Overview

SITRANS P300, pressure transmitter with PMC connection for paper industry

The SITRANS P300 pressure transmitter has been fitted with special process connections for the paper industry. With the two process connection threads 1½" and 1" flush at the front, the SITRANS P300 transmitter can be used in all processes of the paper industry.

The SITRANS P300 pressure transmitter is a digital pressure transmitter featuring extensive user-friendliness and high accuracy. The parameterization is performed using control keys or via HART communication or via PROFIBUS PA or FOUNDATION Fieldbus interface.

The comprehensive functionality makes for precise adjustment of the pressure transmitter to the requirements of the plant. Operation is very simple in spite of the numerous setting options.

Pressure transmitters of the "Intrinsic safety" and "Flameproof" type of protection can be installed within hazardous areas (zone 1) or in zone 0. The devices are provided with an EC type-examination certificate and comply with the corresponding harmonized European standards (ATEX).

Various versions of the pressure transmitters are available for measuring:

- Gauge pressure
- Level
- Volume level
- Mass level

Benefits

- High quality and service life
- High reliability even under extreme chemical and mechanical loads, e.g. abrasion
- For corrosive and non-corrosive gases, vapors and liquids
- Extensive diagnostics and simulation functions
- Minimal conformity error
- Small long-term drift
- Wetted parts made of Hastelloy
- Continuously adjustable measuring spans from 0.03 bar to 16 bar (0.43 psi to 232 psi) with HART interface
- Nominal measuring ranges from 1 bar to 16 bar (14.5 psi to 232 psi) with PROFIBUS PA interface
- High measuring accuracy
- Parameterization using control keys or HART and/or PROFIBUS PA or FOUNDATION Fieldbus

Application

The SITRANS P300 pressure transmitter for gauge pressure with PMC connection is used in the paper industry.

Pressure transmitters of the "Intrinsic safety" and "Flameproof" type of protection can be installed within hazardous areas (zone 1) or in zone 0. The pressure transmitters are provided with an EC type-examination certificate and comply with the corresponding harmonized European standards (ATEX).

Pressure transmitters with the type of protection "Intrinsic safety" for use in zone 0 may be operated with power supply units of category "ia" and "ib".

The pressure transmitters can be equipped with various designs of remote seals for special applications such as the measurement of highly viscous substances.

The pressure transmitter can be operated locally over 3 input buttons or programmed externally over HART or over PROFIBUS PA or FOUNDATION Fieldbus interface.

Measuring span (continuously adjustable)

P300 with HART: 0.01 to 16 bar (0.15 to 232 psi)

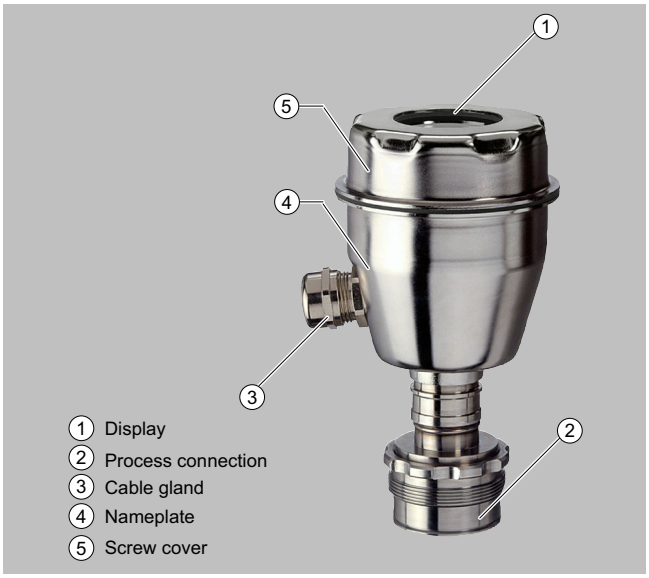
Nominal measuring range

For P300 with PROFIBUS PA and FOUNDATION Fieldbus:
1 to 16 bar (14.5 to 232 psi)

Design

The SITRANS P300 pressure transmitter consists of:

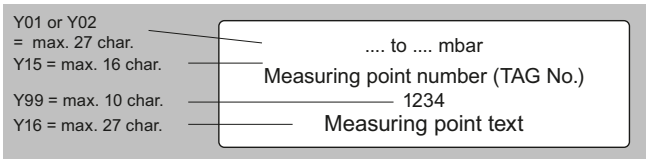
- electronics
- Enclosure
- Measuring cell



Perspective view of the SITRANS P300

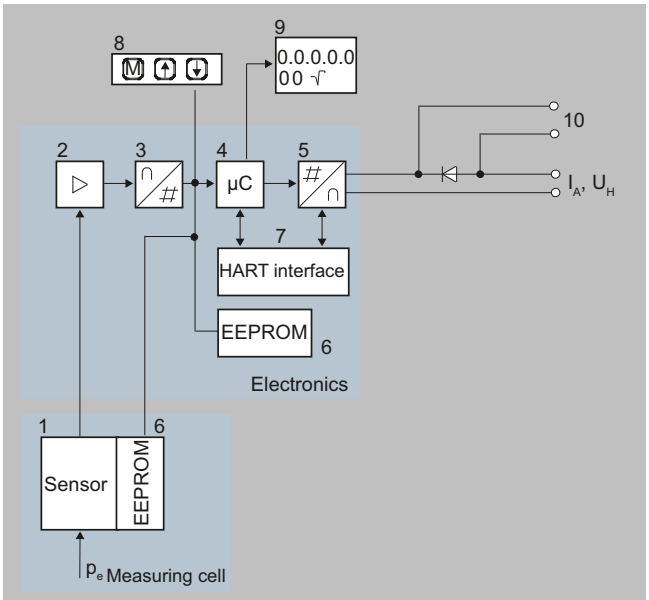
The enclosure has a screw-on cover (5) and, depending on the version, comes with or without an inspection window. The electrical terminal compartment, the buttons for operation of the device and, depending on the version, the display are located under this cover. The connections for the auxiliary power U_H and the shield are in the terminal compartment. The cable gland is on the side of the enclosure. The measuring cell with the process connection (2) is located on the bottom of the enclosure. The measuring cell with the process connection may differ from the one shown in the diagram, depending on the device design.

