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.

Various versions of the DS III pressure transmitters are available for measuring:

- 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 psia)

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

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 $q \sim \sqrt{\Delta p}$ (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)

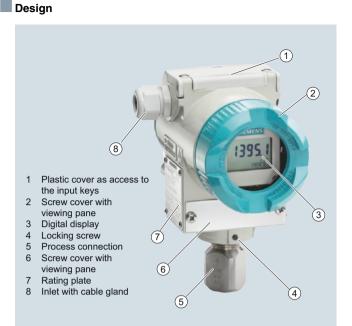
Nominal diameter of the mounting flange

- 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.



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).

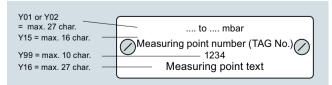
The approval label is located on the opposite side.

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

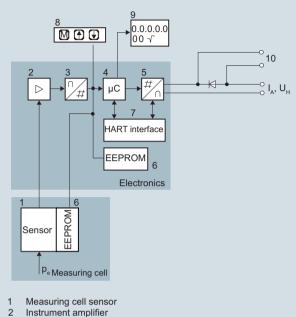


Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III - Technical description

Function

Operation of electronics with HART communication



- 3 Analog-to-digital converter
- 4 Microcontroller
- 5 Digital-to-analog converter
- 6 One non-volatile memory each in the measuring cell and
- electronics
- 7 HART interface
- 8 Three input keys (local operation)
- 9 Digital display
- 10 Diode circuit and connection for external ammeter
- I_A Output current
- Ü_H Power supply
- P 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.

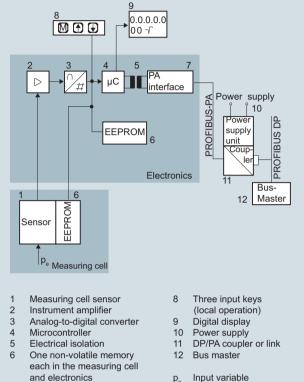
The diode circuit (10) protects against incorrect polarity.

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

7 PROFIBUS-PA interface

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.

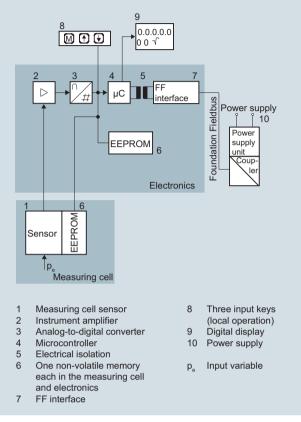
Using the three input buttons (8) you can parameterize the pressure transmitter directly at the measuring point. The input buttons can also be used to control the view of the results, the error messages and the operating modes on the display (9).

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

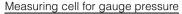
The bridge output voltage created by the sensor (1, Figure "Function diagram of electronics") is amplified by the measuring amplifier (2) and digitized in the analog-to-digital converter (3). The digital information is evaluated in the microcontroller, its linearity and temperature response corrected,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

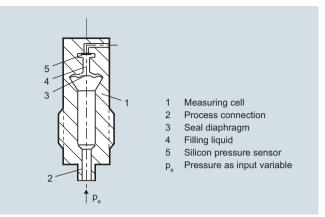
The data specific to the measuring cell, the electronics data, and the parameter data are stored in the two non-volatile memories (6). The one memory is coupled to the measuring cell, the other to the electronics. As the result of this modular design, the electronics and the measuring cell can be replaced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

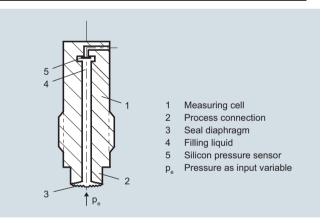




Measuring cell for gauge pressure, function diagram

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



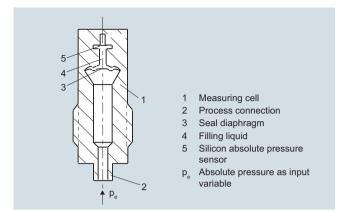
Measuring cell for gauge pressure, with front-flush diaphragm for paper industry, function diagram

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.

SITRANS P DS III - Technical description

Transmitters for applications with advanced requirements (Advanced)

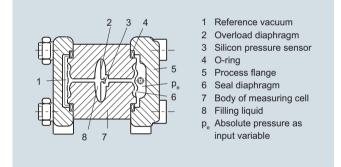
Measuring cell for absolute pressure from gauge pressure series



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

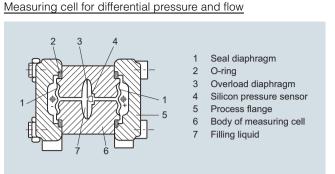


Measuring cell for absolute pressure from differential pressure series, function diagram

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 p_e 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.



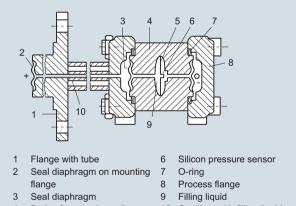
Measuring cell for differential pressure and flow, function diagram

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



- Body of measuring cell
- Overload diaphragm 5
- 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 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 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.

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III - Technical description

Parameterization DS III

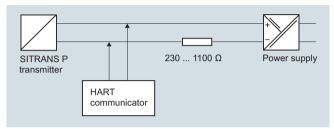
Depending on the version, there are a range of options for parameterizing the pressure transmitter and for setting or scanning the parameters.

Parameterization using the input buttons (local operation)

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

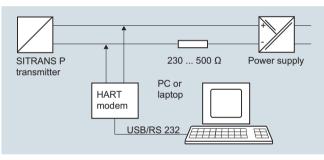
Parameterization using HART

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

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

Cancel apart from write protection

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 dimensions
Pa, MPa, kPa, bar, mbar, torr, atm, psi, g/cm ² , kg/cm ² , inH ₂ O, inH ₂ O (4 °C), mmH ₂ O, ftH ₂ O (20 °C), inHg, mmHg
m, cm, mm, ft, in
m ³ , dm ³ , hl, yd ³ , ft ³ , in ³ , US gallon, Imp. gallon, bushel, barrel, barrel liquid
g, kg, t, lb, Ston, Lton, oz
$\rm m^3/d,m^3/h,m^3/s,l/min,l/s,ft^3/d,ft^3/min,ft^3/s,US$ gallon/min, US gallon/s
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
K, °C, °F, °R
%, 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	х	х
Zero adjustment (correction of position)	х	x
Buttons and/or function disabling	х	х
Source of measured-value display	х	х
Physical dimension of display	х	х
Position of decimal point	х	х
Bus address	х	х
Adjustment of characteristic	х	х
Input of characteristic		х
Freely-programmable LCD		х
Diagnostics functions		х

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SITRANS P DS III - Technical description

Diagnostic	functions for	or 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/cm ² , kg/cm ² , mmH ₂ O, mmH ₂ O (4 °C), inH ₂ O, inH ₂ O (4 °C), ftH ₂ O (20 °C), mmHg, inHg
Level (height data)	m, cm, mm, ft, in, yd
Volume	m ³ , dm ³ , hl, yd ³ , ft ³ , in ³ , US gallon, Imp. gallon, bushel, barrel, barrel liquid
volume flow	m³/s, m³/min, m³/h, m³/d, l/s, l/min, l/h, l/ d, MI/d, ft³/s, ft³/min, ft³/h, ft³/d, US gal- lon/s, US gallon/min, US gallon/h, US gal- lon/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

Measured variable

Gauge pressure

30 mbar a/3 kPa a/0.44 psia

30 mbar a/3 kPa a/0.44 psia

3.55 mA, factory preset to 3.84 mA 23 mA, factory preset to 20.5 mA or optionally set to 22.0 mA

 $R_{\rm B} \leq (U_{\rm H}$ - 10.5 V)/0.023 A in Ω , $U_{\rm H}$: Power supply in V

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

 $R_{\rm B}$ = 230 ... 500 Ω (SIMATIC PDM) bzw.

 $R_{\rm B} = 230 \dots 1100 \Omega$ (HART-Communicator)

Protected against short-circuit and polarity reversal.

Each connection against the other with max. supply voltage.

HART

4 ... 20 mA

HART

Span (fully adjustable) or measuring range, max. operating pressure (in accordance with 97/23/EC 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)

	ΠΑΝ Ι	FOUNDATION		
k	Span	Nominal measuring range	Max. operating pres- sure 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

100% of max. span (max. 100 bar/10 MPa/1450 psi for oxygen measurement)

Fieldbus signal

IEC 61158-2

PROFIBUS PA/FOUNDATION Fieldbus Digital PROFIBUS PA and FOUNDATION

ambient temperature/process temperature 60 °C (140 °F)

PROFIBUS PA/

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

Output

Output signal

• Lower limit (infinitely adjustable)

• Upper limit (infinitely adjustable)

Load

- Without HART
- With HART

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 gauge pressure

SITRANS P, DS III series for gauge pressure		
Measuring accuracy	Acc. to IEC 60770)-1
Reference conditions	 Increasing chara Start-of-scale va Stainless steel se Silicone oil filling Room temperature 	lue 0 bar/kPa/psi eal diaphragm J
Measuring span ratio r (spread, Turn-Down)	r = max. measurir	ng span/set measuring span or nom. pressure range
Error in measurement at limit setting incl. hysteresis and reproducibility		
Linear characteristic		
- 250 mbar/25 kPa/3.6 psi	r ≤ 1.25 : 1.25 < r ≤ 30 :	≤ 0.065 % ≤ (0.008 · r + 0.055) %
- 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	r ≤ 5 : 5 < r ≤ 100 :	≤ 0.065 % ≤ (0.004 · r + 0.045) %
- 400 bar/40 MPa/5802 psi 700 bar/70 MPa/10152 psi	r ≤ 3 : 3 < r ≤ 10 : 10 < r ≤ 100 :	≤ 0.075 % ≤ (0.0029 · r + 0.071) % ≤ (0.005 · r + 0.05) %
Influence of ambient temperature (in percent per 28 °C (50 °F))		
• 250 mbar/25 kPa/3.6 psi	$\leq (0.16 \cdot r + 0.1) \%$	0
• 1 bar/100 kPa/3.6 psi	$\leq (0.05 \cdot r + 0.1) \%$	6
 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 	≤ (0.025 · r + 0.12	5) %
• 700 bar/70 MPa/10152 psi	$\leq (0.08 \cdot r + 0.16)$	%
Long-term stability (temperature change \pm 30 °C (\pm 54 °F))		
• 250 mbar/25 kPa/3.6 psi	≤ (0.25 · r) % per y	year
• 1 bar/100 kPa/3.6 psi 4 bar/400 kPa/58 psi	\leq (0.25 \cdot r) % in 5	years
 16 bar/1.6 MPa/232 psi 63 bar/6.3 MPa/914 psi 160 bar/16 MPa/2321 psi 400 bar/40 MPa/5802 psi 	≤ (0.125 · r) % in 5	5 years
• 700 bar/70 MPa/10152 psi	\leq (0.25 \cdot r) % in 5	years
Effect of mounting position		kPa/0.000725 psi per 10° inclination tion 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	I measuring range

SITRANS P DS III for gauge pressure					
SITRANS P, DS III series for gauge pressure					
Rated conditions					
Degree of protection (to EN 60529)	IP66 (optional IP66/IP68), NEMA 4X				
Temperature of medium					
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)				
- 160 bar/16 MPa/2321 psi 400 bar/40 MPa/5802 psi 700 bar/70 MPa/10152 psi	-20 +100 °C (-4 +212 °F)				
 In conjunction with dust explosion protection 	-20 +60 °C (-4 +140 °F)				
Ambient conditions					
Ambient temperature					
 Transmitter (with 4-wire connection, observe temperature values of su plementary 4-wire electronics) 	-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 us	se 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: ≈ 2.0 kg (≈ 4.4 lb) Stainless steel precision casting: ≈ 4.6 kg	Die-cast aluminum: ≈ 2.0 kg (≈ 4.4 lb) Stainless steel precision casting: ≈ 4.6 kg (≈ 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			
Netted parts materials					
Connection shank	Stainless steel, mat. no. 1.4404/316L or H	Hastelloy C4, mat. no. 2.4610			
• Oval flange	Stainless steel, mat. no. 1.4404/316L				
• Seal diaphragm	Stainless steel, mat. no. 1.4404/316L or H	Hastelloy C276, mat. no. 2.4819			
Measuring cell filling	Silicone oil or inert filling liquid (maximum value with oxygen measureme (140 °F))	ent pressure 100 bar (1450 psi) at 60 °C			
Process connection	Connection shank G½B to DIN EN 837-1 (PN 160 (MAWP 2320 psi)) to DIN 19213 to EN 61518				
Material of mounting bracket					
Steel	Sheet-steel, Mat. No. 1.0330, chrome-pla	ated			
Stainless steel	Sheet stainless steel, mat. no. 1.4301 (SS	S 304)			
Power supply $oldsymbol{U}_{ec}$	HART	PROFIBUS PA/FOUNDATION Fieldb			
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			
5	-	9 32 V 9 24 V			
• Not Ex	-				
Not ExWith intrinsically-safe operation	-				
 Not Ex With intrinsically-safe operation Current consumption 	-	9 24 V			
 Not Ex With intrinsically-safe operation Current consumption Basic current (max.) 	-	9 24 V 12.5 mA			

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 97/23/EC	For gases of fluid group 1 and liquid article 3, paragraph 3 (sound engine 1)	ids of fluid group 1; complies with requirements of ineering 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	a/Gb
- Permissible ambient temperature	-40 +85 °C (-40 +185 °F) tem -40 +70 °C (-40 +158 °F) tem -40 +60 °C (-40 +140 °F) tem	perature class T5;
- Connection	To certified intrinsically-safe circuits peak values: $U_i = 30 \text{ V}, I_i = 100 \text{ mA},$ $P_i = 750 \text{ mW}; R_i = 300 \Omega$	ts with FISCO supply unit: $U_0 = 17.5$ V, $I_0 = 380$ mA, $P_0 = 5.32$ W Linear barrier: $U_0 = 24$ V, $I_0 = 174$ mA, $P_0 = 1$ W
- Effective internal inductance/capacitance	$L_{\rm i} = 0.4 {\rm mH}, \ C_{\rm i} = 6 {\rm nF}$	$L_{\rm i} = 7 \ \mu {\rm H}, \ C_{\rm i} = 1.1 \ {\rm nF}$
• 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) tem -40 +60 °C (-40 +140 °F) tem	
- 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 peak values: U_i = 30 V, l_i = 100 mA, P_i = 750 mW, R_i = 300 Ω	is with FISCO supply unit: $U_0 = 17.5$ V, $I_0 = 380$ mA, $P_0 = 5.32$ W Linear barrier: $U_0 = 24$ V, $I_0 = 250$ mA, $P_0 = 1$ W
- Effective internal inductance/capacitance	$L_{\rm i} = 0.4 {\rm mH}, C_{\rm i} = 6 {\rm nF}$	$L_{\rm i} = 7 \ \mu {\rm H}, \ C_{\rm i} = 1.1 \ {\rm nF}$
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 V	To circuits with values: W $U_{\rm H} = 9 \dots 32$ 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 II T4/T5/T6 Gc Ex II 2/3 G Ex ic IIC T4/T5/T6 Gc	
- Connection (Ex nA)	$U_{\rm m} = 45 \ { m V}$	U _m = 32 V
- Connections (Ex ic)	To circuits with values: $U_{\rm i}$ = 45 V	FISCO supply unit ic: $U_0 = 17.5$ V, $I_0 = 570$ mA Linear barrier: $U_0 = 32$ V, $I_0 = 132$ mA, $P_0 = 1$ W
- Effective internal inductance/capacitance	$L_{\rm i} = 0.4 \rm mH, C_{\rm i} = 6 \rm nF$	$L_{\rm i} = 7 \mu {\rm H}, C_{\rm i} = 1.1 {\rm nF}$
Explosion protection acc. to FM	Certificate of Compliance 3008490	
- Identification (XP/DIP) or (IS); (NI)		II, DIV 1, GP EFG; CL III; CL I, ZN 0/1 AEx ia IIC
Explosion protection to CSA	Certificate of Compliance 1153651	
- Identification (XP/DIP) or (IS)		II, DIV 1, GP EFG; CL III; Ex ia IIC T4T6; CL I,

SITRANS P DS III for gauge p	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 opera- tion (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)	- Limit monitoring	value) Yes, one upper and lower warn-
Input byte	0, 1, or 2 (register operating mode and reset function for metering)	Ŭ	ing limit and one alarm limit respectively
Internal preprocessing	gy	 Square-rooted characteristic for flow measurement 	Yes
Device profile	PROFIBUS PA Profile for Pro- cess 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
 Adaptation to customer-specif- ic 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 temper- 	Constant value or over parame- terizable ramp function
- Limit monitoring	Yes, one upper and lower warn- ing limit and one alarm limit respectively	ature and electronics tempera- ture	
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 two pressures 	Yes		
- Monitoring of sensor limits	Yes		
 Specification of a container characteristic with 	Max. 30 nodes		
 Square-rooted characteristic for flow measurement 	Yes		
 Gradual volume suppression and implementation point of square-root extraction 	Parameterizable		
- Simulation function for mea- sured pressure value and sen- sor temperature	Constant value or over parame- terizable ramp function		

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for gauge pressure

Selection and Orderin	g data		Arti	cle N	١o.		Selection and Ordering data	Article No.
Pressure transmitter for gauge pressure,			7 M F 4 0 3 3 -		-	Pressure transmitter for gauge pressure,	7 M F 4 0 3 3 -	
SITRANS P DS III with	HART		S P DS III with HART SITRANS P DS III with HART		SITRANS P DS III with HART			
Z Click on the Article N	lo. for the online configu	.					Electrical connection / cable entry	
ration in the PIA Life	Cycle Portal.						• Screwed gland Pg 13.5 (adapter) ¹¹⁾	A
Measuring cell filling	Measuring cell clean-				-			•
measuring ben ming	ing						Screwed gland 1/2-14 NPT	
Silicone oil	normal		1				Han 7D plug (plastic housing) incl. mating connector ¹¹	
Inert liquid ¹⁾	grease-free to		3				connector ¹¹	
	cleanliness level 2						 M12 connectors (stainless steel)¹¹⁾¹²⁾ 	F
Measuring span (min.	max.)						Display	_
8.3 250 mbar	(0.12 3.6 psi)		Α				Without display	,
0.01 1 bar	(0.15 14.5 psi)		В					•
0.04 4 bar	(0.58 58 psi)		С				(display concealed, setting: mA)	
0.16 16 bar	(2.32 232 psi)		D				With visible display (setting: mA)	• • • • • • • • • • • • • • • • • • •
0.63 63 bar	(9.14 914 psi)		Ε					,
1.6 160 bar	(23.2 2320 psi)		F				 with customer-specific display (setting as specified, Order code "Y21" or "Y22" required) 	
4.0 400 bar	(58.0 5802 psi)		G					
7.0 700 bar	(102.0 10153 psi)		J				Available ex stock	
Wetted parts materials	2						 We can offer shorter delivery times for configur 	
Seal diaphragm	Process connection						the Quick Ship Symbol . For details see page	
		-					Power supply units see Chap. 7 "Supplementary	Components".
Stainless steel	Stainless steel			A			Included in delivery of the device:	
Hastelloy	Stainless steel			B C			 Brief instructions (Leporello) 	
Hastelloy Version as diaphragm s	Hastelloy			Y			 DVD with detailed documentation 	
				T			¹⁾ For oxygen application, add Order code E10.	
Process connection							²⁾ When the manufacture's certificate (calibration ce	tificate) has to be
Connection shank G ¹ / ₂				0			ordered for transmitters with diaphragm seals acc	
 Female thread ½-14 N 		•		1			is recommended only to order this certificate exclu	usively with the dia-
Stainless steel oval flag							phragm seals. The measuring accuracy of the <u>tota</u> here.	combination is cer
nection (Oval flange h	$_{6}$ -20 UNF to IEC 61518			2			³⁾ If the acceptance test certificate 3.1.is ordered for	the trepenitter with
- Mounting thread M1				2			mounted diaphragm seals this certificate must als	
- Mounting thread M1				4			respective remote seals.	
Male thread M20 x 1.5				5			⁴⁾ The diaphragm seal is to be specified with a sepa	
 Male thread 1/2 -14 NP 				6			must be included with the transmitter order number	er, for example
							7MF403Y and 7MF4900-1B	
Non-wetted parts mate							⁵⁾ The standard measuring cell filling of configuration is silicone oil.	is with remote seals
 Housing made of die- Housing stainless stee 				0			 ⁶⁾ Not in conjunction with Electrical connection "Screet" 	wed aland Pa 13 5
	er precision casting*			3			"Han7D plug".	wed gland i g 15.5
Version							7) Without cable gland, with blanking plug	
 Standard version, Ger 		•			1		⁸⁾ With enclosed cable gland Ex ia and blanking plu	a
setting for pressure un	English plate inscription,				2		⁹⁾ Configurations with HAN and M12 connectors are	-
setting for pressure ur	nit: bar				4		¹⁰⁾ Only in connection with IP66.	,
Chinese version, Engli		•			3		¹¹⁾ Only in connection with Ex approval A, B or E.	
setting for pressure uni							$^{12)}$ M12 delivered without cable socket	
All versions include DVD							WITE DEINETED WITHOUT CADIE SUCKET	
SITRANS P in German, E	English, French, Italian							
and Spanish. Includes C ructions in 21 EU langua	ompact operating inst-							
	.903.							
Explosion protection								
None With ATEX. Type of pr	otaction:	•				A		
 With ATEX, Type of pr "Intrinsic safety (Ex i 		•				в		
- "Explosion-proof (Ex						D		
 "Intrinsic safety, and 						P		
(Ex ia + Ex d)" ⁸⁾	nameproor enclosure	-				•		
- "Ex nA/ic (Zone 2)" ⁹⁾)	•				Е		
,						R		
and dust explosion p	protection (Ex ia + Ex d +							
Zone 1D/2D)" ⁸⁾¹⁰⁾ '								
 FM + CSA intrinsic sa 						F		
• FM + CSA (is + ep) +						S		
14/01 51 66 5								
• With FM + CSA, Type	of protection: xplosion Proof (is + xp)" ⁷					NC		

