Measurement

Transmitters for basic requirements

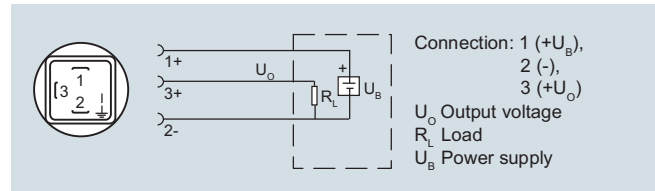
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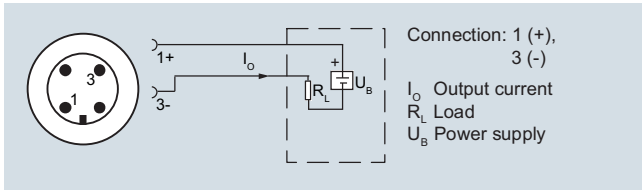
Schematics



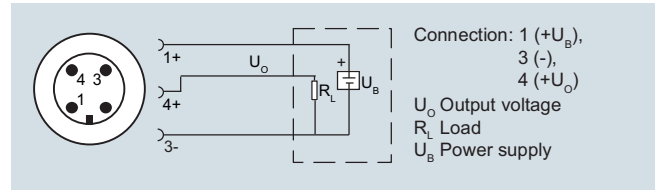
Connection with current output and connector per EN 175301



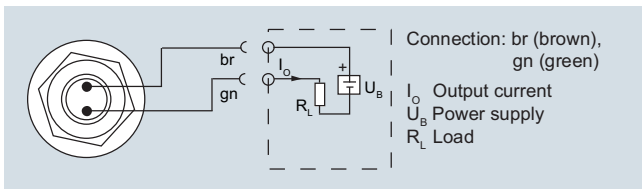
Connection with voltage output and connector per EN 175301



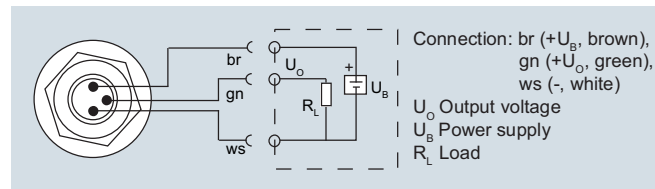
Connection with current output and connector M12x1



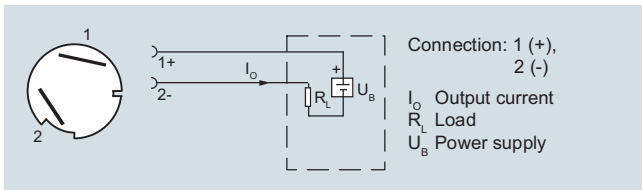
Connection with voltage output and connector M12x1



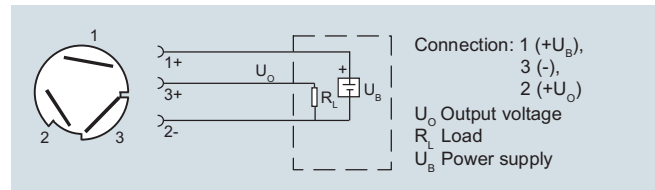
Connection with current output and cable



Connection with voltage output and cable



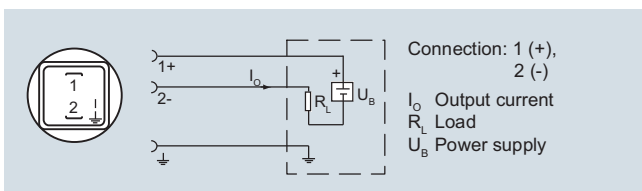
Connection with current output and Quickon cable quick screw connection



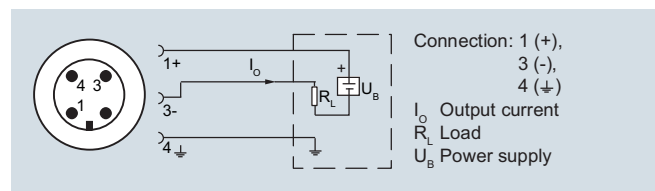
Connection with voltage output and Quickon cable quick screw connection

Version with explosion protection: 4 ... 20 mA

The grounding connection is conductively bonded to the transmitter enclosure



Connection with current output and connector per EN 175301 (Ex)



Connection with current output and connector M12x1 (Ex)