Example of attached measuring point label



Function

Operation of electronics with HART communication



1 Measuring cell sensor
2 Instrument amplifier
3 Analog-to-digital converter
4 Microcontroller
5 Digital-to-analog converter
6 One non-volatile memory each in the measuring cell and electronics
7 HART interface
8 Three input keys (local operation)
9 Digital display
10 Diode circuit and connection for external ammeter
I_A Output current 4 ... 20 mA
U_H Power supply
P_e Input variable

Function diagram of electronics

The bridge output voltage created by the sensor (1, Figure "Function diagram of electronics") is amplified by the measuring amplifier (2) and digitalized in the analog-to-digital converter (3). The digital information is evaluated in a microcontroller, corrected for linearity and temperature response, and converted in a digital-to-analog converter (5) into an output current of 4 to 20 mA.

The diode circuit (10) protects against incorrect polarity.

The data specific to the measuring cell, the electronics data, and the parameter data are stored in the two non-volatile memories (6). One memory is coupled to the measuring cell, the other to the electronics. As the result of this modular design, the electronics and the measuring cell can be replaced separately from each other.

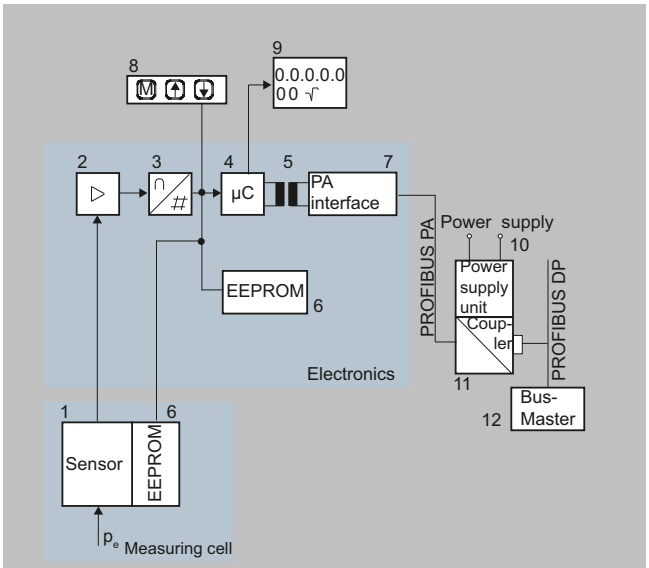
Using the 3 input buttons (8), you can parameterize the pressure transmitter directly at the measuring point. The input buttons can also be used to control the view of the measurement results, the error messages and the operating modes on the display (9).

The HART modem (7) permits parameterization using a protocol according to the HART specification.

The pressure transmitters with measuring spans ≤ 63 bar measure the input pressure compared to atmosphere, transmitters with spans ≥ 160 bar the input pressure compared to vacuum.

Function (continued)

Operation of electronics with PROFIBUS PA communication



1 Measuring cell sensor
2 Instrument amplifier
3 Analog-to-digital converter
4 Microcontroller
5 Electrical isolation
6 One non-volatile memory each in the measuring cell and electronics
7 PROFIBUS PA interface
8 Three input keys (local operation)
9 Digital display
10 Power supply
11 DP/PA coupler or link
12 Bus master
p_e Input variable

Function diagram of electronics

The bridge output voltage created by the sensor (1, Figure "Function diagram of electronics") is amplified by the measuring amplifier (2) and digitalized in the analog-to-digital converter (3). The digital information is evaluated in the microcontroller, corrected for linearity and temperature response, and made available on the PROFIBUS PA via an electrically isolated PA interface (7).

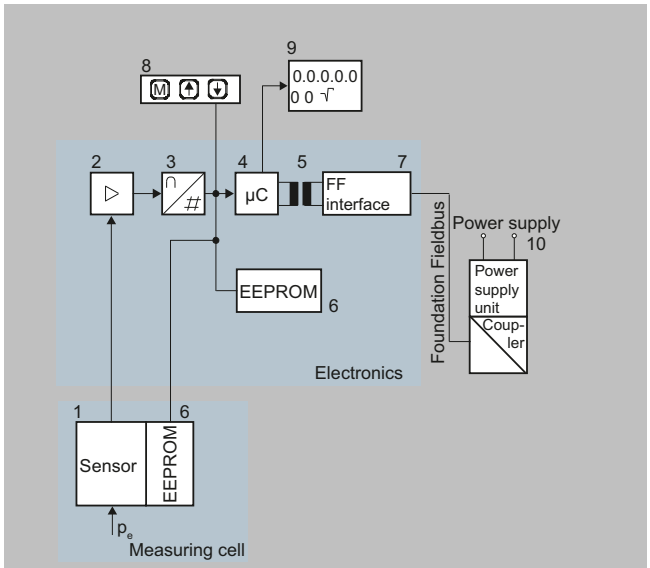
The data specific to the measuring cell, the electronics data, and the parameter data are stored in the two non-volatile memories (6). One memory is coupled to the measuring cell, the other to the electronics. As the result of this modular design, the electronics and the measuring cell can be replaced separately from each other.