Pressure Measurement

Transmitters for applications with advanced requirements (Advanced)

Selection and Orderi	ng data	Article	No.		Selection and Ordering data	Article No.
Pressure transmitter	for gauge pressure				Pressure transmitter for gauge pressure	
SITRANS P DS III with PROFIBUS PA (PA)		7 M F 4	7 M F 4 0 3 4 -		SITRANS P DS III with PROFIBUS PA (PA)	7 M F 4 0 3 4
SITRANS P DS III with	FOUNDATION Fieldbus (FF)	7 M F 4	035-		SITRANS P DS III with FOUNDATION Fieldbus (FF)	7 M F 4 0 3 5
Click on the Article ration in the PIA Life	No. for the online configu-		- 11			
Measuring cell filling			-	_	 Electrical connection/cable entry Screwed gland M20 x 1.5 	
incuculing con ming	ing				Screwed gland 1/2-14 NPT	
Silicone oil	normal	1			• M12 connectors (stainless steel) ¹¹⁾¹²⁾	
Inert liquid ¹⁾	grease-free to cleanliness level 2	3			Display	-
<u>.</u>					Without display	
Nominal measuring i	•				 Without visible display (display concealed, 	
250 mbar 1 bar	(3.6 psi)	A B			setting: bar)	
	(14.5 psi)				 With visible display (setting: bar) 	
4 bar	(58 psi)	C			• with customer-specific display (setting as spec-	
16 bar	(232 psi)	D			ified, Order code "Y21" required)	
63 bar	(914 psi) (2220 poi)	E			Included in delivery of the device:	
160 bar	(2320 psi)				Brief instructions (Leporello)	
400 bar	(5802 psi)	G			 DVD with detailed documentation 	
700 bar	(10153 psi)	J			¹⁾ For oxygen application, add Order code E10.	
Wetted parts materia					²⁾ When the manufacture's certificate (calibration certif	icate) has to be
Seal diaphragm	Process connection				ordered for transmitters with diaphragm seals accord	ding to IEC 607
Stainless steel	Stainless steel	Α			is recommended only to order this certificate exclusion	
Hastelloy	Stainless steel	В			phragm seals. The measuring accuracy of the <u>total</u> c here.	ombination is c
Hastelloy	Hastelloy	С			³⁾ If the acceptance test certificate 3.1.is ordered for th	o transmitter w
Version as diaphragm	seal ^{2) 3) 4) 5)}	Y			mounted diaphragm seals this certificate must also	
Process connection		-			respective remote seals.	
Connection shank G ¹ / ₂ B to EN 837-1		0			⁴⁾ The diaphragm seal is to be specified with a separa	te order numbe
Female thread ¹ / ₂ -14 NPT		1			must be included with the transmitter order number, 7MF403Y and 7MF4900-1B	for example
Stainless steel oval flange with process connec-						
tion (Oval flange has no female thread) ⁶⁾					⁵⁾ The standard measuring cell filling of configurations is silicone oil.	with remote sea
- Mounting thread 7/	16-20 UNF to IEC 61518	2			 ⁶⁾ M10 fastening thread: Max. span 160 bar (2320 psi) 	
- Mounting thread N	110 to DIN 19213	3			7/16-20 UNF and M12 fastening thread: Max. span	100 bar (5802 p
- Mounting thread N	112 to DIN 19213	4			⁷⁾ Without cable gland, with blanking plug.	
• Male thread M20 x 1	.5	5			⁸⁾ With enclosed cable gland Ex ia and blanking plug.	
• Male thread 1/2 -14 N	IPT	6			⁹⁾ Configurations with HAN and M12 connectors are or	nlv available in l
Non-wetted parts ma	iterials				¹⁰⁾ Only in connection with IP66.	ny avanabie III I
• Housing made of die	e-cast aluminium		0		¹¹⁾ M12 delivered without cable socket.	
Housing stainless st	eel precision casting		3		¹²⁾ Only in connection with Ex approval A, B, E or F.	
Version	-				Only in connection with Ex approval A, D, E OFF.	
	erman label inscription, 🔹 🕯		1			
	, English label inscription,		2			
Chinese version, Eng setting of pressure u	init: kPa		3			
	vith documentation for , English, French, Italian and t operating instructions in 21					
Explosion protection	•					
None			A			
• With ATEX, Type of p						
- "Intrinsic safety (E>	(Ia)" 		В			
- "Explosion-proof (E	=x d)"''		D			
 "Intrinsic safety and (Ex ia + Ex d)"⁸⁾ 	d flameproof enclosure"		Р			
- "Ex nA/ic (Zone 2)"	9)		-			
	•		E			

R

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s

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- "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)"^{8) 10)} (not for DS III FF)

- FM + CSA intrinsic safe (is)
- FM + CSA (is + ep) + Ex ia + Ex d (ATEX)¹⁰⁾

• With FM + CSA, Type of protection:

- "Intrinsic Safe and Explosion Proof (is + $xp)^{"7)}$

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for gauge pressure

Selection and Ordering data	Order	code			Selection and Ordering data	Order c	code		
<i>Further designs</i> Add " -Z " to Article No. and specify Order code.		HART	PA	FF	Further designs Add "-Z" to Article No. and specify Order code.		HART	PA	F
Pressure transmitter with mounting					Dual seal	E24	✓	✓	
bracket (1x fixing angle, 2 x nut, 2 x U- washer or 1 x bracket, 2 x nut, 2 x U- washer) made of:					Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil)	E25 ⁴⁾	1	~	
• Steel	A01	✓	✓	1	(only for transmitter 7MF4B)	•			
Stainless steel	7.02	1	~	~	"Flameproof" explosion protection according to INMETRO (Brazil) (only for transmitter 7MF4D)	E26 ⁴⁾	~	~	
 Han 7D (metal) Han 8D (instead of Han 7D) 	A30 A31	√ √			Explosion-proof "Intrinsic safety" (Ex ia	E28 ⁴⁾	~	1	
• Angled	A32	1			+ Ex d) to INMETRO (Brazil)	LZO	•	•	
• Han 8D (metal)	A33	√			(only for transmitter 7MF4P)	4)			
Cable sockets for M12 connectors (metal (CuZn))	A50	1	~	~	Ex Approval IEC Ex (Ex ia) (only for transmitter 7MF4B)	E45 ⁴⁾	~	1	
Rating plate inscription (instead of German)					Ex Approval IEC Ex (Ex d)	E46 ⁴⁾	~	✓	
• English		✓	✓	✓.	(only for transmitter 7MF4	E55 ⁴⁾	,	,	
French Spanish		√ √	√ √	√ √	Explosion-proof "Intrinsic safety" to NEPSI (China)	E35"	v	v	
• Italian		¥	✓	√	(only for transmitter 7MF4B)				
Cyrillic (russian)	B16	1	✓	✓	Explosion protection "Explosion-proof" to NEPSI (China)	E56 ⁴⁾	✓	✓	
English rating plate	B21	✓	~	1	(only for transmitter 7MF4D)				
Pressure units in inH ₂ 0 and/or psi Quality inspection certificate (Five-step	C11	~	✓	✓	Ex protection "Zone 2" to NEPSI (China)	E57 ⁴⁾	✓	✓	
factory calibration) to IEC 60770-2 ¹⁾	C12	1	✓	1	(only for transmitter 7MF4E) Ex protection "Ex ia", "Ex d" and	E58 ⁴⁾	✓	✓	
Acc. to EN 10204-3.1					"Zone 2" to NEPSI (China) (only for transmitter 7MF4R)				
Acc. to EN 10204-2.2	C14	~	~	~	"Intrinsic safety" and "Explosion-proof" explosion protection acc. to Kosha (Korea)	E70 ⁴⁾	✓	✓	
Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL	C20	1			(only for transmitter 7MF4[B, D]Z + E11)				
conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol	C21 ³⁾		✓		Ex-protection Ex ia according to EAC Ex (Russia)	E80 ⁵⁾ E81 ⁵⁾	*	•	
•	C23	1			Ex-protection Ex d according to EAC Ex (Russia)	E81°	v	•	
Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration	010				Ex-protection Ex nA/ic (Zone 2) according to EAC Ex (Russia)	E82 ⁵⁾	1	1	
Device passport Russia	C99	1	✓	~	Ex-protection Ex ia + Ex d + Zone 1D/2D according to EAC Ex (Russia)	E83 ⁵⁾	~	1	
Setting of upper limit of output signal to 22.0 mA	D05	1			Two coats of lacquer on casing and	G10	~	✓	
Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009)	D07	*	1	~	cover (PU on epoxy) Transient protector 6 kV (lightning pro- tection)	J01	✓	~	
Degree of protection IP66/IP68 (only for M20x1.5 and ½-14 NPT)	D12	1	~	~	Oval flange NAM (ASTAVA)	J06	✓	~	
Supplied with oval flange (1 item), PTFE packing and screws in thread of oval flange	D37	1	1	1	 We can offer shorter delivery times for confithe Quick Ship Symbol For details see p When the manufacture's certificate (calibration) 	age 9/5	in the a	appen	١d
Capri cable gland 4F CrNi and clamping device (848699 + 810634) included	D59	1	~	~	When the manufacture's certificate (calibration ordered for transmitters with diaphragm seals a is recommended only to order this certificate e phragm seals. The measuring accuracy of the I	according exclusivel	g to IEC ly with t	C 6077 the dia	70 a-
Use in or on zone 1D/2D (only together with type of protection "Intrinsic safety" (transmitter 7MF4B Ex ia)" and IP66)	E01	•	1	•	 ²⁾ If the acceptance test certificate 3.1.is ordered mounted diaphragm seals this certificate must respective remote seals. 	d for the t	ransmi	tter wi	th
Oxygen application	E10	1	~	~	 Profisafe transmitters can only be operated wit configuration software in combination with S7- 	th the S7	F Syste	ems Ve	6.
(In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140 °F))					⁴⁾ Option does not include ATEX approval, but incountry-specific approval.		cludes	only th	ıe
Export approval Korea	E11	1	~	1	⁵⁾ Approval pending.				
CRN approval Canada	E22	1	1	1					

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for gauge pressure

Selection and Ordering data	Order	code		
Additional data Please add "-2" to Article No. and specify Order code(s) and plain text.		HART		FF
Measuring range to be set	Y01	1	√ 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) Max. 16 characters, specify in plain text: Y15:	Y15	*	*	~
Measuring point text (entry in device	Y16	✓	~	~
variable) Max. 27 characters, specify in plain text: Y16:				
Entry of HART address (TAG)	Y17	1		
Max. 8 characters, specify in plain text: Y17:				
	Y21	1	1	1
sure units				
Specify in plain text (standard setting: bar): Y21: mbar, bar, kPa, MPa, psi, Note: The following pressure units can be selected:				
bar, mbar, mm H ₂ O ^{*)} , 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, m ³ /h, m, USgpm, (specification of measuring range in pres- sure units "Y01" is essential, unit with max. 5 characters)	Y22 + Y01	V		
Preset bus address	Y25		1	1
possible between 1 and 126 Specify in plain text: Y25:				
Damping adjustment in seconds (0 100 s)	¥30	*	~	~

We can offer shorter delivery times for configurations designated with the Quick Ship Symbol

 For details see page 9/5 in the appendix.

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

Ordering example

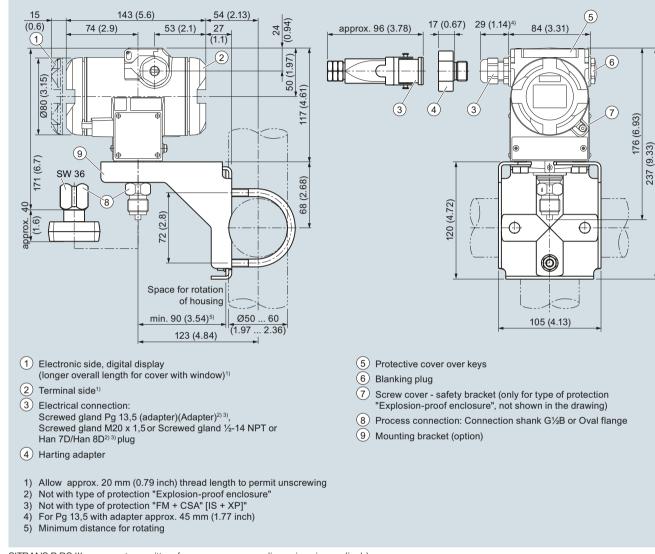
or dorining ondiring	510
Item line:	7MF4033-1EA00-1AA7-Z
B line:	A01 + Y01 + Y21
C line:	Y01: 10 20 bar (145 290 psi)
C line:	Y21: bar (psi)

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.

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for gauge pressure

Dimensional drawings



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

Technical specifications					
SITRANS P DS III series for gauge and absolute pressure,	with front-flush diap	hragm			
Input of gauge pressure, with front-flush diaphragm					
Measured variable	Gauge pressure, fro	nt-flush			
Span (continuously adjustable) or measuring range, max. operating pressure and max. test pressure	HART	PROFIBUS PA/ FOUNDATION Fieldbus			
	Span	Nominal measuring range	Max. operating pres- sure 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/				
 Measuring cell with inert filling liquid 	100 mbar a/10 kPa/ ⁻				
Measuring cell with Neobee	100 mbar a/10 kPa/1.45 psia				
Upper measuring limit	100 % of max. span				
Input of absolute pressure, with front-flush diaphragm					
Measured variable	Absolute pressure, f	1	1		
Span (continuously adjustable) or measuring range, max. ope- rating pressure and max. test pressure	HARI	PROFIBUS PA/ FOUNDATION Fieldbus			
	Span	Nominal measuring range	Max. operating pres- sure MAWP (PS)	Max. perm. test pressure	
	43 1300 mbar a 4.3 130 kPa a 17 525 inH ₂ O a	1300 mbar a 130 kPa a 525 inH ₂ O a	2.6 bar a 260 kPa a 37.7 psi	10 bar a 1 MPa a 145 psi	
	160 5000 mbar a 16 500 kPa a 2.32 72.5 psia	5000 mbar a 500 kPa a 72.5 psia	10 bar a 1 MPa a 145 psia	30 bar a 3 MPa a 435 psia	
	1 30 bar a 0.1 3 MPa a 14.5 435 psia	30 bar a 3 MPa a 435 psia	45 bar a 4.5 MPa a 653 psia	100 bar a 10 MPa a 1450 psia	
	Depending on the p	rocess connection, th	e span may differ from	m these values	
Lower measuring limit	0 mbar a/0 kPa a/0 p	osia			
Upper measuring limit	100 % of max. span				
Output	HART		PROFIBUS PA/FOU	NDATION Fieldbus	
Output signal	4 20 mA		Digital PROFIBUS P Fieldbus signal	A and FOUNDATION	
Lower limit (infinitely adjustable)	3.55 mA, factory pre		-		
Upper limit (infinitely adjustable)	23 mA, factory prese optionally set to 22.0		-		
Load		000 4 1			
Without HART	$R_{\rm B} \le (U_{\rm H} - 10.5 \text{ V})/0.$ $U_{\rm H}$: Power supply in	.023 A in Ω, V	-		
• With HART	$R_{\rm B} = 230 \dots 500 \ \Omega \ (S_{\rm B} = 230 \dots 1100 \ \Omega \ tor)$	SIMATIC PDM) or	-		
Physical bus	-		IEC 61158-2		
Protection against polarity reversal	Protected against sh other with max. supp	nort-circuit and polarit	y reversal. Each conr	nection against the	
	0.11.0./0.100	`			

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

Electrical damping (step width 0.1 s)

Transmitters	s for applications with advan	ced requirements (Advanced)		
SITRAN	NS P DS III for gauge/absolute pr	essure, with front-flush diaphragm		
SITRANS P DS III series for gauge and absolute pressure, w	with front-flush diaphragm			
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) Error in measurement at limit setting incl. hysteresis and reproducibility	r = max. measuring span/set measuring	g span or nom. pressure range		
Linear characteristic	Gauge pressure, front-flush	Absolute pressure, front-flush		
- r ≤ 5	≤ 0.075 %	-		
- 5 < r ≤ 100	≤ (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))	≤ (0.08 · r + 0.16) %	≤ (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 \pm 30 °C (\pm 54 °F))	\leq (0.25 ° r) % in 5 years			
Effect of mounting position (in pressure per change in angle)	(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 3 · 10 ⁻⁵ of nominal measuring range			
Measuring value resolution for PROFIBUS PA and FOUNDATION Fieldbus	3 · 10 · of nominal measuring range			
Rated conditions				
Installation conditions				
Ambient temperature	Observe the temperature class in areas	subject to explosion nazard.		
Measuring cell with silicone oil	-40 +85 °C (-40 +185 °F) -10 +85 °C (14 +185 °F)			
Measuring cell with Neobee oil (with front-flush diaphragm)	-10 +85 °C (14 +185 °F) -20 +85 °C (-4 +185 °F)			
Measuring cell with inert liquid (not with front-flush dia- phragm)	· · · · ·			
Transmitter (with 4-wire connection, observe temperature values of supplementary 4-wire electronics)	, , , , , , , , , , , , , , , , , , ,			
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 (for high temperature oil: -10 + 85 °C (
Climatic class				
Condensation	Relative humidity 0 100 % Condensation permissible, suitable for u	ise in the tropics		
Degree of protection (to IEC 60529)	IP66 (optional IP66/IP68), NEMA 4X			
Electromagnetic Compatibility				
Emitted interference and interference immunity	Acc. to IEC 61326 and NAMUR NE 21			
Medium conditions	The max. medium temperature of the fro into account in accordance with the rele 32676, DIN 11851 etc.).	nt-flush process connections is to be taken vant connection standards (e.g. DIN		
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)	-40 +200 °C (-40 +392 °F)			
 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 pres- sure version with front-flush diaphragm) 	-10 +250 °C (14 482 °F)			

