

**Technical specifications**

<b>Input</b>		<b>Measuring accuracy</b>							
Measured variable	Differential pressure and flow	Reference conditions (in accordance with IEC 60770-1)	<ul style="list-style-type: none"> <li>• Rising characteristic curve</li> <li>• Start of scale 0 bar</li> <li>• Stainless steel seal diaphragm</li> <li>• Measuring cell with silicone oil filling</li> <li>• Room temperature (25 °C (77 °F))</li> </ul>						
Span (infinitely adjustable)	Span (min. ... max.)	All error information always refers to the set span.							
	Maximum operating pressure (static pressure)	Error in measurement at limit setting incl. hysteresis and reproducibility							
	1.00 ... 50 mbar (0.4 ... 20 inH <sub>2</sub> O) 1.25 ... 250 mbar (0.5 ... 100 inH <sub>2</sub> O) 6.25 ... 1250 mbar (2.5 ... 502 inH <sub>2</sub> O) 31.25 ... 6250 mbar (12.54 ... 2509 inH <sub>2</sub> O) 0.16 ... 32 bar (2.33 ... 465 psi)	r: Span ratio (r: Span ratio (r = max. span / set span))							
Lower range limit	-100 % of max. span and/or 30 mbar a (0.44 psi a)	Linear characteristic	<table border="1" style="width: 100%;"> <tr> <td>r ≤ 10</td> <td>r ≥ 10</td> </tr> <tr> <td>≤ 0.06 %</td> <td>≤ (0.006 · r) %</td> </tr> <tr> <td>≤ 0.03 %</td> <td>≤ (0.003 · r) %</td> </tr> </table>	r ≤ 10	r ≥ 10	≤ 0.06 %	≤ (0.006 · r) %	≤ 0.03 %	≤ (0.003 · r) %
r ≤ 10	r ≥ 10								
≤ 0.06 %	≤ (0.006 · r) %								
≤ 0.03 %	≤ (0.003 · r) %								
• Measuring cell with silicone oil filling		• 50 mbar (20 inH <sub>2</sub> O) • 250 mbar (100 inH <sub>2</sub> O) 1250 mbar (502 inH <sub>2</sub> O) 6250 mbar (2509 inH <sub>2</sub> O) 32 bar (465 psi)							
Upper range limit	100 % of max. span	Square-rooted characteristic	<table border="1" style="width: 100%;"> <tr> <td>r ≤ 10</td> <td>r ≥ 10</td> </tr> <tr> <td>≤ 0.06 %</td> <td>≤ (0.006 · r) %</td> </tr> <tr> <td>≤ 0.03 %</td> <td>≤ (0.003 · r) %</td> </tr> </table>	r ≤ 10	r ≥ 10	≤ 0.06 %	≤ (0.006 · r) %	≤ 0.03 %	≤ (0.003 · r) %
r ≤ 10	r ≥ 10								
≤ 0.06 %	≤ (0.006 · r) %								
≤ 0.03 %	≤ (0.003 · r) %								
Start of scale	Between measuring limits (freely adjustable)	• Flow > 50 % - 50 mbar (20 inH <sub>2</sub> O) - 250 mbar (100 inH <sub>2</sub> O) 1250 mbar (502 inH <sub>2</sub> O) 6250 mbar (2509 inH <sub>2</sub> O) 32 bar (465 psi)							
<b>Output</b>		• Flow 25 % ... 50 % - 50 mbar (20 inH <sub>2</sub> O) - 250 mbar (100 inH <sub>2</sub> O) 1250 mbar (502 inH <sub>2</sub> O) 6250 mbar (2509 inH <sub>2</sub> O) 32 bar (465 psi)	<table border="1" style="width: 100%;"> <tr> <td>r ≤ 10</td> <td>r ≥ 10</td> </tr> <tr> <td>≤ 0.12 %</td> <td>≤ (0.012 · r) %</td> </tr> <tr> <td>≤ 0.06 %</td> <td>≤ (0.006 · r) %</td> </tr> </table>	r ≤ 10	r ≥ 10	≤ 0.12 %	≤ (0.012 · r) %	≤ 0.06 %	≤ (0.006 · r) %
