Transmitters for applications with advanced requirements (Advanced)
SITRANS P DS III

Technical description

Overview



SITRANS P DS III pressure transmitters are digital pressure transmitters featuring extensive user-friendliness and high accuracy. The parameterization is performed using control keys or via HART, PROFIBUS-PA or FOUNDATION Fieldbus interface.

Extensive functionality enables the pressure transmitter to be precisely adapted to the plant's requirements. Operation is very simple in spite of the numerous setting options.

Transmitters with type of protection "Intrinsic safety" and "Explosion-proof" may be installed within potentially explosive atmospheres (zone 1) or in zone 0. The transmitters are provided with an EC type examination certificate and comply with the corresponding harmonized European standards (ATEX).

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

- Gauge pressure
- Absolute pressure
- Differential pressure
- Level
- · Volume level
- Mass level
- Volume flow
- · Mass flow

Benefits

- · High quality and service life
- High reliability even under extreme chemical and mechanical loads
- For aggressive and non-aggressive gases, vapors and liquids
- Extensive diagnosis and simulation functions
- Separate replacement of measuring cell and electronics without recalibration
- · Minimum conformity error
- · Good long-term stability
- Wetted parts made of high-grade materials (e.g. stainless steel, Hastelloy, gold, Monel, tantalum)

- Infinitely adjustable span from 0.01 bar to 700 bar (0.15 psi to 10153 psi) for DS III with HART interface
- Nominal measuring range from 1 bar to 700 bar (14.5 psi to 10153 psi) for DS III with PROFIBUS PA and FOUNDATION Fieldbus interface
- · High measuring accuracy
- Parameterization over control keys and HART or PROFIBUS PA, or FOUNDATION Fieldbus interface.

Application

The pressure transmitters of the DS III series, can be used in industrial areas with extreme chemical and mechanical loads. Electromagnetic compatibility in the range 10 kHz to 1 GHz makes the DS III pressure transmitters suitable for locations with high electromagnetic emissions.

Pressure transmitters with type of protection "Intrinsic safety" and "Explosion-proof" may be installed within potentially explosive atmospheres (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 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 programmed locally using the 3 control buttons or externally via HART or PROFIBUS PA or FOUNDATION Fieldbus interface.

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Pressure transmitter for gauge pressure

Measured variable: Gauge pressure of aggressive and non-aggressive gases, vapors and liquids.

Span (infinitely adjustable)

for DS III with HART: 0.01 bar to 700 bar (0.15 psi to 10153 psi)

Nominal measuring range for DS III with PROFIBUS PA and FOUNDATION Fieldbus: 1 bar to 700 bar (14.5 psi to 10153 psi)

Pressure transmitters for absolute pressure

Measured variable: Absolute pressure of aggressive and nonaggressive gases, vapors and liquids.

Span (infinitely adjustable)

for DS III with HART: 8.3 mbar a ... 100 bar a (0.12 ... 1450 psi a)

Nominal measuring range for DS III with PROFIBUS PA and FOUNDATION Fieldbus: 250 mbar a ... 100 bar a (3.6 ... 1450 psi a)

There are two series:

- · Gauge pressure series
- Differential pressure series

Pressure transmitters for differential pressure and flow

Measured variables:

- Differential pressure
- · Small positive or negative pressure
- Flow q ~ √∆p (together with a primary differential pressure device (see Chapter "Flow Meters"))

Span (infinitely adjustable)

for DS III with HART: 1 mbar ... 30 bar (0.0145 ... 435 psi)

Nominal measuring range

for DS III with PROFIBUS PA and FOUNDATION Fieldbus: 20 mbar ... 30 bar (0.29 ... 435 psi)

Pressure transmitters for level

Measured variable: Level of aggressive and non-aggressive liquids in open and closed vessels.

Span (infinitely adjustable)

for DS III with HART: 25 mbar ... 5 bar (0.363 ... 72.5 psi)

Nominal measuring range for DS III with PROFIBUS PA and FOUNDATION Fieldbus: 250 mbar ... 5 bar (3.63 ... 72.5 psi)

Nominal diameter of the mounting flange

- DN 80 or DN 100
- 3 inch or 4 inch

In the case of level measurements in open containers, the lowpressure connection of the measuring cell remains open (measurement "compared to atmospheric").

In the case of measurements in closed containers, the lowerpressure connection has to be connected to the container in order to compensate the static pressure.

The wetted parts are made from a variety of materials, depending on the degree of corrosion resistance required.

Design



Front view

The transmitter consists of various components depending on the order. The possible versions are listed in the ordering information. The components described below are the same for all transmitters.

The rating plate (7, Figure "Front view") with the Article No. is located on the side of the housing. The specified number together with the ordering information provide details on the optional design details and on the possible measuring range (physical properties of built-in sensor element).

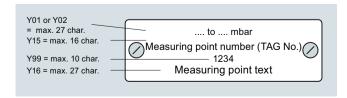
The approval label is located on the opposite side.

The housing is made of die-cast aluminium or stainless steel precision casting. A round cover (6) is screwed on at the front and rear of the housing. The front cover can be fitted with a viewing pane so that the measured values can be read directly on the display. The inlet (8) for the electrical connection is located either on the left or right side. The unused opening on the opposite side is sealed by a blanking plug. The protective earth connection is located on the rear of the housing.

The electrical connections for the power supply and screen are accessible by unscrewing the rear cover. The bottom part of the housing contains the measuring cell with process connection (5). The measuring cell is prevented from rotating by a locking screw (4). As the result of this modular design, the measuring cell and the electronics can be replaced separately from each other. The set parameter data are retained.

At the top of the housing is a plastic cover (1), which hides the input keys.

Example for an attached measuring point label



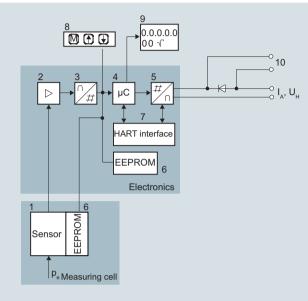
Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III

Technical description

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
- Output current
- $\hat{\mathsf{U}}_{\mathsf{H}}$ Power supply
- P_e Input variable

Function diagram of electronics

The bridge output voltage created by the sensor (1, Figure "Function diagram of the electronics") is amplified by the measuring amplifier (2) and digitized in the analog-to-digital converter (3). The digital information is evaluated in a microcontroller, its linearity and temperature response corrected, 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.

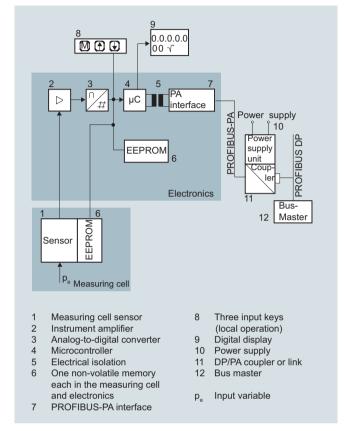
The data specific to the measuring cell, the electronics data, and the parameter data are stored in the two non-volatile memories (6). The one memory is coupled to the measuring cell, the other to the electronics. As the result of this modular design, the electronics and the measuring cell can be replaced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

Using the 3 input keys (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 HART modem (7) permits parameterization using a protocol according to the HART specification.

The pressure transmitters with spans \leq 63 bar measure the input pressure compared to atmosphere, transmitters with spans \geq 160 bar compared to vacuum.

Operation of electronics with PROFIBUS PA communication



Function diagram of electronics

The bridge output voltage created by the sensor (1, Figure "Function diagram of the electronics") is amplified by the measuring amplifier (2) and digitized 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 PROFIBUS PA through 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). 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.

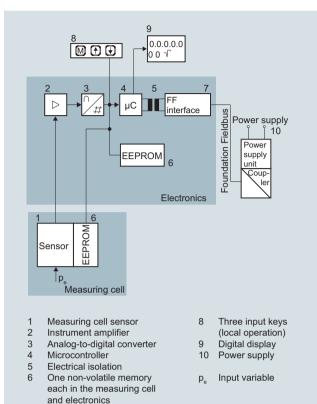
Using the three input buttons (8) you can parameterize the pressure transmitter directly at the measuring point. The input buttons can also be used to control the view of the results, the error messages and the operating modes on the display (9).

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

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

Technical description

Operation of electronics with FOUNDATION Fieldbus communication



Function diagram of electronics

FF interface

The bridge output voltage created by the sensor (1, Figure "Function diagram of electronics") is amplified by the measuring amplifier (2) and digitized 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).

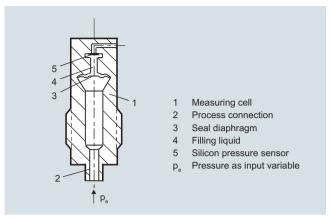
The data specific to the measuring cell, the electronics data, and the parameter data are stored in the two non-volatile memories (6). The one memory is coupled to the measuring cell, the other to the electronics. As the result of this modular design, the electronics and the measuring cell can be replaced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

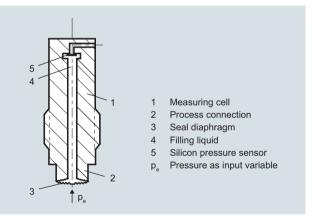
Measuring cell for gauge pressure



Measuring cell for gauge pressure, function diagram

The pressure p_e is applied through the process connection (2, Figure "Measuring cell for gauge pressure, 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 absolute pressure.

Measuring cell for gauge pressure with front-flush diaphragm



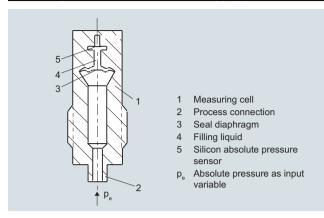
Measuring cell for gauge pressure, with front-flush diaphragm for paper industry, function diagram

The pressure p_e is applied through the process connection (2, Figure "Measuring cell for gauge pressure, with front-flush 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 absolute pressure.

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

Technical description

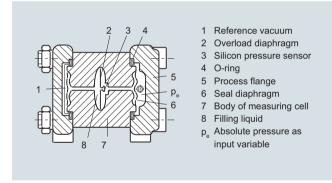
Measuring cell for absolute pressure from gauge pressure series



Measuring cell for absolute pressure from the pressure series, function diagram

The absolute pressure pe is transmitted through the seal diaphragm (3, Figure "Measuring cell for absolute pressure from pressure series, gauge pressure, function diagram ") and the filling liquid (4) to the silicon absolute 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 absolute pressure.

Measuring cell for absolute pressure from differential pressure series



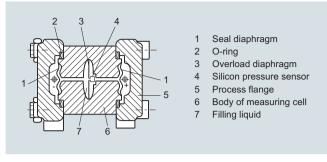
Measuring cell for absolute pressure from differential pressure series, function diagram

The input pressure pe is transmitted through the seal diaphragm (6, Figure "Measuring cell for absolute pressure from differential pressure series, function diagram") and the filling liquid (8) to the silicon pressure sensor (3).

The difference in pressure between the input pressure pe and the reference vacuum (1) on the low-pressure side of the measuring cell flexes the measuring diaphragm. 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 absolute pressure.

An overload diaphragm is installed to provide protection from overloads. If the measuring limits are exceeded, the overload diaphragm (2) is flexed until the seal diaphragm rests on the body of the measuring cell (7), thus protecting the silicon pressure sensor from overloads.

Measuring cell for differential pressure and flow



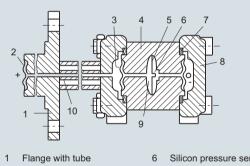
Measuring cell for differential pressure and flow, function diagram

The differential pressure is transmitted through the seal diaphragms (1, Figure "Measuring cell for differential pressure and flow, function diagram") and the filling liquid (7) to the silicon pressure sensor (4).

The measuring diaphragm is flexed by the applied differential pressure. 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 differential pressure.

An overload diaphragm is installed to provide protection from overloads. If the measuring limits are exceeded, the overload diaphragm (3) is flexed until the seal diaphragm rests on the body of the measuring cell (6), thus protecting the silicon pressure sensor from overloads.

Measuring cell for level



- Seal diaphragm on mounting
- Seal diaphragm 3
- Body of measuring cell
- Overload diaphragm
- Silicon pressure sensor
- O-ring
- Process flange
- Filling liquid
- 10 Capillary with filling liquid of mounting flange

Measuring cell for level, function diagram

The input pressure (hydrostatic pressure) acts hydraulically on the measuring cell through the seal diaphragm on the mounting flange (2, Figure "Measuring cell for level, function diagram"). This differential pressure is subsequently transmitted further through the measuring cell (3) and the filling liquid (9) to the silicon pressure sensor (6) whose measuring diaphragm is then

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 differential pressure.

An overload diaphragm is installed to provide protection from overloads. If the measuring limits are exceeded, the overload diaphragm (5) is flexed until the seal diaphragm rests on the body of the measuring cell (4), thus protecting the silicon pressure sensor from overloads.

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Technical description

Parameterization DS III

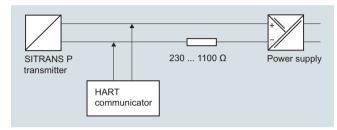
Depending on the version, there are a range of options for parameterizing the pressure transmitter and for setting or scanning the parameters.

Parameterization using the input buttons (local operation)

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

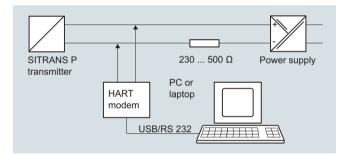
Parameterization using HART

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.



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, DS III with HART

Adjustable parameters, DS III WILLI HANT					
Parameters	Input keys (DS III HART)	HART communication			
Start of scale	X	X			
Full-scale value	X	X			
Electrical damping	X	X			
Start-of-scale value without application of a pressure ("Blind setting")	X	X			
Full-scale value without application of a pressure ("Blind setting")	Х	X			
Zero adjustment	X	X			
current transmitter	X	X			
Fault current	X	X			
Disabling of buttons, write protection	Х	x ¹⁾			
Type of dimension and actual dimension	Х	Х			
Characteristic (linear / square-rooted)	x ²⁾	x ²⁾			
Input of characteristic		X			
Freely-programmable LCD		X			
Diagnostic functions		X			

- 1) Cancel apart from write protection
- 2) Only differential pressure

Diagnostic functions for DS III with HART

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

Available physical units of display for DS III with HART

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/cm², kg/cm², 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, lmp. gallon, bushel, barrel, barrel liquid
Mass	g, kg, t, lb, Ston, Lton, oz
volume flow	m³/d, m³/h, m³/s, l/min, l/s, ft³/d, ft³/min, ft³/s, US gallon/min, US gallon/s
Mass flow	t/d, t/h, t/min, kg/d, kg/h, kg/min, kg/s, g/d, g/h, g/min, g/s, lb/d, lb/h, lb/min, lb/s, LTon/d, LTon/h, STon/d, STon/h, STon/min
Temperature	K, °C, °F, °R
Miscellaneous	%, mA

Parameterization through PROFIBUS PA interface

Fully digital communication through PROFIBUS PA, profile 3.0, is particularly user-friendly. Through the PROFIBUS the DS III with PROFIBUS PA is connected 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 DS III with FOUNDATION Fieldbus 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 DS III with PROFIBUS PA and FOUNDATION Fieldbus

Parameters	Input keys	PROFIBUS PA and FOUNDATION Field-bus interface
Electrical damping	X	X
Zero adjustment (correction of position)	X	X
Buttons and/or function disabling	х	X
Source of measured-value display	х	X
Physical dimension of display	х	X
Position of decimal point	X	Χ
Bus address	X	Χ
Adjustment of characteristic	X	Χ
Input of characteristic		X
Freely-programmable LCD		X
Diagnostics functions		X

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Diagnostic functions for DS III 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/cm², kg/cm², 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
Volume	m ³ , dm ³ , hl, yd ³ , ft ³ , in ³ , US gallon, lmp. gallon, bushel, barrel, barrel liquid
volume flow	m³/s, m³/min, m³/h, m³/d, l/s, l/min, l/h, l/d, Ml/d, ft³/s, ft³/min, ft³/h, ft³/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	%

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for gauge pressure

Technical specifications

SITRANS P, DS III series for gauge pressure
Input
Managemand variable

Measured variable

Span (fully adjustable) or 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/process temperature)

Gauge pressure

HART PROFIBUS PA/ FOUNDATION Fieldbus				
	Span	Nominal measuring range	Max. operating pressure MAWP (PS)	Max. perm. test pressure
	8.3 250 mbar	250 mbar	4 bar	6 bar
	0.83 25 kPa	25 kPa	400 kPa	600 kPa
	0.12 3.6 psi	3.6 psi	58 psi	87 psi
	0.01 1 bar	1 bar	4 bar	6 bar
	1 100 kPa	100 kPa	400 kPa	600 kPa
	0.15 14.5 psi	14.5 psi	58 psi	87 psi
	0.04 4 bar	4 bar	7 bar	10 bar
	4 400 kPa	400 kPa	0.7 MPa	1 MPa
	0.58 58 psi	58 psi	102 psi	145 psi
	0.16 16 bar	16 bar	21 bar	32 bar
	16 1600 kPa	1600 kPa	2.1 MPa	3.2 MPa
	2.3 232 psi	232 psi	305 psi	464 psi
	0.63 63 bar	63 bar	67 bar	100 bar
	63 6300 kPa	6300 kPa	6.7 MPa	10 MPa
	9.1 914 psi	914 psi	972 psi	1450 psi
	1.6 160 bar	160 bar	167 bar	250 bar
	0.16 16 MPa	16 MPa	16.7 MPa	25 MPa
	23 2321 psi	2321 psi	2422 psi	3626 psi
	4 400 bar	400 bar	400 bar	600 bar
	0.4 40 MPa	40 MPa	40 MPa	60 MPa
	58 5802 psi	5802 psi	5802 psi	8702 psi
	7 700 bar	700 bar	800 bar	800 bar
	0.7 70 MPa	70 MPa	80 MPa	80 MPa
	102 10153 psi	10153 psi	11603 psi	11603 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 upt to 30 mbar a/3 kPa a/0.44 psi a.)

- Measuring cell with silicone oil filling
- 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. span (max. 100 bar/10 MPa/1450 psi for oxygen measurement) ambient temperature/process temperature 60 °C (140 °F)

	ambient temperature/process temperature 60 °C (140 °F)			
Output	HART PROFIBUS PA/FOUNDATION Fieldb			
Output signal	4 20 mA	Digital PROFIBUS PA and FOUNDATION Fieldbus signal		
• Lower limit (infinitely adjustable)	3.55 mA, factory preset to 3.84 mA			
Upper limit (infinitely adjustable)	23 mA, factory preset to 20.5 mA or optionally set to 22.0 mA	-		
Load				
Without HART	$R_{\rm B} \leq (U_{\rm H}$ - 10.5 V)/0.023 A in Ω , - $U_{\rm H}$: Power supply in V			
• With HART	$R_{\rm B}$ = 230 500 Ω (SIMATIC PDM) bzw $R_{\rm B}$ = 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)			

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r = max. measuring span/set measuring span or nom. pressure range

for gauge pressure

SITRANS P, DS III series for gauge pressure

Measuring accuracy

Reference conditions

• Increasing characteristic

- Start-of-scale value 0 bar/kPa/psi
- Stainless steel seal diaphragm
- Silicone oil filling

Acc. to IEC 60770-1

• Room temperature 25 °C (77 °F)

Measuring span ratio r (spread, Turn-Down)

Error in measurement at limit setting incl. hysteresis and reproducibility

- Linear characteristic
- 250 mbar/25 kPa/3.6 psi
- 1 bar/100 kPa/3.6 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 700 bar/70 MPa/10152 psi

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

- 250 mbar/25 kPa/3.6 psi
- 1 bar/100 kPa/3.6 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
- 700 bar/70 MPa/10152 psi

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

- 250 mbar/25 kPa/3.6 psi
- 1 bar/100 kPa/3.6 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
- 700 bar/70 MPa/10152 psi

Effect of mounting position

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

Measuring value resolution for PROFIBUS PA and FOUNDATION Fieldbus

r ≤ 1.25 : ≤ 0.065 % 1.25 < r ≤ 30 : \leq (0.008 · r + 0.055) %

5 < r ≤ 100 : \leq (0.004 · r + 0.045) %

r ≤ 3 : ≤ 0.075 %

 $3 < r \le 10$: \leq (0.0029 · r + 0.071) % $10 < r \le 100$: $\leq (0.005 \cdot r + 0.05) \%$

 \leq (0.16 · r + 0.1) %

 $\leq (0.05 \cdot r + 0.1) \%$

 \leq (0.025 · r + 0.125) %

 \leq (0.08 · r + 0.16) %

 \leq (0.25 · r) % per year

≤ (0.25 · r) % in 5 years

 \leq (0.125 · r) % in 5 years

 \leq (0.25 · r) % in 5 years

≤ 0.05 mbar/0.005 kPa/0.000725 psi per 10° inclination

(zero point correction is possible with position error compensation)

0.005 % per 1 V

3 · 10⁻⁵ of nominal measuring range

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for gauge pressure

SITRANS P, DS III series for gauge pressure					
Rated conditions					
Degree of protection					
according to EN 60529	IP66 (optional IP66/IP68)				
according to NEMA 250	Type 4X				
Temperature of medium	31.				
Measuring cell with silicone oil filling	-40 +100 °C (-40 +212 °F)				
Measuring cell with inert filling liquid	, ,				
- 1 bar/100 kPa/3.6 psi 4 bar/400 kPa/58 psi 16 bar/1.6 MPa/232 psi 63 bar/6.3 MPa/914 psi	-40 +85 °C (-40 +185 °F)	-40 +85 °C (-40 +185 °F)			
- 160 bar/16 MPa/2321 psi 400 bar/40 MPa/5802 psi 700 bar/70 MPa/10152 psi	-20 +100 °C (-4 +212 °F)				
• Measuring cell with Neobee fill fluid (FDA-compliant)	-10 +100 °C (+14 +212 °F)				
• In conjunction with dust explosion protection	-20 +60 °C (-4 +140 °F)				
Ambient conditions					
 Ambient temperature (silicone oil and inert oil) 					
- Transmitter	-40 +85 °C (-40 +185 °F)				
- Display readable	-30 +85 °C (-22 +185 °F)				
 Ambient temperature (Neobee fill fluid) 					
- Transmitter	-10 +85 °C (+14 +185 °F)				
Storage temperature	-50 +85 °C (-58 +185 °F)				
Climatic class					
- Condensation	Relative humidity 0 100 %/Condensatio	n permissible, suitable for use in the tropics			
Electromagnetic Compatibility					
- Emitted interference and interference immunity	Acc. to IEC 61326 and NAMUR NE 21				
Design					
Weight (without options)	Die-cast aluminum: \approx 2.0 kg (\approx 4.4 lb) Stainless steel precision casting: \approx 4.6 kg (\approx 10.1 lb)				
Enclosure material	Low-copper die-cast aluminum, GD-AlSi mat. no. 1.4408	Low-copper die-cast aluminum, GD-AlSi 12 or stainless steel precision casting, mat. no. 1.4408			
Wetted parts materials					
Connection shank	Stainless steel, mat. no. 1.4404/316L or h	Hastelloy C4, mat. no. 2.4602			
Oval flange	Stainless steel, mat. no. 1.4404/316L				
Seal diaphragm	Stainless steel, mat. no. 1.4404/316L or H	-			
Measuring cell filling	100 bar (1450 psi) at 60 °C (140 °F))	value with oxygen measurement pressure			
Process connection	Connection shank G½B to DIN EN 837-1 (PN 160 (MAWP 2320 psi)) to DIN 19213 to IEC 61518/DIN EN 61518	, female thread ½ -14 NPT or oval flange with mounting thread M10 or ⁷ / ₁₆ -20 UNF			
Material of mounting bracket					
• Steel	Sheet-steel, Mat. No. 1.0330, chrome-pla	ated			
• Stainless steel 304	Sheet stainless steel, mat. no. 1.4301 (SS	S 304)			
Stainless steel 316L	Sheet stainless steel, mat. no. 1.4404 (SS	<u> </u>			
Power supply $U_{\mathbb{H}}$	HART	PROFIBUS PA/FOUNDATION Fieldbus			
Terminal voltage on transmitter	10.5 45 V DC 10.5 30 V DC in intrinsically-safe mode				
Power supply	-	Supplied through bus			
Separate 24 V power supply	-	Not necessary			
Bus voltage					
• Not Ex	-	9 32 V			
With intrinsically-safe operation	-	9 24 V			
Current consumption					
Basic current (max.)	-	12.5 mA			
• Start-up current ≤ basic current	-	Yes			
Max. current in event of fault	-	15.5 mA			
E (FDE)					

Yes

Fault disconnection electronics (FDE) available

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for gauge pressure

SITRANS P, DS III series for gauge 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)			
Explosion protection				
• Intrinsic safety "i"	PTB 13 ATEX 2007 X			
- Marking	Ex II 1/2 G Ex ia/ib IIC T4/T5/T6 Ga/Gb			
- Permissible ambient temperature	-40 +85 °C (-40 +185 °F) temperatur -40 +70 °C (-40 +158 °F) temperatur -40 +60 °C (-40 +140 °F) temperatur	e class T5;		
- Connection	To certified intrinsically-safe circuits with peak values: $U_{\rm i}=30$ V, $I_{\rm i}=100$ mA, $P_{\rm i}=750$ mW; $P_{\rm i}=300$ Ω	FISCO supply unit: $U_0 = 17.5 \text{ V}$, $I_0 = 380 \text{ mA}$, $P_0 = 5.32 \text{ W}$ Linear barrier: $U_0 = 24 \text{ V}$, $I_0 = 174 \text{ mA}$, $P_0 = 1 \text{ W}$		
- Effective internal inductance/capacitance	$L_{i} = 0.4 \text{ mH}, C_{i} = 6 \text{ nF}$	$L_{\rm i} = 7 \mu \text{H}, C_{\rm i} = 1.1 \text{nF}$		
• Explosion-proof "d"	PTB 99 ATEX 1160			
- Marking	Ex II 1/2 G Ex d IIC T4/T6 Gb			
- Permissible ambient temperature	-40 +85 °C (-40 +185 °F) temperatur -40 +60 °C (-40 +140 °F) temperatur	e class T4; e class T6		
- Connection	To circuits with values: $U_{\rm H}$ = 10.5 45 V DC	To circuits with values: $U_{\rm H}$ = 9 32 V DC		
Dust explosion protection for zone 20	PTB 01 ATEX 2055			
- Marking	Ex II 1 D Ex ta IIIC T120°C Da Ex II 1/2 D Ex ta/tb IIIC T120°C Da/Db			
- Permissible ambient temperature	-40 +85 °C (-40 +185 °F)			
- Max. surface temperature	120 °C (248 °F)			
- Connection	To certified intrinsically-safe circuits with peak values: $U_{\rm i}$ = 30 V, $I_{\rm i}$ = 100 mA, $P_{\rm i}$ = 750 mW, $P_{\rm i}$ = 300 Ω	FISCO supply unit: $U_0 = 17.5 \text{ V}, I_0 = 380 \text{ mA}, P_0 = 5.32 \text{ W}$ Linear barrier: $U_0 = 24 \text{ V}, I_0 = 250 \text{ mA}, P_0 = 1 \text{ W}$		
- Effective internal inductance/capacitance	$L_{i} = 0.4 \text{ mH}, C_{i} = 6 \text{ nF}$	$L_{\rm i} = 7 \mu \text{H}, C_{\rm i} = 1.1 \text{nF}$		
• Dust explosion protection for zone 21/22	PTB 01 ATEX 2055			
- Marking	Ex II 2 D Ex tb IIIC T120°C Db			
- Connection	To circuits with values: $U_{\rm H}$ = 10.5 45 V DC; $P_{\rm max}$ = 1.2 W	To circuits with values: $U_{H} = 9 \dots 32 \text{ V DC}; P_{max} = 1 \text{ W}$		
• Type of protection "n" (zone 2)	PTB 13 ATEX 2007 X			
- Marking	Ex II 2/3 G Ex nA IIC T4/T5/T6 Gb/Gc Ex II 2/3 G Ex ic IIC T4/T5/T6 Gb/Gc			
- Connection (Ex nA)	$U_{\rm m} = 45 \ {\rm V}$	$U_{\rm m} = 32 \text{ V}$		
- Connections (Ex ic)	To circuits with values: $U_{\rm i} = 45~{\rm V}$	FISCO supply unit ic: $U_0 = 17.5 \text{ V}$, $I_0 = 570 \text{ mA}$ Linear barrier: $U_0 = 32 \text{ V}$, $I_0 = 132 \text{ mA}$, $P_0 = 1 \text{ W}$		
- Effective internal inductance/capacitance	$L_{\rm i} = 0.4 {\rm mH}, \ C_{\rm i} = 6 {\rm nF}$	$L_{i} = 7 \mu H, C_{i} = 1.1 \text{ nF}$		
• Explosion protection acc. to FM	Certificate of Compliance 3008490			
- Identification (XP/DIP) or (IS); (NI)	CL I, DIV 1, GP ABCD T4T6; CL II, DIV 1, GP EFG; CL III; CL I, ZN 0/1 AEx ia IIC T4T6; CL I, DIV 2, GP ABCD T4T6; CL II, DIV 2, GP FG; CL III			
• Explosion protection to CSA	Certificate of Compliance 1153651			
- Identification (XP/DIP) or (IS)	CL I, DIV 1, GP ABCD T4T6; CL II, DIV 1, GP EFG; CL III; Ex ia IIC T4T6; CL I, DIV 2, GP ABCD T4T6; CL II, DIV 2, GP FG; CL III			

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for gauge pressure			
HART communication		FOUNDATION Fieldbus	
HART	230 1100 Ω	communication	
Protocol	HART Version 5.x	Function blocks	3 function blocks analog input, 1 function block PID
Software for computer	SIMATIC PDM	Analog input	
PROFIBUS PA communication		- Adaptation to customer-specif-	Yes, linearly rising or falling
Simultaneous communication with master class 2 (max.)	4	ic process variables - Electrical damping, adjustable	characteristic 0 100 s
The address can be set using	Configuration tool or local operation (standard setting address 126)	- Simulation function	Output/input (can be locked within the device with a bridge)
Cyclic data usage	120)	- Failure mode	parameterizable (last good value, substitute value, incorrect
Output byte	5 (one measured value) or 10 (two measured values)		value)
• Input byte	0, 1, or 2 (register operating mode and reset function for	- Limit monitoring	Yes, one upper and lower warn- ing limit and one alarm limit respectively
Internal preprocessing	metering)	 Square-rooted characteristic for flow measurement 	Yes
Device profile	PROFIBUS PA Profile for Process Control Devices Version	• PID	Standard FOUNDATION Fieldbus function block
	3.0, class B	 Physical block 	1 resource block
Function blocks	2	Transducer blocks	1 transducer block Pressure with
Analog input Adaptation to sustance and if the Van linearly vising or falling.			calibration, 1 transducer block LCD
 Adaptation to customer-specific process variables 	Yes, linearly rising or falling characteristic	Pressure transducer block	
- Electrical damping, adjustable	0 100 s	 Can be calibrated by applying two pressures 	Yes
- Simulation function	Input /Output	- Monitoring of sensor limits	Yes
- Failure mode	parameterizable (last good value, substitute value, incorrect value)	- Simulation function: Measured pressure value, sensor tem-	Constant value or over parameterizable ramp function
- Limit monitoring	Yes, one upper and lower warn- ing limit and one alarm limit respectively	perature and electronics tem- perature	
Register (totalizer)	Can be reset, preset, optional direction of counting, simulation function of register output		
- Failure mode	parameterizable (summation with last good value, continuous summation, summation with incorrect value)		
- Limit monitoring	One upper and lower warning limit and one alarm limit respec- tively		
 Physical block 	1		
Transducer blocks	2		

• Pressure transducer block - Can be calibrated by applying

- Monitoring of sensor limits

- Specification of a container

and implementation point of square-root extraction - Simulation function for mea-

sured pressure value and sensor temperature

characteristic with - Square-rooted characteristic

for flow measurement - Gradual volume suppression

two pressures

Yes

Yes

Yes

Max. 30 nodes

Parameterizable

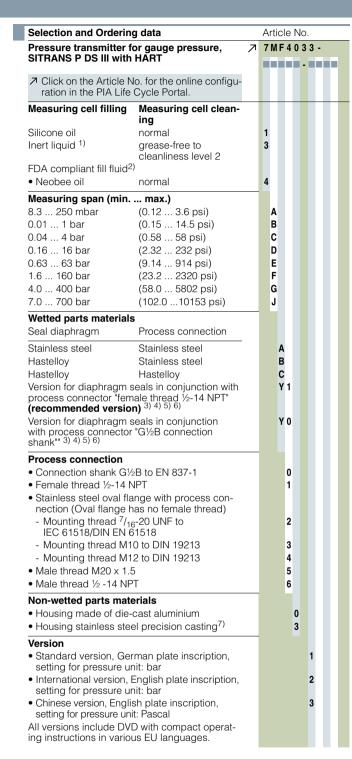
Constant value or over parame-

terizable ramp function

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III

for gauge pressure



Selection and Ordering data	Article No.
Pressure transmitter for gauge pressure, SITRANS P DS III with HART	7 M F 4 0 3 3 -
Explosion protection None	A
With ATEX, Type of protection:	^
- "Intrinsic safety (Ex ia)"	В
- "Explosion-proof (Ex d)" ⁸⁾	D
- "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)"9)	P
- "Ex nA/ic (Zone 2)"10)	E
 "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)**8)11) 	R
• FM + CSA intrinsic safe (is) ¹²⁾	F
• FM + CSA (is + ep) + Ex ia + Ex d (ATEX) + Zone 1D/2D ⁹⁾¹¹⁾¹²⁾	S
 With FM + CSA, Type of protection: 	
 "Intrinsic Safe and Explosion Proof (is + xp)"⁷⁾¹²⁾ 	NC
Electrical connection / cable entry	
 Screwed gland M20 x1 .5 	В
• Screwed gland ½-14 NPT	C
 Han 7D device plug (plastic housing) incl. mating connector¹³⁾ 	D
• M12 device plugs (stainless steel) ¹³⁾¹⁴⁾	F
Display	
Without display	0
 Without visible display (display concealed, setting: mA) 	1
 With visible display (setting: mA) 	6
 with customer-specific display (setting as specified, Order code "Y21" or "Y22" required) 	7
Power supply units see Chap. 7 "Supplementary C	'omponente"

Power supply units see Chap. 7 "Supplementary Components".

A quick-start guide is included in the scope of delivery of the device.

- 1) For oxygen application, add Order code E10.
- 2) Available for measuring ranges 1 ... 63 bar.
- When the manufacture's certificate (calibration certificate) has to be ordered for transmitters with diaphragm seals according to IEC 60770-2, it is recommended only to order this certificate exclusively with the diaphragm seals. The measuring accuracy of the <u>total</u> combination is certified here.
- 4) If the acceptance test certificate 3.1.is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.
- 5) The diaphragm seal is to be specified with a separate order number and must be included with the transmitter order number, for example 7MF403.-.Y... and 7MF4900-1...-.B
- 6) The standard measuring cell filling of configurations with remote seals (Y) is silicone oil.
- 7) Not in conjunction with Electrical connection "Han 7D device plug".
- 8) Without cable gland, with blanking plug
- 9) With enclosed cable gland Ex ia and blanking plug
- 10) Configurations with Han and M12 device plugs are only available in Ex ic.
- 11) Only in connection with IP66.
- 12) Explosion protection acc. to FM/CSA: suitable for installations according to NEC 500/505.
- $^{\rm 13)}$ Only in connection with Ex approval A, B or E.
- 14) M12 delivered without cable socket

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for gauge pressure

				-				
Selection and Ordering		Aı	rti	cle	· N	0.		
Pressure transmitter for	or gauge pressure							
SITRANS P DS III with P	ROFIBUS PA (PA)	7	M	F 4	0	3 4	-	
SITRANS P DS III with FOUNDATION Fieldbus (FF)		7	M	F 4	0	3 5	; -	
Click on the Article N ration in the PIA Life 0	o. for the online configu- Cycle Portal.	i		ľ		1		
Measuring cell filling	Measuring cell clean-							
Ciliaana ail	ing							
Silicone oil	normal	1						
Inert liquid ¹⁾	grease-free to cleanliness level 2	3						
FDA compliant fill fluid ²⁾								
Neobee oil	normal	4						
Nominal measuring rar	nae							
250 mbar	(3.6 psi)		Α					
1 bar	(14.5 psi)		В					
4 bar	(58 psi)		c					
16 bar	(232 psi)		D					
63 bar	(914 psi)		E					
160 bar	(2320 psi)		F					
400 bar	(5802 psi)		Ġ					
700 bar	(10153 psi)		J					
			_					
Wetted parts materials Seal diaphragm	Process connection							
Stainless steel	Stainless steel			A				
Hastelloy	Stainless steel			B C				
Hastelloy Version for diaphragm s process connector "fema (recommended versior	Hastelloy eals in conjunction with ale thread ½-14 NPT") 3) 4) 5) 6)			Y 1				
Version for diaphragm s				YC)			
with process connector 'G½B connection shank	3) 4) 5) 6)							
Process connection								
 Connection shank G½ 	B to EN 837-1			C				
• Female thread ½-14 NPT				1				
tion (Oval flange has n								
 Mounting thread ⁷/₁₆ IEC 61518/DIN EN 6 	-20 UNF to 1518			2	2			
- Mounting thread M10	0 to DIN 19213			3	3			
- Mounting thread M12	2 to DIN 19213			4	ļ.			
 Male thread M20 x 1.5 				5	5			
 Male thread ½ -14 NP 	Γ			6				
Non-wetted parts mate	rials							
 Housing made of die-cast aluminium 					0			
 Housing stainless stee 	l precision casting				3			
Version								
 Standard version, Geri 						1		
setting of pressure uni								
 International version, E 						2	2	
setting of pressure unit								
Chinese version, Englis cetting of pressure unit						3	5	
setting of pressure unit	t: KPa) with compact operating							
All versions include DVL instructions in various El								
monuciono in vandus Et	o languages.							

0 1 11 10 1 1 1 1 1	A 11 1 NI	_
Selection and Ordering data	Article No.	
Pressure transmitter for gauge pressure		
SITRANS P DS III with PROFIBUS PA (PA)	7 M F 4 0 3 4 -	
SITRANS P DS III with FOUNDATION Fieldbus (FF)	7MF4035-	
Explosion protection		Ī
• None	A	
 With ATEX, Type of protection: "Intrinsic safety (Ex ia)" "Explosion-proof (Ex d)"⁸) "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)"⁹) 	B D P	
- "Ex nA/ic (Zone 2)*10) - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)*9)*11) • FM + CSA intrinsic safe (is)*12)	E R	
FM + CSA (its + ep) + Ex ia + Ex d (ATEX) + Zone 1D/2D ⁹⁾¹¹⁾¹²⁾	s	
 With FM + CSA, Type of protection: "Intrinsic Safe and Explosion Proof (is + xp)"⁷⁾¹²⁾ 	NC	
Electrical connection/cable entry Screwed gland M20 x 1.5 Screwed gland ½-14 NPT M12 device plugs (stainless steel) ¹³⁾¹⁴⁾	B C F	
Display Without display Without visible display (display concealed, setting: bar)		0
With visible display (setting: bar) with customer-specific display (setting as specified, Order code "Y21" required)		6 7
A social start socials is included in the second of dali-	on of the device	

A quick-start guide is included in the scope of delivery of the device.

- 1) For oxygen application, add Order code E10.
- 2) Available for measuring ranges 1 ... 63 bar.
- 3) When the manufacture's certificate (calibration certificate) has to be ordered for transmitters with diaphragm seals according to IEC 60770-2, it is recommended only to order this certificate exclusively with the diaphragm seals. The measuring accuracy of the total combination is certified here.
- 4) If the acceptance test certificate 3.1.is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.
- The diaphragm seal is to be specified with a separate order number and must be included with the transmitter order number, for example 7MF403.-..Y..-... and 7MF4900-1...-.B
- 6) The standard measuring cell filling of configurations with remote seals (Y) is silicone oil.
- 7) M10 fastening thread: Max. span 160 bar (2320 psi) 7/16-20 UNF and M12 fastening thread: Max. span 400 bar (5802 psi)
- 8) Without cable gland, with blanking plug.
- 9) With enclosed cable gland Ex ia and blanking plug.
- 10) Configurations with Han and M12 device plugs are only available in Ex ic.
- 11) Only in connection with IP66.
- 12) Explosion protection acc. to FM/CSA: suitable for installations according to NEC 500/505.
- 13) M12 delivered without cable socket.
- ¹⁴⁾ Only in connection with Ex approval A, B, E or F.

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for gauge pressure

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 (1x fixing angle, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer) made of:				
• Steel	A01	1	1	1
• Stainless steel 304	A02	✓	✓	✓
Stainless steel 316L	A03	✓	✓	✓
Device plugs ¹⁾	• • • •			
Han 7D (metal)Han 8D (instead of Han 7D)	A30 A31	1		
• Angled	A32	1		
Han 8D (metal)	A33	✓		
Cable sockets for M12 device plugs (metal (CuZn))	A50	✓	✓	✓
Rating plate inscription				
(instead of German) • English	B11	1	1	1
• French	B12	✓	✓	✓
Spanish	B13	✓	✓	✓
• Italian	B14	V	1	1
Cyrillic (russian)	B16	✓	✓.	V
English rating plate Pressure units in inH ₂ 0 and/or psi	B21	✓	✓	✓
Quality Inspection Certificate (5-point characteristic curve test) according to IEC 60770-2 ²⁾	C11	✓	✓	√
Inspection certificate ³⁾ Acc. to EN 10204-3.1	C12	✓	✓	✓
Factory certificate Acc. to EN 10204-2.2	C14	✓	✓	✓
Acceptance certificate (EN 10204-3.1) PMI test of parts in contact with medium	C15	✓	✓	✓
Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration	C20	✓		
Functional safety (PROFIsafe) Certificate and PROFIsafe protocol	C21 ⁴⁾		✓	
Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration	C23	✓		
PED for Russia with initial calibration mark	C99	✓	✓	✓
Setting of the upper saturation limit of the output signal to 22.0 mA	D05	✓		
Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009)	D07	✓	✓	✓
Degree of protection IP66/IP68 (only for M20x1.5 and ½-14 NPT)	D12	✓	✓	✓
Supplied with oval flange (1 item), PTFE packing and screws in thread of oval flange	D37	✓	✓	✓
Capri cable gland 4F CrNi and clamping device (848699 + 810634) included	D59	✓	✓	✓
Use in or on zone 1D/2D ⁵⁾ (only together with type of protection "Intrinsic safety" (transmitter 7MF4B Ex ia)" and IP66)	E01	✓	✓	✓
Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140 °F))	E10	✓	1	1
Export approval Korea	E11	✓	✓	✓

Selection and Ordering data	Order	code		
Further designs Add "-Z" to Article No. and specify Order code.		HART	PA	FF
CRN approval Canada (Canadian Registration Number)	E22 ⁶⁾	✓	✓	✓
Dual seal	E24	✓	✓	✓
Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil)	E25 ⁷⁾	✓	✓	✓
(only for transmitter 7MF4B)	F0C7)	,	,	,
"Flameproof" explosion protection according to INMETRO (Brazil) (only for transmitter 7MF4D)	E26 ⁷⁾	•	•	•
Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil)	E28 ⁷⁾	✓	✓	
(only for transmitter 7MF4P)				
Ex Approval IEC Ex (Ex ia) (only for transmitter 7MF4B)	E45 ⁷⁾	✓	✓	✓
Ex Approval IEC Ex (Ex d) (only for transmitter 7MF4D)	E46 ⁷⁾	✓	✓	✓
Explosion-proof "Intrinsic safety" to NEPSI (China)	E5 ⁷⁾	✓	✓	✓
(only for transmitter 7MF4B)				
Explosion protection "Explosion-proof" to NEPSI (China)	E56 ⁷⁾	✓	✓	✓
(only for transmitter 7MF4D) Ex protection "Zone 2" to NEPSI (China)	E57 ⁷⁾	,	,	1
(only for transmitter 7MF4	L37 /	·	•	•
Ex protection "Ex ia", "Ex d" and "Zone 2" to NEPSI (China)	E58 ⁷⁾	✓	✓	✓
(only for transmitter 7MF4R)	7)		,	
"Intrinsic safety" and "Explosion-proof" explosion protection acc. to Kosha (Korea) (only for transmitter	E70 ⁷⁾	V	✓	•
7MF4[B, D]Z + E11)				
Ex-protection Ex ia according to EAC Ex (Russia)	E80	✓	✓	✓
(only for transmitter 7MF4B)	E81	.,		
Ex-protection Ex d according to EAC Ex (Russia) (only for transmitter 7MF4D)	EOI	•	•	v
Ex-protection Ex nA/ic (Zone 2) according to EAC Ex (Russia) (only for transmitter 7MF4E)	E82	✓	✓	✓
Ex-protection Ex ia + Ex d + Zone 1D/2D according to EAC Ex (Russia) (only for transmitter 7MF4R)	E83	✓	✓	1
Two coats of lacquer on casing and cover (PU on epoxy)	G10	✓	✓	✓
Transient protector 6 kV (lightning protection)	J01	✓	✓	✓
Process connection Astava	J06	✓	1	✓

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for gauge pressure

Selection and Ordering data	Order	code		
Further designs Add "-Z" to Article No. and specify Order code.		HART	PA	FF
Marine approvals				
 Det Norske Veritas Germanischer Lloyd (DNV-GL) 	S10	✓	✓	✓
 Lloyds Register (LR) 	S11	✓	✓	✓
 French marine classification society Bureau Veritas (BV) 	S12	✓	✓	✓
 American Bureau of Shipping (ABS) 	S14	✓	✓	✓
 Russian Maritime Register (RMR) 	S16	✓	✓	1
Korean Register of Shipping (KR)	S17	✓	✓	✓

- 1) Han device plug IP65
- 2) When the manufacture's certificate (calibration certificate) has to be ordered for transmitters with diaphragm seals according to IEC 60770-2, it is recommended only to order this certificate exclusively with the diaphragm seals. The measuring accuracy of the total combination is certified here.
- 3) If the acceptance test certificate 3.1.is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.
- 4) Profisafe transmitters can only be operated with the S7 F Systems V6.1 configuration software in combination with S7-400H
- 5) Option does not contain gas explosion protection; only dust explosion protection: Use in or at Zone 1D/2D.
- 6) Cannot be ordered with remote seal.
- 7) When the additional ex option is selected, the ATEX marking on the device is omitted. Only the Ex option selected via the Z option is marked.

