

Overview



The SITRANS P300 is a digital pressure transmitter for relative and absolute pressure. The conventional thread versions are available as process connections, as are flush-mounted versions. A large number of the flush-mounted versions are suitable for food and pharmaceutical applications, and satisfy the EHEDG and 3A hygiene requirements.

The output signal is a load-independent direct current from 4 to 20 mA or a PROFIBUS PA or FOUNDATION signal, which is linearly proportional to the input pressure. Communication is via HART protocol or PROFIBUS PA interface. Convenient buttons for easy local operation of the basic settings of the pressure transmitter.

The SITRANS P300 has a single-chamber stainless steel enclosure. The pressure transmitter is approved with "intrinsically safe" type of protection. It can be used in zone 1 or zone 0.

Benefits

- High quality and service life
- High reliability even under extreme chemical and mechanical loads
- Extensive diagnosis and simulation functions
- Minimum conformity error
- Small long-term drift
- Wetted parts made of high-grade materials (such as stainless steel, Hastelloy)
- Measuring range 0.008 bar to 400 bar (0.1 psi to 5802 psi)
- High measuring accuracy
- Parameterization over control keys and HART or PROFIBUS PA or FOUNDATION Fieldbus

Application

The pressure transmitter is available in versions for gauge pressure and for absolute pressure. The output signal is always a load-independent direct current from 4 to 20 mA or a PROFIBUS PA or FOUNDATION Fieldbus signal, which is linearly proportional to the input pressure. The pressure transmitter measures aggressive, non-aggressive and hazardous gases, as well as vapors and liquids.

It can be used for the following measurement types:

- Gauge pressure
- Absolute pressure

With appropriate parameter settings, it can also be used for the following additional measurement types:

- Level
- Volume
- Mass

The "intrinsically-safe" Ex version of the transmitter can be installed in hazardous areas (zone 1). The transmitters are provided with an EC type examination certificate and comply with the respective harmonized European standards of ATEX.

Gauge pressure

This variant measures aggressive, non-aggressive and hazardous gases, vapors and liquids.

The smallest measuring span is 0.01 bar (0.15 psi), the largest is 400 bar (5802 psi).

Level

With appropriate parameter settings, the gauge pressure variant measures the level of aggressive, non-aggressive and hazardous liquids.

For measuring the level in an open container you require one device; for measuring the level in a closed container, you require two devices and a process control system.

Absolute pressure

This variant measures the absolute pressure of aggressive, non-aggressive and hazardous gases, vapors and liquids.

The smallest measuring span is 0.008 bar a (0.12 psi a), the largest is 30 bar a (435 psi a).

Pressure Measurement

Pressure transmitters
for food, pharmaceuticals and biotechnology

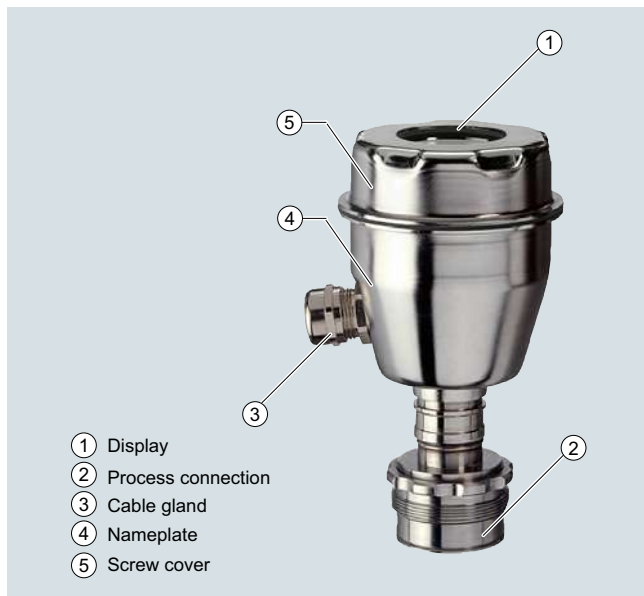
SITRANS P300 for gauge and absolute pressure

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Design

The device comprises:

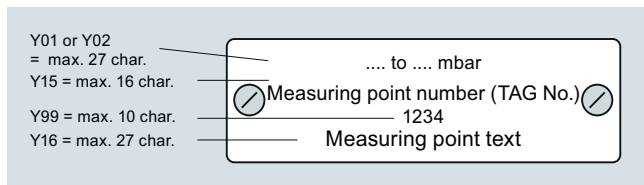
- Electronics
- Enclosure
- Measuring cell



Perspective view of SITRANS P300

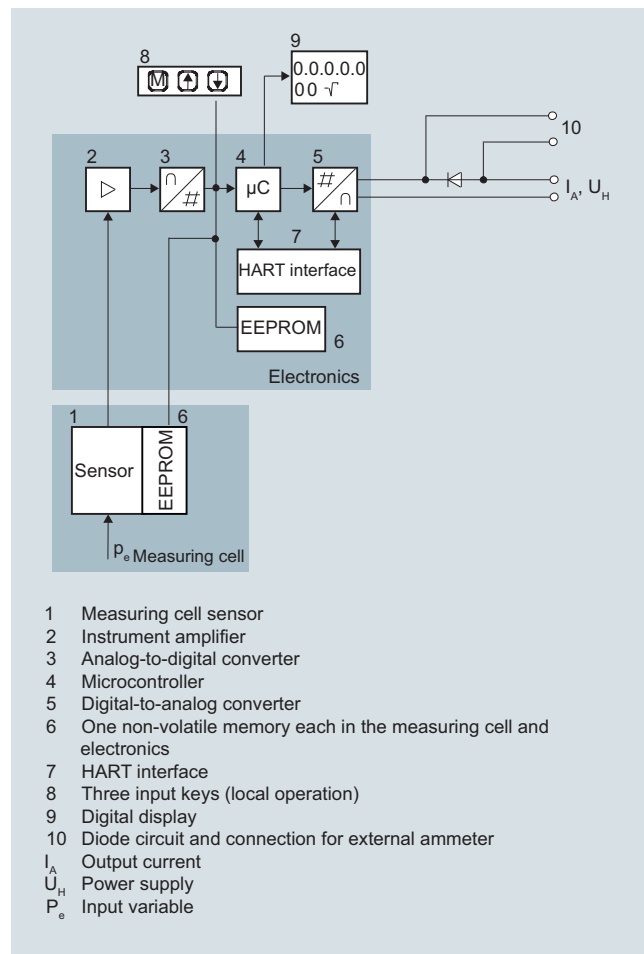
The enclosure has a screw-on lid (5) and, depending on the version, is with or without an inspection window. The electrical terminal enclosure, the buttons for operation of the device are located under this lid and, depending on the version, the display. The connections for the auxiliary power U_H and the shield are in the terminal enclosure. The cable gland is mounted 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 version.

Example of attached measuring points sign



Function

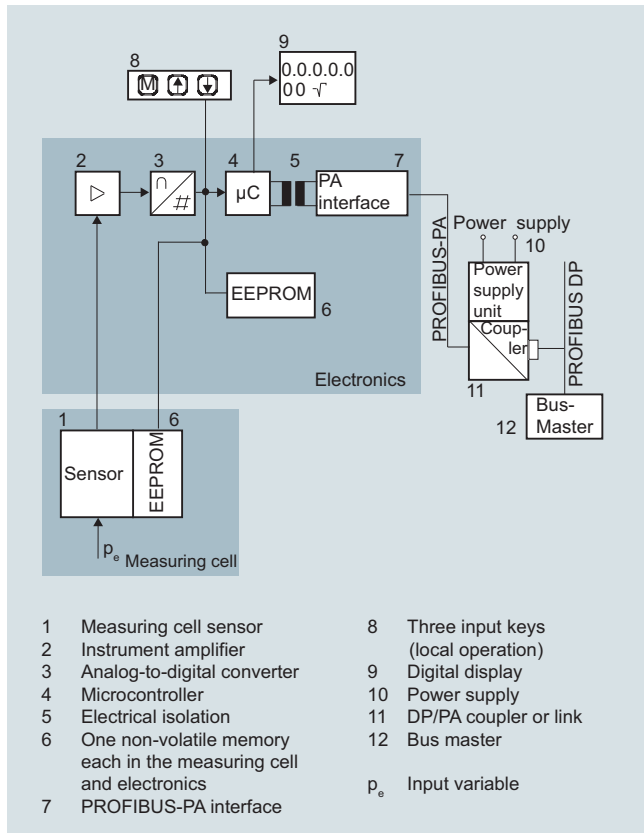
Operation of electronics with HART communication



Function diagram of electronics

The input pressure is converted into an electrical signal by the sensor (1). This signal is amplified by the measuring amplifier (2) and digitalized in an analog-to-digital converter (3). The digital signal is analyzed in a microcontroller (4) and corrected according to linearity and thermal characteristics. In a digital-to-analog converter (5) it is then converted into the output current of 4 to 20 mA. A diode circuit provides reverse polarity protection. You can make an uninterrupted current measurement with a low-ohm ammeter at the connection (10). The data specific to the measuring cell, the electronic data and parameter settings are stored in two non-volatile memories (6). The first memory is linked to the measuring cell, the second to the electronics.

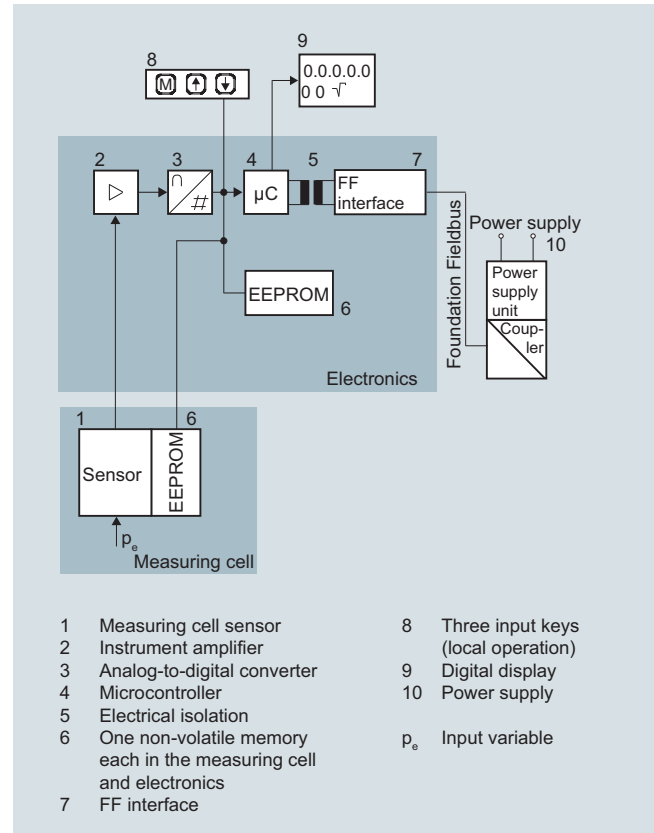
The buttons (8) can be used to call up individual functions, so-called modes. If you have a device with a display (9), you can use this to track mode settings and other messages. The basic mode settings can be changed with a computer via the HART modem (7).

Operation of electronics with PROFIBUS PA communication

Function diagram of electronics

The input pressure is converted into an electrical signal by the sensor (1). This signal is amplified by the measuring amplifier (2) and digitalized in an analog-to-digital converter (3). The digital signal is analyzed in a microcontroller (4) and corrected according to linearity and thermal characteristics. It is then made available at the PROFIBUS PA over an electrically isolated PROFIBUS PA interface (7). The data specific to the measuring cell, the electronic data and parameter settings are stored in two non-volatile memories (6). The first memory is linked to the measuring cell, the second to the electronics.

The buttons (8) can be used to call up individual functions, so-called modes. If you have a device with a display (9), you can use this to track mode settings and other messages. The basic mode settings (12) can be changed with a computer over the bus master.

Operation of electronics with FOUNDATION Fieldbus communication

Function diagram of electronics

The bridge output voltage created by the sensor (1, Figure "Function diagram of electronics") amplified by the measuring amplifier (2) and digitalized in the analog-to-digital converter (3). The digital information is evaluated in the microcontroller, its linearity and temperature response corrected, and provided on the FOUNDATION Fieldbus through 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). The 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 results, the error messages and the operating modes on the display (9).

The results with status values and diagnostic values 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.