r ≤ 10	r ≥ 10								
≤ 0.12 %	≤ (0.012 · r) %								
≤ 0.06 %	≤ (0.006 · r) %								
Output current signal	4 ... 20 mA	Influence of ambient temperature per 28 °C (50 °F)	<ul style="list-style-type: none"> <li>• 50 mbar (20 inH<sub>2</sub>O) ≤ (0.04 · r + 0.05) %</li> <li>• 250 mbar (100 inH<sub>2</sub>O) ≤ (0.025 · r + 0.014) %</li> <li>• 1250 mbar (502 inH<sub>2</sub>O) ≤ (0.006 · r + 0.03) %</li> <li>• 6250 mbar (2509 inH<sub>2</sub>O)</li> <li>• 32 bar (465 psi)</li> </ul>						
• Lower current limit (freely adjustable)	3.55 mA, factory setting 3.8 mA	Influence of static pressure	<ul style="list-style-type: none"> <li>• At the start of scale value (PKN)</li> <li>- 50 mbar (20 inH<sub>2</sub>O) ≤ (0.1 · r) % per 70 bar (1015 psi) correction via zero point correction</li> <li>- 250 mbar (100 inH<sub>2</sub>O) ≤ (0.035 · r) % per 70 bar (1015 psi) correction via zero point correction</li> <li>- 1250 mbar (502 inH<sub>2</sub>O) ≤ (0.007 · r) % per 70 bar (1015 psi) correction via zero point correction</li> <li>- 6250 mbar (2509 inH<sub>2</sub>O)</li> <li>- 32 bar (465 psi)</li> </ul>						
• Upper current limit (freely adjustable)	23 mA, factory setting 20.5 mA	• On the span (PKS)	<ul style="list-style-type: none"> <li>- 50 mbar (20 inH<sub>2</sub>O) ≤ 0.13 % per 70 bar (1015 psi)</li> <li>- 250 mbar (100 inH<sub>2</sub>O) ≤ 0.03 % per 70 bar (1015 psi)</li> <li>- 1250 mbar (502 inH<sub>2</sub>O)</li> <li>- 6250 mbar (2509 inH<sub>2</sub>O) ≤ 0.09 % per 70 bar (1015 psi)</li> <li>- 32 bar (465 psi) ≤ 0.05 % per 70 bar (1015 psi)</li> </ul>						
• Ripple (without HART communication)	I <sub>pp</sub> ≤ 0.4 % of max. output current								
• adjustable damping	0... 100 s in steps of 0.1 s, factory-setting: 2 s								
• current transmitter	3.55 ... 23 mA								
• Failure signal	adjustable within limits: • Bottom: 3.55 ... 3.7 mA (default value: 3.6 mA) • Top: 21.0 ... 23 mA (default value: 22.8 mA)								
Load									
• Without HART communication	$R_B \leq (U_H - 10.5 \text{ V})/0.023 \text{ A}$ in $\Omega$ , $U_H$ : Power supply in V								
• With HART communication									
- HART Communicator	$R_B = 230 \dots 1100 \Omega$								
- HART modem	$R_B = 230 \dots 500 \Omega$								
Characteristic curve	Linearly rising, linearly falling, square rooted characteristic rising, bidirectional square rooted characteristic and user-specific								