Using the three input buttons (8), you can parameterize the pressure transmitter directly at the measuring point. The input buttons can also be used to control the view of the measurement results, the error messages and the operating modes on the display (9).

The results with status values and diagnostics data are transferred by cyclic data transmission on the PROFIBUS PA. Parameterization data and error messages are transferred by acyclic data transmission. Special software such as SIMATIC PDM is required for this.

Function (continued)

Operation of electronics with FOUNDATION Fieldbus communication



1 Measuring cell sensor
2 Instrument amplifier
3 Analog-to-digital converter
4 Microcontroller
5 Electrical isolation
6 One non-volatile memory each in the measuring cell and electronics
7 FOUNDATION Fieldbus interface
8 Three input keys (local operation)
9 Digital display
10 Power supply
p_e Input variable

Function diagram of electronics

The bridge output voltage created by the sensor (1, Figure "Function diagram of electronics") is amplified by the measuring amplifier (2) and digitalized in the analog-to-digital converter (3). The digital information is evaluated in the microcontroller, corrected for linearity and temperature response and made available on the FOUNDATION Fieldbus via an electrically isolated FOUNDATION Fieldbus interface (7).

The data specific to the measuring cell, the electronics data, and the parameter data are stored in the two non-volatile memories (6). One memory is coupled to the measuring cell, the other to the electronics. As the result of this modular design, the electronics and the measuring cell can be replaced separately from each other.

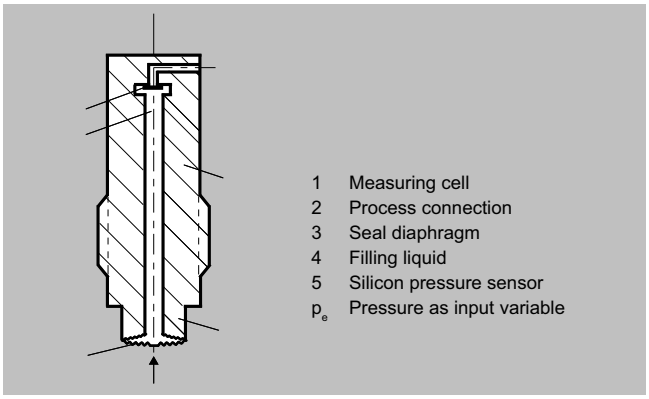
Using the three input buttons (8), you can parameterize the pressure transmitter directly at the measuring point. The input buttons can also be used to control the view of the measurement results, the error messages and the operating modes on the display (9).

The results with status values and diagnostics data are transferred by cyclic data transmission on the FOUNDATION Fieldbus. Parameterization data and error messages are transferred by acyclic data transmission. Special software such as National Instruments Configurator is required for this.

Function (continued)

Mode of operation of the measuring cell

Measuring cell for gauge pressure with flush-mounted diaphragm



Measuring cell for gauge pressure, with flush-mounted diaphragm for paper industry, function diagram

The pressure p_e is applied through the process connection (2, Figure "Measuring cell for gauge pressure, with flush-mounted diaphragm for paper industry, function diagram") to the measuring cell (1). This pressure is subsequently transmitted further through the seal diaphragm (3) and the filling liquid (4) to the silicon pressure sensor (5) whose measuring diaphragm is then flexed. This changes the resistance of the four piezo-resistors fitted in the diaphragm in a bridge circuit. This change in resistance results in a bridge output voltage proportional to the input pressure.

Parameterization

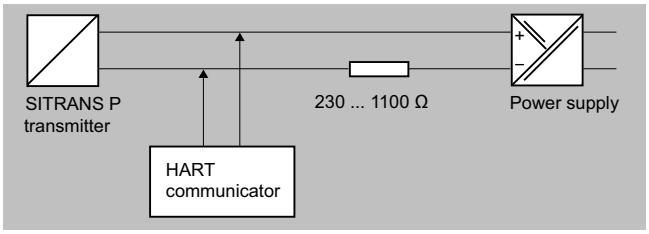
Depending on the version, there are a range of options for parameterizing the pressure transmitter and for setting or scanning the parameters.

Parameterization using the input buttons (local operation)

With the input buttons, you can easily set the most important parameters without any additional equipment.

Parameterization using HART

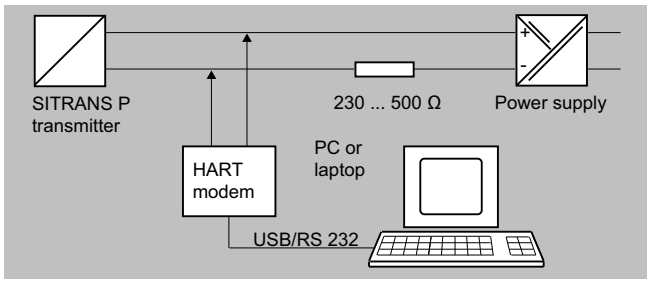
Parameterization using HART is performed with a HART Communicator or a PC.