SITRANS P DS III for gauge/absolute pressure, with front-flush diaphragm						
SITRANS P DS III series for gauge and absolute pressure, with front-flush diaphragm						
Design						
Weight (without options)	≈ 1.5 kg (≈ 3.3 lb)					
Enclosure material	Low-copper die-cast aluminum, GD-AlSi1: no. 1.4408	2 or stainless steel precision casting, mat.				
Wetted parts materials	Stainless steel, mat. no. 1.4404/316L or H	astelloy 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	$R_{a}\text{-values} \leq 0.8~\mu\text{m}~(32~\mu\text{-inch})/\text{welds}~R_{a}) \leq 1.6~\mu\text{m}~(64~\mu\text{-inch})$ (Process connections acc. to 3A; $R_{a}\text{-values} \leq 0.8~\mu\text{m}~(32~\mu\text{-inch})/\text{welds}~R_{a}) \leq 0.8~\mu\text{m}~(32~\mu\text{-inch})$					
Power supply U_{H}	HART	PROFIBUS PA/FOUNDATION Fieldbus				
Terminal voltage on transmitter	10.5 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				

Pressure Measurement

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	e, with front-flush diaphragm			
Certificates and approvals				
Classification according to PED 97/23/EC	For gases of fluid group 1 and liquids of f article 3, paragraph 3 (sound engineerin	luid group 1; complies with requirements of g 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) temperatu -40 +70 °C (-40 +158 °F) temperatu -40 +60 °C (-40 +140 °F) temperatu	ire class T5;		
- Connection	To certified intrinsically-safe circuits with peak values: $U_{\rm i}$ = 30 V, $l_{\rm i}$ = 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	$L_{\rm i} = 0.4 {\rm mH}, C_{\rm i} = 6 {\rm nF}$	$L_{\rm i} = 7 \ \mu {\rm H}, \ C_{\rm i} = 1.1 \ {\rm nF}$		
• 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	ire 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: $U_i = 30 \text{ V}, l_i = 100 \text{ mA},$ $P_i = 750 \text{ mW}, P_i = 300 \Omega$	FISCO supply unit: $U_0 = 17.5$ V, $I_0 = 380$ mA, $P_0 = 5.32$ W Linear barrier: $U_0 = 24$ V, $I_0 = 250$ mA, $P_0 = 1$ W		
- Effective internal inductance/capacitance	$L_{\rm i} = 0.4 {\rm mH}, C_{\rm i} = 6 {\rm nF}$	$L_{\rm i} = 7 \ \mu {\rm H}, \ C_{\rm i} = 1.1 \ {\rm nF}$		
 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 II T4/T5/T6 Gc Ex II 2/3 G Ex ic IIC T4/T5/T6 Gc			
- Connection (Ex nA)	$U_{\rm m} = 45 \text{ V}$	<i>U</i> _m = 32 V		
- Connections (Ex ic)	To circuits with values: <i>U</i> _i = 45 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	$L_{\rm i} = 0.4 {\rm mH}, C_{\rm i} = 6 {\rm nF}$	$L_{\rm i} = 7 \ \mu {\rm H}, \ C_{\rm i} = 1.1 \ {\rm nF}$		
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 T4T6; CL I, DIV 2, GP ABCD T4T6; CL II, DIV	1, GP EFG; CL III; CL I, ZN 0/1 AEx ia IIC 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 DIV 2, GP ABCD T4T6; CL II, DIV 2, GF	1, GP EFG; CL III; Ex ia IIC T4T6; CL I, P FG; CL III		

Hygiene version

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

SITRANS P DS III for gauge/a	bsolute pressure, with front	t-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- ic process variables 	Yes, linearly rising or falling characteristic
Simultaneous communication with master class 2 (max.)	4	- Electrical damping, adjustable	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		- Failure mode	parameterizable (last good value, substitute value, substitute value, incorrect
Output byte	5 (one measured value) or		value)
Input byte	10 (two measured values) 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 Pro- cess 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
 Adaptation to customer-specif- ic 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 temper- 	Constant value or over parame- terizable ramp function
- Limit monitoring	Yes, one upper and lower warn- ing limit and one alarm limit respectively	ature and electronics tempera- ture	
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 two pressures 	Yes		
- Monitoring of sensor limits	Yes		
 Specification of a container characteristic with 	Max. 30 nodes		
 Square-rooted characteristic for flow measurement 	Yes		
 Gradual volume suppression and implementation point of square-root extraction 	Parameterizable		
 Simulation function for mea- sured pressure value and sen- sor temperature 	Constant value or over parame- terizable ramp function		

Transmitters for applications with advanced requirements (Advanced)

Selection and Ordering	g data	Article No.	Selection and Ordering data	Article No.
	or gauge and absolute liaphragm,	7 M F 4 1 3 3 -	Pressure transmitter for gauge and absolute pressure, front-flush diaphragm, SITRANS P DS III HART	7 M F 4 1 3 3 -
↗ Click on the Article N ration in the PIA Life	lo. for the online configu- Cycle Portal.		Display ● Without display	
Measuring cell filling Silicone oil Inert liquid FDA compliant fill fluid • Neobee oil Measuring span (min.	Measuring cell cleaning normal grease-free to cleanliness level 2 normal	1 3 4	 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) Power supply units see Chap. 7 "Supplementary (Components"
0.01 1 bar 0.04 4 bar 0.63 16 bar 43 1300 mbar a ¹⁾ 0.16 5 bar a ¹⁾ 1 30 bar a ¹⁾ Wetted parts materials	(0.15 14.5 psi) (0.58 58 psi) (2.32 232 psi) (9.14 914 psi) (0.62 18.85 psia) ¹⁾ (0.7 72.5 psia) ¹⁾ (4.35 435 psia) ¹⁾	B C D E S T U	 Included in delivery of the device: Brief instructions (Leporello) DVD with detailed documentation Not with temperature decoupler P00 and P10, not for p R04, R10 and R11, and can only be ordered in conjun Only available for flanges with options M, N and Without cable gland, with blanking plug Configurations with HAN and M12 connectors are optimized. 	rocess connections f ction with silicone oil. Q
Seal diaphragm Stainless steel Hastelloy ²⁾	Connection shank Stainless steel Stainless steel	AB	 ⁵⁾ Only in connection with IP66. ⁶⁾ Only in connection with Ex approval A, B or E. ⁷⁾ Only in connection with Ex approval A, B, E or F. 	
 setting for pressure un Chinese version, Englis setting for pressure uni All versions include DVD SITRANS P in German, E 	it: bar English plate inscription, it: bar sh plate inscription, t: Pascal	1 2 3		
 Explosion protection None With ATEX, Type of protection and the state of the state	a)" d)" ³⁾ ie (is) Ex ia + Ex d (ATEX) ⁵⁾	A B D E F S		
Electrical connection/c Inner thread M20 x 1.5 Female thread ½-14 N Han 7D plug (plastic h connector ⁶⁾ M12 connectors (stain	5 IPT nousing) incl. mating	B C D F		

SITRANS P DS III for gauge/absolute pressure, with front-flush diaphragm

Pressure Measurement

1

1

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for gauge/absolute pressure, with front-flush diaphragm

Selection and Ordering	q data	Article No.	Selection and Ordering data	Article No.
	of for gauge and absolute		Pressure transmitter P for gauge and absolute pressure, front-flush diaphragm:	
SITRANS P DS III with P		7MF4134-	SITRANS P DS III with PROFIBUS PA (PA)	7 M F 4 1 3 4 -
	OUNDATION Fieldbus (FF)	7 M F 4 1 3 5 -	SITRANS P DS III with FOUNDATION Fieldbus (FF)	7 M F 4 1 3 5 -
↗ Click on the Article N ration in the PIA Life	No. for the online configu- Cycle Portal.			
Measuring cell filling Silicone oil Inert liquid FDA compliant fill fluid • Neobee oil Nominal measuring ra 1 bar 4 bar 16 bar 63 bar 1300 mbar a ¹⁾ 5 bar a ¹⁾	Measuring cell clean- ing normal grease-free to cleanliness level 2 normal (14.5 psi) (58 psi) (232 psi) (914 psi) (18.85 psia) ¹⁾ (72.5 psia) ¹⁾	1 3 4 B C D E S T	 Display Without display Without visible display (display concealed, setting: bar) With visible display (setting: bar) With customer-specific display (setting as specified, Order code "Y21" required) Included in delivery of the device: Brief instructions (Leporello) DVD with detailed documentation ¹⁾ Not with temperature decoupler P00 and P10, not fo R01, R02, R04, R10 and R11, and can only be order silicone oil. ²⁾ Only available for flanges with options M, N and C ³⁾ Without cable gland, with blanking plug 	red in conjunction with Q
30 bar a ¹⁾ Wetted parts materials	(435 psia) ¹⁾	U	⁴⁾ Configurations with HAN and M12 connectors are or ⁵⁾ Only in connection with IP66.	nly available in Ex ic.
Seal diaphragm	Connection shank		⁶⁾ Only in connection with Ex approval A, B, E or F.	
Stainless steel Hastelloy ²⁾	Stainless steel Stainless steel	AB	⁷⁾ M12 delivered without cable socket	
Q Non-wetted parts mate • Housing made of die- • Housing stainless stee	cast aluminium	7 0 3		
Version • Standard version, Ger setting for pressure ur • International version, I setting for pressure ur • Chinese version, Englii setting for pressure uni All versions include DVD SITRANS P in German, E	rman plate inscription, nit: bar English plate inscription, nit: bar sh plate inscription, it: Pascal	1 3		
Explosion protection				
 None With ATEX, Type of pri- "Intrinsic safety (Ex i - "Explosion-proof (Ex - "Ex nA/ic (Zone 2)"4 FM + CSA intrinsic sa FM + CSA (is + ep) + With FM + CSA, Type - "Intrinsic Safe and E (Available soon) 	ia)" (d)" ³⁾ fe (is) Ex ia + Ex d (ATEX) ⁵⁾ of protection: ixplosion Proof (is + xp)" ³⁾	A B D F S NC		
Electrical connection// • Screwed gland M20 x • Screwed gland ½-14 • M12 connectors (stair	(1.5 NPT	B C F		

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for gauge/absolute pressure, with front-flush diaphragm

Orde	and Ordering data	er code	
ify Order code.	<i>signs</i> Article No. and specify Order code.	HART	PA
fety" to NEPSI E55 ²	proof "Intrinsic safety" to NEPS	!) ✓	1
	,,		
B)	nsmitter 7MF4B)		
sion-proof" to E56 ²	protection "Explosion-proof" to	2) 🖌	1
	ina)		
D)	nsmitter 7MF4D)		
,	on "Zone 2" to NEPSI (China)	:) 🖌	1
- (nsmitter 7MF4E)		
and "Zone 2" E58 ²	on "Ex ia", "Ex d" and "Zone 2")	1
	China)		
R)	nsmitter 7MF4R)		
,	,		1
	afety" and "Explosion-proof" protection acc. to Kosha (Korea)	·, v	•
USIIa (NOTEA)	nsmitter		
	[B, D]Z + E11)		
	on Ex ia according to EAC Ex		v
to EAC Ex E81 ³	on Ex d according to EAC Ex	•) 🗸	1
e) according to E82 ³	on Ex nA/ic (Zone 2) according to	i) 🗸	1
	issia)		
one 1D/2D E83 ³	on Ex ia + Ex d + Zone 1D/2D	i) 🖌	1
	o EAC Ex (Russia)		
ng and cover G10	of lacquer on casing and cover	1	~
tning protec- J01	protector 6 kV (lightning protec-	1	•
	EN 1092-1, Form B1	,	,
M11	V 40 ⁴⁾	1	1
M21	N 100 ⁴⁾	√	✓.
M13	N 40	v	1
M23	N 100	V	✓.
M04	N 16	√	✓.
M14	N 40	~	✓
M06	N 16	✓	✓
M16	N 40	✓	✓
	ASME B16.5		
s 150 ⁴⁾ M40	steel flange 1" class 150 ⁴⁾	1	1
	steel flange 11/2" class 150		1
	steel flange 2" class 150		
	9		
	steel flange 3" class 150	¥.	~
	steel flange 4" class 150		
	steel flange 1" class 300 ⁴⁾	1	1
	steel flange 11/2" class 300	1	√
	steel flange 2" class 300	✓	1
	steel flange 3" class 300	✓	✓
s 300 M49	steel flange 4" class 300	✓	✓
852-2	connector to DIN 3852-2,		
002 2,	ead to ISO 228^{5}		
R01	ont-flush	1	1
R02	ont-flush	1	1
R04	ont-flush	1	1
n04			•
	ection ⁶⁾		
	ncluded in delivery		
R10	PN 40	✓	1
R11	D, PN 40	✓	1

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for gauge/absolute pressure, with front-flush diaphragm

1

Selection and Ordering data	Order			
<i>Further designs</i> Add "-Z" to Article No. and specify Order code.		HART	PA	FF
Sanitary process connection according DIN 11851 (Dairy connection with slotted				
union nut) • DN 50, PN 25	N04	1	1	1
• DN 80, PN 25	N06	1	1	1
Tri-Clamp connection according				
DIN 32676/ISO 2852				
• DN 50/2", PN 16	N14	1	1	1
• DN 65/3", PN 10	N15	v	v	•
Varivent connection Certified to EHEDG				
 Type N = 68 for Varivent housing DN 40 125 and 1¹/₂" 6", PN 40 	N28	~	✓	*
Temperature decoupler up to 200 °C⁷⁾ for version with front-flush diaphragm	P00	1	✓	~
Temperature decoupler up to 250 °C Measuring cell filling: High-temperature oil, only in conjunction with measuring cell filling silicone oil	P10	~	•	1
Sanitary process connection to DRD				
• DN 50, PN 40	M32	✓	✓	✓
SMS socket with union nut				
• 2" - 01/ "	M67	√ √	√ √	1
• 2½" • 3"	M68 M69	✓ ✓	¥ •	¥
SMS threaded socket	mee			
• 2"	M73	~	1	~
• 21/2"	M74	✓	✓	✓
• 3"	M75	~	~	~
IDF socket with union nut ISO 2853		,	,	
• 2" • 2½"	M82 M83	✓ ✓	✓ ✓	×
• 3"	M84	1	1	1
IDF threaded socket ISO 2853				
• 2"	M92	✓	✓	✓
• 2 ¹ /2"	M93	4	√ ✓	1
• 3" 	M94	•	•	•
Sanitary process connection to NEUMO Bio-Connect screw connection Certified to EHEDG				
• DN 50, PN 16	Q05	✓	1	1
• DN 65, PN 16	Q06	1	1	1
• DN 80, PN 16 • DN 100, PN 16	Q07 Q08	√ √	✓ ✓	√ √
• DN 2", PN 16	Q13	· /	1	¥
• DN 2½", PN 16	Q14	✓	✓	~
• DN 3", PN 16	Q15	✓	1	×.
• DN 4", PN 16	Q16	~	~	~
Sanitary process connection to NEUMO Bio-Connect flange connection				
Certified to EHEDG	000			
• DN 50, PN 16 • DN 65, PN 16	Q23 Q24	√ √	√ √	~
• DN 80, PN 16	Q25	1	1	1
• DN 100, PN 16	Q26	1	1	✓
• DN 2", PN 16	Q31	√ √	√ √	*
• DN 2½", PN 16 • DN 3", PN 16	Q32 Q33	√ √	√	× •
• DN 4", PN 16	Q34	✓	1	1

Selection and Ordering data	Order	code		
<i>Further designs</i> Add "-Z" to Article No. and specify Order code.		HART	PA	FF
Sanitary process connection to NEUMO Bio-Connect clamp connection Certified to EHEDG				
• DN 50, PN 16	Q39	1	1	1
• DN 65, PN 10	Q40	✓	✓	✓
• DN 80, PN 10	Q41	✓	✓	✓
• DN 100, PN 10	Q42	1	1	1
• DN 2½", PN 16	Q48	√ √	1	* *
• DN 3", PN 10 • DN 4", PN 10	Q49 Q50	√	√ √	↓
Sanitary process connection to NEUMO Bio-Connect S flange connection Certified to EHEDG				
• DN 2", PN 16	Q72	1	✓	✓
Aseptic threaded socket to DIN 11864-1 Form A				
approved according to EHEDG				
• DN 50, PN 25	N33	✓	✓	✓
• DN 65, PN 25	N34	✓	✓	1
• DN 80, PN 25	N35	1	1	1
• DN 100, PN 25	N36	~	~	~
Aseptic flange with notch to DIN 11864-2 Form A				
approved according to EHEDG				
• DN 50, PN 16	N43	√	✓.	√
• DN 65, PN 16	N44	1	1	√ √
• DN 80, PN 16 • DN 100, PN 16	N45 N46	4	4	*
	1140	•	v	v
Aseptic flange with groove to DIN 11864-2 Form A approved according to EHEDG				
• DN 50, PN 16	N43 + P11	1	~	~
• 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 FormA				
approved according to EHEDG	N53	1	1	1
 DN 50, PN 25 DN 65, PN 25 	N53 N54	✓ ✓	√	1
• DN 80, PN 16	N54	¥.	✓	1
• DN 100, PN 16	N56	1		1
¹⁾ Profisafe transmitters can only be operated wit	th the S7	' F Syste	ems Ve	5.1

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

²⁾ Option does not include ATEX approval, but instead includes only the country-specific approval.

³⁾ Approval pending.

⁴⁾ Special seal in Viton included in the scope of delivery

⁵⁾ Cannot be combined with Order codes P00 and P10. Can only be ordered with silicone oil measuring cell filling.

⁶⁾ The weldable socket can be ordered under accessories.

⁷⁾ Certified to 3A and EHEDG. 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	F	
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	√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 vari- able)	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_2O^{*}), in H_2O^{*}), ft H_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 ²⁾	Y22 + Y01	1			
Specify in plain text: Y22: up to l/min, m ³ /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		~		

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)

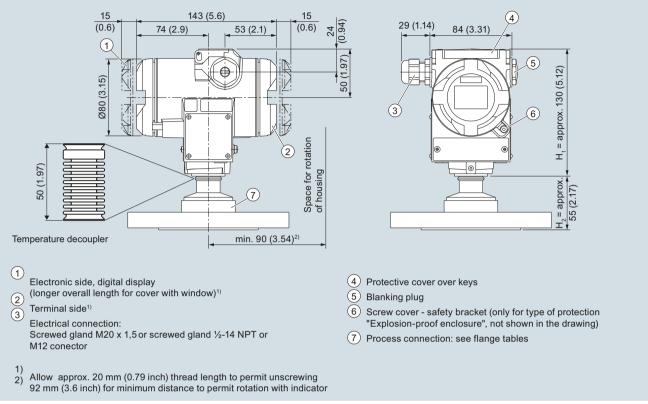
¹⁾ Measuring accuracies for PROFIBUS PA transmitters with Option Y01 are calculated in the same way as for HART devices.

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

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for 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 H_2 is indicated in the dimensions of the flanges.