# Pressure Measurement

Pressure transmitters  
for applications with highest requirements (Premium)  
SITRANS P500

## for differential pressure and flow

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Total Performance <sup>1)</sup>		Design	
<ul style="list-style-type: none"> <li>Linear characteristic</li> <li>- 50 mbar (20 inH<sub>2</sub>O)</li> <li>- 250 mbar (100 inH<sub>2</sub>O)</li> <li>- 1250 mbar (502 inH<sub>2</sub>O)</li> <li>6250 mbar (2509 inH<sub>2</sub>O)</li> <li>32 bar (465 psi)</li> </ul>	$r \leq 5$ $\leq 0.27\%$ $\leq 0.14\%$ $\leq 0.09\%$	$5 < r \leq 10$ $\leq 0.46\%$ $\leq 0.27\%$ $\leq 0.14\%$	<b>Weight (without options)</b> Approx. 3.3 kg (7.3 lb)
Square rooted characteristic			<b>Material of parts in contact with the medium</b> <ul style="list-style-type: none"> <li>Seal diaphragm</li> </ul>
<ul style="list-style-type: none"> <li>Flow &gt; 50 %</li> <li>- 50 mbar (20 inH<sub>2</sub>O)</li> <li>- 250 mbar (100 inH<sub>2</sub>O)</li> <li>- 1250 mbar (502 inH<sub>2</sub>O)</li> <li>6250 mbar (2509 inH<sub>2</sub>O)</li> <li>32 bar (465 psi)</li> </ul>	$r \leq 5$ $\leq 0.27\%$ $\leq 0.14\%$ $\leq 0.09\%$	$5 < r \leq 10$ $\leq 0.46\%$ $\leq 0.27\%$ $\leq 0.14\%$	<ul style="list-style-type: none"> <li>Process connection and sealing screw</li> <li>Sealing material in the process connections</li> <li>- O-Ring</li> </ul>
<ul style="list-style-type: none"> <li>Flow 25 % ... 50 %</li> <li>- 50 mbar (20 inH<sub>2</sub>O)</li> <li>- 250 mbar (100 inH<sub>2</sub>O)</li> <li>- 1250 mbar (502 inH<sub>2</sub>O)</li> <li>6250 mbar (2509 inH<sub>2</sub>O)</li> <li>32 bar (465 psi)</li> </ul>	$r \leq 5$ $\leq 0.54\%$ $\leq 0.28\%$ $\leq 0.18\%$	$5 < r \leq 10$ $\leq 0.92\%$ $\leq 0.54\%$ $\leq 0.28\%$	<b>Material of parts not in contact with media</b> Die-cast aluminum housing
Step response time $T_{63}$ without electrical damping			<ul style="list-style-type: none"> <li>Standard: Viton (FKM (FPM))</li> <li>Optional: NBR, PTFE (virginal), PTFE (glass fiber-reinforced), FFPM (Kalrez)<sup>2)</sup>, Graphite</li> </ul>
<ul style="list-style-type: none"> <li>50 mbar (20 inH<sub>2</sub>O)</li> </ul>	$\leq 140$ ms, contains a dead time of $\leq 45$ ms		<b>Material of parts not in contact with media</b> Stainless steel precision cast housing
<ul style="list-style-type: none"> <li>250 mbar (100 inH<sub>2</sub>O)</li> <li>1250 mbar (502 inH<sub>2</sub>O)</li> <li>6250 mbar (2509 inH<sub>2</sub>O)</li> <li>32 bar (465 psi)</li> </ul>	$\leq 88$ ms, contains a dead time of $\leq 45$ ms		Process connection screws
Long-term stability	$\leq (0.05 \cdot r)\%$ per 5 years $\leq (0.08 \cdot r)\%$ per 10 years		Mounting bracket
Influence of power supply	$\leq 0.005\%/1$ V		Measuring cell filling
<b>Rated conditions</b>			Process connection
Mounting position	Any		Electrical connection
Ambient conditions			Displays and controls
<ul style="list-style-type: none"> <li>Ambient temperature (Note: Observe the temperature class in areas subject to explosion hazard.)</li> <li>- Total device</li> <li>- Readable display</li> <li>- Storage temperature</li> </ul>	-40 ... +85 °C (-40 ... +185 °F) -20 ... +85 °C (-4 ... +185 °F) -50 ... +90 °C (-58 ... +194 °F)		Pushbuttons
Climatic class			Display
<ul style="list-style-type: none"> <li>Condensation</li> </ul>	Relative humidity 0 ... 100 % (condensation permissible)		<b>Auxiliary power supply</b>
Degree of protection (to IEC 60529)	IP66/IP 68 and NEMA 4X (with corresponding cable gland)		Terminal voltage on transmitter
Electromagnetic Compatibility			<ul style="list-style-type: none"> <li>DC 10.6 ... 44 V</li> <li>With intrinsically-safe operation DC 10.6 ... 30 V</li> </ul>
<ul style="list-style-type: none"> <li>Emitted interference and interference immunity</li> </ul>	Acc. to IEC 61326 and NAMUR NE 21		
Permissible pressures	According to 2014/68/EU pressure equipment directive		
Temperature of medium			
<ul style="list-style-type: none"> <li>Measuring cell with silicone oil filling</li> </ul>	-40 ... +125 °C (-40 ... +257 °F)		

**Certificates and approvals**

Classification according to PED 2014/68/EU

- PN 160 (MAWP 2320 psi)

For gases of fluid group 1 and liquids of fluid group 1; complies with requirements of article 4, paragraph 3 (sound engineering practice)

Explosion protection

Explosion protection for Europe (to ATEX)

- Intrinsic safety "i"

PTB 09 ATEX 2004 X

- Marking
- Permissible ambient temperature
- Connection

Ex II 1/2 G Ex ia/ib IIC T4

-40 ... +85 °C (-40 ... +185 °F)

To certified intrinsically-safe circuits with peak values:

$U_i = 30 \text{ V}$ ,  $I_i = 100 \text{ mA}$ ,  $P_i = 750 \text{ mW}$ ;  $R_i = 300 \Omega$

$L_i = 400 \mu\text{H}$

- Effective internal inductance:
- Effective inner capacitance:

$C_i = 6 \text{ nF}$

- Explosion-proof "d"

BVS 09 ATEX E 027

- Marking
- Permissible ambient temperature

Ex II 1/2 G Ex db ia IIC T4/T6 Ga/Gb

-40 ... +85 °C (-40 ... +185 °F)

temperature class T4;

-40 ... +60 °C (-40 ... +140 °F)

temperature class T6

- Connection

To circuits with values:

$U_m = \text{DC } 10.5 \dots 45 \text{ V}$

- Dust explosion protection for zone 20

BVS 09 ATEX E 027

- Marking
- Permissible ambient temperature
- Max. surface temperature
- Connection

Ex II 1 D Ex ta ia IIIC T120°C Da

-40 ... +85 °C (-40 ... +185 °F)

120 °C (248 °F)

To certified intrinsically-safe circuits with peak values:

