

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

SIEMENS

7MF1567-3CB10-1AA1

SITRANS P200 PRESSURE TRANSMITTER

Used with the applicable SITRANS P200 configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Siemens official technical documentation for 7MF1567-3CB10-1AA1

Overview



The SITRANS P200 pressure transmitter measures the gauge and absolute pressure of liquids, gases and vapors.

- Ceramic measuring cell
- Gauge and absolute measuring ranges 1 to 60 bar (15 to 1000 psi)
- For general applications

Benefits

- High measuring accuracy
- Rugged stainless steel enclosure
- High overload withstand capability
- For aggressive and non-aggressive media
- For measuring the pressure of liquids, gases and vapors
- Compact design

Application

The SITRANS P200 pressure transmitter for gauge and absolute pressure is used in the following industrial areas:

- Mechanical engineering
- Shipbuilding
- Power engineering
- Chemical industry
- Water supply

Design

Device structure without explosion protection

The pressure transmitter consists of a piezoresistive measuring cell with a diaphragm installed in a stainless steel enclosure. It can be used with a connector per EN 175301-803-A (IP65), a round plug M12 (IP67), a cable (IP67) or a Quickon cable quick screw connection (IP67) connected electrically. The output signal is between 4 and 20 mA or 0 and 10 V.

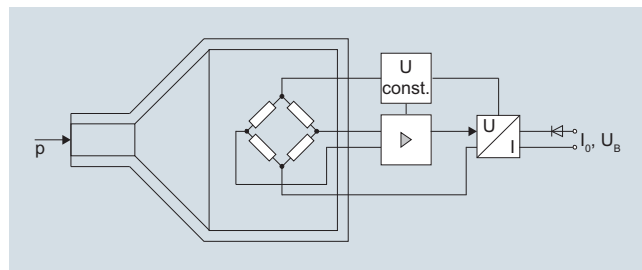
Device structure with explosion protection

The pressure transmitter consists of a piezoresistive measuring cell with a diaphragm installed in a stainless steel enclosure. It can be used with a connector per EN 175301-803-A (IP65) or a round plug M12 (IP67) connected electrically. The output signal is between 4 and 20 mA.

Function

The pressure transmitter measures the gauge and absolute pressure of liquids and gases as well as the level of liquids.

Mode of operation



SITRANS P200 pressure transmitters (7MF1565-...), functional diagram

The ceramic measuring cell has a thin-film resistance bridge to which the operating pressure p is transmitted through a ceramic diaphragm.

The voltage output from the measuring cell is converted by an amplifier into an output current of 4 to 20 mA or an output voltage of 0 to 10 V DC.

The output current and voltage are linearly proportional to the input pressure.

Pressure Measurement

Single-range transmitters for general applications

SITRANS P200 for gauge and absolute pressure

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Technical specifications

Application		Design	
Gauge and absolute pressure measurement	Liquids, gases and vapors	Weight	Approx. 0.090 kg (0.198 lb)
Mode of operation		Process connections	See dimension drawings
Measuring principle	Piezo-resistive measuring cell (ceramic diaphragm)	Electrical connections	<ul style="list-style-type: none"> 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 (Ø ± 5.4 mm) Quickon cable quick screw connection
Measured variable	Gauge and absolute pressure	Wetted parts materials	<ul style="list-style-type: none"> Measuring cell: Al₂O₃ - 96 % Process connection: Stainless steel, mat. No. 1.4404 (SST 316 L) Gasket: <ul style="list-style-type: none"> FPM (Standard) Neoprene Perbunan EPDM
Inputs		Non-wetted parts materials	<ul style="list-style-type: none"> Enclosure: Stainless steel, mat. No. 1.4404 (SST 316 L) Rack: Plastic Cables: PVC
Measuring range		Certificates and approvals	
<ul style="list-style-type: none"> Gauge pressure <ul style="list-style-type: none"> - Metric: 1 ... 60 bar (15 ... 870 psi) - US measuring range: 15 ... 1000 psi Absolute pressure <ul style="list-style-type: none"> - Metric: 0.6 ... 16 bar a (10 ... 232 psia) - US measuring range: 10 ... 300 psia 		Classification according to pressure equipment directive (PED 2014/68/EU)	For gases of fluid group 1 and liquids of fluid group 1; complies with requirements of article 4, paragraph 3 (sound engineering practice)
Output		Lloyd's Register of Shipping (LR) ¹⁾	12/20010
Current signal	4 ... 20 mA	Germanischer Lloyd (GL) ¹⁾	GL19740 11 HH00
• Load	(U _B - 10 V)/0.02 A	American Bureau of Shipping (ABS) ¹⁾	ABS_11_HG 789392_PDA
• Auxiliary power U _B	DC 7 ... 33 V (10 ... 30 V for Ex)	Bureau Veritas (BV) ¹⁾	BV 271007A0 BV
Voltage signal	0 ... 10 V DC	Det Norske Veritas (DNV) ¹⁾	A 12553
• Load	≥ 10 kΩ	Drinking water approval (ACS) ¹⁾	ACS 15 ACC NY 360
• Auxiliary power U _B	12 ... 33 V DC	EAC ¹⁾	№ TC RU C-DE.ГБ05.B.00732 OC НАННО «ЦСВЭ»
• Power consumption	< 7 mA at 10 kΩ	Underwriters Laboratories (UL) ¹⁾	UL 20110217 - E34453
Ratiometric output	0 ... 90 %	• for USA and Canada	IEC UL DK 21845
• Load	≥ 10 kΩ	• worldwide	
• Auxiliary power U _B	5 V DC ± 10 %	Explosion protection	
• Power consumption	< 7 mA at 10 kΩ	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
Characteristic curve	Linear rising	EC type-examination certificate	SEV 10 ATEX 0146
Measuring accuracy		Connection to certified intrinsically-safe resistive circuits with maximum values:	U _i ≤ 30 V DC; I _i ≤ 100 mA; P _i ≤ 0.75 W
Error in measurement at limit setting incl. hysteresis and reproducibility	<ul style="list-style-type: none"> Typical: 0.25 % of full-scale value Maximum: 0.5 % of full-scale value 	Effective internal inductance and capacity for versions with plugs per EN 175301-803-A and M12	L _i = 0 nH; C _i = 0 nF
Step response time T ₉₉	< 5 ms	1) For variants with output signal 0 ... 5 V and ratiometric output available soon.	
Long-term stability			
• Lower range value and measuring span	0.25 % of full-scale value/year span		
Influence of ambient temperature			
• Lower range value and measuring span	0.25 %/10 K of full-scale value span		
• 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)	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> acc. IEC 61326-1/-2/-3 acc. NAMUR NE21, only for ATEX versions and with a max. measuring deviation ≤ 1 % 		