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Pressure Measurement

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

EN 1092-1					
t <u>≞</u>	Order code	DN	PN	ØD	H ₂
	M11	25	40	115 mm (4.5")	Approx.
	M21	25	100	140 mm (5.5")	52 mm (2")
b	M13	40	40	150 mm (5.9")	
	M23	40	100	170 mm (6.7")	
	M04	50	16	165 mm (6.5")	
	M14	50	40	165 mm (6.5")	
	M06	80	16	200 mm (7.9")	
	M16	80	40	200 mm (7.9")	

Flanges to ASME

ASME B16.5

<u>+</u> <u>⊨</u>	Order code	DN	PN	ØD	H ₂
I I I I I I I I I I I I I I I I I I I	M40	1"	150	110 mm (4.3")	Approx.
	M41	11⁄2"	150	130 mm (5.1")	52 mm (2")
	M42	2"	150	150 mm (5.9")	
	M43	3"	150	190 mm (7.5")	
	M44	4"	150	230 mm (9.1")	
	M45	1"	300	125 mm (4.9")	
	M46	1½"	300	155 mm (6.1")	
	M47	2"	300	165 mm (6.5")	
	M48	3"	300	210 mm (8.1")	
	M49	4"	300	255 mm (10.0")	

NuG and pharmaceutical connections

Connections to DIN

DIN 11851 (milk pipe union with slotted union nut)								
	Order code	DN	PN	ØD	H ₂			
	N04 N06	50 80		92 mm (3.6") 127 mm (5.0")	Approx. 52 mm (2")			

Tri-Clamp nach DIN 32676

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

Other connections

+	Ord cod
	N28

Varivent connection									
· ·	Order code	DN	PN	ØD	H ₂				
	N28	40 125	40	84 mm (3.3")	Approx. 52 mm (2")				

Sanitary process connection to DRD

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

Sanitary process screw connection to NEUMO Bio-Connect								
	Order code	DN	PN	ØD	H ₂			
	Q05	50	16	82 mm (3.2")	Approx.			
	Q06	65	16	105 mm (4.1")	52 mm (2")			
	Q07	80	16	115 mm (4.5")				
	Q08	100	16	145 mm (5.7")				
D P	Q13	2"	16	82 mm (3.2")				
	Q14	21⁄2"	16	105 mm (4.1")				
	Q15	3"	16	105 mm (4.1")				
	Q16	4"	16	145 mm (5.7")				

Sanitary process connection to NEUMO Bio-Connect flange connection

	Order code	DN	PN	ØD	H ₂
	Q23	50	16	110 mm (4.3")	Approx.
	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
لسلسلم	Q39	50	16	77.4 mm (3.0")	Approx.
=" \	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	Q47	2"	16	77.4 mm (3.0")	
2	Q48	21⁄2"	16	90.9 mm (3.6")	
	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
	Q72	2"	16	125 mm (4.9")	Approx. 52 mm (2")

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

	Order code	DN	PN	ØD	H ₂
	R01	3⁄4"	60	37 mm (1.5")	Approx. 45 mm (1.8")
D	R02	1"	60	48 mm (1.9")	Approx. 47 mm (1.9")
	R04	2"	60	78 mm (3.1")	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 code	DN	PN	ØD	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
I I I I I I I I I I I I I I I I I I I	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")	
←					

SMS threaded socket

Order code	DN	PN	ØD	H ₂
M73	2"	25	70 x 1/6 mm	Approx.
M74	21⁄2"	25	85 x 1/6 mm	52 mm (2")
M75	3"	25	98 x 1/6 mm	
	code M73 M74	code M73 2" M74 2½"	Code 2" 25 M73 2½" 25	M73 2" 25 70 x 1/6 mm M74 2½" 25 85 x 1/6 mm

IDF socket with union nut

Order code	DN	PN	ØD	H ₂
			77 mm (3") 91 mm (3.6")	Approx. 52 mm (2")
M84	3"	25	106 mm (4.2")	

IDF threaded socket

	Order code	DN	PN	ØD	H ₂
I		2" 21⁄6"		64 mm (2.5") 77.5 mm (3.1")	Approx. 52 mm (2")
	M94	272 3"		91 mm (3.6")	02 (2)
→ D					

Aseptic threaded socket to DIN 11864-1 Form A Order DN PN ØD H₂ (code N33 Approx. 52 mm (2") 25 78 x 1/6" 50 N34 65 25 95 x 1/6" ŕ N35 80 25 110 x ¼" \square N36 100 25 130 x ¼"

Aseptic flange with notch to DIN 11864-2 Form A

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

Aseptic flange with groove to DIN 11864-2 Form A

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

Aseptic clamp with groove to DIN 11864-3 Form A

Order code	DN	PN	ØD	H ₂
 N53	50		77.5	Approx. 52 mm (2")
N54 N55	65 80	25 16	91 106	52 11111 (2)
N56	100	16	130	

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for absolute pressure (from gauge pressure series)

Technical specifications

SITRANS P DS III series for absolute pressure (from the ga	uge pressure series)				
Input					
Measured variable	Absolute pressure				
Span (fully adjustable) or measuring range, max. operating pressure (in accordance with 97/23/EC Pressure Equipment Directive) and max. test pressure (pursuant to DIN 16086)	HART	PROFIBUS PA/ FOUNDATION Fieldbus			
	Span	Nominal measuring range	Max. operating pres- sure MAWP (PS)	Max. perm. test pressure	
	8.3 250 mbar a 0.83 25 kPa a 3 100 inH ₂ O a	250 mbar a 25 kPa a 100 inH ₂ O a	1.5 bar a 150 kPa a 21.8 psia	6 bar a 600 kPa a 87 psia	
	43 1300 mbar a 4.3 130 kPa a 17 525 inH ₂ O a	1300 mbar a 130 kPa a 525 inH ₂ O	2.6 bar a 260 kPa a 37.7 psia	10 bar a 1 MPa a 145 psia	
	160 5000 mbar a 16 500 kPa a 2.32 72.5 psia	5000 mbar a 500 kPa a 72.5 psia	10 bar a 1 MPa a 145 psia	30 bar a 3 MPa a 435 psia	
	1 30 bar a 0.1 3 MPa a 14.5 435 psia	30 bar a 3 MPa a 435 psia	45 bar a 4.5 MPa a 653 psia	100 bar a 10 MPa a 1450 psia	
Lower measuring limit			I	1	
 Measuring cell with silicone oil filling 	0 mbar a (0 psia)				
 Measuring cell with inert filling liquid 					
- for process temperature -20 °C < $\vartheta \le +60$ °C (-4 °F < $\vartheta \le +140$ °F)	30 mbar a/0 kPa a/0	psia			
- for process temperature 60 °C < $9 \le +100$ °C (max. 85 °C for measuring cell 30 bar) (140 °F < $9 \le +212$ °C (max. 185 °C 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 - 108 °F)/°F				
Upper measuring limit		ement max. 100 bar/1 e/process temperatur	0 MPa/1450 psi and 6 e)	60 °C (108 °F)	
Start of scale value	Between the measur	ring limits (fully adjust	able)		
Output	HART		PROFIBUS PA/FOUNDATION Fieldbus		
Output signal	4 20 mA		Digital PROFIBUS PA FOUNDATION Field		
 Lower limit (infinitely adjustable) 	3.55 mA, factory pre	set to 3.84 mA	-		
Upper limit (infinitely adjustable)	23 mA, factory prese optionally set to 22.0		-		
Load					
Without HART	$R_{\rm B} \leq (U_{\rm H} - 10.5 \text{ V})/0.023 \text{ A in } \Omega, \qquad - U_{\rm H}$: Power supply in V				
With HART	$R_{\rm B} = 230 \dots 500 \ \Omega \ ({\rm SIMATIC \ PDM}) \ {\rm or} \ R_{\rm B} = 230 \dots 1100 \ \Omega \ ({\rm HART \ Communicator}) \ -$				
Physical bus	-		IEC 61158-2		
Protection against polarity reversal		nort-circuit and polarit ainst the other with m			
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 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/25 kPa/3.6 psi	\leq (0.15 · r + 0.1) %
• 1300 mbar a/130 kPa a/18.8 psia 5 bar /500 kPa a/72.5 psia 30 bar /3000 kPa a/435 psia 100 bar /10 MPa a/1450 psia 160 bar /16 MPa a/2321 psia 400 bar /40 MPa a/5802 psia 700 bar /50 MPa a/10152 psia	≤ (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)	\leq 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 (to IEC 60529)	IP66 (optional IP66/IP68), NEMA 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 (with 4-wire connection, observe temperature values of sup- plementary 4-wire electronics)	-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

		1 X			
	SITRANS P DS III for absolu	te 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)				
Enclosure material	Low-copper die-cast aluminum, 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. 1.4404/3	316L or Hastelloy C4, mat. no. 2.4610			
Oval flange	Stainless steel, mat. no. 1.4404/3	Stainless steel, mat. no. 1.4404/316L			
Seal diaphragm	Stainless steel, mat. no. 1.4404/	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 me (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 psia)) to DIN 19213 with mounting thread M10 or $^7/_{16}$ -20 UNF to IEC 61518			
Material of mounting bracket					
Steel	Sheet-steel, Mat. No. 1.0330, ch	Sheet-steel, Mat. No. 1.0330, chrome-plated			
Stainless steel	Sheet stainless steel, mat. no. 1.	Sheet stainless steel, mat. no. 1.4301 (SS 304)			
Power supply $m{U}_{ m H}$	HART	PROFIBUS PA/FOUNDATION Fieldbus			
Terminal voltage on transmitter	10.5 45 V DC 10.5 30 V DC in intrinsically-sa	afe 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 97/23/EC		For gases of fluid group 1 and liquids of fluid group 1; complies with requirements of article 3, 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) 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: $U_i = 30 \text{ V}, l_i = 100 \text{ mA},$ $P_i = 750 \text{ mW}; R_i = 300 \Omega$	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	$L_{\rm i} = 0.4 {\rm mH}, \ C_{\rm i} = 6 {\rm nF}$	$L_{\rm i} = 7 \ \mu {\rm H}, \ C_{\rm i} = 1.1 \ {\rm nF}$		
• Explosion-proof "d"	PTB 99 ATEX 1160			
- Marking	Ex II 1/2 G Ex d IIC T4/T6 Gb	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	-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: $U_i = 30 \text{ V}, \ l_i = 100 \text{ mA},$ $P_i = 750 \text{ mW}, \ R_i = 300 \Omega$	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	$L_{\rm i} = 0.4 {\rm mH}, C_{\rm i} = 6 {\rm nF}$	$L_{i} = 7 \mu\text{H}, C_{i} = 1.1 \text{nF}$		
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: $U_{H} = 9 \dots 32 V$ DC; $P_{max} = 1 W$		
• Type of protection "n" (zone 2)	PTB 13 ATEX 2007 X	IIIdA		
- Marking	Ex II 2/3 G Ex nA II T4/T5/T6 Gc Ex II 2/3 G Ex ic IIC T4/T5/T6 Gc			
- Connection (Ex nA)	U _m = 45 V	U _m = 32 V		
- Connection (Ex ic)	To circuits with values: $U_i = 45 \text{ V}$	Linear barrier: $U_0 = 17.5 \text{ V}, I_0 = 570 \text{ mA}$ Linear barrier: $U_0 = 32 \text{ V}, I_0 = 132 \text{ mA}, P_0 = 1 \text{ W}$		
- Effective internal inductance/capacitance	$L_{\rm i} = 0.4 {\rm mH}, C_{\rm i} = 6 {\rm nF}$	$L_{\rm i} = 7 \ \mu {\rm H}, \ C_{\rm i} = 1.1 \ {\rm nF}$		
 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 DIV 2, GP ABCD T4T6; CL II, DIV 2, GF			

	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 	Tranetion block TID
PROFIBUS PA communication		- Adaptation to customer-specif-	Yes, linearly rising or falling
Simultaneous communication with master class 2 (max.)	4	- Electrical damping, adjustable	characteristic 0 100 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	120)	- Failure mode	parameterizable (last good value, substitute 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 Yes
Internal preprocessing	3,	 Square-rooted characteristic for flow measurement 	res
Device profile	PROFIBUS PA Profile for Pro- cess 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
 Adaptation to customer-specif- ic 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 temper- 	Constant value or over parame- terizable ramp function
- Limit monitoring	Yes, one upper and lower warn- ing limit and one alarm limit respectively	ature and electronics tempera- ture	
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 two pressures 	Yes		
- Monitoring of sensor limits	Yes		
 Specification of a container characteristic with 	Max. 30 nodes		
 Square-rooted characteristic for flow measurement 	Yes		
 Gradual volume suppression and implementation point of square-root extraction 	Parameterizable		
- Simulation function for mea- sured pressure value and sen- sor temperature	Constant value or over parame- terizable ramp function		

Pressure Measurement

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for absolute pressure (from gauge pressure series)

Selection and Ordering		-	cle N	-	Selection and Ordering data	Article No.	
Pressure transmitters for absolute pressure from gauge pressure series SITRANS P DS III with HART		7 M F 4 2 3 3 -			Pressure transmitters for absolute pressure from gauge pressure series SITRANS P DS III with HART		
Click on the Article N ration in the PIA Life	lo. for the online configu- Cycle Portal.				Display • Without display	•	
Measuring cell filling	Measuring cell cleaning	Г			 Without visible display (display concealed, setting: mA) 	•	
Silicone oil nert liquid ¹⁾	normal grease-free to cleanliness level 2	1 3			 With visible display (setting: mA) with customer-specific display (setting as specified, Order code "Y21" or "Y22" required) 	•	
Measuring span (min. 3.3 250 mbar a 43 1300 mbar a 0.16 5 bar a 1 30 bar a	max.) (0.12 3.62 psia) (0.62 18.85 psia) (2.32 72.5 psia) (14.5 435 psia)	D F G H			 We can offer shorter delivery times for config the Quick Ship Symbol . For details see pa Power supply units see Chap. 7 "Supplementar Included in delivery of the device: Brief instructions (Leporello) 	ge 9/5 in the append	
Vetted parts materials Seal diaphragm	Process connection				• DVD with detailed documentation		
Stainless steel Hastelloy Hastelloy Version for diaphragm s	Stainless steel Stainless steel Hastelloy		A B C Y		 For oxygen application, add Order code E10. Version 7MF4233-1DY only up to max. span 200 When the manufacture's certificate (calibration c ordered for transmitters with diaphragm seals ac is recommended only to order this certificate ex phragm seals. The measuring accuracy of the to 	ertificate) has to be cording to IEC 60770 clusively with the dia-	
Process connection Connection shank G½ Female thread ½-14 N Stainless steel oval fla nection (Oval flange h - Mounting thread 7/ ₁₆ - Mounting thread M1 - Mounting thread M1 Male thread M20 x 1.5	IPT nge with process con- as no female thread) y-20 UNF to EN 61518 0 to DIN 19213 2 to DIN 19213 5		0 1 2 3 4 5		 here. If the acceptance test certificate 3.1. is order mounted diaphragm seals this certificate must a respective remote seals. 4) If the acceptance test certificate 3.1. is ordered 1 mounted diaphragm seals this certificate must a respective remote seals. 5) The diaphragm seal is to be specified with a segmust be included with the transmitter order num 7MF423Y and 7MF4900-1B 6) The standard measuring cell filling for configura is silicone oil. 	ed for the transmitter so be ordered with th or the transmitter with lso be ordered with th arate order number a ber, for example	
Male thread 1/2 -14 NP		_	6		 ⁷⁾ Not in conjunction with Electrical connection "Sc 	ewed aland Pa 13.5	
Non-wetted parts mate • Housing made of die-(• Housing stainless stee Version • Standard version, Ger setting for pressure ur • International version, Englis setting for pressure uni All versions include DVD SITRANS P in German, E and Spanish. Includes C ructions in 21 EU langua Explosion protection	 cast aluminium el precision casting⁷) man plate inscription, it: bar English plate inscription, it: bar sh plate inscription, t: Pascal with documentation for inglish, French, Italian ompact operating inst- 	•	03	1 2 3	 "Han7D plug". ⁸⁾ Without cable gland, with blanking plug. ⁹⁾ With enclosed cable gland Ex ia and blanking p ¹⁰⁾Configurations with HAN and M12 connectors a ¹¹⁾Only in connection with IP66. ¹²⁾Only in connection with Ex apporval A, B or E. ¹³⁾Only in connection with Ex apporval A, B, E or F ¹⁴⁾M12 delivered without cable socket 	ug.	
 None With ATEX, Type of product of the second s	a)" d) ^{v8)} flameproof enclosure"			A D P E R			
 FM + CSA intrinsic sat FM + CSA (is + ep) + With FM + CSA, Type 	fe (is) Ex ia + Ex d (ATEX) ¹¹⁾ of protection: kplosion Proof (is + xp) ^{⊮8)} ●			F S N C			
 Screwed gland Pg 13. Screwed gland M20x1 Screwed gland ½-14 I Han 7D plug (plastic h connector¹²) 	5 ¹²⁾ 1.5 • NPT •			A B C D			

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for absolute pressure (from gauge pressure series)

Selection and Ordering data	Article No.	Selection and Ordering data	Article No.
Pressure transmitters for absolute pre-		Pressure transmitters for absolute pressure from gauge pressure series	Article No.
om gauge pressure series	7454004		7.11.5 4 6 6 4
SITRANS P DS III with PROFIBUS PA (PA)	7 M F 4 2 3 4 -	SITRANS P DS III with PROFIBUS PA (PA)	7 M F 4 2 3 4 -
ITRANS P DS III with FOUNDATION Field Click on the Article No. for the online of the		SITRANS P DS III with FOUNDATION Fieldbus (FF)	7 M F 4 2 3 5 -
ration in the PIA Life Cycle Portal.	ormgu-	Display	
asuring cell filling Measuring cell		Without display	0
one oil normal		Without visible display	1
one oil normal t liquid ¹⁾ grease-free to	1	(display concealed, setting: bar)With visible display (setting: bar)	6
cleanliness leve		with customer-specific display	7
ominal measuring range		(setting as specified, Order code "Y21" or "Y22"	
50 mbar a (3.62 psia)	D	required)	
00 mbar a (18.85 psia) par a (72.5 psia)	F	Included in delivery of the device: • Brief instructions (Leporello)	
bar a (435 psia)	н	DVD with detailed documentation	
etted parts materials		¹⁾ For oxygen application, add Order code E10.	
eal diaphragm Process connec	ion	²⁾ Version 7MF4233-1DY only up to max. span 200 mb	par a (2.9 psia).
tainless steel Stainless steel	A	³⁾ When the manufacture's certificate (calibration certific	cate) has to be
lastelloy Stainless steel	В	ordered for transmitters with diaphragm seals accord is recommended only to order this certificate exclusive	
Hastelloy Hastelloy	C	phragm seals. The measuring accuracy of the total co	
ersion as diaphragm seal ^{2) 3) 4) 5) 6)}	Y	⁴⁾ If the acceptance test certificate 3.1.is ordered for the	e transmitter with
Process connection Connection shank G½B to EN 837-1	0	mounted diaphragm seals this certificate must also b	
Female thread 1/2-14 NPT	1	respective remote seals.	
Stainless steel oval flange with process		⁵⁾ The diaphragm seal is to be specified with a separate must be included wiht the transmitter order number, f	e order number and
tion (Oval flange has no female thread)		7MF423Y and 7MF4900-1B	
 Mounting thread ⁷/₁₆-20 UNF to IEC 6 Mounting thread M10 to DIN 19213 	1518 2 3	⁶⁾ The standard measuring cell filling for configurations is silicone oil.	with remote seals (Y)
- Mounting thread M10 to DIN 19213 - Mounting thread M12 to DIN 19213	4	 Without cable gland, with blanking plug. 	
• Male thread M20 x 1.5	5	⁸⁾ With enclosed cable gland Ex ia and blanking plug.	
Male thread 1/2 -14 NPT	6	⁹⁾ Configurations with HAN and M12 connectors are on	ly available in Ex ic.
on-wetted parts materials		¹⁰⁾ Only in connection with IP66.	
Housing made of die-cast aluminium	0	¹¹⁾ Only in connection with Ex approval A, B, E or F.	
Housing stainless steel precision castin	g 3	¹²⁾ M12 delivered without cable socket.	
/ersion			
Standard version, German plate inscrip setting for pressure unit: bar	ion, 1		
 International version, English plate insc 	iption, 2		
setting for pressure unit: bar			
 Chinese version, English plate inscriptio setting for pressure unit: Pascal 	n, 3		
Il versions include DVD with documentation	n for		
ITRANS P in German, English, French, Ita	ian and		
panish. Includes Compact operating instr 1 21 EU languages.	uctions		
Explosion protection			
None	A		
• With ATEX, Type of protection:			
- "Intrinsic safety (Ex ia)"	В		
- "Explosion-proof (Ex d)" ⁷⁾	D		
 "Intrinsic safety and flameproof enclos (Ex ia + Ex d)^{*8}) 	ure" P		
- "Ex nA/ic (Zone 2)" ⁹⁾	E		
- "Intrinsic safety, explosion-proof enclosed	ure and R		
dust explosion protection (Ex ia + Ex Zone 1D/2D) ^{*8)} ¹⁰⁾ (not for DS III FF)	1 +		
• FM + CSA intrinsic safe (is)	F		
• FM + CSA (is + ep) + Ex ia + Ex d (ATE			
With FM + CSA, Type of protection:			
	+ xp)" ⁷⁾ NC		
 With FM + CSA, Type of protection: "Intrinsic Safe and Explosion Proof (is Electrical connection/cable entry 			
 With FM + CSA, Type of protection: 	+ xp)" ⁷⁾ NC B C		

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for absolute pressure (from gauge pressure series)