$U_i = 30 \text{ V}$ ,  $I_i = 100 \text{ mA}$ ,

$P_i = 750 \text{ mW}$ ,  $R_i = 300 \Omega$

$L_i = 400 \mu\text{H}$

- Effective internal inductance:
- Effective inner capacitance:

$C_i = 6 \text{ nF}$

- Dust explosion protection for zone 21/22

BVS 09 ATEX E 027

- Marking
- Connection

Ex II 2D Ex tb ia IIIC T120°C Db

To circuits with values:

$U_m = 10.5 \dots 45 \text{ V DC}$ ;  $P_{\text{max}} = 1.2 \text{ W}$

- Type of protection "n" (zone 2)

PTB 09 ATEX 2004 X

- Marking

Ex II 3 G Ex nA II T4/T6

Ex II 2/3 G Ex ib/nL IIC T4/T6

Ex II 2/3 G Ex ib/ic IIC T4/T6

- "nA" connection
- "nL, ic" connection
- Effective internal inductance:
- Effective inner capacitance:

$U_m = 45 \text{ V DC}$

$U_i = 45 \text{ V}$

$L_i = 400 \mu\text{H}$

$C_i = 6 \text{ nF}$

Explosion protection for USA

(to FM)

Certificate of Compliance

No. 3033013

- Identification (XP/DIP) or (IS)

XP CL I, DIV 1, GP ABCDEFG T4 / T6

DIP CL II, III, DIV1, GP EFG T4/T6

IS CL I, II, III, DIV1, GP ABCDEFG T4

CL I, Zone 0, AEx ia IIC T4

CL I, Zone 1, AEx ib IIC T4

- Permissible Ambient Temperature

$T_a = \text{T4: } -40 \dots +85 \text{ °C}$

$(-40 \dots +185 \text{ °F})$

$T_a = \text{T6: } -40 \dots +60 \text{ °C}$

$(-40 \dots +140 \text{ °F})$

- Entity parameters

According to "control drawing":

A5E02189134N

$U_m = 30 \text{ V}$ ,  $I_m = 100 \text{ mA}$ ,

$P_i = 750 \text{ mW}$ ,  $L_i = 400 \mu\text{H}$ ,  $C_i = 6 \text{ nF}$

- Marking (NI/NO)

NI CL I, DIV 2, GP ABCD T4/T6

NI CL I, Zone 2, GP IIC T4/T6

S CL II, III, GPFG T4/T6

NI CL I, DIV 2, GP ABCD T4/T6, NIFW

NI CL I, Zone 2, GP IIC T4/T6, NIFW

NI CLII, III, DIV 2, GP FG T4/T6, NIFW

- Permissible Ambient Temperature

$T_a = \text{T4: } -40 \dots +85 \text{ °C}$

$(-40 \dots +185 \text{ °F})$

$T_a = \text{T6: } -40 \dots +60 \text{ °C}$

$(-40 \dots +140 \text{ °F})$

- (NI/S) parameters

According to "control drawing":

A5E02189134N

$U_m = 45 \text{ V}$ ,  $L_i = 400 \mu\text{H}$ ,  $C_i = 6 \text{ nF}$ ,

Explosion protection for Canada (to cCSAUS)

Certificate of Compliance

No. 2280963

- Marking (XP/DIP)

CL I, DIV 1, GP ABCD T4 /T6;

CL II, DIV 1, GP EFG T4/T6

- Permissible ambient temperature

$T_a = \text{T4: } -40 \dots +85 \text{ °C } (-40 \dots +185 \text{ °F})$

$T_a = \text{T6: } -40 \dots +60 \text{ °C } (-40 \dots +140 \text{ °F})$

- Entity parameters

According to "control drawing":

A5E02189134N

$U_m = 45 \text{ V}$

- Marking (ia/ib)

CL I, Ex ia/Ex ib IIC, T4

CL II, III, Ex ia/Ex ib, GP EFG, T4

CL I, AEx ia/AEx ib IIC, T4

CL II, III, AEx ia/ AEx ib, GP EFG, T4

- Permissible ambient temperature

$T_a = \text{T4: } -40 \dots +85 \text{ °C}$

$(-40 \dots +185 \text{ °F})$

- Entity parameters

$U_i = 30 \text{ V}$ ,  $I_i = 100 \text{ mA}$ ,  $P_i = 750 \text{ mW}$ ,

$R_i = 300 \Omega$ ,  $L_i = 400 \mu\text{H}$ ,  $C_i = 6 \text{ nF}$

- Marking (NI/n)

CL I, DIV 2, GP ABCD T4/T6

CL II, III, DIV 2, GP FG T4/T6

Ex nA IIC T4/T6

AEx nA IIC T4/T6

Ex nL IIC T4/T6

AEx nL IIC T4/T6

- Permissible ambient temperature

$T_a = \text{T4: } -40 \dots +85 \text{ °C } (-40 \dots +185 \text{ °F})$

$T_a = \text{T6: } -40 \dots +60 \text{ °C } (-40 \dots +140 \text{ °F})$

- NI/nA parameters

According to "control drawing":