Pressure Measurement

Single-range transmitters for general applications

SITRANS P200 for gauge and absolute pressure

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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-

Characteristic curve deviation typ. 0.25 %

Wetted parts materials: Ceramic and stainless steel + sealing material

Non-wetted parts materials: stainless steel

➤ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.

Measuring range		Overload limit		Burst pressure			
		Min.	Max.				
For gauge pressure							
0 ... 1 bar	(0 ... 14.5 psi)	-1 bar (-14.5 psi)	2.5 bar (36.26 psi)	> 2.5 bar (> 36.3 psi)	▶▶	3BA	
0 ... 1.6 bar	(0 ... 23.2 psi)	-1 bar (-14.5 psi)	4 bar (58.02 psi)	> 4 bar (> 58.0 psi)	▶▶	3BB	
0 ... 2.5 bar	(0 ... 36.3 psi)	-1 bar (-14.5 psi)	6.25 bar (90.65 psi)	> 6.25 bar (> 90.7 psi)	▶▶	3BD	
0 ... 4 bar	(0 ... 58.0 psi)	-1 bar (-14.5 psi)	10 bar (145 psi)	> 10 bar (> 145 psi)	▶▶	3BE	
0 ... 6 bar	(0 ... 87.0 psi)	-1 bar (-14.5 psi)	15 bar (217 psi)	> 15 bar (> 217 psi)	▶▶	3BG	
0 ... 10 bar	(0 ... 145 psi)	-1 bar (-14.5 psi)	25 bar (362 psi)	> 25 bar (> 362 psi)	▶▶	3CA	
0 ... 16 bar	(0 ... 232 psi)	-1 bar (-14.5 psi)	40 bar (580 psi)	> 40 bar (> 580 psi)	▶▶	3CB	
0 ... 25 bar	(0 ... 363 psi)	-1 bar (-14.5 psi)	62.5 bar (906 psi)	> 62.5 bar (> 906 psi)	▶▶	3CD	
0 ... 40 bar	(0 ... 580 psi)	-1 bar (-14.5 psi)	100 bar (1450 psi)	> 100 bar (> 1450 psi)	▶▶	3CE	
0 ... 60 bar	(0 ... 870 psi)	-1 bar (-14.5 psi)	150 bar (2175 psi)	> 150 bar (> 2175 psi)	▶▶	3CG	
Other version, add Order code and plain text: Measuring range: ... up to... bar (psi)						9AA	H1Y
For absolute pressure							
0 ... 0.6 bar a	(0 ... 8.7 psia)	0 bar a (0 psia)	3 bar a (43.51 psia)	> 2.5 bar a (> 36.3 psia)		5AG	
0 ... 1 bar a	(0 ... 14.5 psia)	0 bar a (0 psia)	2.5 bar a (36.26 psia)	> 2.5 bar a (> 36.3 psia)	▶▶	5BA	
0 ... 1.6 bar a	(0 ... 23.2 psia)	0 bar a (0 psia)	4 bar a (58.02 psia)	> 4 bar a (> 58.0 psia)	▶▶	5BB	
0 ... 2.5 bar a	(0 ... 36.3 psia)	0 bar a (0 psia)	6.25 bar a (90.65 psia)	> 6.25 bar a (> 90.7 psia)	▶▶	5BD	
0 ... 4 bar a	(0 ... 58.0 psia)	0 bar a (0 psia)	10 bar a (145 psia)	> 10 bar a (> 145 psia)	▶▶	5BE	
0 ... 6 bar a	(0 ... 87.0 psia)	0 bar a (0 psia)	15 bar a (217 psia)	> 15 bar a (> 217 psia)	▶▶	5BG	
0 ... 10 bar a	(0 ... 145 psi)	0 bar a (0 psia)	25 bar a (362 psia)	> 25 bar a (> 362 psia)	▶▶	5CA	
0 ... 16 bar a	(0 ... 232 psi)	0 bar a (0 psia)	40 bar a (580 psia)	> 40 bar a (> 580 psia)	▶▶	5CB	
Other version, add Order code and plain text: Measuring range: ... up to ... mbar a (psia)						9AA	H2Y
Measuring ranges for gauge pressure							
0 ... 15 psi	-14.5 psi	35 psi	> 35 psi			4BB	
3 ... 15 psi	-14.5 psi	35 psi	> 35 psi			4BC	
0 ... 20 psi	-14.5 psi	50 psi	> 50 psi			4BD	
0 ... 30 psi	-14.5 psi	80 psi	> 80 psi			4BE	
0 ... 60 psi	-14.5 psi	140 psi	> 140 psi			4BF	
0 ... 100 psi	-14.5 psi	200 psi	> 200 psi			4BG	
0 ... 150 psi	-14.5 psi	350 psi	> 350 psi			4CA	
0 ... 200 psi	-14.5 psi	550 psi	> 550 psi			4CB	
0 ... 300 psi	-14.5 psi	800 psi	> 800 psi			4CD	
0 ... 500 psi	-14.5 psi	1400 psi	> 1400 psi			4CE	
0 ... 750 psi	-14.5 psi	2000 psi	> 2000 psi			4CF	
0 ... 1000 psi	-14.5 psi	2000 psi	> 2000 psi			4CG	
Other version, add Order code and plain text: Measuring range: ... up to ... psi						9AA	H1Y
Measuring ranges for absolute pressure							
0 ... 10 psia	0 psia	35 psia	> 35 psia			6AG	
0 ... 15 psia	0 psia	35 psia	> 35 psia			6BA	
0 ... 20 psia	0 psia	50 psia	> 50 psia			6BB	
0 ... 30 psia	0 psia	80 psia	> 80 psia			6BD	
0 ... 60 psia	0 psia	140 psia	> 140 psia			6BE	
0 ... 100 psia	0 psia	200 psia	> 200 psia			6BG	
0 ... 150 psia	0 psia	350 psia	> 350 psia			6CA	
0 ... 200 psia	0 psia	550 psia	> 550 psia			6CB	
0 ... 300 psia	0 psia	800 psia	> 800 psia			6CC	
Other version, add Order code and plain text: Measuring range: ... up to ... psia						9AA	H2Y