Selection and Ordering data		Order	code			Selection and Ordering da
Further designs			HART	PA	FF	Further designs
Add "-Z" to Article No. and specify Order code.						Add "-Z" to Article No. and sp code.
Pressure transmitter with mounting bracket (1x fixing angle, 2 x nut, 2 x U-						CRN approval Canada (Canadian Registration Nun
washer or 1 x bracket, 2 x nut, 2 x U- washer) made of:						Dual seal
• Steel	٠	A01	✓	✓	✓	Explosion-proof "Intrinsic
Stainless steel	٠	A02	~	~	~	to INMETRO (Brazil) (only for transmitter 7MF4
Plug						
Han 7D (metal) Han 7D (instead of Han 7D)		A30 A31	4			"Flameproof" explosion p according to INMETRO (B
 Han 8D (instead of Han 7D) Angled 		A31 A32	↓			(only for transmitter 7MF4
• Han 8D (metal)		A33	1			Explosion-proof "Intrinsic
Cable sockets for M12 connectors (metal (CuZn))		A50	~	✓	~	+ Ex d) to INMETRO (Braz (only for transmitter 7MF4
Rating plate inscription (instead of Ger- man)						Ex Approval IEC Ex (Ex ia) (only for transmitter 7MF4
• English		B11	✓	✓	✓	Ex Approval IEC Ex (Ex d)
• French	٠		1	✓.	1	(only for transmitter 7MF4
• Spanish	•		1	1	1	Explosion-proof "Intrinsic
Italian Curillia (masian)	•		√ √	√ √	√ √	NEPSI (China)
• Cyrillic (russian)		B16	↓	↓	¥	(only for transmitter 7MF4
English rating plate Pressure units in inH ₂ 0 and/or psi		B21				Explosion protection "Exp to NEPSI (China)
Quality inspection certificate (Five-step factory calibration) to IEC 60770-2 ¹⁾	•	C11	~	1	1	(only for transmitter 7MF4 Explosion-proof "Zone 2"
Inspection certificate ²⁾ Acc. to EN 10204-3.1	•	C12	~	1	~	(China) (only for transmitter 7MF4
Factory certificate Acc. to EN 10204-2.2	•	C14	~	~	1	Ex protection "Ex ia", "Ex 2" to NEPSI (China)
Functional safety (SIL2)	٠	C20	✓			(only for transmitter 7MF4
Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration						"Intrinsic safety" and "Exp explosion protection acc. t
Functional safety (PROFIsafe) Certificate and PROFIsafe protocol		C21 ³⁾		1		(only for transmitter 7MF4[B, D]Z + E1
Functional safety (SIL2/3) Devices suitable for use according to IEC	٠	C23	~			Ex-protection Ex ia accordi (Russia)
61508 and IEC 61511. Includes SIL confor- mity declaration						Ex-protection Ex d accordin (Russia)
Device passport Russia		C99	✓	✓	✓	Ex-protection Ex nA/ic (Zor
Setting of upper limit of output signal to 22.0 mA		D05	1			to EAC Ex (Russia) Ex-protection Ex ia + Ex d -
Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009)		D07	~	~	~	according to EAC Ex (Russ Two coats of lacquer on c
Degree of protection IP66/IP68 (only for M20 x 1.5 and ½-14 NPT)		D12	~	1	~	cover (PU on epoxy) Transient protector 6 kV (I
Supplied with oval flange		D37	~	~	~	tection)
(1 item), PTFE packing and screws in thread of oval flange						Oval flange NAM (ASTAVA
Capri cable gland 4F CrNi and clamping device (848699 + 810634) included		D59	~	1	~	 We can offer shorter deli the Quick Ship Symbol
Use in or on zone 1D/2D		E01	✓	1	~	 When the manufacture's ce ordered for transmitters wit
(only together with type of protection "Intrinsic safety" (transmitter 7MF4B Ex ia)" and IP65)						is recommended only to or phragm seals. The measur here.
Oxygen application		E10	~	~	✓	2) If the acceptance test certi
(In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C						mounted diaphragm seals respective remote seals. ³⁾ Profisafe transmitters can c
(140 °F))						configuration software in co
Export approval Korea		E11	1	1	~	 ⁴⁾ Option does not include AT

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	1	✓	1
Dual seal	E24	1	1	1
Explosion-proof "Intrinsic safety" (Ex ia)	E25 ⁴⁾	1	1	1
to INMETRO (Brazil)				
(only for transmitter 7MF4B)				
"Flameproof" explosion protection according to INMETRO (Brazil)	E26 ⁴⁾	~	1	~
(only for transmitter 7MF4D)				
Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil) (only for transmitter 7MF4P)	E28 ⁴⁾	~	~	
	E45 ⁴⁾			
Ex Approval IEC Ex (Ex ia) (only for transmitter 7MF4B)	E45 ·/	v	v	v
Ex Approval IEC Ex (Ex d)	E46 ⁴⁾	1	1	1
(only for transmitter 7MF4D)	L40	·	•	·
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)				
Explosion-proof "Zone 2" to NEPSI (China)	E57 ⁴⁾	~	✓	~
(only for transmitter 7MF4E)				
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)	E70 ⁴⁾	~	~	1
(only for transmitter 7MF4[B, D]Z + E11)				
Ex-protection Ex ia according to EAC Ex (Russia)	E80 ⁵⁾	1	1	*
Ex-protection Ex d according to EAC Ex (Russia)	E81 ⁵⁾	~	~	1
Ex-protection Ex nA/ic (Zone 2) according to EAC Ex (Russia)	E82 ⁵⁾	~	~	*
Ex-protection Ex ia + Ex d + Zone 1D/2D according to EAC Ex (Russia)	E83 ⁵⁾	~	✓	1
Two coats of lacquer on casing and cover (PU on epoxy)	G10	1	1	1
Transient protector 6 kV (lightning pro- tection)	J01	1	1	1
Oval flange NAM (ASTAVA)	J06	~	1	1
We can offer shorter delivery times for confi	iguration	ne doeir	nator	h with

) 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.

- 2) 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.
- ³⁾ Profisafe transmitters can only be operated with the S7 F Systems V6.1 configuration software in combination with S7-400H
- ⁴⁾ Option does not include ATEX approval, but instead includes only the country-specific approval.
- ⁵⁾ Approval pending.

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for absolute pressure (from gauge 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} , psia 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) Max. 27 characters, specify in plain text:	Y16	~	1	1
Y16: Entry of HART address (TAG) Max. 8 characters, specify in plain text: Y17:	Y17	~		
Setting of pressure indication in pres- sure units Specify in plain text (standard setting: bar): Y21: mbar, bar, kPa, MPa, psi, Note: The following pressure units can be selected: bar, mbar, mm H ₂ O ^{*)} , 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	Y21	~	•	*
Setting of pressure indication in non-pressure units ³⁾ Specify in plain text: Y22: up to //min, m ³ /h, m, USgpm, (specification of measuring range in pres- sure 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	~	~	~

 We can offer shorter delivery times for configurations designated with the Quick Ship Symbol

 For details see page 9/5 in the appendix.

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.

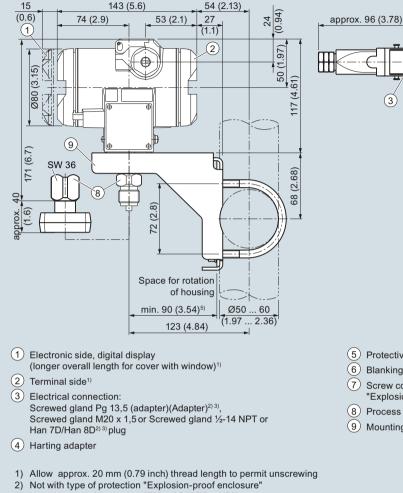
²⁾ Only absolute pressure units selectable. Negative pressure values not permitted.

 $^{\rm 3)}$ Preset values can only be changed over SIMATIC PDM.

Transmitters for applications with advanced requirements (Advanced)

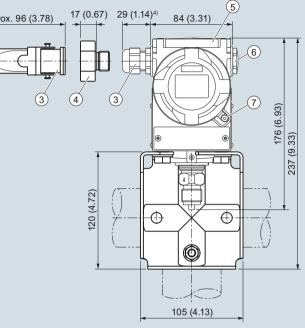
SITRANS P DS III for absolute pressure (from gauge pressure series)

Dimensional drawings



- 3) Not with type of protection "FM + CSA" [IS + XP]"
- 4) For Pg 13,5 with adapter approx. 45 mm (1.77 inch)
- 5) Minimum distance for rotating

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



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

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 differenti	al pressure series)		
Input			
Measured variable	Absolute pressure		
Span (fully adjustable) or measuring range, max. operating pressure (in accordance with 97/23/EC 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)
	8.3 250 mbar a 0.83 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 psia
	43 1300 mbar a 4.3 130 kPa a 17 525 inH ₂ O a	1300 mbar a 130 kPa a 525 inH ₂ O	32 bar a 3.2 MPa a 464 psia
	160 5000 mbar a 16 500 kPa a 2.32 72.5 psia	5000 mbar a 500 kPa a 72.5 psia	32 bar a 3.2 MPa a 464 psia
	1 30 bar a 0.1 3 MPa a 14.5 435 psia	30 bar a 3 MPa a 435 psia	160 bar a 16 MPa a 2320 psia
	5.3 100 bar a 0.5 10 MPa a 76.9 1450 psia	100 bar a 10 MPa a 1450 psia	160 bar a 16 MPa a 2320 psia
Lower measuring limit			
 Measuring cell with silicone oil filling 	0 mbar a/3 kPa a/0.4	14 psia	
 Measuring cell with inert filling liquid 			
- for process temperature -20 °C < 9 \leq +60 °C (-4 °F < 9 \leq +140 °F)	30 mbar a/0 kPa a/0	psia	
- for process temperature 60 °C < $\vartheta \le +100$ °C (max. 85 °C for measuring cell 30 bar) (140 °F < $\vartheta \le +212$ °C (max. 185 °C for measuring cell 435 psi))	30 mbar a + 20 mba 3 kPa a + 2 kPa a · (0.44 psi a + 0.29 ps	θ - 6Ò °C)/°C	
Upper measuring limit		ement max. 100 bar/1 e/process temperature	0 MPa/1450 psi and 60 °C (108 °F) e)
Start of scale value	Between the measur	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 prese 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, V	-
• With HART	$R_{\rm B} = 230 \dots 500 \ \Omega \ (S_{\rm R_{\rm B}} = 230 \dots 1100 \ \Omega \ tor)$		-
Physical bus	-		IEC 61158-2
Protection against polarity reversal		nort-circuit and polarit ainst the other with m	
Electrical damping (step width 0.1 s)	Set to 2 s (0 100 s	3)	

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for absolute pressure (from 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/25 kPa/3.6 psi	$\leq (0.15 \cdot r + 0.1) \%$
 1300 mbar a/130 kPa a/18.8 psia 5 bar /500 kPa a/72.5 psia 30 bar /3000 kPa a/435 psia 100 bar /10 MPa a/1450 psia 160 bar /16 MPa a/2321 psia 400 bar /40 MPa a/5802 psia 700 bar /50 MPa a/10152 psia 	≤ (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)	\leq 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 (to IEC 60529)	IP66 (optional IP66/IP68), NEMA 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 (with 4-wire connection, observe temperature values of sup- plementary 4-wire electronics) 	-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 o	ressure (from differential pressure series					
SITRANS P, DS III for absolute pressure (from the di							
Design	· · ·						
Weight (without options)	≈ 4.5 kg (≈ 9.9 (lb)	≈ 4.5 kg (≈ 9.9 (lb)					
Enclosure material	Low-copper die-cast aluminum no. 1.4408	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 2.4360	Stainless steel, mat. no. 1.4408, Hastelloy C4, mat. no. 2.4610 or Monel, mat. no. 2.4360					
• O-Ring	FPM (Viton) or optionally: PTFE	FPM (Viton) or optionally: PTFE, FEP, FEPM and NBR					
Measuring cell filling	Silicone oil or inert filling liquid (maximum value with oxigen m (140 °F))	(maximum value with oxigen measurement pressure 100 bar (1450 psi) at 60 °C					
Process connection	$^{1\!\!/}_{-18}$ NPT and flange connection $^{7}\!/_{16}$ -20 UNF to IEC 61518	$^{1\!\!/}_{16}\text{-18}$ NPT and flange connection with mounting thread M10 to DIN 19213 or $^{7\!\!/}_{16}\text{-20}$ UNF to IEC 61518					
Material of mounting bracket							
Steel	Sheet-steel, Mat. No. 1.0330, c	hrome-plated					
Stainless steel	Sheet stainless steel, mat. no. 7	1.4301 (SS 304)					
Power supply $m{U}_{ m H}$	HART	PROFIBUS PA/FOUNDATION Fieldbus					
Terminal voltage on transmitter	10.5 45 V DC 10.5 30 V DC in intrinsically-s	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 differential pressure series)

STIRANS P DS III for absolute pressure (fro	. ,	
SITRANS P, DS III for absolute pressure (from the d	• •	
Certificates and approvals	HART	PROFIBUS PA/ FOUNDATION Fieldbus
Classification according to PED 97/23/EC	For gases of fluid group 1 and liquids article 3, paragraph 3 (sound engined	of fluid group 1; complies with requirements of ering 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/G	b
- Permissible ambient temperature	-40 +85 °C (-40 +185 °F) temper -40 +70 °C (-40 +158 °F) temper -40 +60 °C (-40 +140 °F) temper	ature class T5;
- Connection	To certified intrinsically-safe circuits we peak values: $U_i = 30 \text{ V}, \ l_i = 100 \text{ mA}, \ P_i = 750 \text{ mW}; \ P_i = 300 \Omega$	$ \begin{array}{l} \mbox{FISCO supply unit:} \\ U_{\rm o} = 17.5 \mbox{ V}, l_{\rm o} = 380 \mbox{ mA}, P_{\rm o} = 5.32 \mbox{ W} \\ \mbox{Linear barrier:} \\ U_{\rm o} = 24 \mbox{ V}, l_{\rm o} = 250 \mbox{ mA}, P_{\rm o} = 1.2 \mbox{ W} \\ \end{array} $
- Effective internal inductance/capacitance	$L_{\rm i} = 0.4$ mH, $C_{\rm i} = 6$ 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) temper -40 +60 °C (-40 +140 °F) temper	
- Connection	To circuits with values: $_{\rm H}$ = 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 we 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	$L_{\rm i} = 0.4 {\rm mH}, C_{\rm i} = 6 {\rm nF}$	$L_{\rm i} = 7 \ \mu {\rm H}, \ C_{\rm i} = 1.1 \ {\rm nF}$
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 II T4/T5/T6 Gc Ex II 2/3 G Ex ic IIC T4/T5/T6 Gc	
- Connection (Ex nA)	<i>U</i> _m = 45 V	<i>U</i> _m = 32 V
- Connection (Ex ic)	To circuits with values: $U_{\rm i}$ = 45 V	FISCO supply unit ic: $U_0 = 17.5$ V, $I_0 = 570$ mA Linear barrier: $U_0 = 32$ V, $I_0 = 132$ mA, $P_0 = 1$ 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)	•	DIV 1, GP EFG; CL III; CL I, ZN 0/1 AEx ia IIC 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, I DIV 2, GP ABCD T4T6; CL II, DIV 2,	DIV 1, GP EFG; CL III; Ex ia IIC T4T6; CL I, GP FG; CL III

Transmitters for applications with advanced requirements (Advanced)

	SITRANS P D	S III for absolute pressure (from	differential pressure series)
HART communication		FOUNDATION Fieldbus	
HART	230 1100 Ω	communication	O function blacks and the
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 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, 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)	- Square-rooted characteristic	ing limit and one alarm limit respectively Yes
Internal preprocessing		for flow measurement	100
Device profile	PROFIBUS PA Profile for Pro- cess 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-specif- ic 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 temper- 	Constant value or over parame- terizable ramp function
- Limit monitoring	Yes, one upper and lower warn- ing limit and one alarm limit respectively	ature and electronics tempera- ture	
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 two pressures 	Yes		
- Monitoring of sensor limits	Yes		
 Specification of a container characteristic with 	Max. 30 nodes		
 Square-rooted characteristic for flow measurement 	Yes		
 Gradual volume suppression and implementation point of square-root extraction 	Parameterizable		
 Simulation function for mea- sured pressure value and sen- sor temperature 	Constant value or over parame- terizable ramp function		

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Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for absolute pressure (from differential pressure series)