A5E02189134N

$U_m = 45 \text{ V}$

- nL parameters

According to "control drawing":

A5E02189134N

$U_i = 45 \text{ V}$ ,  $I_i = 100 \text{ mA}$ ,  $L_i = 400 \mu\text{H}$ ,

$C_i = 6 \text{ nF}$

## Pressure Measurement

Pressure transmitters  
for applications with highest requirements (Premium)  
SITRANS P500

### for differential pressure and flow

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#### Explosion protection for China (acc. to NEPSI)

• Intrinsic safety "i"	GYJ111111X
- Marking	Ex ia/ib IIB/IIC T4
- Perm. ambient temperature	40 ... +85 °C (-40 ... +185 °F)
- Connection	To certified intrinsically-safe circuits with maximum values: $U_i = 30 \text{ V}$ $I_i = 100 \text{ mA}$ , $P_i = 750 \text{ mW}$
- Effective internal inductance	$L_i = 400 \text{ mH}$
- Effective inner capacitance	$C_i = 6 \text{ nF}$
• Explosion-proof "d"	GYJ111112
- Marking	Ex dia IIC T4/T6
- Permissible ambient temperature	-40 ... +85 °C (-40 ... +185 °F) temperature class T4; -40 ... +60 °C (-40 ... +140 °F) temperature class T6
- Connection	To circuits with values: $U_m = \text{DC } 10.5 \dots 45 \text{ V}$
• Dust explosion protection for zone 21/22	GYJ111112
- Marking	DIP A21 TA,T120 °C IP68 D21
- Connection	To circuits with values: $U_m = \text{DC } 10.5 \dots 45 \text{ V}$
• Type of protection "n" (zone 2)	GYJ111111X
- Marking	Ex nL IIB/IIC T4/T6 Ex nA II T4/T6
- Connection	$U_i = 45 \text{ V DC}$
- Effective internal inductance	$L_i = 400 \text{ mH}$
- Effective inner capacitance	$C_i = 6 \text{ nF}$

1) The total performance includes the errors caused by temperature effects, static pressure effects and conformity error, including hysteresis and repeatability.

2) Not in combination with span "G".

#### HART communication

Load with connection of	
• HART communicator	$R_B = 230 \dots 1100 \Omega$
• HART modem	$R_B = 230 \dots 500 \Omega$
Cable	2 wire shielded: $\leq 3.0 \text{ km}$ (1.86 miles), multiwire shielded: $\leq 1.5 \text{ km}$ (0.93 miles)
Protocol	HART Version 6.0
PC/laptop requirements	IBM compatible, RAM > 32 MByte, hard disk > 70 MByte, depending on modem type: RS 232-interface or USB connection, VGA graphics
Software for computer	SIMATIC PDM 6.0

**Selection and Ordering data**

Article No.

**Pressure transmitters for differential pressure and flow,  
SITRANS P500 HART, PN 160 (MAWP 2320 psi)**

➤ 7 MF 5 4 - - - - 0

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

**Enclosure**

**Thread for cable gland<sup>1)</sup>**

Die-cast aluminum, dual compartment	M20x1.5
Die-cast aluminum, dual compartment	½-14 NPT
Stainless steel precision casting, two-chamber housing	M20x1.5
Stainless steel precision casting, two-chamber housing	½-14 NPT

**Output**

4 ... 20 mA, HART

**Measuring cell filling**

**Measuring cell cleaning**

Silicone oil                      normal

**Measuring span**

1.00 ... 50 mbar	(0.4 ... 20 inH <sub>2</sub> O)
1.25 ... 250 mbar	(0.5 ... 100.4 inH <sub>2</sub> O)
6.25 ... 1250 mbar	(2.5 ... 502 inH <sub>2</sub> O)
31.25 ... 6250 mbar	(12.54 ... 2509 inH <sub>2</sub> O)
0.16 ... 32 bar	(2.33 ... 465 psi)

**Wetted parts materials**

Seal diaphragm	Process flange
Stainless steel 1.4404/316L	Stainless steel 1.4404/316L
Hastelloy C276 <sup>2)</sup>	Stainless steel 1.4404/316L
Monel 400 <sup>2)</sup>	Stainless steel 1.4404/316L
Hastelloy	Hastelloy