Mode of operation of the measuring cells

The process connections available include the following:

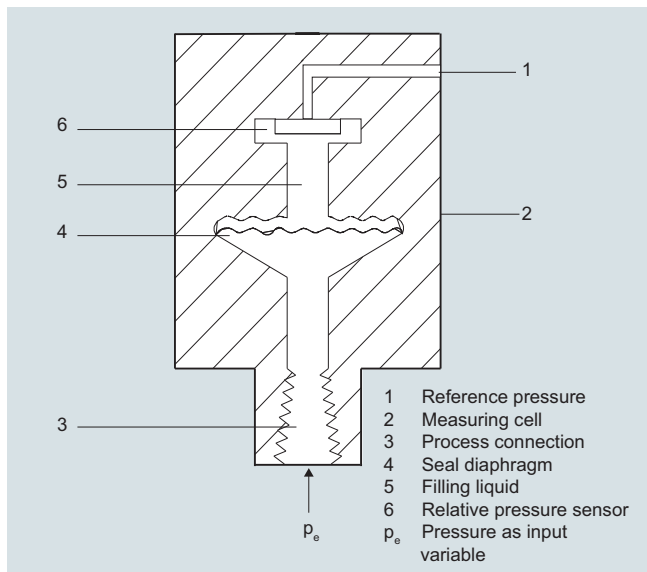
- G $\frac{1}{2}$
- $\frac{1}{2}$ -14 NPT
- Flush-mounted diaphragm:
 - Flanges to EN
 - Flanges to ASME
 - NuG and pharmaceutical connections

Pressure Measurement

Pressure transmitters
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SITRANS P300 for gauge and absolute pressure

Measuring cell for gauge pressure

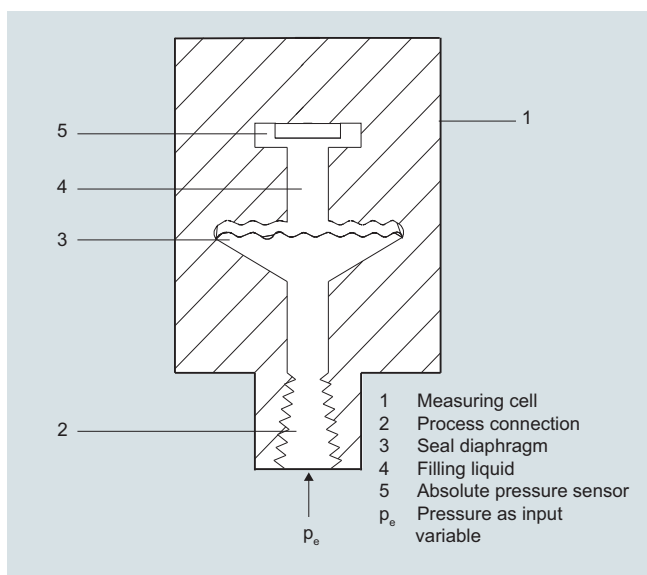


Measuring cell for gauge pressure, function diagram

The input pressure (p_e) is transferred to the gauge pressure sensor (6) via the seal diaphragm (4) and the filling liquid (5), displacing its measuring diaphragm. The displacement changes the resistance value of the four piezo resistors in the measuring diaphragm in a bridge circuit. The change in the resistance causes a bridge output voltage proportional to the input pressure.

Transmitters with measuring spans ≤ 63 bar (≤ 926.1 psi) measure the input pressure compared to atmospheric, transmitters with measuring spans of ≥ 160 bar (≥ 2352 psi) compared to a vacuum.

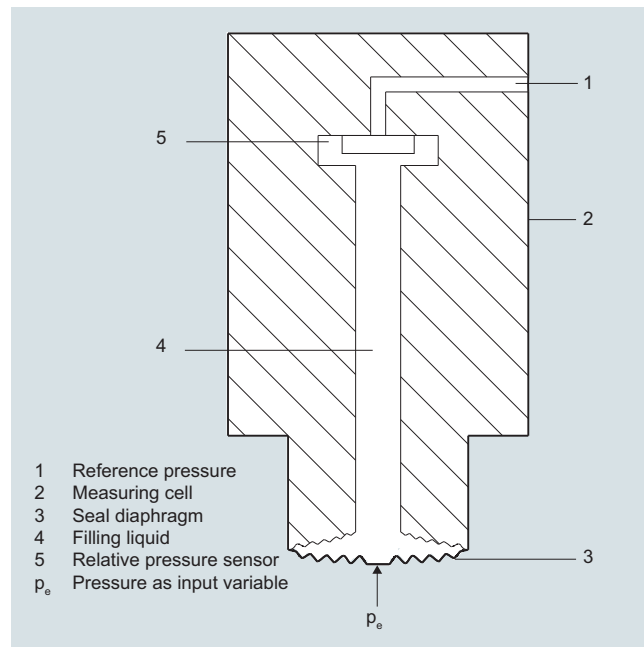
Measuring cell for absolute pressure



Measuring cell for absolute pressure, function diagram

The input pressure (p_e) is transferred to the absolute pressure sensor (5) via the seal diaphragm (3) and the filling liquid (4), displacing its measuring diaphragm. The displacement changes the resistance value of the four piezo resistors in the measuring diaphragm in a bridge circuit. The change in the resistance causes a bridge output voltage proportional to the input pressure.

Measuring cell for gauge pressure, front-flush diaphragm

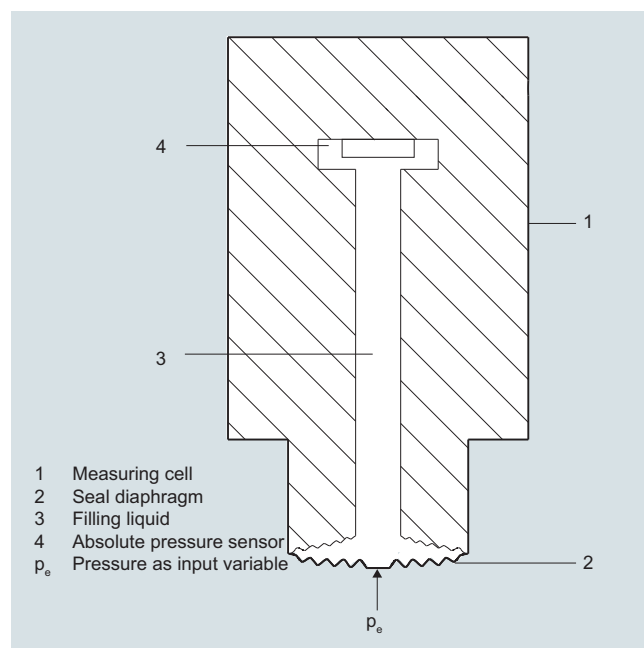


Measuring cell for gauge pressure, front-flush diaphragm, function diagram

The input pressure (p_e) is transferred to the gauge pressure sensor (6) via the seal diaphragm (4) and the filling liquid (5), displacing its measuring diaphragm. The displacement changes the resistance value of the four piezo resistors in the measuring diaphragm in a bridge circuit. The change in the resistance causes a bridge output voltage proportional to the input pressure.

Transmitters with measuring spans ≤ 63 bar (≤ 926.1 psi) measure the input pressure compared to atmospheric, transmitters with measuring spans of ≥ 160 bar (≥ 2352 psi) compared to a vacuum.

Measuring cell for absolute pressure, front-flush diaphragm



Measuring cell for absolute pressure, front-flush diaphragm, function diagram

Pressure Measurement

Pressure transmitters for food, pharmaceuticals and biotechnology

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The input pressure (p_e) is transferred to the absolute pressure sensor (5) via the seal diaphragm (3) and the filling liquid (4), displacing its measuring diaphragm. The displacement changes the resistance value of the four piezo resistors in the measuring diaphragm in a bridge circuit. The change in the resistance causes a bridge output voltage proportional to the input pressure.

Parameterization

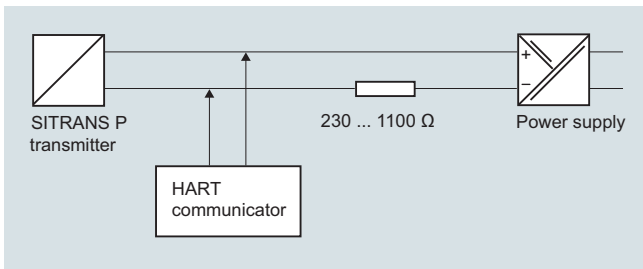
Depending on the version, there are a range of options for parameterizing the pressure transmitter and for setting or scanning the parameters.

Parameterization using the input buttons (local operation)

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

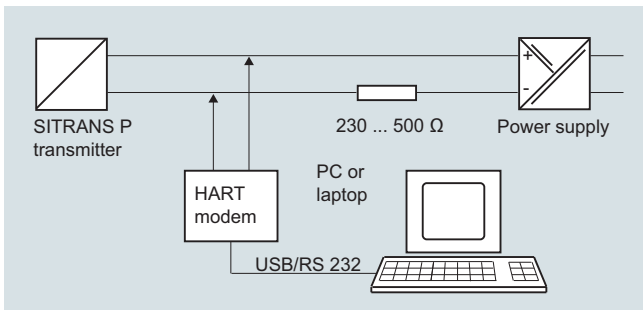
Parameterization using HART communication

Parameterization using HART communication 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.



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 the Frequency Shift Keying (FSK) method.

Adjustable parameters on SITRANS P300 with HART communication

| Parameters | Input keys | HART communication |
|---|------------|--------------------|
| Lower range value | x | x |
| Upper range value | x | x |
| Electrical damping | x | x |
| Lower range value without application of a pressure ("Blind setting") | x | x |
| Upper range value without application of a pressure ("Blind setting") | x | x |
| Zero adjustment | x | x |
| Current transmitter | x | x |
| Fault current | x | x |
| Disabling of buttons, write protection | x | x ¹⁾ |
| Type of dimension and actual dimension | x | x |
| Input of characteristic | | x |
| Freely-programmable LCD | | x |
| Diagnostic functions | | x |

¹⁾ Cancel apart from write protection

Diagnostic functions for SITRANS P300 with HART communication

- Zero correction display
- Event counter
- Limit transmitter
- Saturation alarm
- Slave pointer
- Simulation functions
- Maintenance timer

Available physical units of display for SITRANS P300 with HART communication

Table style: Technical specifications 2

| Physical variable | Physical dimensions |
|--|---|
| Pressure (setting can also be made in the factory) | Pa, MPa, kPa, bar, mbar, torr, atm, psi, g/cm ² , kg/cm ² , inH ₂ O, inH ₂ O (4 °C), mmH ₂ O, ftH ₂ O (20 °C), inHg, mmHg |
| Level (height data) | m, cm, mm, ft, in |
| Volume | m ³ , dm ³ , hl, yd ³ , ft ³ , in ³ , US gallon, Imp. gallon, bushel, barrel, barrel liquid |
| Mass | g, kg, t, lb, Ston, Lton, oz |
| Temperature | K, °C, °F, °R |
| Miscellaneous | %, mA |

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SITRANS P300 for gauge and absolute pressure

Parameterization through PROFIBUS PA interface

Fully digital communication through PROFIBUS PA, profile 3.0, is particularly user-friendly. The PROFIBUS connects the SITRANS P300 PA to a process control system, e.g. SIMATIC PSC 7. Communication is possible even in a potentially explosive environment.

For parameterization through 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. Through the FOUNDATION Fieldbus the P300 is connected to a process control system. Communication is possible even in a potentially explosive environment.

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 keys | PROFIBUS PA and FOUNDATION Fieldbus interface |
|--|------------|---|
| 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 dimension of display | x | x |
| Position of decimal point | x | x |
| Bus address | x | x |
| Adjustment of characteristic | x | x |
| Input of characteristic | | x |
| Freely-programmable LCD | | x |
| Diagnostic functions | | x |

Diagnostic functions for SITRANS P300 with PROFIBUS PA and FOUNDATION Fieldbus

- Event counter
- Slave pointer
- Maintenance timer
- Simulation functions
- Display of zero correction
- Limit transmitter
- Saturation alarm

Physical dimensions available for the display

| Physical variable | Physical dimensions |
|--|--|
| Pressure (setting can also be made in the factory) | MPa, kPa, Pa, bar, mbar, torr, atm, psi, g/cm ² , kg/cm ² , mmH ₂ O, mmH ₂ O (4 °C), inH ₂ O, inH ₂ O (4 °C), ftH ₂ O (20 °C), 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 |
| volume flow | m ³ /s, m ³ /min, m ³ /h, m ³ /d, l/s, l/min, l/h, l/d, Ml/d, ft ³ /s, ft ³ /min, ft ³ /h, ft ³ /d, US gallon/s, US gallon/min, US gallon/h, US gallon/d, bbl/s, bbl/min, bbl/h, bbl/d |
| Mass flow | g/s, g/min, g/h, g/d, kg/s, kg/min, kg/h, kg/d, t/s, t/min, t/h, t/d, lb/s, lb/min, lb/h, lb/d, STon/s, STon/min, STon/h, STon/d, LTon/s, LTon/min, LTon/h, LTon/d |
| Total mass flow | t, kg, g, lb, oz, LTon, STon |
| Temperature | K, °C, °F, °R |
| Miscellaneous | % |

Hygiene version

In the case of the SITRANS P300 with 7MF812-... front-flush diaphragm, selected connections comply with the requirements of the EHEDG or 3A. You will find further details in the order form. Please note in particular that the seal materials used must comply with the requirements of 3A. Similarly, the filling liquids used must be FDA-compliant.