Pressure transmitters for absolute pressure stratAKS P DS II with HART Y#F 4 3 3 - The strate stratements for absolute pressure stratAKS P DS II with HART Y#F 4 3 3 - The stratements for absolute pressure stratAKS P DS II with HART 2 Click on the Archite N, for the unitine configu- ment tigod ¹¹ Measuring cell listen cell ment tigod ¹¹ Measuring cell measuring stratement for absolute pressure measuring stratement for absolute for the process tigod for the measuring stratement for absolute pressure measuring stratement for absolute pressure meastratement for absolute pressure measure for absolute	Selection and Orderin	ng data	Article No.	Selection and Ordering data	Article No.
from differential pressure series. from differential pressure series. stranks P Disk with HART from differential pressure series. stranks P Disk with HART from differential pressure series. stranks P Disk with HART from differential pressure series. A' Click on the Article No. for the online configuration with PART from differential pressure series. Beauring cell filling descring cell discring cell filling descring cell Stranks P Disk Without Strain Cell from differential pressure series. Stranks P Disk Without Strain Cell from differential pressure series. Stranks P Disk Without Strain Cell from differential pressure series. Strain Cell from differential pressure series. Strain Cell from differential pressure series. Disk Disk Cell from differential pressure series. Strain Cell <		•			
PC Construction the Article No. for the ordine configuration in the PLA Lob Queb Park (1.4). Code Park (1.4). C	from differential press	sure series,		from differential pressure series,	
Heasuring cell filling cleaning linear liquid met liquid grease-free to cleaniness level 2 • Screwed gland M20 × 15 • Screwed gland M20 × 15 Silicone all met liquid 3 • Screwed gland M20 × 15 • Screwed gland M20 × 15 Silicone all met liquid 3 • Screwed gland M20 × 15 • Screwed gland M20 × 15 Silicone all and the screwed gland M20 × 15 • Screwed gland M20 × 15 Silicone all and the screwed gland M20 × 15 • Screwed gland M20 × 15 Silicone all and the screwed gland M20 × 15 • Screwed gland M20 × 15 Silicone screwed screwed gland M20 × 16 • Screwed gland M20 × 16 Silicone screwed screwed gland M20 × 16 • Screwed gland M20 × 16 Silicone screwed screwed gland M20 × 16 • Screwed gland M20 × 16 Silicone screwed screwed gland M20 × 16 • Screwed gland M20 × 16 Silicone screwed screwed gland M20 × 16 • Screwed gland M20 × 16 Silicone screwed screwed gland M20 × 20 × 16 • Screwed gland M20 × 16 Cord Cord Cord Cord Cord Cord Cord Cord	↗ Click on the Article I	No. for the online configu-		Electrical connection/cable entry	
 Convecting the second second		-			
Silicono all profile from the specified by the separate order with each order of the specified with a separate order and specified of the specified with specified order with s	Measuring cell filling				
Besuring set with 2 • M12 connectors (statiless steel) • M12 conn	Silicone oil	•	1	Han 7D plug (plastic housing) incl. mating	-
Examines a low 12 • M12 connectors (stainless steel) ^{14) 15)} F Biseuring starts and reading of 12.2362 pain D Display • Wifbout display concealed, sating: mA) 0 130 bar a (12.2362 pain) D F O </td <td></td> <td></td> <td></td> <td>connector¹³⁾</td> <td>5</td>				connector ¹³⁾	5
3.3 230 mbar a (0.12 3.82 psis) D 3 1300 mbar a (0.12 1.85 psis) F 3 1300 mbar a (0.12 1.85 psis) G 1 30 bar a (1.32 1.85 psis) G 1 30 bar a (1.32 1.85 psis) G 5.3 100 bar a (1.45 1.85 psis) G Vettod parts materials Stanless steel Stanless steel Stanless steel Stanless steel Baseloy Hasteloy Fatalum F Gold Gol Colored Colored Color Y21' or Y22' requires) Process connection F Formal thread Y ₁ /Y > 50 fb Y Process connection P Process connection P Process connection P - Mounting thread Y ₁ /Y > 20 UNF to EN 6158 2 - Mounting thread Y ₁ /Y > 20 UNF to EN 6158 2 - Mounting thread Y ₁ /Y > 20 UNF to EN 6158 2 - Mounting thread Y ₁ /Y > 20 UNF to EN 6158 2 - Mounting thread Y ₁ /Y > 20 UNF to EN 6158 2 - Mounting thread Y ₁ /Y > 20 UNF to EN 6158 2 - Mounting thread Y ₁ /Y > 20 UNF to EN 61518<				 M12 connectors (stainless steel) ^{14) 15)} 	F
3.3 230 mbar a (0.12 3.82 psis) D 3 1300 mbar a (0.12 1.85 psis) F 3 1300 mbar a (0.12 1.85 psis) G 1 30 bar a (1.32 1.85 psis) G 1 30 bar a (1.32 1.85 psis) G 5.3 100 bar a (1.45 1.85 psis) G Vettod parts materials Stanless steel Stanless steel Stanless steel Stanless steel Baseloy Hasteloy Fatalum F Gold Gol Colored Colored Color Y21' or Y22' requires) Process connection F Formal thread Y ₁ /Y > 50 fb Y Process connection P Process connection P Process connection P - Mounting thread Y ₁ /Y > 20 UNF to EN 6158 2 - Mounting thread Y ₁ /Y > 20 UNF to EN 6158 2 - Mounting thread Y ₁ /Y > 20 UNF to EN 6158 2 - Mounting thread Y ₁ /Y > 20 UNF to EN 6158 2 - Mounting thread Y ₁ /Y > 20 UNF to EN 6158 2 - Mounting thread Y ₁ /Y > 20 UNF to EN 6158 2 - Mounting thread Y ₁ /Y > 20 UNF to EN 61518<	Measuring span (min.	max.)		Display	-
1.130 bara (1451450 paia) (145450 paia) (145450 paia) Vetted parts materials Solutions state (145450 paia) KE Solution for the stateloy Solutions state (145450 paia) KE Statinises steel Solutions steel A Hasteloy Basilines steel B Hasteloy Basilines steel B Hasteloy Hasteloy C Cold Cold Cold Cold Cold Cold Cold Cold Cold Process connection Participacement requirement) Y Process connection Participacement requirement) Y Process connection Participacement requirement) Participacement requirement) Prowetcopacement medulot babo pacolised with the d	•••		D		0
 130 bar a (14.5435 psia) 130 bar a (16.5 1450 psia) 1455 psia)<!--</td--><td>43 1300 mbar a</td><td>(0.62 18.85 psia)</td><td>F</td><td></td><td>1</td>	43 1300 mbar a	(0.62 18.85 psia)	F		1
5.3. T00 bar a (76.91450 psia) KE Wetted parts materials • with customer-specific display 7 Wetted parts materials • with customer-specific display 7 Starliess steel Starliess steel Starliess steel * Starliess steel Starliess steel A Starliess steel Starliess steel Starliess steel * Monel Monel C * Monel Monel C * Monel Monel * * Process connection * * * Ferale thread V-18 NFT with flange connection * * * * Mounting thread M10 to DN 19213 0 * * (only for regizement regularement re					
Wetted parts materials (continue transmitting cell Seal dispitage Parts of measuring cell Stainless steel Stainless steel Hastelloy Stainless steel Hastelloy Hastelloy Cording and specified. Order code "221" of "22" Process connection Code Formal thread Vi-18 NPT with flange connection Sealing servers) for the process flanges(s) Noming thread Vi-18 NPT with flange connection Sealing servers control to process flanges (s) Nounning thread Vi-18 NPT with flange connection Sealing servers control to process flanges (s) Nounning thread M to E0 N1 19213 2 (nft for replacement requirement) Vertain of a to process flange (s) Nounning thread M to E0 N1 19213 6 (nft for replacement requirement) 4 Version Constitutes and this bus process flanges steel precision casting 2 Stainless steel Stainless steel Sealing servers Process connection 2 Version General metavismant requirement) 4 Nounning thread M to E0 N1 19213 6 (only for replacement requirement) 2 Non-wetted prath materials 1 St					
Wetted parts materials inclusions i	5.3 100 bar a	(76.9 1450 psia)	KE		1
Stainless steel Stainless steel Stainless steel Hasteloy Stainless steel B Hasteloy Hasteloy Hasteloy Tantalum Tantalum Tantalum Gold Gold Gold Gold Gold Gold Fromate thread 10:16 DN honel H Fromate thread 10:16 DN honel H Process connection Forange thread 10:16 DN honel H Fromate thread 10:16 DN honel L Y Mounting thread 71:4::00 UNF for EN 61518 20 Version for trapsacement requirement • Mounting thread 71:4::00 UNF for EN 61518 20 Version included with the respective remote seals. • Mounting thread 71:4::00 UNF for EN 61518 64 • Mounting thread 10:10 DN 19213 64 (nb) for replacement requirement 23 Stainless steel Stainless steel Stainless steel Stainless steel Dioc-cat aluminum 23 • Staindard version, German plate inscription, esting cores alumpicon 41 • Staindard version, German plate inscription, esting cores include Core 33 • Staindard version, English plate inscription, esting core <td>•</td> <td></td> <td></td> <td></td> <td></td>	•				
Stainless steel Stainless steel A Hastelloy Stainless steel A Hastelloy Stainless steel A Hastelloy Stainless steel A Hastelloy A Hastelloy A Hastelloy A Hastelloy C C Hastelloy Hastelloy Hastelloy C C Hastelloy Hastelloy A Hastelloy C C Hastelloy Hastelloy Hastelloy C C Hastelloy Hastelloy Hastelloy C C Hastelloy	Seal diaphragm	Parts of measuring cell		Power supply units see Chap. 7 "Supplementary Co	omponents".
 Hastelloy Stanties steel Hastelloy Hastelloy Hastelloy Cantalum Tantalum E Monel Monel Gold Gold Cold Version for diaphragm seal? 37:45:00 Process connection Sealing screws [Jort Net Mission 105: C60702; 40:10 When the manufacture's certificate (calibration certificate) has to be ordered for transmitters with diaphragm seals according to IEC 607702; 41:10 When the manufacture's certificate calibration is certificate calibration is certificate on the calibration is certificate calibration is certificate to the transmitter with mounted diaphragm seals according to IEC 607702; 41:10 When the manufacture's certificate calibration is certificate seals accord to IEC 607702; 41:10 When the manufacture's certificate calibration is certificate to be cortered with the acceptance test certificate calibration is certificate to the transmitter with mounted diaphragm seals is to be process flamge 7? Mounting thread /1(1₀ c20 UNF to EN 61518 Mounting thread /1(1₀					
Tantalumi Tantalumi E Monel Monel Monel Gold Gold Cold Version for diaphragm seal? (3) 4) 5) 6) Y Process connection Y Female thread V-18 MPT with flange connection Y Sealing screw (5) (Female thread V-18 MPT with flange connection Y Solarity screw opposite process connection Y Mounting thread V1-18 MPT with flange connection Y Solarity screw opposite process connection Y Mounting thread V1-18 MPT with flange connection Y Monel extraction (10 to DIN 19213 (only for replacement requirement) Y Process flange screws Electronics housing Y Stainless steel Die-cast aluminum Y Y Stainless steel Die-cast aluminum	,			 Brief instructions (Leporello) 	
Monel Monel H Gold Gold Gold Version for diaphragm seal ⁽²⁾ (3) 4) 5) 6) P Process connection F Process connection P Frenate thread V-18 NPT with flange connection Version for diaphragm seals conting to IEC 0070-2; its recommended only to order this cellificate scalusely with the diaphragm seals according to IEC 0070-2; its recommended only to order this cellificate scalusely with the diaphragm seals. The measuring accuracy of the transmitter with mounted displargm seals. The measuring accuracy of the transmitter with respective remote seals. • Mounting thread /1/1,e-20 UNF to EN 1518 C • Mounting thread /1/1,e-20 UNF to EN 1518 C • Mounting thread /1/1,e-20 UNF to EN 1518 C • Mounting thread /1/1,e-20 UNF to EN 1518 C • Mounting thread /1/1,e-20 UNF to EN 1518 C • Mounting thread /1/1,e-20 UNF to EN 1518 C • Mounting thread /1/1,e-20 UNF to EN 1518 C • Mounting thread /1/1,e-20 UNF to EN 1518 C • Stainless steel Die-cast aluminum C Stainless steel Die-cast aluminum C • International version, English plate inscription, setting for pressure unit: bar C • International version, English plate inscription, s	,	,			e flere e e (c)
Gold Gold L Version for diaphragm seal? (3) 4(5) 6) Y Process connection Process connection Female thread V-18 MPT with flange connection Sealing screw opposite process connection Sealing screw opposite process connection Wersion MPT-4333-10%only up for ones: span 200 mbr a (2.9 psi). Would gitter and M10 to DIN 19213 O Gold of or diaphragm seals according to IEC 60770.2, it is recommended only to roder this certificate exclusively with the diaphragm seals according to IEC 60770.2, it is recommended only to roder the transmitter with mounded diaphragm seals is certificate as 1, is ordered for the transmitter with mounded diaphragm seals is certificate as 1, is ordered with the diaphragm seals is certificate as 1, is ordered with the diaphragm seals is certificate as 1, is ordered with the diaphragm seals is certificate as 1, is ordered for the transmitter with mounded diaphragm seals is certificate as 1, is ordered for the transmitter with mounded diaphragm seals is certificate as 1, is ordered with the diaphragm seals is certificate as 1, is ordered for the transmitter with mounded diaphragm seals is certificate mater seals. Non-wetted parts materials O process flange screws Electronics housing Stainless steel Dicecast aluminum Stainless steel Stainless steel proceision Stainless steel Stainless steel proceision Stainless steel Stainless steel proceision <				 Sealing plug(s) or sealing screw(s) for the proces 	s lianges(s)
Version for diaphragm seal ⁽²⁾ (3) (4) (5) (5) Y Process connection Process connection Franke thread (X-18 NF) with flange connection Sealing screw opposite process connection • Mounting thread (X-18 NF) with flange connection 2 • Mounting thread (X-16 NF) with flange connection 2 • Mounting thread (X-16 NF) with flange connection 2 • Mounting thread (X-16 NF) 2 • Mounting thread (X-16 NF) 2 • Mounting thread (X-16 NF) 6 • Mounting thread (X-16 NF) 7 • The claptenatin term (X-16 NF)				¹⁾ For oxygen applications, add Order code E10.	
Process connection •• When Hanufacture's with diaghragm seak according to IEC 6070-2, it is recommended only to order the transmitters with diaghragm seak according to IEC 6070-2, it is recommended only to order this certificate exclusively with the diaghragm seak according to IEC 6070-2, it is recommended only to order this certificate exclusively with the diaghragm seak according to IEC 6070-2, it is recommended only to order this certificate exclusively with the diaghragm seak according to IEC 6070-2, it is recommended only to order this certificate exclusively with the diaghragm seak its certificate state cerificate state state cerificate state certificate state cerificate	Version for diaphragm	seal ^{2) 3) 4) 5) 6)}		²⁾ Version 7MF4333-1DY only up to max. span 200 m	ıbar a (2.9 psia).
Female thread 14-18 NPT with flange connection Stalling screw opposite process connection Mounting thread 71,e²/20 UNF to EN 161518 Mounting thread 71,e²/20 UNF to EN 161518 Mounting thread 71,e²/1,e²/20 UNF to EN 161518 M	the second s			³⁾ When the manufacture's certificate (calibration certificate)	icate) has to be
 Sealing screw opposite process connection Mounting thread 7/₁₆-20 UNF to EN 61518 Mounting thread M10 to DN 19213 (only for replacement requirement) Vent on side of process flange 7¹ Mounting thread M10 to DN 19213 (only for replacement requirement) Wonting thread M10 to DN 19213 (only for replacement requirement) Wontonig thread M10 to DN 19213 (only for replacement requirement) Moverting screws Electronics housing Stainless steel Dis-cast aluminum Stainless steel Dis-cast aluminum casting? Stainless steel Dis-cast aluminum Stainless steel Dis-cast aluminum setting for pressure unit: bar Standard 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 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 for K118 (K k k k) Chinese version for K118 (K k k) Chinese version (K k k) Chinese version (K k) Chinese version (K k) Chinese version (K k) Chinese version (K k) Chine k)<td></td><td>PT with flange connection</td><td></td><td>ordered for transmitters with diaphragm seals accord</td><td>ding to IEC 60770-2, it</td>		PT with flange connection		ordered for transmitters with diaphragm seals accord	ding to IEC 60770-2, it
 Mounting thread /_{1/6}=20 UNF to EN 61518 Mon-wetted parts materials process flange screws Electronics housing Stainless steel Die-cast aluminum 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 All version include DVD with documentation for STFANS P in German, English, French, Italian and Spanish, Includes Compact operating instructions in 21 EU languages. Explosion protection None With M + CSA (zone 2)¹¹ FM + CSA (is + eq) + Ex ia + Ex d (ATEX)¹² With PH + CSA, Type of protection: FM + CSA, Type of protection: FM + CSA, Type of protection: FM + CSA, Type of protection: With FM + CSA, Ty		0			
 Mounting thread M10 to DIN 19213 (only for replacement requirement) Vent on side of process flange ⁷/₁₆:20 UNF to 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 Die-cast aluminum Stainless steel Die-cast aluminum Stainless steel Stainless steel			2		
 Vent on ide of process lange 7 Mounting thread // 1₁₆:-20 UNF to EN 61518 Mounting thread // 1₁₆:-20 UNF to EN 61518 Mounting thread // 1₁₆:-20 UNF to EN 61518 The disphragm seal is to be specified with a separate order number, for example 7MF433	- Mounting thread M	10 to DIN 19213	0	4) If the acceptance test certificate 3.1 is ordered for the mounted diaphragm scale this partificate must also	he transmitter with
 Mounting thread //₁₆-20 UNF to 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 casting³⁹ Version Standard version, English plate inscription, setting for pressure unit: bar International version, English plate inscription, setting for pressure unit: Pascal All versions include DVD with documentation for STIRANS P in German English, French, Italian and Sparish. Includes Compact operating instructions in 21 EU languages. Explosion-proof (Ex d)⁹¹ "Krinics safety (Ex ia)" "Intrinsic safety (Ex ia)" "Intrinsic safety (Ex ia)" "Explosion-proof (Ex d)⁹¹ "Explosion-proof (Ex d)⁹² "Explosion-proof (Ex d)⁹¹ "Explosion-proof enclosure and dust explosion protection (Ex a) + Ex d (ATEX)¹²⁰ Sating the Cash (Ex a) + Ex d (ATEX)¹²⁰ Sating to Protection (Ex d) + Ex a + Ex d (ATEX)¹²⁰ Sating to Protection (Ex d) + Ex a + Ex d (ATEX)¹²⁰ Sating to Protection (Ex d) + Ex a + Ex d (ATEX)¹²⁰ Sating to Protection (Ex d) + Ex a + Ex d (ATEX)¹²⁰ Sating to Protection (Ex d) + Ex a + Ex d (ATEX)¹²⁰ Sating to Protection (Ex d) + Ex a + Ex d (ATEX)¹²⁰ Sating to Protection (Ex d) + Ex a + Ex d (ATEX)¹²⁰ Sating to Protection (Ex d) + Ex a + Ex d (ATEX)¹²⁰ Sating to Protection (Ex d) + Ex a + Ex d (ATEX)¹²⁰ Sating to Protection (Ex d) + Ex a + Ex d (ATEX)¹²⁰ Sating to Protection (Ex a) + Ex (A (Ex A)¹²⁰ Sating					
 Mounting thread M10 to DIN 19213 (only for replacement requirement) Mon-wetted parts materials process flange screws Electronics housing Stainless steel Die-cast aluminum Stainless steel precision casting³ Version Standard version, German plate inscription, setting for pressure unit: bar Chinese version, English plate inscription, setting for pressure unit: Pascal All versions include DV with documentation for STITRANS P in German, English, French, Italian and Spanish. Includes Compact operating instructions in 21 EU languages. Explosion protection None With ATEX, Type of protection: 'Intrinsic safety (Ex ia)' 'Ex nA(c Zone 2¹¹) 'FM + CSA (is + ep) + Ex ia + Ex d (ATEX)¹² S 	Vent on side of proce	ss flange ()		⁵⁾ The diaphragm seal is to be specified with a separa	te order number and
(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 ³ Version 3 • International version, German plate inscription, setting for pressure unit: bar 1 • Chinese version, English plate inscription, setting for pressure unit: bar 2 • Chinese version, English plate inscription, setting for pressure unit: bar 3 • Chinese version, English plate inscription, setting for pressure unit: bar 3 • None 3 • With ATEX, Type of protection: 1 • "Intrinsic safety (Ex ia)" 8 • With ATEX, Type of protection: * • "Intrinsic safety (Ex ia)" 8 • "Avaitic is day blosin-proof (Ex d)" ⁹ * • "Explosion-proof (Ex d)" ⁹ * • "Avaitic is safety and flameproof enclosure and dust explosion-proof enclosure and dust explosion-proof enclosure and dust explosion-proof enclosure and dust explosion-proof (Ex d)" ⁹ • "Thrinsic safety and flameproof enclosure and dust explosion-proof enclosure and dust explosion protection (Ex ia + Ex d) + Zon ED/2D/ ^{10/12}					for example
Non-wetted parts materials process flarge screws Electronics housing Stainless steel Die-cast aluminum 2 Stainless steel Die-cast aluminum 3 Version 3 3 • Standard version, German plate inscription, setting for pressure unit: bar 1 • International version, English plate inscription, setting for pressure unit: bar 2 • Onlinese version, English plate inscription, setting for pressure unit: Pascal 3 All versions include DVD with documentation for SITFANS P in German, English, French, Italian and Spanish. Includes Compact operating instructions in 21 EU languages. 3 Explosion protection * • Nore in Cludes Compact operating instructions in 21 EU languages. 8 FX (Z kan 2 + Ex d) ¹⁰ * • Thrinsic safety and flameproof enclosure" (Ex ia + Ex d) ¹⁰ * • Thrinsic safety, explosion-proof enclosure and dust explosion proof enclosure and dust explosion protection in the XC (X and 2) ¹⁰ * • FM + CSA intrinsic safe (is) * * • With M+ CSA, Type of protection: * • With M+ CSA, is + eoj + Ex ia + Ex d (ATEX) ¹² *			4		with remote seals (Y)
process flange screws Electronics housing Stainless steel Die-cast aluminum Stainless steel Stainless steel precision casting ⁹ Version 1 • International version, German plate inscription, setting for pressure unit: bar 1 • International version, English plate inscription, setting for pressure unit: bar 1 • International version, English plate inscription, setting for pressure unit: bar 2 • Object pressure unit: bar 3 • Object pressure unit: Pascal 3 All versions include DVD with documentation for STIRANS P in German, English, French, Italian and Spanish. Includes Compact operating instructions in 21 EU languages. 3 Explosion protection A • None A • With ATEX, Type of protection: • "Intrinsic safety (Ex a)" B • "Explosion-proof (Ex d)* ⁹) D • "Explosion-proof enclosure" (Ex ia + Ex d) ** ¹⁰) F • Thurtinsic safety, explosion-proof enclosure and dust explosion proof (Ex d)** F • FM + CSA intrinsic safe (is) F • FM + CSA, (is + ep) + Ex ia + Ex d (ATEX)** F • With FM + CSA, type of protection: F	Non-wetted parts mat	erials		is silicone oil.	
Stainless steel Die-cast aluminum 2 Stainless steel Stainless steel precision casting ³ 3 Version 1 • Standard version, German plate inscription, setting for pressure unit: bar 1 • International version, English plate inscription, setting for pressure unit: bar 2 • Chinese version, English plate inscription, setting for pressure unit: bar 2 • Chinese version, English plate inscription, setting for pressure unit: Pascal 3 All versions include DVD with documentation for SITRANS P in German, English, French, Italian and Spanish. Includes Compact operating instructions in 21 EU languages. 3 Explosion protection A • None A • With ATEX, Type of protection: * • Intrinsic safety (Ex ia)* B • Thirtinsic safety (Ex ia)* F	•			7) Not for span "5.3 100 bar a (76.9 1450 psia)". P valve in the process flange (see dimensional drawin	osition of the top vent
Stainless steel Stainless steel precision casting ⁹ 3 "Han7D plug". Version • Standard version, German plate inscription, setting for pressure unit: bar 9 Without cable gland, with blanking plug • International version, English plate inscription, setting for pressure unit: bar 1 1 10Configurations with HAN and M12 connectors are only available in Ex ic. • Chinese version, English plate inscription, setting for pressure unit: Pascal 3 13Only in connection with Ex approval A, B or E. All versions include DVD with documentation for SITRANS P in German, English, French, Italian and Spanish. Includes Compact operating instructions in 21 EU languages. A Explosion protection • None • With ATEX, Type of protection: • • "Intrinsic safety (Ex ia)" B • "Explosion-proof (Ex d)" ⁹ D • That is a safety and flameproof enclosure" (EX ia + Ex d) P • "Intrinsic safety, explosion-proof enclosure and dust explosion proof enclosure and dust explosion proof enclosure and dust explosion proof (Ex d) ¹⁰ F • FM + CSA (Is + ep) + Ex ia + Ex d (ATEX) ¹² F • With FM + CSA, Type of protection: F	Stainless steel	Die-cast aluminum	2		0,
• Version • Without cable gland, with blanking plug • Standard version, German plate inscription, setting for pressure unit: bar 1 • International version, English plate inscription, setting for pressure unit: bar 2 • Chinese version, English plate inscription, setting for pressure unit: bar 2 • Chinese version, English plate inscription, setting for pressure unit: Pascal 3 All versions include DVD with documentation for SITFANS P in German, English, French, Italian and Spanish. Includes Compact operating instructions in 21 EU languages. 1 Explosion protection • • None A • With ATEX, Type of protection: • • "Intrinsic safety (Ex ia)" B • "Intrinsic safety, explosion-proof enclosure" (Ex ia + Ex d) * 10'' P • That Cace 2)************************************	Stainless steel	Stainless steel precision	3		ed gland i g 15.5 and
 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 documentation for SITRANS P in German, English, French, Italian and Spanish. Includes Compact operating instructions in 21 EU languages. Explosion protection None "Intrinsic safety (Ex ia)" "Intrinsic safety (Ex ia)" "Intrinsic safety (Ex ia)" "Intrinsic safety, explosion-proof enclosure" (Ex ia + Ex d) ¹⁰) "Explosion protection (Ex ia + Ex d + Zone 1D/2D)'^{101/21} FM + CSA intrinsic safe (is) FM + CSA (is + ep) + Ex ia + Ex d (ATEX)¹²) 		casting		⁹⁾ Without cable gland, with blanking plug	
 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: Pacal All versions include DVD with documentation for SITRANS P in German, English, French, Italian and Spanish. Includes Compact operating instructions in 21 EU languages. Explosion protection None With ATEX, Type of protection: Intrinsic safety (Ex a)* Thirinsic safety (Ex d)*⁹ Thirinsic safety (Ex d)*⁹ Thirinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia+ Ex d + Zone 1D/2D)*¹⁰¹² FM + CSA (is + ep) + Ex ia + Ex d (ATEX)¹² With FM + CSA, Type of protection: 				0 01 0	
 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 documentation for SITRANS P in German, English, French, Italian and Spanish. Includes Compact operating instructions in 21 EU languages. Explosion protection None With ATEX, Type of protection: "Intrinsic safety (Ex a)" "Explosion-proof (Ex d)"⁹ "Intrinsic safety, explosion-proof enclosure" (Ex ia + Ex d)"¹⁰ "Ex nA/ic (Zone 2)"¹¹) "Explosion protection (Ex ia + Ex d + Zone 1D/2D)"¹⁰¹² FM + CSA intrinsic safe (is) FM + CSA, Type of protection: 			1	¹¹⁾ Configurations with HAN and M12 connectors are or	nly available in Ex ic.
 Setting for pressure unit: bar Chinese version, English plate inscription, setting for pressure unit: Pascal All versions include DVD with documentation for SITRANS P in German, English, French, Italian and Spanish. Includes Compact operating instructions in 21 EU languages. Explosion protection None None With ATEX, Type of protection: "Intrinsic safety (Ex ia)" "Explosion-proof (Ex d)"⁹ "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d) ¹⁰ "Ex nA/ic (Zone 2)¹¹) "Ex nA/ic (Zone 2)¹¹) FM + CSA intrinsic safe (is) FM + CSA (is + ep) + Ex ia + Ex d (ATEX)¹² With FM + CSA, Type of protection: 			2		
setting for pressure unit: Pascal All versions include DVD with documentation for SITRANS P in German, English, French, Italian and Spanish. Includes Compact operating instructions in 21 EU languages. Explosion protection • None • With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d) ^{v9)} - "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)" ¹⁰⁾ - "Ex nA/ic (Zone 2)" ¹¹⁾ - "Intrinsic safet, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)" ¹⁰¹²) • FM + CSA intrinsic safe (is) • With FM + CSA, Type of protection:	setting for pressure u	nit: bar			
All versions include DVD with documentation for SITRANS P in German, English, French, Italian and Spanish. Includes Compact operating instructions in 21 EU languages. Explosion protection • None • With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" B - "Explosion-proof (Ex d)" ⁹⁾ - "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)" ¹⁰⁾ - "Ex nA/ic (Zone 2)" ¹¹⁾ - "Ex nA/ic (Zone 2)" ¹¹⁾ • Thrinsic safet, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)" ^{10/12)} • FM + CSA intrinsic safe (is) • FM + CSA, Type of protection:			3		
SITRANS P in German, English, French, Italian and Spanish. Includes Compact operating instructions in 21 EU languages. Image: Compact operating instructions in 21 EU languages. Explosion protection Image: Compact operating instructions in 21 EU languages. • None Image: Compact operating instructions in 21 EU languages. • With ATEX, Type of protection: Image: Compact operating instructions in 21 EU languages. • With ATEX, Type of protection: Image: Compact operating instructions in 21 EU languages. • With ATEX, Type of protection: Image: Compact operating instructions in 21 EU languages. • With ATEX, Type of protection: Image: Compact operating instructions in 21 EU languages. • "Intrinsic safety (Ex ia)" Image: Compact operating instructions in 21 EU languages. • "Intrinsic safety and flameproof enclosure" Image: Compact operating instructions in 21 EU languages. • "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)" ^{101/2} Image: Compact operating instructions in 21 EU languages. • FM + CSA (is + ep) + Ex ia + Ex d (ATEX) ¹² Image: Compact operating instructions in 21 EU languages. • With FM + CSA, Type of protection: Image: Compact operating instructions in 21 EU languages.	0 1			¹³ /M12 delivered without cable socket.	
Spanish. Includes Compact operating instructions in 21 EU languages. Explosion protection • None • With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)" ⁹⁾ - "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)" 10) - "Ex nA/ic (Zone 2)" ¹¹⁾ - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)" ¹⁰⁾¹² • FM + CSA intrinsic safe (is) • FM + CSA (is + ep) + Ex ia + Ex d (ATEX) ¹²⁾ • With FM + CSA, Type of protection:					
Explosion protection • None • With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)" ⁹) - "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)" ¹⁰) - "Ex nA/ic (Zone 2)" ¹¹) - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)" ¹⁰) ¹² • FM + CSA (is + ep) + Ex ia + Ex d (ATEX) ¹²) • With FM + CSA, Type of protection:	Spanish. Includes Com				
 None With ATEX, Type of protection: "Intrinsic safety (Ex ia)" "Explosion-proof (Ex d)"⁹ D "Intrinsic safety and flameproof enclosure" ((Ex ia + Ex d)" ¹⁰) "Ex nA/ic (Zone 2)"¹¹) "Ex nA/ic (Zone 2)"¹¹) "Explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)"¹⁰)¹² FM + CSA intrinsic safe (is) FM + CSA (is + ep) + Ex ia + Ex d (ATEX)¹²) With FM + CSA, Type of protection: 					
 With ATEX, Type of protection: "Intrinsic safety (Ex ia)" "Explosion-proof (Ex d)"⁹) D "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)"¹⁰ "Ex nA/ic (Zone 2)"¹¹) "Ex nA/ic (Zone 2)"¹¹ "Ex nA/ic	• •				
 "Intrinsic safety (Ex ia)" "Explosion-proof (Ex d)"⁹) "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)"¹⁰ "Ex nA/ic (Zone 2)"¹¹) "FX + CSA (ist explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)"¹⁰)¹² "FM + CSA (is + ep) + Ex ia + Ex d (ATEX)¹² With FM + CSA, Type of protection: 		rotaction:	A		
 "Explosion-proof (Ex d)"⁹⁾ "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)"¹⁰⁾ "Ex nA/ic (Zone 2)"¹¹⁾ "Ex nA/ic (Zone 2)"¹¹⁾ "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)"¹⁰⁾¹² FM + CSA (is + ep) + Ex ia + Ex d (ATEX)¹²⁾ With FM + CSA, Type of protection: 			P		
 "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)^{* 10} "Ex nA/ic (Zone 2)^{*11} E "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)^{*1012} FM + CSA (is + ep) + Ex ia + Ex d (ATEX)¹² With FM + CSA, Type of protection: 					
(Ex ia + Ex d)* ¹⁰⁾ E - "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⁾ F • FM + CSA intrinsic safe (is) F • FM + CSA (is + ep) + Ex ia + Ex d (ATEX) ¹²⁾ S • With FM + CSA, Type of protection: F	- "Intrinsic safety and				
 "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia+ Ex d + Zone 1D/2D)*¹⁰⁾¹² FM + CSA intrinsic safe (is) FM + CSA (is + ep) + Ex ia + Ex d (ATEX)¹²⁾ With FM + CSA, Type of protection: 	(Ex ia + Ex d)" ¹⁰⁾				
dust explosion protection (Ex ia+ Ex d + Zone 1D/2D)* ¹⁰⁾¹² • FM + CSA intrinsic safe (is) • FM + CSA (is + ep) + Ex ia + Ex d (ATEX) ¹²⁾ • With FM + CSA, Type of protection:	,				
Zone 1D/2D)*10)12)• FM + CSA intrinsic safe (is)• FM + CSA (is + ep) + Ex ia + Ex d (ATEX)12)• With FM + CSA, Type of protection:			R		
 FM + CSA intrinsic safe (is) FM + CSA (is + ep) + Ex ia + Ex d (ATEX)¹²⁾ With FM + CSA, Type of protection: 	Zone 1D/2D)" ¹⁰⁾¹²⁾	GUIUTI (LA IAT EX U T			
 FM + CSA (is + ep) + Ex ia + Ex d (ATEX)¹² With FM + CSA, Type of protection: 		afe (is)	F		
- "Intrinsic Safe and Explosion Proof (is + xp)" ⁹⁾					
	- "Intrinsic Safe and E	Explosion Proof (is + xp)" ⁹⁾	NC		