Communication between a HART Communicator and a pressure transmitter

When parameterizing with the HART Communicator, the connection is made directly to the 2-wire cable.

Function (continued)



HART communication between a PC communicator and a pressure transmitter

When parameterizing with a PC, the connection is made through a HART modem.

The signals needed for communication in conformity with the HART 5.x or 6.x protocols are superimposed on the output current using FSK (Frequency Shift Keying).

Adjustable parameters for SITRANS P300 with HART

Parameters	Input buttons	HART
Lower range value	x	x
Upper range value	x	x
Electrical damping	x	x
Blind adjustment of the lower range value	x	x
Blind adjustment of the upper range value	x	x
Zero adjustment	x	x
Current simulator	x	x
Fault current	x	x
Disabling of buttons, write protection	x	x [1]
Type of unit, unit	x	x
Characteristic curve (linear)	x	x
Input of characteristic curve		x
Freely-programmable LCD		x
Diagnostic functions		x

[1] Except cancel write protection.

Diagnostic functions for SITRANS P300 with HART

- Zero correction display
- Event counter
- Limit transmitter
- Saturation alarm
- Min/max pointer
- Simulation functions
- Maintenance timer

Available physical units of display for SITRANS P300 with HART

Physical variable	Physical units
Pressure (can also be preset in the factory)	Pa, MPa, kPa, bar, mbar, torr, atm, psi, g/cm², kg/cm², inH₂O, inH₂O (4 °C), mmH₂O, ftH₂O (20 °C), inHg, mmHg
Level (height data)	m, cm, mm, ft, in
Volume	m³, dm³, hl, yd³, ft³, in³, US gallon, Imp. gallon, bushel, barrel, barrel liquid
Mass	g, kg, t, lb, Ston, Lton, oz
Temperature	K, °C, °F, °R
Other	%, mA

Function (continued)

Parameterization through PROFIBUS interface

Fully digital communication through PROFIBUS PA, profile 3.0, is particularly user-friendly. Communication is possible even in a hazardous area.

For parameter assignment via PROFIBUS, you need suitable software, e.g. SIMATIC PDM (Process Device Manager)

Parameterization through FOUNDATION Fieldbus interface

Fully digital communication through FOUNDATION Fieldbus is particularly user-friendly. Communication is possible even in a hazardous area.

For parameterization through the FOUNDATION Fieldbus you need suitable software, e.g. National Instruments Configurator.

Adjustable parameters for SITRANS P300 with PROFIBUS PA and FOUNDATION Fieldbus

Adjustable parameters	Input buttons	PROFIBUS PA and FOUNDATION Fieldbus
Electrical damping	x	x
Zero adjustment (correction of position)	x	x
Buttons and/or function disabling	x	x
Source of measured value display	x	x
Physical unit of display	x	x
Position of decimal point	x	x
Bus address	x	x
Adjustment of characteristic curve	x	x
Input of characteristic curve		x
Freely-programmable LCD		x
Diagnostic functions		x

Diagnostic functions for SITRANS P300 with PROFIBUS PA and FOUNDATION Fieldbus

- Event counter
- Min/max pointer
- Maintenance timer
- Simulation functions
- Zero correction display
- Limit transmitter
- Saturation alarm

Physical units available for the display

Physical variable	Physical units
Pressure (can also be preset in the factory)	MPa, hPa, kPa, Pa, bar, mbar, torr, atm, psi, g/cm^2, kg/cm^2, mmH_2O, mmH_2O (4 °C), inH_2O, inH_2O (4 °C), ftH_2O, mmHg, inHg
Level (height data)	m, cm, mm, ft, in, yd
Mass	g, kg, t, lb, Ston, Lton, oz
Volume	m^3, dm^3, hl, yd^3, ft^3, in^3, US gallon, Imp. gallon, bushel, barrel, barrel liquid
Temperature	K, °C, °F, °R
Other	%

Selection and ordering data

SITRANS P300 pressure transmitters with PMC connection, single chamber enclosure, nameplate inscription in English		Article No.
4 ... 20 mA / HART		7MF8123-
PROFIBUS PA		7MF8124-
FOUNDATION Fieldbus (FF)		7MF8125-
		● ● ● ● ● - ● ● ● ●
Click the article number for online configuration in the PIA Life Cycle Portal.		
Measuring cell filling	**Measuring cell cleaning**	
Silicone oil	Normal	1
Inert liquid	Cleanliness level 2 according to DIN 25410	3
Measuring span		
1 bar(14.5 psi)[1]		B
4 bar (58 psi)		C
16 bar (232 psi)		D
Material of wetted parts		
Seal diaphragm	***Measuring cell***	
Hastelloy	Stainless steel	B
Process connection		
PMC style Standard: Thread 1½"		2
PMC style Minibolt: Flush-mounted 1" (minimum measuring span: 500 mbar (200 inH_2O), cannot be ordered with 1 bar measuring cell (option B))		3
Material of non-wetted parts		
Stainless steel, deep-drawn and electrolytically polished		4
Version		
Standard version		1
Explosion protection		
None		A
With ATEX, type of protection:		
• "Intrinsic safety (Ex ia)"		B
• Zone 20/21/22[2]		C
• Ex nA/nL (Zone 2)[3]		E
With FM + CSA, type of protection:		
• "Intrinsic Safe (is)" (planned)[4]		M
Electrical connection/cable entry		
Screw gland M20×1.5 (polyamide)[5]		A
Screw gland M20×1.5 (metal)		B
Screw gland M20×1.5 (stainless steel)		C
Device plug M12 (stainless steel, without cable socket)		G
½-14 NPT threaded metal[6]		H
½-14 NPT threaded stainless steel[6]		J
Display		
Without local display, with buttons, closed lid		1
With local display and buttons, closed lid[7]		2
With local display and buttons, lid with polycarbonate pane (setting for HART devices: mA, for PROFIBUS PA and FOUNDATION Fieldbus devices: pressure units)[7]		4
With local display and buttons (setting acc. to specifications, order code "Y21" or "Y22" required), lid with polycarbonate pane[7]		5
With local display and buttons, lid with glass pane (setting for HART devices: mA, for PROFIBUS PA and FOUNDATION Fieldbus devices: pressure unit)[7]		6
With local display and buttons (setting acc. to specifications, order code "Y21" or "Y22" required), lid with glass pane[7]		7