Technical specifications

SITRANS P300 for gauge and absolute pressure

Gauge pressure input

Measured variable

Measuring span (infinitely adjustable) or nominal measuring range, max. operating pressure (in accordance with 2014/68/EU Pressure Equipment Directive) and max. test pressure (pursuant to DIN 16086)

(for oxygen measurement, max. 100 bar/10 MPa/1450 psi and 60 °C (140 °F) ambient temperature/temperature of medium)

| HART | PROFIBUS PA/ FOUNDATION Fieldbus | | |
|---|--|-----------------------------------|--------------------------------|
| Measuring span | Nominal measuring range | Max. operating pressure MAWP (PS) | Max. perm. test pressure |
| 8.3 ... 250 mbar 0.83 ... 25 kPa 0.12 ... 3.6 psi | 250 mbar 25 kPa 3.6 psi | 4 bar 400 kPa 58 psi | 6 bar 600 kPa 87 psi |
| 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 0.7 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 |
| 0.63 ... 63 bar 63 ... 6300 kPa 9.1 ... 914 psi | 63 bar 6300 kPa 914 psi | 67 bar 6.7 MPa 972 psi | 100 bar 10 MPa 1450 psi |
| 1.6 ... 160 bar 0.16 ... 16 MPa 23 ... 2321 psi | 160 bar 16 MPa 2321 psi | 167 bar 16.7 MPa 2422 psi | 250 bar 2.5 MPa 3626 psi |
| 4 ... 400 bar 0.4 ... 40 kPa 58 ... 5802 psi | 400 bar 40 kPa 5802 psi | 400 bar 40 MPa 5802 psi | 600 bar 60 MPa 8700 psi |

Lower measuring limit

(for 250mbar/25 kPa/3.6 psi measuring cells, the lower measuring limit is 750 mbar a/75 kPa a/10.8 psi a. The measuring cell is vacuum-resistant up to 30 mbar a/3 kPa a/0.44 psi a.)

- Measuring cell with silicone oil
- Measuring cell with inert filling liquid

Upper measuring limit

30 mbar a/3 kPa a/0.44 psi a
30 mbar a/3 kPa a/0.44 psi a
100 % of max. measuring span
(for oxygen measurement max. 100 bar/10 MPa/1450 psi and 60 ° (140 °F) ambient temperature/temperature of medium)

Absolute pressure input

Measured variable

Measuring span (infinitely adjustable) or nominal measuring range, max. operating pressure (in accordance with 2014/68/EU Pressure Equipment Directive) and max. test pressure (pursuant to DIN 16086)

| HART | PROFIBUS PA/ FOUNDATION Fieldbus | | |
|---|--|--------------------------------------|-------------------------------------|
| Measuring span | Nominal measuring range | Max. operating pressure MAWP (PS) | Max. perm. test pressure |
| 8.34 ... 250 mbar a 0.83 ... 25 kPa a 3.35 ... 100 inH ₂ O a 0.13 ... 3.63 psi a | 250 mbar a 25 kPa a 100 inH ₂ O a | 1.5 bar a 150 kPa a 21.8 psi a | 6 bar a 600 kPa a 87 psi a |
| 43.34 ... 1300 mbar a 4.33 ... 130 kPa a 17.42 ... 522.4 inH ₂ O a 0.63 ... 18.86 psi a | 1300 mbar a 130 kPa a 525 inH ₂ O | 2.6 bar a 260 kPa a 37.7 psi a | 10 bar a 1 MPa a 145 psi a |
| 0.17 ... 5 bar a 17 ... 500 kPa a 2.43 ... 72.5 psi a | 5000 mbar a 500 kPa a 72.5 psi a | 10 bar a 1 MPa a 145 psi a | 30 bar a 3 MPa a 435 psi a |
| 1 ... 30 bar a 0.1 ... 3 MPa a 14.6 ... 435 psi a | 30 bar a 3 MPa a 435 psi a | 45 bar a 4.5 MPa a 653 psi a | 100 bar a 10 MPa a 1450 psi a |

Pressure Measurement

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SITRANS P300 for gauge and absolute pressure

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| | |
|---|--|
| Lower measuring limit | 0 mbar a/0 kPa a /0 psi a |
| <ul style="list-style-type: none"> Measuring cell with silicone oil | 0 mbar a/0 kPa a /0 psi a |
| <ul style="list-style-type: none"> Measuring cell with inert filling liquid - for temperature of medium $-20\text{ °C} < \vartheta \leq +60\text{ °C}$ ($-4\text{ °F} < \vartheta \leq +140\text{ °F}$) - for temperature of medium $60\text{ °C} < \vartheta \leq +100\text{ °C}$ (max. 85 °C for measuring cell 30 bar) ($140\text{ °F} < \vartheta \leq +212\text{ °F}$ (max. 185 °F for meas. cell 435 psi)) | 30 mbar a/3 kPa a/0.44 psi a |
| Upper measuring limit | 100 % of max. measuring span (for oxygen measurement max. 100 bar/10 MPa/1450 psi und 60 °C (140 °F) ambient temperature/temperature of medium) |
| Lower range value | Between the measuring limits (fully adjustable) |

Input of gauge pressure, with front-flush diaphragm

| | | | | |
|--|---|---|-----------------------------------|-------------------------------|
| Measured variable | Gauge pressure, front-flush | | | |
| Measuring span (infinitely adjustable) or nominal measuring range, max. permissible operating pressure and max. test pressure | HART | PROFIBUS PA/ FOUNDATION Fieldbus | | |
| | Measuring span | Nominal measuring range | Max. operating pressure MAWP (PS) | Max. perm. 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 0.7 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 |
| | 0.63 ... 63 bar 63 ... 6300 kPa 9.1 ... 914 psi | 63 bar 6300 kPa 914 psi | 67 bar 6.7 MPa 972 psi | 100 bar 10 MPa 1450 psi |
| Lower measuring limit | 100 mbar a/10 kPa a/1.45 psi a | | | |
| <ul style="list-style-type: none"> Measuring cell with silicone oil filling Measuring cell with inert filling liquid Measuring cell with Neobee | 100 mbar a/10 kPa a/1.45 psi a | | | |
| Upper measuring limit | 100% of max. measuring span | | | |

Input of absolute pressure, with front-flush diaphragm

| | | | | |
|--|--|--|--------------------------------------|-------------------------------------|
| Measured variable | Absolute pressure, front-flush | | | |
| Measuring span (infinitely adjustable) or nominal measuring range and max. permissible test pressure | HART | PROFIBUS PA/ FOUNDATION Fieldbus | | |
| | Measuring span | Nominal measuring range | Max. operating pressure MAWP (PS) | Max. perm. test pressure |
| | 43 ... 1300 mbar a 4.3 ... 130 kPa a 17 ... 525 inH ₂ O a | 1300 mbar a 130 kPa a 525 inH ₂ O a | 2.6 bar a 260 kPa a 37.7 psi a | 10 bar a 1 MPa a 145 psi a |
| | 160 ... 5000 mbar a 16 ... 500 kPa a 2.32 ... 72.5 psi a | 5000 mbar a 500 kPa a 72.5 psi a | 10 bar a 1 MPa a 145 psi a | 30 bar a 3 MPa a 435 psi a |
| | 1 ... 30 bar a 0.1 ... 3 MPa a 14.5 ... 435 psi a | 30 bar a 3 MPa a 435 psi a | 45 bar a 4.5 MPa a 653 psi a | 100 bar a 10 MPa a 1450 psi a |
| | Depending on the process connection, the measuring span may differ from these values | | | |
| Lower measuring limit | 0 mbar a/0 kPa a/0 psi a | | | |
| Upper measuring limit | 100 % of max. measuring span | | | |

| | | |
|---------------------------------------|---|---|
| Output | HART | PROFIBUS PA/ FOUNDATION Fieldbus |
| Output signal | 4 ... 20 mA | Digital PROFIBUS PA or FOUNDATION Fieldbus signal |
| 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) | |

SITRANS P300 for gauge and absolute pressure**Measuring accuracy for gauge pressure**

Reference conditions

According to IEC 60770-1

- Increasing characteristic
- Lower range value 0 bar/kPa/psi
- Stainless steel seal diaphragm
- Measuring cell with silicone oil
- Room temperature 25 °C (77 °F)

Measuring span ratio r (spread, Turn-Down) $r = \text{max. measuring span/set measuring span or nominal measuring range}$

Error in measurement at limit setting incl. hysteresis and reproducibility

- Linear characteristic

- 250 mbar/25 kPa/3.6 psi

 $r \leq 1.25 :$ $\leq 0.075 \%$
 $1.25 < r \leq 30 :$ $\leq (0.008 \cdot r + 0.065) \%$

- 1 bar/100 kPa/14.5 psi
 4 bar/400 kPa/58 psi
 16 bar/1.6 MPa/232 psi
 63 bar/6.3 MPa/914 psi
 160 bar/16 MPa/2321 psi

 $r \leq 5 :$ $\leq 0.075 \%$
 $5 < r \leq 100 :$ $\leq (0.005 \cdot r + 0.05) \%$

- 400 bar/40 MPa/5802 psi

 $r \leq 3 :$ $\leq 0.075 \%$
 $3 < r \leq 10 :$ $\leq (0.0029 \cdot r + 0.071) \%$
 $10 < r \leq 100 :$ $\leq (0.005 \cdot r + 0.05) \%$
Influence of ambient temperature
(in percent per 28 °C (50 °F))

- 250 mbar/25 kPa/3.6 psi

 $\leq (0.16 \cdot r + 0.1) \%$

- 1 bar/100 kPa/14.5 psi
 4 bar/400 kPa/58 psi
 16 bar/1.6 MPa/232 psi
 63 bar/6.3 MPa/914 psi
 160 bar/16 MPa/2321 psi
 400 bar/40 MPa/5802 psi

 $\leq (0.07 \cdot r + 0.08) \%$ Long-term stability (temperature change ± 30 °C (± 54 °F))

- 250 mbar/25 kPa/3.6 psi

 $\leq (0.25 \cdot r) \%$ per year

- 1 bar/100 kPa/14.5 psi
 4 bar/400 kPa/58 psi

 $\leq (0.25 \cdot r) \%$ in 5 years

- 16 bar/1.6 MPa/232 psi
 63 bar/6.3 MPa/914 psi
 160 bar/16 MPa/2321 psi
 400 bar/40 MPa/5802 psi

 $\leq (0.125 \cdot r) \%$ in 5 years

Effect of mounting position

 ≤ 0.05 mbar/0.005 kPa/0.000725 psi per 10° inclination
(zero point correction is possible with position error compensation)Effect of auxiliary power supply
(in percent per change in voltage)

0.005 % per 1 V

Measuring value resolution for PROFIBUS PA and
FOUNDATION Fieldbus $3 \cdot 10^{-5}$ of the nominal measuring range

Pressure Measurement

Pressure transmitters
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SITRANS P300 for gauge and absolute pressure

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SITRANS P300 for gauge and absolute pressure

Measuring accuracy for absolute pressure

Reference conditions

According to IEC 60770-1

- Increasing characteristic
- Lower range value 0 bar/kPa/psi
- Stainless steel seal diaphragm
- Measuring cell with silicone oil
- Room temperature 25 °C (77 °F)

Measuring span ratio r (spread, Turn-Down)

$r = \max.$ measuring span/set measuring span or nominal measuring range

Error in measurement at limit setting incl. hysteresis and reproducibility

- Linear characteristic

- $r \leq 10$

$\leq 0.1 \%$

- $10 < r \leq 30$

$\leq 0.2 \%$

Influence of ambient temperature
(in percent per 28 °C (50 °F))