Selection and Ordering data	Order	code		
Additional data Please add "-Z" to Article No. and specify Order code(s) and plain text.		HART	PA	FF
Measuring range to be set Specify in plain text (max. 5 characters): Y01: up to mbar, bar, kPa, MPa, psi	Y01	✓	√ 1)	
Stainless steel tag plate and entry in device variable (measuring point description) Max. 16 characters, specify in plain text:	Y15 ²⁾	✓	✓	✓
Y15: Measuring point text (entry in device	Y16	✓	1	✓
variable) Max. 27 characters, specify in plain text: Y16:				
Entry of HART address (TAG)	Y17	✓		
Max. 8 characters, specify in plain text: Y17:				
Setting of pressure indication in pressure units	Y21	✓	✓	✓
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*), inH ₂ O*), ftH ₂ O*), mmHG, inHG, psi, Pa, kPa, MPa, g/cm ² , kg/cm ² , Torr, ATM or % *) ref. temperature 20 °C				
Setting of pressure indication in non-pressure units ³) Specify in plain text: Y22: up to I/min, m ³ /h, m, USgpm, (specification of measuring range in pressure units "Y01" is essential, unit with max. 5 characters)	Y22 + Y01	√		
Preset bus address possible between 1 and 126 Specify in plain text: Y25:	Y25		✓	✓
Damping adjustment in seconds (0 100 s)	Y30	✓	✓	✓

Only Y01, Y15, Y16, Y17, Y21, Y22, Y25 and D05 can be factory preset

✓ = available

Ordering example

Item line: 7MF4033-1EA00-1AA7-Z

B line: A01 + Y01 + Y21

C line: Y01: 10 ... 20 bar (145 ... 290 psi)

C line: Y21: bar (psi)

¹⁾ Measuring accuracies for PROFIBUS PA transmitters with Option Y01 are calculated in the same way as for HART devices.

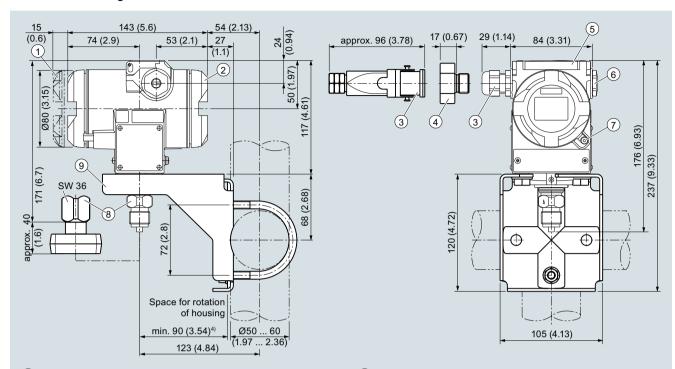
²⁾ If you do not wish to have any text engraved for Y15, then do not make any further text entries as "Y15:".

³⁾ Preset values can only be changed over SIMATIC PDM.

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for gauge pressure

Dimensional drawings



- 1 Electronic side, digital display (longer overall length for cover with window)1)
- Terminal side1)
- Electrical connection: Screwed gland M20 x 1,5 or Screwed gland ½-14 NPT or Han 7D/8D device plug^{2) 3)}
- 4 Harting adapter
- Allow approx. 20 mm (0.79 inch) thread length to permit unscrewing
- Not with type of protection "Explosion-proof enclosure" Not with type of protection "FM + CSA" [IS + XP]"
- Minimum distance for rotating

5 Protective cover over keys

- 6 Blanking plug
- Screw cover safety bracket (only for type of protection "Explosion-proof enclosure", not shown in the drawing)
- Process connection: Connection shank G1/2B or Oval flange
- 9 Mounting bracket (option)

SITRANS P DS III pressure transmitters for gauge pressure, dimensions in mm (inch)

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for gauge/absolute pressure, with front-flush diaphragm

for gauge/absolute pressure, with front-flush dia	apnragm			
Technical specifications				
SITRANS P DS III series for gauge and absolute pressure	, with front-flush diaph	ragm		
Input of gauge pressure, with front-flush diaphragm				
Measured variable	Gauge pressure, front-	flush		
Span (continuously adjustable) or measuring range, max. operating pressure and max. test pressure	HART	PROFIBUS PA/ FOUNDATION Fieldbus		
	Span	Nominal measur- ing 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 6.7MPa 972 psi	100 bar 10 MPa 1450 psi
Lower measuring limit				"
 Measuring cell with silicone oil filling 	100 mbar a/10 kPa a/1	.45 psi a		
 Measuring cell with inert filling liquid 	100 mbar a/10 kPa a/1	.45 psi a		
Measuring cell with Neobee	100 mbar a/10 kPa a/1	.45 psi a		
Upper measuring limit	100 % of max. span			
Input of absolute pressure, with front-flush diaphragm				
Measured variable	Absolute pressure, from	1	1	
Span (continuously adjustable) or measuring range, max. operating pressure and max. test pressure	HART	PROFIBUS PA/ FOUNDATION Fieldbus		
	Span	Nominal measur- ing range	Max. operating pressure MAWP (PS)	Max. perm. test pressure
	43.34 1300 mbar a 4.33 130 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 14.6 435 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
	Depending on the prod	cess connection, the	span may differ from	these values
Lower measuring limit	0 mbar a/0 kPa a/0 psi	а		
Upper measuring limit	100 % of max. span			
Output	HART		PROFIBUS PA/FOU	JNDATION Fieldbus
Output signal	4 20 mA	44- 0.04 ··· A	Digital PROFIBUS F	
Lower limit (infinitely adjustable) Lipper limit (infinitely adjustable)	3.55 mA, factory preset to 3.55 mA, factory pres		-	
Upper limit (infinitely adjustable) Load	ally set to 22.0 mA	to 20.5 MA or option-	-	
• Without HART	$R_{\rm B} \le (U_{\rm H} - 10.5 \text{ V})/0.02$ $U_{\rm H}$: Power supply in V	23 A in Ω,	-	
• With HART	$R_{\rm B} = 230 \dots 500 \Omega ({\rm SIM}) R_{\rm B} = 230 \dots 1100 \Omega ({\rm H}) \Omega$		-	
Physical bus	-		IEC 61158-2	
Protection against polarity reversal	Protected against shor other with max. supply		reversal. Each conne	ection against the

Set to 2 s (0 ... 100 s)

Electrical damping (step width 0.1 s)

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for gauge/absolute pressure, with front-flush diaphragm

SITRANS P DS III series for gauge and absolute pressure,		oodie, min nom naen diapmagin		
Measuring accuracy	Acc. to IEC 60770-1			
Reference conditions (All error data refer always refer to the set span)	 Increasing characteristic Start-of-scale value 0 bar/kPa/psi Stainless steel seal diaphragm Silicone oil filling Room temperature 25 °C (77 °F) 			
Measuring span ratio r (spread, Turn-Down)	r = max. measuring span/set measuring sp	oan or nom. pressure range		
Error in measurement at limit setting incl. hysteresis and reproducibility				
Linear characteristic	Gauge pressure, front-flush	Absolute pressure, front-flush		
- r ≤ 5	≤ 0.075 %	-		
- 5 < r ≤ 100	\leq (0.005 · r + 0.05) %	-		
- r ≤ 10	-	≤ 0.2 %		
- 10 < r ≤ 30	-	≤ 0.4 %		
Influence of ambient temperature (in percent per 28 °C (50 °F))	\leq (0.08 · r + 0.16) %	\leq (0.16 · r + 0.24) %		
Effect of ambient temperature (in pressure per temperature change)				
Temperature difference between medium temperature 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 · r) % in 5 years			
Effect of mounting position (in pressure per change in angle)	(zero point correction is possible with posit			
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 · 10 ⁻⁵ of nominal measuring range			
Rated 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 (with front-flush diaphragm)	-10 +85 °C (14 +185 °F)			
Measuring cell with inert liquid	-40 +85 °C (-40 +185 °F)			
Transmitter	-40 +85 °C (-40 +185 °F)			
Display readable	-30 +85 °C (-22 +185 °F)			
Storage temperature	-50 +85 °C (-58 +185 °F) (in the case of Neobee: -20 +85 °C (-4 +185/°F)) (for high temperature oil: -10 + 85 °C (14 185 °F))			
Climatic class				
Condensation	Relative humidity 0 100 % Condensation permissible, suitable for use	in the tropics		
Degree of protection				
• according to EN 60529	IP66 (optional IP66/IP68)			
according to NEMA 250	Type 4X			
Electromagnetic Compatibility				
Emitted interference and interference immunity	Acc. to IEC 61326 and NAMUR NE 21			
Medium conditions	The max. medium temperature of the front- into account in accordance with the relevar DIN 11851 etc.).	flush process connections is to be taken at connection standards (e. g. DIN 32676,		
Temperature of medium				
Measuring cell with silicone oil	-40 +100 °C (-40 +212 °F)			
• Measuring cell with silicone oil (with front-flush diaphragm)	-40 +150 °C (-40 +302 °F)			
• Measuring cell with Neobee oil (with front-flush diaphragm)	-10 +150 °C (14 302 °F)			
Measuring cell with silicone oil, with temperature decoupler (only for gauge pressure version with front-flush diaphragm)				
Measuring cell with Neobee oil, with temp. decoupler (only for gauge pressure version with flush-mounted diaphragm)	-10 +200 °C (14 392 °F)			
Measuring cell with inert filling liquid	-20 +100 °C (-4 +212 °F)			
 Measuring cell with high-temperature oil (only for gauge pressure version with front-flush diaphragm) 	-10 +250 °C (14 482 °F)			

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for gauge/absolute pressure, with front-flush diaphragm

SITRANS P DS III series for gauge and absolute pro	essure, with front-flush diaphragm
Design	
Weight (without options)	≈ 1.5 kg (≈ 3.3 lb)
Enclosure material	Low-copper die-cast aluminum, GD-AlSi12 or stainless steel precision casting, mat. no. 1.4408
Wetted parts materials	Stainless steel, mat. no. 1.4404/316L or Hastelloy C276, mat. no. 2.4819
Measuring cell filling	Silicone oil or inert filling liquid
Process connection	Flanges as per EN and ASME
	F&B and pharmaceutical flanges
Surface quality touched-by-media	R_a -values \leq 0.8 μm (32 μ-inch)/welds R_a) \leq 1.6 μm (64 μ-inch) (Process connections acc. to 3A; R_a -values \leq 0.8 μm (32 μ-inch)/welds R_a) \leq 0.8 μm (32 μ-inch)

	(02 po.)	
Power supply U_{H}	HART	PROFIBUS PA/FOUNDATION Fieldbus
Terminal voltage on transmitter	10.5 45 V DC 10.5 30 V DC in intrinsically-safe mode	-
Power supply		Supplied through bus
Separate 24 V power supply necessary	-	No
Bus voltage		
• Not Ex		9 32 V
With intrinsically-safe operation		9 24 V
Current consumption		
Basic current (max.)		12.5 mA
• Start-up current ≤ basic current		Yes
Max. current in event of fault		15.5 mA
Fault disconnection electronics (FDE) available	-	Yes

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for gauge/absolute pressure, with front-flush diaphragm

SITRANS P DS III series for gauge and absolute pressur	e, with front-flush diaphragm				
Certificates and approvals					
Classification according to PED 2014/68/EU	For gases of fluid group 1 and liquids of flu article 4, paragraph 3 (sound engineering)				
Explosion protection					
• Intrinsic safety "i"	PTB 13 ATEX 2007 X				
- Marking	Ex II 1/2 G Ex ia/ib IIC T4/T5/T6 Ga/Gb				
- Permissible ambient temperature	-40 +85 °C (-40 +185 °F) temperature -40 +70 °C (-40 +158 °F) temperature -40 +60 °C (-40 +140 °F) temperature	class T5;			
- Connection	To certified intrinsically-safe circuits with peak values: $U_{\rm i}$ = 30 V, $I_{\rm i}$ = 100 mA, $P_{\rm i}$ = 750 mW; $R_{\rm i}$ = 300 Ω	FISCO supply unit: $U_0 = 17.5 \text{ V}$, $I_0 = 380 \text{ mA}$, $P_0 = 5.32 \text{ W}$ Linear barrier: $U_0 = 24 \text{ V}$, $I_0 = 250 \text{ mA}$, $P_0 = 1.2 \text{ W}$			
- Effective internal inductance/capacitance	$L_{\rm i} = 0.4 {\rm mH}, C_{\rm i} = 6 {\rm nF}$	$L_{i} = 7 \mu H, C_{i} = 1.1 nF$			
• Explosion-proof "d"	PTB 99 ATEX 1160				
- Marking	Ex II 1/2 G Ex d IIC T4/T6 Gb				
- Permissible ambient temperature	-40 +85 °C (-40 +185 °F) temperature -40 +60 °C (-40 +140 °F) temperature				
- Connection	To circuits with values: $U_{\rm H}$ = 10.5 45 V DC	To circuits with values: $U_{\rm H}$ = 9 32 V DC			
• Dust explosion protection for zone 20	PTB 01 ATEX 2055				
- Marking	Ex II 1 D Ex ta IIIC T120°C Da Ex II 1/2 D Ex ta/tb IIIC T120°C Da/Db				
- Permissible ambient temperature	-40 +85 °C (-40 +185 °F)				
- Max. surface temperature	120 °C (248 °F)				
- Connection	To certified intrinsically-safe circuits with peak values: $U_{\rm i}$ = 30 V, $I_{\rm i}$ = 100 mA, $P_{\rm i}$ = 750 mW, $R_{\rm i}$ = 300 Ω	FISCO supply unit: $U_0 = 17.5 \text{ V}$, $I_0 = 380 \text{ mA}$, $P_0 = 5.32 \text{ W}$ Linear barrier: $U_0 = 24 \text{ V}$, $I_0 = 250 \text{ mA}$, $P_0 = 1 \text{ W}$			
- Effective internal inductance/capacitance	$L_{\rm i} = 0.4 {\rm mH}, C_{\rm i} = 6 {\rm nF}$	$L_{i} = 7 \mu H, C_{i} = 1.1 nF$			
• Dust explosion protection for zone 21/22	Ex II 2 D Ex tb IIIC T120°C Db				
- Marking	Ex II 2 D IP65 T 120 °C				
- Connection	To circuits with values: $U_{\rm H}$ = 10.5 45 V DC; $P_{\rm max}$ = 1.2 W	To circuits with values: $U_{\rm H}$ = 9 32 V DC; $P_{\rm max}$ = 1 W			
• Type of protection "n" (zone 2)	PTB 13 ATEX 2007 X				
- Marking	Ex II 2/3 G Ex nA IIC T4/T5/T6 Gb/Gc Ex II 2/3 G Ex ic IIC T4/T5/T6 Gb/Gc				
- Connection (Ex nA)	<i>U</i> _m = 45 V	U _m = 32 V			
- Connections (Ex ic)	To circuits with values: $U_i = 45 \text{ V}$	FISCO supply unit ic: $U_0 = 17.5 \text{ V}$, $I_0 = 570 \text{ mA}$ Linear barrier: $U_0 = 32 \text{ V}$, $I_0 = 132 \text{ mA}$, $P_0 = 1 \text{ W}$			
- Effective internal inductance/capacitance	$L_i = 0.4 \text{ mH}, C_i = 6 \text{ nF}$	$L_{i} = 7 \mu H, C_{i} = 1.1 nF$			
• Explosion protection acc. to FM	Certificate of Compliance 3008490				
- Identification (XP/DIP) or (IS); (NI)	CL I, DIV 1, GP ABCD T4T6; CL II, DIV 1, T4T6; CL I, DIV 2, GP ABCD T4T6; CL I				
• Explosion protection to CSA	Certificate of Compliance 1153651				
- Identification (XP/DIP) or (IS)	CL I, DIV 1, GP ABCD T4T6; CL II, DIV 1, 2, GP ABCD T4T6; CL II, DIV 2, GP FG; C				

Hygiene version

In the case of SITRANS P DSIII with 7MF413x front-flush diaphragm, selected connections comply with the requirements of EHEDG.

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for gauge/absolute pressure,	with front-flush diaphragm		
HART communication		FOUNDATION Fieldbus	
HART	230 1100 Ω	communication	
Protocol	HART Version 5.x	Function blocks	3 function blocks analog input, 1 function block PID
Software for computer	SIMATIC PDM	Analog input	
PROFIBUS PA communication		- Adaptation to customer-specif-	Yes, linearly rising or falling
Simultaneous communication with master class 2 (max.)	4	ic process variables	characteristic
The address can be set using	Configuration tool or local	- Electrical damping, adjustable	0 100 s
The address can be set doing	operation (standard setting address 126)	- Simulation function	Output/input (can be locked within the device with a bridge)
Cyclic data usage		- Failure mode	parameterizable (last good value, substitute value, incorrect
Output byte	5 (one measured value) or		value)
a law it but a	10 (two measured values)	- Limit monitoring	Yes, one upper and lower warn- ing limit and one alarm limit
Input byte	0, 1, or 2 (register operating mode and reset function for		respectively
	metering)	- Square-rooted characteristic	Yes
Internal preprocessing		for flow measurement	Chandard FOLINDATION
Device profile	PROFIBUS PA Profile for Process Control Devices Version	• PID	Standard FOUNDATION Fieldbus function block
	3.0, class B	Physical block	1 resource block
Function blocks	2	Transducer blocks	1 transducer block Pressure with
Analog input			calibration, 1 transducer block LCD
 Adaptation to customer-specific process variables 	Yes, linearly rising or falling characteristic	Pressure transducer block	
- Electrical damping, adjustable	0 100 s	 Can be calibrated by applying two pressures 	Yes
- Simulation function	Input /Output	- Monitoring of sensor limits	Yes
- Failure mode	parameterizable (last good value, substitute value, incorrect value)	- Simulation function: Measured pressure value, sensor tem-	Constant value or over parameterizable ramp function
- Limit monitoring	Yes, one upper and lower warning limit and one alarm limit respectively	perature and electronics tem- perature	
Register (totalizer)	Can be reset, preset, optional direction of counting, simulation function of register output		
- Failure mode	parameterizable (summation with last good value, continuous summation, summation with incorrect value)		
- Limit monitoring	One upper and lower warning limit and one alarm limit respec- tively		
 Physical block 	1		
T 1 11 1	•		

Transducer blocks

two pressures

• Pressure transducer block - Can be calibrated by applying

- Monitoring of sensor limits

- Specification of a container

and implementation point of square-root extraction - Simulation function for mea-

sured pressure value and sensor temperature

characteristic with - Square-rooted characteristic

for flow measurement - Gradual volume suppression 2

Yes

Yes

Yes

Max. 30 nodes

Parameterizable

Constant value or over parame-

terizable ramp function

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for gauge/absolute pressure, with front-flush diaphragm

Selection and Ordering	g data	Α	rtio	cle	No	Э.	
Pressure transmitter for	or gauge and absolute 🧷	7	M	F 4	1 :	3 3	-
pressure, front-flush d SITRANS P DS III HAR		E					
	-						
ration in the PIA Life	lo. for the online configu- Cycle Portal.						
Measuring cell filling	-						
Silicone oil	normal	1					
Inert liquid		3					
FDA compliant fill fluid Neobee oil	normal	4					
Measuring span (min.	•		Ь				
0.01 1 bar 0.04 4 bar	(0.15 14.5 psi)		В				
0.04 4 bar 0.16 16 bar	(0.58 58 psi) (2.32 232 psi)		D				
0.63 63 bar	(9.14 914 psi)		E				
	, , ,						
43.34 1300 mbar a ¹⁾ 0.17 5 bar a ¹⁾	(0.63 18.86 psi a) ¹⁾ (2.43 72.5 psi a) ¹⁾		S				
0.17 5 bar a ⁷ 1 30 bar a ¹⁾	(4.35 435 psi a) ¹⁾		U				
			4				
Wetted parts materials Seal diaphragm	Connection shank						
Stainless steel	Stainless steel			A			
Hastelloy ²⁾	Stainless steel			В			
Process connection							
	der code M, N, R or Q			7			
Non-wetted parts mate							
 Housing made of die- 					0		
 Housing stainless stee 					3		
Version							
 Standard version, Ger 						1	
setting for pressure ur							
 International version, I setting for pressure ur 	English plate inscription,					2	
 Chinese version, English 						3	
setting for pressure uni						Ĭ	
	O with compact operating						
instructions in various E	U languages.						
Explosion protection							
• None							Α
With ATEX, Type of pro							_
- "Intrinsic safety (Ex i							В
 "Explosion-proof (Ex "Ex nA/ic (Zone 2)"⁴⁾ 							D E
 FM + CSA intrinsic sat 							F
• FM + CSA (is + ep) +							S
Zone 1D/2D ⁵⁾⁶⁾⁷⁾	· - · · · · · · · · · · · · · · ·						
• With FM + CSA, Type							
- "Intrinsic Safe and Ex	(plosion Proof (is + xp)"3)5)						NC
Electrical connection/	cable entry						
 Inner thread M20 x 1.5 							В
 Female thread ½-14 N 							С
Han 7D device plug (p	plastic housing) incl.						D
mating connector ⁸⁾ • M12 device plugs (sta	siplace etacl)(9) 10)						F

Selection and Ordering data	Article No.	
Pressure transmitter for gauge and absolute pressure, front-flush diaphragm,	7MF4133-	
SITRANS P DS III HART		
Display		
Without display		0
 Without visible display 		1
(display concealed, setting: mA)		
 With visible display (setting: mA) 		6
With customer-specific display (setting as specified, Order code "Y21" or "Y22" required)		7

Power supply units see Chap. 7 "Supplementary Components".

A quick-start guide is included in the scope of delivery of the device.

- Not with temperature decoupler P00, not for process connections 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) Without cable gland, with blanking plug
- 4) Configurations with Han and M12 device plugs are only available in Ex ic.
 5) Explosion protection acc. to FM/CSA: suitable for installations according to
- 6) Only in connection with IP66.

NEC 500/505.

- 7) With enclosed cable gland Ex ia and blanking plug.
- 8) Only in connection with Ex approval A, B or E.
- 9) Only in connection with Ex approval A, B, E or F.
- 10) M12 delivered without cable socket

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for gauge/absolute pressure, with front-flush diaphragm

Selection and Orderin	g data	Ar	icl	e	No).	
Pressure transmitter F							
pressure, front-flush diaphragm:							
SITRANS P DS III with F	7 N	۱F	4	1 3	3 4	-	
SITRANS P DS III with F	OUNDATION Fieldbus (FF)	7 N	۱F	4	1 3	3 5	-
	No. for the online configu- Cycle Portal.	ľ			ľ	Ī	
Measuring cell filling	Measuring cell clean- ing						
Silicone oil	normal	1					
Inert liquid FDA compliant fill fluid		3					
Neobee oil	normal	4					
Nominal measuring ra							
1 bar	(14.5 psi)	E	3				
4 bar	(58 psi)	-					
16 bar	(232 psi)						
63 bar	(914 psi)	E					
1300 mbar a ¹⁾	(18.86 psi a) ¹⁾						
5 bar a ¹⁾	(72.5 psi a) ¹⁾	1					
30 bar a ¹⁾	(435 psi a) ¹⁾	Į	,				
Wetted parts materials							
Seal diaphragm	Connection shank						
Stainless steel	Stainless steel		Α				
Hastelloy ²⁾	Stainless steel		В				
Process connection							
 Flange version with O Q 	rder code M, N, R or			7			
Non-wetted parts mate	nuinlo			d			
Housing made of die-					0		
Housing stainless step					3		
Version							
Standard version, Ger	rman plate inscription,					1	
setting for pressure un							
	English plate inscription,					2	
setting for pressure unChinese version, Engli						3	
setting for pressure un	it: Pascal					ŭ	
All versions include DV	D with compact operating						
instructions in various E	U languages.						
Explosion protection							
None None	ata atia a						A
 With ATEX, Type of pr "Intrinsic safety (Exit 							В
- "Explosion-proof (Ex	. 4) _{"3)}						D
- "Ex nA/ic (Zone 2) ⁴							E
• FM + CSA intrinsic sa	fe (is) ⁵⁾						F
• FM + CSA (is + ep) +	Ex ia + Ex d (ATEX) +						S
Zone 1D/2D ⁵⁾⁶⁾⁷⁾	of protection:						
 With FM + CSA, Type Intrinsic Safe and F 	of protection: xplosion Proof (is + xp)" ³⁾⁵⁾						
(available soon)	χριοσιοίττ τουι (ισ + χρ) · ·						NC
Electrical connection/	cable entry						
Screwed gland M20 x	•						В
• Caraurad alamal 1/ 11	NPT						С
 Screwed gland ½-14 M12 device plugs (statement) 							F

Selection and Ordering data	Article No.
Selection and Ordering data	Article No.
Pressure transmitter P for gauge and absolute pressure, front-flush diaphragm:	
SITRANS P DS III with PROFIBUS PA (PA)	7 M F 4 1 3 4 -
SITRANS P DS III with FOUNDATION Fieldbus (FF)	7MF4135-
Display	
Without display	0
Without visible display	1
(display concealed, setting: bar)	
 With visible display (setting: bar) 	6
 With customer-specific display (setting 	7
as specified, Order code "Y21" required)	

A quick-start guide is included in the scope of delivery of the device.

- 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) Without cable gland, with blanking plug
- 4) Configurations with Han and M12 device plugs are only available in Ex ic.
- 5) Explosion protection acc. to FM/CSA: suitable for installations according to NEC 500/505.
- 6) Only in connection with IP66.
- 7) With enclosed cable gland Ex ia and blanking plug.
- 8) Only in connection with Ex approval A, B, E or F.
- 9) M12 delivered without cable socket

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for gauge/absolute pressure, with front-flush diaphragm

Salastian and Ordaning data	Order	aada		
Selection and Ordering data Further designs	Order	HART	DΛ	FF
Add "-Z" to Article No. and specify Order code.		IIAIII		••
Device plugs ¹⁾	400	,		
Han 7D (metal) Han 8D (instead of Han 7D)	A30 A31	√		
Han 8D (instead of Han 7D) Angled	A31	✓		
AngledHan 8D (metal)	A32	1		
,		,	,	,
Cable sockets for M12 device plugs (metal (CuZn))	A50	_	•	•
Rating plate inscription (instead of German)				
• English	B11	✓	V	*
• French	B12 B13	1	√	1
SpanishItalian	B14	1	V	1
Cyrillic (russian)	B16	1	1	1
English rating plate	B21	1	1	1
Pressure units in inH ₂ 0 and/or psi				
Quality Inspection Certificate (5-point characteristic curve test) according to IEC 60770-2	C11	✓	✓	✓
Inspection certificate	C12	1	1	1
Acc. to EN 10204-3.1	012	ľ	•	·
Factory certificate Acc. to EN 10204-2.2	C14	✓	✓	✓
Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration	C20	✓		
Functional safety (PROFIsafe) Certificate and PROFIsafe protocol	C21 ²⁾		✓	
Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration	C23	✓		
PED for Russia with initial calibration mark	C99	✓	✓	✓
Setting of the upper saturation limit of the output signal to 22.0 mA	D05	✓		
Degree of protection IP66/IP68 (only for M20x1.5 and ½-14 NPT)	D12	✓	✓	✓
Capri cable gland 4F CrNi and clamping device (848699 + 810634) included	D59	✓	✓	✓
Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140°F))	E10	✓	✓	✓
Export approval Korea	E11	✓	✓	✓
CRN approval Canada (Canadian Registration Number)	E22 ³⁾	✓	✓	✓
Dual seal	E24	✓	✓	✓
Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil)	E25 ⁴⁾	✓	1	✓
(only for transmitter 7MF4B) "Flameproof" explosion protection according to INMETRO (Brazil)	E26 ⁴⁾	✓	✓	✓
(only for transmitter 7MF4)				
Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil)	E28 ⁴⁾	✓	✓	
(only for transmitter 7MF4P)	E4E4)	,	,	,
Ex Approval IEC Ex (Ex ia) (only for transmitter 7MF4B)	E45 ⁴)	,	V	√
Ex Approval IEC Ex (Ex d) (only for transmitter 7MF4D)	E46 ⁴⁾	√	√	✓

	0 1			
Selection and Ordering data	Order		D4	
Further designs Add "-Z" to Article No. and specify Order code.		HART	PA	FF
Explosion-proof "Intrinsic safety" to NEPSI (China)	E55 ⁴⁾	✓	✓	✓
(only for transmitter 7MF4B)	•			
Explosion protection "Explosion-proof" to NEPSI (China)	E56 ⁴⁾	✓	✓	✓
(only for transmitter 7MF4D)	•			
Ex protection "Zone 2" to NEPSI (China) (only for transmitter 7MF4	E57 ⁴⁾	~	✓	~
Ex protection "Ex ia", "Ex d" and "Zone 2" to NEPSI (China)	E58 ⁴⁾	✓	✓	✓
(only for transmitter 7MF4R)	()		,	
"Intrinsic safety" and "Explosion-proof" explosion protection acc. to Kosha (Korea) (only for transmitter	E70 ⁴⁾	~	✓	✓
7MF4[B, D]Z + E11)				
Ex-protection Ex ia according to EAC Ex (Russia)	E80	✓	✓	✓
Ex-protection Ex d according to EAC Ex (Russia)	E81	✓	✓	✓
Ex-protection Ex nA/ic (Zone 2) according to EAC Ex (Russia)	E82	✓	✓	✓
Ex-protection Ex ia + Ex d + Zone 1D/2D according to EAC Ex (Russia)	E83	✓	✓	✓
Two coats of lacquer on casing and cover (PU on epoxy)	G10	✓	✓	✓
Transient protector 6 kV (lightning protection)	J01	✓	✓	✓
Flanges to EN 1092-1, Form B1				
• DN 25, PN 40 ⁵)	M11	1	1	1
DN 40, PN 40DN 40, PN 100	M13 M23	1	✓	✓
• DN 50, PN 16	M04	1	1	1
• DN 50, PN 40	M14	✓	✓	✓
• DN 80, PN 16	M06	✓	✓	✓
• DN 80, PN 40	M16	✓	✓	✓
Flanges to ASME B16.5		,	,	
 Stainless steel flange 1" class 150⁵) Stainless steel flange 1½" class 150 	M40 M41	√	√	1
Stainless steel flange 2" class 150 Stainless steel flange 2" class 150	M42	*	1	*
• Stainless steel flange 3" class 150	M43	1	1	1
• Stainless steel flange 4" class 150	M44	✓	✓	✓
 Stainless steel flange 1½" class 300 	M46	✓.	✓.	✓.
• Stainless steel flange 2" class 300	M47	1	1	1
Stainless steel flange 3" class 300Stainless steel flange 4" class 300	M48 M49	✓	√	1
Threaded connector to DIN 3852-2,	IVITO	•		
form A, thread to ISO 228				
• G ¾"-A, front-flush ⁶⁾	R01	✓	1	1
• G 1"-A, front-flush ⁶⁾	R02	1	1	1
• G 2"-A, front-flush	R04	V	V	√
Tank connection ⁷⁾				
Sealing is included in delivery • TG 52/50, PN 40	R10	1	1	1
• TG 52/150, PN 40	R11	1	1	1

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for gauge/absolute pressure, with front-flush diaphragm

Further designs Add "-Z" to Article No. and specify Order code. Sanitary process connection according DIN 11851 (Dairy connection with slotted union nut)	Selection and Ordering data	Order	code		
DIN 11851 (Dairy connection with slotted union nut)	Further designs		HART	PA	FF
• DN 50, PN 25 • DN 80, PN 25 • DN 80, PN 25 • DN 80, PN 25 Tri-Clamp connection according DIN 32676/ISO 2852 • DN 50/2°, PN 16 • DN 65/2.5°, PN 10 Varivent connection EHEDG compilant • Type N = 68 for Varivent housing DN 40 125 and 1½° 6°, PN 40 Temperature decoupler up to 200 °C®) for version with front-flush diaphragm Sanitary process connection to DRD • DN 50, PN 40 SMS socket with union nut • 2°	DIN 11851 (Dairy connection with slotted				
• DN 80, PN 25 Tri-Clamp connection according DIN 32676/ISO 2852 • DN 50/2*, PN 16 • DN 65/2.5*, PN 10 Varivent connection EHEDG compliant • Type N = 68 for Varivent housing DN 40 125 and 1½* 6*, PN 40 Temperature decoupler up to 200 °C8 for version with front-flush diaphragm Sanitary process connection to DRD • DN 50, PN 40 SMS socket with union nut • 2'	,	N04	1	1	1
DIN 32676/ISO 2852 • DN 50/2*, PN 16 • DN 50/2*, PN 10 Varivent connection EHEDG compliant • Type N = 68 for Varivent housing DN 40 125 and 1½* 6*, PN 40 Temperature decoupler up to 200 °C8 for version with front-flush diaphragm Sanitary process connection to DRD • DN 50, PN 40 SMS socket with union nut • 2' • 2½*		N06	✓		✓
• DN 65/2.5°, PN 10 Varivent connection EHEDG compliant • Type N = 68 for Varivent housing DN 40 125 and 1½° 6°, PN 40 Temperature decoupler up to 200 °C8¹ for version with front-flush diaphragm Sanitary process connection to DRD • DN 50, PN 40 SMS socket with union nut • 2°	DIN 32676/ISO 2852				
Varivent connection EHEDG compliant • Type N = 68 for Varivent housing DN 40 125 and 1½" 6", PN 40 N28 ✓ ✓ ✓ Temperature decoupler up to 200 °C8¹ for version with front-flush diaphragm P00 ✓ ✓ ✓ Sanitary process connection to DRD • DN 50, PN 40 SMS socket with union nut • 2" • 2½² M67 ✓ ✓ ✓ • 3" M69 ✓ ✓ ✓ SMS threaded socket • 2" • 2½² M74 ✓ ✓ ✓ • 3" M75 ✓ ✓ ✓ IDF socket with union nut ISO 2853 • 2" • 2½² M82 ✓ ✓ ✓ • 3" M82 ✓ ✓ ✓ IDF threaded socket ISO 2853 • 2" • 2½² M83 ✓ ✓ • 3" M84 ✓ ✓ IDF threaded socket ISO 2853 • 2" • 2½²² M93 ✓ ✓ • 3" M94 ✓ ✓ IDF threaded socket ISO 2853 • 2" • 2½²² M93 ✓ ✓ • 3" M94 ✓ ✓ IDF threaded socket ISO 2853 • 2" • 2½²² M93 ✓ ✓ • 3" M94 ✓ ✓ • 3" <td></td> <td></td> <td>✓</td> <td>✓.</td> <td>✓.</td>			✓	✓.	✓.
EHEDG compliant • Type N = 68 for Varivent housing DN 40 125 and 1½" 6", PN 40 Temperature decoupler up to 200 °C8) for version with front-flush diaphragm Sanitary process connection to DRD • DN 50, PN 40 SMS socket with union nut • 2" • 2½" • 3" SMS threaded socket • 2" • 2½½" • 3" M68 • 2" • 2½½" • 3" M74 • 2½½" • 3" M75 • 2½½" • 3" M82 • 2" • 2½½" • 3" M83 • 2" • 2½½" • 3" M84 • 2		N15	√	✓	✓
• Type N = 68 for Varivent housing DN 40 125 and 1½* 6*, PN 40 Temperature decoupler up to 200 °C8 for version with front-flush diaphragm Sanitary process connection to DRD • DN 50, PN 40 SMS socket with union nut • 2*					
Sanitary process connection to DRD • DN 50, PN 40 SMS socket with union nut • 2* • 2½* • 3* SMS threaded socket • 2* • 2½½* • 3* SMS threaded socket • 2* • 2½½* • 3* IDF socket with union nut ISO 2853 • 2* • 2½½* • 3* IDF socket with union nut ISO 2853 • 2* • 2½½* • 3* IDF socket lsO 2853 • 2* • 2½½* • 3* IDF threaded socket ISO 2853 • 2* • 2½½* • 3* Sanitary process connection to NEUMO Bio-Connect screw connection EHEDG compliant • DN 50, PN 16 • DN 80, PN 16 • DN 2½*, PN 16 • DN 2½*, PN 16 • DN 4*, PN 16 Sanitary process connection to NEUMO Bio-Connect flange connection EHEDG compliant • DN 50, PN 16 • DN 4*, PN 16 • DN 80, PN 16 • DN	 Type N = 68 for Varivent housing 	N28	✓	✓	✓
• DN 50, PN 40 SMS socket with union nut • 2" • 2½" • 3" SMS threaded socket • 2" • 2½" • 3" IDF socket with union nut ISO 2853 • 2" • 2½" • 3" IDF socket with union nut ISO 2853 • 2" • 2½" • 3" IDF socket with union nut ISO 2853 • 2" • 2½" • 3" IDF threaded socket ISO 2853 • 2" • 2½" • 3" M84 • 7 • 7 Sanitary process connection to NEUMO Bio-Connect screw connection EHEDG compliant • DN 50, PN 16 • DN 80, PN 16 • DN 100, PN 16 • DN 2", PN 16 • DN 2", PN 16 • DN 4", PN 16 • DN 4", PN 16 • DN 4", PN 16 • DN 50, PN 16 • DN 65, PN 16 • DN 4", PN 16 • DN 65, PN 16 • DN 4", PN 16 • DN 4", PN 16 • DN 50, PN 16 • DN 65, PN 16 • DN 80, PN 16		P00	✓	✓	✓
SMS socket with union nut 2" 2½" M68 M69 SMS threaded socket 2" 2½" M74 3" IDF socket with union nut ISO 2853 2" 2½" M82 - 3" IDF socket with union nut ISO 2853 2" M82 - 2½" M83 - 2" M84 - 3" IDF threaded socket ISO 2853 - 2" - 2½" M83 - 2" M84 - 3" M84				,	
• 2" • 2½" • 2½" • 3"	,	M32	1	✓	✓
• 2½'' • 3" SMS threaded socket • 2" • 2½'' • 3" IDF socket with union nut ISO 2853 • 2' • 2½'' • 3" IDF threaded socket ISO 2853 • 2" • 2½'' • 3" IDF threaded socket ISO 2853 • 2" • 2½'' • 3" Sanitary process connection to NEUMO Bio-Connect screw connection EHEDG compliant • DN 50, PN 16 • DN 80, PN 16 • DN 2½'', PN 16 • DN 3", PN 16 • DN 4", PN 16 • DN 4", PN 16 • DN 4", PN 16 • DN 50,		Mez	1	_/	
• 3" SMS threaded socket • 2" • 2½" • 3" IDF socket with union nut ISO 2853 • 2" • 2½" • 3" M82 • 3" M82 • √ • √ • ½½" • 3" M84 • √ • √ IDF threaded socket ISO 2853 • 2" • 2½" • 3" M92 • 3" M92 • √ • √ • ✓ Sanitary process connection to NEUMO Bio-Connect screw connection EHEDG compliant • DN 50, PN 16 • DN 80, PN 16 • DN 100, PN 16 • DN 2", PN 16 • DN 3", PN 16 • DN 4", PN 16 Sanitary process connection to NEUMO Bio-Connect flange connection EHEDG compliant • DN 50, PN 16 • DN 3", PN 16 • DN 50, PN 16 • DN 100, PN 16 • DN 100, PN 16 • DN 2½", PN 16 • DN 4", PN 16 Sanitary process connection to NEUMO Bio-Connect flange connection EHEDG compliant • DN 50, PN 16					
• 2" • 2½" • 3" IDF socket with union nut ISO 2853 • 2" • 2½" • 3" M82			1	1	
• 2½" • 3" IDF socket with union nut ISO 2853 • 2" • 2½" • 3" IDF threaded socket ISO 2853 • 2" • 2½" • 3" IDF threaded socket ISO 2853 • 2" • 2½" • 3" Sanitary process connection to NEUMO Bio-Connect screw connection EHEDG compliant • DN 50, PN 16 • DN 2½", PN 16 • DN 2½", PN 16 • DN 3", PN 16 • DN 4", PN 16 Sanitary process connection to NEUMO Bio-Connect flange connection to NEUMO Bio-Connect screw connection Quay • 2" • 3" Sanitary process connection to NEUMO Bio-Connect screw connection CHEDG Compliant • DN 50, PN 16 • DN 100, PN 16 • DN 2½", PN 16 • DN 2½", PN 16 • DN 4", PN 16 Sanitary process connection to NEUMO Bio-Connect flange connection EHEDG Compliant • DN 50, PN 16 • DN 50, PN 16 • DN 50, PN 16 • DN 80, PN 16 • DN 80, PN 16 • DN 100, PN 16 • DN 100, PN 16 • DN 100, PN 16 • DN 2½", PN 16 • DN 3", PN 16	SMS threaded socket				
Sanitary process connection to NEUMO Bio-Connect screw connection EHEDG compliant	• 2 ⁿ	M73	✓		✓
IDF socket with union nut ISO 2853 2"					V
• 2" • 2½" • 3" IDF threaded socket ISO 2853 • 2" • 2½" • 3" M92	•	M75	✓	✓	√
• 2½" • 3" IDF threaded socket ISO 2853 • 2" • 2½" • 3" Sanitary process connection to NEUMO Bio-Connect screw connection • DN 50, PN 16 • DN 80, PN 16 • DN 2½", PN 16 • DN 2½", PN 16 • DN 3", PN 16 • DN 4", PN 16 • DN 4", PN 16 • DN 4", PN 16 • DN 50, PN 16 • DN 50, PN 16 • DN 50, PN 16 • DN 100, PN 16 • DN 4", PN 16 • DN 4", PN 16 • DN 4", PN 16 • DN 50, PN 16 • DN 50, PN 16 • DN 50, PN 16 • DN 100, PN 16 • DN 2½", PN 16 • DN 100, PN 16 • DN 100, PN 16 • DN 2½", PN 16 • DN 3", PN 16		MOO	,		.,
■ 3" IDF threaded socket ISO 2853 ■ 2" ■ 2½" ■ 3" Sanitary process connection to NEUMO Bio-Connect screw connection EHEDG compliant ■ DN 50, PN 16 ■ DN 80, PN 16 ■ DN 100, PN 16 ■ DN 2½", PN 16 ■ DN 2½", PN 16 ■ DN 3", PN 16 ■ DN 4", PN 16 ■ DN 4", PN 16 ■ DN 50, PN 16 ■ DN 4", PN 16 ■ DN 50, PN 16 ■ DN 4", PN 16 ■ DN 4", PN 16 ■ DN 4", PN 16 ■ DN 50, PN 16 ■ DN 2½", PN 16 ■ DN 3", PN 16	_				
• 2" • 2½" • 2½" • 3" Sanitary process connection to NEUMO Bio-Connect screw connection EHEDG compliant • DN 50, PN 16 • DN 85, PN 16 • DN 100, PN 16 • DN 2½", PN 16 • DN 3", PN 16 • DN 4", PN 16 Sanitary process connection to NEUMO Bio-Connect flange connection EHEDG compliant • DN 50, PN 16 • DN 4", PN 16 • DN 50, PN 16 • DN 65, PN 16 • DN 65, PN 16 • DN 65, PN 16 • DN 80, PN 16 • DN 100, PN 16 • DN 2½", PN 16 • DN 100, PN 16 • DN 2½", PN 16 • DN 2½", PN 16 • DN 2½", PN 16 • DN 3", PN 16 • DN 3", PN 16			1	1	
• 2½" • 3" Sanitary process connection to NEUMO Bio-Connect screw connection EHEDG compliant • DN 50, PN 16 • DN 80, PN 16 • DN 100, PN 16 • DN 2", PN 16 • DN 3", PN 16 • DN 4", PN 16 • DN 4", PN 16 Sanitary process connection to NEUMO Bio-Connect flarge connection EHEDG compliant • DN 50, PN 16 • DN 4", PN 16 • DN 4", PN 16 • DN 4", PN 16 • DN 50, PN 16 • DN 80, PN 16 • DN 100, PN 16 • DN 2", PN 16 • DN 3", PN 16 • DN 3", PN 16	IDF threaded socket ISO 2853				
• 3" Sanitary process connection to NEUMO Bio-Connect screw connection EHEDG compliant • DN 50, PN 16 • DN 65, PN 16 • DN 100, PN 16 • DN 2", PN 16 • DN 2", PN 16 • DN 3", PN 16 • DN 4", PN 16 Sanitary process connection to NEUMO Bio-Connect flange connection EHEDG compliant • DN 50, PN 16 • DN 50, PN 16 • DN 80, PN 16 • DN 100, PN 16 • DN 2", PN 16 • DN 3", PN 16 • DN 3", PN 16	_	M92			
Sanitary process connection to NEUMO Bio-Connect screw connection EHEDG compliant • DN 50, PN 16 • DN 65, PN 16 • DN 80, PN 16 • DN 21/2*, PN 16 • DN 21/2*, PN 16 • DN 4*, PN 16 Sanitary process connection to NEUMO Bio-Connect flange connection EHEDG compliant • DN 50, PN 16 • DN 80, PN 16 • DN 100, PN 16 • DN 21/2*, PN 16 • DN 3*, PN 16					
NEUMO Bio-Connect screw connection EHEDG compliant • 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 3", PN 16 Q14 ✓ ✓ ✓ • DN 4", PN 16 Q15 ✓ ✓ ✓ Sanitary process connection to NEUMO Bio-Connect flange connection EHEDG compliant ✓ ✓ ✓ • DN 50, PN 16 Q24 ✓ ✓ ✓ • DN 80, PN 16 Q25 ✓ ✓ ✓ • DN 100, PN 16 Q26 ✓ ✓ ✓ • DN 2", PN 16 Q31 ✓ ✓ ✓ • DN 2", PN 16 Q32 ✓ ✓ ✓ • DN 3", PN 16 Q32 ✓ ✓ ✓		M94	✓	✓	✓
 DN 50, PN 16 DN 65, PN 16 DN 80, PN 16 DN 100, PN 16 DN 2", PN 16 DN 2", PN 16 DN 3", PN 16 DN 4", PN 16 Q15 ✓ <l< td=""><td>NEUMO Bio-Connect screw connection</td><td></td><td></td><td></td><td></td></l<>	NEUMO Bio-Connect screw connection				
DN 80, PN 16 DN 100, PN 16 DN 2", PN 16 DN 2½", PN 16 DN 3", PN 16 DN 4", PN 16 DN 4", PN 16 Sanitary process connection to NEUMO Bio-Connect flange connection EHEDG compliant DN 50, PN 16 DN 65, PN 16 DN 80, PN 16 DN 80, PN 16 DN 100, PN 16 DN 100, PN 16 DN 2½", PN 16 DN 2½", PN 16 DN 2½", PN 16 DN 2½", PN 16 DN 3",	• DN 50, PN 16	Q05	✓		
• DN 100, PN 16 • DN 2", PN 16 • DN 2½", PN 16 • DN 3", PN 16 • DN 4", PN 16 Canitary process connection to NEUMO Bio-Connect flange connection EHEDG compliant • DN 50, PN 16 • DN 65, PN 16 • DN 80, PN 16 • DN 100, PN 16 • DN 100, PN 16 • DN 2", PN 16 • DN 2", PN 16 • DN 2", PN 16 • DN 2½", PN 16 • DN 3", PN 16 • DN 3", PN 16 • DN 3", PN 16	,				
• DN 2", PN 16 • DN 2½", PN 16 • DN 3", PN 16 • DN 4", PN 16 • DN 4", PN 16 Sanitary process connection to NEUMO Bio-Connect flange connection EHEDG compliant • DN 50, PN 16 • DN 65, PN 16 • DN 80, PN 16 • DN 100, PN 16 • DN 100, PN 16 • DN 2", PN 16 • DN 2½", PN 16 • DN ½½", PN 16 • DN ½½", PN 16 • DN 3", PN 16 • DN 3", PN 16	•				
• DN 2½*, PN 16 • DN 3*, PN 16 • DN 3*, PN 16 • DN 4*, PN 16 • DN 4*, PN 16 Sanitary process connection to NEUMO Bio-Connect flange connection EHEDG compliant • DN 50, PN 16 • DN 65, PN 16 • DN 80, PN 16 • DN 100, PN 16 • DN 100, PN 16 • DN 2*, PN 16 • DN 2½*, PN 16 • DN ½½*, PN 16 • DN 3*, PN 16 • DN 3*, PN 16					
• DN 3", PN 16 • DN 4", PN 16 Sanitary process connection to NEUMO Bio-Connect flange connection EHEDG compliant • DN 50, PN 16 • DN 65, PN 16 • DN 80, PN 16 • DN 100, PN 16 • DN 2", PN 16 • DN 2½", PN 16 • DN 3", PN 16 • DN 3", PN 16 • DN 3", PN 16					
Sanitary process connection to NEUMO Bio-Connect flange connection EHEDG compliant • DN 50, PN 16 • DN 65, PN 16 • DN 80, PN 16 • DN 100, PN 16 • DN 2", PN 16 • DN 2", PN 16 • DN 2½", PN 16 • DN 3", PN 16 • DN 3", PN 16	• DN 3", PN 16	Q15		1	✓
Bio-Connect flange connection EHEDG compliant • DN 50, PN 16 • DN 65, PN 16 • DN 80, PN 16 • DN 100, PN 16 • DN 2", PN 16 • DN 2½", PN 16 • DN 3", PN 16 • DN 3", PN 16 • Q33 • ✓ ✓ ✓	• DN 4", PN 16	Q16	1	1	✓
 DN 50, PN 16 DN 65, PN 16 DN 80, PN 16 DN 100, PN 16 DN 2", PN 16 DN 2½", PN 16 DN 3", PN 16 Q33 Q33 Q33 Q33 	Bio-Connect flange connection				
 DN 65, PN 16 DN 80, PN 16 DN 100, PN 16 DN 2", PN 16 DN 2½", PN 16 DN ½½", PN 16 DN 3", PN 16 Q33 ✓ <l>✓ ✓ ✓ ✓ ✓ ✓ <l< td=""><td>•</td><td>Q23</td><td>1</td><td>1</td><td>1</td></l<></l>	•	Q23	1	1	1
 DN 100, PN 16 DN 2", PN 16 DN 2½", PN 16 DN ½½", PN 16 DN 3", PN 16 Q33 ✓ 			✓		✓
• DN 2", PN 16 Q31 ✓ ✓ • DN 2½", PN 16 Q32 ✓ ✓ • DN 3", PN 16 Q33 ✓ ✓					
• DN 2½", PN 16 Q32 ✓ ✓ • DN 3", PN 16 Q33 ✓ ✓					
• DN 3", PN 16 Q33 ✓ ✓ ✓					
			✓	✓	✓

Selection and Ordering data	Order	code		
Further designs		HART	PA	FF
Add "-Z" to Article No. and specify Order code.				
Sanitary process connection to				
NEUMO Bio-Connect clamp connection EHEDG compliant				
• DN 50, PN 16	Q39	1	1	1
• DN 65, PN 10	Q40	1	1	1
• DN 80, PN 10	Q41	1	1	1
• DN 100, PN 10	Q42	1	1	✓
• DN 21/2", PN 16	Q48	✓	✓	✓
• DN 3", PN 10	Q49	✓	✓	✓
• DN 4", PN 10	Q50	✓	✓	✓
Bio-Control sanitary process connection				
• DN 50, PN 16	Q53	✓	✓	✓
• DN 65, PN 16	Q54	✓	✓	✓
Sanitary process connection to				
NEUMO Bio-Connect S flange connection				
• DN 2", PN 16	Q72	✓	✓	✓
Aseptic threaded socket to DIN 11864-1				
Form A	NOO	.,	1	
DN 50, PN 25DN 65, PN 25	N33 N34	√	*	1
• DN 80, PN 25	N35	1	1	1
• DN 100, PN 25	N36	1	1	1
,	1100	Ť	•	
Aseptic flange with notch to DIN 11864-2 Form A				
• DN 50, PN 16	N43	1	1	1
• DN 65, PN 16	N44	1	1	1
• DN 80, PN 16	N45	1	✓	✓
• DN 100, PN 16	N46	✓	✓	✓
Aseptic flange with groove to DIN 11864-2				
Form A				
• 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				
• DN 50, PN 25	N53	1	1	1
• DN 65, PN 25	N54	1	1	1
• DN 80, PN 16	N55	✓	1	1
• DN 100, PN 16	N56	✓	1	1

¹⁾ Han device plug IP65

Profisafe transmitters can only be operated with the S7 F Systems V6.1 configuration software in combination with S7-400H.