Note

See section "Supplementary components" for supply units. The device's scope of delivery includes a brochure and a sealing ring.

1) Only with "Standard" process connection
2) Can only be ordered together with electrical connection option A.
3) Can only be ordered together with electrical connection option B, C or G.
4) Explosion protection acc. to FM/CSA: suitable for installations according to NEC 500/505. 5) Only together with HART electronics.
6) Without cable gland.
7) Local display cannot be rotated.

Selection and ordering data (continued)

Options Add "-Z" to article number and specify order code.	Order code	Communication
Cable socket for M12 device plug		
Stainless steel	**A51**	HART / PQ / FF
Nameplate inscription (in place of English)		
• German	**B10**	HART / PQ / FF
• French	**B12**	HART / PQ / FF
• Spanish	**B13**	HART / PQ / FF
• Italian	**B14**	HART / PQ / FF
English nameplate, pressure units in inH_20 or psi	**B21**	HART / PQ / FF
Quality inspection certificate (5-point characteristic curve test) according to IEC 62828-2[1)]	**C11**	HART / PQ / FF
Inspection certificate according to EN 10204-3.1[2)]	**C12**	HART / PQ / FF
Factory certificate according to EN 10204-2.2	**C14**	HART / PQ / FF
Setting of the upper saturation limit of the output signal to 22.0 mA	**D05**	HART / PQ / FF
IP65/IP68 degree of protection only for M20x1.5 and ½-14 NPT	**D12**	HART / PQ / FF
Mounting		
Weld-in sockets for standard threaded connection 1½"	**P01**	HART / PQ / FF
Weld-in sockets for minibolt connection 1" (including screw 5/16-18 UNC-2B and washer)	**P02**	HART / PQ / FF
Additional information Add "**-Z**" to article number, specify order code and plain text.		
Measuring range to be set Specify in plain text (max. 5 digits): Y01: ... to ... mbar, bar, kPa, MPa, psi	**Y01**	HART / PQ[1)]
Tag plate made of stainless steel and entry in the device variable (measuring point description) Max. 16 characters; specify in plain text: Y15:	**Y15**	HART / PQ / FF
Measuring point text (entry in device variable) Max. 27 characters; specify in plain text: Y16:	**Y16**	HART / PQ / FF
Entry of HART TAG Max. 8 characters; specify in plain text: Y17:	**Y17**	HART
Setting of the local display in pressure units Specify in plain text (default setting: bar): Y21: mbar, bar, kPa, MPa, psi, ... ***Note*** The following pressure units can be selected: bar, mbar, mm H_2O[3)], inH_2O[3)], ftH_2O[3)], mmHG, inHG, psi, Pa, kPa, MPa, g/cm², kg/cm², Torr, ATM or %	**Y21**	HART / PQ / FF
Setting of the local display in non-pressure units[9)] Specify in plain text: Y22: ..... to ..... l, m³, m, USg, ... (Specification of measuring range in pressure units "Y01" is essential, unit with max. 5 characters)	**Y22 + Y01**	HART
Preset bus address, possible range 1 ... 126 Specify in plain text: Y25:	**Y25**	PQ / FF

Note:

Only "Y01" and "Y21" can be factory preset.

1) Measuring accuracies for PROFIBUS PA transmitters with option Y01 are calculated in the same way as for HART devices.
2) Preset values can only be changed via SIMATIC PDM.
3) 20 °C reference temperature.