- 250 mbar a/25 kPa a/3.6 psi a

$\leq (0.15 \cdot r + 0.1) \%$

- 1300 mbar a/130 kPa a/18.8 psi a
5 bar a/500 kPa a/72.5 psi a
30 bar a/3000 kPa a/435 psi a

$\leq (0.08 \cdot r + 0.16) \%$

Long-term stability (temperature change ± 30 °C (± 54 °F))

$\leq (0.25 \cdot r) \%$ in 5 years

Effect of mounting position (in pressure per change in angle)

≤ 0.05 mbar/0.005 kPa/0.000725 psi per 10° inclination
(zero point correction is possible with position error compensation)

Effect of auxiliary power supply
(in percent per change in voltage)

0.005 % per 1 V

Measuring value resolution for PROFIBUS PA and FOUNDATION Fieldbus

$3 \cdot 10^{-5}$ of the rated nominal measuring range

Measuring accuracy for gauge and absolute pressure, with front-flush diaphragm

According to IEC 60770-1

Reference conditions

- Increasing characteristic
- Lower range value 0 bar/kPa/psi
- Stainless steel seal diaphragm
- Measuring cell with silicone oil
- Room temperature 25 °C (77 °F)

Measuring span ratio r (spread, Turn-Down)

$r = \max.$ measuring span/set measuring span or nominal measuring range

Error in measurement at limit setting incl. hysteresis and reproducibility

- Linear characteristic

- $r \leq 5$

$\leq 0.075 \%$

- $5 < r \leq 100$

$\leq (0.005 \cdot r + 0.05) \%$

- $r \leq 10$

$\leq 0.2 \%$

- $10 < r \leq 30$

$\leq 0.4 \%$

Influence of ambient temperature
(as percentage per 28 °C (50 °F))

$\leq (0.08 \cdot r + 0.16) \%$

$\leq (0.16 \cdot r + 0.24) \%$

Effect of temperature of medium
(in pressure per temperature change)

- Temperature difference between temperature of medium and ambient temperature

3 mbar/0.3 kPa/0.04 psi per 10 K

Long-term stability (temperature change ± 30 °C (± 54 °F))

$(0.25 \cdot r) \%$ in 5 years

Effect of mounting position (in pressure per change in angle)

0.4 mbar/0.04 kPa/0.006 per 10° inclination
(zero point correction is possible with position error compensation)

Effect of auxiliary power supply
(in percent per change in voltage)

0.005 % per 1 V

Measuring value resolution for PROFIBUS PA and FOUNDATION Fieldbus

$3 \cdot 10^{-5}$ of the nominal measuring range

Gauge pressure, with front-flush diaphragm

Absolute pressure, with front-flush diaphragm

SITRANS P300 for gauge and absolute pressure

Operating conditions

Installation conditions

| | |
|--|---|
| Ambient temperature | Observe the temperature class in areas subject to explosion hazard. |
| • Measuring cell with silicone oil | -40 ... +85 °C (-40 ... +185 °F) |
| • Measuring cell with Neobee oil (FDA-compliant, with flush-mounted diaphragm) | -10 ... +85 °C (14 ... +185 °F) |
| • Measuring cell with inert liquid | -40 ... +85 °C (-40 ... +185 °F) |
| • Display readable | -30 ... +85 °C (-22 ... +185 °F) |
| • Storage temperature | -50 ... +85 °C (-58 ... +185 °F) (for Neobee: -20 ... +85 °C (-4 ... +185 °F)) (for temperature oil: -10 ... +85 °C (14 ... +165 °F)) |
| 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 | IP65, IP68, Type 4X, enclosure cleaning, resistant to lyes, steam to 150 °C (302 °F) |
| Electromagnetic Compatibility | |
| • Emitted interference and interference immunity | Acc. to IEC 61326 and NAMUR NE 21 |

Medium conditions

| | |
|---|-----------------------------------|
| Temperature of medium | |
| • Measuring cell with silicone oil | -40 ... +100 °C (-40 ... +212 °F) |
| • Measuring cell with silicone oil (FDA-compliant, with flush-mounted diaphragm) | -40 ... +150 °C (-40 ... +302 °F) |
| • Measuring cell with Neobee oil "Measuring cell with Neobee oil (FDA-compliant, with flush-mounted diaphragm) | -10 ... +150 °C (-14 ... +302 °F) |
| • Measuring cell with silicone oil, with temperature decoupler (only for gauge pressure version with flush-mounted diaphragm) | -40 ... +200 °C (-40 ... +392 °F) |
| • Measuring cell with Neobee oil, with temperature decoupler (only for gauge pressure version with flush-mounted diaphragm) | -10 ... +200 °C (14 ... +392 °F) |
| • Measuring cell with inert liquid | -20 ... +100 °C (-4 ... +212 °F) |
| • Measuring cell with high-temperature oil (only for gauge pressure version with flush-mounted diaphragm) | -10 ... +250 °C (14 ... 482 °F) |

Design (standard version)

| | |
|--|--|
| Weight (without options) | Approx. 800 g (1.8 lb) |
| Enclosure material | Stainless steel, mat. no. 1.4301/304 |
| Material of parts in contact with the medium | |
| • Connection shank | Stainless steel, mat. no. 1.4404/316L or Hastelloy C276, mat. no. 2.4819 |
| • Oval flange | Stainless steel, mat. no. 1.4404/316L |
| • Seal diaphragm | Stainless steel, mat. no. 1.4404/316L or Hastelloy C276, mat. no. 2.4819 |
| • Measuring cell filling | <ul style="list-style-type: none"> • Silicone oil • Inert filling liquid |
| Process connection | <ul style="list-style-type: none"> • G$\frac{1}{2}$B to EN 837-1 • Female thread $\frac{1}{2}$-14 NPT • Oval flange PN 160 (MAWP 2320 psi) with fastening thread: <ul style="list-style-type: none"> - $\frac{7}{16}$-20 UNF to IEC 61518/DIN EN 61518 - M10 as per DIN 19213 |

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Design (version with front-flush diaphragm)

| | |
|--|--|
| Weight (without options) | approx. 1 ... 13 kg (2.2 ... 29 lb) |
| Enclosure material | Stainless steel, mat. no. 1.4301/304 |
| Material of parts in contact with the medium | |
| • Process connection | Stainless steel, mat. no. 1.4404/316L |
| • Seal diaphragm | Stainless steel, mat. no. 1.4404/316L |
| • Measuring cell filling | <ul style="list-style-type: none"> • Silicone oil • Inert filling liquid • FDA compliant fill fluid (Neobee oil) |
| Process connection | <ul style="list-style-type: none"> • Flanges as per EN and ASME • F&B and pharmaceutical flanges |
| Surface quality touched-by-media | R_a -values $\leq 0.8 \mu\text{m}$ (32 $\mu\text{-inch}$)/welds $R_a \leq 1.6 \mu\text{m}$ (64 $\mu\text{-inch}$) (Process connections acc. to 3A; R_a -values $\leq 0.8 \mu\text{m}$ (32 $\mu\text{-inch}$)/welds $R_a \leq 0.8 \mu\text{m}$ (32 $\mu\text{-inch}$)) |

Power supply 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 | |
| Power supply | - | Supplied though bus |
| Separate supply voltage | - | Not necessary |
| Bus voltage | | |
| • Without Ex | - | 9 ... 32 V |
| • With intrinsically-safe operation | - | 9 ... 24 V |
| Current consumption | | |
| • Max. basic current | - | 12.5 mA |
| • Start-up current \leq basic current | - | Yes |
| • Max. fault current in the event of a fault | - | 15.5 mA |
| Fault disconnection electronics (FDE) available | - | Yes |

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| SITRANS P300 for gauge and absolute pressure | HART | PROFIBUS PA/ FOUNDATION Fieldbus |
|---|---|--|
| Certificates and approvals | | |
| Classification according to 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) | |
| Water, waste water | Pending | |
| <u>Explosion protection</u> | | |
| 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: $U_i = 30 \text{ V}$, $I_i = 100 \text{ mA}$, $P_i = 750 \text{ mW}$, $R_i = 300 \Omega$ | To certified intrinsically-safe circuits with peak values: <u>FISCO supply unit:</u> $U_i = 17.5 \text{ V}$, $I_i = 380 \text{ mA}$, $P_i = 5.32 \text{ W}$ <u>Linear barrier:</u> $U_i = 24 \text{ V}$, $I_i = 250 \text{ mA}$, $P_i = 1.2 \text{ W}$ $C_i = 1.1 \text{ nF}$ $L_i \leq 7 \mu\text{H}$ |
| • Effective inner capacitance: | $C_i = 6 \text{ nF}$ | |
| • Effective internal inductance: | $L_i = 0.4 \text{ mH}$ | |
| Explosion protection to FM for USA <u>and</u> 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 4 ... T6; CL I, DIV 2, GP ABCD T4 ... T6; CL II, DIV 2, GP FG; CL III | |
| Dust explosion protection for zone 20/21/22 | PTB 05 ATEX 2048 | |
| • Marking | II 1 D Ex ia IIC T120 °C Da II 1/2 D Ex ia IIC T120 °C Da/Db II 2 D Ex ib IIC T120 °C Db | |
| • Permissible ambient temperature | | |
| - Temperature class T4 | -40 ... +85 °C (-40 ... +185 °F) (in the case of mineral glass windows only -20 ... +85 °C (-4 ... +185 °F)) | |
| - Temperature class T5 | -40 ... +70 °C (-40 ... +158 °F) (in the case of mineral glass windows only -20 ... +70 °C (-4 ... +158 °F)) | |
| - Temperature class T6 | -40 ... +60 °C (-40 ... +140 °F) (in the case of mineral glass windows only -20 ... +60 °C (-4 ... +140 °F)) | |
| • Connection | To certified intrinsically-safe circuits with peak values: $U_i = 30 \text{ V}$, $I_i = 100 \text{ mA}$, $P_i = 750 \text{ mW}$ $C_i = 6 \text{ nF}$ $L_i = 0.4 \mu\text{H}$ | To certified intrinsically-safe circuits with peak values: $U_i = 24 \text{ V}$, $I_i = 380 \text{ mA}$, $P_i = 5.32 \text{ mW}$ $C_i = 5 \text{ nF}$ $L_i = 10 \mu\text{H}$ |
| • Effective inner capacitance: | | |
| • Effective internal inductance: | | |
| Type of protection Ex nA/nL/ic (Zone 2) | PTB 05 ATEX 2048 | |
| • Marking | II 2/3 G Ex ic IIC/IIB T4/T5/T6 Gb/Gc II 2/3 G Ex nA IIC T4/T5/T6 Gb/Gc | |
| • Permissible ambient temperature | | |
| - Temperature class T4 | -40 ... +85 °C (-40 ... +185 °F) (in the case of mineral glass windows only -20 ... +85 °C (-4 ... +185 °F)) | |
| - Temperature class T5 | -40 ... +70 °C (-40 ... +158 °F) (in the case of mineral glass windows only -20 ... +70 °C (-4 ... +158 °F)) | |
| - Temperature class T6 | -40 ... +60 °C (-40 ... +140 °F) (in the case of mineral glass windows only -20 ... +60 °C (-4 ... +140 °F)) | |
| • Ex nA/nL connection | To certified intrinsically-safe circuits with peak values: $U_m = 45 \text{ V}$ | To certified intrinsically-safe circuits with peak values: $U_m = 32 \text{ V}$ |
| • Ex ic connection | To certified intrinsically-safe circuits with peak values: $U_i = 45 \text{ V}$ | To certified intrinsically-safe circuits with peak values: $U_i = 32 \text{ V}$ |
| • Effective inner capacitance: | $C_i = 6 \text{ nF}$ | $C_i = 5 \text{ nF}$ |
| • Effective internal inductance: | $L_i = 0.4 \text{ mH}$ | $L_i = 20 \mu\text{H}$ |