³⁾ Cannot be ordered with remote seal.

⁴⁾ When the additional ex option is selected, the ATEX marking on the device is omitted. Only the Ex option selected via the Z option is marked.

5) Special seal in Viton included in the scope of delivery. FKM; temperature range -20 ... +200 °C (-4 ... +392 °C).

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 and EHEDG compliant. The maximum permissible temperatures of the medium depend on the respective cell fillings (see medium conditions).

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for gauge/absolute pressure, with front-flush diaphragm

Selection and Ordering data	Order code							
Additional data		HART	PA	FF				
Please add "-Z" to Article No. and specify Order code(s) and plain text.								
Measuring range to be set	Y01	✓	√ 1)					
Specify in plain text (max. 5 characters): Y01: up to mbar, bar, kPa, MPa, psi								
Stainless steel tag plate and entry in device variable (measuring point description)	Y15	1	✓	✓				
Max. 16 characters, specify in plain text:								
Measuring point text (entry in device variable)	Y16	✓	✓	✓				
Max. 27 characters, specify in plain text: Y16:								
Entry of HART address (TAG)	Y17	✓						
Max. 8 characters, specify in plain text: Y17:								
Setting of pressure indicator in pressure units	Y21	✓	✓	✓				
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 ^{*)} , inH ₂ O ^{*)} , ftH ₂ O ^{*)} , mmHG, inHG, psi, Pa, kPa, MPa, g/cm ² , kg/cm ² , Torr, ATM or %								
*) ref. temperature 20 °C								
Setting of pressure indication in non-pressure units ²⁾	Y22 + Y01	✓						
Specify in plain text: Y22: up to I/min, m³/h, m, USgpm, (specification of measuring range in pressure units "Y01" is essential, unit with max. 5 characters)								
Preset bus address	Y25		✓	✓				
possible between 1 and 126 Specify in plain text: Y25:								
Damping adjustment in seconds (0 100 s)	Y30	✓	✓	✓				

Only Y01, Y15, Y16, Y17, Y21, Y22, Y25 and D05 can be factory preset

✓ = available

ordering example

Item line: 7MF4133-1DB20-1AB7-Z

B line: A22 + Y01 + Y21

C line: Y01: 1 ... 10 bar (14.5 ... 145 psi)

C line: Y21: bar (psi)

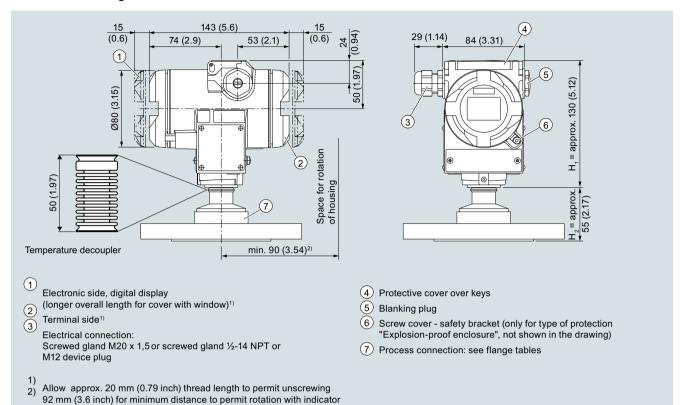
2) Preset values can only be changed over SIMATIC PDM.

¹⁾ Measuring accuracies for PROFIBUS PA transmitters with Option Y01 are calculated in the same way as for HART devices.

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for gauge/absolute pressure, with front-flush diaphragm

Dimensional drawings



SITRANS P pressure transmitters, DS III series for gauge pressure, with front-flush diaphragm, dimensions in mm (inch)

The diagram shows a SITRANS P DS III with an example of a flange. In this drawing the height is subdivided into H₁ and H₂.

H₁ = Height of the SITRANS P300 up to a defined cross-section

 H_2 = Height of the flange up to this defined cross-section

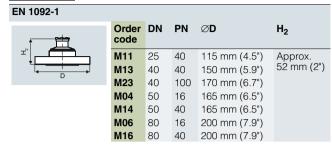
Only the height H₂ is indicated in the dimensions of the flanges.

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for gauge/absolute pressure, with front-flush diaphragm

Flanges as per EN and ASME

Flange to EN

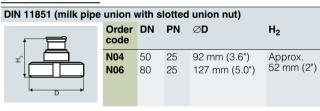


Flanges to ASME

ASME B16.5 PΝ ØD Order DN H_2 code M40 Approx. 52 mm (2") 150 110 mm (4.3") M41 11/2" 150 130 mm (5.1") 2" M42 150 150 mm (5.9") 3" M43 150 190 mm (7.5") M44 4" 150 230 mm (9.1") M46 11/2" 300 155 mm (6.1") 2" M47 300 165 mm (6.5") 300 210 mm (8.1") 3" M48 M49 4" 300 255 mm (10.0")

NuG and pharmaceutical connections

Connections to DIN



Tri-Clamp nach DIN 32676								
	Order code	DN	PN	ØD	H ₂			
T D	N14 N15	50 65	16 10	64 mm (2.5") 91 mm (3.6")	Approx. 52 mm (2")			

Other connections

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

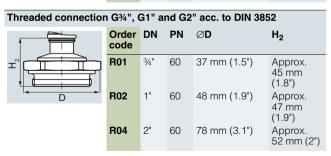
Sanitary process connection to DRD									
	Order code	DN	PN	ØD	H ₂				
D	M32	50	40	105 mm (4.1")	Approx. 52 mm (2")				

Sanitary process screw connection to NEUMO Bio-Connect Order DN PΝ $\emptyset D$ H_2 Q05 82 mm (3.2") 16 50 Approx. 52 mm (2") Q06 65 16 105 mm (4.1") Q07 80 16 115 mm (4.5") Q08 100 145 mm (5.7") 16 Q13 2" 16 82 mm (3.2") Q14 21/2" 16 105 mm (4.1") Q15 3" 105 mm (4.1") 16 Q16 4" 145 mm (5.7") 16

Sanitary process connection to NEUMO Bio-Connect flange connection								
	Order code	DN	PN	ØD	H ₂			
	Q23	50	16	110 mm (4.3")	Approx.			
<u> </u>	Q24	65	16	140 mm (5.5")	52 mm (2")			
D	Q25	80	16	150 mm (5.9")				
	Q26	100	16	175 mm (6.9")				
	Q31	2"	16	100 mm (3.9")				
	Q32	21/2"	16	110 mm (4.3")				
	Q33	3"	16	140 mm (5.5")				
	Q34	4"	16	175 mm (6.9")				

Sanitary process connection to NEUMO Bio-Connect clamp connection					
	Order code	DN	PN	ØD	H ₂
	Q39	50	16	77.4 mm (3.0")	Approx.
±1 \	Q40	65	10	90.9 mm (3.6")	52 mm (2")
	Q41	80	10	106 mm (4.2")	
	Q42	100	10	119 mm (4.7")	
D	Q48	21/2"	16	90.9 mm (3.6")	
2	Q49	3"	10	106 mm (4.2")	
	Q50	4"	10	119 mm (4.7")	

Sanitary process connection to NEUMO Bio-Connect S flange connection						
	Order code	DN	PN	ØD	H ₂	
T	Q72	2"	16	125 mm (4.9")	Approx. 52 mm (2")	



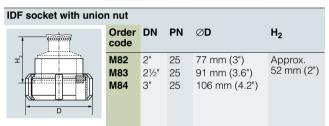
Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for gauge/absolute pressure, with front-flush diaphragm

Tank connection TG 52/50 and TG52/150 Order DN PΝ 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 socket with union nut					
	Order code	DN	PN	ØD	H ₂
1	M67	2"	25	84 mm (3.3")	Approx.
	M68	21/2"	25	100 mm (3.9")	52 mm (2")
	M69	3"	25	114 mm (4.5")	
D D					

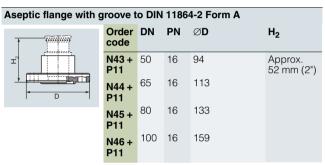
PN	ØD	H ₂
25	85 x 1/6 mm	Approx. 52 mm (2")
	25	25 70 x 1/6 mm 25 85 x 1/6 mm 25 98 x 1/6 mm

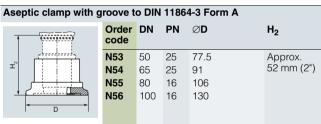


IDF threaded socket					
(111)	Order code	DN	PN	ØD	H ₂
T D	M92 M93 M94			64 mm (2.5") 77.5 mm (3.1") 91 mm (3.6")	Approx. 52 mm (2")

Aseptic threaded socket to DIN 11864-1 Form A					
	Order code	DN	PN	ØD	H ₂
T D	N33 N34 N35 N36	50 65 80 100	25 25 25 25 25	78 × 1/6" 95 × 1/6" 110 × ½" 130 × ½"	Approx. 52 mm (2")

Aseptic flange with notch to DIN 11864-2 Form A					
	Order code	DN	PN	ØD	H ₂
Ξ ²	N43	50	16	94	Approx. 52 mm (2")
	N44	65	16	113	52 mm (2")
	N45	80	16	133	
I D I	N46	100	16	159	





Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

DDOCIDUO DA

for absolute pressure (from gauge pressure series)

Technical specifications

SITRANS P DS III series for absolute pressure (from the	e gauge pressure series)
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ln	put

Measured variable

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

Absolute pressure

	PROFIBUS PA/ FOUNDATION Fieldbus			
- 1		Nominal measur- ing range	Max. operating pressure MAWP (PS)	Max. perm. test pressure
	8.34 250 mbar a	250 mbar a	1.5 bar a	6 bar a
	0.83 25 kPa a	25 kPa a	150 kPa a	600 kPa a
	3.35 100 inH ₂ O a	100 inH ₂ O a	21.8 psi a	87 psi a
	43.34 1300 mbar a	1300 mbar a	2.6 bar a	10 bar a
	4.33 130 kPa a	130 kPa a	260 kPa a	1 MPa a
	17.42 522.4 inH ₂ O a	525 inH ₂ O a	37.7 psi a	145 psi a
	170 5000 mbar a	5000 mbar a	10 bar a	30 bar a
	17 500 kPa a	500 kPa a	1 MPa a	3 MPa a
	2.43 72.5 psi a	72.5 psi a	145 psi a	435 psi a
	1 30 bar a	30 bar a	45 bar a	100 bar a
	0.1 3 MPa a	3 MPa a	4.5 MPa a	10 MPa a
	14.6 435 psi a	435 psi a	653 psi a	1450 psi a
	5,34 160 bar a	160 bar a	167 bar a	250 bar a
	0.53 16 MPa a	16 MPa a	16,7 MPa a	25 MPa a
	77.4 2321 psi a	2321 psi	2422 psi	3626 psi
	13.34 400 bar a	400 bar a	400 bar a	600 bar a
	1.3 40 MPa a	40 MPa a	40 MPa a	60 MPa a
	193.4 5802 psi a	5802 psi a	5802 psi a	8702 psi a
	23.34 700 bar a	700 bar a	800 bar a	800 bar a
	2.33 70 MPa a	70 MPa a	80 MPa a	80 MPa a
	338.43 10153 psi a	10153 psi a	11603 psi a	11603 psi a

Lower measuring limit

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

Electrical damping (step width 0.1 s)

- for process temperature -20 °C < 9 ≤ +60 °C $(-4 \, {}^{\circ}\text{F} < 9 \le +140 \, {}^{\circ}\text{F})$
- for process temperature 60 °C < 9 ≤ +100 °C (max. 85 °C for measuring cell 30 bar) (140 °F < 9 ≤ +212 °F (max. 185 °F for measuring cell 435 psi))

Upper measuring limit

0 mbar a/0 kPa a/0 psi a

30 mbar a/3 kPa a/0.44 psi a

30 mbar a + 20 mbar a · (ϑ - 60 °C)/°C 3 kPa a + 2 kPa a · (ϑ - 60 °C)/°C 0.44 psi a + 0.29 psi a · (9 - 140 °F)/°F

100 % of max. span

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

ambient temperature/process temperature)

Between the measuring limits (fully adjustable) Start of scale value

Output	HART	PROFIBUS PA/FOUNDATION Fieldbus
Output signal	4 20 mA	Digital PROFIBUS PA and FOUNDATION Fieldbus signal
 Lower limit (infinitely adjustable) 	3.55 mA, factory preset to 3.84 mA	-
Upper limit (infinitely adjustable)	23 mA, factory preset to 20.5 mA or optionally set to 22.0 mA $$	-
Load		
• Without HART	$R_{\rm B} \leq$ ($U_{\rm H}$ - 10.5 V)/0.023 A in Ω , $U_{\rm H}$: Power supply in V	-
• With HART	$R_{\rm B}$ = 230 500 Ω (SIMATIC PDM) or $R_{\rm B}$ = 230 1100 Ω (HART Communicator)	-
Physical bus	-	IEC 61158-2
Protection against polarity reversal	Protected against short-circuit and polarity Each connection against the other with max	

Set to 2 s (0 ... 100 s)

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for absolute pressure (from gauge pressure series)

SITRANS P DS III series for absolute pressure (from the g	auge pressure series)
Measuring accuracy	Acc. to IEC 60770-1
Reference conditions (All error data refer always refer to the set span)	 Increasing characteristic Start-of-scale value 0 bar/kPa/psi Stainless steel seal diaphragm Silicone oil filling Room temperature 25 °C (77 °F)
Measuring span ratio r (spread, Turn-Down)	r = max. measuring span/set measuring span or nom. pressure range
Error in measurement at limit setting incl. hysteresis and reproducibility	
Linear characteristic	
- r ≤ 10	≤ 0.1 %
- 10 < r ≤ 30	≤ 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 · 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 100 bar a/10 MPa a/1450 psi a 160 bar a/16 MPa a/2321 psi a 400 bar a/40 MPa a/5802 psi a 700 bar a/50 MPa a/10152 psi a	\leq (0.08 · r + 0.16) %
Long-term stability (temperature change ± 30 °C (± 54 °F))	\leq (0.25 · 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 ⋅ 10 ⁻⁵ of nominal measuring range
Rated conditions	
Degree of protection	
• according to EN 60529	IP66 (optional IP66/IP68)
• according to NEMA 250	Type 4X
Temperature of medium	
Measuring cell with silicone oil filling	-40 +100 °C (-40 +212 °F) -20 +100 °C (-4 +212 °F) with 30 bar a measuring cell
 Measuring cell with inert filling liquid 	-20 +100 °C (-4 +212 °F)
 In conjunction with dust explosion protection 	-20 +60 °C (-4 +140 °F)
Ambient conditions	
Ambient temperature	
- Transmitter	-40 +85 °C (-40 +185 °F)
- Display readable	-30 +85 °C (-22 +185 °F)
Storage temperature	-50 +85 °C (-58 +185 °F)
Climatic class	
- Condensation	Relative humidity 0 100 % Condensation permissible, suitable for use in the tropics
• Electromagnetic Compatibility	
- Emitted interference and interference immunity	Acc. to IEC 61326 and NAMUR NE 21

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for absolute pressure (from gauge pressure series)

SITRANS P DS III series for absolute pressure (from the gauge pressure series)				
Design				
Weight (without options)	≈ 1.5 kg (≈ 3.3 lb)	≈ 1.5 kg (≈ 3.3 lb)		
Enclosure material	Low-copper die-cast aluminum, GD-no. 1.4408	Low-copper die-cast aluminum, GD-AlSi 12 or stainless steel precision casting, mat no. 1.4408		
Wetted parts materials				
Connection shank	Stainless steel, mat. no. 1.4404/316L	Stainless steel, mat. no. 1.4404/316L or Hastelloy C4, mat. no. 2.4602		
Oval flange	Stainless steel, mat. no. 1.4404/316L	Stainless steel, mat. no. 1.4404/316L		
Seal diaphragm	Stainless steel, mat. no. 1.4404/316L	Stainless steel, mat. no. 1.4404/316L or Hastelloy C276, mat. no. 2.4819		
Measuring cell filling	Silicone oil or inert filling liquid (maximum value with oxygen measur (140 °F))	(maximum value with oxygen measurement pressure 100 bar (1450 psi) at 60 °C		
Process connection		Connection shank G½B to EN 837-1, female thread ½ -14 NPT or oval flange (PN 160 (MAWP 2320 psi a)) to DIN 19213 with mounting thread M10 or $^7/_{16}$ -20 UNF to IEC 61518/DIN EN 61518		
Material of mounting bracket				
• Steel	Sheet-steel, Mat. No. 1.0330, chrome	Sheet-steel, Mat. No. 1.0330, chrome-plated		
• Stainless steel 304	Sheet stainless steel, mat. no. 1.430	Sheet stainless steel, mat. no. 1.4301 (SS 304)		
• Stainless steel 316L	Sheet stainless steel, mat. no. 1.4404	Sheet stainless steel, mat. no. 1.4404 (SS 316L)		
Power supply $\emph{\textbf{U}}_{H}$	HART	PROFIBUS PA/FOUNDATION Fieldbus		
Terminal voltage on transmitter	10.5 45 V DC	-		

Starriess steer of the	Check stailiness steet, that the 1.4404 (CO 0102)				
Power supply U _H	HART	PROFIBUS PA/FOUNDATION Fieldbus			
Terminal voltage on transmitter	10.5 45 V DC 10.5 30 V DC in intrinsically-safe mode	-			
Power supply		Supplied through bus			
Separate 24 V power supply necessary	-	No			
Bus voltage					
• Not Ex	-	9 32 V			
With intrinsically-safe operation	-	9 24 V			
Current consumption					
Basic current (max.)	-	12.5 mA			
• Start-up current ≤ basic current	-	Yes			
Max. current in event of fault	-	15.5 mA			
Fault disconnection electronics (FDE) available	-	Yes			

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for absolute pressure (from gauge pressure series)

SITRANS P DS III series for absolute pressure (from the gauge pressure series)			
Certificates and approvals	HART PROFIBUS PA/ FOUNDATION Fieldbus		
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)		
Explosion protection			
Intrinsic safety "i"	PTB 13 ATEX 2007 X		
- Marking	Ex II 1/2 G Ex ia/ib IIC T4/T5/T6 Ga/Gb		
- Permissible ambient temperature	-40 +85 °C (-40 +185 °F) temperature class T4; -40 +70 °C (-40 +158 °F) temperature class T5; -40 +60 °C (-40 +140 °F) temperature class T6		
- Connection	To certified intrinsically-safe circuits with peak values: $U_{\rm i}$ = 30 V, $I_{\rm i}$ = 100 mA, $P_{\rm i}$ = 750 mW; $P_{\rm i}$ = 300 Ω	FISCO supply unit: $U_0 = 17.5 \text{ V}$, $I_0 = 380 \text{ mA}$, $P_0 = 5.32 \text{ W}$ Linear barrier: $U_0 = 24 \text{ V}$, $I_0 = 250 \text{ mA}$, $P_0 = 1.2 \text{ W}$	
- Effective internal inductance/capacitance	$L_{\rm i} = 0.4$ mH, $C_{\rm i} = 6$ nF	$L_{\rm i} = 7 \mu \text{H}, C_{\rm i} = 1.1 \text{nF}$	
• Explosion-proof "d"	PTB 99 ATEX 1160		
- Marking	Ex II 1/2 G Ex d IIC T4/T6 Gb		
- Permissible ambient temperature	-40 +85 °C (-40 +185 °F) temperature class T4; -40 +60 °C (-40 +140 °F) temperature class T6		
- Connection	To circuits with values: $U_{\rm H}$ = 10.5 45 V DC	To circuits with values: $U_{\rm H}$ = 9 32 V DC	
 Dust explosion protection for zone 20 	PTB 01 ATEX 2055		
- Marking	Ex II 1 D Ex ta IIIC T120°C Da Ex II 1/2 D Ex ta/tb IIIC T120°C Da/Db		
- Permissible ambient temperature	-40 +85 °C (-40 +185 °F)		
- Max. surface temperature	120 °C (248 °F)		
- Connection	To certified intrinsically-safe circuits with peak values: $U_{\rm i}=30$ V, $I_{\rm i}=100$ mA, $P_{\rm i}=750$ mW, $P_{\rm i}=300$ Ω	FISCO supply unit: $U_0 = 17.5 \text{ V}$, $I_0 = 380 \text{ mA}$, $P_0 = 5.32 \text{ W}$ Linear barrier: $U_0 = 24 \text{ V}$, $I_0 = 250 \text{ mA}$, $P_0 = 1.2 \text{ W}$	
- Effective internal inductance/capacitance	$L_{\rm i} = 0.4 {\rm mH}, \ C_{\rm i} = 6 {\rm nF}$	$L_{i} = 7 \mu H, C_{i} = 1.1 \text{ nF}$	
 Dust explosion protection for zone 21/22 	PTB 01 ATEX 2055		
- Marking	Ex II 2 D Ex tb IIIC T120°C Db		
- Connection	To circuits with values: $U_{\rm H}$ = 10.5 45 V DC; $P_{\rm max}$ = 1.2 W	To circuits with values: $U_{\rm H}$ = 9 32 V DC; $P_{\rm max}$ = 1 W	
 Type of protection "n" (zone 2) 	PTB 13 ATEX 2007 X		
- Marking	Ex II 2/3 G Ex nA IIC T4/T5/T6 Gb/Gc Ex II 2/3 G Ex ic IIC T4/T5/T6 Gb/Gc		
- Connection (Ex nA)	$U_{\rm m} = 45 \text{ V}$	$U_{\rm m} = 32 \text{ V}$	
- Connection (Ex ic)	To circuits with values: $U_i = 45 \text{ V}$	FISCO supply unit ic: $U_0 = 17.5 \text{ V}$, $I_0 = 570 \text{ mA}$ Linear barrier: $U_0 = 32 \text{ V}$, $I_0 = 132 \text{ mA}$, $P_0 = 1 \text{ W}$	
- Effective internal inductance/capacitance	$L_{i} = 0.4 \text{ mH}, C_{i} = 6 \text{ nF}$	$L_{i} = 7 \mu H, C_{i} = 1.1 nF$	
 Explosion protection acc. to FM 	Certificate of Compliance 3008490		
- Identification (XP/DIP) or (IS); (NI)	CL I, DIV 1, GP ABCD T4T6; CL II, DIV 1, GP EFG; CL III; CL I, ZN 0/1 AEx ia IIC T4T6; CL I, DIV 2, GP ABCD T4T6; CL II, DIV 2, GP FG; CL III		
 Explosion protection to CSA 	Certificate of Compliance 1153651		
- Identification (XP/DIP) or (IS)	CL I, DIV 1, GP ABCD T4T6; CL II, DIV 1, GP EFG; CL III; Ex ia IIC T4T6; CL I, DIV 2, GP ABCD T4T6; CL II, DIV 2, GP FG; CL III		

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

		for absolute pressure (from gauge pressure series)		
HART communication		FOUNDATION Fieldbus			
HART	230 1100 Ω	communication			
Protocol	HART Version 5.x	Function blocks	3 function blocks analog input, 1 function block PID		
Software for computer	SIMATIC PDM	Analog input			
PROFIBUS PA communication		- Adaptation to customer-specif-	Yes, linearly rising or falling		
Simultaneous communication with master class 2 (max.)	4	ic process variables	characteristic		
The address can be set using	Configuration tool or local opera-	- Electrical damping, adjustable	0 100 s		
The address can be set using	tion (standard setting address 126)	- Simulation function	Output/input (can be locked within the device with a bridge)		
Cyclic data usage		- Failure mode	parameterizable (last good value, substitute value, incorrect		
Output byte	5 (one measured value) or		value)		
	10 (two measured values)	- Limit monitoring	Yes, one upper and lower warn-		
Input byte	0, 1, or 2 (register operating mode and reset function for		ing limit and one alarm limit respectively		
	metering)	- Square-rooted characteristic	Yes		
Internal preprocessing		for flow measurement			
Device profile	PROFIBUS PA Profile for Process Control Devices Version	• PID	Standard FOUNDATION Fieldbus function block		
	3.0, class B	 Physical block 	1 resource block		
Function blocks	2	Transducer blocks	1 transducer block Pressure with		
 Analog input 			calibration, 1 transducer block LCD		
 Adaptation to customer-specific process variables 	Yes, linearly rising or falling characteristic	Pressure transducer block			
- Electrical damping, adjustable	0 to 100 s	 Can be calibrated by applying two pressures 	Yes		
- Simulation function	Input /Output	- Monitoring of sensor limits	Yes		
- Failure mode	parameterizable (last good value, substitute value, incorrect value)	Simulation function: Measured pressure value, sensor tem-	Constant value or over parameterizable ramp function		
- Limit monitoring	Yes, one upper and lower warning limit and one alarm limit respectively	perature and electronics tem- perature	, i		
Register (totalizer)	Can be reset, preset, optional direction of counting, simulation function of register output				
- Failure mode	parameterizable (summation with last good value, continuous summation, summation with incorrect value)				
- Limit monitoring	One upper and lower warning limit and one alarm limit respec- tively				
DI : 111 1					

• Physical block

Transducer blocks

• Pressure transducer block

- Can be calibrated by applying two pressures

- Monitoring of sensor limits

- Specification of a container

and implementation point of square-root extraction - Simulation function for mea-

sured pressure value and sensor temperature

characteristic with - Square-rooted characteristic

for flow measurement - Gradual volume suppression 1 2

Yes

Yes

Yes

Max. 30 nodes

Parameterizable

Constant value or over parame-

terizable ramp function

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for absolute pressure (from gauge pressure series)

for absolute pressure (from gauge pressure series)							
Selection and Ordering data			Article No.				
<u> </u>		7	7MF4233-				
from gauge pressure series							
SITRANS P DS III with I							
✓ Click on the Article N ration in the PIA Life	lo. for the online configu- Cycle Portal.						
Measuring cell filling	Measuring cell						
Silicone oil	cleaning normal		1				
Inert liquid ¹⁾	grease-free to		3				
more iiquid	cleanliness level 2						
Measuring span (min.	max.)						
8.34 250 mbar a	(0.13 3.63 psi a)		D				
43.34 1300 mbar a	(0.63 18.86 psi a)		F				
0.17 5 bar a	(2.43 72.5 psi a)		G				
1 30 bar a	(14.6 435 psi a)		Н				
5.34 160 bar a ²⁾	(77.4 2 321 psi a)		L				
13.34 400 bar a ²⁾	(193.4 5 802 psi a)		M				
23.34 700 bar a ²⁾	(338.43 10 153 psi a)		N				
Wetted parts materials Seal diaphragm	Process connection						
Stainless steel	Stainless steel						
Stainless steel Hastelloy	Stainless steel Stainless steel		A E				
Hastelloy	Hastellov						
	seals in conjunction with			1			
process connector "fem (recommended version	ale thread ½-14 NPT"						
			Ι.				
Version for diaphragm s	seals in conjunction		١	0			
with process connector shank" 3) 4) 5) 6) 7)	G72B CONNECTION						
Process connection							
• Connection shank G½B to EN 837-1				0			
• Female thread ½-14 NPT				1			
Stainless steel oval flagger							
nection (Oval flange h - Mounting thread ⁷ / ₁₆				2			
IEC 61518/DIN EN 6	5-20 ONF 10 51518						
- Mounting thread M1	0 to DIN 19213			3			
- Mounting thread M1	2 to DIN 19213			4			
 Male thread M20 x 1.5 				5			
• Male thread ½ -14 NP	T			6			
•	Non-wetted parts materials Housing made of die-cast aluminium						
Housing made of die-cast aluminium Housing stainless steel precision casting ⁸⁾			0 3				
Version				J			
Standard version, German plate inscription,					1		
setting for pressure unit: bar							
 International version, English plate inscription, setting for pressure unit: bar 					2		
Chinese version, English plate inscription,					3		
setting for pressure unit: Pascal All versions include DVD with compact operat-							
ing instructions in various EU languages.							
Explosion protection							
None With ATEX Type of pr	ataction:					A	
With ATEX, Type of pre- "Intrinsic sefety (Ex.) "Intrinsic sefety						В	
"Intrinsic safety (Ex i"Explosion-proof (Ex						D D	
- "Intrinsic safety and						P	
(Ex ia + Ex d)"10)							
, , , , , , , , , , , , , , , , , , , ,	- "Ex nA/ic (Zone 2)" ¹¹⁾					E	
- "Intrinsic safety, explanation	losion-proof enclosure					R	
Zone 1D/2D)" ¹⁰⁾¹²⁾	protection (Ex ia+ Ex d +						
• FM + CSA intrinsic sa	fe (is) ¹³⁾					F	
• FM + CSA (is + ep) + Zone 1D/2D ¹⁰) ¹²) ¹³)	Ex ia + Ex d (ATEX) +					S	
 With FM + CSA, Type "Intrinsic Safe and E 						NC	
(is + xp) ^{#9)13)}	Αρισσιστή του!					.,,	

Selection and Ordering data	Article No.			
Pressure transmitters for absolute pressure	7MF4233-			
from gauge pressure series SITRANS P DS III with HART				
Electrical connection/cable entry				
 Screwed gland M20x1.5 	В			
 Screwed gland ½-14 NPT 	C			
 Han 7D device plug (plastic housing) incl. mating connector¹⁴⁾ 	D			
 M12 device plugs (stainless steel) ^{15) 16)} 	F			
Display				
Without display	0			
 Without visible display (display concealed, setting: mA) 	1			
 With visible display (setting: mA) 	6			
 with customer-specific display (setting as specified, Order code "Y21" or "Y22" required) 	7			

Power supply units see Chap. 7 "Supplementary Components".

A quick-start guide is included in the scope of delivery of the device.

- 1) For oxygen application, add Order code E10.
- 2) Available soon
- 3) Version 7MF4233-1DY... only up to max. span 200 mbar a (80 inH₂O a).
- 4) When the manufacture's certificate (calibration certificate) has to be ordered for transmitters with diaphragm seals according to IEC 60770-2, it is recommended only to order this certificate exclusively with the diaphragm seals. The measuring accuracy of the total combination is certified here. If the acceptance test certificate 3.1 is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.
- 5) If the acceptance test certificate 3.1.is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.
- 6) The diaphragm seal is to be specified with a separate order number and must be included with the transmitter order number, for example 7MF423.-.Y..-.... and 7MF4900-1...-.B
- 7) The standard measuring cell filling for configurations with remote seals (Y) is silicone oil.
- 8) Not in conjunction with Electrical connection "Han 7D device plug".
- 9) Without cable gland, with blanking plug.
- 10) With enclosed cable gland Ex ia and blanking plug.
- ¹¹⁾ Configurations with Han and M12 device plugs are only available in Ex ic.
- 12) Only in connection with IP66.
- Explosion protection acc. to FM/CSA: suitable for installations according to NEC 500/505.
- ¹⁴⁾ Only in connection with Ex apporval A, B or E.
- 15) Only in connection with Ex apporval A, B, E or F.
- 16) M12 delivered without cable socket

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for absolute pressure (from gauge pressure series)

Calcation and Orderin	n data	Λ r+		ا ما	N I e	_	_	=
Selection and Orderin Pressure transmitters	-	Art	IC	ie i	N).		
from gauge pressure								
SITRANS P DS III with PROFIBUS PA (PA)			۱F	4 :	2 :	3 4	-	
SITRANS P DS III with FOUNDATION Fieldbus (FF)			۱F	4 :	2 :	3 5	-	
Click on the Article N ration in the PIA Life	No. for the online configu- Cycle Portal.	r				Ī		
Measuring cell filling	Measuring cell cleaning							
Silicone oil	normal	1						
Inert liquid ¹⁾	grease-free to cleanliness level 2	3						
Nominal measuring ra	nge							
250 mbar a	(3.63 psi a)	D						
1300 mbar a	(18.86 psi a)	F						
5 bar a	(72.5 psi a)	G						
30 bar a	(435 psi a)	H						
160 bar a ²⁾ 400 bar a ²⁾	(2 321 psi a) (5 802 psi a)	L						
700 bar a ²⁾	(10 153 psi a)	N						
Wetted parts materials								
Seal diaphragm	Process connection							
Stainless steel	Stainless steel		Α					
Hastelloy	Stainless steel		В					
Hastelloy	Hastelloy		С					
Version for diaphragm seals in conjunction with			Υ	1				
process connector "female thread ½-14 NPT" (recommended version) 3) 4) 5) 6) 7)								
Version for diaphragm s			Υ	0				
with process connector "G½B connection shank	("" 3) 4) 5) 6) 7)							
Process connection								
Connection shank G½				0				
• Female thread ½-14 N				1				
tion (Oval flange has i	inge with process connec- no female thread)							
- Mounting thread ⁷ / ₁₀ IEC 61518/DIN EN 6	-20 UNF to			2				
- Mounting thread M1				3				
- Mounting thread M1				4				
 Male thread M20 x 1.5 				5				
• Male thread ½ -14 NP	T			6				
Non-wetted parts mate								
Housing made of die-Housing stainless stee					3			
Version								
 Standard version, Ger setting for pressure ur 						1		
	English plate inscription,					2		
setting for pressure un	nit: bar					ĺ		
Chinese version, Engli						3		
setting for pressure un								
instructions in various E	D with compact operating U languages.							

Selection and Ordering data	Article No.
Pressure transmitters for absolute pressure from gauge pressure series	
SITRANS P DS III with PROFIBUS PA (PA)	7 M F 4 2 3 4 -
SITRANS P DS III with FOUNDATION Fieldbus (FF)	7MF4235-
·	THE RESERVE
Explosion protection	
• None	A
 With ATEX, Type of protection: 	
- "Intrinsic safety (Ex ia)"	В
- "Explosion-proof (Ex d)"8)	D
- "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)" ⁽⁹⁾	P
- "Ex nA/ic (Zone 2)" 10)	E
 "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)*9)*11) 	R
• FM + CSA intrinsic safe (is) ¹²⁾	F
• FM + CSA (is + ep) + Ex ia + Ex d (ATEX) + Zone 1D/2D ⁹⁾¹¹⁾¹²⁾	S
• With FM + CSA, Type of protection:	
 "Intrinsic Safe and Explosion Proof (is + xp)"⁸)12) 	N C
Electrical connection/cable entry	
Screwed gland M20 x 1.5	В
• Screwed gland ½-14 NPT	C
M12 device plugs (stainless steel) ^{13) 14)}	•
Display	
Without display Without visible display	0
 Without visible display (display concealed, setting: bar) 	1
With visible display (setting: bar)	6
with customer-specific display	7
(setting as specified, Order code "Y21" or "Y22" required)	

A quick-start guide is included in the scope of delivery of the device.

- 1) For oxygen application, add Order code E10.
- 2) Available soon
- 3) Version 7MF4233-1DY... only up to max. span 200 mbar a (2.9 psi a).
- 4) When the manufacture's certificate (calibration certificate) has to be ordered for transmitters with diaphragm seals according to IEC 60770-2, it is recommended only to order this certificate exclusively with the diaphragm seals. The measuring accuracy of the total combination is certified here.
- 5) If the acceptance test certificate 3.1.is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.
- The diaphragm seal is to be specified with a separate order number and must be included wiht the transmitter order number, for example 7MF423.-..Y..-... and 7MF4900-1...-.B
- 7) The standard measuring cell filling for configurations with remote seals (Y) is silicone oil.
- 8) Without cable gland, with blanking plug.
- 9) With enclosed cable gland Ex ia and blanking plug.
- 10) Configurations with Han and M12 device plugs are only available in Ex ic.
- ¹¹⁾Only in connection with IP66.
- 12) Explosion protection acc. to FM/CSA: suitable for installations according to NEC 500/505.
- 13) Only in connection with Ex approval A, B, E or F.
- ¹⁴⁾ M12 delivered without cable socket.