Technical specifications

SITRANS P300 for gauge pressure with PMC connection for the paper industry				
Input				
Measured variable	Gauge pressure (flush-mounted)			
	HART	**PROFIBUS PA/FOUNDATION Fieldbus**		
Measuring span (continuously adjustable) or nominal measuring range and max. permissible test pressure	Measuring span	Nominal measuring range	Max. permissible operating pressure MAWP (PS)	Max. permissible test pressure
	0.01 ... 1 bar 1 ... 100 kPa 0.15 ... 14.5 psi	1 bar 100 kPa 14.5 psi	4 bar 400 kPa 58 psi	6 bar 600 kPa 87 psi
	0.04 ... 4 bar 4 ... 400 kPa 0.58 ... 58 psi	4 bar 400 kPa 58 psi	7 bar 0.71 MPa 102 psi	10 bar 1 MPa 145 psi
	0.16 ... 16 bar 16 ... 1600 kPa 2.3 ... 232 psi	16 bar 1600 kPa 232 psi	21 bar 2.1 MPa 305 psi	32 bar 3.2 MPa 464 psi
Lower measuring limit (for PMC Style Minibolt no measuring span < 500 mbar adjustable)	100 mbar a/10 kPa a/1.45 psi a			
Upper measuring limit	100% of max. measuring span			
Output	**HART**		**PROFIBUS PA/FOUNDATION Fieldbus**	
Output signal	4 ... 20 mA		Digital PROFIBUS PA signal	
• Lower limit (continuously adjustable)	3.55 mA, factory set to 3.84 mA		-	
• Upper limit (continuously adjustable)	23 mA, factory-set to 20.5 mA or optionally set to 22.0 mA		-	
Load				
• Without HART	$R_B \leq (U_H - 10.5\ V) / 0.023\ A$ in Ω, U_H: Auxiliary power in V		-	
• With HART	R_B = 230 ... 500 Ω (SIMATIC PDM) or R_B = 230 ... 1100 Ω (HART communicator)		-	
Physical bus	-		IEC 61158-2	
Protection against polarity reversal	Protected against short-circuit and polarity reversal. Each connection against the other with max. supply voltage.			
Electrical damping (step width 0.1 s)	Set to 2 s (0 ... 100 s)			
Measuring accuracy	According to IEC 62828-1			
Reference conditions	• Rising characteristic curve • Lower range value 0 bar • Seal diaphragm stainless steel • Silicone oil filling • Room temperature (25 °C (77 °F))			
Measuring span ratio r (spread, Turn-Down)	r = maximum measuring span/set measuring span or nominal measuring range			
Measurement deviation at limit setting including hysteresis and reproducibility				
• Linear characteristic curve				
- $r \leq 5$	≤ 0.075%			
- $5 < r \leq 100$	≤ (0.005 · r +0.05)%			
Effect of ambient temperature	≤ (0.08 · r + 0.16)%			
Long-term stability (temperature change ±30 °C (± 54 °F))	≤ (0.25 · r)% in 5 years			
Influence of mounting position	≤ 0.1 mbar/0.01 kPa/0.00145 psi per 10° incline (zero offset is possible with position error compensation)			
Effect of auxiliary power (in percent per voltage change)	0.005% per 1 V			
Measured value resolution for PROFIBUS PA and FOUNDATION Fieldbus	$3 \cdot 10^{-5}$ of nominal measuring range			
Operating conditions				
Installation conditions				
Ambient temperature	Observe the temperature class in hazardous areas.			
• Measuring cell with silicone oil	-40 ... +85 °C (-40 ... +185 °F)			
• Display readable	-30 ... +85 °C (-22 ... +185 °F)			
• Storage temperature	-50 ... +85 °C (-58 ... +185 °F)			

Technical specifications (continued)

SITRANS P300 for gauge pressure with PMC connection for the paper industry		
Climatic class		
Condensation	Relative humidity 0 ... 100% Condensation permissible, suitable for use in the tropics	
Degree of protection		
• According to EN 60529	IP65, IP68	
• According to NEMA 250	Type 4X, enclosure cleaning, resistant to lyes, steam to 150 °C (302 °F)	
Electromagnetic compatibility		
• Emitted interference and interference immunity	Acc. to EN 61326 and NAMUR NE 21	
Process conditions		
Medium temperature		
• Measuring cell with silicone oil	-40 ... +100 °C (-40 ... +212 °F)	
Structural design		
Weight (without options)	Approx. 1 kg (2.2 lbs)	
Enclosure material	Stainless steel, mat. no. 1.4301/304	
Material of wetted parts		
• Seal diaphragm	Hastelloy C276, mat. no. 2.4819	
• Measuring cell filling	Silicone oil	
Surface quality touched-by-media	R_a-values ≤ 0.8 µm (32 µ-inch)/welds Ra ≤ 1.6 µm (64 µ-inch)	
Auxiliary power U_H	**HART**	**PROFIBUS PA/FOUNDATION Fieldbus**
Terminal voltage on transmitter	10.5 ... 42 V DC for intrinsically safe operation: 10.5 ... 30 V DC	-
Auxiliary power	-	Bus-powered
Separate supply voltage	-	Not necessary
Bus voltage		
• Without EEx	-	9 ... 32 V
• With intrinsically safe operation	-	9 ... 24 V
Current consumption		
• Max. basic current	-	12.5 mA
• Starting current ≤ basic current	-	Yes
• Max. fault current in the event of an error	-	15.5 mA
Fault disconnection electronics (FDE) available	-	Yes
Certificates and approvals	**HART**	**PROFIBUS PA/FOUNDATION Fieldbus**
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)	
Explosion protection		
Intrinsic safety "i"	PTB 05 ATEX 2048	
Marking	II 1/2 G Ex ia IIC/IIB T4/T5/T6 Ga/Gb	
Permissible ambient temperature		
• Temperature class T4	-40 ... +85 °C (-40 ... +185 °F)	
• Temperature class T5	-40 ... +70 °C (-40 ... +158 °F)	
• Temperature class T6	-40 ... +60 °C (-40 ... +140 °F)	
Connection	To certified intrinsically safe circuits with peak values: U_i = 30 V, I_i = 100 mA, P_i = 750 mW, R_i = 300 Ω	To certified intrinsically safe circuits with peak values: ***FISCO supply unit:*** U_i = 17.5 V, I_i = 380 mA, P_i = 5.32 W ***Linear barrier:*** U_i = 24 V, I_i = 250 mA, P_i = 1.2 W
Effective internal capacitance	C_i = 6 nF	C_i = 1.1 nF
Effective internal inductance	L_i = 0.4 mH	L_i = 7 µH