Pressure Measurement

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| HART Communication | | FOUNDATION Fieldbus communication | |
|---|--|---|--|
| HART communication | 230 ... 1100 Ω | Function blocks | 3 function blocks analog input, 1 function block PID |
| Protocol | HART Version 5.x | <ul style="list-style-type: none"> Analog input <ul style="list-style-type: none"> - Adaptation to customer-specific process variables - Electrical damping, adjustable - Simulation function Failure mode Limit monitoring Square-rooted characteristic for flow measurement | Yes, linearly rising or falling characteristic 0 ... 100 s Output/input (can be locked within the device with a bridge) parameterizable (last good value, substitute value, incorrect value) Yes, one upper and lower warning limit and one alarm limit respectively Yes |
| Software for computer | SIMATIC PDM | <ul style="list-style-type: none"> PID Physical block | Standard FOUNDATION Fieldbus function block 1 resource block |
| PROFIBUS PA communication | | Transducer blocks | |
| Simultaneous communication with master class 2 (max.) | 4 | <ul style="list-style-type: none"> Pressure transducer block <ul style="list-style-type: none"> - Can be calibrated by applying two pressures - Monitoring of sensor limits - Simulation function: Measured pressure value, sensor temperature and electronics temperature | 1 transducer block Pressure with calibration, 1 transducer block LCD |
| The address can be set using | Configuration tool or local operation (standard setting Address 126) | | |
| Cyclic data usage | | | |
| <ul style="list-style-type: none"> Output byte Input byte Internal preprocessing | 5 (one measured value) or 10 (two measured values) 0.1 or 2 (totalizer mode and reset function for dosing) | | |
| Device profile | PROFIBUS PA Profile for Process Control Devices Version 3.0, class B | | |
| Function blocks | 2 | | |
| <ul style="list-style-type: none"> Analog input <ul style="list-style-type: none"> - Adaptation to customer-specific process variables - Electrical damping adjustable - Simulation function - Failure function Limit monitoring Register (totalizer) <ul style="list-style-type: none"> - Failure mode Limit monitoring Physical block | Yes, linearly rising or falling characteristic 0 ... 100 s Input /Output parameterizable (last good value, substitute value, incorrect value) Yes, one upper and lower warning limit and one alarm limit respectively Can be reset, preset, optional direction of counting, simulation function of register output parameterizable (summation with last good value, continuous summation, summation with incorrect value) One upper and lower warning limit and one alarm limit respectively | | |
| Transducer blocks | 2 | | |
| <ul style="list-style-type: none"> Pressure transducer block <ul style="list-style-type: none"> - Can be calibrated by applying two pressures - Monitoring of sensor limits - Specification of a container characteristic with - Simulation function for measured pressure value and sensor temperature | Yes Yes Max. 30 nodes Constant value or over parameterizable ramp function | | |

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| Selection and Ordering data | | Article No. | Selection and Ordering data | | Article No. |
|--|----------------------------------|-----------------------|---|--|-----------------------|
| SITRANS P300 pressure transmitters for relative and absolute pressure , single-chamber measuring enclosure, rating plate inscription in English | | | SITRANS P300 pressure transmitters for relative and absolute pressure , single-chamber measuring enclosure, rating plate inscription in English | | |
| 4 ... 20 mA/HART | | 7 MF 8 0 2 3 - | 4 ... 20 mA/HART | | 7 MF 8 0 2 3 - |
| PROFIBUS PA | | 7 MF 8 0 2 4 - | PROFIBUS PA | | 7 MF 8 0 2 4 - |
| FOUNDATION Fieldbus (FF) | | 7 MF 8 0 2 5 - | FOUNDATION Fieldbus (FF) | | 7 MF 8 0 2 5 - |
| ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal. | | | | | |
| Measuring cell filling | Measuring cell cleaning | | Display | | |
| Silicone oil | normal | 1 | • Without display, with keys, closed lid | | 1 |
| Inert liquid | Cleanliness level 2 to DIN 25410 | 3 | • With display and keys, closed lid ¹¹⁾ | | 2 |
| | | | • With display and keys, lid with polycarbonate disc | | 4 |
| | | | • (setting on HART devices: mA, with PROFIBUS PA and FOUNDATION Fieldbus equipment: pressure units) ¹¹⁾ | | 5 |
| | | | • With display and keys (setting acc. to specifications, Order code "Y21" or "Y22" required), lid with polycarbonate disc ¹¹⁾ | | 6 |
| | | | • With display and keys, lid with glass pane (setting on HART devices: mA, with PROFIBUS and FOUNDATION Fieldbus equipment: pressure units) ¹¹⁾ | | 7 |
| | | | • With display and keys (setting acc. to specifications, Order code "Y21" or "Y22" required), lid with glass pane ¹¹⁾ | | |
| Measuring span (min. ... max.) | | | Power supply units see Chap. 7 "Supplementary Components". | | |
| 8.3 ... 250 mbar | (0.12 ... 3.63 psi) | A | A quick-start guide is included in the scope of delivery of the device. | | |
| 0.01 ... 1 bar | (0.145 ... 14.5 psi) | B | 1) When also ordering the quality test 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. | | |
| 0.04 ... 4 bar | (0.58 ... 58 psi) | C | 2) If the inspection certificate 3.1 is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals. | | |
| 0.16 ... 16 bar | (2.32 ... 232 psi) | D | 3) The diaphragm seal is to be specified with a separate order number and must be included with the transmitter order number, for example 7MF802-..Y.-..... and 7MF4900-1...-B | | |
| 0.63 ... 63 bar | (9.14 ... 914 psi) | E | 4) The standard measuring cell filling for configurations with remote seals (Y) is silicone oil. | | |
| 1.6 ... 160 bar | (23.2 ... 2320 psi) | F | 5) Remote seal for direct mounting only available in combination with process connection 1/2-14 NPT. | | |
| 4 ... 400 bar | (58 ... 5802 psi) | G | 6) M10 fastening thread: Max. measuring span 160 bar (2320 psi) 7/16-20 UNF and M12 fastening thread: Max. measuring span 400 bar (5802 psi) | | |
| 8.34 ... 250 mbar a | (0.13 ... 3.63 psi a) | Q | 7) Only available together with electrical connection option A | | |
| 43.34 ... 1300 mbar a | (0.63 ... 18.86 psi a) | S | 8) Only available together with electrical connection options B, C or G. | | |
| 0.17 ... 5 bar a | (2.43 ... 72.5 psi a) | T | 9) Only together with HART electronics. | | |
| 1 ... 30 bar a | (14.6 ... 435 psi a) | U | 10) Without cable gland. | | |
| | | | 11) Display cannot be turned. | | |
| Wetted parts materials | | | | | |
| Seal diaphragm | Measuring cell | | | | |
| Stainless steel | Stainless steel | A | | | |
| Hastelloy | Stainless steel | B | | | |
| Hastelloy | Hastelloy | C | | | |
| Version for diaphragm seals in conjunction with process connector "female thread 1/2-14 NPT" (recommended version) 1) 2) 3) 4) 5) | | Y | | | |
| Process connection | | | | | |
| • Connection shank G1/2B to EN 837-1 | | 0 | | | |
| • Female thread 1/2-14 NPT | | 1 | | | |
| • Stainless steel oval flange with process connection (Oval flange has no female thread) 6) | | | | | |
| - Mounting thread 7/16-20 UNF to IEC 61518/DIN EN 61518 | | 2 | | | |
| - Mounting thread M10 to DIN 19213 | | 3 | | | |
| - Mounting thread M12 to DIN 19213 | | 4 | | | |
| • Male thread M20 x 1.5 | | 5 | | | |
| • Male thread 1/2 -14 NPT | | 6 | | | |
| Non-wetted parts materials | | | | | |
| • Stainless steel, deep-drawn and electrolytically polished | | 4 | | | |
| Version | | | | | |
| • Standard versions | | 1 | | | |
| Explosion protection | | | | | |
| • None | | A | | | |
| • With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" | | B | | | |
| • Zone 20/21/22 ⁷⁾ | | C | | | |
| • Ex nA/nL (Zone 2) ⁸⁾ | | E | | | |
| • with FM "intrinsic safety" (cFM _{US}) | | M | | | |
| Electrical connection / cable entry | | | | | |
| • Screwed gland M20x1.5 (polyamide) ⁹⁾ | | A | | | |
| • Screwed gland M20x1.5 (metal) | | B | | | |
| • Screwed gland M20x1.5 (stainless steel) | | C | | | |
| • Device plug M12 (stainless steel), without cable socket | | G | | | |
| • Screwed gland 1/2-14 NPT metal thread ¹⁰⁾ | | H | | | |
| • Screwed gland 1/2-14 NPT stainless steel thread | | J | | | |

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| Selection and Ordering data | Article No. |
|--|----------------|
| SITRANS P300 pressure transmitters for relative and absolute pressure with front-flush membrane , single-chamber measuring enclosure, rating plate inscription in English | |
| 4 ... 20 mA/HART | 7 MF 8 1 2 3 - |
| PROFIBUS PA | 7 MF 8 1 2 4 - |
| FOUNDATION Fieldbus (FF) | 7 MF 8 1 2 5 - |
| ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal. | |
| Measuring cell filling | |
| Silicone oil | 1 |
| Inert liquid | 3 |
| FDA compliant fill fluid | |
| • Neobee oil | 4 |
| Measuring cell cleaning | |
| normal | |
| Measuring span (min. ... max.) | |
| 0.01 ... 1 bar (0.15 ... 14.5 psi) | B |
| 0.04 ... 4 bar (0.58 ... 58 psi) | C |
| 0.16 ... 16 bar (2.32 ... 232 psi) | D |
| 0.63 ... 63 bar (9.14 ... 914 psi) | E |
| 43.34 ... 1300 mbar a ¹⁾ (0.63 ... 18.86 psi a ¹⁾) | S |
| 0.17 ... 5 bar a ¹⁾ (2.43 ... 72.5 psi a ¹⁾) | T |
| 1 ... 30 bar a ¹⁾ (14.6 ... 435 psi a ¹⁾) | U |
| Wetted parts materials | |
| Seal diaphragm | |
| Measuring cell | |
| Stainless steel | A |
| Hastelloy ²⁾ | B |
| Process connection | |
| • Flange version with Order code M., N., R.. or Q.. (see "Further designs") | 7 |
| Non-wetted parts materials | |
| • Stainless steel, deep-drawn and electrolytically polished | 4 |
| Version | |
| • Standard versions | 1 |
| Explosion protection | |
| • None | A |
| • With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" | B |
| • Zone 20/21/22 ³⁾ | C |
| • Ex nA/nL (Zone 2) ⁴⁾ | E |
| • with FM "intrinsic safety" (cFM _{US}) | M |
| Electrical connection / cable entry | |
| • Screwed gland M20x1.5 (polyamide) ⁵⁾ | A |
| • Screwed gland M20x1.5 (metal) | B |
| • Screwed gland M20x1.5 (stainless steel) | C |
| • Device plug M12 (stainless steel), without cable socket | G |
| • Screwed gland ½-14 NPT metal thread ⁶⁾ | H |
| • Screwed gland ½-14 NPT stainless steel thread ⁶⁾ | J |

| Selection and Ordering data | Article No. |
|--|----------------|
| SITRANS P300 pressure transmitters for relative and absolute pressure with front-flush membrane , single-chamber measuring enclosure, rating plate inscription in English | |
| 4 ... 20 mA/HART | 7 MF 8 1 2 3 - |
| PROFIBUS PA | 7 MF 8 1 2 4 - |
| FOUNDATION Fieldbus (FF) | 7 MF 8 1 2 5 - |
| ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal. | |
| Display | |
| • Without display, with keys, closed lid | 1 |
| • With display and keys, closed lid ⁷⁾ | 2 |
| • With display and keys, lid with polycarbonate disc (setting on HART devices: mA, with PROFIBUS PA and FOUNDATION Fieldbus equipment: pressure units) ⁷⁾ | 4 |
| • With display and keys (setting acc. to specifications, Order code "Y21" or "Y22" required), lid with polycarbonate disc ⁷⁾ | 5 |
| • With display and keys, lid with glass pane (setting on HART devices: mA, with PROFIBUS PA and FOUNDATION Fieldbus equipment: pressure units) ⁷⁾ | 6 |
| • With display and keys (setting acc. to specifications, Order code "Y21" or "Y22" required), lid with glass pane ⁷⁾ | 7 |
| Power supply units see Chap. 7 "Supplementary Components" | |
| A quick-start guide is included in the scope of delivery of the device. | |
| 1) Not with temperature decoupler P00, not for process connections R01, R02, R04, R10 and R11, and can only be ordered in conjunction with silicone oil. | |
| 2) Only available for flanges with options M., N.. and Q.. | |
| 3) Only together with electrical connection option A. | |
| 4) Only available together with electrical connection options B, C or G. | |
| 5) Only together with HART electronics. | |
| 6) Without cable gland. | |
| 7) Display cannot be turned. | |