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for absolute pressure (from gauge pressure series)

Selection and Ordering data Further designs Add '-Z' to Article No. and specify Order code. Pressure transmitter with mounting bracket (1x fixing angle, 2 x nut, 2 x U-washer or 1 x bracket, 2 x u-washer or 1 x u-washer or	ioi absolute pressure (iroiii gauge	p. 000 u.		100)	
Add "-Z" to Article No. and specify Order code. Pressure transmitter with mounting bracket (1x fixing angle, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x U-washer or 1		Order	code		
code. Pressure transmitter with mounting bracket (1x fixing angle, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x u-washer or 1 x bracket, 2 x u-washer or 1 x bracket, 2 x u-washer or 1 x u-washer o	Further designs		HART	PA	FF
bracket (1x fixing angle, 2x nut, 2 x U-washer) made of: • Steel • Steel • Steel • Stainless steel 304 • Stainless steel 316L Device plugs ¹ • Han 7D (metal) • Han 8D (instead of Han 7D) • Angled • Han 8D (metal) • Han 8D (metal) • Angled • A32 • Han 8D (metal) Cable sockets for M12 device plugs (metal (CuZn)) Rating plate inscription (instead of German) • English • French • Spanish • Italian • Cyrillic (russian) English rating plate Pressure units in inH ₂ 0 and/or psi Quality Inspection Certificate (5-point characteristic curve test) according to IEC 6770-2² Inspection certificate (EN 10204-3.1) PMI test of parts in contact with medium Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (Table Sil					
washer) made of: Steel A01 ✓	bracket (1x fixing angle, 2 x nut, 2 x U-				
• Stainless steel 304 • Stainless steel 316L Device plugs¹¹ • Han 7D (metal) • Han 8D (instead of Han 7D) • Angled • Han 8D (instead of Han 7D) • Angled • Han 8D (metal) • Aa30 • Argled • Han 8D (metal) Cable sockets for M12 device plugs (metal (CuZn)) Rating plate inscription (instead of German) • English • French • French • Spanish • Italian • Cyrillic (russian) • English rating plate Pressure units in inH₂0 and/or psi Quality Inspection Certificate (5-point characteristic curve test) according to IEC 60770-22¹ Inspection certificate Acc. to EN 10204-3.1 Pattern of End 10204-3.1 PMI test of parts in contact with medium Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SiL conformity declaration Functional safety (PROFisafe) Certificate and PROFisafe protocol Functional safety (PROFisafe) Certificate and PROFisafe Certificate and PROFis					
• Stainless steel 316L Device plugs¹) • Han 7D (metal) • Han 8D (instead of Han 7D) • Angled • Han 8D (metal) • Han 8D (metal) • Han 8D (metal) • Angled • Han 8D (metal) • Cable sockets for M12 device plugs (metal (CuZn)) Rating plate inscription (instead of German) • English • French • Spanish • Italian • Spanish • Italian • Cyrillic (russian) English rating plate Pressure units in inH₂0 and/or psi Quality Inspection Certificate (5-point characteristic curve test) according to IEC 60770-2²) Inspection certificate C11 • Acc. to EN 10204-3.1 PAcc. to EN 10204-3.1 PMI test of parts in contact with medium Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsate) Certificate and PROFIsate protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2) PED for Russia with initial calibration mark Setting of the upper saturation limit of the output signal to 22.0 mA Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009) Degree of protection IP66/IP68 (only for M20 x 1.5 and ½-14 NPT) Supplied with oval flange Capri cable gland 4F CrNi and clamping device (848699 + 810634) included Use in or on zone 1D/2D5¹) (only together with type of protection 'Intrinsic safety' (transmitter 7MF4	• Steel	A01		✓	✓
Device plugs¹) - Han 7D (metal) - Han 8D (instead of Han 7D) - Angled - Angled - Angled - Han 8D (metal) - Cable sockets for M12 device plugs (metal (CuZn)) Rating plate inscription (instead of German) - English - French - Spanish - Italian - Cyrillic (russian) English rating plate - Cyrillic (russian) English rating plate - Resure units in inH₂0 and/or psi - Quality Inspection Certificate (5-point characteristic curve test) according to IEC 60770-2² Inspection certificate (S-point characteristic curve test) according to IEC 60770-2² Inspection certificate (EN 10204-3.1) Factory certificate - Acc. to EN 10204-2.2 - Acceptance certificate (EN 10204-3.1) PMI test of parts in contact with medium Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61514. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61508 and IEC 615011. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61508 and IEC 615011. Includes SIL conformity declaration Functional	Stainless steel 304		✓	✓	✓
• Han 7D (metal) • Han 8D (instead of Han 7D) • Han 8D (instead of Han 7D) • Angled • Angled • Han 8D (instead of Han 7D) • Angled • Han 8D (metal) Cable sockets for M12 device plugs (metal (CuZn)) Rating plate inscription (instead of German) • English • Ernglish • French • Spanish • Italian • Cyrillic (russian) • English rating plate • Pressure units in inH ₂ 0 and/or psi Quality Inspection Certificate (5-point characteristic curve test) according to IEC 60770-22 Inspection certificate • Cac. to EN 10204-3.1 Factory certificate • Cac. to EN 10204-3.1 PMI test of parts in contact with medium Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity of Cac of the output signal to 22.0 mA Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009) Degree of protection IP66/IP68 (only for M20 x 1.5 and ½-14 NPT) Supplied with oval flange (1 item), PTFE packing and screws in thread of oval flange Capri cable gland 4F CrNi and clamping device (848699 + 810634) included Use in or on zone 1D/2D5 (only together with type of protection 'Intrinsic safety' (transmitter 'TMF4	Stainless steel 316L	A03	✓	✓	✓
• Han 8D (instead of Han 7D) • Angled • Angled • Angled • Angled • Angled • Han 8D (metal) Cable sockets for M12 device plugs (metal (CuZn)) Rating plate inscription (instead of German) • English • French • Spanish • Italian • Cyrillic (russian) • English rating plate • Pressure units in inH ₂ 0 and/or psi Quality Inspection Certificate (5-point characteristic curve test) according to IEC 60770-2² Inspection certificate • Acc. to EN 10204-3.1 Factory certificate • Acc. to EN 10204-2.2 Acceptance certificate (EN 10204-3.1) PMI test of parts in contact with medium Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration PED for Russia with initial calibration mark Setting of the upper saturation limit of the output signal to 22.0 mA Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009) Degree of protection IP66/IP68 (only for M20 x 1.5 and ½-14 NPT) Supplied with oval flange (1 item), PTFE packing and screws in thread of oval flange Capri cable gland 4F CrNi and clamping device (848699 + 810634) included Use in or on zone 1D/2D ⁵⁾ (only together with type of protection 'Intrinsic safety' (transmitter '7MF-1B Ex ia) and IP65) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140 °F))	. •				
• Angled • Han 8D (metal) Cable sockets for M12 device plugs (metal (CuZn)) Rating plate inscription (instead of German) • English • French • Spanish • Italian • Cyrillic (russian) English (russian) • English (surprise) • English (surprise) • Spanish • Italian • Italian • Cyrillic (russian) • English rating plate Pressure units in inH ₂ 0 and/or psi Quality Inspection Certificate (5-point characteristic curve test) according to IEC 60770-2² Inspection certificate Acc. to EN 10204-3.1 Factory certificate Acc. to EN 10204-3.1 PMI test of parts in contact with medium Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (FROFisafe) Certificate and PROFisafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration FED for Russia with initial calibration mark Setting of the upper saturation limit of the output signal to 22.0 mA Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009) Degree of protection IP66/IP68 (only for M20 x 1.5 and ½-14 NPT) Supplied with oval flange (1 item), PTFE packing and screws in thread of oval flange Capri cable gland 4F CrNi and clamping device (848699 + 810634) included Use in or on zone 1D/2D5) (only together with type of protection 'Intrinsic safety' (transmitter 7MF4B. Ex ia) and IP65) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140°F))	• •				
• Han 8D (metal) Cable sockets for M12 device plugs (metal (CuZn)) Rating plate inscription (instead of German) • English • French • Spanish • Italian • Cyrillic (russian) English rating plate • Pressure units in inH ₂ 0 and/or psi Quality Inspection Certificate (5-point characteristic curve test) according to IEC 60770-2² Inspection certificate Acc. to EN 10204-3.1 Factory certificate Acc. to EN 10204-3.1 Factory certificate (EN 10204-3.1) PMI test of parts in contact with medium Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (The Profication of the output signal to 22.0 mA Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009) Degree of protection IP66/IP68 (only for M20 x 1.5 and ½-14 NPT) Supplied with oval flange	,				
Cable sockets for M12 device plugs (metal (CuZn)) Rating plate inscription (instead of German) • English • French • English • French • Spanish • Italian • Cyrillic (russian) English rating plate • Cyrillic (russian) English rating plate Pressure units in inH ₂ 0 and/or psi Quality Inspection Certificate (5-point characteristic curve test) according to IEC 60770-29 Inspection certificate Acc. to EN 10204-3.1 Factory certificate Acc. to EN 10204-2.2 Acceptance certificate (EN 10204-3.1) PMI test of parts in contact with medium Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (PROFIsafe) Certificate and PROFIsafe Cal 4	•				
(metal (CuZn)) Rating plate inscription (instead of German) English B11 ✓ ✓ • English B12 ✓ ✓ • Spanish B13 ✓ ✓ • Cyrillic (russian) B16 ✓ ✓ English rating plate B21 ✓ ✓ Pressure units in inH₂0 and/or psi B16 ✓ ✓ Quality Inspection Certificate (S-point characteristic curve test) according to IEC 60770-2² C12 ✓ ✓ Quality Inspection Certificate (S-point characteristic curve test) according to IEC 60770-2² C12 ✓ ✓ ✓ Inspection certificate C14 ✓ ✓ ✓ Acc. to EN 10204-2.2 Acc. to EN 10204-3.1 C15 ✓ ✓ Factory certificate C14 ✓ ✓ ✓ Mult test of parts in contact with medium Functional safety (SIL2) C20 ✓ Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration C20 ✓ Functional safety (SIL2/3) C22 ✓ Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity d					,
• English • English • French • French • Spanish • Italian • Cyrillic (russian) English rating plate Pressure units in inH ₂ 0 and/or psi Quality Inspection Certificate (5-point characteristic curve test) according to IEC 60770-2²) Inspection certificate³) Acc. to EN 10204-3.1 Factory certificate Acc. to EN 10204-2.2 Acceptance certificate (EN 10204-3.1) Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Cezi		A50	1	√	✓
• English • French • Spanish • Italian • Cyrillic (russian) English rating plate Pressure units in inH ₂ 0 and/or psi Quality Inspection Certificate (5-point characteristic curve test) according to IEC 60770-2²) Inspection certificate ³⁾ Acc. to EN 10204-3.1 Factory certificate Acc. to EN 10204-2.2 Acceptance certificate (EN 10204-3.1) PMI test of parts in contact with medium Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration PED for Russia with initial calibration mark Setting of the upper saturation limit of the output signal to 22.0 mA Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009) Degree of protection IP66/IP68 (only for M20 x 1.5 and ½-14 NPT) Supplied with oval flange Capri cable gland 4F CrNi and clamping device (848699 + 810634) included Use in or on zone ID/2D ⁵⁾ (only together with type of protection 'Intrinsic safety' (transmitter 7MF4B. Ex ia) and IP65) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140°F)					
• Spanish • Italian • Italian • Cyrillic (russian) English rating plate Pressure units in inH ₂ 0 and/or psi Quality Inspection Certificate (5-point characteristic curve test) according to IEC 60770-2² Inspection certificate³ Acc. to EN 10204-3.1 Factory certificate Acc. to EN 10204-2.2 Acceptance certificate (EN 10204-3.1) PMI test of parts in contact with medium Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2) Certificate and PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) C220 C214) C220 C24 C25 C26 C27 C27 C27 C27 C29 C29 C29 C214) C20 C	· ·	B11	1	✓	1
• Italian • Cyrillic (russian) • Cyrillic (russian) • Cyrillic (russian) • Cyrillic (russian) • English rating plate Pressure units in inH ₂ 0 and/or psi Quality Inspection Certificate (5-point characteristic curve test) according to IEC 60770-2²) Inspection certificate³) Acc. to EN 10204-3.1 Factory certificate Acc. to EN 10204-2.2 Acceptance certificate (EN 10204-3.1) PMI test of parts in contact with medium Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration PED for Russia with initial calibration mark Setting of the upper saturation limit of the output signal to 22.0 mA Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009) Degree of protection IP66/IP68 (Only for M20 x 1.5 and ½-14 NPT) Supplied with oval flange (1 item), PTFE packing and screws in thread of oval flange Capri cable gland 4F CrNi and clamping device (848699 + 810634) included Use in or on zone ID/2D ⁵⁾ (only together with type of protection "Intrinsic safety" (transmitter 7MF4	• French	B12			
• Cyrillic (russian) English rating plate Pressure units in inH₂0 and/or psi Quality Inspection Certificate (5-point characteristic curve test) according to IEC 60770-2² Inspection certificate³ Acc. to EN 10204-3.1 Factory certificate Acc. to EN 10204-2.2 Acceptance certificate (EN 10204-3.1) PMI test of parts in contact with medium Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (ROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration PED for Russia with initial calibration mark Setting of the upper saturation limit of the output signal to 22.0 mA Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009) Degree of protection IP66/IP68 (only for M20 x 1.5 and ½-14 NPT) Supplied with oval flange (1 item), PTFE packing and screws in thread of oval flange Capri cable gland 4F CrNi and clamping device (848699 + 810634) included Use in or on zone 1D/2D ⁵⁾ Conly together with type of protection "Intrinsic safety" (transmitter 7MF4,,B. Ex ia) and IP65) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140 °F))	•				
English rating plate Pressure units in inH ₂ 0 and/or psi Quality Inspection Certificate (5-point characteristic curve test) according to IEC 60770-2²) Inspection certificate³ Acc. to EN 10204-3.1 Factory certificate Acc. to EN 10204-2.2 Acceptance certificate (EN 10204-3.1) PMI test of parts in contact with medium Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration PED for Russia with initial calibration mark Setting of the upper saturation limit of the output signal to 22.0 mA Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009) Degree of protection IP66/IP68 (only for M20 x 1.5 and ½-14 NPT) Supplied with oval flange (1 item), PTFE packing and screws in thread of oval flange Capri cable gland 4F CrNi and clamping device (848699 + 810634) included Use in or on zone 1D/2D ⁵⁾ (only together with type of protection 'Intrinsic safety' (transmitter 7MF4B. Ex ia) and IP65) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140 °F))					
Pressure units in inH ₂ 0 and/or psi Quality Inspection Certificate (5-point characteristic curve test) according to IEC 60770-2²1 Inspection certificate³ Acc. to EN 10204-3.1 Factory certificate (EN 10204-3.1) PMI test of parts in contact with medium Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration PED for Russia with initial calibration mark Setting of the upper saturation limit of the output signal to 22.0 mA Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009) Degree of protection IP66/IP68 (only for M20 x 1.5 and ½-14 NPT) Supplied with oval flange (1 item), PTFE packing and screws in thread of oval flange Capri cable gland 4F CrNi and clamping device (848699 + 810634) included Use in or on zone 1D/2D ⁵⁾ (only together with type of protection "Intrinsic safety" (transmitter 7MF4B. Ex ia) and IP65) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140 °F))					
Quality Inspection Certificate (5-point characteristic curve test) according to IEC 60770-221 Inspection certificate ³⁾ Acc. to EN 10204-3.1 Factory certificate Acc. to EN 10204-2.2 Acceptance certificate (EN 10204-3.1) PMI test of parts in contact with medium Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration PED for Russia with initial calibration mark Setting of the upper saturation limit of the output signal to 22.0 mA Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009) Degree of protection IP66/IP68 (only for M20 x 1.5 and ½-14 NPT) Supplied with oval flange (1 item), PTFE packing and screws in thread of oval flange Capri cable gland 4F CrNi and clamping device (848699 + 810634) included Use in or on zone 1D/2D ⁵⁾ (only together with type of protection "Intrinsic safety" (transmitter 7MF4B. Ex ia) and IP65) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140 °F))		B21	✓	✓	1
characteristic curve test) according to IEC 60770-22 Inspection certificate ³⁾ Acc. to EN 10204-3.1 Factory certificate Acc. to EN 10204-2.2 Acceptance certificate (EN 10204-3.1) PMI test of parts in contact with medium Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration PED for Russia with initial calibration mark Setting of the upper saturation limit of the output signal to 22.0 mA Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009) Degree of protection IP66/IP68 (only for M20 x 1.5 and ½-14 NPT) Supplied with oval flange (1 item), PTFE packing and screws in thread of oval flange Capri cable gland 4F CrNi and clamping device (848699 + 810634) included Use in or on zone 1D/2D ⁵⁾ (only together with type of protection 'Intrinsic safety' (transmitter 7MF4B. Ex ia) and IP65) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140°F))					
Acc. to EN 10204-3.1 Factory certificate Acc. to EN 10204-2.2 Acceptance certificate (EN 10204-3.1) PMI test of parts in contact with medium Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration PED for Russia with initial calibration mark Setting of the upper saturation limit of the output signal to 22.0 mA Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009) Degree of protection IP66/IP68 (only for M20 x 1.5 and ½-14 NPT) Supplied with oval flange (1 item), PTFE packing and screws in thread of oval flange Capri cable gland 4F CrNi and clamping device (848699 + 810634) included Use in or on zone 1D/2D ⁵⁾ (only together with type of protection "Intrinsic safety" (transmitter 7MF4B. Ex ia) and IP65) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140°F))	characteristic curve test) according to	C11	✓	✓	✓
Acc. to EN 10204-2.2 Acceptance certificate (EN 10204-3.1) PMI test of parts in contact with medium Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration PED for Russia with initial calibration mark Setting of the upper saturation limit of the output signal to 22.0 mA Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009) Degree of protection IP66/IP68 (only for M20 x 1.5 and ½-14 NPT) Supplied with oval flange (1 item), PTFE packing and screws in thread of oval flange Capri cable gland 4F CrNi and clamping device (848699 + 810634) included Use in or on zone 1D/2D ⁵⁾ (only together with type of protection "Intrinsic safety" (transmitter 7MF4B. Ex ia) and IP65) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140°F))	•	C12	✓	✓	✓
Acceptance certificate (EN 10204-3.1) PMI test of parts in contact with medium Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration PED for Russia with initial calibration mark Setting of the upper saturation limit of the output signal to 22.0 mA Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009) Degree of protection IP66/IP68 (only for M20 x 1.5 and ½-14 NPT) Supplied with oval flange (1 item), PTFE packing and screws in thread of oval flange Capri cable gland 4F CrNi and clamping device (848699 + 810634) included Use in or on zone 1D/2D ⁵⁾ (only together with type of protection 'Intrinsic safety' (transmitter 7MF4B. Ex ia) and IP65) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140°F))		C14	✓	✓	✓
Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration PED for Russia with initial calibration mark Setting of the upper saturation limit of the output signal to 22.0 mA Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009) Degree of protection IP66/IP68 (only for M20 x 1.5 and ½-14 NPT) Supplied with oval flange (1 item), PTFE packing and screws in thread of oval flange Capri cable gland 4F CrNi and clamping device (848699 + 810634) included Use in or on zone 1D/2D ⁵) (only together with type of protection "Intrinsic safety" (transmitter 7MF4B. Ex ia) and IP65) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140°F))	Acceptance certificate (EN 10204-3.1)	C15	✓	✓	✓
Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration PED for Russia with initial calibration mark Setting of the upper saturation limit of the output signal to 22.0 mA Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009) Degree of protection IP66/IP68 (only for M20 x 1.5 and ½-14 NPT) Supplied with oval flange (1 item), PTFE packing and screws in thread of oval flange Capri cable gland 4F CrNi and clamping device (848699 + 810634) included Use in or on zone 1D/2D ⁵⁾ (only together with type of protection "Intrinsic safety" (transmitter 7MF4B. Ex ia) and IP65) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140 °F))	Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL confor-	C20	✓		
Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration PED for Russia with initial calibration mark Setting of the upper saturation limit of the output signal to 22.0 mA Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009) Degree of protection IP66/IP68 (only for M20 x 1.5 and ½-14 NPT) Supplied with oval flange (1 item), PTFE packing and screws in thread of oval flange Capri cable gland 4F CrNi and clamping device (848699 + 810634) included Use in or on zone 1D/2D ⁵⁾ (only together with type of protection "Intrinsic safety" (transmitter 7MF4B. Ex ia) and IP65) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140°F))	Functional safety (PROFIsafe)	C21 ⁴⁾		✓	
mark Setting of the upper saturation limit of the output signal to 22.0 mA Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009) Degree of protection IP66/IP68 (only for M20 x 1.5 and ½-14 NPT) Supplied with oval flange (1 item), PTFE packing and screws in thread of oval flange Capri cable gland 4F CrNi and clamping device (848699 + 810634) included Use in or on zone 1D/2D ⁵⁾ (only together with type of protection "Intrinsic safety" (transmitter 7MF4B. Ex ia) and IP65) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140°F))	Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL confor-	C23	✓		
the output signal to 22.0 mA Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009) Degree of protection IP66/IP68 (only for M20 x 1.5 and ½-14 NPT) Supplied with oval flange (1 item), PTFE packing and screws in thread of oval flange Capri cable gland 4F CrNi and clamping device (848699 + 810634) included Use in or on zone 1D/2D ⁵) (only together with type of protection "Intrinsic safety" (transmitter 7MF4B Ex ia) and IP65) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140 °F))		C99	✓	✓	✓
(MR 0103-2012 and MR 0175-2009) Degree of protection IP66/IP68 (only for M20 x 1.5 and ½-14 NPT) Supplied with oval flange (1 item), PTFE packing and screws in thread of oval flange Capri cable gland 4F CrNi and clamping device (848699 + 810634) included Use in or on zone 1D/2D ⁵ (only together with type of protection "Intrinsic safety" (transmitter 7MF4B. Ex ia) and IP65) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140°F))	Setting of the upper saturation limit of the output signal to 22.0 mA	D05	✓		
(only for M20 x 1.5 and ½-14 NPT) Supplied with oval flange (1 item), PTFE packing and screws in thread of oval flange Capri cable gland 4F CrNi and clamping device (848699 + 810634) included Use in or on zone 1D/2D ⁵) (only together with type of protection "Intrinsic safety" (transmitter 7MF4B. Ex ia) and IP65) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140 °F))		D07	✓	✓	✓
(1 item), PTFE packing and screws in thread of oval flange Capri cable gland 4F CrNi and clamping device (848699 + 810634) included Use in or on zone 1D/2D ⁵) (only together with type of protection "Intrinsic safety" (transmitter 7MF4B. Ex ia) and IP65) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140 °F))		D12	✓	✓	✓
device (848699 + 810634) included Use in or on zone 1D/2D ⁵⁾ (only together with type of protection "Intrinsic safety" (transmitter 7MF4B. Ex ia) and IP65) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140 °F))	(1 item), PTFE packing and screws in	D37	1	✓	✓
(only together with type of protection "Intrinsic safety" (transmitter 7MF4B Ex ia) and IP65) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140 °F))		D59	✓	✓	1
Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140 °F))	(only together with type of protection "Intrinsic safety" (transmitter	E01	✓	✓	✓
	Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C	E10	✓	✓	✓
		E11	1	✓	1

Selection and Ordering data	Order	code		
Further designs		HART	PA	FF
Add "-Z" to Article No. and specify Order code.				
CRN approval Canada (Canadian Registration Number)	E22 ⁶⁾	√	✓	✓
Dual seal	E24	1	1	1
Explosion-proof "Intrinsic safety" (Ex ia)	E25 ⁷⁾	1	1	1
to INMETRO (Brazil) (only for transmitter 7MF4B)				
"Flameproof" explosion protection	E26 ⁷⁾	1	1	1
according to INMETRO (Brazil)				
(only for transmitter 7MF4D)	E28 ⁷)	/	1	
Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil) (only for transmitter 7MF4P)	E281)	•	•	
Ex Approval IEC Ex (Ex ia)	E45 ⁷⁾	✓	✓	✓
(only for transmitter 7MF4				
Ex Approval IEC Ex (Ex d) (only for transmitter 7MF4D)	E46 ⁷⁾	✓	✓	✓
Explosion-proof "Intrinsic safety" to	E55 ⁷⁾	✓	1	✓
NEPSI (China) (only for transmitter 7MF4B)				
Explosion protection "Explosion-proof" to NEPSI (China)	E56 ⁷⁾	✓	✓	1
(only for transmitter 7MF4)				
Explosion-proof "Zone 2" to NEPSI (China) (only for transmitter 7MF4E)	E57 ⁷⁾	✓	✓	✓
Ex protection "Ex ia", "Ex d" and "Zone	E58 ⁷⁾	1	1	1
2" to NEPSI (China) (only for transmitter 7MF4R)	L30 /	Ť	·	·
"Intrinsic safety" and "Explosion-proof"	E70 ⁷⁾	1	1	1
explosion protection acc. to Kosha (Korea) (only for transmitter				
7MF4[B, D]Z + E11)				
Ex-protection Ex ia according to EAC Ex (Russia)	E80	✓	✓	✓
Ex-protection Ex d according to EAC Ex (Russia)	E81	✓	✓	✓
Ex-protection Ex nA/ic (Zone 2) according to EAC Ex (Russia)	E82	✓	✓	✓
Ex-protection Ex ia + Ex d + Zone 1D/2D according to EAC Ex (Russia)	E83	✓	✓	✓
Two coats of lacquer on casing and cover (PU on epoxy)	G10	√	✓	✓
Transient protector 6 kV (lightning protect.)	J01	✓	✓	1
Oval flange NAM (ASTAVA)	J06	✓	1	✓
Marine approvals				
Det Norske Veritas Germanischer Lloyd (DNV-GL)	S10	✓	✓	1
Lloyds Register (LR)	S11	1	1	1
French marine classification society Bureau Veritas (BV)	S12	✓	✓	✓
American Bureau of Shipping (ABS)	S14	1	1	1
 Russian Maritime Register (RMR) 	S16	✓	✓	✓
 Korean Register of Shipping (KR) 	S17	✓	✓	1

1) Han device plug IP65

When the manufacture's certificate (calibration certificate) has to be ordered for transmitters with diaphragm seals according to IEC 60770-2, it is recommended only to order this certificate exclusively with the diaphragm seals. The measuring accuracy of the total combination is certified here.

³⁾ If the acceptance test certificate 3.1 is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.

⁴⁾ Profisafe transmitters can only be operated with the S7 F Systems V6.1 configuration software in combination with S7-400H.

⁵⁾ Option does not contain gas explosion protection; only dust explosion protection: Use in or at Zone 1D/2D.

⁶⁾ Cannot be ordered with remote seal.

⁽⁷⁾ When the additional ex option is selected, the ATEX marking on the device is omitted. Only the Ex option selected via the Z option is marked.

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for absolute pressure (from gauge pressure series)

0.1 10.1	0 :	,		
Selection and Ordering data	Order			
Additional data		HART	PA	FF
Please add "-Z" to Article No. and specify Order code(s) and plain text.				
Measuring range to be set Specify in plain text (max. 5 characters): Y01: up to mbar a, bar a, kPa _{abs} , MPa _{abs} , psi a ²)	Y01	✓	√ 1)	
Stainless steel tag plate and entry in device variable (measuring point description) Max. 16 characters, specify in plain text: Y15:	Y15	✓	✓	✓
Measuring point text (entry in device variable)	Y16	✓	✓	✓
Max. 27 characters, specify in plain text: Y16:				
Entry of HART address (TAG) Max. 8 characters, specify in plain text: Y17:	Y17	✓		
Setting of pressure indication in pressure units	Y21	✓	✓	✓
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_2O^*), $\inf H_2O^*$), $\inf H_2O^*$), $mmHG$, $\inf HG$, psi , Pa , kPa , mPa , g/cm^2 , kg/cm^2 , $forr$, f				
Setting of pressure indication in non-pressure units ³) Specify in plain text: Y22: up to I/min, m ³ /h, m, USgpm, (specification of measuring range in pressure units "Y01" is essential, unit with max. 5 characters)	Y22 + Y01	√		
Preset bus address possible between 1 and 126 Specify in plain text: Y25:	Y25		✓	✓
Damping adjustment in seconds (0 100 s)	Y30	✓	✓	✓

Factory mounting of valve manifolds, see accessories.

Only Y01, Y15, Y16, Y17, Y21, Y22, Y25 and D05 can be factory preset

✓ = available

¹⁾ Measuring accuracies for PROFIBUS PA transmitters with Option Y01 are calculated in the same way as for HART devices.

²⁾ Only absolute pressure units selectable. Negative pressure values not permitted.

³⁾ Preset values can only be changed over SIMATIC PDM.

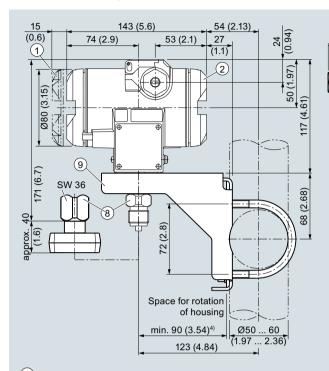
approx. 96 (3.78)

Pressure Measurement

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for absolute pressure (from gauge pressure series)

Dimensional drawings



- 5 Protective cover over keys
 - 6 Blanking plug
 - Screw cover safety bracket (only for type of protection "Explosion-proof enclosure", not shown in the drawing)

17 (0.67)

(4)

120 (4.72)

29 (1.14)

 \oplus

105 (4.13)

(3)

84 (3.31)

(6)

 \oplus

176 (6.93)

237 (9.33)

- (8) Process connection: Connection shank G1/2B or Oval flange
- (9) Mounting bracket (option)

- 1 Electronic side, digital display (longer overall length for cover with window)1)
- Terminal side1)
- Electrical connection: Screwed gland M20 x 1,5 or Screwed gland ½-14 NPT or Han 7D/8D device plug^{2) 3)}
- 4 Harting adapter
- Allow approx. 20 mm (0.79 inch) thread length to permit unscrewing
- Not with type of protection "Explosion-proof enclosure" Not with type of protection "FM + CSA" [IS + XP]"
- Minimum distance for rotating

SITRANS P DS III pressure transmitters for absolute pressure, from the pressure series, dimensions in mm (inch)

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for absolute pressure (from differential pressure series)

Technical specifications

SITRANS P, DS III for absolute pressure (from the differen	tial pressure series)				
Input					
Measured variable	Absolute pressure				
Span (fully adjustable) or measuring range, max. operating pressure (in accordance with 2014/68/EU Pressure Equipment Directive) and max. test pressure (pursuant to DIN	HART	PROFIBUS PA/ FOUNDATION Fieldbus			
16086)	Span	Nominal measur- ing range	Max. operating pressure MAWP (PS)		
	8.34 250 mbar a 0.834 25 kPa a 3 100 inH ₂ O a	250 mbar a 25 kPa a 100 inH ₂ O a	32 bar a 3.2 MPa a 464 psi a		
	43.34 1300 mbar a 4.33 130 kPa a 17 525 inH ₂ O a	1300 mbar a 130 kPa a 525 inH ₂ O a	32 bar a 3.2 MPa a 464 psi a		
	170 5000 mbar a 17 500 kPa a 2.43 72.5 psi a	5000 mbar a 500 kPa a 72.5 psi a	32 bar a 3.2 MPa a 464 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	160 bar a 16 MPa a 2320 psi a		
	5.3 100 bar a 0.5 10 MPa a 76.9 1450 psi a	100 bar a 10 MPa a 1450 psi a	160 bar a 16 MPa a 2320 psi a		
Lower measuring limit					
Measuring cell with silicone oil filling	0 mbar a/0 kPa a/0 psi	a			
Measuring cell with inert filling liquid					
- for process temperature -20 °C < 9 \leq +60 °C (-4 °F < 9 \leq +140 °F)	30 mbar a/3 kPa a/0.44 psi a				
- for process temperature 60 °C < $9 \le +100$ °C (max. 85 °C for measuring cell 30 bar) (140 °F < $9 \le +212$ °F (max. 185 °F for measuring cell 435 psi))	30 mbar a + 20 mbar a · (9 - 60 °C)/°C 3 kPa a + 2 kPa a · (9 - 60 °C)/°C 0.44 psi a + 0.29 psi a · (9 - 140 °F)/°F				
Upper measuring limit	100 % of max. span (for oxygen measurement ambient temperature/p		MPa/1450 psi and 60 °C (140 °F)		
Start of scale value	Between the measuring	g limits (fully adjustab	ole)		
Output	HART		PROFIBUS PA/ FOUNDATION Fieldbus		
Output signal	4 20 mA		Digital PROFIBUS PA and FOUNDATION Fieldbus signal		
• Lower limit (infinitely adjustable)	3.55 mA, factory prese	t to 3.84 mA	-		
Upper limit (infinitely adjustable)	23 mA, factory preset tally set to 22.0 mA	o 20.5 mA or option-	-		
Load					
Without HART	$R_{\rm B} \le (U_{\rm H} - 10.5 \text{ V})/0.02$ $U_{\rm H}$: Power supply in V	3 A in Ω,	-		
• With HART	$R_{\rm B} = 230 \dots 500 \Omega$ (SIN $R_{\rm B} = 230 \dots 1100 \Omega$ (H	,	-		
Physical bus	-		IEC 61158-2		
Protection against polarity reversal	Protected against shor Each connection again				
Electrical damping (step width 0.1 s)	Set to 2 s (0 100 s)				

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

SITRANS P, DS III for absolute pressure (from the differential pressure series)				
Measuring accuracy	Acc. to IEC 60770-1			
Reference conditions (All error data refer always refer to the set span)	 Increasing characteristic Start-of-scale value 0 bar/kPa/psi Stainless steel seal diaphragm Silicone oil filling Room temperature 25 °C (77 °F) 			
Measuring span ratio r (spread, Turn-Down)	r = max. measuring span/set measuring span or nom. pressure range			
Error in measurement at limit setting incl. hysteresis and reproducibility				
Linear characteristic				
- r ≤ 10	≤ 0.1 %			
- 10 < r ≤ 30	≤ 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 · 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 100 bar a/10 MPa a/1450 psi a	\leq (0.08 · r + 0.16) %			
Long-term stability (temperature change ± 30 °C (± 54 °F))	≤ (0.25 · r) % in 5 years			
Effect of mounting position (in pressure per change in angle)	≤ 0.7 mbar/0.07 kPa/0.001015 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 · 10 ⁻⁵ of nominal measuring range			
Rated conditions				
Degree of protection				
• according to EN 60529	IP66 (optional IP66/IP68)			
• according to NEMA 250	Type 4X			
Temperature of medium				
Measuring cell with silicone oil filling	-40 +100 °C (-40 +212 °F)			
Measuring cell with inert filling liquid	-20 +100 °C (-4 +212 °F)			
• In conjunction with dust explosion protection	-20 +60 °C (-4 +140 °F)			
Ambient conditions				
Ambient temperature				
- Transmitter	-40 +85 °C (-40 +185 °F)			
- Display readable	-30 +85 °C (-22 +185 °F)			
Storage temperature	-50 +85 °C (-58 +185 °F)			
Climatic class				
- Condensation	Relative humidity 0 100 % Condensation permissible, suitable for use in the tropics			
Electromagnetic Compatibility				
- Emitted interference and interference immunity	Acc. to IEC 61326 and NAMUR NE 21			

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

SITRANS P, DS III for absolute pressure (from	the differential pressure series)
Design	
Weight (without options)	≈ 4.5 kg (≈ 9.9 (lb)
Enclosure material	Low-copper die-cast aluminum, GD-AlSi12 or stainless steel precision casting, mat. no. 1.4408
Wetted parts materials	
• Seal diaphragm	Stainless steel, mat. no. 1.4404/316L or Hastelloy C276, mat. no. 2.4819, Monel, mat. no. 2.4360, tantalum or gold
Process flanges and sealing screw	Stainless steel, mat. no. 1.4408, Hastelloy C4, mat. no. 2.4602 or Monel, mat. no. 2.4360
• O-Ring	FPM (Viton) or optionally: PTFE, FEP, FEPM and NBR
Measuring cell filling	Silicone oil or inert filling liquid (maximum value with oxigen measurement pressure 100 bar (1450 psi) at 60 °C (140 °F))
Process connection	$^{1}\!\!4\text{-}18$ NPT and flange connection with mounting thread M10 to DIN 19213 or $^{7}\!\!/_{16}\text{-}20$ UNF to IEC 61518/DIN EN 61518
Material of mounting bracket	
• Steel	Sheet-steel, Mat. No. 1.0330, chrome-plated
• Stainless steel 304	Sheet stainless steel, mat. no. 1.4301 (SS 304)
Stainless steel 316L	Sheet stainless steel, mat. no. 1.4404 (SS 316L)
D	DESCRIPTION DA /FOUNDATION ES-L-III

Power supply $U_{\rm H}$	HART	PROFIBUS PA/FOUNDATION Fieldbus
Terminal voltage on transmitter	10.5 45 V DC 10.5 30 V DC in intrinsically-safe mode	-
Power supply		Supplied through bus
Separate 24 V power supply necessary	-	No
Bus voltage		
• Not Ex	-	9 32 V
With intrinsically-safe operation	-	9 24 V
Current consumption		
Basic current (max.)	-	12.5 mA
• Start-up current ≤ basic current	-	Yes
Max. current in event of fault	-	15.5 mA
Fault disconnection electronics (FDE) available	-	Yes

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

SITRANS P, DS III for absolute pressure (from the differential pressure series)						
Certificates and approvals	HART	PROFIBUS PA/ FOUNDATION Field-bus				
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)					
Explosion protection						
• Intrinsic safety "i"	PTB 13 ATEX 2007 X					
- Marking	Ex II 1/2 G Ex ia/ib IIC T4/T5/T6 Ga/Gb					
- Permissible ambient temperature	-40 +85 °C (-40 +185 °F) temperature -40 +70 °C (-40 +158 °F) temperature -40 +60 °C (-40 +140 °F) temperature	class T5;				
- Connection	To certified intrinsically-safe circuits with peak values: $ U_{\rm i} = 30 \text{ V, } I_{\rm i} = 100 \text{ mA,} \\ P_{\rm i} = 750 \text{ mW; } P_{\rm i} = 300 \Omega $	FISCO supply unit: $U_0 = 17.5 \text{ V}$, $I_0 = 380 \text{ mA}$, $P_0 = 5.32 \text{ W}$ Linear barrier: $U_0 = 24 \text{ V}$, $I_0 = 250 \text{ mA}$, $P_0 = 1.2 \text{ W}$				
- Effective internal inductance/capacitance	$L_{\rm i}$ = 0.4 mH, $C_{\rm i}$ = 6 nF	$L_{i} = 7 \mu H, C_{i} = 1.1 nF$				
• Explosion-proof "d"	PTB 99 ATEX 1160					
- Marking	Ex II 1/2 G Ex d IIC T4/T6 Gb					
- Permissible ambient temperature	-40 +85 °C (-40 +185 °F) temperature -40 +60 °C (-40 +140 °F) temperature					
- Connection	To circuits with values: H = 10.5 45 V DC	To circuits with values: $U_{\rm H}$ = 9 32 V DC				
 Dust explosion protection for zone 20 	PTB 01 ATEX 2055					
- Marking	Ex II 1 D Ex ta IIIC T120°C Da Ex II 1/2 D Ex ta/tb IIIC T120°C Da/Db					
- Permissible ambient temperature	-40 +85 °C (-40 +185 °F)					
- Max. surface temperature	120 °C (248 °F)					
- Connection	To certified intrinsically-safe circuits with peak values: $U_{\rm i}=$ 30 V, $I_{\rm i}=$ 100 mA, $P_{\rm i}=$ 750 mW, $R_{\rm i}=$ 300 Ω	FISCO supply unit: $U_0 = 17.5 \text{ V}$, $I_0 = 380 \text{ mA}$, $P_0 = 5.32 \text{ W}$ Linear barrier: $U_0 = 24 \text{ V}$, $I_0 = 250 \text{ mA}$, $P_0 = 1.2 \text{ W}$				
- Effective internal inductance/capacitance	$L_{\rm i}$ = 0.4 mH, $C_{\rm i}$ = 6 nF	$L_{i} = 7 \mu H, C_{i} = 1.1 nF$				
 Dust explosion protection for zone 21/22 	PTB 01 ATEX 2055					
- Marking	Ex II 2 D Ex tb IIIC T120°C Db					
- Connection	To circuits with values: $U_{\rm H}$ = 10.5 45 V DC; $P_{\rm max}$ = 1.2 W	To circuits with values: $U_H = 9 \dots 32 \text{ V DC}; P_{\text{max}} = 1 \text{ W}$				
• Type of protection "n" (zone 2)	PTB 13 ATEX 2007 X					
- Marking	Ex II 2/3 G Ex nA IIC T4/T5/T6 Gb/Gc Ex II 2/3 G Ex ic IIC T4/T5/T6 Gb/Gc					
- Connection (Ex nA)	$U_{\rm m} = 45 \text{ V}$	$U_{\rm m} = 32 \text{ V}$				
- Connection (Ex ic)	To circuits with values: $U_i = 45 \text{ V}$	FISCO supply unit ic: $U_0 = 17.5 \text{ V}$, $I_0 = 570 \text{ mA}$ Linear barrier: $U_0 = 32 \text{ V}$, $I_0 = 132 \text{ mA}$, $P_0 = 1 \text{ W}$				
- Effective internal inductance/capacitance	$L_{\rm i} = 0.4 {\rm mH}, C_{\rm i} = 6 {\rm nF}$	$L_{\rm i} = 7 \mu \text{H}, C_{\rm i} = 1.1 \text{nF}$				
• Explosion protection acc. to FM	Certificate of Compliance 3008490					
- Identification (XP/DIP) or (IS); (NI)	CL I, DIV 1, GP ABCD T4T6; CL II, DIV 1, GP EFG; CL III; CL I, ZN 0/1 AEx ia IIC T4T6; CL I, DIV 2, GP ABCD T4T6; CL II, DIV 2, GP FG; CL III					
• Explosion protection to CSA	Certificate of Compliance 1153651					
- Identification (XP/DIP) or (IS)	CL I, DIV 1, GP ABCD T4T6; CL II, DIV 1, 2, GP ABCD T4T6; CL II, DIV 2, GP FG; C					

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

		for absolute pressure (from	differential pressure series)
HART communication		FOUNDATION Fieldbus	
HART	230 1100 Ω	communication	
Protocol	HART Version 5.x	Function blocks	3 function blocks analog input, 1 function block PID
Software for computer	SIMATIC PDM	Analog input	
PROFIBUS PA communication Simultaneous communication with	4	- Adaptation to customer-specific process variables	Yes, linearly rising or falling characteristic
master class 2 (max.)		- Electrical damping, adjustable	0 to 100 s
The address can be set using	Configuration tool or local opera- tion (standard setting address 126)	- Simulation function	Output/input (can be locked within the device with a bridge)
Cyclic data usage	,	- Failure mode	parameterizable (last good value, substitute value, incorrect value)
Output byte	5 (one measured value) or 10 (two measured values)	- Limit monitoring	Yes, one upper and lower warn-
• Input byte	0, 1, or 2 (register operating mode and reset function for	- Limit monitoring	ing limit and one alarm limit respectively
Internal preprocessing	metering)	 Square-rooted characteristic for flow measurement 	Yes
Device profile	PROFIBUS PA Profile for Process Control Devices Version	• PID	Standard FOUNDATION Field- bus function block
	3.0, class B	 Physical block 	1 resource block
Function blocks • Analog input	2	Transducer blocks	1 transducer block Pressure with calibration, 1 transducer block
 Adaptation to customer-specific process variables 	Yes, linearly rising or falling characteristic	Pressure transducer block	LCD
- Electrical damping, adjustable	0 100 s	- Can be calibrated by applying	Yes
- Simulation function	Input /Output	two pressures	
- Failure mode	parameterizable (last good	- Monitoring of sensor limits	Yes
Tallate mode	value, substitute value, incorrect value)	 Simulation function: Measured pressure value, sensor tem- perature and electronics tem- 	Constant value or over parameterizable ramp function
- Limit monitoring	Yes, one upper and lower warn- ing limit and one alarm limit respectively	perature perature	
• Register (totalizer)	Can be reset, preset, optional direction of counting, simulation function of register output		
- Failure mode	parameterizable (summation with last good value, continuous summation, summation with incorrect value)		
- Limit monitoring	One upper and lower warning limit and one alarm limit respec- tively		
 Physical block 	1		

2

Yes

Yes

Yes

Max. 30 nodes

Parameterizable

Constant value or over parame-

terizable ramp function

Transducer blocks

• Pressure transducer block

- Can be calibrated by applying two pressures

- Monitoring of sensor limits

- Specification of a container

and implementation point of square-root extractionSimulation function for mea-

sured pressure value and sensor temperature

characteristic with
- Square-rooted characteristic

for flow measurement
- Gradual volume suppression

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for absolute pressure (from differential pressure series)

for absolute pressi	ure (from differential i	ores	ssu	re	SE	eries)
Selection and Ordering	a data	Ar	ticle	No).		_
Pressure transmitters for absolute pressure 7		_	NF4			-	
from differential pressure series, SITRANS P DS III with HART			T			•	
	lo. for the online configu- Cycle Portal.						
Measuring cell filling	Measuring cell						
0.00	cleaning	١.					
Silicone oil	normal	1					
Inert liquid ¹⁾	grease-free to cleanliness level 2	3					
Measuring span (min.							
8.34 250 mbar a	(0.13 3.63 psi a)		2				
43.34 1300 mbar a	(0.63 18.86 psi a)		F				
0.17 5 bar a 1 30 bar a	(2.43 72.5 psi a)		Э Н				
5.3 100 bar a	(14.6 435 psi a) (76.9 1450 psi a)	-	' (E				
Wetted parts materials	·		ı				
Seal diaphragm	Parts of measuring cell						
Stainless steel	Stainless steel		Α				
Hastelloy	Stainless steel		В				
Hastelloy	Hastelloy		С				
Tantalum	Tantalum		E				
Monel	Monel Gold		H				
Gold Version for diaphragm s			Y				
Process connection		-					
Female thread 1/4-18 NP	T with flange connection						
 Sealing screw opposit 							
- Mounting thread ⁷ / ₁₆ -20 UNF to IEC 61518/DIN EN 61518			2				
			,				
 Mounting thread M1 (only for replacement 			0				
Vent on side of process flange 7)							
- Mounting thread ⁷ / ₁₆ IEC 61518/DIN EN 6			6	;			
 Mounting thread M1 (only for replacement 			4				
Non-wetted parts mate				П			
process flange screws	Electronics housing						
Stainless steel	Die-cast aluminum			2			
Stainless steel	Stainless steel precision casting ⁸⁾			3			
Version		-					
Standard version, Ger actting for progrum un					1		
 setting for pressure ur International version. I 	nt: bar English plate inscription, 🕨				2		
setting for pressure ur	nit: bar						
 Chinese version, Englis setting for pressure uni 					3		
All versions include DVI instructions in various E	O with compact operating U languages.						
Explosion protection							
None None	ata ation.					A	
 With ATEX, Type of pro- "Intrinsic safety (Ex is 						В	
- "Explosion-proof (Ex	*					D D	
						P	
- "Intrinsic safety and (Ex ia + Ex d)" 10)							
- "Ex nA/ic (Zone 2)"11						E	
	osion-proof enclosure and					R	
dust explosion prote Zone 1D/2D)**10)12)	GUOTI (EX IA+ EX U +						
• FM + CSA intrinsic sat						F	
• FM + CSA (is + ep) + Zone 1D/2D ¹⁰)12)13)						S	
 With FM + CSA, Type "Intrinsic Safe and Example 1. 						NC	
(is + xp)" 9)13)	Aprodioti i Tool						

Selection and Ordering data	Article No.
Pressure transmitters for absolute pressure	7MF4333-
from differential pressure series, SITRANS P DS III with HART	
Electrical connection/cable entry	
 Screwed gland M20 x 1.5 	В
• Screwed gland ½-14 NPT	C
 Han 7D device plug (plastic housing) incl. mating connector¹⁴⁾ 	D
M12 device plugs (stainless steel) 15) 16)	F
Display	
Without display	0
Without visible display (display concealed, setting: mA)	1
 With visible display (setting: mA) 	6
with customer-specific display (setting as specified, Order code "Y21" or "Y22" required)	7

Power supply units see Chap. 7 "Supplementary Components".

Included in delivery of the device:

- Quick-start guide
- Sealing plug(s) or sealing screw(s) for the process flanges(s)
- 1) For oxygen applications, add Order code E10.
- 2) Version 7MF4333-1DY... only up to max. span 200 mbar a (2.9 psi a).
- 3) When the manufacture's certificate (calibration certificate) has to be ordered for transmitters with diaphragm seals according to IEC 60770-2, it is recommended only to order this certificate exclusively with the diaphragm seals. The measuring accuracy of the <u>total</u> combination is certified here.
- 4) If the acceptance test certificate 3.1.is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.
- 5) The diaphragm seal is to be specified with a separate order number and must be included with the transmitter order number, for example 7MF433.-..Y..-... and 7MF4900-1...-.B
- 6) The standard measuring cell filling for configurations with remote seals (Y) is silicone oil.
- 7) Not for span "5.3 ... 100 bar a (76.9 ... 1450 psi a)". Position of the top vent valve in the process flange (see dimensional drawing).
- 8) Not in conjunction with Electrical connection "Han 7D device plug".
- 9) Without cable gland, with blanking plug
- 10) With enclosed cable gland Ex ia and blanking plug
- 11) Configurations with Han and M12 device plugs are only available in Ex ic.
- 12) Only in connection with IP66.
- 13) Explosion protection acc. to FM/CSA: suitable for installations according to NEC 500/505.
- ¹⁴⁾ Only in connection with Ex apporval A, B or E.
- 15) Only in connection with Ex approval A, B, E or F.
- 16) M12 delivered without cable socket.