Technical specifications (continued)

SITRANS P300 for gauge pressure with PMC connection for the paper industry	
Explosion protection to FM for USA and Canada (cFM_{US})	
• Identification (DIP) or (IS); (NI)	Certificate of Compliance 3025099 CL I, DIV 1, GP ABCD T4 ... T6; CL II, DIV 1, GP EFG; CL III; CL I, ZN 0/1 AEx ia IIC T4 ... T6 CL I, DIV 2, GP ABCD T4 ... T6; CL II, DIV 2, GP FG; CL III
• Identification (DIP) or (IS)	Certificate of Compliance 3025099C CL I, DIV 1, GP ABCD T4 ... T6; CL II, DIV 1, GP EFG; CL III; Ex ia IIC T4 ... T6 CL I, DIV 2, GP ABCD T4 ... T6; CL II, DIV 2, GP FG; CL III

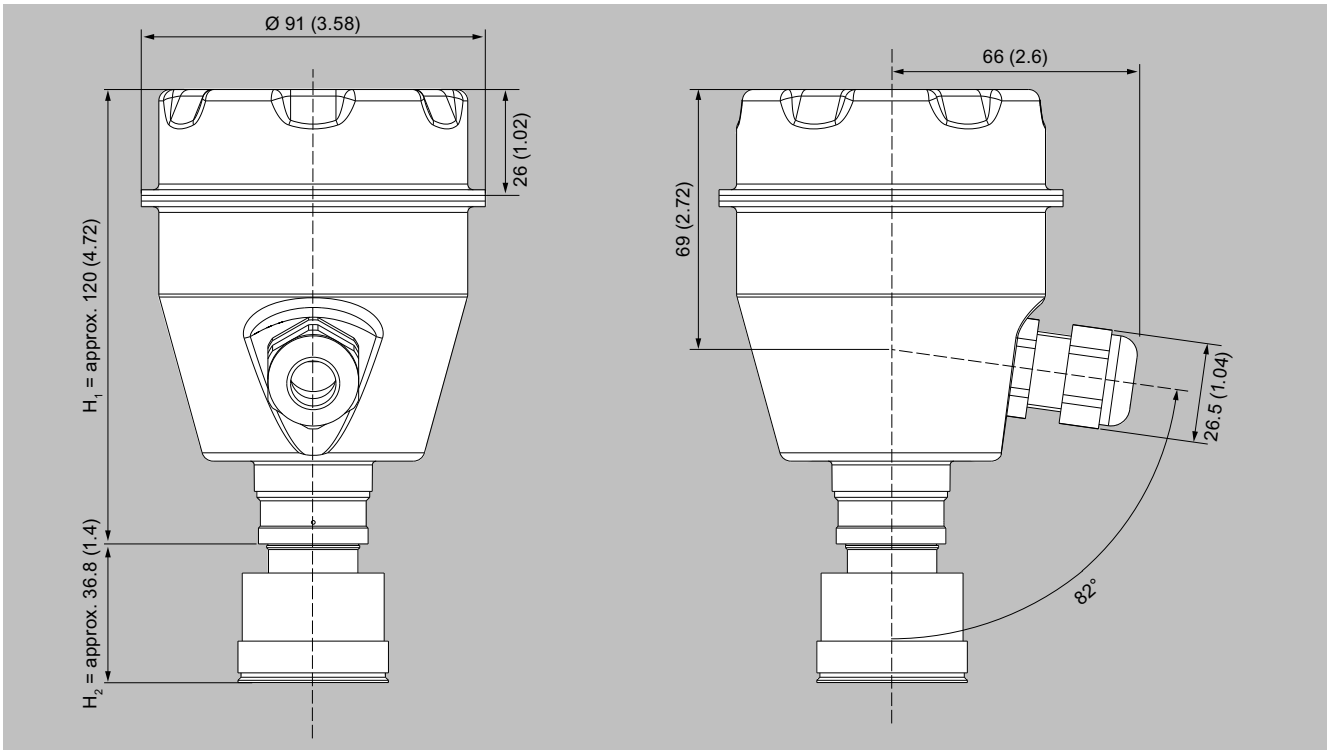
Communication

Communication	
HART	
HART	230 ... 1 100 Ω
Protocol	HART version 5.x
Software for computer	SIMATIC PDM
PROFIBUS PA	
Simultaneous communication with master class 2 (max.)	4
The address can be set using	Configuration tool or local operation (default setting address 126)
Cyclic data usage	
• Output byte	1 measured value: 5 bytes 2 measured values: 10 bytes
• Input byte	Register operation mode: 1 byte Reset function due to dosing: 1 byte
Device profile	PROFIBUS PA Profile for Process Control Devices Version 3.0, Class B
Function blocks	2
• Analog input	
- Adaptation to user-specific process variable	Linearly rising or falling characteristic curve
- Electrical damping	0 ... 100 s adjustable
- Simulation function	Output/input
- Limit monitoring	One upper and lower warning limit and one alarm limit respectively
• Register (totalizer)	Can be reset and preset Selectable direction of counting Simulation function of the register output
- Limit monitoring	One upper and lower warning limit and one alarm limit respectively
• Physical block	1
Transducer blocks	2
• Pressure transducer block	
- Monitoring of sensor limits	Yes
- Specification of a vessel characteristic curve with	Max. 31 nodes
- Characteristic curve	Linear
- Simulation function	Available
• Transducer block "Electronics temperature"	
Simulation function	Available
FOUNDATION Fieldbus	
Function blocks	3 function blocks analog input, 1 function block PID
• Analog input	
- Adaptation to user-specific process variable	Yes, linearly rising or falling characteristic curve
- Electrical damping adjustable	0 ... 100 s
- Simulation function	Output/input (can be locked within the device with a bridge)