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1

| Selection and Ordering data | Order code | | | |
|---|------------|------|----|----|
| Further designs Add "-Z" to Article No. and specify Order code. | | HART | PA | FF |
| Pressure transmitter with mounting bracket (2 shackles, 4 nuts, 4 U-plates, 1 angle) made of: made completely of stainless steel, for wall or pipe mounting | A02 | ✓ | ✓ | ✓ |
| Cable socket for device plugs M12 • Stainless steel | A51 | ✓ | ✓ | ✓ |
| Rating plate inscription (instead of English) | | | | |
| • German | B10 | ✓ | ✓ | ✓ |
| • French | B12 | ✓ | ✓ | ✓ |
| • Spanish | B13 | ✓ | ✓ | ✓ |
| • Italian | B14 | ✓ | ✓ | ✓ |
| English rating plate Pressure units in inH ₂ O and/or psi | B21 | ✓ | ✓ | ✓ |
| Quality test certificate, 5-point factory calibration (IEC 60770-2)¹⁾ | C11 | ✓ | ✓ | ✓ |
| Inspection certificate²⁾ Acc. to EN 10204-3.1 | C12 | ✓ | ✓ | ✓ |
| Factory certificate Acc. to EN 10204-2.2 | C14 | ✓ | ✓ | ✓ |
| Degree of protection IP65/IP68 (only for M20x1.5 and ½"-14 NPT) | D12 | ✓ | ✓ | ✓ |
| Degree of protection IP6k9k (only for M20x1.5) | D46 | ✓ | ✓ | ✓ |
| CRN approval Canada (Canadian Registration Number) | E22 | ✓ | ✓ | ✓ |
| Export approval Korea | E11 | ✓ | ✓ | ✓ |
| Ex-protection Ex ia according to EAC Ex (Russia) | E80 | ✓ | ✓ | ✓ |
| Ex Approval Ex ia/ib NEPSI | E55 | ✓ | ✓ | ✓ |
| Only for SITRANS P300 with front-flush diaphragm (7MF81...-...) | | | | |
| Flange to EN 1092-1, Form B1 | | | | |
| • DN 25, PN 40 ³⁾ | M11 | ✓ | ✓ | ✓ |
| • DN 40, PN 40 | M13 | ✓ | ✓ | ✓ |
| • DN 40, PN 100 | M23 | ✓ | ✓ | ✓ |
| • DN 50, PN 16 | M04 | ✓ | ✓ | ✓ |
| • DN 50, PN 40 | M14 | ✓ | ✓ | ✓ |
| • DN 80, PN 16 | M06 | ✓ | ✓ | ✓ |
| • DN 80, PN 40 | M16 | ✓ | ✓ | ✓ |
| Flanges to ASME B16.5 | | | | |
| • 1", class 150 ⁴⁾ | M40 | ✓ | ✓ | ✓ |
| • 1½", class 150 | M41 | ✓ | ✓ | ✓ |
| • 2", class 150 | M42 | ✓ | ✓ | ✓ |
| • 3", class 150 | M43 | ✓ | ✓ | ✓ |
| • 4", class 150 | M44 | ✓ | ✓ | ✓ |
| • 1", class 300 ⁴⁾ | M45 | ✓ | ✓ | ✓ |
| • 1½", class 300 | M46 | ✓ | ✓ | ✓ |
| • 2", class 300 | M47 | ✓ | ✓ | ✓ |
| • 3", class 300 | M48 | ✓ | ✓ | ✓ |
| • 4", class 300 | M49 | ✓ | ✓ | ✓ |
| Threaded connector to DIN 3852-2, form A, thread to ISO 228 | | | | |
| • G ¾"-A, front-flush ⁴⁾ | R01 | ✓ | ✓ | ✓ |
| • G 1"-A, front-flush ⁴⁾ | R02 | ✓ | ✓ | ✓ |
| • G 2"-A, front-flush | R04 | ✓ | ✓ | ✓ |
| Tank connection⁵⁾ Sealing is included in delivery | | | | |
| • TG 52/50, PN 40 | R10 | ✓ | ✓ | ✓ |
| • TG 52/150, PN 40 | R11 | ✓ | ✓ | ✓ |

| Selection and Ordering data | Order code | | | |
|--|------------|--------|--------|--------|
| Further designs Add "-Z" to Article No. and specify Order code. | | HART | PA | FF |
| Sanitary process connection according DIN 11851 (Dairy connection with slotted union nut) • DN 50, PN 25 • DN 80, PN 25 | N04 N06 | ✓ ✓ | ✓ ✓ | ✓ ✓ |
| Tri-Clamp connection according DIN 32676/ISO 2852 3A compliant ⁶⁾ | | | | |
| • DN 50/2", PN 16 | N14 | ✓ | ✓ | ✓ |
| • DN 65/2.5", PN 10 | N15 | ✓ | ✓ | ✓ |
| • Clamp 2" ISO 2852 PN 16 | N22 | ✓ | ✓ | ✓ |
| • Clamp 3" ISO 2852 PN 16 | N23 | ✓ | ✓ | ✓ |
| Varivent connection 3A and EHEDG compliant ⁶⁾ | | | | |
| • Type N = 68 for Varivent enclosure DN 40 ... 125 and 1½" ... 6", PN 40 | N28 | ✓ | ✓ | ✓ |
| Temperature decoupler up to 200 °C⁷⁾ for front-flush diaphragm version | P00 | ✓ | ✓ | ✓ |
| Sanitary process connection to DRD • DN 50, PN 40 | M32 | ✓ | ✓ | ✓ |
| SMS threaded socket | | | | |
| • 2" | M73 | ✓ | ✓ | ✓ |
| • 2½" | M74 | ✓ | ✓ | ✓ |
| • 3" | M75 | ✓ | ✓ | ✓ |
| Sanitary process connection to NEUMO Bio-Connect screw connection 3A and EHEDG compliant ⁶⁾ | | | | |
| • DN 50, PN 16 | Q05 | ✓ | ✓ | ✓ |
| • DN 65, PN 16 | Q06 | ✓ | ✓ | ✓ |
| • DN 80, PN 16 | Q07 | ✓ | ✓ | ✓ |
| • DN 100, PN 16 | Q08 | ✓ | ✓ | ✓ |
| • DN 2", PN 16 | Q13 | ✓ | ✓ | ✓ |
| • DN 2½", PN 16 | Q14 | ✓ | ✓ | ✓ |
| • DN 3", PN 16 | Q15 | ✓ | ✓ | ✓ |
| • DN 4", PN 16 | Q16 | ✓ | ✓ | ✓ |
| Sanitary process connection to NEUMO Bio-Connect S flange connection • DN 2", PN 16 | Q72 | ✓ | ✓ | ✓ |

Pressure Measurement

Pressure transmitters
for food, pharmaceuticals and biotechnology

SITRANS P300 for gauge and absolute pressure

1

| Selection and Ordering data | Order code | | | Selection and Ordering data | Order code | | | | |
|---|------------------|-------------|-----------|-----------------------------|---|------------------|-------------|-----------------|-----------|
| Further designs | | HART | PA | FF | Additional data | | HART | PA | FF |
| Add "-Z" to Article No. and specify Order code. | | | | | Please add "-Z" to Article No. and specify Order code(s) and plain text. | | | | |
| Aseptic threaded socket to DIN 11864-1 Form A 3A compliant ⁶⁾ | | | | | Measuring range to be set Specify in plain text (max. 5 characters): Y01: ... up to ... mbar, bar, kPa, MPa, psi | Y01 | ✓ | ✓ ⁸⁾ | |
| • DN 50, PN 25 | N33 | ✓ | ✓ | ✓ | Stainless steel tag plate and entry in device variable (measuring point description) Max. 16 characters, specify in plain text: Y15: | Y15 | ✓ | ✓ | ✓ |
| • DN 65, PN 25 | N34 | ✓ | ✓ | ✓ | Measuring point text (entry in device variable) Max. 27 characters, specify in plain text: Y16: | Y16 | ✓ | ✓ | ✓ |
| • DN 80, PN 25 | N35 | ✓ | ✓ | ✓ | Entry of HART TAG Max. 8 characters, specify in plain text: Y17: | Y17 | ✓ | | |
| • DN 100, PN 25 | N36 | ✓ | ✓ | ✓ | Setting of the display in pressure units Specify in plain text (standard setting: bar): Y21: mbar, bar, kPa, MPa, psi, ... Note: The following pressure units can be selected: bar, mbar, mm H ₂ O ¹⁾ , inH ₂ O ¹⁾ , ftH ₂ O ¹⁾ , mmHG, inHG, psi, Pa, kPa, MPa, g/cm ² , kg/cm ² , Torr, ATM or %) ref. temperature 20 °C | Y21 | ✓ | ✓ | ✓ |
| Aseptic flange with notch to DIN 11864-2 Form A 3A compliant ⁶⁾ | | | | | Setting of the display in non-pressure units⁹⁾ Specify in plain text: Y22: up to l, m ³ , m, USg, ... (specification of measuring range in pressure units "Y01" is essential, unit with max. 5 characters) | Y22 + Y01 | ✓ | | |
| • DN 50, PN 16 | N43 | ✓ | ✓ | ✓ | Preset bus address (possible between 1 ... 126) Specify in plain text: Y25: | Y25 | | ✓ | ✓ |
| • DN 65, PN 16 | N44 | ✓ | ✓ | ✓ | | | | | |
| • DN 80, PN 16 | N45 | ✓ | ✓ | ✓ | | | | | |
| • DN 100, PN 16 | N46 | ✓ | ✓ | ✓ | | | | | |
| Aseptic flange with groove to DIN 11864-2 Form A 3A compliant ⁶⁾ | | | | | | | | | |
| • DN 50, PN 16 | N43 + P11 | ✓ | ✓ | ✓ | | | | | |
| • DN 65, PN 16 | N44 + P11 | ✓ | ✓ | ✓ | | | | | |
| • DN 80, PN 16 | N45 + P11 | ✓ | ✓ | ✓ | | | | | |
| • DN 100, PN 16 | N46 + P11 | ✓ | ✓ | ✓ | | | | | |
| Aseptic clamp with groove to DIN 11864-3 Form A 3A compliant ⁶⁾ | | | | | | | | | |
| • DN 50, PN 25 | N53 | ✓ | ✓ | ✓ | | | | | |
| • DN 65, PN 25 | N54 | ✓ | ✓ | ✓ | | | | | |
| • DN 80, PN 16 | N55 | ✓ | ✓ | ✓ | | | | | |
| • DN 100, PN 16 | N56 | ✓ | ✓ | ✓ | | | | | |

Factory mounting of valve manifolds, see accessories.