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for absolute pressure (from differential pressure series)

Selection and Orderin	g data	Article No.	Selection and Ordering data	Article No.
Pressure transmitter f from differential press			Pressure transmitter for absolute pressure from differential pressure series	
SITRANS P DS III with F	PROFIBUS PA (PA)	7 M F 4 3 3 4 -	SITRANS P DS III with PROFIBUS PA (PA)	7 M F 4 3 3 4 -
SITRANS P DS III with F	OUNDATION Fieldbus (FF)	7 M F 4 3 3 5 -	SITRANS P DS III with FOUNDATION Fieldbus (FF)	7 M F 4 3 3 5 -
↗ Click on the Article N	No. for the online configu-			
ration in the PIA Life			Electrical connection/cable entry	
Measuring cell filling	Measuring cell cleaning		Screwed gland M20 x 1.5	B
Silicone oil	normal	1	 Screwed gland ½-14 NPT M12 connectors (stainless steel)¹²⁾¹³⁾ 	C
Inert liquid ¹⁾	grease-free to	3		
	cleanliness level 2		DisplayWithout display	
Nominal measuring ra	•		Without visible display	
250 mbar a 1300 mbar a	(3.62 psia) (18.85 psia)	D	(display concealed, setting: bar)	
5 bar a	(72.5 psia)	G	With visible display (setting: bar)	
30 bar a	(435 psia)	Н	 With customer-specific display (setting as specified, Order code "Y21" required) 	
100 bar a	(1450 psia)	KE	Included in delivery of the device:	
Wetted parts material	S		Brief instructions (Leporello)	
Seal diaphragm	Parts of measuring cell		 DVD with detailed documentation Sealing plug(s) or sealing screw(s) for the proces 	s flangos(s)
Stainless steel	Stainless steel	Α		s nanges(s)
Hastelloy	Stainless steel	В	¹⁾ For oxygen application, add Order code E10.	
Hastelloy	Hastelloy	CE	²⁾ Version 7MF4334-1DY only up to max. span 200 m	
Tantalum Monel	Tantalum Monel	H	³⁾ When the manufacture's certificate (calibration certif ordered for transmitters with diaphragm seals accord	icate) has to be ding to IEC 60770.
Gold	Gold	L	is recommended only to order this certificate exclusion	ively with the dia-
Version as diaphragm s	seal 2) 3) 4) 5) 6)	Ÿ	phragm seals. The measuring accuracy of the total c here.	ombination is cert
Process connection			⁴⁾ If the acceptance test certificate 3.1.is ordered for th	ne transmitter with
	PT with flange connection		mounted diaphragm seals this certificate must also l respective remote seals.	be ordered with th
 Sealing screw opposi 			 ⁵⁾ The diaphragm seal is to be specified with a separa 	to order number o
- Mounting thread '/1	₆ -20 UNF to IEC 61518	2	must be included wiht the transmitter order number,	for example
- Mounting thread M1		0	7MF433Y and 7MF4900-1B	
(only for replacementVent on side of procession	ss flange ⁷⁾		⁶⁾ The standard measuring cell filling for configurations is silicone oil.	s with remote seals
	₆ -20 UNF to IEC 61518	6	⁷⁾ Not for nominal measuring range 100 bar a (1450 ps	sia). Position of the
- Mounting thread M1	-	4	vent valve in the process flange (see dimensional dr	
(only for replacement			⁸⁾ Without cable gland, with blanking plug	
Non-wetted parts mat			⁹⁾ With enclosed cable gland Ex ia and blanking plug ¹⁰⁾ Configurations with HAN and M12 connectors are or	uly available in Ev
process flange screws			¹¹⁾ Only in connection with IP66.	, available ill EX
Stainless steel	Die-cast aluminum	2	¹²⁾ Only in connection with Ex approval A, B, E or F.	
Stainless steel	Stainless steel precision casting	3	¹³⁾ M12 delivered without cable socket	
Version				
 Standard version, Ge 		1		
setting for pressure u	nit: bar			
 International version, setting for pressure up 	English plate inscription, nit: bar	2		
 Chinese version. Engli 	sh plate inscription.	3		
setting for pressure un	it: Pascal			
) with documentation for			
Spanish. Includes Comr	English, French, Italian and bact operating instructions			
in 21 EU languages.				
Explosion protection				
• None		A		
 With ATEX, Type of pr 				
 "Intrinsic safety (Ex "Explosion-proof (Ex 		B		
- "Intrinsic safety and	flameproof enclosure"	P		
(Ex ia + Ex d)" ⁹⁾				
- "Ex nA/ic (Zone 2)"1		E		
- "Intrinsic safety, expl	losion-proof enclosure and	R		
Zone 1D/2D) ^{"9) 11)} (ection (Ex ia + Ex d + not for DS III FF)			
 FM + CSA intrinsic sa 	tfe (is)	F		
	Ex ia + Ex d (ATEX) ¹¹⁾	s		
 With FM + CSA, Type 	of protection: Explosion Proof (is + xp)" ⁸⁾			
	valacies Dreef (is van) (0)			

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for absolute pressure (from differential pressure series)

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	A02			
• Stairness steer	AUZ	•	•	•
O-rings for process flanges				
(instead of FPM (Viton))				
PTFE (Teflon)	A20	✓	✓	1
• FEP (with silicone core, approved for food)	A21	1	✓	1
• FFPM (Kalrez, compound 4079),	A22	1	1	1
for measured medium temperatures	~~~	·	•	
-15 100 °C (5 212 °F))				
• NBR (Buna N)	A23	1	1	1
	720	•	•	
Plug				
 Han 7D (metal) 	A30	✓		
Han 8D (instead of Han 7D)	A31	1		
Angled	A32	1		
• Han 8D (metal)	A33	1		
Sealing screw	A40	1	~	~
1/4-18 NPT, with valve in mat. of process flanges				
Cable sockets for M12 connectors	A50	1	1	1
(metal (CuZn))	A00			
Rating plate inscription				
(instead of German)				
• English	B11	✓	✓	✓
• French	B12	✓	✓	✓
• Spanish	B13	1	✓	1
Italian	B14	1	1	1
	B16	1	1	1
• Cyrillic (russian)				
English rating plate	B21	✓	✓	✓
Pressure units in inH ₂ 0 and/or psi				
Quality inspection certificate (Five-step	C11	1	✓	1
factory calibration) to IEC 60770-2 ¹⁾				
	010			
Inspection certificate ²⁾	C12	1	~	~
Acc. to EN 10204-3.1				
Factory certificate	C14	1	1	1
Acc. to EN 10204-2.2				
Functional safety (SIL2)	C20	~		
Devices suitable for use according to IEC				
61508 and IEC 61511. Includes SIL confor-				
mity declaration				
Functional safety (PROFIsafe)	C21 ³⁾		✓	
Certificate and PROFIsafe protocol				
Functional safety (SIL2/3)	C23	1		
Devices suitable for use according to IEC				
61508 and IEC 61511. Includes SIL confor-				
mity declaration				
Device passport Russia	C99	1	1	1
			•	•
Setting of upper limit of	D05	~		
output signal to 22.0 mA				
Manufacturer's declaration acc. to NACE	D07	1	1	1
(MR 0103-2012 and MR 0175-2009)				
(only together with seal diaphragm made of				
Hastelloy and stainless steel)				
	DIO	1	1	
Degree of protection IP66/IP68	D12	v	~	~
(only for M20 x 1.5 and ½-14 NPT)				
Supplied with oval flange	D37	✓	✓	✓
(1 item), PTFE packing and screws in thread				
of process flange				
	D59	1	1	1
Capri cable gland 4F CrNi and clamping	039	•		
device (848699 + 810634) included				

Selection and Ordering data	Order	codo		
Selection and Ordering data Further designs	Order	HART	PA	FF
Add "-Z" to Article No. and specify Order code.		HANI	FA	FF
Use in or on zone 1D/2D (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	✓	✓	✓
CRN approval Canada (Canadian Registration Number)	E22	~	~	~
Dual seal	E24	✓	✓	✓
Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil) (only for transmitter 7MF4B)	E25 ⁴⁾	~	1	*
"Flameproof" explosion protection accord- ing to INMETRO (Brazil)	E26 ⁴⁾	~	1	1
(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)	E45 ⁴⁾	1	✓	✓
(only for transmitter 7MF4B) Ex Approval IEC Ex (Ex d)	E46 ⁴⁾			
(only for transmitter 7MF4D)	E55 ⁴⁾			
Explosion-proof "Intrinsic safety" to NEPSI (China) (only for transmitter 7MF4B)	E55 ''	v	v	•
Explosion protection "Explosion-proof" to NEPSI (China)	E56 ⁴⁾	4	•	*
(only for transmitter 7MF4D) Explosion-proof "Zone 2" to NEPSI (China) (only for transmitter 7MF4E)	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 ⁵⁾	~	~	✓
Ex-protection Ex d according to EAC Ex (Russia)	E81 ⁵⁾	~	✓	✓
Ex-protection Ex nA/ic (Zone 2) according to EAC Ex (Russia)	E82 ⁵⁾	~	✓	1
Ex-protection Ex ia + Ex d + Zone 1D/2D according to EAC Ex (Russia)	E83 ⁵⁾	~	~	*
Two coats of lacquer on casing and cover (PU on epoxy)	G10	1	1	1
Interchanging of process connection side	H01	✓	✓	✓
Vent on side for gas measurements	H02	✓	✓	1
Stainless steel process flanges for vertical differential pressure lines	H03	~	1	~
(not together with K01, K02 and K04) ⁶⁾				

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for absolute pressure (from differential pressure series)

Selection and Ordering data	Order	code		
<i>Further designs</i> Add "- 2 " to Article No. and specify Order code.		HART	PA	FF
Transient protector 6 kV (lightning protection)	J01	1	1	~
Chambered graphite gasket for process flange	J02	~	1	*
Chambered PTFE graphite gasket	J03	✓	✓	✓
EPDM O-rings for process flange with approval (WRC/WRAS)	J05	~	1	*
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⁾	J09	~	1	*
Process flange				
Hastelloy	K01	1	✓	1
• Monel	K02	✓	✓	✓
 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 	K04	~	~	•

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 dia-1) phragm seals. The measuring accuracy of the total combination is certified here.