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for absolute pressure (from differential pressure series)

Selection and Ordering data Pressure transmitter for absolute pressure from differential pressure series SITRANS P DS III with PROFIBUS PA (PA) Zick on the Article No. for the online configuration in the PIA Life Cycle Portal. Measuring cell filling Measuring cell cleaning Silicone oil normal Inert liquid¹¹ grease-free to cleaning Silicone oil normal Inert liquid liquid Inert								
from differential pressure series SITRANS P DS III with PROFIBUS PA (PA) 7 MF 4 3 3 4 - 7 MF 4 3 3 4 - 7 MF 4 3 3 4 - 7 MF 4 3 3 5 - 7 Click on the Article No. for the online configuration in the PIA Life Cycle Portal. Measuring cell filling Measuring cell cleaning Slicone oil 1 normal 1 pressere to cleanliness level 2 Nominal measuring range 250 mbar a (3.63 psi a) 1300 mbar a (18.86 psi a) 5 bar a (72.5 psi a) 30 bar a (72.5 psi a) 30 bar a (72.5 psi a) 30 bar a (72.5 psi a) 4 MKE Wetted parts materials Seal diaphragm Parts of measuring cell Stainless steel Stainless steel Stainless steel Stainless steel Stainless steel Hastelloy Hastelloy Tantalum Monel Frocess connection Female thread ¼-18 NPT with flange connection Sealing screw opposite process connection Mounting thread 1/16-20 UNF to IEC 61518(DIN EN 61518 Mounting thread 1/16-50 UNF to IEC 61518(DIN EN 61518 Mounting thread 1/16-50 UNF to IEC 61518(DIN EN 61518 Mounting thread M10 to DIN 19213 (only for replacement requirement) Vent on side of process flange 7) Mounting thread M10 to DIN 19213 (only for replacement requirement) Vent on side of process flange screws Electronics housing Stainless steel Die-cast aluminum Stainless steel Stainless steel precision casting Version Version Non-wetted parts materials process flange screws Electronics housing Stainless steel Die-cast aluminum Stainless steel Stainless steel precision casting Version None With ATEX, Type of protection: "Intrinsic safety (Ex ia)" "Explosion-proof (Ex d)" "The CSA intrinsic safe (is)"	Selection and Ordering	g data	Artic	cle	No	١.		
SITRANS P DS III with PROFIBUS PA (PA) SITRANS P DS III with FOUNDATION Fieldbus (FF),7 Click on the Article No. for the online configuration in the PIA Life Cycle Portal. Measuring cell filling Measuring cell cleaning Silicone oil normal 1 Inert liquid¹) grease-free to cleanliness level 2 Nominal measuring range 250 mbar a (3.63 psi a) 1300 mbar a (18.86 psi a) 5 bar a (72.5 psi a) 30 bar a (435 psi a) 100 bar a (1450 psi a) Wetted parts materials Seal diaphragm Parts of measuring cell Stainless steel Stainless steel Hastelloy Stainless steel Hastelloy Hastelloy Tantalum Tantalum E Monel Monel Monel Gold Gold Gold Version as diaphragm seal (2) (3) (4) (5) (6) Frocess connection Female thread ½-18 NPT with flange connection • Sealing screw opposite process connection • Mounting thread M10 to DIN 19213 (only for replacement requirement) • Vent on side of process flange 7) • Mounting thread M10 to DIN 19213 (only for replacement requirement) Non-wetted parts materials process flange screws Electronics housing Stainless steel Stainless steel precision casting Version • Standard version, German plate inscription, setting for pressure unit: bar • Chinese version, English plate inscription, setting for pressure unit: bar • Chinese version, English plate inscription, setting for pressure unit: bar • Chinese version, English plate inscription, setting for pressure unit: bar • Chinese version, English plate inscription, setting for pressure unit: bar • Chinese version, English plate inscription, setting for pressure unit: bar • Chinese version, English plate inscription, setting for pressure unit: bar • Chinese version, English plate inscription, setting for pressure unit: bar • Chinese version, English plate inscription, setting for pressure unit: bar • Chinese version, English plate inscription, setting for pressure unit: bar • Chinese version, English plate inscription, setting for pressure unit: bar • Tandard version, English plate inscription, setting for pressure unit: bar • Chinese version, English pla								
SITRANS P DS III with FOUNDATION Fieldbus (FF) 7 Click on the Article No. for the online configuration in the PIA Life Cycle Portal. Measuring cell filling Measuring cell cleaning Silicone oil normal presses free to cleanliness level 2 Nominal measuring range 250 mbar a (3.63 psi a) 1 1300 mbar a (18.86 psi a) 5 5 bar a (72.5 psi a) 6 30 bar a (435 psi a) 7 100 bar a (1450 psi a) 7 Wetted parts materials Seal diaphragm Parts of measuring cell Stainless steel Stainless steel Stainless steel Hastelloy Hastelloy Cantalum Easuring Cold Lyersion as diaphragm seal (2) 3) 4) 5) 6) Process connection Female thread 74-18 NPT with flange connection Sealing screw opposite process connection Sealing screw opposite process connection Sealing screw opposite process connection Mounting thread 71-12-20 UNF to 12C 61518/DIN EN 61518 Mounting thread 71-12-20 UNF to 12C 61518/DIN EN 61518 Mounting thread 71-10-20 UNF to	•							
Zerolick on the Article No. for the online configuration in the PIA Life Cycle Portal. Measuring cell filling Measuring cell cleaning Silicone oil normal 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		` '						
ration in the PIA Life Cycle Portal. Measuring cell filling								
Cleaning	ration in the PIA Life	Cycle Portal.			-			
Inert liquid 1) grease-free to cleanliness level 2 Nominal measuring range 250 mbar a (3.63 psi a) proper significance in the control of the		cleaning						
Cleanliness level 2 2								
250 mbar a (3.63 psi a) 1300 mbar a (18.86 psi a) 5 bar a (72.5 psi a) 30 bar a (435 psi a) 100 bar a (1450 psi a) Wetted parts materials Seal diaphragm Parts of measuring cell Stainless steel Stainless steel Hastelloy Stainless steel Hastelloy Hastelloy Tantalum Tantalum Monel Monel Gold Gold Wersion as diaphragm seal (2) 3) 4) 5) 6) Process connection Female thread ¼-18 NPT with flange connection • Sealing screw opposite process connection • Sealing screw opposite process connection • Mounting thread ¼-18 NPT with flange connection • Sealing screw opposite process connection • Mounting thread ¼-18 NPT with flange connection • Sealing screw opposite process connection • Mounting thread ¼-18 NPT by IEC 61518/DIN EN 61518 • Mounting thread M10 to DIN 19213 (only for replacement requirement) • Vent on side of process flange 7) • Mounting thread M10 to DIN 19213 (only for replacement requirement) • Vent on side of process flange 7) • Mounting thread M10 to DIN 19213 (only for replacement requirement) Non-wetted parts materials process flange screws Electronics housing Stainless steel Die-cast aluminum Stainless steel Stainless steel precision casting Version • Standard version, German plate inscription, setting for pressure unit: bar • International version, English plate inscription, setting for pressure unit: bar • International version, English plate inscription, setting for pressure unit: bar • International version EU languages. Explosion protection • None • With ATEX, Type of protection: • "Intrinsic safety (Ex ia)" • "Explosion-proof (Ex d)"8) • "Intrinsic safety (Ex ia)" • "Explosion-proof (Ex d)"8) • "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)"1112) • FM + CSA (is + ep) + Ex ia + Ex d (ATEX) + Zone 1D/2D)"1112 • With FM + CSA, Type of protection: "Intrinsic Cofe and Explance Depart (in x may #8)122 • With FM + CSA, Type of protection: "Intrinsic Cofe and Explance Depart (in x may #8)122 • With FM + CSA, Type of protection:		cleanliness level 2	Ĺ					
5 bar a (72.5 psi a) 30 bar a (435 psi a) 100 bar a (435 psi a) 100 bar a (1450 psi a) Wetted parts materials Seal diaphragm Parts of measuring cell Stainless steel Stainless steel Hastelloy Hastelloy C Tantalum Tantalum Monel Monel Gold Gold Cyersion as diaphragm seal (2) 3) 4) 5) 6) Process connection Female thread (4-18 NPT with flange connection - Sealing screw opposite process connection - Sealing screw opposite process connection - Mounting thread 7/16-20 UNF to IEC 61518/DIN EN 61518 - Mounting thread 7/16-20 UNF to IEC 65158/DIN EN 61518 - Mounting thread 7/16-20 UNF to IEC 65158/DIN EN 61518 - Mounting thread M10 to DIN 19213 (only for replacement requirement) Non-wetted parts materials process flange screws Electronics housing Stainless steel Die-cast aluminum Stainless steel Stainless steel precision casting Version - Standard version, German plate inscription, setting for pressure unit: bar - International version, English plate inscription, setting for pressure unit: bar - International version be Ul anguages. Explosion protection - None - With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)"8) - "Intrinsic safety, explosion-proof enclosure" (Ex ia + Ex d)" 9) - "Ex nA/ic (Zone 2)" 10) - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)" 11) 12 - FM + CSA (is + ep) + Ex ia + Ex d (ATEX) + Zone 1D/2D)" 11) 12 - With FM + CSA, Type of protection:			D					
30 bar a (435 psi a) 100 bar a (1450 psi a) Wetted parts materials Seal diaphragm Parts of measuring cell Stainless steel Stainless steel Hastelloy Stainless steel B Hastelloy Hastelloy C Tantalum Tantalum E Monel Monel H Gold Gold L Version as diaphragm seal 2) 3) 4) 5) 6) Process connection Female thread ¼-18 NPT with flange connection • Sealing screw opposite process connection • Mounting thread 7/1 ₁₆ -20 UNF to IEC 61518/DIN EN 61518 - Mounting thread M10 to DIN 19213 (only for replacement requirement) • Vent on side of process flange 7) - Mounting thread 7/1 ₁₆ -20 UNF to IEC 61518/DIN EN 61518 - Mounting thread M10 to DIN 19213 (only for replacement requirement) Non-wetted parts materials process flange screws Electronics housing Stainless steel Die-cast aluminum Stainless steel Die-cast aluminum Stainless steel Die-cast aluminum Stainless steel Stainless steel precision casting Version • Standard version, German plate inscription, setting for pressure unit: bar • International version, English plate inscription, setting for pressure unit: bar • International version, English plate inscription, setting for pressure unit: bar • International version include DVD with compact operating instructions in various EU languages. Explosion protection • None • With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)*6) - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)*1112) • FM + CSA (is + ep) + Ex ia + Ex d (ATEX) + Zone 1D/2D*1112) • With FM + CSA, Type of protection: - "Intrinsic Safe (is)*12) • FM + CSA (is + ep) + Explayine Proof (is v vary 8)*12) • With FM + CSA, Type of protection: - "Intrinsic Safe (soft)*2) • With FM + CSA, Type of protection: - "Intrinsic Safe (soft)*2) • With FM + CSA, Type of protection: - "Intrinsic Safe (soft)*2) • With FM + CSA, Type of protection:	1300 mbar a	(18.86 psi a)	F					
Wetted parts materials Seal diaphragm Parts of measuring cell Stainless steel Hastelloy Stainless steel Hastelloy Tantalum Monel Gold Gold Wersion as diaphragm seal 2) 3) 4) 5) 6) Process connection Female thread ¼-18 NPT with flange connection • Sealing screw opposite process connection • Sealing screw opposite process connection • Mounting thread ¼-18 NPT with flange connection • Mounting thread 7/ ₁₆ -20 UNF to IEC 61518/DIN EN 61518 • Mounting thread M10 to DIN 19213 (only for replacement requirement) • Vent on side of process flange 7) • Mounting thread M10 to DIN 19213 (only for replacement requirement) Non-wetted parts materials process flange screws Electronics housing Stainless steel Die-cast aluminum Stainless steel Stainless steel precision casting Version • Standard version, German plate inscription, setting for pressure unit: bar • International version, English plate inscription, setting for pressure unit: bar • International version, English plate inscription, setting for pressure unit: bar • Chinese version, English plate inscription, setting for pressure unit: bar • Chinese version, English plate inscription, setting for pressure unit: bar • Chinese version, English plate inscription, setting for pressure unit: bar • Chinese version include DVD with compact operating instructions in various EU languages. Explosion protection • None • With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)" - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)" - "Intrinsic Safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)" - "Intrinsic Safety, Explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)" - "Intrinsic Safety (Ex lap)" - "EM + CSA (Is + ep) + Ex ia + Ex d (ATEX) + Zone 1D/2D* With FM + CSA, Type of protection: - "Intrinsic Safe (Is Safe and Explosion Proof (Is a way) #120 With FM + CSA, Type of protection: - "Intrinsic Safe (Is Safe and Explosio	5 bar a	(72.5 psi a)	G					
Wetted parts materials Seal diaphragm Parts of measuring cell Stainless steel Astainless steel ABH Hastelloy Hastelloy Hastelloy C Tantalum Tantalum E Monel Monel H Gold Gold L Version as diaphragm seal ²) ³) ⁴) 5) 6) Y Process connection • Sealing screw opposite process connection • Sealing screw opposite process connection • Sealing screw opposite process connection • Mounting thread ½,18 NPT with flange connection • Sealing screw opposite process connection • Mounting thread ½,18 NPT with flange connection • Sealing screw opposite process connection • Mounting thread ½,18 NPT with flange connection • Colspan="2">• Mounting thread M10 to DIN 19213 (only for replacement requirement) • Vent on side of process flange ? • Mounting thread ¾10 to DIN 19213 • General Mounting thread M10 to DIN 19213 • General Male Male Male Male Male Male Male Ma	30 bar a	(435 psi a)	Н					
Seal diaphragm Parts of measuring cell Stainless steel Stainless steel B Hastelloy Stainless steel Hastelloy Hastelloy C C Tantalum Tantalum E Monel Monel Monel Monel Monel Monel Gold Gold Version as diaphragm seal 2) 3) 4) 5) 6) Process connection Female thread ¼-18 NPT with flange connection • Sealing screw opposite process connection - Mounting thread 7/ ₁₆ -20 UNF to IEC 61518/DIN EN 61518 - Mounting thread M10 to DIN 19213 (only for replacement requirement) • Vent on side of process flange 7) - Mounting thread M10 to DIN 19213 (only for replacement requirement) Non-wetted parts materials process flange screws Electronics housing Stainless steel Die-cast aluminum Stainless steel Die-cast aluminum Stainless steel Die-cast aluminum 2 Stainless steel Die-cast aluminum 2 International version, German plate inscription, setting for pressure unit: bar • International version, English plate inscription, setting for pressure unit: bar • Chinese version, English plate inscription, setting for pressure unit: Pascal All versions include DVD with compact operating instructions in various EU languages. Explosion protection • None • With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)*8) - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)*8) - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)*9)*11) • FM + CSA (is + ep) + Ex ia + Ex d (ATEX) + Zone 1D/2D*9)*11)*2) • With FM + CSA, Type of protection: **Intrinsic Seafety and Emplacies Despt. (is + unit *812)* • With FM + CSA, Type of protection: **Intrinsic Seafety Seafe S	100 bar a	(1450 psi a)	K	E				
Stainless steel Stainless steel Hastelloy Stainless steel Hastelloy Hastelloy C Tantalum Tantalum E Monel Monel Monel H Gold Gold Gold Wersion as diaphragm seal 2) 3) 4) 5) 6) Process connection Female thread 1/4-18 NPT with flange connection • Sealing screw opposite process connection • Mounting thread 7/ ₁₆ -20 UNF to IEC 61518/DIN EN 61518 • Mounting thread M10 to DIN 19213 (only for replacement requirement) • Vent on side of process flange 7) • Mounting thread M10 to DIN 19213 (only for replacement requirement) • Vent on side of process flange 7) • Mounting thread M10 to DIN 19213 (only for replacement requirement) Non-wetted parts materials process flange screws Electronics housing Stainless steel Die-cast aluminum 2 Stainless steel Die-cast aluminum 2 Stainless steel Die-cast aluminum 2 Stainless steel Stainless steel precision casting Version • Standard version, German plate inscription, setting for pressure unit: bar • International version, English plate inscription, setting for pressure unit: bar • International version, English plate inscription, setting for pressure unit: bar • Chinese version, English plate inscription, setting for pressure unit: bar • International version, English plate inscription, setting for pressure unit: bar • International version include DVD with compact operating instructions in various EU languages. Explosion protection • None • With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)*8) - "Explosion-proof (Ex d)*8) - "Explosion-proof (Ex d)*8) - "Explosion protection (Ex ia + Ex d + Zone 1D/2D)*9) 11) • FM + CSA (is + ep.) + Ex ia + Ex d (ATEX) + Zone 1D/2D*9)*11)*2) • With FM + CSA, Type of protection: **Intrinsic Safety Explacion Proof (is u unit 812)*								
Hastelloy Hastelloy C Tantalum Tantalum E Monel Monel H Gold Gold Gold L Version as diaphragm seal 2) 3) 4) 5) 6) Process connection Female thread 1/4-18 NPT with flange connection • Sealing screw opposite process connection - Mounting thread 7/ ₁₆ -20 UNF to IEC 61518/DIN EN 61518 - Mounting thread M10 to DIN 19213 (only for replacement requirement) • Vent on side of process flange 7) - Mounting thread M10 to DIN 19213 (only for replacement requirement) • Vent on side of process flange 7) - Mounting thread M10 to DIN 19213 (only for replacement requirement) Non-wetted parts materials - Mounting thread M10 to DIN 19213 (only for replacement requirement) Non-wetted parts materials - Process flange screws Electronics housing Stainless steel Die-cast aluminum • Standard version, German plate inscription, setting for pressure unit: bar • International version, English plate inscription, setting for pressure unit: bar • Chinese version, English plate inscription, setting for pressure unit: bar • Chinese version, English plate inscription, setting for pressure unit: bar • Chinese version, English plate inscription, setting for pressure unit: bar • International version, English plate inscription, setting for pressure unit: bar • Chinese version, English plate inscription, setting for pressure unit: bar • International version, English plate inscription, setting for pressure unit: bar • International version in various EU languages. Explosion protection • None • With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)" - "Intrinsic safety (Ex ia)" - "Ex nA/ic (Zone 2)" - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)" - "Ex nA/ic (Zone 2)" - "Intrinsic safety is an + Ex d (ATEX) + Zone 1D/2D)" - "Intrinsic Safety is an + Ex d (ATEX) + Zone 1D/2D)" - "Intrinsic Safety is an + Ex d (ATEX) + Zone 1D/2D)" - "Intrinsic Safety or the content of the string for protection: - "Intrinsic Safety or the string for protection: - "Intrinsic Sa				Δ				
Tantalum Monel Monel Gold Gold Gold Gold Gold Gold Cyrsion as diaphragm seal ²⁾ ³⁾ ⁴⁾ ⁵⁾ ⁶⁾ Process connection Female thread ¹ / ₄ -18 NPT with flange connection • Sealing screw opposite process connection • Mounting thread ⁷ / ₁₆ -20 UNF to IEC 61518/DIN EN 61518 • Mounting thread M10 to DIN 19213 (only for replacement requirement) • Vent on side of process flange ⁷⁾ • Mounting thread ⁷ / ₁₆ -20 UNF to IEC 61518/DIN EN 61518 • Mounting thread ⁷ / ₁₆ -20 UNF to IEC 61518/DIN EN 61518 • Mounting thread M10 to DIN 19213 (only for replacement requirement) Non-wetted parts materials process flange screws Electronics housing Stainless steel Die-cast aluminum Stainless steel Die-cast aluminum Stainless steel Stainless steel precision casting Version • Standard version, German plate inscription, setting for pressure unit: bar • International version, English plate inscription, setting for pressure unit: bar • Chinese version, English plate inscription, setting for pressure unit: bar • Chinese version include DVD with compact operating instructions in various EU languages. Explosion protection • None • With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)* ⁸) - "Intrinsic safety, explosion-proof enclosure" (Ex ia + Ex d)* ⁹) - "Ex nA/ic (Zone 2)* ¹⁰) - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)* ⁹⁾ ¹¹⁾ • FM + CSA (is + ep) + Ex ia + Ex d (ATEX) + Zone 1D/2D)* ⁹⁾ ¹¹⁾ • With FM + CSA, Type of protection: **Intrinsic Sefe (set Protection: **Intrinsic			ĺ	В				
Tantalum Tantalum Monel Monel Gold Gold Gold Gold Gold Gold Gold Utersion as diaphragm seal 2) 3) 4) 5) 6) Process connection Female thread 1/4-18 NPT with flange connection • Sealing screw opposite process connection - Mounting thread 7/16-20 UNF to IEC 61518/DIN EN 61518 - Mounting thread M10 to DIN 19213 (only for replacement requirement) • Vent on side of process flange 7) - Mounting thread M10 to DIN 19213 (only for replacement requirement) Non-wetted parts materials - Mounting thread M10 to DIN 19213 (only for replacement requirement) Non-wetted parts materials process flange screws Electronics housing Stainless steel Die-cast aluminum Stainless steel Stainless steel precision casting Version • Standard version, German plate inscription, setting for pressure unit: bar • International version, English plate inscription, setting for pressure unit: bar • Chinese version, English plate inscription, setting for pressure unit: bar • Chinese version in curious EU languages. Explosion protection • None • With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)*8) - "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)*9) - "Ex nA/ic (Zone 2)*10) - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)*9)*11)*12) • FM + CSA intrinsic safe (is)*12) • FM + CSA intrinsic safe (is)*12) • With FM + CSA, Type of protection: **Intrinsic Sefe nat Evaluation Dept (is + 10)*18/12) • With FM + CSA, Type of protection: **Intrinsic Sefe nat Evaluation Dept (is + 10)*18/12)	Hastelloy	Hastelloy		C				
Gold Gold Gold Version as diaphragm seal ²⁾ ³⁾ ⁴⁾ ⁵⁾ ⁶⁾ Process connection Female thread ¹ / ₄ -18 NPT with flange connection • Sealing screw opposite process connection - Mounting thread ⁷ / ₁₆ - ² 0 UNF to IEC 61518/DIN EN 61518 - Mounting thread M10 to DIN 19213 (only for replacement requirement) • Vent on side of process flange ⁷⁾ - Mounting thread ⁷ / ₁₆ - ² 0 UNF to IEC 61518/DIN EN 61518 - Mounting thread M10 to DIN 19213 (only for replacement requirement) Non-wetted parts materials process flange screws Electronics housing Stainless steel Die-cast aluminum Stainless steel Die-cast aluminum Stainless steel Stainless steel precision casting Version • Standard version, German plate inscription, setting for pressure unit: bar • International version, English plate inscription, setting for pressure unit: Pascal All versions include DVD with compact operating instructions in various EU languages. Explosion protection • None • With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Ex plosion-proof (Ex d)* ⁸) - "Intrinsic safety, explosion-proof enclosure" (Ex ia + Ex d)* - "Ex nA/ic (Zone 2)* ¹⁰⁾ - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)* ⁹⁾ 11) • FM + CSA intrinsic safe (is) ¹²⁾ • FM + CSA intrinsic safe (is) ¹²⁾ • FM + CSA intrinsic safe (is) ¹²⁾ • With FM + CSA, Type of protection: **Intrinsic Sefe and Evaluation Proof (is + 10)* 81(2) • With FM + CSA, Type of protection: **Intrinsic Sefe and Evaluation Proof (is + 10)* 81(2) • With FM + CSA, Type of protection:	•	Tantalum		E				
Version as diaphragm seal 2) 3) 4) 5) 6) Process connection Female thread 1/4-18 NPT with flange connection • Sealing screw opposite process connection - Mounting thread 7/ ₁₆ -20 UNF to IEC 61518/DIN EN 61518 - Mounting thread M10 to DIN 19213 (only for replacement requirement) • Vent on side of process flange 7) - Mounting thread M10 to DIN 19213 (only for replacement requirement) • Non-wetted parts materials - Mounting thread M10 to DIN 19213 (only for replacement requirement) Non-wetted parts materials process flange screws Electronics housing Stainless steel Die-cast aluminum Stainless steel Die-cast aluminum Stainless steel Die-cast aluminum Stainless steel Stainless steel precision casting Version • Standard version, German plate inscription, setting for pressure unit: bar • International version, English plate inscription, setting for pressure unit: bar • Chinese version, English plate inscription, setting for pressure unit: Pascal All versions include DVD with compact operating instructions in various EU languages. Explosion protection • None • With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Ex plosion-proof (Ex d)*8) - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)*9)*11) • FM + CSA (is + ep) + Ex ia + Ex d (ATEX) + Zone 1D/2D)*11)*12) • With FM + CSA, Type of protection: **Intrinsic Sefe and Evaluation Proof (is + 10)*81(2) • With FM + CSA, Type of protection: **Intrinsic Sefe and Evaluation Proof (is + 10)*81(2) • With FM + CSA, Type of protection:	Monel	Monel	1	Н				
Process connection Female thread ¼-18 NPT with flange connection • Sealing screw opposite process connection - Mounting thread ¾-18 NPT with flange connection - Mounting thread ¾-16-20 UNF to IEC 61518/DIN EN 61518 - Mounting thread M10 to DIN 19213 (only for replacement requirement) • Vent on side of process flange ₹ - Mounting thread ¾-16-20 UNF to IEC 61518/DIN EN 61518 - Mounting thread ¾-16-20 UNF to IEC 61518/DIN EN 61518 - Mounting thread M10 to DIN 19213 (only for replacement requirement) Non-wetted parts materials process flange screws Electronics housing Stainless steel Die-cast aluminum Stainless steel Die-cast aluminum • Stainless steel Stainless steel precision casting Version • Standard version, German plate inscription, setting for pressure unit: bar • International version, English plate inscription, setting for pressure unit: bar • Chinese version, English plate inscription, setting for pressure unit: Pascal All versions include DVD with compact operating instructions in various EU languages. Explosion protection • None • With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)"® - "Explosion-proof (Ex d)"® - "Explosion-proof (Ex d)"® - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)"911) • FM + CSA intrinsic safe (is)¹² • FM + CSA (is + ep) + Ex ia + Ex d (ATEX) + Zone 1D/2D)*11/12 • With FM + CSA, Type of protection: **Intrinsic Sefe and Explosion Proof (is x un)**81/12 **With FM + CSA, Type of protection: **Intrinsic Sefe and Explosion Proof (is x un)**81/12 **With FM + CSA, Type of protection: **Intrinsic Sefe and Explosion Proof (is x un)**81/12 **With FM + CSA, Type of protection: **Intrinsic Sefe and Explosion Proof (is x un)**81/12 **With FM + CSA, Type of protection:				L				
Process connection Female thread ¼-18 NPT with flange connection • Sealing screw opposite process connection - Mounting thread ¾-18 NPT with flange connection - Mounting thread ¾-16-20 UNF to IEC 61518/DIN EN 61518 - Mounting thread M10 to DIN 19213 (only for replacement requirement) • Vent on side of process flange ₹ - Mounting thread ¾-16-20 UNF to IEC 61518/DIN EN 61518 - Mounting thread ¾-16-20 UNF to IEC 61518/DIN EN 61518 - Mounting thread M10 to DIN 19213 (only for replacement requirement) Non-wetted parts materials process flange screws Electronics housing Stainless steel Die-cast aluminum Stainless steel Die-cast aluminum • Stainless steel Stainless steel precision casting Version • Standard version, German plate inscription, setting for pressure unit: bar • International version, English plate inscription, setting for pressure unit: bar • Chinese version, English plate inscription, setting for pressure unit: Pascal All versions include DVD with compact operating instructions in various EU languages. Explosion protection • None • With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)"® - "Explosion-proof (Ex d)"® - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)"911) • FM + CSA intrinsic safe (is)¹² • With FM + CSA, Type of protection: **Intrinsic Sefe and Explosion Proof (is x un)** 8/12) • With FM + CSA, Type of protection: **Intrinsic Sefe and Explosion Proof (is x un)** 8/12) • With FM + CSA, Type of protection: **Intrinsic Sefe and Explosion Proof (is x un)** 8/12) • With FM + CSA, Type of protection: **Intrinsic Sefe and Explosion Proof (is x un)** 8/12) • With FM + CSA, Type of protection: **Intrinsic Sefe and Explosion Proof (is x un)** 8/12)	Version as diaphragm s	eal ^{2) 3) 4) 5) 6)}	,	Y				
• Sealing screw opposite process connection - Mounting thread ⁷ / ₁₆ -20 UNF to IEC 61518/DIN EN 61518 - Mounting thread M10 to DIN 19213 (only for replacement requirement) • Vent on side of process flange ⁷ / - Mounting thread ⁷ / ₁₆ -20 UNF to IEC 61518/DIN EN 61518 - Mounting thread M10 to DIN 19213 (only for replacement requirement) Non-wetted parts materials process flange screws Electronics housing Stainless steel Die-cast aluminum Stainless steel Stainless steel precision casting Version • Standard version, German plate inscription, setting for pressure unit: bar • International version, English plate inscription, setting for pressure unit: bar • Chinese version, English plate inscription, setting for pressure unit: Pascal All versions include DVD with compact operating instructions in various EU languages. Explosion protection • None • With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)" ⁸) - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)") 11) • FM + CSA (is + ep) + Ex ia + Ex d (ATEX) + Zone 1D/2D) ^{911/1/22} • With FM + CSA, Type of protection: **Intrinsic Sefe and Evaluation Proof (is x up)** (8/12) **Intrinsic Sefe and Evaluation Proof (is x up)** (8/12) **With FM + CSA, Type of protection: **Intrinsic Sefe and Evaluation Proof (is x up)** (8/12) **With FM + CSA, Type of protection: **Intrinsic Sefe and Evaluation Proof (is x up)** (8/12) **With FM + CSA, Type of protection: **Intrinsic Sefe and Evaluation Proof (is x up)** (8/12) **With FM + CSA, Type of protection: **Intrinsic Sefe and Evaluation Proof (is x up)** (8/12) **With FM + CSA, Type of protection: **Intrinsic Sefe and Evaluation Proof (is x up)** (8/12) **With FM + CSA, Type of protection: **Intrinsic Sefe and Evaluation Proof (is x up)** (8/12)	Process connection							
- Mounting thread ⁷ / ₁₆ -20 UNF to IEC 61518/DIN EN 61518 - Mounting thread M10 to DIN 19213 (only for replacement requirement) • Vent on side of process flange ⁷) - Mounting thread M10 to DIN 19213 (only for replacement requirement) • Vent on side of process flange ⁷) - Mounting thread M10 to DIN 19213 (only for replacement requirement) Non-wetted parts materials process flange screws Electronics housing Stainless steel Die-cast aluminum Stainless steel Stainless steel precision casting Version • Standard version, German plate inscription, setting for pressure unit: bar • International version, English plate inscription, setting for pressure unit: Pascal All versions include DVD with compact operating instructions in various EU languages. Explosion protection • None • With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)"*8) - "Intrinsic safety and flameproof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)" 11) • FM + CSA (is + ep) + Ex ia + Ex d (ATEX) + Zone 1D/2D)** • With FM + CSA, Type of protection: "Intrinsic Sefe and Evaluation Proof (is + un)" (R)12) • With FM + CSA, Type of protection: "Intrinsic Sefe and Evaluation Proof (is + un)" (R)12) • With FM + CSA, Type of protection: "Intrinsic Sefe and Evaluation Proof (is + un)" (R)12)	Female thread 1/4-18 NF	T with flange connection						
- Mounting thread M10 to DIN 19213 (only for replacement requirement) • Vent on side of process flange 7) - Mounting thread 7/ ₁₆ -20 UNF to IEC 61518/DIN EN 61518 - Mounting thread M10 to DIN 19213 (only for replacement requirement) Non-wetted parts materials process flange screws Electronics housing Stainless steel Die-cast aluminum Stainless steel Stainless steel precision casting Version • Standard version, German plate inscription, setting for pressure unit: bar • International version, English plate inscription, setting for pressure unit: bar • Chinese version, English plate inscription, setting for pressure unit: Pascal All versions include DVD with compact operating instructions in various EU languages. Explosion protection • None • With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)"8) - "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)" 9) - "Ex nA/ic (Zone 2)" 10) - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)" 11) • FM + CSA (is + ep) + Ex ia + Ex d (ATEX) + Zone 1D/2D)" 1112) • With FM + CSA, Type of protection: - "Intrinsic Safe and Explosion Proof (is + yea)" 8112) • With FM + CSA, Type of protection: - "Intrinsic Safe and Explosion Proof (is + yea)" 8112) • With FM + CSA, Type of protection: - "Intrinsic Safe and Explosion Proof (is + yea)" 8112)								
- Mounting thread M10 to DIN 19213 (only for replacement requirement) • Vent on side of process flange 7) - Mounting thread 7/ ₁₆ -20 UNF to IEC 61518/DIN EN 61518 - Mounting thread M10 to DIN 19213 (only for replacement requirement) Non-wetted parts materials process flange screws Electronics housing Stainless steel Die-cast aluminum Stainless steel Stainless steel precision casting Version • Standard version, German plate inscription, setting for pressure unit: bar • International version, English plate inscription, setting for pressure unit: bar • Chinese version, English plate inscription, setting for pressure unit: Pascal All versions include DVD with compact operating instructions in various EU languages. Explosion protection • None • With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)"8) - "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)" 9) - "Ex nA/ic (Zone 2)" 10) - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)" 11) • FM + CSA (is + ep) + Ex ia + Ex d (ATEX) + Zone 1D/2D)" 1112) • With FM + CSA, Type of protection: - "Intrinsic Safe and Explosion Proof (is + yea)" 8112) • With FM + CSA, Type of protection: - "Intrinsic Safe and Explosion Proof (is + yea)" 8112) • With FM + CSA, Type of protection: - "Intrinsic Safe and Explosion Proof (is + yea)" 8112)	 Mounting thread ⁷/₁₆ IEC 61518/DIN EN 6 	₃ -20 UNF to 11518		2				
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"Intringia Sofo and Evaluation Proof (ig., vp.)" 8)12)							S	
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Selection and Ordering data	Article No.
Pressure transmitter for absolute pressure from differential pressure series	
SITRANS P DS III with PROFIBUS PA (PA)	7 M F 4 3 3 4 -
SITRANS P DS III with FOUNDATION Fieldbus (FF)	7 M F 4 3 3 5 -
Electrical connection/cable entry	_
• Screwed gland M20 x 1.5	В
• Screwed gland ½-14 NPT	C
 M12 device plugs (stainless steel)¹³⁾¹⁴⁾ 	F
Display	
Without display	0
Without visible display	1
(display concealed, setting: bar)	
 With visible display (setting: bar) 	6
With customer-specific display (setting as	7
specified, Order code "Y21" required)	

Included in delivery of the device:

- Quick-start guide
- Sealing plug(s) or sealing screw(s) for the process flanges(s)
- 1) For oxygen application, add Order code E10.
- 2) Version 7MF4334-1DY... only up to max. span 200 mbar a (80 inH₂O a).
- 3) When the manufacture's certificate (calibration certificate) has to be ordered for transmitters with diaphragm seals according to IEC 60770-2, it is recommended only to order this certificate exclusively with the diaphragm seals. The measuring accuracy of the total combination is certified here.
- 4) If the acceptance test certificate 3.1.is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.
- 5) The diaphragm seal is to be specified with a separate order number and must be included with the transmitter order number, for example 7MF433.-.Y..-... and 7MF4900-1...-.B
- 6) The standard measuring cell filling for configurations with remote seals (Y) is silicone oil.
- 7) Not for nominal measuring range 100 bar a (1450 psi a). Position of the top vent valve in the process flange (see dimensional drawing).
- 8) Without cable gland, with blanking plug
- 9) With enclosed cable gland Ex ia and blanking plug
- ¹⁰⁾ Configurations with Han and M12 device plugs are only available in Ex ic.
- 11) Only in connection with IP66.
- 12) Explosion protection acc. to FM/CSA: suitable for installations according to NEC 500/505.
- 13) 11Only in connection with Ex approval A, B, E or F.
- ¹⁴⁾ M12 delivered without cable socket

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

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 (1x fixing angle, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer) made of:				
SteelStainless steel 304Stainless steel 316L	A01 A02 A03	√ ✓	√ √	✓
O-rings for process flanges (instead of FPM (Viton)) PTFE (Teflon) FEP (with silicone core, approved for food) FFPM (Kalrez, compound 4079), for measured medium temperatures -15 100 °C (5 212 °F)) NBR (Buna N)	A20 A21 A22	* * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * *	* * *
Device plugs¹) • Han 7D (metal) • Han 8D (instead of Han 7D) • Angled • Han 8D (metal)	A30 A31 A32 A33	✓✓✓	•	·
Sealing screw 1/4-18 NPT, with valve in mat. of process flanges Cable sockets for M12 device plugs	A40 A50	1	1	1
(metal (CuZn))	AJU	,		•
Rating plate inscription (instead of German) • English • French • Spanish • Italian • Cyrillic (russian) English rating plate	B11 B12 B13 B14 B16	\ \ \ \ \ \ \ \	* * * * * *	*****
Pressure units in inH ₂ 0 and/or psi Quality Inspection Certificate (5-point characteristic pure text)	C11	1	✓	✓
acteristic curve test) according to IEC 60770-2 ²⁾ Inspection certificate ³⁾ Acc. to EN 10204-3.1	C12	✓	✓	✓
Factory certificate Acc. to EN 10204-2.2	C14	✓	✓	✓
Acceptance certificate (EN 10204-3.1) PMI test of parts in contact with medium	C15	✓	✓	✓
Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration	C20	✓		
Functional safety (PROFIsafe) Certificate and PROFIsafe protocol	C21 ⁴⁾		1	
Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration	C23	1		
PED for Russia with initial calibration mark	C99	✓	✓	✓

Selection and Ordering data	Order	code		
Further designs Add "-Z" to Article No. and specify Order code.		HART	PA	FF
Setting of the upper saturation limit of the output signal to 22.0 mA	D05	✓		
Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009) (only together with seal diaphragm made of Hastelloy and stainless steel)	D07	✓	✓	✓
Degree of protection IP66/IP68 (only for M20 x 1.5 and ½-14 NPT)		✓	✓	✓
Supplied with oval flange (1 item), PTFE packing and screws in thread of process flange	D37	✓	✓	✓
Capri cable gland 4F CrNi and clamping device (848699 + 810634) included	D59	✓	✓	1

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

Selection and Ordering data	Order	code		
Further designs Add "-Z" to Article No. and specify Order code.		HART	PA	FF
Use in or on zone 1D/2D ⁵⁾	E01	✓	✓	✓
(only together with type of protection "Intrinsic safety" (transmitter 7MF4B Ex ia)" and IP66)				
Oxygen application	E10	✓	✓	✓
(In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140 °F))				
Export approval Korea	E11	✓	✓	✓
CRN approval Canada (Canadian Registration Number)	E22 ⁶⁾	✓	✓	✓
Dual seal	E24	✓	✓	✓
Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil)	E25 ⁷⁾	✓	✓	✓
(only for transmitter 7MF4B)				
"Flameproof" explosion protection according to INMETRO (Brazil)	E26 ⁷⁾	✓	✓	✓
(only for transmitter 7MF4D)	_,			
Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil) (only for transmitter 7MF4P)	E28 ⁷⁾	√	✓	
Ex Approval IEC Ex (Ex ia) (only for transmitter 7MF4B)	E45 ⁷⁾	✓	✓	✓
Ex Approval IEC Ex (Ex d) (only for transmitter 7MF4D)	E46 ⁷⁾	✓	✓	✓
Explosion-proof "Intrinsic safety"	E55 ⁷⁾		1	_
to NEPSI (China) (only for transmitter 7MF4B)	E33.4	ľ	•	Ť
Explosion protection "Explosion-proof" to NEPSI (China)	E56 ⁷⁾	✓	✓	✓
(only for transmitter 7MF4D)				
Explosion-proof "Zone 2" to NEPSI (China) (only for transmitter 7MF4	E57 ⁷⁾	✓	✓	✓
Ex protection "Ex ia", "Ex d" and "Zone 2" to NEPSI (China)	E58 ⁷⁾	✓	✓	✓
(only for transmitter 7MF4R)				
"Intrinsic safety" and "Explosion-proof" explosion protection acc. to Kosha (Korea)	E70 ⁷⁾	✓	✓	✓
(only for transmitter 7MF4[B, D]Z + E11)				
Ex-protection Ex ia according to EAC Ex (Russia)	E80	✓	✓	✓
Ex-protection Ex d according to EAC Ex (Russia)	E81	✓	✓	✓
Ex-protection Ex nA/ic (Zone 2) according to EAC Ex (Russia)	E82	✓	✓	✓
Ex-protection Ex ia + Ex d + Zone 1D/2D according to EAC Ex (Russia)	E83	1	✓	✓
Two coats of lacquer on casing and cover (PU on epoxy)	G10	✓	✓	✓
Interchanging of process connection side	H01	✓	✓	✓
Vent on side for gas measurements	H02	✓	✓	✓
Stainless steel process flanges for vertical differential pressure lines	H03	1	✓	✓
(not together with K01, K02 and K04) ⁸⁾				

Selection and Ordering data	Order code			
Further designs Add "-Z" to Article No. and specify Order code.		HART	PA	FF
Transient protector 6 kV (lightning protection)	J01	✓	✓	1
Chambered graphite gasket for process flange	J02	✓	✓	✓
Chambered PTFE graphite gasket	J03	✓	✓	✓
EPDM O-rings for process flange with approval (WRC/WRAS)	J05	✓	✓	✓
Vent valve or blanking plug of process flange welded-in (orientation: on right when viewing the display) ⁹⁾	J08	✓	✓	✓
Vent valve or blanking plug of process flange welded-in (orientation: on left when viewing the display) ⁹⁾	J09	✓	✓	✓
Process flange • Hastelloy • Monel • Stainless steel with PVDF insert max. PN 10 (MAWP 145 psi), max. temperature of medium 90 °C (194 °F) For ½-14 NPT inner process connection on the side in the middle of the process flange, vent valve not possible	K01 K02 K04	* * * *	√ √ √	√ √ √
Marine approvals Det Norske Veritas Germanischer Lloyd (DNV-GL) Lloyds Register (LR) French marine classification society Bureau Veritas (BV) American Bureau of Shipping (ABS) Russian Maritime Register (RMR) Korean Register of Shipping (KR)	S10 S11 S12 S14 S16 S17	* * * * * * *	4 4	* * * * * * * * * * * * * * * * * * *

- 1) Han device plug IP65
- When the manufacture's certificate (calibration certificate) has to be ordered for transmitters with diaphragm seals according to IEC 60770-2, it is recommended only to order this certificate exclusively with the diaphragm seals. The measuring accuracy of the total combination is certified here.
- 3) If the acceptance test certificate 3.1.is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.
- 4) Profisafe transmitters can only be operated with the S7 F Systems V6.1 configuration software in combination with S7-400H
- 5) Option does not contain gas explosion protection; only dust explosion protection: Use in or at Zone 1D/2D.
- 6) Cannot be ordered with remote seal.
- 7) When the additional ex option is selected, the ATEX marking on the device is omitted. Only the Ex option selected via the Z option is marked.
- 8) Not suitable for connection of remote seals.
- 9) Blanking plug is standard configuration. Order option A40 if a vent valve is required instead of a blanking plug.

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for absolute pressure (from differential pressure series)

Selection and Ordering data	Order	code		
Additional data		HART	PA	FF
Please add "-Z" to Article No. and specify Order code(s) and plain text.				
Measuring range to be set Specify in plain text (max. 5 characters): Y01: up to mbar a, bar a, kPa _{abs} , MPa _{abs} , psi a ²)	Y01	✓	√ 1)	
Stainless steel tag plate and entry in device variable (measuring point description)	Y15	✓	✓	✓
Max. 16 characters, specify in plain text: Y15:				
Measuring point text (entry in device variable)	Y16	✓	✓	✓
Max. 27 characters, specify in plain text: Y16:				
Entry of HART address (TAG) Max. 8 characters, specify in plain text: Y17:	Y17	√		
Setting of pressure indication in pressure units	Y21	✓	✓	✓
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_2O^*), inH_2O^*), ftH_2O^*), $mmHG$, $inHG$, psi, Pa, kPa, MPa, g/cm^2 , kg/cm^2 , Torr, ATM or % *) ref. temperature 20 °C				
Setting of pressure indication in non-pressure units ³⁾	Y22 + Y01	✓		
Specify in plain text: Y22: up to I/min, m³/h, m, USgpm, (specification of measuring range in pressure units "Y01" is essential, unit with max. 5 characters)				
Preset bus address possible between 1 and 126 Specify in plain text: Y25:	Y25		✓	✓
Damping adjustment in seconds (0 100 s)	Y30	✓	✓	✓

Factory mounting of valve manifolds, see accessories.

Only Y01, Y15, Y16, Y17, Y21, Y22, Y25 and D05 can be factory preset

✓ = available

¹⁾ Measuring accuracies for PROFIBUS PA transmitters with Option Y01 are calculated in the same way as for HART devices.

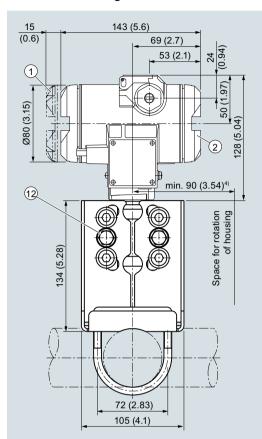
Only absolute pressure units selectable. Negative pressure values not permitted.

³⁾ Preset values can only be changed over SIMATIC PDM.