**Process connection**

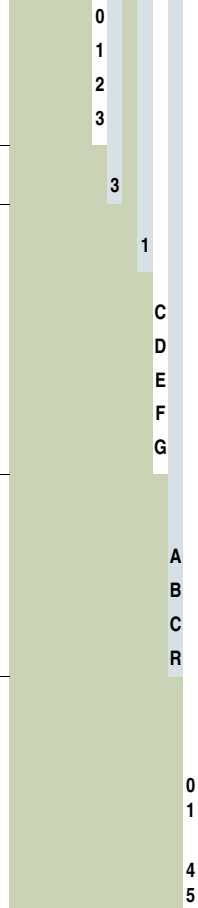
Female thread ¼-18 NPT

- Sealing screw opposite process connection
  - Mounting thread 7/16 - 20 UNF according to IEC 61518/DIN EN 61518
  - Mounting thread M10 to DIN 19213
- Vent on side of process flange<sup>3)</sup>
  - Mounting thread 7/16 - 20 UNF according to IEC 61518/DIN EN 61518
  - Mounting thread M10 to DIN 19213

<sup>1)</sup> Cable glands must be ordered separately from "Further designs" (add "-Z" to Article No. and specify order code).

<sup>2)</sup> Not together with Measuring span "C".

<sup>3)</sup> Not in conjunction with remote seals (option V00).



# Pressure Measurement

Pressure transmitters

for applications with highest requirements (Premium)

SITRANS P500

for differential pressure and flow

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## Selection and Ordering data

Order code

### Further designs

Add "-Z" to Article No. and specify Order code.

### Attachments

Mounting bracket made of steel	<b>A01</b>
Mounting bracket made of stainless steel 304	<b>A02</b>
Mounting bracket made of stainless steel 316L	<b>A03</b>

### Display

(Standard: no display, cover closed)

With display and blanking cover	<b>A10</b>
With display and glass cover	<b>A11</b>

### Special casing / cover version

Two coats of lacquer on casing, cover (PU on epoxy)	<b>A20</b>
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### Electrical connection and cable entry

(Standard: no cable gland, only dust protection caps)

Cable gland made of plastic (IP66/68) <sup>4)</sup>	<b>A50</b>
Cable glands made of metal (IP66/68)	<b>A51</b>
Cable glands made of stainless steel (IP66/68)	<b>A52</b>
Device plug M12 without cable socket (IP66/67) <sup>4)</sup>	<b>A60</b>
Device plug M12 complete with cable socket (IP66/67) <sup>4)</sup>	<b>A61</b>
Device plug Han 7D, plastic, straight (with cable socket) (IP65) <sup>4)</sup>	<b>A71</b>
Device plug Han 7D, plastic, angled (with cable socket) (IP65) <sup>4)</sup>	<b>A72</b>
Device plug Han 7D, metal enclosure, straight (with cable socket) (IP65) <sup>4)</sup>	<b>A73</b>
Device plug Han 7D, metal enclosure, angled (with cable socket) (IP65) <sup>4)</sup>	<b>A74</b>
Device plug Han 8D, plastic, straight (with cable socket) (IP65) <sup>4)</sup> <sup>7)</sup>	<b>A75</b>
Device plug Han 8D, plastic, angled (with cable socket) (IP65) <sup>4)</sup> <sup>7)</sup>	<b>A76</b>
Device plug Han 8D, metal enclosure, straight (with cable socket) (IP65) <sup>4)</sup> <sup>7)</sup>	<b>A77</b>
Device plug Han 8D, metal enclosure, angled (with cable socket) (IP65) <sup>4)</sup> <sup>7)</sup>	<b>A78</b>
PG 13.5 adapters <sup>4)</sup>	<b>A82</b>

### Language for labels, quick-start guide, menu language default<sup>9)</sup>

(instead of English as standard)

German	<b>B10</b>
French	<b>B12</b>
Spanish	<b>B13</b>
Italian	<b>B14</b>
Chinese	<b>B15</b>
Russian	<b>B16</b>
Japanese	<b>B17</b>
English with units psi/inH <sub>2</sub> O/°F	<b>B21</b>

### Special version: Supplementary menu languages

(Standard: English, German, French, Spanish, Italian)

Asia language package (in addition: Chinese, Japanese, Russian)	<b>B80</b>
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### Certificates

(available online for downloading)<sup>1)</sup>

Quality Inspection Certificate (5-point characteristic curve test) according to IEC 60770-2 <sup>2)</sup>	<b>C11</b>
Acceptance test certificate according to EN 10204-3.1 <sup>3)</sup>	<b>C12</b>
Acceptance certificate (EN 10204-3.1); PMI test of parts in contact with medium	<b>C15</b>

### Functional Safety (SIL2)

Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration

**C20**

## Selection and Ordering data

Order code

### Further designs

Add "-Z" to Article No. and specify Order code.