Only Y01, Y15, Y16, Y17, Y21, Y22 and Y25 can be factory preset

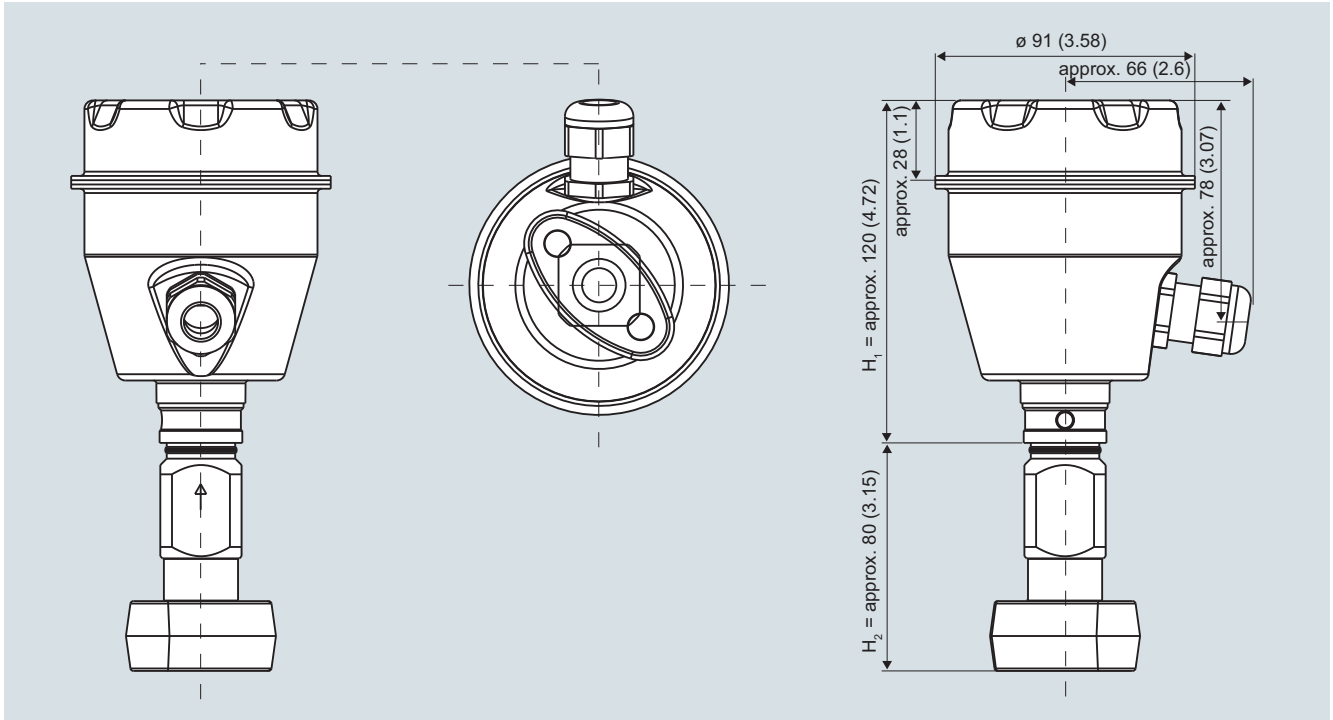
✓ = available

Ordering example

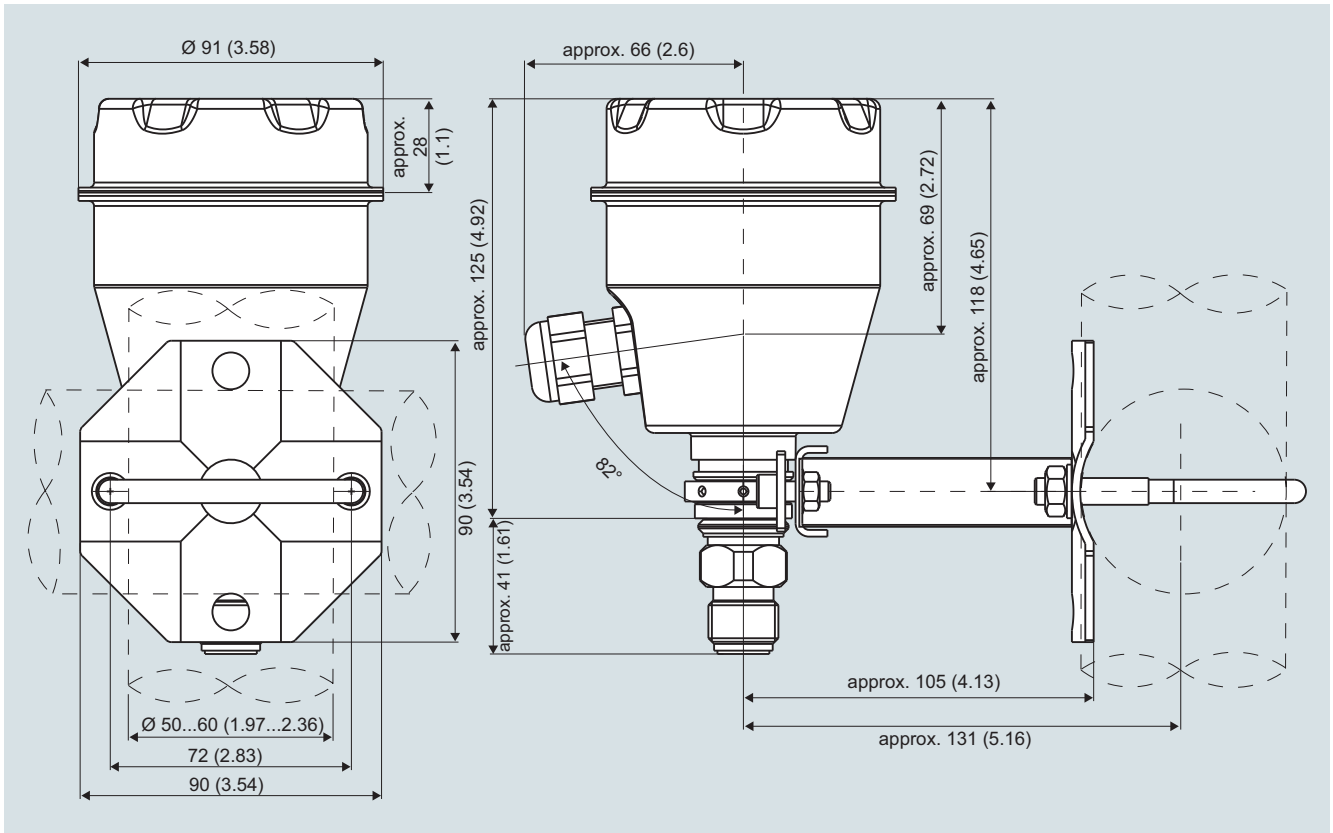
Item line: 7MF8023-1DB24-1AB7-Z
B line: A02 + Y01 + Y21
C line: Y01: 1 ... 10 bar (14.5 ... 145 psi)
C line: Y21: bar (psi)

- When also ordering the quality test 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.
- If the inspection certificate 3.1 is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.
- Special seal in Viton included in the scope of delivery (FKM; temperature range -20 ... +200 °C (-4 ... +392 °F))
- Cannot be combined with Order code P00. Can only be ordered with silicone oil measuring cell filling.
- The weldable socket can be ordered under accessories.
- 3A compliance ensured only when 3A compliant sealing rings are used.
- Conformity according to 3A and EHEDG. The maximum permissible temperatures of the medium depend on the respective cell fillings (see medium conditions).
- Measuring accuracies for PROFIBUS PA transmitters with Option Y01 are calculated in the same way as for HART devices.
- Preset values can only be changed over SIMATIC PDM.

Dimensional drawings



SITRANS P300, with oval flange, dimensions in mm (inch)

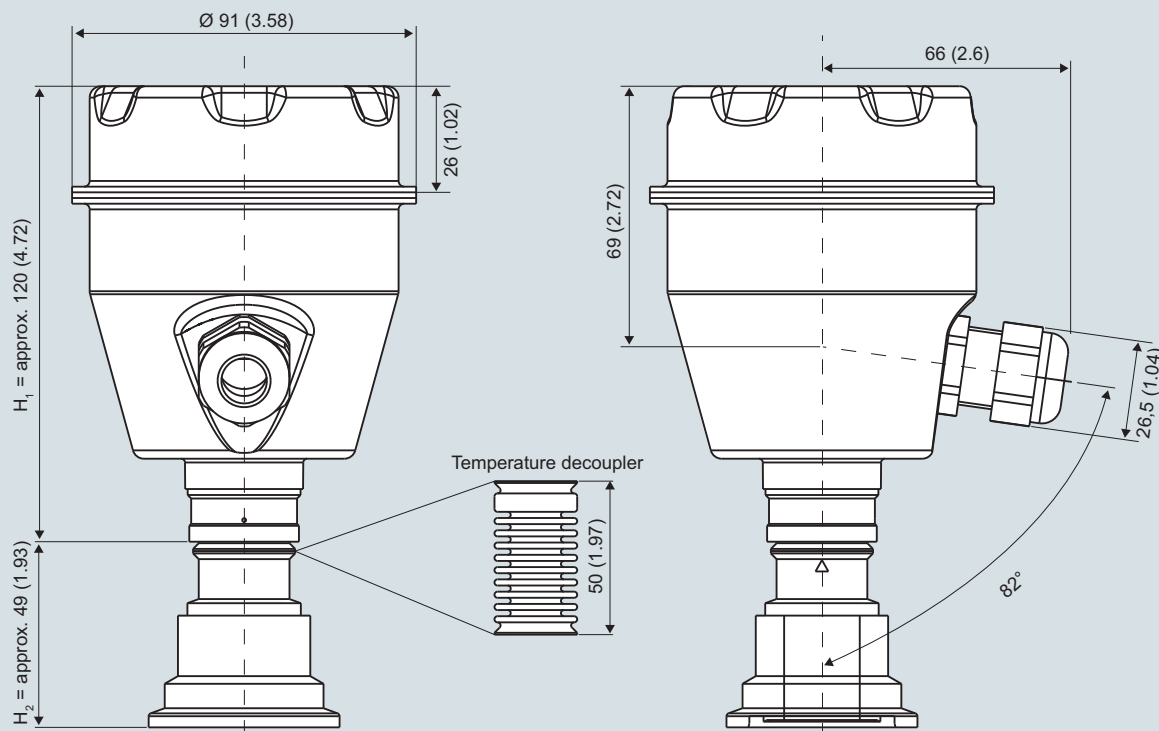


SITRANS P300, process connection M20 x 1.5, with mounted mounting bracket, dimensions in mm (inch)

Pressure Measurement

Pressure transmitters
for food, pharmaceuticals and biotechnology

SITRANS P300 for gauge and absolute pressure



SITRANS P300, front-flush, dimensions in mm (inch)

The diagram shows a SITRANS P300 with an example of a 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.

Pressure Measurement

Pressure transmitters
for food, pharmaceuticals and biotechnology

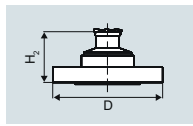
SITRANS P300 for gauge and absolute pressure

1

Flanges according to EN and ASME

Flange according to EN

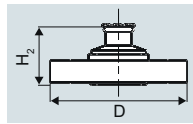
EN 1092-1



| Order code | DN | PN | ØD | H ₂ |
|------------|----|-----|---------------|-----------------------|
| M11 | 25 | 40 | 115 mm (4.5") | Approx. 52 mm (2") |
| M13 | 40 | 40 | 150 mm (5.9") | |
| M23 | 40 | 100 | 170 mm (6.7") | |
| M04 | 50 | 16 | 165 mm (6.5") | |
| M14 | 50 | 40 | 165 mm (6.5") | |
| M06 | 80 | 16 | 200 mm (7.9") | |
| M16 | 80 | 40 | 200 mm (7.9") | |

Flanges according to ASME

ASME B16.5

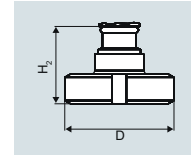


| Order code | DN | PN | ØD | H ₂ |
|------------|-----|-----|----------------|-----------------------|
| M40 | 1" | 150 | 110 mm (4.3") | Approx. 52 mm (2") |
| M41 | 1½" | 150 | 130 mm (5.1") | |
| M42 | 2" | 150 | 150 mm (5.9") | |
| M43 | 3" | 150 | 190 mm (7.5") | |
| M44 | 4" | 150 | 230 mm (9.1") | |
| M46 | 1½" | 300 | 155 mm (6.1") | |
| M47 | 2" | 300 | 165 mm (6.5") | |
| M48 | 3" | 300 | 210 mm (8.1") | |
| M49 | 4" | 300 | 255 mm (10.0") | |

NuG and pharmaceutical connections

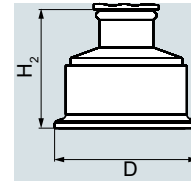
Connections to DIN

DIN 11851 (milk pipe union with slotted union nut)



| Order code | DN | PN | ØD | H ₂ |
|------------|----|----|---------------|-----------------------|
| N04 | 50 | 25 | 92 mm (3.6") | Approx. 52 mm (2") |
| N06 | 80 | 25 | 127 mm (5.0") | |

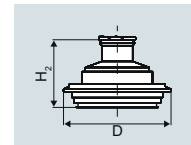
Tri-Clamp nach DIN 32676



| Order code | DN | PN | ØD | H ₂ |
|------------|----|----|--------------|-----------------------|
| N14 | 50 | 16 | 64 mm (2.5") | Approx. 52 mm (2") |
| N15 | 65 | 10 | 91 mm (3.6") | |

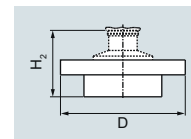
Other connections

Varivent connection



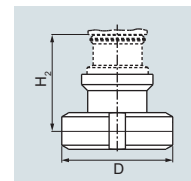
| Order code | DN | PN | ØD | H ₂ |
|------------|------------|----|--------------|-----------------------|
| N28 | 40 ... 125 | 40 | 84 mm (3.3") | Approx. 52 mm (2") |

Sanitary process connection to DRD



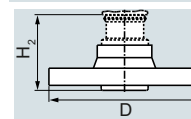
| Order code | DN | PN | ØD | H ₂ |
|------------|----|----|---------------|-----------------------|
| M32 | 50 | 40 | 105 mm (4.1") | Approx. 52 mm (2") |