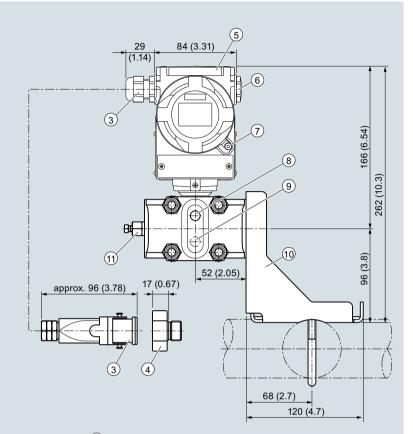
Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for absolute pressure (from differential pressure series)

Dimensional drawings



- 1 Electronic side, digital display (longer overall length for cover with window)¹⁾
- 2 Terminal side¹⁾
- (3) Electrical connection: Screwed gland M20 x 1,5 or Screwed gland ½-14 NPT or Han 7D/8D device plug^{2) 3)}
- 4 Harting adapter
- 5 Protective cover over keys
- Allow approx. 20 mm (0.79 inch) thread length to permit unscrewing
- 2) Not with type of protection "Explosion-proof enclosure"
- 3) Not with type of protection "FM + CSA" [IS + XP]"
- ⁴⁾ 92 mm (3.62 inch) for minimum distance to permit rotation with indicator



- 6 Blanking plug
- 7 Screw cover safety bracket (only for type of protection "Explosion-proof enclosure", not shown in the drawing)
- 8 Lateral venting for liquid measurement (Standard)
- 9 Lateral venting for gas measurement (suffix H02)
- 10 Mounting bracket (option)
- (11) Sealing screw with valve (option)
- 12 Process connection: 1/4-18 NPT (IEC 61518)

SITRANS P DS III pressure transmitters for absolute pressure, from the differential pressure series, dimensions in mm (inch)

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for differential pressure and flow

Technical specifications

SITRANS P, DS III for differential pressure and flow

Input

Measured variable

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

Differential pressure and flow

HART	PROFIBUS PA/ FOUNDATION Fieldbus	
Span	Nominal measuring range	Max. operating pressure MAWP (PS)
1 20 mbar 0.1 2 kPa 0.4 8 inH ₂ O	20 mbar 2 kPa 8 inH ₂ O	32 bar 3.2 MPa 464 psi
1 60 mbar 0.1 6 kPa 0.4 24 inH ₂ O	60 mbar 6 kPa 24.1 inH ₂ O	160 bar 16 MPa 2320 psi
2.5 250 mbar 0.2 25 kPa 1 100 inH ₂ O	250 mbar 25 kPa 100 inH ₂ O	
6 600 mbar 0.660 kPa 2.4 240 inH ₂ O	600 mbar 60 kPa 240 inH ₂ O	
16 1600 mbar 1.6160 kPa 6.4 642 inH ₂ O	1600 mbar 160 kPa 642 inH ₂ O	
50 5000 mbar 5500 kPa 20 2000 inH ₂ O	5000 mbar 500 kPa 2000 inH ₂ O	
0.3 30 bar 0.03 3 MPa 4.35 435 psi	30 bar 3 MPa 435 psi	
2.5 250 mbar 0.2 25 kPa 1 100 inH ₂ O	250 mbar 25 kPa 100 inH ₂ O	420 bar 42 MPa 6091 psi
6 600 mbar 0.660 kPa 2.4 240 inH ₂ O	600 mbar 60 kPa 240 inH ₂ O	(500 bar/50 MPa/7250 psi can be ordered optionally with Order Code D56)
16 1600 mbar 1.6160 kPa 6.4 642 inH ₂ O	1600 mbar 160 kPa 642 inH ₂ O	
50 5000 mbar 5500 kPa 20 2000 inH ₂ O	5000 mbar 500 kPa 2000 inH ₂ O	
0.3 30 bar 0.03 3 MPa 4.35 435 psi	30 bar 3 MPa 435 psi	

Lower measuring limit

- Measuring cell with silicone oil filling
- Measuring cell with inert filling liquid
- for process temperature -20 °C < 9 \leq +60 °C (-4 °F < 9 \leq +140 °F)
- for process temperature 60 °C < $9 \le +100$ °C (max. 85 °C for measuring cell 30 bar) (140 °F < $9 \le +212$ °F (max. 185 °F for measuring cell 435 psi))

Upper measuring limit

Start of scale value

- -100 % of max. span (-33 % with measuring cell 30 bar/3 MPa/435 psi) or 30 mbar a/3 kPa a/0.44 psi a
- -100 % of max. span (-33 % with measuring cell 30 bar/3 MPa/435 psi) or 30 mbar a/3 kPa a/0.44 psi a

30 mbar a + 20 mbar a · (\$ - 60 °C)/°C 3 kPa a + 2 kPa a · (\$ - 60 °C)/°C 0.44 psi a + 0.29 psi a · (\$ - 140 °F)/°F

100 % of max. span

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

Between the measuring limits (fully adjustable)

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

SITRANS P, DS III for differential pressure and flow			
Output	HART		PROFIBUS PA/FOUNDATION Fieldbus
Output signal	4 20 mA		Digital PROFIBUS PA and FOUNDATION Fieldbus signal
• Lower limit (infinitely adjustable)	3.55 mA, factory pr	reset to 3.84 mA	
Upper limit (infinitely adjustable)	23 mA, factory presoptionally set to 22 code D05)		-
Load			
Without HART	$R_{\rm B} \le (U_{\rm H} - 10.5 \text{ V})/U_{\rm H}$: Power supply i		-
• With HART	$R_{\rm B} = 230 \dots 500 \Omega$ $R_{\rm B} = 230 \dots 1100 \Omega$ tor)	(SIMATIC PDM) or 2 (HART Communica-	-
Physical bus	-		IEC 61158-2
Protection against polarity reversal	Protected against so other with max. sup		ty reversal. Each connection against the
Electrical damping (step width 0.1 s)	Set to 2 s (0 100	s)	
Measuring accuracy	Acc. to IEC 60770-	1	
Reference conditions (All error data refer always refer to the set span)	 Increasing chara Start-of-scale vali Stainless steel se Silicone oil filling Room temperatur 	ue 0 bar/kPa/psi al diaphragm	
Measuring span ratio r (spread, Turn-Down)	r = max. measurin	g span/set measuring	span or nom. pressure range
Error in measurement at limit setting incl. hysteresis and reproducibility			
Linear characteristic			
- 20 mbar/2 kPa/0.29 psi	r≤5: 5 <r≤10: 10<r≤20:< td=""><td>$\leq 0.075 \%$ $\leq (0.0029 \cdot r + 0.07)$ $\leq (0.0045 \cdot r + 0.07)$</td><td></td></r≤20:<></r≤10: 	$\leq 0.075 \%$ $\leq (0.0029 \cdot r + 0.07)$ $\leq (0.0045 \cdot r + 0.07)$	
- 60 mbar/6 kPa/0.87 psi	$r \le 5$: $5 < r \le 60$:	≤ 0.075 % ≤ (0.005 · r + 0.05) °	%
 - 250 mbar/25 kPa/3.63 psi 600 mbar/60 kPa/8.7 psi 1600 mbar/160 kPa/23.21 psi 5 bar/500 kpa/72.5 psi 30 bar/3 MPa/435 psi 	r ≤ 5 : 5 < r ≤ 100 :	≤ 0.065 % ≤ (0.004 · r + 0.045)	%
• Square-rooted characteristic (flow > 50 %)			
- 20 mbar/2 kPa/0.29 psi	r≤5: 5 < r≤10: 10 < r≤20:	$\leq 0.075 \%$ $\leq (0.0029 \cdot r + 0.07)$ $\leq (0.0045 \cdot r + 0.07)$	
- 60 mbar/6 kPa/0.87 psi	r≤5: 5 < r≤60:	≤ 0.075 % ≤ (0.005 · r + 0.05) °	%
- 250 mbar/25 kPa/3.63 psi 600 mbar/60 kPa/8.7 psi 1600 mbar/160 kPa/23.21 psi 5 bar/500 kpa/72.5 psi 30 bar/3 MPa/435 psi	$r \le 5$: $5 < r \le 100$:	≤ 0.065 % ≤ (0.004 · r + 0.045)	%
• Square-rooted characteristic (flow > 25 50 %)			
- 20 mbar/2 kPa/0.29 psi	r≤5: 5 < r≤10: 10 < r≤20:	≤ 0.15 % ≤ (0.0058 · r + 0.142 ≤ (0.009 · r + 0.142)	
- 60 mbar/6 kPa/0.87 psi	$r \le 5$: $5 < r \le 60$:	≤ 0.015 % ≤ (0.01 · r + 0.1) %	
- 250 mbar/25 kPa/3.63 psi 600 mbar/60 kPa/8.7 psi 1600 mbar/160 kPa/23.21 psi 5 bar/500 kpa/72.5 psi 30 bar/3 MPa/435 psi	r ≤ 5 : 5 < r ≤ 100 :	$\leq 0.13\%$ $\leq (0.008 \cdot r + 0.09)$	%

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

SITRANS P, DS III for differential pressure and flow	
Measuring accuracy (continued)	Acc. IEC 60770-1
Influence of ambient temperature (in percent per 28 °C (50 °F))	
• 20 mbar/2 kPa/0.29 psi	\leq (0.15 · r + 0.1) %
• 60 mbar/6 kPa/0.87 psi	\leq (0.075 · r + 0.1) %
 250 mbar/25 kPa/3.63 psi 600 mbar/60 kPa/8.7 psi 1600 mbar/160 kPa/23.21 psi 5 bar/500 kpa/72.5 psi 30 bar/3 MPa/435 psi 	≤ (0.025 · r + 0.125) %
Influence of static pressure	
• on the zero point	
- 20 mbar/2 kPa/0.29 psi	\leq (0.15 \cdot r) % per 32 bar (zero-point correction is possible with position error adjustment)
 60 mbar/6 kPa/0.87 psi 250 mbar/25 kPa/3.63 psi 600 mbar/60 kPa/8.7 psi 1600 mbar/160 kPa/23.21 psi 	\leq (0.1 · r) % per 70 bar (zero-point correction is possible with position error adjustment)
- 5 bar/500 kpa/72.5 psi 30 bar/3 MPa/435 psi	\leq (0.2 · r) % per 70 bar (zero-point correction is possible with position error adjustment)
• on the span	
- 20 mbar/2 kPa/0.29 psi	≤ 0.2 % per 32 bar
 - 60 mbar/6 kPa/0.87 psi 250 mbar/25 kPa/3.63 psi 600 mbar/60 kPa/8.7 psi 1600 mbar/160 kPa/23.21 psi 5 bar/500 kpa/72.5 psi 30 bar/3 MPa/435 psi 	≤ 0.14 % per 70 bar
Long-term stability (temperature change ± 30 °C (± 54 °F))	Static pressure max. 70 bar/7 MPa/ 1015 psi
• 20 mbar/2 kPa/0.29 psi	≤ (0.2 · r) % per year
 60 mbar/6 kPa/0.87 psi 30 bar/3 MPa/435 psi 	≤ (0.25 · r) % in 5 years
 250 mbar/25 kPa/3.63 psi 600 mbar/60 kPa/8.7 psi 1600 mbar/160 kPa/23.21 psi 5 bar/500 kpa/72.5 psi 	≤ (0.125 · r) % in 5 years
Effect of mounting position (in pressure per change in angle)	≤ 0.7 mbar/0.07 kPa/0.028 inH ₂ O per 10° inclination (zero-point correction is possible with position error adjustment)
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 · 10 ⁻⁵ of nominal measuring range

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

		for differential pressure and flow			
SITRANS P, DS III for differential pressure and flow					
Rated conditions					
Degree of protection					
• according to EN 60529	IP66 (optional IP66/IP68)				
according to NEMA 250	Type 4X				
Temperature of medium	71-				
Measuring cell with silicone oil filling	-40 +100 °C (-40 +212 °F) -20 +10 with 30 bar measuring cell	00 °C (-4 +212 °F)			
Measuring cell with inert filling liquid	-20 +100 °C (-4 +212 °F)				
Measuring cell with Neobee fill fluid (FDA-compliant)	-10 +100 °C (+14 +212 °F)				
In conjunction with dust explosion protection	-20 +60 °C (-4 +140 °F)				
Ambient conditions	,				
Ambient temperature (silicone oil and inert oil)					
- Transmitter	-40 +85 °C (-40 +185 °F)				
	-20 +85 °C (-4 +185 °F) with 30 bar i	measuring cell			
- Display readable	-30 +85 °C (-22 +185 °F)	G			
Ambient temperature (Neobee fill fluid)	,				
- Transmitter	-10 +85 °C (+14 +185 °F)				
Storage temperature	-50 +85 °C (-58 +185 °F)				
Climatic class	50 1 50 °C (50 1 150 °C)				
- Condensation	Relative humidity 0 100 %				
- condensation	Condensation permissible, suitable for us	e in the tropics			
Electromagnetic Compatibility					
- Emitted interference and interference immunity	Acc. to IEC 61326 and NAMUR NE 21				
Design					
Weight (without options)	Die-cast aluminum: ≈ 4.5 kg (≈ 9.9 lb) Stainless steel precision casting: ≈ 7.1 kg	(≈ 15.6 lb)			
Enclosure material	Low-copper die-cast aluminum, GD-AlSi1 no. 1.4408	2 or stainless steel precision casting, mat.			
Wetted parts materials					
Seal diaphragm	Stainless steel, mat. no. 1.4404/316L or H mat. no. 2.4360, tantalum or gold	lastelloy C276, mat. no. 2.4819, Monel,			
Process flanges and sealing screw	Stainless steel, mat. no. 1.4408, Hastelloy mat. no. 2.4360	C4, mat. no. 2.4602 or Monel,			
• O-Ring	FPM (Viton) or optionally: PTFE, FEP, FEP	M and NBR			
Measuring cell filling	Silicone oil or inert filling liquid (maximum 100 bar (1450 psi) at 60 °C (140 °F))	value with oxygen measurement pressure			
Process connection	Female thread $\frac{1}{4}$ -18 NPT and flange conr DIN 19213 or $\frac{7}{16}$ -20 UNF to IEC 61518/D	nection with mounting thread M10 to NN EN 61518			
Material of mounting bracket					
• Steel	Sheet-steel, Mat. No. 1.0330, chrome-plate	ted			
• Stainless steel 304	Sheet stainless steel, mat. no. 1.4301 (SS	304)			
Stainless steel 316L	Sheet stainless steel, mat. no. 1.4404 (SS	316L)			
Power supply $\emph{\textbf{U}}_{H}$	HART	PROFIBUS PA/ FOUNDATION Fieldbus			
Terminal voltage on transmitter	10.5 45 V DC 10.5 30 V DC in intrinsically-safe mode	-			
Power supply	-	Supplied through bus			
Separate 24 V power supply necessary Bus voltage	-	No			
• Not Ex	_	9 32 V			
With intrinsically-safe operation	_	9 32 V 9 24 V			
With Intrinsically-sale operation Current consumption		J 24 V			
· · · · · · · · · · · · · · · · · · ·	10.5 1				
Basic current (max.)Start-up current ≤ basic current		12.5 mA Yes			
Max. current in event of fault		15.5 mA			
Fault disconnection electronics (FDE) available	-	Yes			
. III. I. I Som oddon oloddon oo (1 DE) dydnado					

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for differential pressure and flow	_	_
SITRANS P, DS III for differential pressure and flow		
Certificates and approvals	HART	PROFIBUS PA/ FOUNDATION Fieldbus
Classification according to PED 2014/68/EU	group 1; complies with requirements practice) • PN 420 (MAWP 6092) for gases of flu	gases of fluid group 1 and liquids of fluid of article 4, paragraph 3 (sound engineering id group 1 and liquids of fluid group 1; nts of Article 4, paragraph 1 (appendix 1);
	assigned to category III, conformity e	evaluation module H by the TÜV Nord.
Explosion protection		
Intrinsic safety "i"	PTB 13 ATEX 2007 X	
- Marking	Ex II 1/2 G Ex ia/ib IIC T4/T5/T6 Ga/Gb	
- Permissible ambient temperature	-40 +85 °C (-40 +185 °F) tempera -40 +70 °C (-40 +158 °F) tempera -40 +60 °C (-40 +140 °F) tempera	ture class T5;
- Connection	To certified intrinsically-safe circuits wit peak values: $U_{\rm i}$ = 30 V, $I_{\rm i}$ = 100 mA, $P_{\rm i}$ = 750 mW; $R_{\rm i}$ = 300 Ω	h FISCO supply unit: $U_0 = 17.5 \text{ V}, I_0 = 380 \text{ mA}, P_0 = 5.32 \text{ W}$ Linear barrier: $U_0 = 24 \text{ V}, I_0 = 250 \text{ mA}, P_0 = 1.2 \text{ W}$
- Effective internal inductance/capacitance	$L_{i} = 0.4 \text{ mH}, C_{i} = 6 \text{ nF}$	$L_i = 7 \mu H, C_i = 1.1 nF$
• Explosion-proof "d"	PTB 99 ATEX 1160	
- Marking	Ex II 1/2 G Ex d IIC T4/T6 Gb	
- Permissible ambient temperature	-40 +85 °C (-40 +185 °F) tempera -40 +60 °C (-40 +140 °F) tempera	
- Connection	To circuits with values: $U_{\rm H}$ = 10.5 45 V DC	To circuits with values: $U_{\rm H} = 9 \dots 32 \ {\rm VDC}$
 Dust explosion protection for zone 20 	PTB 01 ATEX 2055	
- Marking	Ex II 1 D Ex ta IIIC T120°C Da Ex II 1/2 D Ex ta/tb IIIC T120°C Da/Db	
- Permissible ambient temperature	-40 +85 °C (-40 +185 °F)	
- Max. surface temperature	120 °C (248 °F)	
- Connection	To certified intrinsically-safe circuits wit peak values: $U_{\rm i}$ = 30 V, $I_{\rm i}$ = 100 mA, $P_{\rm i}$ = 750 mW, $P_{\rm i}$ = 300 Ω	h FISCO supply unit: $U_0 = 17.5 \text{ V}, I_0 = 380 \text{ mA}, P_0 = 5.32 \text{ W}$ Linear barrier: $U_0 = 24 \text{ V}, I_0 = 250 \text{ mA}, P_0 = 1 \text{ W}$
- Effective internal inductance/capacitance	$L_{\rm i} = 0.4 {\rm mH}, C_{\rm i} = 6 {\rm nF}$	$L_i = 7 \mu H, C_i = 1.1 nF$
 Dust explosion protection for zone 21/22 	PTB 01 ATEX 2055	'
- Marking	Ex II 2 D Ex tb IIIC T120°C Db	
- Connection	To circuits with values: $U_{\rm H}$ = 10.5 45 DC; $P_{\rm max}$ = 1.2 W	V To circuits with values: $U_{\rm H}$ = 9 32 V DC; $P_{\rm max}$ = 1 W
Type of protection "n" (zone 2)	PTB 13 ATEX 2007 X	That .
- Marking	Ex II 2/3 G Ex nA IIC T4/T5/T6 Gb/Gc Ex II 2/3 G Ex ic IIC T4/T5/T6 Gb/Gc	
- Connection (Ex nA)	<i>U</i> _m = 45 V	$U_{\rm m} = 32 \text{ V}$
- Connection (Ex ic)	To circuits with values: $U_{\rm i} = 45~{\rm V}$	FISCO supply unit ic: $U_0 = 17.5 \text{ V}$, $I_0 = 570 \text{ mA}$ Linear barrier: $U_0 = 32 \text{ V}$, $I_0 = 132 \text{ mA}$, $P_0 = 1 \text{ W}$
- Effective internal inductance/capacitance	$L_i = 0.4 \text{ mH}, C_i = 6 \text{ nF}$	$L_{\rm i} = 7 \mu \text{H}, C_{\rm i} = 1.1 \text{nF}$
Explosion protection acc. to FM	Certificate of Compliance 3008490	1
- Identification (XP/DIP) or (IS); (NI)		IV 1, GP EFG; CL III; CL I, ZN 0/1 AEx ia IIC CL II, DIV 2, GP FG; CL III

Certificate of Compliance 1153651

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

- Explosion protection to CSA
- Identification (XP/DIP) or (IS)

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

		for d	ifferential pressure and flow
HART communication		FOUNDATION Fieldbus	
HART	230 1100 Ω	communication	
Protocol	HART Version 5.x	Function blocks	3 function blocks analog input, 1 function block PID
Software for PC	SIMATIC PDM	Analog input	
PROFIBUS PA communication		- Adaptation to customer-	Yes, linearly rising or falling
Simultaneous communication with master class 2 (max.)	4	specific process variables	characteristic
The address can be set using	Configuration tool or local opera-	- Electrical damping, adjustable	0 100 s
The address can be set doing	tion (standard setting address 126)	- Simulation function	Output/input (can be locked within the device with a bridge)
Cyclic data usage		- Failure mode	parameterizable (last good value, substitute value, incorrect
Output byte	5 (one measured value) or 10 (two measured values)		value)
• Input byte	0, 1, or 2 (register operating mode and reset function for	- Limit monitoring	Yes, one upper and lower warn- ing limit and one alarm limit respectively
	metering)	- Square-rooted characteristic	Yes
Internal preprocessing		for flow measurement	
Device profile	PROFIBUS PA Profile for Process Control Devices Version	• PID	Standard FOUNDATION Field- bus function block
	3.0, class B	 Physical block 	1 resource block
Function blocks	2	Transducer blocks	1 transducer block Pressure with
Analog input			calibration, 1 transducer block LCD
 Adaptation to customer-specific process variables 	Yes, linearly rising or falling characteristic	Pressure transducer block	
- Electrical damping, adjustable	0 100 s	 Can be calibrated by applying two pressures 	Yes
- Simulation function	Input /Output	- Monitoring of sensor limits	Yes
- Failure mode	parameterizable (last good value, substitute value, incorrect value)	 Simulation function: Measured pressure value, sensor tem- 	Constant value or over parameterizable ramp function
- Limit monitoring	Yes, one upper and lower warning limit and one alarm limit respectively	perature and electronics tem- perature	
Register (totalizer)	Can be reset, preset, optional direction of counting, simulation function of register output		
- Failure mode	parameterizable (summation with last good value, continuous summation, summation with incorrect value)		
- Limit monitoring	One upper and lower warning limit and one alarm limit respec- tively		
 Physical block 	1		

2

Yes

Yes

Yes

Max. 30 nodes

Parameterizable

Constant value or over parame-

terizable ramp function

Transducer blocks

• Pressure transducer block

- Can be calibrated by applying two pressures

- Monitoring of sensor limits

- Specification of a container

and implementation point of square-root extraction - Simulation function for mea-

sured pressure value and sensor temperature

characteristic with - Square-rooted characteristic

for flow measurement - Gradual volume suppression

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for differential pressure and flow

Selection and Orderi	-		Article No.				
SITRANS P DS III with mitters for differentia	h HART pressure trans-	7	7 M F 4 4 3 3 -				
PN 32/160 (MAWP 46							
	No. for the online configue Cycle Portal.						
Measuring cell filling	Measuring cell						
	cleaning						
Silicone oil	normal		1				
Inert liquid ¹⁾	grease-free to cleanliness level 2		3				
FDA compliant fill fluid							
Neobee oil	normal		4				
Measuring span (min		_					
PN 32 (MAWP 464 psi							
1 20 mbar ³⁾	(0.4 8 inH ₂ O)		В				
PN 160 (MAWP 2320 p	osi)						
I 60 mbar	(0.4 24 inH ₂ O)		С				
2.5 250 mbar	(1.004 100.4 inH ₂ O)		D				
600 mbar	(2.4 240 inH ₂ O)		E				
6 1600 mbar	(6.4 642 inH ₂ O)		F				
50 5000 mbar	(20 2000 inH ₂ O)		G				
).3 30 bar	(4.35 435 psi)		Н				
Vetted parts materia							
stainless steel proces	• ,						
Seal diaphragm	Parts of measuring cell						
Stainless steel	Stainless steel		A				
Hastelloy	Stainless steel		В				
Hastelloy	Hastelloy		С				
「antalum ⁴⁾	Tantalum		E				
Monel ⁴⁾	Monel		Н				
Gold ⁴⁾	Gold		5				
ersion for diaphragm	seal ^{O) O) () O)}		Y				
Process connection	DT '11 (1						
	PT with flange connection						
• Sealing screw oppos	site process connection						
 Mounting thread ⁷/ IEC 61518/DIN EN 	₁₆ -20 UNF to 61518		2				
- Mounting thread M	10 to DIN 19213		0				
(only for replaceme	ent requirement)						
Vent on side of proce	ess flange 3)						
 Mounting thread ⁷/ IEC 61518/DIN EN 	₁₆ -20 UNF to 61518		6				
- Mounting thread M			4				
(only for replacement	ent requirement)						
Non-wetted parts ma							
process flange screws	Electronics housing						
Stainless steel	Die-cast aluminum		2				
Stainless steel	Stainless steel precision casting ⁹⁾		3				
/ersion		\neg					
setting for pressure u			1				
setting for pressure i			2				
 Chinese version, Eng setting for pressure un 			3				
All versions include D\ ng instructions in vari	/D with compact operat- ous EU languages.						

Selection and Ordering data	Article No.		
SITRANS P DS III with HART pressure transmitters for differential pressure and flow,	7 M F 4 4 3 3	-	
PN 32/160 (MAWP 464/2320 psi)		-	۱
Explosion protection			
• None		A	
With ATEX, Type of protection:			
- "Intrinsic safety (Ex ia)"		В	
- "Explosion-proof (Ex d)" ¹⁰⁾		D	
 "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)"¹¹⁾ 		Р	
 "Ex nA/ic (Zone 2)"¹²⁾ 		E	
 "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia+ Ex d + Zone 1D/2D)"11)13) 		R	
• FM + CSA intrinsic safe (is) ¹⁴⁾		F	
• FM + CSA (is + ep) + Ex ia + Ex d (ATEX) + Zone 1D/2D ¹¹)13)14)		S	
 With FM + CSA, Type of protection: 			
- "Intrinsic Safe and Explosion Proof (is + xp)"10)14)		NC	
Electrical connection/cable entry			
 Screwed gland M20 x 1.5 		В	
 Screwed gland ½-14 NPT 		С	
 Han 7D device plug (plastic housing) incl. mating connector¹⁵⁾¹⁶⁾ 		D	
 M12 device plugs (stainless steel)¹⁷⁾¹⁸⁾ 		F	
Display	-		
 Without display 		0)
Without visible display		1	
(display concealed, setting: mA)			
With visible display (setting: mA)		6	
 with customer-specific display (setting as specified, Order code "Y21" or "Y22" required) 		7	
Power supply units see Chap. 7 "Supplementary Co	mnonents"		

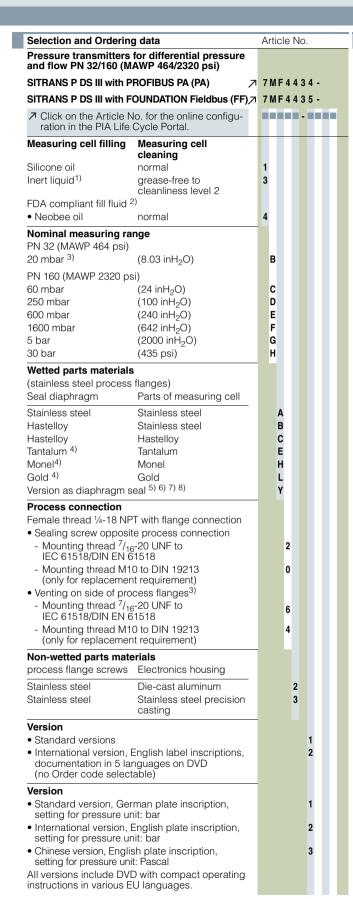
Power supply units see Chap. 7 "Supplementary Components".

Included in delivery of the device:

- Quick-start guide
- Sealing plug(s) or sealing screw(s) for the process flanges(s)
- 1) For oxygen application, add Order code E10.
- 2) Available for measuring ranges 250 mbar ... 5 bar.
- 3) Not suitable for connection of remote seal. Position of the top vent valve in the process flange (see dimensional drawing).
- $^{4)}$ Not in conjunction with max. span 20 and 60 mbar (8.03 and 24.09 inH $_2$ O))
- 5) When the manufacture's certificate (calibration certificate) has to be ordered for transmitters with diaphragm seals according to IEC 60770-2, it is recommended only to order this certificate exclusively with the diaphragm seals. The measuring accuracy of the <u>total</u> combination is certified here.
- 6) If the acceptance test certificate 3.1.is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.
- 7) The diaphragm seal is to be specified with a separate order number and must be included with the transmitter order number, for example 7MF443.-.Y.-.... and 7MF4900-1...-.B
- 8) The standard measuring cell filling for configurations with remote seals (Y) is silicone oil.
- 9) Not in conjunction with Electrical connection "Han 7D device plug".
- ¹⁰⁾Without cable gland, with blanking plug
- 11) With enclosed cable gland Ex ia and blanking plug
- ¹²⁾Configurations with Han and M12 device plugs are only available in Ex ic.
- 13)Only in connection with IP66.
- 14) Explosion protection acc. to FM/CSA: suitable for installations according to NEC 500/505.
- ¹⁵⁾ Only in connection with Ex apporval A, B or E.
- ¹⁶⁾ Permissible only for crimp-contact of conductor cross-section 1 mm²
- ¹⁷⁾ Only in connection with Ex approval A, B, E or F.
- 18) M12 delivered without cable socket.

Transmitters for applications with advanced requirements (Advanced)
SITRANS P DS III

for differential pressure and flow



Selection and Ordering data	Article No.
Pressure transmitters for differential pressure and flow PN 32/160 (MAWP 464/2320 psi)	
SITRANS P DS III with PROFIBUS PA (PA)	7 M F 4 4 3 4 -
SITRANS P DS III with FOUNDATION Fieldbus (FF)	7 M F 4 4 3 5 -
Explosion protection	
• None	A
 With ATEX, Type of protection: 	
- "Intrinsic safety (Ex ia)"	В
- "Explosion-proof (Ex d)"9)	D
 "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)"¹⁰⁾ 	P
- "Ex nA/ic (Zone 2)" ¹¹⁾	E
 "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)*10)12) 	R
• FM + CSA intrinsic safe (is) ¹³⁾	F
• FM + CSA (is + ep) + Ex ia + Ex d (ATEX)+ Zone 1D/2D ¹⁰) ¹²) ¹³)	S
• With FM + CSA, Type of protection:	
- "Intrinsic Safe and Explosion Proof (is + xp)"9)13)	NC
Electrical connection/cable entry	
Screwed gland M20 x 1.5	В
• Screwed gland ½-14 NPT	С
 M12 device plugs (stainless steel)^{14) 15)} 	F
Display	
Without display	0
Without visible display	1
(display concealed, setting: bar)	
With visible display (setting: bar)	6
 With customer-specific display (setting as specified, Order code "Y21" required) 	7
Included in delivery of the devices	

Included in delivery of the device:

- Quick-start guide
- Sealing plug(s) or sealing screw(s) for the process flanges(s)
- 1) For oxygen application, add Order code E10.
- 2) Available for measuring ranges 250 mbar ... 5 bar.
- 3) Not suitable for connection of remote seal. Position of the top vent valve in the process flange (see dimensional drawing).
- $^{4)}$ Not in conjunction with max. span 20 and 60 mbar (8.03 and 24.09 inH₂O))
- 5) When the manufacture's certificate (calibration certificate) has to be ordered for transmitters with diaphragm seals according to IEC 60770-2, it is recommended only to order this certificate exclusively with the diaphragm seals. The measuring accuracy of the total combination is certified here.
- 6) If the acceptance test certificate 3.1.is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.
- 7) The diaphragm seal is to be specified with a separate order number and must be included wiht the transmitter order number, for example 7MF443.-.Y... and 7MF4900-1...-.B
- 8) The standard measuring cell filling for configurations with remote seals (Y) is silicone oil.
- Without cable gland, with blanking plug.
- 10) With enclosed cable gland Ex ia and blanking plug
- 11) Configurations with Han and M12 device plugs are only available in Ex ic.
- 12) Only in connection with IP66.
- 13) Explosion protection acc. to FM/CSA: suitable for installations according to NEC 500/505.
- ¹⁴⁾ Only in connection with Ex approval A, B, E or F.
- 15) M12 delivered without cable socket

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

Further designs Add *Z* to Article No. and specify Order code. Pressure transmitter with mounting bracket (1x fixing angle, 2 x nut, 2 x U-washer) made of: Steel Stainless steel 304 Stainless steel 316L Orings for process flanges (instead of FPM (Viton)) PTFE (Felfon) FEP (with silicone core, approved for food) FFPM (Kalrez, compound 4079), for measured medium temperatures 15 100 °C (5 212 °F) NBR (Buna N) Device plugs1) Han 7D (metal) Han 8D (instead of Han 7D) A31 Han 8D (metal) Sealing screws (2 units) 1/4-18 NPT, with valve in mat. of process flanges Cable sockets for M12 device plugs (metal (CuZn)) Rating plate inscription (instead of German) English French Spanish Italian Hall PA FF FF FF FF FF FF FF FF FF	Selection and Ordering data	Order	code		
bracket (1x fixing angle, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer or 1 x bracket, 2 x U-y V-y V-y V-y V-y V-y V-y V-y V-y V-y V	Further designs Add "-Z" to Article No. and specify Order		HART	PA	FF
(instead of FPM (Viton)) PTFE (Teflon) FEP (with silicone core, approved for food) FEP (with silicone core, approved for food) FFPM (Kalrez, compound 4079), for measured medium temperatures -15 100 °C (5 212 °F) NBR (Buna N) Device plugs¹) Han 7D (metal) Han 8D (instead of Han 7D) A31 A32 Han 8D (metal) Sealing screws (2 units) V4-18 NPT, with valve in mat. of process flanges Cable sockets for M12 device plugs (metal (CuZn)) Rating plate inscription (instead of German) English French Spanish Italian Cyrillic (russian) English rating plate Pressure units in inH2O and/or psi Quality Inspection Certificate (5-point characteristic curve test) according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (PROFIsafe) Certificate and PROFIsafe protocol	bracket (1x fixing angle, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer) made of: • Steel • Stainless steel 304	A02			* * *
 Han 7D (metal) Han 8D (instead of Han 7D) Angled Han 8D (metal) A32 Han 8D (metal) Sealing screws (2 units) ¼-18 NPT, with valve in mat. of process flanges Cable sockets for M12 device plugs (metal (CuZn)) Rating plate inscription (instead of German) English French Spanish Italian Cyrillic (russian) English rating plate Pressure units in inH₂O and/or psi Quality Inspection Certificate (5-point characteristic curve test) according to IEC 60770-2² Inspection certificate (EN 10204-3.1) PMI test of parts in contact with medium Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration 	(instead of FPM (Viton)) PTFE (Teflon) FEP (with silicone core, approved for food) FFPM (Kalrez, compound 4079), for measured medium temperatures -15 100 °C (5 212 °F)	A21 A22	√		* * * * * *
1/4-18 NPT, with valve in mat. of process flanges Cable sockets for M12 device plugs (metal (CuZn)) Rating plate inscription (instead of German) • English • French • Spanish • Italian • Cyrillic (russian) English rating plate Pressure units in inH ₂ O and/or psi Quality Inspection Certificate (5-point characteristic curve test) according to IEC 60770-2²) Inspection certificate (EN 10204-3.1) PMI test of parts in contact with medium Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration	 Han 7D (metal) Han 8D (instead of Han 7D) Angled Han 8D (metal) 	A31 A32 A33	✓	√	√
(metal (CuZn)) Rating plate inscription (instead of German) • English • French • Spanish • Italian • Cyrillic (russian) English rating plate Pressure units in inH ₂ O and/or psi Quality Inspection Certificate (5-point characteristic curve test) according to IEC 60770-2²) Inspection certificate to EN 10204-3.1 Factory certificate to EN 10204-3.1 Factory certificate (EN 10204-3.1) PMI test of parts in contact with medium Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration	1/4-18 NPT, with valve in mat. of process	7.10			
(instead of German) • English • French • Spanish • Italian • Cyrillic (russian) English rating plate Pressure units in inH ₂ O and/or psi Quality Inspection Certificate (5-point characteristic curve test) according to IEC 60770-2²) Inspection certificate to EN 10204-3.1 Factory certificate to EN 10204-3.1 PMI test of parts in contact with medium Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration		A50	~	√	✓
English rating plate Pressure units in inH ₂ O and/or psi Quality Inspection Certificate (5-point characteristic curve test) according to IEC 60770-2²) Inspection certificate³) to EN 10204-3.1 Factory certificate to EN 10204-2.2 Acceptance certificate (EN 10204-3.1) PMI test of parts in contact with medium Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration	(instead of German) • English • French • Spanish • Italian	B12 B13 B14	* * *	√	* * * * *
Quality Inspection Certificate (5-point characteristic curve test) according to IEC 60770-2²) Inspection certificate³) to EN 10204-3.1 Factory certificate to EN 10204-2.2 Acceptance certificate (EN 10204-3.1) PMI test of parts in contact with medium Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration	English rating plate			•	✓
Factory certificate to EN 10204-2.2 Acceptance certificate (EN 10204-3.1) PMI test of parts in contact with medium Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration	Quality Inspection Certificate (5-point characteristic curve test) according to	C11	1	✓	✓
Acceptance certificate (EN 10204-3.1) PMI test of parts in contact with medium Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration	Inspection certificate ³⁾ to EN 10204-3.1	C12	✓	✓	✓
PMI test of parts in contact with medium Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration	•	C14		✓	✓
Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration		C15	1	✓	✓
Certificate and PŔÒFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration	Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL	C20	✓		
Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration		C21 ⁴⁾		✓	
PED for Russia with initial calibration Coo / /	Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL	C23	✓		
mark	PED for Russia with initial calibration mark	C99	1	✓	✓

Selection and Ordering data	Order	code		
Further designs		HART	PA	FF
Add "-Z" to Article No. and specify Order code.				
Setting of the upper saturation limit of	D05	✓		
the output signal to 22.0 mA				
Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009)	D07	✓	✓	✓
(only together with seal diaphragm made of Hastelloy and stainless steel)				
Degree of protection IP66/IP68 (only for M20 x 1.5 and ½-14 NPT)	D12	✓	✓	✓
Process flange screws made of Monel (max. nominal pressure PN20)	D34	✓	✓	✓
Supplied with oval flange set	D37	✓	✓	1
(2 items), PTFE packings and screws in thread of process flanges				
Capri cable gland 4F CrNi and clamping device (848699 + 810634) included	D59	✓	✓	✓
Use in or on zone 1D/2D ⁵⁾	E01	✓	✓	✓
(only together with type of protection "Intrinsic safety" (transmitter 7MF4B Ex ia)"and IP66)				
Overfilling safety device for flammable	E08	1		
and non-flammable liquids				
(max. PN 32 (MAWP 464 psi), basic device with type of protection "Intrinsic safety (Ex ia)", to WHG and VbF, not together with				
measuring cell filling "inert liquid")	- 40		,	
Oxygen application (In the case of oxygen measurement and	E10	•	✓	•
inert liquid max. 100 bar (1450 psi) at 60°C (140 °F))				
Export approval Korea	E11	✓	✓	✓
CRN approval Canada (Canadian Registration Number)	E22 ⁶⁾	✓	✓	✓
Dual seal	E24	✓	✓	✓
Explosion-proof "Intrinsic safety" (Ex ia)	E25 ⁷⁾	✓	✓	1
to INMETRO (Brazil) (only for transmitter 7MF4B)				
"Flameproof" explosion protection according to INMETRO (Brazil)	E26 ⁷⁾	✓	✓	✓
(only for transmitter 7MF4				
Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil)	E28 ⁷⁾	✓	✓	
(only for transmitter 7MF4P)				
Ex Approval IEC Ex (Ex ia) (only for transmitter 7MF4B)	E45 ⁷⁾	✓	✓	✓
Ex Approval IEC Ex (Ex d) (only for transmitter 7MF4D)	E46 ⁷⁾	✓	✓	1
Explosion-proof "Intrinsic safety" to NEPSI (China)	E55 ⁷⁾	✓	✓	✓
(only for transmitter 7MF4B)				
Explosion protection "Explosion-proof" to NEPSI (China)	E56 ⁷⁾	✓	✓	✓
(only for transmitter 7MF4D)	E57 ⁷⁾		,	
Explosion-proof "Zone 2" to NEPSI (China) (only for transmitter 7MF4E)	⊏3/'/	V	•	٧
Ex protection "Ex ia", "Ex d" and "Zone	E58 ⁷⁾	1	1	1
2" to NEPSI (China)	L30 /		·	
(only for transmitter 7MF4R)	7)		,	
"Intrinsic safety" and "Explosion-proof" explosion protection acc. to Kosha (Korea)	E70 ⁷⁾	V	✓	V
(only for transmitter 7MF4[B, D]Z + E11)				

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for differential pressure and flow

Solontion and Ordering data	Order	oodo		
Selection and Ordering data	Ordel		DA	FF
Further designs Add "-Z" to Article No. and specify Order code.		HART	PA	FF
Ex-protection Ex ia according to EAC Ex (Russia)	E80	✓	✓	✓
Ex-protection Ex d according to EAC Ex (Russia)	E81	✓	✓	✓
Ex-protection Ex nA/ic (Zone 2) according to EAC Ex (Russia)	E82	✓	✓	✓
Ex-protection Ex ia + Ex d + Zone 1D/2D according to EAC Ex (Russia)	E83	✓	✓	✓
Two coats of lacquer on casing and cover (PU on epoxy)	G10	✓	✓	1
Interchanging of process connection side	H01	1	✓	1
Vent on side for gas measurements	H02	✓	✓	✓
Stainless steel process flanges for vertical differential pressure lines (not together with K01, K02 and K04 ⁸⁾	H03	✓	✓	✓
Transient protector 6 kV (lightning protection)	J01	✓	✓	1
Chambered graphite gasket for process flange	J02	✓	✓	✓
Chambered PTFE graphite gasket	J03	✓	✓	1
EPDM O-rings for process flange with approval (WRC/WRAS)	J05	✓	✓	✓
Vent valve or blanking plug of process flange welded-in (orientation: on right when viewing the display ⁹⁾	J08	✓	✓	✓
Vent valve or blanking plug of process flange welded-in (orientation: on left when viewing the display) ⁹⁾	J09	✓	✓	✓
Process flange				
Hastelloy	K01	✓	✓	✓
Monel	K02	✓.	✓.	✓.
Stainless steel with PVDF insert PN 10 (MANAP 145 ps)	K04	✓	✓	✓
max. PN 10 (MAWP 145 psi), max. temperature of medium 90 °C				
(194 °F), for ½-14 NPT inner process con-				
nection on the side in the middle of the				
process flange, vent valve not possible				
Marine approvals • Det Norske Veritas	S10	1	1	1
Germanischer Lloyd (DNV-GL)				
Lloyds Register (LR)	S11	✓	✓.	✓.
 French marine classification society Bureau Veritas (BV) 	S12	✓	✓	1
American Bureau of Shipping (ABS)	S14	1	1	1
Russian Maritime Register (RMR)	S16	✓	✓	1
 Korean Register of Shipping (KR) 	S17	✓	1	1

Factory mounting of valve manifolds, see accessories.

- ✓ = available
- 1) Han device plug IP65
- When the manufacture's certificate (calibration certificate) has to be ordered for transmitters with diaphragm seals according to IEC 60770-2, it is recommended only to order this certificate exclusively with the diaphragm seals. The measuring accuracy of the <u>total</u> combination is certified here.
- 3) If the acceptance test certificate 3.1.is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.
- 4) Profisafe transmitters can only be operated with the S7 F Systems V6.1 configuration software in combination with S7-400H
- 5) Option does not contain gas explosion protection; only dust explosion protection: Use in or at Zone 1D/2D.
- 6) Cannot be ordered with remote seal.
- 7) When the additional ex option is selected, the ATEX marking on the device is omitted. Only the Ex option selected via the Z option is marked.
- 8) Not suitable for connection of remote seal.
- 9) Blanking plug is standard configuration. Order option A40 if a vent valve is required instead of a blanking plug.

Selection and Ordering data	Order	code		
Additional data Please add "-Z" to Article No. and specify Order code(s) and plain text.		HART	PA	FF
Measuring range to be set Specify in plain text: • in the case of linear characteristic curve	Y01	4	√ 1)	
(max. 5 characters): Y01: up to mbar, bar, kPa, MPa, psi • in the case of square rooted characteristic (max. 5 characters):	Y02	✓		
Y02: up to mbar, bar, kPa, MPa, psi Stainless steel tag plate and entry in device variable (measuring point description)	Y15	✓	✓	✓
Max. 16 characters, specify in plain text: Y15:				
Measuring point text (entry in device variable)	Y16	✓	✓	✓
Max. 27 char., specify in plain text: Y16:				
Entry of HART address (TAG) Max. 8 char., specify in plain text: Y17:	Y17	✓		
Setting of pressure indicator in pressure units	Y21	✓	✓	✓
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*), inH ₂ O*), ftH ₂ O*), mmHG, inHG, psi, Pa, kPa, MPa, g/cm ² , kg/cm ² , Torr, ATM or % *) ref. temperature 20 °C				
Setting of pressure indicator in non- pressure units ²⁾	Y22 ³⁾	✓		
Specify in plain text: Y22: up to //min, m³/h, m, USgpm, (specification of measuring range in pressure units "Y01" or "Y02" is essential, unit with max. 5 characters)	Y01 OF Y02			
Preset bus address possible between 1 and 126 Specify in plain text: Y25:	Y25		✓	✓
Damping adjustment in seconds (0 100 s)	Y30	✓	✓	✓

Factory mounting of valve manifolds, see accessories.