Technical specifications (continued)

Communication	
- Failure mode	Parameterizable (last good value, substitute value, incorrect value)
- Limit monitoring	Yes, one upper and lower warning limit and one alarm limit respectively
- Square-rooted characteristic curve for flow measurement	Yes
• PID	Standard FOUNDATION Fieldbus function block
• Physical block	1 resource block
Transducer blocks	1 transducer block Pressure with calibration, 1 transducer block LCD
• Pressure transducer block	
- Can be calibrated by applying two pressures	Yes
- Monitoring of sensor limits	Yes
- Simulation function: pressure measurement, sensor temperature and electronics temperature	Constant value or by means of parameterizable ramp function

Dimensional drawings



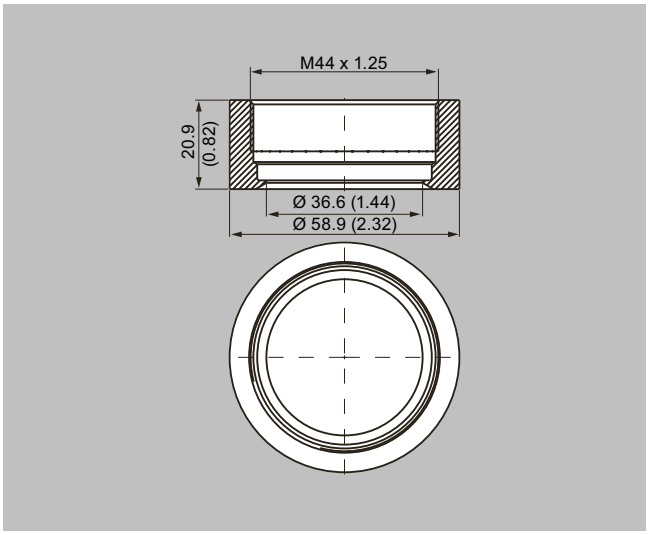
SITRANS P300 pressure transmitter for gauge pressure, with PMC connection, dimensions in mm (inch)

The figure shows a SITRANS P300 with an example flange. In this drawing, the height is subdivided into H_1 and H_2:

- H_1 = Height of the SITRANS P300 up to a defined cross-section
- H_2 = Height of the flange up to this defined cross-section

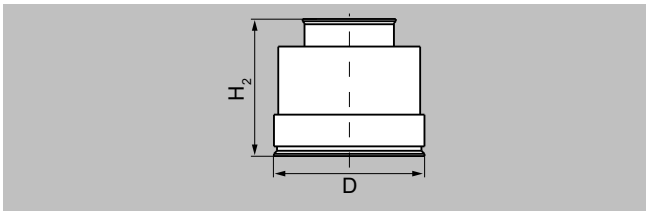
Only the height H_2 is indicated in the dimensions of the flanges.

PMC Style standard weldable sockets



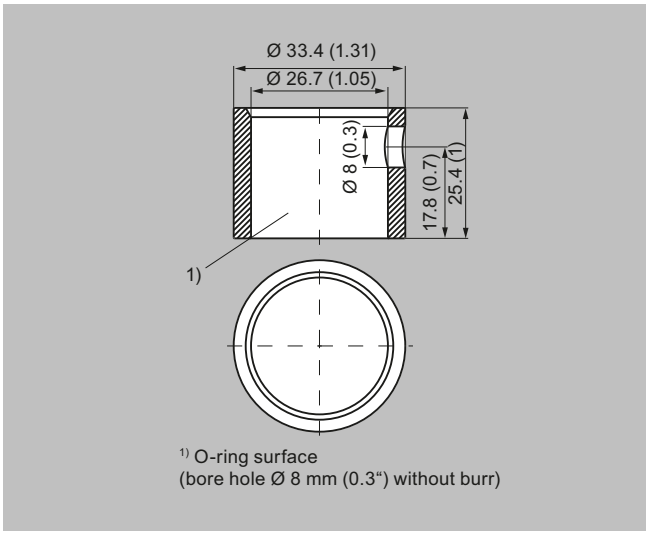
PMC Style Standard weldable sockets, dimensions in mm (inch)

Dimensional drawings (continued)

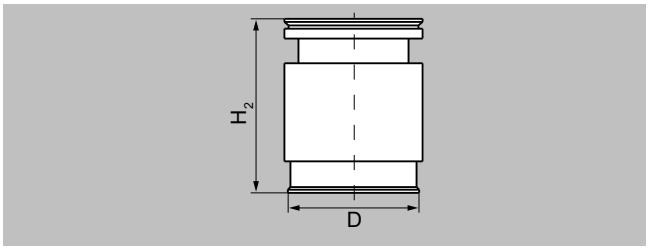


Material: Stainless steel, mat. no. 1.4404/316L
ØD = 40.9 mm (1.6")
H_2 = approx. 36.8 mm (1.4")

PMC Style Minibolt weldable sockets



PMC Style Minibolt weldable sockets, dimensions in mm (inch)



ØD = 26.3 mm (1.0")
H_2 = approx. 33.1 mm (1.3")