Sanitary process screw connection to NEUMO Bio-Connect



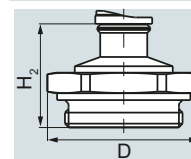
| Order code | DN | PN | ØD | H ₂ |
|------------|-----|----|---------------|-----------------------|
| Q05 | 50 | 16 | 82 mm (3.2") | Approx. 52 mm (2") |
| Q06 | 65 | 16 | 105 mm (4.1") | |
| Q07 | 80 | 16 | 115 mm (4.5") | |
| Q08 | 100 | 16 | 145 mm (5.7") | |
| Q13 | 2" | 16 | 82 mm (3.2") | |
| Q14 | 2½" | 16 | 105 mm (4.1") | |
| Q15 | 3" | 16 | 105 mm (4.1") | |
| Q16 | 4" | 16 | 145 mm (5.7") | |

Sanitary process connection to NEUMO Bio-Connect S flange connection



| Order code | DN | PN | ØD | H ₂ |
|------------|----|----|---------------|-----------------------|
| Q72 | 2" | 16 | 125 mm (4.9") | Approx. 52 mm (2") |

Threaded connection G¾", G1" and G2" acc. to DIN 3852



| Order code | DN | PN | ØD | H ₂ |
|------------|----|----|--------------|-------------------------|
| R01 | ¾" | 60 | 37 mm (1.5") | Approx. 45 mm (1.8") |
| R02 | 1" | 60 | 48 mm (1.9") | Approx. 47 mm (1.9") |
| R04 | 2" | 60 | 78 mm (3.1") | Approx. 52 mm (2") |

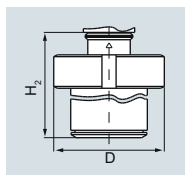
Pressure Measurement

Pressure transmitters
for food, pharmaceuticals and biotechnology

SITRANS P300 for gauge and absolute pressure

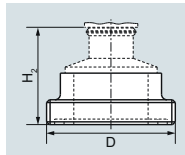
1

Tank connection TG 52/50 and TG52/150



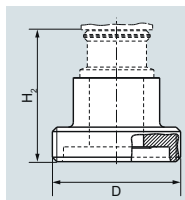
| Order code | DN | PN | ∅D | H ₂ |
|------------|----|----|--------------|-----------------------|
| R10 | 25 | 40 | 63 mm (2.5") | Approx. 63 mm (2.5") |
| R11 | 25 | 40 | 63 mm (2.5") | Approx. 170 mm (6.7") |

SMS threaded socket



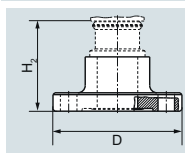
| Order code | DN | PN | ∅D | H ₂ |
|------------|-----|----|-------------|--------------------|
| M73 | 2" | 25 | 70 x 1/6 mm | Approx. 52 mm (2") |
| M74 | 2½" | 25 | 85 x 1/6 mm | |
| M75 | 3" | 25 | 98 x 1/6 mm | |

Aseptic threaded socket to DIN 11864-1 Form A



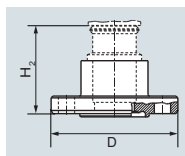
| Order code | DN | PN | ∅D | H ₂ |
|------------|-----|----|-----------|--------------------|
| N33 | 50 | 25 | 78 x 1/6" | Approx. 52 mm (2") |
| N34 | 65 | 25 | 95 x 1/6" | |
| N35 | 80 | 25 | 110 x ¼" | |
| N36 | 100 | 25 | 130 x ¼" | |

Aseptic flange with notch to DIN 11864-2 Form A



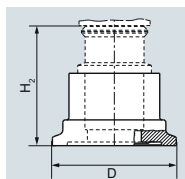
| Order code | DN | PN | ∅D | H ₂ |
|------------|-----|----|-----|--------------------|
| N43 | 50 | 16 | 94 | Approx. 52 mm (2") |
| N44 | 65 | 16 | 113 | |
| N45 | 80 | 16 | 133 | |
| N46 | 100 | 16 | 159 | |

Aseptic flange with groove to DIN 11864-2 Form A



| Order code | DN | PN | ∅D | H ₂ |
|------------|-----|----|-----|--------------------|
| N43 + P11 | 50 | 16 | 94 | Approx. 52 mm (2") |
| N44 + P11 | 65 | 16 | 113 | |
| N45 + P11 | 80 | 16 | 133 | |
| N46 + P11 | 100 | 16 | 159 | |

Aseptic clamp with groove to DIN 11864-3 Form A



| Order code | DN | PN | ∅D | H ₂ |
|------------|-----|----|------|--------------------|
| N53 | 50 | 25 | 77.5 | Approx. 52 mm (2") |
| N54 | 65 | 25 | 91 | |
| N55 | 80 | 16 | 106 | |
| N56 | 100 | 16 | 130 | |

Pressure Measurement

Pressure transmitters for food, pharmaceuticals and biotechnology

SITRANS P300 Accessories/Spare parts

1

| Selection and Ordering data | Article No. | Selection and Ordering data | Article No. |
|---|--|--|--------------------|
| <i>Spare parts / Accessories</i> | | Documentation | |
| Mounting bracket and fastening parts kit made of stainless steel | 7MF8997-1AA | The entire documentation is available for download free-of-charge in various languages at: http://www.siemens.com/processinstrumentation/documentation | |
| Lid without window gasket not included | 7MF8997-1BA | Compact operating instructions | |
| Lid with glass window gasket not included | 7MF8997-1BD | • English, German, Spanish, French, Italian, Dutch | A5E03434657 |
| NBR enclosure sealing | 7MF8997-1BG | Certificates (order only via SAP) instead of Internet download | |
| Measuring point label unlabeled | 7MF8997-1CA | • hard copy (to order) | A5E03252406 |
| Cable gland • metal • plastic (blue) | 7MF8997-1EA 7MF8997-1EB | • on DVD (to order) | A5E03252407 |
| Weldable sockets for PMC connection • PMC Style Standard: Thread 1½" • PMC Style Minibolt: front-flush 1" | 7MF4997-2HA 7MF4997-2HB | HART modem with USB interface | 7MF4997-1DB |
| Gaskets for PMC connection (packing unit = 5 units) • PTFE seal for PMC Style Standard: Thread 1½" • Gasket made of Viton for PMC Style Minibolt: front-flush 1" | 7MF4997-2HC 7MF4997-2HD | Power supply units see Chap. 7 "Supplementary Components". | |
| Weldable socket for TG 52/50 and TG 52/150 connection • TG 52/50 connection • TG5 2/150 connection | 7MF4997-2HE 7MF4997-2HF | | |
| Seals for TG 52/50 and TG 52/150 made of silicone | 7MF4997-2HG | | |
| Seals for flange connection with front-flush diaphragm Material FKM (Viton); temperature range: -20 ... +200 °C (-4 ... +392 °F), 10 units • DN 25, PN 40 (M11) • 1", class 150 (M40) | 7MF4997-2HH 7MF4997-2HK | | |

Pressure Measurement

Pressure transmitters

for food, pharmaceuticals and biotechnology

1

SITRANS P300 - Factory-mounting of valve manifolds on transmitters

Overview

The SITRANS P300 transmitter for gauge and absolute pressure can be delivered factory-fitted with the following valve manifolds:

- 7MF9011-4EA and 7MF9011-4FA valve manifolds for gauge pressure and absolute pressure transmitters

Design

The 7MF9011-4EA valve manifolds are sealed with PTFE gaskets between the transmitter and the valve manifold as standard. Soft iron, stainless steel and copper gaskets are also available for sealing purposes if preferred.

The 7MF9011-4FA valve manifolds are sealed with PTFE sealing tape between the transmitter and the valve manifold.

The complete unit is checked for leaks under pressure after assembly (air pressure 6 bar (87 psi)) and certified with a factory certificate according to EN 10204 - 2.2.

All valve manifolds should preferably be secured with the corresponding mounting brackets. The transmitters are mounted on the valve manifold and not on the unit itself.

If you order a mounting bracket when choosing the option "Factory mounting of valve manifolds", you will receive a mounting bracket for the valve manifold instead of a bracket for mounting the transmitter.

If you order an inspection certificate 3.1 to EN 10204 after choosing the option "Factory mounting of valve manifolds", a separate certificate is provided for the transmitter and for the valve manifold.

Selection and Ordering data

7MF9011-4FA valve manifold on gauge and absolute pressure transmitters



Add **-Z** to the Article No. of the transmitter and add Order codes

| SITRANS P300 7MF802.-...1.-... | Order code |
|-----------------------------------|------------|
| | T03 |

With process connection female thread ½-14 NPT in-sealed with PTFE sealing tape

Delivery including high-pressure test certified by factory certificate according to EN 10204-2.2

Further designs:

| | |
|--|------------|
| Delivery includes mounting brackets and mounting clips made of stainless steel (instead of the mounting bracket supplied with the transmitter) | A02 |
|--|------------|

| | |
|---|------------|
| Inspection certificate according to EN 10204-3.1 supplied for transmitters and mounted valve manifold | C12 |
|---|------------|

7MF9011-4EA valve manifold on gauge and absolute pressure transmitters



Add **-Z** to the Article No. of the transmitter and add Order codes

| SITRANS P300 7MF802.-...0.-... | Order code |
|-----------------------------------|------------|
| | T02 |

with process connection collar G½ A to EN 837-1 with gasket made of PTFE between valve manifold and transmitter

Alternative sealing material:

- | | |
|-----------------------------------|------------|
| • Soft iron | A70 |
| • Stainless steel, Mat. No. 14571 | A71 |
| • copper | A72 |

Delivery including high-pressure test certified by factory certificate according to EN 10204-2.2

Further designs:

| | |
|--|------------|
| Delivery includes mounting brackets and mounting clips made of stainless steel (instead of the mounting bracket supplied with the transmitter) | A02 |
|--|------------|

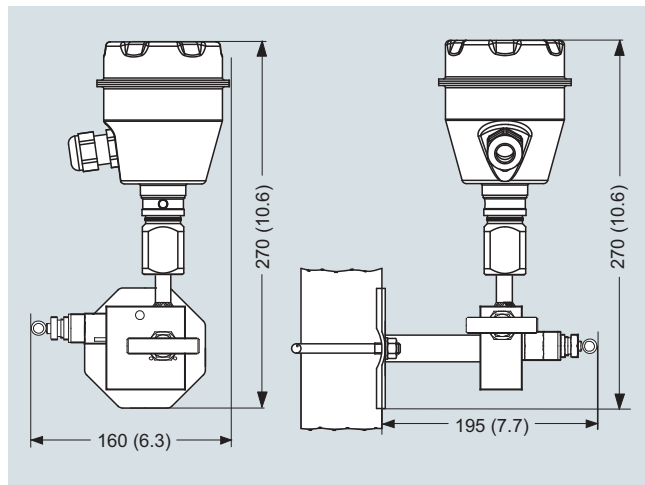
| | |
|---|------------|
| Inspection certificate according to EN 10204-3.1 supplied for transmitters and mounted valve manifold | C12 |
|---|------------|

Dimensional drawings

Valve manifolds mounted on SITRANS P300



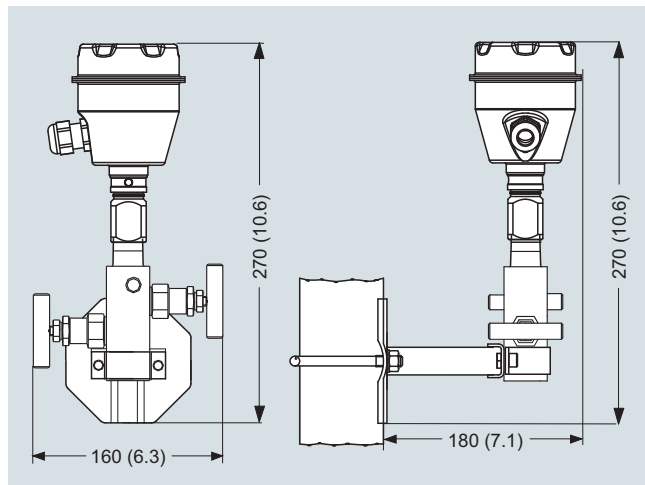
7MF9011-4EA valve manifold with mounted gauge pressure and absolute pressure transmitters



7MF9011-4EA valve manifold with mounted gauge pressure and absolute pressure transmitters, dimensions in mm (inch)



7MF9011-4FA valve manifold with mounted gauge pressure and absolute pressure transmitters



7MF9011-4FA valve manifold with mounted gauge pressure and absolute pressure transmitters, dimensions in mm (inch)