Only Y01, Y15, Y16, Y17, Y21, Y22, Y25 and D05 can be factory preset

- ✓ = available
- 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 over SIMATIC PDM.
- Not in conjunction with over-filling safety device for flammable and non-flammable liquids (Order code "E08")

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for differential pressure and flow

for differential pres	ssure and flow				
Selection and Ordering	g data	Artic	le No).	
SITRANS P DS III with	HART pressure trans- 7	7 M F	453	3 3 -	
mitters for differential PN 420 (MAWP 6092 p		100	П.		
	lo. for the online configu-				
ration in the PIA Life					
Measuring cell filling	Measuring cell				
Silicone oil	cleaning normal	1			
Inert liquid ¹⁾	grease-free to	3			
more inquita	cleanliness level 2				
Measuring span (min.					
2.5 250 mbar	(1.004 100 inH ₂ O)	D			
6 600 mbar	(2.4 240 inH ₂ O)	E F			
16 1600 mbar 50 5000 mbar	(6.4 642 inH ₂ O) (20 2000 inH ₂ O)	G			
0.3 30 bar	(4.35 435 psi)	Н			
Wetted parts materials					
(stainless steel process					
Seal diaphragm	Parts of measuring cell				
Stainless steel	Stainless steel	Α			
Hastelloy	Stainless steel	В			
Gold ²⁾	Gold	L			
Version for diaphragm s	seal 3) 4) 5) 6)	Y			
Process connection					
	T with flange connection				
Sealing screw opposit	te process connection				
 Mounting thread ⁷/₁₆ IEC 61518/DIN EN 6 	₃ -20 UNF to 11518		3		
- Mounting thread M1			1		
 (only for replacement Venting on side of pro- 	cess flanges, location of				
vent valve at top of pro sional drawing)	ocess flanges (see dimen-				
 Mounting thread ⁷/₁₆ IEC 61518/DIN EN 6 	3-20 UNF to		7		
- Mounting thread M1			5		
(only for replacemen	nt requirement)				
Non-wetted parts mate					
process flange screws	Electronics housing				
Stainless steel	Die-cast aluminum		2		
Stainless steel	Stainless steel precision casting ⁷⁾		3		
Version	Casting 7				
 Standard version, Ger 	man plate inscription			1	
setting for pressure ur					
	English plate inscription,			2	
setting for pressure ur					
 Chinese version, English setting for pressure unit 				3	
	D with compact operating				
instructions in various E					
Explosion protection					
• None				Α	
With ATEX, Type of pro "Intringia and the Continuous Cont					
"Intrinsic safety (Ex i"Explosion-proof (Ex				В	
1 1	′			D	
 "Intrinsic safety and (Ex ia + Ex d)"⁹⁾ 	nameproor enclosure"			Р	
- "Ex nA/ic (Zone 2)"10				E	
	osion-proof enclosure and			R	
 FM + CSA intrinsic sa FM + CSA (is + ap) + 				F S	
• FM + CSA (is + ep) + Zone 1D/2D ⁹⁾¹¹⁾¹²⁾	LA IQ + LA U (AIEA) +			3	
• With FM + CSA, Type	of protection:				
- "Intrinsic safety and	explosion-proof			NC	
(is + xp)" ⁸⁾¹²⁾ , max l	PN 360				

Selection and Ordering data	Article No.
SITRANS P DS III with HART pressure transmitters for differential pressure and flow,	7 M F 4 5 3 3 -
PN 420 (MAWP 6092 psi)	
 Electrical connection/cable entry Screwed gland M20x1.5 Screwed gland ½-14 NPT Han 7D device plug (plastic housing) incl. mating connector¹³⁾¹⁴⁾ M12 device plugs (stainless steel)¹⁵⁾ ¹⁶⁾ 	B C D
Display Without display Without visible display (display concealed, setting: mA) With visible display (setting: mA) with customer-specific display (setting as specified, Order code "Y21" or "Y22" required)	0 1 6 7

Power supply units see Chap. 7 "Supplementary Components".

Scope of delivery: Pressure transmitter as ordered (Instruction Manual is extra ordering item) $\,$

- 1) For oxygen application, add Order code E10.
- 2) Not in conjunction with max. span 600 mbar (240.9 inH₂O)
- 3) When the manufacture's certificate (calibration certificate) has to be ordered for transmitters with diaphragm seals according to IEC 60770-2, it is recommended only to order this certificate exclusively with the diaphragm seals. The measuring accuracy of the total combination is certified here.
- 4) If the acceptance test certificate 3.1.is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.
- The diaphragm seal is to be specified with a separate order number and must be included wiht the transmitter order number, for example 7MF453.-.Y..-... and 7MF4900-1....-.B
- 6) The standard measuring cell filling for configurations with remote seals (Y) is silicone oil.
- 7) Not in conjunction with Electrical connection "Han 7D device plug".
- 8) Without cable gland, with blanking plug
- 9) With enclosed cable gland Ex ia and blanking plug
- $^{10)}$ Configurations with Han and M12 device plugs are only available in Ex ic.
- ¹¹⁾ Only in connection with IP66.
- 12) Explosion protection acc. to FM/CSA: suitable for installations according to NEC 500/505.
- ¹³⁾ Only in connection with Ex approval A, B or E.
- ¹⁴⁾ Permissible only for crimp-contact of conductor cross-section 1 mm²
- 15) Only in connection with Ex approval A, B, E or F.
- ¹⁶⁾ M12 delivered without cable socket.

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for differential pressure and flow

Selection and Orde	ering data	Α	tic	le	No).		
Pressure transmitte and flow, PN 420 (M	ers for differential pressure MAWP 6092 psi)							
SITRANS P DS III wit	th PROFIBUS PA (PA)	7	M F	4	5 3	3 4		
SITRANS P DS III wit	th FOUNDATION Fieldbus (FF)	7	M F	4	5 3	3 5		
Click on the Artic ration in the PIA I	ele No. for the online configu- Life Cycle Portal.		1				1	ı
Measuring cell filling	ng Measuring cell cleaning				Ī			
Silicone oil Inert liquid ¹⁾	normal grease-free to cleanliness level 2	1						
Nominal measuring	grange			Н	Ť			
250 mbar 600 mbar 1600 mbar 5 bar 30 bar	$(100 \text{ inH}_2\text{O})$ $(240 \text{ inH}_2\text{O})$ $(642 \text{ inH}_2\text{O})$ $(2000 \text{ inH}_2\text{O})$ (435 psi)		D E F G					
Wetted parts mater	rials							
(stainless steel proc Seal diaphragm	ess flanges) Parts of measuring cell							
Stainless steel Hastelloy Gold ²⁾ Version for diaphrag	Stainless steel Stainless steel Gold		E L	3				
 Sealing screw opp. Mounting thread IEC 61518/DIN E Mounting thread (only for replace) Venting on side of vent valve at top o sional drawing). Mounting thread IEC 61518/DIN E Mounting thread (only for replace) Non-wetted parts in	EN 61518 M12 to DIN 19213 ment requirement) process flanges, location of f process flanges (see dimen- 7/ ₁₆ -20 UNF to EN 61518 M12 to DIN 19213 ment requirement)			3 1 7 5	2			
Stainless steel	Stainless steel precision casting				3			
Version • Standard version, setting for pressure	German plate inscription, e unit: bar					1		
 International versionsetting for pressure 	on, English plate inscription, e unit: bar					2		
setting for pressure All versions include	nglish plate inscription, e unit: Pascal DVD with compact operating					3		

instructions in various EU languages.

Selection and Ordering data	Article No.
Pressure transmitters for differential pressure and flow, PN 420 (MAWP 6092 psi)	
SITRANS P DS III with PROFIBUS PA (PA)	7MF4534-
SITRANS P DS III with FOUNDATION Fieldbus (FF)	7MF4535-
Explosion protection	
• None	Α
 With ATEX, Type of protection: 	
- "Intrinsic safety (Ex ia)"	В
- "Explosion-proof (Ex d)"7)	D
- "Intrinsic safety and flameproof enclosure"	P
(Ex ia + Ex d)" ⁸⁾ - "Ex nA/ic (Zone 2)" ⁹⁾	E
- "Intrinsic safety, explosion-proof enclosure and	B
dust explosion protection (Ex ia + Ex d + Zone 1D/2D)*8) 10)	
• FM + CSA intrinsic safe (is) ¹¹⁾	F
• FM + CSA (is + ep) + Ex ia + Ex d (ATEX)+ Zone 1D/2D ⁹⁾¹⁰⁾¹¹⁾	S
 With FM + CSA, Type of protection: 	
 "Intrinsic safety and explosion-proof (is + xp)"⁷⁾¹¹), max PN 360 	NC
Electrical connection/cable entry	
 Screwed gland M20 x 1.5 	В
• Screwed gland ½-14 NPT	C
M12 device plugs (stainless steel) 12) 13)	F
Display	
Without (display hidden)	0
Without visible display (display appealed acting her)	1
(display concealed, setting: bar)	
With visible display (setting: bar)With customer-specific display (setting as	6
specified, Order code "Y21" required)	

Included in delivery of the device:

- Quick-start guide
- Sealing plug(s) or sealing screw(s) for the process flanges(s)
- 1) For oxygen application, add Order code E10.
- 2) Not in conjunction with max. span 600 mbar (240.9 inH₂O)
- 3) When the manufacture's certificate (calibration certificate) has to be ordered for transmitters with diaphragm seals according to IEC 60770-2, it is recommended only to order this certificate exclusively with the diaphragm seals. The measuring accuracy of the total combination is certified here.
- 4) If the acceptance test certificate 3.1.is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.
- The diaphragm seal is to be specified with a separate order number and must be included with the transmitter order number, for example 7MF453.-..Y..-.... and 7MF4900-1....-.B
- 6) The standard measuring cell filling for configurations with remote seals (Y) is silicone oil.
- 7) Without cable gland, with blanking plug.
- 8) With enclosed cable gland Ex ia and blanking plug.
- 9) Configurations with Han and M12 device plugs are only available in Ex ic. 10) Only in connection with IP66.
- 11) Explosion protection acc. to FM/CSA: suitable for installations according to NEC 500/505.
- 12) Only in connection with Ex approval A, B, E or F.
- 13) M12 delivered without cable socket

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

Selection and Ordering data	Order	code		
Further designs		HART	PA	FF
Add "-Z" to Article No. and specify Order code.				
Pressure transmitter with mounting bracket (1x fixing angle, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer) made of:				
• Steel	A01	1	1	1
Stainless steel 304	A02	1	1	1
Stainless steel 316L	A03	1	✓	1
O-rings for process flanges (instead of FPM (Viton))				
PTFE (Teflon)	A20	V	✓.	✓.
 FEP (with silicone core, approved for food) 	A21	✓.	✓.	✓.
 FFPM (Kalrez, compound 4079), for measured medium temperatures -15 100 °C (5 212 °F) 	A22	√	✓	✓
• NBR (Buna N)	A23	✓	✓	1
Device plugs ¹⁾		,		
Han 7D (metal)	A30	V		
Han 8D (instead of Han 7D)	A31	√		
• Angled	A32	√		
Han 8D (metal)	A33	✓		
Sealing screws (2 units) 1/4-18 NPT, with valve in mat. of process flanges	A40	✓	✓	✓
Cable sockets for M12 device plugs	A50	✓	✓	1
(metal (CuZn))				
Rating plate inscription (instead of German)				
 English 	B11	✓	✓	✓
• French	B12	✓	✓	✓
 Spanish 	B13	✓	✓	✓
• Italian	B14	✓	✓	✓
 Cyrillic (russian) 	B16	✓	✓	✓
English rating plate	B21	✓	✓	✓
Pressure units in inH ₂ O and/or psi				
Quality Inspection Certificate (5-point characteristic curve test) according to IEC 60770-2	C11	✓	✓	✓
Inspection certificate Acc. to EN 10204-3.1	C12	✓	✓	✓
Factory certificate Acc. to EN 10204-2.2	C14	✓	✓	✓
Acceptance certificate (EN 10204-3.1) PMI test of parts in contact with medium	C15	✓	✓	✓
Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration	C20	✓		
Functional safety (PROFIsafe) Certificate and PROFIsafe protocol	C21 ²⁾		✓	
Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration	C23	✓		
PED for Russia with initial calibration mark	C99	✓	1	✓

Selection and Ordering data	Order	code		
Setting of the upper saturation limit of the	D05	✓		
output signal to 22.0\ mA				
Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009)	D07	✓	✓	✓
(only together with seal diaphragm made of Hastelloy and stainless steel)				
Degree of protection IP66/IP68 (only for M20 x 1.5 and ½-14 NPT)	D12	✓	✓	✓
Nom. press. rating PN 500 (MAWP 7250 psi) (Only for measuring cell 600 mbar 30 bar $(240 \text{ inH}_2\text{O} \dots 435 \text{ psi})$, SIL- and Ex-options not possible)) ³⁾	D56	✓		
Capri cable gland 4F CrNi and clamping device (848699 + 810634) included	D59	✓	✓	✓
Use in or on zone 1D/2D ⁴⁾	E01	✓	✓	✓
(only together with type of protection "Intrinsic safety" (transmitter 7MF4B Ex ia)"and IP66)				
Export approval Korea	E11	✓	✓	✓
CRN approval Canada (Canadian Registration Number)	E22 ⁵⁾	✓	✓	✓
Dual seal	E24	1	1	1
Explosion-proof "Intrinsic safety" (Ex ia) to	E25 ⁶⁾	1	1	1
INMETRO (Brazil) (only for transmitter 7MF4B)				
"Flameproof" explosion protection according to INMETRO (Brazil)	E26 ⁶⁾	✓	✓	✓
(only for transmitter 7MF4D)				
Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil)	E28 ⁶⁾	✓	✓	
(only for transmitter 7MF4P)	E456)			
Ex Approval IEC Ex (Ex ia) (only for transmitter 7MF4B)	E45 ⁶⁾	•	•	•
Ex Approval IEC Ex (Ex d)	E46 ⁶⁾	✓	✓	✓
(only for transmitter 7MF4D) Explosion-proof "Intrinsic safety"	E55 ⁶⁾	1	✓	✓
to NEPSI (China) (only for transmitter 7MF4				
Ex prot. "Explosion-proof" to NEPSI (China) (only for transmitter 7MF4D)	E56 ⁶⁾	✓	✓	✓
Explosion-proof "Zone 2" to NEPSI (China)	E57 ⁶⁾	1	1	1
(only for transmitter 7MF4)				
Ex protection "Ex ia", "Ex d" and "Zone 2" to NEPSI (China)	E58 ⁶⁾	✓	✓	✓
(only for transmitter 7MF4R)	6)	,	,	
"Intrinsic safety" and "Explosion-proof" explosion protection acc. to Kosha (Korea)	E70 ⁶⁾	✓	✓	✓
(only for transmitter 7MF4[B, D]Z + E11)				
Ex-protection Ex ia acc. to EAC Ex (Russia)	E80	✓	✓	✓
Ex-protection Ex d acc. to EAC Ex (Russia)	E81	✓	✓	✓
Ex-protection Ex nA/ic (Zone 2) according to EAC Ex (Russia)	E82	✓	✓	✓
Ex-protection Ex ia + Ex d + Zone 1D/2D according to EAC Ex (Russia)	E83	✓	✓	✓

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for differential pressure and flow

Selection and Ordering data	Order	code		
Further designs		HART	PA	FF
Add "-Z" to Article No. and specify Order code.				
Two coats of lacquer on casing and cover (PU on epoxy)	G10	✓	✓	✓
Interchanging of process connection side	H01	✓	✓	✓
Stainless steel process flanges for vertical differential pressure lines	H03	✓	✓	✓
Transient protector 6 kV (lightning protection)	J01	✓	✓	1
Chambered graphite gasket for process flange	J02	✓	✓	1
EPDM O-rings for process flange with approval (WRC/WRAS)	J05	✓	✓	✓
Vent valve or blanking plug of process flange welded-in (orientation: on right when viewing the display) ⁷⁾	J08	✓	✓	✓
Vent valve or blanking plug of process flange welded-in (orientation: on left when viewing the display) ⁷⁾		✓	✓	✓
Marine approvals				
 Det Norske Veritas Germanischer Lloyd (DNV-GL) 	S10	✓	✓	✓
Lloyds Register (LR)	S11	1	✓	✓
 French marine classification society Bureau Veritas (BV) 	S12	✓	✓	✓
American Bureau of Shipping (ABS)	S14	✓	✓	1
 Russian Maritime Register (RMR) 	S16	✓	✓	1
 Korean Register of Shipping (KR) 	S17	✓	1	✓

- 1) Han device plug IP65
- 2) Profisafe transmitters can only be operated with the S7 F Systems V6.1 configuration software in combination with S7-400H
- 3) Tested according to IEC 61010. Only for measuring materials of the group of fluids 2 in accordance with PED permissible. Not for use with dangerous media suitable.
- Option does not contain gas explosion protection; only dust explosion protection: Use in or at Zone 1D/2D.
- 5) Cannot be ordered with remote seal.
- 6) When the additional ex option is selected, the ATEX marking on the device is omitted. Only the Ex option selected via the Z option is marked.
- 7) Blanking plug is standard configuration. Order option A40 if a vent valve is required instead of a blanking plug.

Selection and Ordering data	Order	code		
Additional data	Ordor	HART	PA	FF
Please add "-Z" to Article No. and specify Order code(s) and plain text.				
Measuring range to be set Specify in plain text: in the case of linear characteristic curve (max. 5 characters):	Y01	✓	√ 1)	
 Y01: up to mbar, bar, kPa, MPa, psi in the case of square rooted characteristic (max. 5 characters): Y02: up to mbar, bar, kPa, MPa, psi 	Y02	✓		
Stainless steel tag plate and entry in device variable (measuring point description)	Y15	✓	✓	✓
Max. 16 characters, specify in plain text: Y15:				
Measuring point text (entry in device variable)	Y16	✓	✓	✓
Max. 27 char., specify in plain text: Y16:				
Entry of HART address (TAG) Max. 8 char., specify in plain text: Y17:		✓		
Setting of pressure indication in pressure units	Y21	✓	✓	✓
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*), inH ₂ O*), ftH ₂ O*), mmHG, inHG, psi, Pa, kPa, MPa, g/cm ² , kg/cm ² , Torr, ATM or % *) ref. temperature 20 °C				
Setting of pressure indication in non-pressure units ²) Specify in plain text: Y22: up to I/min, m³/h, m, USgpm, (specification of measuring range in pressure units "Y01" or "Y02" is essential, unit with max. 5 characters)	Y22 + Y01 or Y02	✓		
Preset bus address possible between 1 and 126 Specify in plain text: Y25:	Y25		✓	✓
Damping adjustment in seconds (0 100 s)	Y30	1	1	✓

Factory mounting of valve manifolds, see accessories.

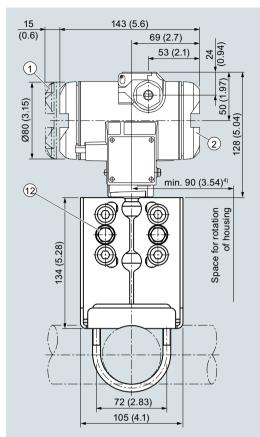
Only Y01, Y15, Y16, Y17, Y21, Y22, Y25 and D05 can be factory preset.

- ✓ = available
- 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 over SIMATIC PDM.

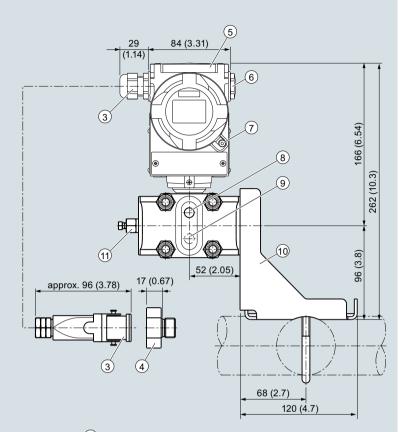
Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for differential pressure and flow

Dimensional drawings



- 1 Electronic side, digital display (longer overall length for cover with window)¹⁾
- 2 Terminal side¹⁾
- (3) Electrical connection: Screwed gland M20 x 1,5 or Screwed gland ½-14 NPT or Han 7D/8D device plug^{2) 3)}
- 4 Harting adapter
- 5 Protective cover over keys
- 1) Allow approx. 20 mm (0.79 inch) thread length to permit unscrewing
- 2) Not with type of protection "Explosion-proof enclosure"
- 3) Not with type of protection "FM + CSA" [IS + XP]"
- 92 mm (3.62 inch) for minimum distance to permit rotation with indicator

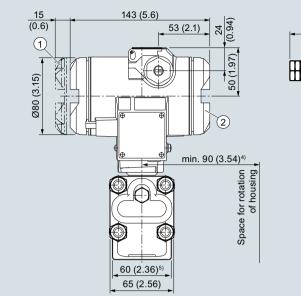


- 6 Blanking plug
- 7 Screw cover safety bracket (only for type of protection "Explosion-proof enclosure", not shown in the drawing)
- 8 Lateral venting for liquid measurement (Standard)
- 9 Lateral venting for gas measurement (suffix H02)
- 10 Mounting bracket (option)
- 11) Sealing screw with valve (option)
- 12 Process connection: 1/4-18 NPT (IEC 61518)

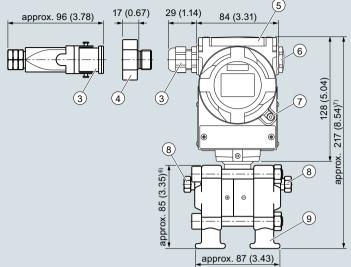
SITRANS P DS III pressure transmitters for differential pressure and flow, dimensions in mm (inch)

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for differential pressure and flow



- 1 Electronic side, digital display (longer overall length for cover with window)¹⁾
- Terminal side1) (3) Electrical connection: Screwed gland M20 x 1,5 or Screwed gland 1/2-14 NPT or Han 7D/8D device plug^{2) 3)}
- 4 Harting adapter
- Allow approx. 20 mm (0.79 inch) thread length to permit unscrewing
- Not with type of protection "Explosion-proof enclosure" Not with type of protection "FM + CSA" [IS + XP]"
- 92 mm (3.6 inch) for minimum distance to permit rotation with indicator
- 74 mm (2.9 inch) for PN \geq 420 (MAWP \geq 6092 psi)
- 91 mm (3.6 inch) for PN ≥ 420 (MAWP ≥ 6092 psi)
- 219 mm (8.62 inch) for PN ≥ 420 (MAWP ≥ 6092 psi)



- 5 Protective cover over keys
- (6) Blanking plug
- Screw cover safety bracket (only for type of protection "Explosion-proof enclosure", not shown in the drawing)
- 8 Sealing screw with valve (option)
- 9 Process connection: 1/4-18 NPT (IEC 61518)

SITRANS P DS III pressure transmitters for differential pressure and flow, with process covers for vertical differential pressure lines, optional "H03", dimensional drawing, dimensions in mm (inch)



SITRANS P DS III pressure transmitters for differential pressure and flow, with process covers for vertical differential pressure lines

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for level

Technical specifications				
SITRANS P DS III for level				
Input				
Measured variable	Level			
Span (fully adjustable) or 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		
	Span	Nominal measuring range	Max. operating pressure MAWP (PS)	
	25 250 mbar 2.5 25 kPa 10 100 inH ₂ O	250 mbar 25 kPa 100 inH ₂ O	See "Mounting flange"	
	25 600 mbar 2.560 kPa 10 240 inH ₂ O	600 mbar 60 kPa 240 inH ₂ O		
	53 1600 mbar 5.3160 kPa 21 640 inH ₂ O	1600 mbar 160 kPa 642 inH ₂ O		
	160 5000 mbar 16500 kPa 2.32 72.5 psi	5000 mbar 500 kPa 72.5 psi		
Lower measuring limit			1	
Measuring cell with silicone oil filling	-100 % of max. span or 30 mbar a/3 kPa a/0.44 psi a depending on mounting flange			
Measuring cell with inert filling liquid	-100 % of max. spar depending on mour	n or 30 mbar a/3 kPa anting flange	a/0.44 psi a	
Upper measuring limit	100 % of max. span	ı		
Start of scale value	Between the measu	ring limits (fully adjust	able)	
Output	HART		PROFIBUS PA/FOUNDATION Fieldbus	
Output signal	4 20 mA		Digital PROFIBUS PA and FOUNDATION Fieldbus signal	
• Lower limit (infinitely adjustable)	3.55 mA, factory pre	eset to 3.84 mA	-	
Upper limit (infinitely adjustable)	23 mA, factory pres optionally set to 22.0		-	
Load				
• Without HART	$R_{\rm B} \le (U_{\rm H} - 10.5 \text{ V})/0$ $U_{\rm H}$: Power supply in	.023 A in Ω, ι V	-	
• With HART	$R_{\rm B} = 230 \dots 500 \Omega$ ($R_{\rm B} = 230 \dots 1100 \Omega$ tor)	SIMATIC PDM) or (HART Communica-	-	

Set to 2 s (0 ... 100 s)

IEC 61158-2

Protected against short-circuit and polarity reversal. Each connection against the other with max. supply voltage.

Physical bus

Protection against polarity reversal

Electrical damping (step width 0.1 s)

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for level

SITRANS P DS III fo	or i	evei	

Measuring accuracy

Reference conditions

Measuring span ratio r (spread, Turn-Down)

Error in measurement at limit setting incl. hysteresis and reproducibility

- Linear characteristic
- 250 mbar/25 kPa/3.6 psi
- 600 mbar/60 kPa/8.7 psi
- 1600 mbar/160 kPa/23.21 psi 5 bar/500 kPa/72.5 psi

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

- 250 mbar/25 kPa/3.6 psi • 600 mbar/60 kPa/8.7 psi
- 1600 mbar/160 kPa/23.21 psi 5 bar/500 kPa/72.5 psi

Influence of static pressure

- on the zero point
- 250 mbar/25 kPa/3.6 psi - 600 mbar/60 kPa/8.7 psi - 1600 mbar/160 kPa/23.21 psi
- 5 bar/500 kPa/72.5 psi

• on the span

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

Effect of mounting position

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

Measuring value resolution for PROFIBUS PA and FOUNDATION Fieldbus

Rated conditions

Degree of protection

- according to EN 60529
- according to NEMA 250

Temperature of medium

- · Measuring cell with silicone oil filling
- High-pressure side
- Low-pressure side

Ambient conditions

- Ambient temperature
- Transmitter
- -Display readable
- Storage temperature
- Climatic class
- Condensation
- Electromagnetic Compatibility
- Emitted interference and interference immunity

Acc. to IEC 60770-1

- Increasing characteristic
- Start-of-scale value 0 bar/kPa/psi
- · Stainless steel seal diaphragm
- Silicone oil filling
- Room temperature 25 °C (77 °F)

r = max. measuring span/set measuring span or nom. pressure range

r ≤ 5 : ≤ 0.125 %

 $\leq (0.007 \cdot r + 0.09) \%$ $5 < r \le 10$:

r < 5:

5 < r ≤ 25 : \leq (0.007 · r + 0.09) %

r ≤ 5 : ≤ 0.125 %

 $5 < r \le 30$: \leq (0.007 · r + 0.09) %

 $\leq (0.4 \cdot r + 0.16) \%$

 \leq (0.24 · r + 0.16) %

 \leq (0.2 · r + 0.16) %

 \leq (0.3 · r) % per nominal pressure

 \leq (0.15 · r) % per nominal pressure

 \leq (0.1 · r) % per nominal pressure

 \leq (0.1 · r) % per nominal pressure

≤ (0.25 · r)% in 5 years

stàtic pressure max. 70 bar/7 MPa/1015 psi Depending on filling liquid of mounting flange

0.005 % per 1 V

3 · 10⁻⁵ of nominal measuring range

IP66 (optional IP66/IP68)

Type 4X

Note: Always take into account assignment of max. permissible operating temperature to max. permissible operating pressure of the respective flange connection!

-40 ... +100¹⁾ °C (-40 ... +212¹⁾ °F)

p_{abs} ≥ 1 bar: -40 ... +175 °C (-40 ... +347 °F) p_{abs} < 1 bar: -40 ... +80 °C (-40 ... +176 °F)

-40 ... +100 °C (-40 ... +212 °F)

-20 ... +60 °C (-4 ... +140 °F) in conjunction with dust explosion protection

-40 ... +85 °C (-40 ... +185 °F)

-30 ... +85 °C (-22 ... +185 °F)

-50 ... +85 °C (-58 ... +185 °F)

Relative humidity 0 ... 100 %, condensation permissible, suitable for use in the trop-

Acc. to IEC 61326 and NAMUR NE 21

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for level

SITRANS P DS III for level	
Design	
Weight (without options)	
 To EN (pressure transmitter with mounting flange, without tube) 	≈ 11 13 kg (≈ 24.2 28.7 (lb)
 To ASME (pressure transmitter with mounting flange, without tube) 	≈ 11 18 kg (≈ 24.2 39.7 lb)
Enclosure material	Low-copper die-cast aluminum, GD-AlSi12 or stainless steel precision casting, mat. no. 1.4408
Wetted parts materials	
High-pressure side	
Seal diaphragm of mounting flange	 Stainless steel, WNr. 1.4404/316L coated with PFA coated with PTFE coated with ECTFE gold plated Monel 400, mat. no. 2.4360 Hastelloy C276, mat. no 2.4619 Hastelloy C4, mat. no. 2.4602 Hastelloy C22, mat. no. 2.4602 Tantalum Titanium, mat. no. 3.7035 Nickel 201 Duplex 2205, mat. no. 1.4462
Measuring cell filling	Silicone oil
Process connection	
High-pressure side	Flange to EN and ASME
Low-pressure side	Female thread ½-18 NPT and flange connection with mounting thread M10 to DIN 19213 or 7 / ₁₆ -20 UNF to IEC 61518/DIN EN 61518
Power supply //	HART PROFILE BA/FOUNDATION Fieldbug

	- 10 - 10 - 10 - 10 - 10 - 10 - 10 - 10	
Power supply <i>U</i> _H	HART	PROFIBUS PA/FOUNDATION Fieldbus
Terminal voltage on transmitter	10.5 45 V DC 10.5 30 V DC in intrinsically-safe	- mode
Power supply		Supplied through bus
Separate 24 V power supply necessary	-	No
Bus voltage		
• Not Ex	-	9 32 V
With intrinsically-safe operation	-	9 24 V
Current consumption		
Basic current (max.)	-	12.5 mA
 Start-up current ≤ basic current 	-	Yes
Max. current in event of fault	-	15.5 mA
Fault disconnection electronics (FDE) available	-	Yes

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for level

SITRANS P DS III for level				
Certificates and approvals	HART	PROFIBUS PA/ FOUNDATION Fieldbus		
Classification according to PED 2014/68/EU	For gases of fluid group 1 and liquids of fl article 4, paragraph 3 (sound engineering	uid group 1; complies with requirements of g practice)		
Explosion protection				
• Intrinsic safety "i"	PTB 13 ATEX 2007 X	PTB 13 ATEX 2007 X		
- Marking	Ex II 1/2 G Ex ia/ib IIC T4/T5/T6 Ga/Gb	Ex II 1/2 G Ex ia/ib IIC T4/T5/T6 Ga/Gb		
- Permissible ambient temperature	-40 +85 °C (-40 +185 °F) temperatu -40 +70 °C (-40 +158 °F) temperatu -40 +60 °C (-40 +140 °F) temperatu	re class T5;		
- Connection	To certified intrinsically-safe circuits with peak values: $U_{\rm i}$ = 30 V, $I_{\rm i}$ = 100 mA, $P_{\rm i}$ = 750 mW; $P_{\rm i}$ = 300 Ω	FISCO supply unit: $U_0 = 17.5 \text{ V, } I_0 = 380 \text{ mA}, P_0 = 5.32 \text{ W}$ Linear barrier: $U_0 = 24 \text{ V, } I_0 = 250 \text{ mA}, P_0 = 1.2 \text{ W}$		
- Effective internal inductance/capacitance	$L_{i} = 0.4 \text{ mH}, C_{i} = 6 \text{ nF}$	$L_{\rm i} = 7 \ \mu {\rm H}, \ C_{\rm i} = 1.1 \ {\rm nF}$		
• Explosion-proof "d"	PTB 99 ATEX 1160			
- Marking	Ex II 1/2 G Ex d IIC T4/T6 Gb			
- Permissible ambient temperature	-40 +85 °C (-40 +185 °F) temperatu -40 +60 °C (-40 +140 °F) temperatu	re class T4; re class T6		
- Connection	To circuits with values: $U_{\rm H} = 10.5 \dots 45 \text{ V DC}$	To circuits with values: U _H = 9 32 V DC		
 Dust explosion protection for zone 20 	PTB 01 ATEX 2055			
- Marking	Ex II 1 D Ex ta IIIC T120°C Da Ex II 1/2 D Ex ta/tb IIIC T120°C Da/Db			
- Permissible ambient temperature	-40 +85 °C (-40 +185 °F)	-40 +85 °C (-40 +185 °F)		
- Max. surface temperature	120 °C (248 °F)			
- Connection	To certified intrinsically-safe circuits with peak values: $U_{\rm i}$ = 30 V, $I_{\rm i}$ = 100 mA, $P_{\rm i}$ = 750 mW, $R_{\rm i}$ = 300 Ω	FISCO supply unit: $U_0 = 17.5 \text{ V}$, $I_0 = 380 \text{ mA}$, $P_0 = 5.32 \text{ W}$ Linear barrier: $U_0 = 24 \text{ V}$, $I_0 = 250 \text{ mA}$, $P_0 = 1.2 \text{ W}$		
- Effective internal inductance/capacitance	$L_{i} = 0.4 \text{ mH}, C_{i} = 6 \text{ nF}$	$L_{\rm i} = 7 \ \mu {\rm H}, \ C_{\rm i} = 1.1 \ {\rm nF}$		
 Dust explosion protection for zone 21/22 	PTB 01 ATEX 2055			
- Marking	Ex II 2 D Ex tb IIIC T120°C Db			
- Connection	To circuits with values: $U_{\rm H}$ = 10.5 45 V DC; $P_{\rm max}$ = 1.2 W	To circuits with values: $U_{\rm H}$ = 9 32 V DC; $P_{\rm max}$ = 1 W		
• Type of protection "n" (zone 2)	PTB 13 ATEX 2007 X			
- Marking	Ex II 2/3 G Ex nA IIC T4/T5/T6 Gb/Gc Ex II 2/3 G Ex ic IIC T4/T5/T6 Gb/Gc			
- Connection (Ex nA)	$U_{\rm m} = 45 \ {\rm V}$	$U_{\rm m} = 32 {\rm V}$		
- Connection (Ex ic)	To circuits with values: $U_{\rm i} = 45 \text{ V}$	FISCO supply unit ic: $U_0 = 17.5 \text{ V, } I_0 = 570 \text{ mA}$ Linear barrier: $U_0 = 32 \text{ V, } I_0 = 132 \text{ mA, } P_0 = 1 \text{ W}$		
- Effective internal inductance/capacitance	$L_{\rm i}$ = 0.4 mH, $C_{\rm i}$ = 6 nF	$L_{i} = 7 \mu H, C_{i} = 1.1 \text{ nF}$		
• Explosion protection acc. to FM	Certificate of Compliance 3008490			
- Identification (XP/DIP) or (IS); (NI)		CL I, DIV 1, GP ABCD T4T6; CL II, DIV 1, GP EFG; CL III; CL I, ZN 0/1 AEx ia IIC T4T6; CL I, DIV 2, GP ABCD T4T6; CL II, DIV 2, GP FG; CL III		
• Explosion protection to CSA	Certificate of Compliance 1153651	Certificate of Compliance 1153651		
- Identification (XP/DIP) or (IS)	CL I, DIV 1, GP ABCD T4T6; CL II, DIV DIV 2, GP ABCD T4T6; CL II, DIV 2, GF			

¹⁾ This value may be increased if the process connection is sufficiently insulated.

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for level

for level			
HART communication		FOUNDATION Fieldbus communication	
HART	230 1100 Ω	Function blocks	3 function blocks analog input,
Protocol	HART Version 5.x	Turiction blocks	1 function block PID
Software for computer	SIMATIC PDM	Analog input	
PROFIBUS PA communication		- Adaptation to customer-specif-	Yes, linearly rising or falling
Simultaneous communication with master class 2 (max.)	4	ic process variables	characteristic
The address can be set using	Configuration tool or local	- Electrical damping, adjustable	0 100 s
The address can be set using	operation (standard setting address 126)	- Simulation function	Output/input (can be locked within the device with a bridge)
Cyclic data usage		- Failure mode	parameterizable (last good value, substitute value, incorrect
Output byte	5 (one measured value) or 10 (two measured values)	- Limit monitoring	value) Yes, one upper and lower warn-
• Input byte	0, 1, or 2 (register operating mode and reset function for metering)		ing limit and one alarm limit respectively
Internal preprocessing	metering)	 Square-rooted characteristic for flow measurement 	Yes
Device profile	PROFIBUS PA Profile for Process Control Devices Version	• PID	Standard FOUNDATION Field- bus function block
	3.0, class B	 Physical block 	1 resource block
Function blocks	2	Transducer blocks	1 transducer block Pressure with
Analog input			calibration, 1 transducer block LCD
 Adaptation to customer-specific process variables 	Yes, linearly rising or falling characteristic	Pressure transducer block	
- Electrical damping, adjustable	0 100 s	 Can be calibrated by applying two pressures 	Yes
- Simulation function	Input/Output	- Monitoring of sensor limits	Yes
- Failure mode	parameterizable (last good value, substitute value, incorrect value)	- Simulation function: Measured pressure value, sensor tem-	Constant value or over parameterizable ramp function
- Limit monitoring	Yes, one upper and lower warning limit and one alarm limit	perature and electronics tem- perature Mounting flange	
- Denistan (tatalisan)	respectively	Nominal diameter	Nominal pressure
Register (totalizer)	Can be reset, preset, optional direction of counting, simulation	• Acc. to EN 1092-1	Norminal pressure
	function of register output	- DN 80	PN 40
- Failure mode	parameterizable (summation	- DN100	PN16, PN40
	with last good value, continuous summation, summation with	• To ASME B16.5	FIN 16, FIN40
	incorrect value)	- 3 inch	class 150, class 300
- Limit monitoring	One upper and lower warning limit and one alarm limit respec- tively	- 4 inch	class 150, class 300
Physical block	1		
Transducer blocks	2		
Pressure transducer block			
- Can be calibrated by applying two pressures	Yes		
- Monitoring of sensor limits	Yes		
- Specification of a container	Max. 30 nodes		

characteristic with
- Square-rooted characteristic

for flow measurement
- Gradual volume suppression

and implementation point of square-root extractionSimulation function for mea-

sured pressure value and sensor temperature

Yes

Parameterizable

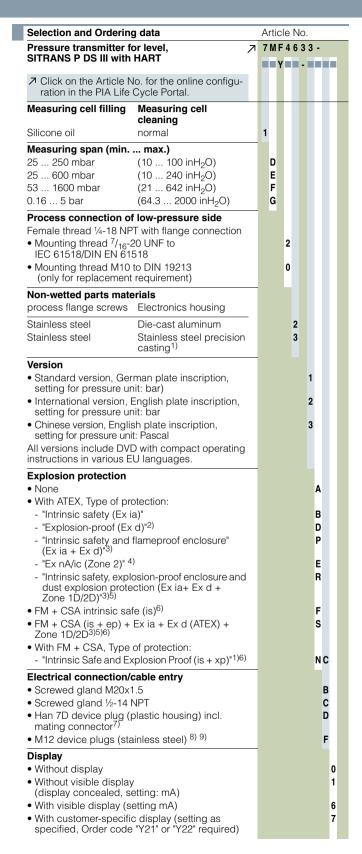
Constant value or over parame-

terizable ramp function

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III

for level



Ordering information

1st order item: Pressure transmitter 7MF4633-... 2nd order item: Mounting flange 7MF4912-3...

ordering example

Item line 1: 7MF4633-1EY20-1AA1-Z

B line: Y01

C line: Y01: 80 to 143 mbar (1.16 to 2.1 psi)

Item line 2: 7MF4912-3GE01

Power supply units see Chap. 7 "Supplementary Components".

Included in delivery of the device:

- Quick-start guide
- Sealing plug(s) or sealing screw(s) for the process flanges(s)
- 1) Not in conjunction with Electrical connection "Han 7D device plug".
- Without cable gland, with blanking plug.
- 3) With enclosed cable gland Ex ia and blanking plug.
- 4) Configurations with Han and M12 device plugs are only available in Ex ic.
- 5) Only in connection with IP66.
- 6) Explosion protection acc. to FM/CSA: suitable for installations according to NEC 500/505.
- 7) Only in connection with Ex approval A, B or E.
- 8) M12 delivered without cable socket
- 9) Only in connection with Ex approval A, B, E or F.

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for level

Selection and Orderin	-	Articl	e N	lo.		
Pressure transmitters						
SITRANS P DS III with P	ROFIBUS PA (PA)	7 M F	4 6	3 4	- ا	
SITRANS P DS III with F	OUNDATION Fieldbus (FF)	7 M F	4 6	3 5	i -	
Click on the Article N ration in the PIA Life	lo. for the online configu- Cycle Portal.	1 Y		-	-	٦
Nominal measuring ra	nge					
250 mbar	(100 inH ₂ O)	D				
600 mbar 1600 mbar	(240 inH ₂ O) (642 inH ₂ O)	E F				
5 bar	(2000 inH ₂ O)	G				
Process connection of	. 2 /					
	T with flange connection					
 Mounting thread ⁷/₁₆-² 	20 UNF to		2			
IEC 61518/DIN EN 61						
 Mounting thread M10 (only for replacement 			0			
Non-wetted parts mate	· · · · · · · · · · · · · · · · · · ·					
process flange screws	Electronics housing					
Stainless steel	Die-cast aluminum		2			
Stainless steel	Stainless steel precision		3			
	casting					
Version						
 Standard version, Ger setting for pressure ur 	man plate inscription,			1		
	English plate inscription,			2	,	
setting for pressure ur	nit: bar					
Chinese version, Englisher	sh plate inscription,			3	3	
setting for pressure uni	D with compact operating					
instructions in various E						
Explosion protection						
• None					Α	
 With ATEX, Type of pre- "Intrinsic safety (Ex i 					ь	
- "Explosion-proof (Ex					B D	
- "Intrinsic safety and					P	
(Ex ia + Ex d)" ²⁾						
- "Ex nA/ic (Zone 2)" 3					E	
 "Intrinsic safety, expl dust explosion prote 	osion-proof enclosure and ection (Ex ia + Ex d +				R	
Zone 1D/2D)"2)4)						
• FM + CSA intrinsic sa					F	
• FM + CSA (is + ep) + Zone 1D/2D ²⁾⁴⁾⁵⁾	Ex Ia + Ex d (ATEX) +				S	
• With FM + CSA, Type	of protection:					
	xplosion Proof (is + xp)"1)5)				N C	:
Electrical connection/	cable entry					
 Screwed gland M20 x 	•				В	3
• Screwed gland ½-14					С	
M12 device plugs (sta	ainless steel) ^{b) /)}				F	
Display						_
Without visible display	1					0
 Without visible display (display concealed, see 						ľ
With visible display (s						6
• With customer-specifi	c display (setting as					7
specified, Order code	required)					

Ordering information

1st order item: Pressure transmitter 7MF4634-... 2nd order item: Mounting flange 7MF4912-...

ordering example

Item line 1: 7MF4634-1EY20-1AA1 Item line 2: 7MF4912-3GE01

Included in delivery of the device:

- Quick-start guide
- Sealing plug(s) or sealing screw(s) for the process flanges(s)
- 1) Without cable gland, with blanking plug.
- 2) With enclosed cable gland Ex ia and blanking plug.
- 3) Configurations with Han and M12 device plugs are only available in Ex ic.
- Only in connection with IP66.
 Explosion protection acc. to FM/CSA: suitable for installations according to NEC 500/505.
- 6) M12 delivered without cable socket
- 7) Only in connection with Ex approval A, B, E or F.