### Degree of protection approvals: Ex ia/ib (intrinsic safety)

Ex ia/ib protection (ATEX) (T4)	<b>E00</b>
Ex IS protection (FM) (T4)	<b>E01</b>
Ex IS protection (cCSA <sub>US</sub> ) (T4)	<b>E02</b>
Ex ia/ib protection (NEPSI) (T4)	<b>E06</b>

### Degree of protection approvals: Ex d (flameproof)

Ex d explosion-proof (ATEX)(T4/T6)	<b>E20</b>
Ex XP explosion-proof and DIP (FM)(T4/T6)	<b>E21</b>
Ex XP explosion-proof and DIP (cCSA <sub>US</sub> )(T4/T6)	<b>E22</b>
Ex d explosion-proof (NEPSI)(T4/T6)	<b>E26</b>

### Degree of protection approvals: n/NI

Zone 2 (nA, nL, ic) (ATEX) (T4/T6)	<b>E40</b>
Div2 NI, Div2 NI-field wiring (FM) (T4/T6)	<b>E41</b>
Zone 2 (nA, nL), Div2 NI (cCSA <sub>US</sub> ) (T4/T6)	<b>E42</b>
Zone 2 (nA, nL) (NEPSI) (T4/T6)	<b>E46</b>

### Degree of protection approvals: Dust Zone 20/21/22

Use in Zone 21/22 (Ex tD) (ATEX) Ex tb	<b>E60</b>
Use in Zone 20/21/22 (Ex iaD) (ATEX) Ex ta	<b>E61</b>
Use in Zone 21/22 (Ex DIP) (NEPSI)	<b>E66</b>

### Degree of protection approvals: Combinations

IS protection and XP and DIP (FM)	<b>E71</b>
IS protection and XP and DIP (cCSA <sub>US</sub> )	<b>E72</b>
IS protection and XP and DIP (FM/cCSA <sub>US</sub> )	<b>E73</b>

### Supplementary approvals/degree of protection

Ex-protection Ex ia according to EAC Ex (Russia)	<b>E80</b>
Ex-protection Ex d according to EAC Ex (Russia)	<b>E81</b>
Dual Seal approval <sup>5)</sup>	<b>E85</b>
Export approval Korea	<b>E86</b>

### Special process connection versions (diff. pressure)

Side vents for gas measurements <sup>9)</sup>	<b>L32</b>
Swap process connection: high-pressure side at front	<b>L33</b>

### Mosquito protection

4 pcs. for ¼-18 NPT thread	<b>L36</b>
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### Process flanges, O-rings, special material Standard: Viton (FKM) (FPM)

Process connection sealing rings made of FPM (Kalrez) <sup>10)</sup>	<b>L62</b>
Process connection sealing rings made of NBR	<b>L63</b>
Process connection sealing rings made of graphite	<b>L64</b>

### Drain/Vent valve (1 set = 2 units)

2 ventilation valves ¼- 18 NPT, in material of process flanges)	<b>L80</b>
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### Remote seals

Transmitters with connection of remote seal <sup>6)</sup> (For premounted valve manifolds see page 1/322)	<b>V00</b>
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<sup>1)</sup> Enclosed in print or as DVD: see page 1/320.

<sup>2)</sup> When also ordering the quality inspection certificate (factory calibration) according to IEC 60770-2 for transmitters with mounted diaphragm seals: Order this certificate only together with the remote seals. The measuring accuracy of the total combination is certified here.

<sup>3)</sup> When also ordering the acceptance test certificate according to EN 10204-3.1 for transmitters with mounted diaphragm seals: Order this certificate as well in addition to the respective remote seals.

<sup>4)</sup> Not together with types of protection "Explosion-proof", "Ex nA" and "Intrinsic safety and explosion-proof"

<sup>5)</sup> Only in conjunction with FM and/or cCSA<sub>US</sub>

<sup>6)</sup> Please select a remote seal separately. Also refer to the information under footnote 2). Remote seals see page 1/402.

<sup>7)</sup> The device plug Han 8D is identical with the former Han 8U version.

<sup>8)</sup> For option B15, B16 and B17 the menu language default is english. Otherwise the Option B80 (Asia language package) is necessary.

<sup>9)</sup> Only in conjunction with process connection "Vent on side".

<sup>10)</sup> Not together with Measuring span "G".

Selection and Ordering data	Order code
<b>Additional data</b>	
Please add <b>"-Z"</b> to Article No. and specify Order code(s) and plain text.	
<b>Measuring range to be set</b>	
Specify in plain text:	
• In the case of linear characteristic curve (max. 5 characters): Y01: ... up to ... mbar, bar, kPa, MPa, psi	<b>Y01</b>
• In the case of square rooted characteristic (max. 5 characters): Y02: ... up to ... mbar, bar, kPa, MPa, psi	<b>Y02</b>
<b>Measuring point number and measuring point identifier (only standard ASCII character set)</b>	
Specify in plain text:	
Measuring point number (TAG No.), max. 16 characters Y15: .....	<b>Y15</b>
Measuring point text (max. 27 char.) Y16: .....	<b>Y16</b>
Entry of HART address (TAG), max. 32 characters Y17: .....	<b>Y17</b>
<b>Setting of pressure indication in pressure units</b>	
Specify in plain text (standard setting: mbar) Y21: bar, kPa, MPa, psi, ...	
Note: The following pressure units are selectable: bar, mbar, mm H <sub>2</sub> O*, in H <sub>2</sub> O*, ftH <sub>2</sub> O*, mmHG, inHG, psi, Pa, kPa, MPa, g/cm <sup>2</sup> , kg/cm <sup>2</sup> , Torr, ATM, % or mA	
*) Reference temperature 20 °C	
<b>Setting of pressure indication in non-pressure units<sup>1)</sup></b>	
Specify in plain text: Y22: ... up to ... l/min, m <sup>3</sup> /h, m, USgpm, ... (specification of measuring range in pressure units "Y01" is essential, unit with max. 5 characters)	
<b>Customer-specific settings</b>	
Damping setting (range: 0 ... 100 s) (Standard setting: 2 s)	<b>Y30</b>