▶ 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.

Pressure Measurement

Single-range transmitters for general applications

SITRANS P200 for gauge and absolute pressure

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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
0 ... 10 V; three-wire system; power supply 12 ... 33 V DC		10
0 ... 5 V; 3-wire system; auxiliary power 7 ... 33 V DC		20
Ratiometric 10 ... 90 %; 3-wire system; auxiliary power 5 V DC ± 10 %		30
Explosion protection (only 4 ... 20 mA)		
None	►◆	0
With explosion protection Ex ia IIC T4	►◆	1
Electrical connection		
Connector per DIN EN 175301-803-A, stuffing box thread M16 (with coupling)	►◆	1
Round connector M12 per IEC 61076-2-101		2
Connection via fixed mounted cable, 2 m (not for type of protection "Intrinsic safety i")		03
Quickon cable quick screw connection PG9 (not for type of protection "Intrinsic safety i")		04
Connector per DIN EN 175301-803-A, stuffing box thread 1/2"-14 NPT (with coupling)		5
Connector per DIN EN 175301-803-A, stuffing box thread PG11 (with coupling)		6
Fixed mounted cable, length 5 m		07
Special version		9 N1Y
Process connection		
G½" male per EN 837-1 (½" BSP male) (standard for metric pressure ranges mbar, bar)	►◆	A
G½" male thread and G1/8" female thread		B
G¼" male per EN 837-1 (¼" BSP male)		C
7/16"-20 UNF male		D
¼"-18 NPT male (standard for pressure ranges inH ₂ O and psi)		E
¼"-18 NPT female		F
½"-14 NPT male		G
½"-14 NPT female		H
7/16"-20 UNF female		J
M20x1.5 male		P
Special version		Z P1Y
Sealing material between sensor and enclosure		
Viton (FPM, standard)	►◆	A
Neoprene (CR)		B
Perbunan (NBR)		C
EPDM		D
Special version		Z Q1Y
Version		
Standard version	►◆	1
Further designs		
Supplement the Article No. with "-Z" and add Order code.		
Quality Inspection Certificate (5-point characteristic curve test) according to IEC 60770-2		
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	