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Selection and Ordering data	Order	code		
Further designs		HART	PA	FF
Add "-Z" to Article No. and specify Order code.				
O-rings for process flanges on				
low-pressure side				
(instead of FPM (Viton)) • PTFE (Teflon)	A20	1	1	1
• FEP (with silicone core, approved for food)	A21	✓	1	1
• FFPM (Kalrez, compound 4079),	A22	✓	✓	✓
for measured medium temperatures -15 100 °C (5 212 °F)				
• NBR (Buna N)	A23	✓	✓	✓
Device plugs ¹⁾				
Han 7D (metal) Han 3D (instead of Han 7D)	A30	1		
Han 8D (instead of Han 7D)Angled	A31 A32	∨		
• Han 8D (metal)	A33	✓		
Sealing screw				
1/4-18 NPT, with valve in mat. of process flanges	A40	✓	✓	✓
Cable sockets for M12 device plugs (metal (CuZn))	A50	✓	✓	✓
Rating plate inscription				
(instead of German)				
• English	B11	1	1	1
FrenchSpanish	B12 B13	√	✓	√
• Italian	B14	1	1	
Cyrillic (russian)	B16	✓	✓	✓
English rating plate	B21	✓	✓	✓
Pressure units in inH ₂ 0 and/or psi	011	1		,
Quality Inspection Certificate (5-point characteristic curve test) according to IEC 60770-2	C11	·	•	v
Inspection certificate	C12	✓	✓	✓
Acc. to EN 10204-3.1		_		
Factory certificate Acc. to EN 10204-2.2	C14	✓	✓	✓
Acceptance certificate (EN 10204-3.1)	C15	✓	✓	✓
PMI test of parts in contact with medium	000			
Functional safety (SIL2) Devices suitable for use according to IEC	C20	✓		
61508 and IEC 61511. Includes SIL conformity declaration				
Functional safety (PROFIsafe)	C21 ²⁾		1	
Certificate and PROFIsafe protocol	J			
Functional safety (SIL2/3)	C23	✓		
Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration				
PED for Russia with initial calibration mark	C99	✓	✓	✓
Setting of the upper saturation limit of the output signal to 22.0 mA	D05	1		
Degree of protection IP66/IP68 (only for M20x1.5 and ½-14 NPT)	D12	✓	✓	✓
Supplied with oval flange	D37	✓	✓	✓
(1 item), PTFE packing and screws in thread of process flange				

Selection and Ordering data	Order			
Further designs		HART	PA	FF
Add "-Z" to Article No. and specify Order code.				
Use on zone 1D / 2D ³) (only together with type of protection "Intrinsic safety" (transmitter 7MF4B Ex ia)"and IP66)	E01	√	✓	✓
Overfilling safety device for flammable and non-flammable liquids (max. PN 32 (MAWP 464 psi), basic device	E08	✓		
with type of protection "Intrinsic safety (Ex ia)", to WHG and VbF, not together with measuring cell filling "inert liquid")				
Export approval Korea	E11	✓	✓	✓
Dual seal	E24	✓	✓	✓
Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil)	E25 ⁴⁾	✓	✓	✓
(only for transmitter 7MF4B) "Flameproof" explosion protection accord-	E26 ⁴⁾	1	✓	1
ing to INMETRO (Brazil) (only for transmitter 7MF4D)				
Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil)	E28 ⁴⁾	✓	✓	
(only for transmitter 7MF4P)				
Ex Approval IEC Ex (Ex ia) (only for transmitter 7MF4B)	E45 ⁴⁾	✓	✓	✓
Ex Approval IEC Ex (Ex d) (only for transmitter 7MF4)	E46 ⁴⁾	✓	✓	✓
Explosion-proof "Intrinsic safety" to NEPSI (China)	E55 ⁴⁾	✓	✓	✓
(only for transmitter 7MF4B) Explosion protection "Explosion-proof" to NEPSI (China)	E56 ⁴⁾	✓	1	1
(only for transmitter 7MF4D) Ex protection "Zone 2" to NEPSI (China)	E57 ⁴⁾	,	,	1
(only for transmitter 7MF4			,	,
Ex protection "Ex ia", "Ex d" and "Zone 2" to NEPSI (China) (only for transmitter 7MF4R)	E58 ⁴⁾	•	•	•
"Intrinsic safety" and "Explosion-proof" explosion protection acc. to Kosha (Korea) (only for transmitter 7MF4[B, D]Z + E11)	E70 ⁴⁾	✓	✓	✓
Ex-protection Ex ia according to EAC Ex (Russia)	E80	✓	✓	✓
Ex-protection Ex d according to EAC Ex (Russia)	E81	✓	✓	✓
Ex-protection Ex nA/ic (Zone 2) according to EAC Ex (Russia)	E82	✓	✓	✓
Ex-protection Ex ia + Ex d + Zone 1D/2D according to EAC Ex (Russia)	E83	✓	✓	✓
Two coats of lacquer on casing and cover (PU on epoxy)	G10	✓	✓	✓
Replacement of process connection side	H01	1	✓	1

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for level

Selection and Ordering data	Order	code		
Further designs		HART	PA	FF
Add "-Z" to Article No. and specify Order code.				
Transient protector 6 kV (lightning protection)	J01	1	✓	1
Vent valve or blanking plug of process flange welded-in (orientation: on right when viewing the display) ⁵⁾	J08	✓	✓	✓
Vent valve or blanking plug of process flange welded-in (orientation: on left when viewing the display) $^{5)}$	J09	✓	✓	1

- 1) Han device plug IP65
- Profisafe transmitters can only be operated with the S7 F Systems V6.1 configuration software in combination with S7-400H
- 3) Option does not contain gas explosion protection; only dust explosion protection: Use in or at Zone 1D/2D.
- 4) When the additional ex option is selected, the ATEX marking on the device is omitted. Only the Ex option selected via the Z option is marked.
- 5) Blanking plug is standard configuration. Order option A40 if a vent valve is required instead of a blanking plug.

Selection and Ordering data	Order	code		
Additional data		HART	PA	FF
Please add "-Z" to Article No. and specify Order code(s) and plain text.				
Measuring range to be set Specify in plain text (max. 5 characters): Y01: up to mbar, bar, kPa, MPa, psi	Y01	✓	√ 1)	
Stainless steel tag plate and entry in device variable (measuring point description)	Y15	✓	✓	✓
Max. 16 characters, specify in plain text: Y15:				
Measuring point text (entry in device variable)	Y16	✓	✓	✓
Max. 27 characters, specify in plain text: Y16:				
Entry of HART address (TAG) Max. 8 characters, specify in plain text: Y17:	Y17	✓		
Setting of pressure indicator in pressure units	Y21	✓	✓	✓
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*), inH ₂ O*), ftH ₂ O*), mmHG, inHG, psi, Pa, kPa, MPa, g/cm ² , kg/cm ² , Torr, ATM or % *) ref. temperature 20 °C				
Setting of pressure indicator in	Y22 ³⁾	✓		
non-pressure units ²) Specify in plain text: Y22: up to I/min, m³/h, m, USgpm, (specification of measuring range in pressure units "Y01" is essential, unit with max. 5 characters)	+ Y01			
Preset bus address possible between 1 and 126 Specify in plain text: Y25:	Y25		✓	✓
Damping adjustment in seconds (0 100 s)	Y30	✓	✓	✓

Only Y01, Y15, Y16, Y17, Y21, Y22, Y25 and D05 can be factory preset ✓ = available

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.

³⁾ Not in conjunction with over-filling safety device for flammable and non-flammable liquids (Order code "E08")

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for le							
Selection and Order	ring data	Article No.	Order	Selection and Ordering data		Article N	No. Order code
Mounting flange	7	7MF491	2	Mounting flange		7MF4	9 1 2
	the SITRANS P pressure or part) for level, for DS III	3	Ш	Directly mounted on the SITRAN transmitter (converter part) for le series		3	
Click on the Articl ration in the PIA L	e No. for the online configuife Cycle Portal.			Customer-specific tubus lengt Specify customer-specific length			
Connection to EN 1	092-1			Order Code			
Nominal diameter DN 25	Nominal pressure PN 10/16/25/40	z	JOA		s steel without foil Standard length		
DN 40	PN 63/100/160 PN 10/16/25/40 PN 63/100 PN 160	Z Z Z Z	J 0 B J 0 C J 0 D J 0 E	20 50 mm (0.79 1.97") 51 100 mm (2.01 3.94") 101 150 mm (3.98 5.91")	50 mm (1.97") 100 mm (3.94") 150 mm (5.91")	A 1 A 2 A 3	
DN 50	PN 10/16/25/40 PN 100	A B	002	201 250 mm (7.91 9.84")	200 mm (7.87") 250 mm (9.84")	A 4 A 5	
DN 80	PN 10/16/25/40	D		 Wetted parts materials: Stainles with ECTFE 	s steel coated		
DN 100	PN 10/16 PN 25/40	G H		Range 20 50 mm (0.79 1.97")	Standard length 50 mm (1.97")	F 1	
Connection to ASM	E B16.5			51 100 mm (2.01 3.94")	100 mm (3.94")	F 2	
Nominal diameter	Nominal pressure	_	J 6 A	101 150 mm (3.98 5.91") 151 200 mm (5.94 7.87")	150 mm (5.91") 200 mm (7.87")	F 3	
1 inch	class 150 class 300	Z	J 6 B	` ,	250 mm (9.84")	F 5	
	class 400/600	Z	J 6 C	Wetted parts materials: Stainless	s steel coated with		
1½ inch	class 900/1500 class 150	Z Z	J 6 D J 6 E	PFA Range	Standard length		
.,	class 300	Z	J 6 F	20 50 mm (0.79 1.97")	50 mm (1.97")	D 1	
	class 400/600 class 900/1500	Z Z	J 6 G J 6 H	51 100 mm (2.01 3.94")	100 mm (3.94")	D 2	
2 inch	class 150	L	3 6 11	101 150 mm (3.98 5.91") 151 200 mm (5.94 7.87")	150 mm (5.91") 200 mm (7.87")	D 3 D 4	
	class 300	M		· · ·	250 mm (9.84")	D 5	
	class 400/600 class 900/1500	N P		Wetted parts materials: Monel 4	100		
3 inch	class 150	Q			Standard length		
4	class 300	R		` '	50 mm (1.97")	G 1	
4 inch	class 150 class 300	T U		51 100 mm (2.01 3.94") 101 150 mm (3.98 5.91")	100 mm (3.94") 150 mm (5.91")	G 2 G 3	
Flange acc. to JIS				· · · · · · · · · · · · · · · · · · ·	200 mm (7.87")	G 4	
Nominal diameter	Nominal pressure			Wetted parts materials: Hastello	,		
JIS DN 50	10 K 316L 20 K 316L	Z Z	J 7 A J 7 B	Range	Standard length		
JIS DN 80	10 K 316L	z	J 7 C	20 50 mm (0.79 1.97") 51 100 mm (2.01 3.94")	50 mm (1.97") 100 mm (3.94")	J 1 J 2	
Otto	20 K 316L	Z	J 7 D	101 150 mm (3.98 5.91")	150 mm (5.91")	J 3	
Nominal diameter:	Order code and plain text: ; Nominal press.:	Z	J 1 Y	, ,	200 mm (7.87")	J 4	
Wetted parts materi				 Wetted parts materials: Tantalur Range 	n Standard length		
 Stainless steel 316 Coated with PFA 	L	A D			50 mm (1.97")	K 1	
- Coated with PTFE	<u> </u>	E O		51 100 mm (2.01 3.94")	100 mm (3.94")	K 2	
- Coated with ECT	FE ¹⁾	F		· · · · · · · · · · · · · · · · · · ·	150 mm (5.91") 200 mm (7.87")	K 3 K 4	
Monel 400, mat. no		G		Filling liquid	200 11111 (7.07)	- 14	
 Hastelloy C276, ma Hastelloy C4, mat. 		J		• Silicone oil M5			1
 Hastelloy C22, mat 		V 0		Silicone oil M50 High temperature oil			2
Tantalum Titanium mat no 3	3.7035 (max. 150 °C (302 °F))	K L 0		 High-temperature oil Halocarbon oil (for O₂-measure 	ement) ²⁾		3 4
 Nickel 201 (max. 2) 		M O		• Food oil (FDA-listed)	,		7
• Duplex 2205, mat.	no. 1.4462	Q		Other version, add			9 M1Y
 Duplex 2205, mat. Stainless steel 316 thickness approx. 2 		R S 0		Order code and plain text: filling liquid:			
Tube length	- p- 1			 For vacuum on request Oil and grease-free cleaning ac 	cording to DIN 254	10 laval 1)
 without tube 	order and and plain text:	0	K 1 V	and packaging included in sco C10 and E10.			

Other version: add Order code and plain text: material of parts in contact with medium:, tubus length:

Z 8

K 1 Y

and packaging included in scope of delivery. Refer to "Further designs" C10 and E10.

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for level

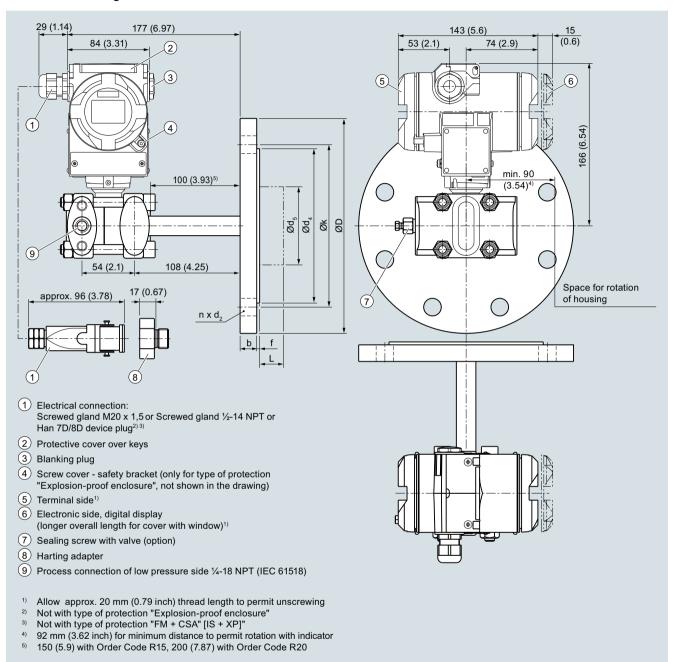
Selection and Ordering data	Order	code		
Further designs		HART	PA	FF
Add "-Z" to Article No. and specify Order code.				
Customer-specific tubus length	Y44	1	✓	✓
Select range, enter desired length in plain text (No entry = standard length)				
Spark arrester For mounting on zone 0 (incl. documentation)	A01	✓	✓	✓
Remote seal nameplate attached out of stainless steel, contains Arti- cle No. and order number of the remote seal supplier	B20	✓	✓	✓
Oil- and grease-free cleaned version	C10	✓	✓	✓
Oil- and grease-free cleaned and packed version, not for oxygen application, only in conjunction with halocarbon oil fill fluid, certified by certificate acc. to EN 10204-2.2				
Quality Inspection Certificate (5-point characteristic curve test) according to IEC 60770-2	C11	✓	✓	✓
Inspection certificate	C12	✓	✓	1
Acc. to EN 10204-3.1				
2.2 Certificate of FDA approval of fill oil	C17	✓	✓	✓
Only in conjunction with filling liquid "Food oil" (FDA listed)"				
"Functional safety (SIL2)" certificate to IEC 61508	C20	√	✓	
(only for conjunction with the Order code "C20" in the case of SITRANS P DS III transmitter)				
"Functional safety (SIL2/3)" certificate to IEC 61508	C23	✓	✓	
(only for conjunction with the Order code "C23" in the case of SITRANS P DS III transmitter)				
Certification acc. to NACE MR-0175	D07	✓	✓	✓
Includes acceptance test certificate 3.1 acc. to EN 10204 (only for wetted parts made of stainless steel 1.4404/316L and Hastelloy C276)				
Certification acc. to NACE MR-0103	D08	✓	✓	✓
Includes acceptance test certificate 3.1 acc. to EN 10204 (only for wetted parts made of stainless steel 1.4404/316L and Hastelloy C276)				
Oil- and grease-free cleaned version	E10	✓	✓	✓
Oil- and grease-free cleaned and packed version, only for oxygen application, only inert fill fluid may be used. Max. temperature: 60 °C (140 °F), max. pressure 50 bar (725 psi), only in connection with halocarbon oil, certified by certificate acc. to EN 10204-2.2				
Epoxy painting Not possible with negative pressure service Color: transparent, coverage: front and rear of the remote seal, capillary(ies) or connecting tube, process connection of the transmitter. With transmitters 7MF40 and 7MF42, only possible with process connection G½B according to EN 837-1.	E15	✓	✓	•

Selection and Ordering data	Order	code		
Further designs		HART	PA	FF
Add "-Z" to Article No. and specify Order code.				
One sided-mounting, sealing surface below	H20			
Sealing surface smooth, form B2 or RFSF (Stainless steel diaphragm) previously DIN 2501, form E	J11	✓	✓	✓
Sealing surface groove, EN 1092-1, form D	J14	✓	1	1
instead of sealing surface B1 (only for wetted parts made of stainless steel 316L)				
Sealing surface with spring according to EN 1092-1, form F, (previously DIN 2512, form F) in stainless steel 316L				
DN 25 DN 40	J30 J31	1	1	1
DN 50	J32	V	1	1
DN 80	J33	✓	✓	✓
DN 100	J34	✓	✓.	✓.
DN 125	J35	✓	✓	✓
Sealing surface with male face according to EN 1092-1, form E (previously DIN 2512, form V13) in stainless steel 316L				
DN 25	J40	1	1	1
DN 40 DN 50	J41 J42	1	√	√
DN 80	J43	1	1	1
DN 100	J44	✓	✓	✓
DN 125	J45	✓	✓	1
Sealing surface with female face according to EN 1092-1, form F (previously DIN 2512, form R13) in stainless steel 316L				
DN 25	J50	✓	1	✓
DN 40	J51	✓	✓	1
DN 50	J52	√	1	1
DN 80 DN 100	J53 J54	v	1	1
DN 125	J55	✓	1	1
Sealing surface B1 or	J12	✓	1	✓
ASME B16.5 RF 125 250 AA instead of sealing surface B2 or RFSF (only for wetted parts made of Hastelloy C276 (2.4819), tantalum and Duplex 2205 (1.4462) and for nominal sizes 2", 3", DN 50 and DN 80)				
Sealing surface RJF (groove, previously RTJ) ASME B16.5 instead of sealing surface ASME B16.5 RF 125 250 AA (only for wetted parts made of stainless steel 316L)	J24	✓	✓	•
Elongated pipe, 150 mm instead of 100 mm,	R15	✓	✓	✓
max. medium temperature 250 $^{\circ}$ C, observe the maximum permissible media temperature of the filling liquid.				
Elongated pipe, 200 mm instead of 100 mm, max. medium temperature 300 °C, observe the maximum permissible media temperature of the filling liquid.	R20	✓	✓	✓
Negative pressure service for use in the low-pressure measuring range for transmitter for level Note: suffix "Y01" required with pressure trans- mitter	V04	✓	✓	✓
Extended negative pressure service				
for use in the low-pressure measuring range for transmitter for level Note: suffix "Y01" required with pressure transmitter	V54	√	✓	✓
✓ = available				

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for level

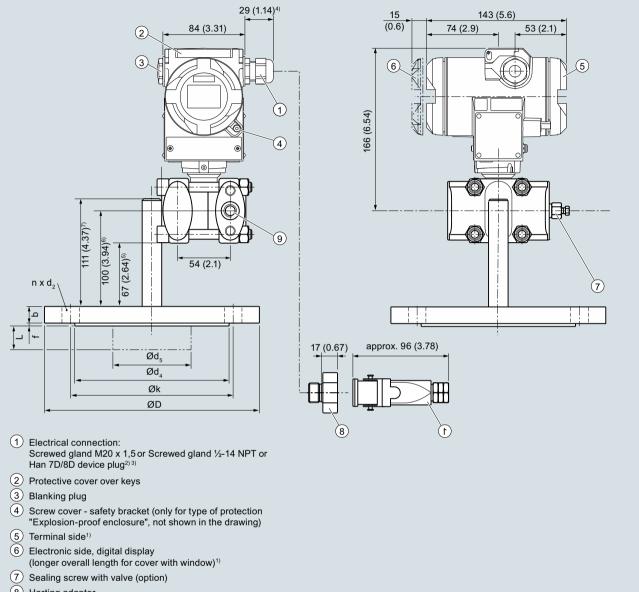
Dimensional drawings



SITRANS P DS III with HART pressure transmitters for level, including mounting flange, dimensions in mm (inch)

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for level



- (8) Harting adapter
- 9 Process connection of low pressure side 1/4-18 NPT (IEC 61518)
- Allow approx. 20 mm (0.79 inch) thread length to permit unscrewing
- Not with type of protection "Explosion-proof enclosure"
- Not with type of protection "FM + CSA" [IS + XP]"
- For Pg 13,5 with adapter approx. 45 mm (1.77 inch)
- 117 (4.61) with Order Code R15, 167 (6.57) with Order Code R20
- 150 (5.19) with Order Code R15, 200 (7.87) with Order Code R20
- 7) 161 (6.34) with Order Code R15, 211 (8.31) with Order Code R20

SITRANS P DS III with HART pressure transmitters for level, including mounting flange, one sided-mounting, sealing surface below (order code H20), dimensions in mm (inch)

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

for level

Connection to EN 1092-1

Nominal diameter	Nominal pressure	b	D	d	d ₂	d ₄	d ₅	d _M	f	k	n	L
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
DN 50	PN 10/16/ 25/40	20	165	90	18	102	48.3	45 ¹⁾	2	125	4	0, 50, 100, 150 or 200
	PN 100	28	195	90	26	102	48.3	45 ¹⁾	2	145	8	
DN 80	PN 10/16/ 25/40	24	200	90	18	138	76	72 ²⁾	2	160	8	
	PN 100	32	230	90	26	138	76	72 ²⁾	2	180	8	
DN 100	PN 10/16	20	220	115	18	158	94	89	2	180	8	
	PN 25/40	24	235	115	22	162	94	89	2	190	8	

Connection to ASME B16.5

Nominal diameter	Nominal pressure	b	D	d ₂	d ₄	d ₅	d _M	f	k	n	L
	lb./sq.in	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)		inch (mm)
2 inch	150	0.77 (19.5)	5.91 (150)	0.79 (20)	3.62 (92)	1.9 (48.3)	1.77 ¹⁾ (45)	0.08 (2)	4.74 (120.5)	4	0, 2, 3.94,
	300	0.89 (22.7)	6.5 (165)	0.79 (20)	3.62 (92)	1.9 (48.3)	1.77 ¹⁾ (45)	0.08 (2)	5 (127)	8	5.94 or 7.87 (0, 50, 100,
	400/600	1.28 (32.4)	6.5 (165)	0.79 (20)	3.62 (92)	1.9 (48.3)	1.77 ¹⁾ (45)	0.28 (7)	5 (127)	8	150 or 200)
	900/1500	1.78 (45.1)	8.46 (215)	1.02 (26)	5 (127)	1.9 (48.3)	1.77 ¹⁾ (45)	0.28 (7)	6.5 (165)	8	
3 inch	150	0.96 (24.3)	7.48 (190)	0.79 (20)	5 (127)	3 (76)	2.83 ²⁾ (72)	0.08 (2)	6 (152.5)	4	
	300	1.14 (29)	8.27 (210)	0.87 (22)	5 (127)	3 (76)	2.83 ²⁾ (72)	0.08 (2)	6.63 (168.5)	8	
	600	1.53 (38.8)	8.27 (210)	0.87 (22)	5 (127)	3 (76)	$2.83^{2)}(72)$	0.28 (7)	6.63 (168.5)	8	
4 inch	150	0.96 (24.3)	9.06 (230)	0.79 (20)	6.22 (158)	3.69 (94)	3.5 (89)	0.08 (2)	7.5 (190.5)	8	
	300	1.27 (32.2)	10.04 (255)	0.87 (22)	6.22 (158)	3.69 (94)	3.5 (89)	0.08 (2)	7.87 (200)	8	
	400	1.65 (42)	10.04 (255)	1.02 (26)	6.22 (158)	3.69 (94)	3.5 (89)	0.28 (7)	7.87 (200)	8	

d: Internal diameter of gasket to DIN 2690

 d_{M} : Effective diaphragm diameter

 $^{^{1)}}$ 59 mm = 2.32 inch with tube length L=0.

 $^{^{2)}}$ 89 mm = $3\frac{1}{2}$ inch with tube length L=0.

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

Accessories/Spare Parts

Selection and Orde	ering data		Article No.
Replacement meas for SITRANS P DS	7	7 M F 4 9 9 0 -	
Click on the Artic tion in the PIA Life			
Measuring cell filling Silicone oil Inert liquid		1 3	
Measured span (m 8.3 250 mbar 0.01 1 bar 0.04 4 bar 0.16 16 bar 0.63 63 bar 1.6 160 bar 4.0 400 bar 7.0 700 bar Wetted parts mater Seal diaphragm Stainless steel Hastelloy	_	A B C D E F G J	
Process connectio Connection shank Female thread ½- Oval flange made max. span 160 ba Mounting thread IEC 61518/DIN E Mounting thread Further designs Please add "-Z" to A	G½B to EN 837-1 14 NPT of stainless steel, r (2320 psi)		0 1 2 3 Order code
Order code. Inspection certificate to EN 10204-3.1	ate		C12

Selection and Orde	ring data		Artic	le No.
Replacement meas pressure for SITRA pressure series)	7		4992- 0-0DB0	
Click on the Articl tion in the PIA Life	le No. for the online configura- e Cycle Portal.			
•	g Measuring cell cleaning			
Silicone oil Inert liquid	Normal grease-free to		1	
men inquia	cleanliness level 2		•	
Measured span (mi	n max.)			
8.3 250 mbar a	(0.12 3.63 psi a)		D	
43 1300 mbar a 0.16 5 bar a	(0.62 18.86 psi a)		F G	
0.16 5 bar a 1 30 bar a	(2.32 72.5 psi a) (14.5 435 psi a)		H	
Wetted parts mater	ials		ы	
Seal diaphragm	Process connection			
Stainless steel	Stainless steel		Α	·
Hastelloy	Stainless steel		В	
Hastelloy	Hastelloy		C	
Process connection	•			
 Connection shank Female thread ½-1 				0
 Pernale inread ½-1 Oval flange made (1
max. span 160 bar				
 Mounting thread IEC 61518/DIN E 	⁷ / ₁₆ -20 UNF to			2
- Mounting thread	WITO 10 DIN 19213			3
Further designs		Orde	er code	
Please add " -Z " to Ar Order code.	ticle No. and specify			
Inspection certifica		C12		
to EN 10204-3.1				

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

Accessories/Spare Parts

Selection and Orde	ring data	Article No.	Selection and Ordering data	Article No.
Replacement meas sure (from the diffe SITRANS P DS III wit	uring cell for absolute pres- 7 rential pressure series) for th HART, DS III with PROFIBUS DUNDATION Fieldbus series		Replacement measuring cell for differential pressure and PN 32/160 (MAWP 464/2320 psi) for SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus series	
Click on the Articletion in the PIA Life	le No. for the online configura- e Cycle Portal.		Click on the Article No. for the online configura- tion in the PIA Life Cycle Portal.	
Measuring cell fillin Silicone oil Inert liquid Measured span (mi 8.3 250 mbar a	ng Measuring cell cleaning Normal grease-free to cleanliness level 2 n max.) (0.12 3.63 psi a)	1 3	Measuring cell filling Measuring cell cleaning Silicone oil Normal Inert liquid grease-free to cleanliness level 2 Measured span (min max.) PN 32 (MAWP 464 psi)	1 3
43 1300 mbar a 0.16 5 bar a 1 30 bar a 5.3 100 bar a	(0.62 18.86 psi a) (2.32 72.5 psi a) (14.5 435 psi a) (76.9 1450 psi a)	F G H KE	$\begin{array}{llllllllllllllllllllllllllllllllllll$	B C D E
Wetted parts mater Seal diaphragm Stainless steel Hastelloy	Parts of measuring cell Stainless steel Stainless steel	A B	16 1600 mbar (6.4 642 inH ₂ O) 50 5000 mbar (20 2000 inH ₂ O) 0.3 30 bar (4.35 435 psi) Wetable parts materials	F G H
Hastelloy Tantalum Monel Gold	Hastelloy Tantalum Monel Gold	C E H	(stainless steel process flanges) Seal diaphragm Parts of measuring cell Stainless steel Stainless steel Hastelloy Stainless steel	A
Sealing screw opp Mounting thread Mounting thread IEC 61518/DIN E Vent on side of pro Mounting thread Mounting thread IEC 61518/DIN E	NPT with flange connection osite process connection M10 to DIN 19213 7/ ₁₆ -20 UNF to N 61518 locess flange ¹⁾ M10 to DIN 19213 7/ ₁₆ -20 UNF to N 61518	0 2 4 6	Hastelloý Tantalum²) Tantalum Monel²) Monel Gold²) Gold Process connection Female thread ¼-18 NPT with flange connection • Sealing screw opposite process connection • Mounting thread M10 to DIN 19213 - Mounting thread 7/ ₁₆ -20 UNF to IEC 61518/DIN EN 61518 • Vent on side of process flange - Mounting thread M10 to DIN 19213	B C E H L L 2
		2 Order code	- Mounting thread ⁷ / ₁₆ -20 UNF to IEC 61518/DIN EN 61518 Non-wetted parts materials Stainless steel process flange screws	6
 FFPM (Kalrez, com 	•	A20 A21 A22 A23	Further designs Please add "-Z" to Article No. and specify Order code. O-rings for process flanges (instead of FPM (Viton)) • PTFE (Teflon) • FEP (with silicone core, approved for food) • FFPM (Kalrez, compound 4079), for measured medium temperatures -15 100 °C (5 212 °F)	A20 A21 A22
Inspection certificato EN 10204-3.1	te	C12	NBR (Buna N) Inspection certificate to EN 10204-3.1	A23
Process connection Remote seal flange (not together with KC	es	D16 D20	Remote seal flanges (not together with K01, K02 and K04)	D20
Vent on side for gas Process flanges	· · · · · · · · · · · · · · · · · · ·	H02	Vent on side for gas measurements Stainless steel process flanges for vertical differential pressure lines (not together with K01, K02 and K04)	H02 H03
For ½-14 NPT inn side in the middle valve not possible	ith PVDF insert NP 145 psi) of medium 90 °C (194 °F) her process connection on the e of the process flange, vent	K01 K02 K04	Process flanges without with process flange made of Hastelloy Monel Stainless steel with PVDF insert, max. PN 10 (MAWP 145 psi), max. temperature of medium 90 °C (194 °F). For ½-14 NPT inner process connection on the side in the middle of the process flange, vent valve not possible	K00 K01 K02 K04

Not suitable for connection of remote seal
 Only together with max. spans 250, 1600, 5000 and 30000 mbar (100 inH₂O, 642 inH₂O, 2000 inH₂O and 435 psi).

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

Accessories/Spare Parts

Selection and Ordering	g data	Artic	le N	0.
Replacement measuring cell for differential				
pressure and PN 420 (MAWP 6092 psi) for IART, DS III with PROFIBUS			- 0 D C 0
	NDATION Fieldbus series			
	lo. for the online configura- ycle Portal.			
Measuring cell filling	Measuring cell cleaning			
Silicone oil	Normal	1		
Measured span (min	max.)			
2.5 250 mbar	(1 100 inH ₂ O)	D		
6 600 mbar	(2.4 240 inH ₂ O)	E		
16 1600 mbar	(6.4 642 inH ₂ O)	F		
50 5000 mbar	(20 2000 inH ₂ O)	G		
0.3 30 bar	(4.35 435 psi)	Н		
Wetted parts materials				
(stainless steel process				
Seal diaphragm	Parts of measuring cell			
Stainless steel	Stainless steel	Α		
Hastelloy	Stainless steel	Е		
Gold ¹⁾	Gold	L		
Process connection	T 0			
Female thread 1/4-18 NP connection	G			
 Sealing screw opposit 	e process connection			
 Mounting thread M1 	2 to DIN 19213		1	
 Mounting thread ⁷/₁₆ IEC 61518/DIN EN 6 			3	
• Vent on side of proces	ss flange			
 Mounting thread M1. 	2 to DIN 19213		5	
- Mounting thread 7/16	_s -20 UNF to		7	
IEC 61518/DIN EN 6	1518			
Non-wetted parts mate	erials			
 Stainless steel proces 	s flange screws		2	
Further designs		Orde	er co	ode
Please add "-Z" to Articl code.	e No. and specify Order			
O-rings for process fla	inges			
(instead of FPM (Viton))	-			
• PTFE (Teflon)		A20		
• FEP (with silicone core		A21		
	und 4079), for measured me-	A22		
NBR (Buna N)	5 100 °C (5 212 °F)	A23		
		C12		
Inspection certificate to EN 10204-3.1		C12		
Stainless steel proces	s flanges for vertical	H03		
differential pressure li				
without process flange	es	K00		

 $^{^{1)}}$ Not together with max. span 600 mbar (240 inH $_2$ O)

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

Accessories/Spare Parts

Selection and Ordering data	Article No.	Selection and Ordering data	Article No.
Spare parts/Accessories		Digital indicator	7MF4997-1BR
Mounting bracket and fastening parts for pressure transmitters		Including mounting material for SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus	
SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus (7MF403C.) For absolute pressure transmitters SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION		Measuring point label • without inscription (5 units) • Printed (1 unit) Data according to Y01 or Y02, Y15, Y16 and Y99 (see "Pressure transmitters")	7MF4997-1CA 7MF4997-1CB-Z Y:
Fieldbus (7MF423C.) • made of steel • made of stainless steel 304/1.4301 • made of stainless steel 316L/1.4404	7MF4997-1AB 7MF4997-1AH 7MF4997-1AP	Mounting screws For measuring point label, grounding and connection terminals or for display (50 units)	7MF4997-1CD
Mounting bracket and fastening parts for pressure transmitters STRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus (7MF403A.,B., .D. and .F.) For absolute pressure transmitters		Sealing screws (1 set = 2 units) for process flange • made of stainless steel • made of Hastelloy	7MF4997-1CG 7MF4997-1CH
SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus 7MF423A.,B.,D. andF.) • made of steel • made of stainless steel 304/1.4301	7MF4997-1AC 7MF4997-1AJ	Sealing screws with vent valve Complete (1 set = 2 units) • made of stainless steel • made of Hastelloy Application electronics	7MF4997-1CP 7MF4997-1CQ
made of stainless steel 316L/1.4404 Mounting and fastening brackets For differential pressure transmitters with flange thread M10	7MF4997-1AQ	 for SITRANS P DS III with HART for SITRANS P DS III with PROFIBUS PA for SITRANS P DS III with FOUNDATION Fieldbus 	7MF4997-1DK 7MF4997-1DL 7MF4997-1DM
SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus (7MF433 and 7MF443) • made of steel • made of stainless steel 304/1.4301	7MF4997-1AD 7MF4997-1AK	Connection board • for SITRANS P DS III • for SITRANS P DS III PROFIBUS PA and FOUNDATION Fieldbus	7MF4997-1DN 7MF4997-1DP
made of stainless steel 316L/1.4404 Mounting and fastening brackets For differential pressure transmitters with flange thread M12 SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION	7MF4997-1AR	O-rings for process flanges made of: FPM (Viton) PTFE (Teflon) FEP (with silicone core, approved for food) FFPM (Kalrez, compound 4079) NBR (Buna N)	7MF4997-2DA 7MF4997-2DB 7MF4997-2DC 7MF4997-2DD 7MF4997-2DE
Fieldbus (7MF453) • made of steel • made of stainless steel 304/1.4301 • made of stainless steel 316L/1.4404	7MF4997-1AE 7MF4997-1AL 7MF4997-1AS	Sealing ring for process connection Weldable sockets for PMC connection • PMC Style Standard: Thread 1½* • PMC Style Missipally front flush 4**	see "Fittings" 7MF4997-2HA 7MF4997-2HB
Mounting and fastening brackets For differential and absolute pressure transmitters with flange thread 7/16 -20 UNF SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus (7MF433, 7MF443 and 7MF453)		PMC Style Minibolt: front-flush 1" 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"	7MF4997-2HB 7MF4997-2HC 7MF4997-2HD
made of steel made of stainless steel 304/1.4301 made of stainless steel 316L/1.4404 Cover	7MF4997-1AF 7MF4997-1AM 7MF4997-1AT	Weldable socket for TG52/50 and TG52/150 connection • TG52/50 connection • TG52/150 connection	7MF4997-2HE 7MF4997-2HF
Made of die-cast aluminum, including gasket, for SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus. Compatible for Ex and non-Ex transmitters without window with window Cover	7MF4997-1BB 7MF4997-1BE	Seals for TG 52/50 and TG 52/150 made of silicone (FDA compliant) Seals for flange connection with front-flush diaphragm M;aterial FKM (Viton); temperature range: -20 +200 °C (-4 +392 °F), 10 units • DN 25, PN 40 (M11) • 1", class 150 (M40)	7MF4997-2HG 7MF4997-2HH 7MF4997-2HK
Made of stainless steel, including gasket, for SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus.			

7MF4997-1BC

7MF4997-1BF

Fieldbus.

• without window

• with window

Compatible for Ex and non-Ex transmitters

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

Accessories/Spare Parts

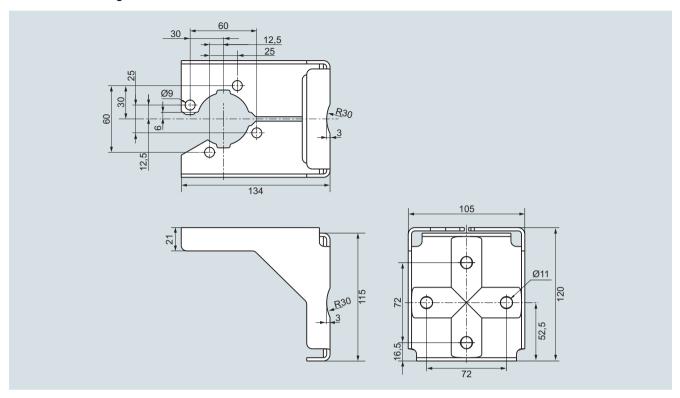
Selection and Ordering data	Article No.
Documentation	
The entire documentation is available for download free-of-charge in various languages at: http://www.siemens.com/processinstrumentation/documentation	
Compact operating instructions SITRANS P DS III/P410 • English, German, Spanish, French, Italian, Dutch	A5E03434626
Certificates (order only via SAP) instead of Internet download	
hard copy (to order)	A5E03252406
• on DVD (to order)	A5E03252407
HART modem	
with USB interface	7MF4997-1DB

Power supply units see Chap. 7 "Supplementary Components".

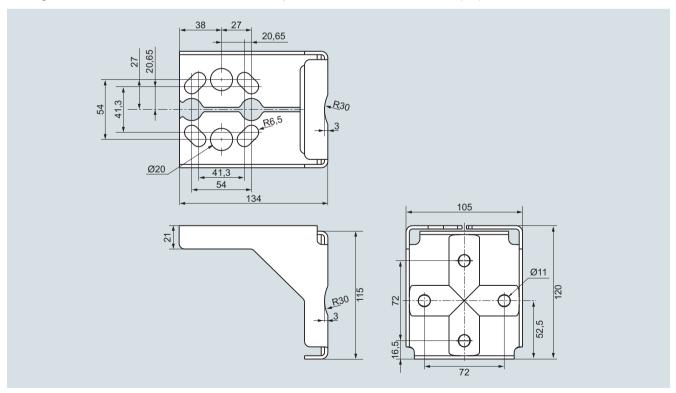
Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

Accessories/Spare Parts

Dimensional drawings



Mounting bracket for SITRANS P DS III, SITRANS P410 and SITRANS P280 gauge and absolute pressure-transmitters, dimensions in mm mounting bracket material: Sheet-steel Mat. No. 1.0330, chrome-plated, or stainless steel Mat. No. 1.4301 (304)



Mounting bracket for SITRANS P DS III and SITRANS P410 differential pressure transmitter, dimensions in mm mounting bracket material: Sheet-steel Mat. No. 1.0330, chrome-plated, or stainless steel Mat. No. 1.4301 (304)

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

Factory-mounting of valve manifolds on transmitters

Overview

SITRANS P transmitters

- DS III for relative and absolute pressure (both designs) and
- DS III for differential 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
- 7MF9411-5BA and 7MF9411-5CA valve manifolds for absolute pressure and differential pressure transmitters

Design

The 7MF9011-4EA valve manifolds are sealed with gaskets made of PTFE between 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 7MF9411-5BA and 7MF9411-5CA valve manifolds are sealed with PTFE sealing rings between the transmitter and the valve manifold.

Once installed, the complete unit is checked under pressure for leaks (compressed air 6 bar (87 psi)) and is certified leak-proof with a test report to EN 10204 - 2.2.

All valve manifolds should preferably be secured with the respective 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 acceptance test certificate 3.1 to EN 10204 when choosing the option "Factory mounting of valve manifolds", a separate certificate is provided for the transmitters and the valve manifolds respectively.

Selection and Ordering data

7MF9411-5AA valve manifold for relative and absolute pressure transmitters



١	Add "- Z " to the Article No. of the transmitter and add order codes.	Order code
	SITRANS P DSIII 7MF4032, 7MF4232, 7MF4033, 7MF4233, 7MF4034, 7MF4234	T05
	With process connection oval flange with PTFE gasket and steel mounting screws.	
	Delivery including high-presure test certified by factory certificate according to EN 10204-2.2	
	Additional versions:	
	Delivery includes mounting brackets and mounting clips made of stainless steel (instead of the mounting bracket supplied with the transmitter)	A02
	Supplied acceptance test certificate to EN 10204- 3.1 for transmitters and mounted valve manifold	C12
	With manufacturer declaration according to NACE, MR-0175	D07

7MF9411-5AA valve manifold for relative and absolute pressure transmitters



1	Add "- \mathbf{Z} " to the Article No. of the transmitter and add order codes.	Order code
	SITRANS P DSIII 7MF4032, 7MF4232, 7MF4033, 7MF4233, 7MF4034, 7MF4234	T06
	With process connection oval flange with PTFE gasket and stainless steel mounting screws.	
	Delivery including high-presure test certified by factory certificate according to EN 10204-2.2	
	Additional versions:	
	Delivery includes mounting brackets and mounting clips made of stainless steel (instead of the mounting bracket supplied with the transmitter)	A02
	Supplied acceptance test certificate to EN 10204- 3.1 for transmitters and mounted valve manifold	C12
	With manufacturer declaration according to NACE, MR-0175	D07

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

Factory-mounting of valve manifolds on transmitters

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



$\operatorname{Add} \textbf{-Z}$ to the Article No. of the transmitter and add Order codes	Order code
SITRANS P DSIII 7MF4031, 7MF4231	T03
With process connection female thread ½-14 NPT in-sealed with PTFE sealing tape	
Delivery incl. high-pressure test certified by test report 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
Supplied acceptance test certificate to EN 10204- 3.1 for transmitters and mounted valve manifold	C12
With manufacturer declaration according to NACE, MR-0175	D07

Add -Z to the Article No. of the transmitter Order

7MF9011-4EA

valve manifold on relative and absolute pressure transmitters



and add Order codes	code
SITRANS P DSIII 7MF4030, 7MF4230 with process connection collar G1/2 A to EN 837-1 with gasket made of PTFE between valve manifold and transmitter	T02
Alternative sealing material: Soft iron Stainless steel, Mat. No. 14571 copper Delivery incl. high-pressure test certified by test report to EN 10204-2.2	A70 A71 A72
Further designs: Delivery includes mounting brackets and mounting clips made of stainless steel (instead of the mounting bracket supplied with the transmitter)	A02
Supplied acceptance test certificate to EN 10204- 3.1 for transmitters and mounted valve manifold	C12
With manufacturer declaration according to NACE, MR-0175	D07

7MF9411-5BA valve manifold on absolute and differential pressure transmitters



Add -Z to the Article No. of the transmitter and add Order codes	Order code
SITRANS P DSIII 7MF433, 7MF443 and 7MF453 1) mounted with gaskets made of PTFE and screws made of • chromized steel • made of stainless steel Delivery incl. high-pressure test certified by test report to EN 10204-2.2	U01 U02
Further designs:	
Delivery includes mounting bracket and mounting clips made of • Steel • Stainless steel (instead of the mounting bracket supplied with the transmitter)	A01 A02
Supplied acceptance test certificate to EN 10204-3.1 for transmitters and mounted valve manifold	C12
With manufacturer declaration according to NACE, MR-0175	D07

7MF9411-5CA valve manifold on differential pressure transmitters



Add $\textbf{-Z}$ to the Article No. of the transmitter and add Order codes	Order code
SITRANS P DSIII 7MF443 and 7MF4531 1)	
mounted with gaskets made of PTFE and screws made of	
 chromized steel 	U03
Stainless steel	U04
Delivery incl. high-pressure test certified by test report to EN 10204-2.2	
Further designs:	
Delivery includes mounting bracket and mounting clips made of	
• Steel	A01
Stainless steel	A02
(instead of the mounting bracket supplied with the transmitter)	
Supplied acceptance test certificate to EN 10204-3.1 for transmitters and mounted valve manifold	C12
With manufacturer declaration according to NACE, MR-0175	D07

¹⁾ For 7MF453.-... transmitters, you require a 7/10-20 UNF connection thread in the process flange

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

Factory-mounting of valve manifolds on transmitters

Dimensional drawings

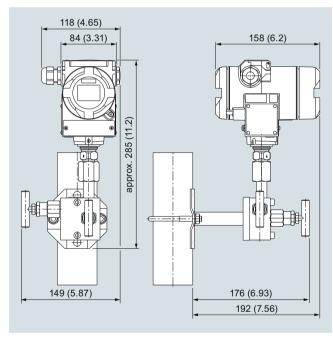
Valve manifolds mounted on SITRANS P DS III



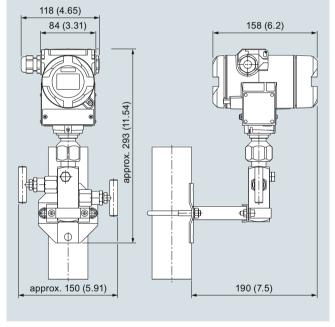
7MF9011-4EA valve manifold with mounted gauge pressure and absolute pressure transmitters



7MF9011-4FA 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)



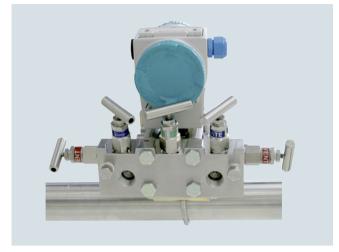
7MF9011-4FA valve manifold with mounted gauge pressure and absolute pressure transmitters, dimensions in mm (inch)

Transmitters for applications with advanced requirements (Advanced) SITRANS P DS III

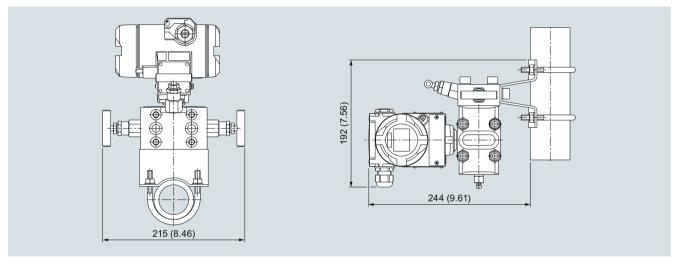
Factory-mounting of valve manifolds on transmitters



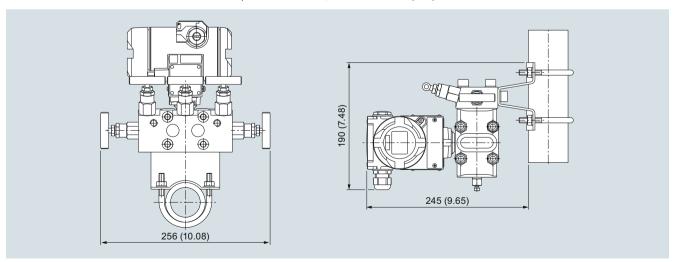
 $7\mbox{MF9411-5BA}$ valve manifold with mounted differential pressure transmitter



7MF9411-5CA valve manifold with mounted differential pressure transmitter



7MF9411-5BA valve manifold with mounted differential pressure transmitter, dimensions in mm (inch)



7MF9411-5CA valve manifold with mounted differential pressure transmitter, dimensions in mm (inch)