<sup>1)</sup> Preset values can only be changed over SIMATIC PDM.

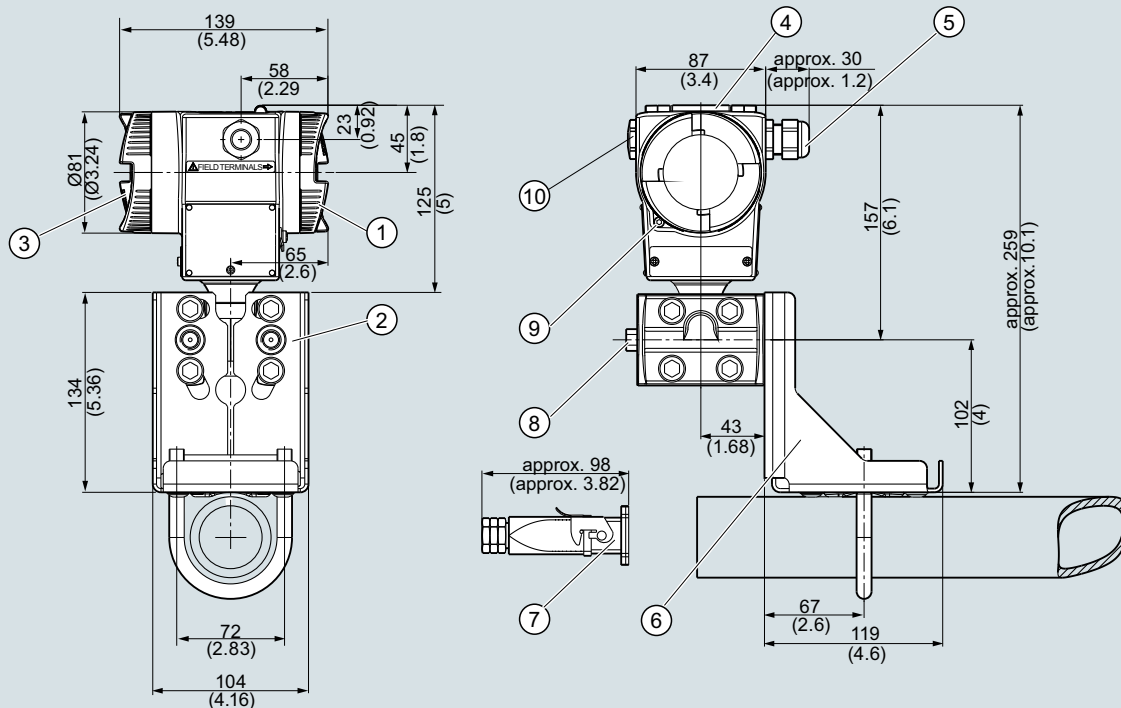
## Pressure Measurement

Pressure transmitters  
for applications with highest requirements (Premium)  
SITRANS P500

for differential pressure and flow

1

### Dimensional drawings



- ① Connection side<sup>1)</sup>
- ② Process connection: 1/4-18 NPT (IEC 61518)
- ③ Electronics side, local display<sup>1)</sup>
- ④ Cover over buttons
- ⑤ Electrical connection:
  - M20 x 1,5 or 1/2-14 NPT screw gland
  - Han 7D/Han 8D<sup>2)</sup> or M12<sup>3)</sup> device plug
- ⑥ Mounting bracket (optional)
- ⑦ Electrical connection:
  - Han 7D/Han 8D device plug<sup>2)</sup><sup>3)</sup>
- ⑧ Process connection, with valve (optional) or screwed joint (optional)
- ⑨ Screw lid - safety bracket
- ⑩ Screw-type blank cap

<sup>1)</sup> In addition, allow approx. 20 mm (0.79 inch) for the thread length

<sup>2)</sup> Not with "flameproof enclosure" type of protection

<sup>3)</sup> Not with type of protection "FM + CSA" [is + XP]"

SITRANS P pressure transmitter for differential pressure and flow, P500 series, measurements in mm (inch)