²⁾ 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.

³⁾ Profisafe transmitters can only be operated with the S7 F Systems V6.1 con-figuration software in combination with S7-400H

⁴⁾ Option does not include ATEX approval, but instead includes only the country-specific approval.

5) Approval pending.

⁶⁾ Not suitable for connection of remote seals.

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		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} , psia ²⁾	Y01	•	√ 1)	
Stainless steel tag plate and entry in device variable (measuring point description)	Y15	1	~	*
Max. 16 characters, specify in plain text: Y15:				
Measuring point text (entry in device vari- able)	Y16	~	~	~
Max. 27 characters, specify in plain text: Y16:				
Entry of HART address (TAG) Max. 8 characters, specify in plain text: Y17:	Y17	1		
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^{*}), in H_2O^{*}), ft H_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	Y22 +	1		
non-pressure units ³⁾ Specify in plain text: Y22: up to l/min, m ³ /h, m, USgpm, (specification of measuring range in pressure units "Y01" is essential, unit with max. 5 char- acters)	Y01			
Preset bus address possible between 1 and 126 Specify in plain text: Y25:	Y25		~	1
Damping adjustment in seconds (0 100 s)	Y30	~	1	*
Factory mounting of valve manifolds, see acco	essories	6.		

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

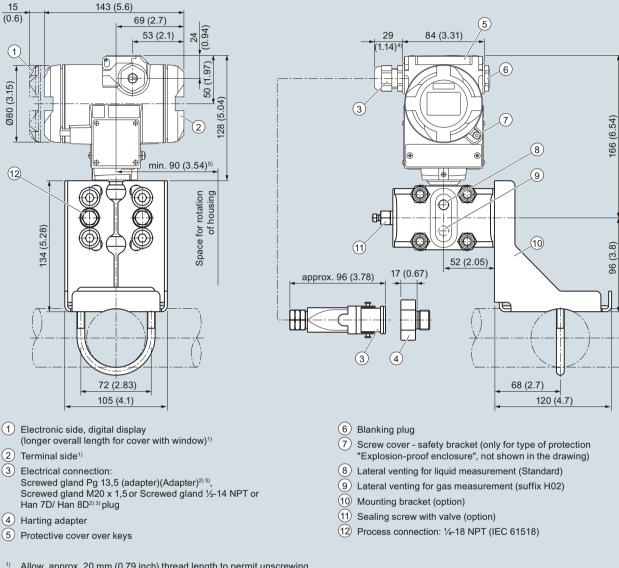
= available

- Measuring accuracies for PROFIBUS PA transmitters with Option Y01 are calculated in the same way as for HART devices. Only absolute pressure units selectable. Negative pressure values not per-1)
- 2) mitted.
- 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



(10.3)

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- Allow approx. 20 mm (0.79 inch) thread length to permit unscrewing
- 2) Not with type of protection "Explosion-proof enclosure"
- Not with type of protection "FM + CSA" [IS + XP]" 3)
- 4) For Pg 13,5 with adapter approx. 45 mm (1.77 inch)
- 5) 92 mm (3.62 inch) for minimum distance to permit rotation with indicator

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 97/23/EC 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	

Measuring cell with silicone oil filling

Lower measuring limit

• Measuring cell with inert filling liquid

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

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 - 108 °F)/°F

100 % of max. span (for oxygen measurement max. 100 bar/10 MPa/1450 psi and 60 $^\circ C$ (108 $^\circ F)$ ambient temperature/process temperature)

Between the measuring limits (fully adjustable)

Transmitters for applications with advanced requirements (Advanced)

SITRANS P, DS III for differential pressure and flow	HART		PROFIBUS PA/FOUNDATION Fieldbus			
Output						
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 p optionally set to 2	reset to 20.5 mA or 22.0 mA	-			
Load						
Without HART	$R_{\rm B} \le (U_{\rm H} - 10.5 \text{ V})$ $U_{\rm H}$: Power suppl	/)/0.023 A in Ω, y in V	-			
With HART		Ω (SIMATIC PDM) or) $Ω$ (HART Communica-	-			
Physical bus	-		IEC 61158-2			
Protection against polarity reversal	Protected agains other with max.		ty reversal. Each connection against the			
Electrical damping (step width 0.1 s)	Set to 2 s (0 10	00 s)				
Measuring accuracy	Acc. to IEC 6077	'0-1				
Reference conditions (All error data refer always refer to the set span)	 Start-of-scale v Stainless steel Silicone oil fillin 	 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. measur	r = max. measuring 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 :	$5 < r \le 10$: $\le (0.0029 \cdot r + 0.071) \%$				
- 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 ≤ 5 : 5 < r ≤ 100 :					
 Square-rooted characteristic (flow > 50 %) 						
- 20 mbar/2 kPa/0.29 psi	r ≤ 5 : 5 < r ≤ 10 : 10 < r ≤ 20 :	≤ 0.075 % ≤ (0.0029 · r + 0.07 ≤ (0.0045 · 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 ≤ 5 : 5 < r ≤ 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 + 0.14) ≤ (0.009 · r + 0.142)				
- 60 mbar/6 kPa/0.87 psi	r ≤ 5 : 5 < r ≤ 60 :	$\leq 0.015 \%$ $\leq (0.01 \cdot r + 0.1) \%$				
- 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 :	≤ 0.13 % ≤ (0.008 · r + 0.09)	%			

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	
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	≤ (0.15 · r + 0.1) %
• 60 mbar/6 kPa/0.87 psi	≤ (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 \cdot 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 \cdot 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	\leq (0.2 · r) % per year
• 60 mbar/6 kPa/0.87 psi 30 bar/3 MPa/435 psi	\leq (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)	\leq 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	N			
SITRANS P, DS III for differential pressure and flow				
Rated conditions				
Degree of protection (to EN 60529)	IP66 (optional IP66/IP68), NEMA 4X			
Temperature of medium				
Measuring cell with silicone oil filling	-40 +100 °C (-40 +212 °F) -20 +10 ing cell	00 °C (-4 +212 °F) with 30 bar measur-		
 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 (with 4-wire connection, observe temperature values of sup- plementary 4-wire electronics) 	-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 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: \approx 4.5 kg (\approx 9.9 lb) Stainless steel precision casting: \approx 7.1 kg (\approx 15.6 lb)			
Enclosure material	Low-copper die-cast aluminum, GD-AISi12 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. 2.4610 or Monel, mat. no. 2.4360			
• O-Ring	FPM (Viton) or optionally: PTFE, FEP, FEPI	M and NBR		
Measuring cell filling	Silicone oil or inert filling liquid (maximum value with oxygen measurement pressure 100 bar (1450 psi) at 60 °C (140 °F))			
Process connection	Female thread $\frac{1}{4}$ -18 NPT and flange conr 19213 or $\frac{7}{16}$ -20 UNF to IEC 61518	nection with mounting thread M10 to DIN		
Material of mounting bracket				
Steel	Sheet-steel, Mat. No. 1.0330, chrome-pla	ted		
Steel Stainless steel	Sheet stainless steel, mat. no. 1.4301 (SS			
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		
		9 32 V 9 24 V		
With intrinsically-safe operation Current consumption		9 24 V		
		10.5		
 Basic current (max.) Start up current < basic current 	-	12.5 mA		
 Start-up current ≤ basic current Max. current in event of fault 		Yes 15.5 mA		
Fault disconnection electronics (FDE) available	-	Yes		
r ant disconnection electronics (i DE) available		100		

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	1				
Certificates and approvals	HART	PROFIBUS PA/ FOUNDATION Fieldbus			
Classification according to PED 97/23/EC					
PN 32/160 (MAWP 464/2320 psi)	For gases of fluid group 1 and liquids of fluid group 1; complies with requirements of article 3, paragraph 3 (sound engineering practice)				
PN 420 (MAWP 6092 psi)	For gases of fluid group 1 and liquids of fluid group 1; complies with basic safety requirements of Article 3, paragraph 1 (appendix 1); assigned to category III, cor formity 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) temperatu -40 +70 °C (-40 +158 °F) temperatu -40 +60 °C (-40 +140 °F) temperatu	ure class T5;			
- Connection	To certified intrinsically-safe circuits with peak values: $U_{\rm i}$ = 30 V, $l_{\rm i}$ = 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	$L_{\rm i} = 0.4 {\rm mH}, C_{\rm i} = 6 {\rm nF}$	$L_{\rm i} = 7 \ \mu {\rm H}, \ C_{\rm i} = 1.1 \ {\rm nF}$			
• 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	ure class T4; ure 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, $R_{\rm i}$ = 300 Ω	FISCO supply unit: $U_0 = 17.5$ V, $I_0 = 380$ mA, $P_0 = 5.32$ W Linear barrier: $U_0 = 24$ V, $I_0 = 250$ mA, $P_0 = 1$ W			
- Effective internal inductance/capacitance	$L_{\rm i} = 0.4 {\rm mH}, C_{\rm i} = 6 {\rm nF}$	$L_{\rm i} = 7 \ \mu {\rm H}, \ C_{\rm i} = 1.1 \ {\rm nF}$			
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 Gc Ex II 2/3 G Ex ic IIC T4/T5/T6 Gc				
- Connection (Ex nA)	$U_{\rm m}$ = 45 V	U _m = 32 V			
- Connection (Ex ic)	To circuits with values: <i>U</i> _i = 45 V	FISCO supply unit ic: $U_0 = 17.5$ V, $I_0 = 570$ mA Linear barrier: $U_0 = 32$ V, $I_0 = 132$ mA, $P_0 = 1$ W			
- Effective internal inductance/capacitance	$L_{\rm i} = 0.4 {\rm mH}, C_{\rm i} = 6 {\rm nF}$	$L_{\rm i} = 7 \ \mu {\rm H}, \ C_{\rm i} = 1.1 \ {\rm nF}$			
 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 T4T6; CL I, DIV 2, GP ABCD T4T6; CL II, DIV	1, GP EFG; CL III; CL I, ZN 0/1 AEx ia IIC			
Explosion protection to CSA	Certificate of Compliance 1153651	2, 6, 10, 02 11			
- Identification (XP/DIP) or (IS)		1 GP FEG: CLIIII: Ex ia IIC T4 T6: CLI			
	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)

HART communication		FOUNDATION Fieldbus	
	230 1100 Ω	COMPATION Fieldbus	
HART Protocol	HART Version 5.x	Function blocks	3 function blocks analog input,
Software for PC	SIMATIC PDM		1 function block PID
PROFIBUS PA communication		Analog input	
Simultaneous communication with	4	 Adaptation to customer- specific process variables 	Yes, linearly rising or falling characteristic
master class 2 (max.)		- Electrical damping, adjustable	0 100 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, incorrec
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 Pro- cess 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
 Adaptation to customer-specif- ic process variables 	Yes, linearly rising or falling characteristic	 Pressure transducer block 	
- Electrical damping, adjustable	0 100 s	- Can be calibrated by applying	Yes
- Simulation function	Input /Output	two pressures - Monitoring of sensor limits	Yes
- Failure mode	parameterizable (last good value, substitute value, incorrect value)	 Simulation function: Measured pressure value, sensor temper- 	Constant value or over parame- terizable ramp function
- Limit monitoring	Yes, one upper and lower warn- ing limit and one alarm limit respectively	ature and electronics tempera- ture	
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 two pressures 	Yes		
- Monitoring of sensor limits	Yes		
 Specification of a container characteristic with 	Max. 30 nodes		
 Square-rooted characteristic for flow measurement 	Yes		
 Gradual volume suppression and implementation point of square-root extraction 	Parameterizable		
 Simulation function for mea- sured pressure value and sen- sor temperature 	Constant value or over parame- terizable ramp function		

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for differential pressure and flow

Selection and Ordering data	Article No.	Selection and Ordering data	Article No.
SITRANS P DS III with HART pressure trans-	7 M F 4 4 3 3 -	SITRANS P DS III with HART pressure trans-	7 M F 4 4 3 3 -
mitters for differential pressure and flow, PN 32/160 (MAWP 464/2320 psi)		mitters for differential pressure and flow, PN 32/160 (MAWP 464/2320 psi)	
↗ Click on the Article No. for the online configu- ration in the PIA Life Cycle Portal.		Explosion protection • None	A
Measuring cell filling Measuring cell		• With ATEX, Type of protection:	
Cleaning Silicone oil normal		- "Intrinsic safety (Ex ia)"	B
Silicone oil normal Inert liquid ¹⁾ grease-free to	1		P
cleanliness level 2	Ū	 "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)"¹⁰ 	
Measuring span (min max.)		- "Ex nA/ic (Zone 2)" ¹¹⁾	E
PN 32 (MAWP 464 psi) 1 20 mbar ²⁾ (0.4015 8.03 inH ₂ O)	в	 "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia+ Ex d + Zone 1D/2D)"¹⁰⁾¹²) 	ĸ
PN 160 (MAWP 2320 psi)		• FM + CSA intrinsic safe (is) ¹⁰⁾	F
1 60 mbar (0.4015 24.09 inH ₂ O) ►		• FM + CSA (is + ep) + Ex ia + Ex d $(ATEX)^{12}$	S
2.5 250 mbar (1.004 100.4 inH ₂ O) ► (6 600 mbar (2.409 240.9 inH ₂ O) ► (With FM + CSA, Type of protection: "Intrinsic Safe and Explosion Proof (is + xp)"⁹⁾ 	NC
16 1600 mbar (6.424 642.4 inH ₂ O)			
50 5000 mbar (20.08 2008 inH ₂ O)		Electrical connection/cable entry • Screwed gland Pg 13.5 ¹³⁾	A
0.3 30 bar (4.35 435 psi)	н	Screwed gland M20 x 1.5	B
Wetted parts materials		Screwed gland ½-14 NPT	c
(stainless steel process flanges)		 Han 7D plug (plastic housing) incl. mating connector¹³⁾¹⁴⁾ 	D
Seal diaphragm Parts of measuring cell		 M12 connectors (stainless steel)¹⁵⁾¹⁶⁾ 	F
Stainless steel Stainless steel			
Hastelloy Stainless steel Hastelloy Hastelloy	B C	 Display Without display 	0
Tantalum ³⁾ Tantalum	E	Without display Without visible display	ů 1
Monel ³⁾ Monel	Ĥ	(display concealed, setting: mA)	
Gold ³⁾ Gold	L	With visible display (setting: mA)	6
Version for diaphragm seal ^{4) 5) 6) 7)}	Y	 with customer-specific display (setting as specified, Order code "Y21" or "Y22" 	7
Process connection		required)	
Female thread ¹ / ₄ -18 NPT with flange connection		Available ex stock	
 Sealing screw opposite process connection Mounting thread ⁷/₁₆-20 UNF to IEC 61518 Mounting thread M10 to DIN 19213 	2	 We can offer shorter delivery times for configurati the Quick Ship Symbol For details see page 9 	
(only for replacement requirement)	U	Power supply units see Chap. 7 "Supplementary Co	omponents".
• Vent on side of process flange ²⁾		Included in delivery of the device:	
- Mounting thread ⁷ / ₁₆ -20 UNF to IEC 61518	6	 Brief instructions (Leporello) DVD with detailed documentation 	
 Mounting thread M10 to DIN 19213 (only for replacement requirement) 	4	Sealing plug(s) or sealing screw(s) for the process	s flanges(s)
Non-wetted parts materials		¹⁾ For oxygen application, add Order code E10.	
process flange screws Electronics housing		²⁾ Not suitable for connection of remote seal. Position of	of the top vent valve in
Stainless steel Die-cast aluminum	2	the process flange (see dimensional drawing).	
Stainless steel Stainless steel precision	3	³⁾ Not in conjunction with max. span 20 and 60 mbar (8	2,,,
casting ⁸⁾		⁴⁾ When the manufacture's certificate (calibration certifi ordered for transmitters with diaphragm seals accord	ding to IEC 60770-2, it
Version Standard version. German plate inscription.	1	is recommended only to order this certificate exclusion	
 Standard version, German plate inscription, setting for pressure unit: bar 		phragm seals. The measuring accuracy of the total con- here.	union auon is certined
 International version, English plate inscription, ► 	2	⁵⁾ If the acceptance test certificate 3.1 is ordered for th	
setting for pressure unit: bar		mounted diaphragm seals this certificate must also b respective remote seals.	be ordered with the
 Chinese version, English plate inscription, setting for pressure unit: Pascal 	3	⁶⁾ The diaphragm seal is to be specified with a separat	e order number and
All versions include DVD with documentation for		must be included wiht the transmitter order number,	
SITRANS P in German, English, French, Italian and Spanish. Includes Compact operating inst-		7MF443Y and 7MF4900-1B ⁷⁾ The standard measuring cell filling for configurations	with remote coole (V)
ructions in 21 EU languages.		is silicone oil.	with remote seals (Y)
0 0 0		⁸⁾ Not in conjunction with Electrical connection "Screwe	ed gland Pg 13.5" and

- ⁸⁾ Not in conjunction with Electrical connection "Screwed gland Pg 13.5" and "Han7D plug".
- 9) Without cable gland, with blanking plug
- ¹⁰⁾With enclosed cable gland Ex ia and blanking plug
- ¹¹⁾Configurations with HAN and M12 connectors are only available in Ex ic. ¹²⁾Only in connection with IP66.
- $^{\rm 13)} \rm Only$ in connection with Ex approval A, B or E.
- $^{\rm 14)} \rm Permissible$ only for crimp-contact of conductor cross-section 1 $\rm mm^2$
- 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)

	for differential pressu			
Selection and Orderin	•	Article No.	Selection and Ordering data	Article No.
	for differential pressure		Pressure transmitters for differential pressure and flow PN 32/160 (MAWP 464/2320 psi)	
SITRANS P DS III with F		7 M F 4 4 3 4 -	SITRANS P DS III with PROFIBUS PA (PA)	7 M F 4 4 3 4 -
	FOUNDATION Fieldbus (FF)	7 M F 4 4 3 5 -	SITRANS P DS III with FOUNDATION Fieldbus (FF)	7 M F 4 4 3 5 -
	No. for the online configu-			
Measuring cell filling			Explosion protection • None 	A
Silicone oil	normal	1	With ATEX, Type of protection:	в
Inert liquid ¹⁾	grease-free to cleanliness level 2	3	- "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)" ⁸⁾	B D
Nominal measuring ra			 "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)"⁹⁾ 	Р
PN 32 (MAWP 464 psi)			- "Ex nA/ic (Zone 2)" ¹⁰⁾	Е
20 mbar ²⁾	(8.03 inH ₂ O)	В	- "Intrinsic safety, explosion-proof enclosure and	R
PN 160 (MAWP 2320 p	si)		dust explosion protection (Ex ia + Ex d + Zone 1D/2D) ^{*9)} ¹¹⁾ (not for DS III FF)	
60 mbar	(24.09 inH ₂ O)	С	• FM + CSA intrinsic safe (is)	F
250 mbar	(100.4 inH ₂ O)	D	• FM + CSA (is + ep) + Ex ia + Ex d (ATEX) ¹¹⁾	S
600 mbar	(240.9 inH ₂ O)	E	• With FM + CSA, Type of protection:	
1600 mbar	(642.4 inH ₂ O)	F	- "Intrinsic Safe and Explosion Proof (is + xp)" ⁸⁾	NC
5 bar 30 bar	(2008 inH ₂ O) (435 psi)	G H	Electrical connection/cable entry	
	· · · /		Screwed gland M20 x 1.5	в
Wetted parts materials (stainless steel process			• Screwed gland ½-14 NPT	c
Seal diaphragm	Parts of measuring cell		M12 connectors (stainless steel) ^{12) 13)}	F
Stainless steel	Stainless steel	A	Display	-
Hastelloy	Stainless steel	B	Without display	(
Hastelloy	Hastelloy	c	Without visible display	
Fantalum ³⁾	Tantalum	Ē	(display concealed, setting: bar)	
Monel ³⁾	Monel	н	With visible display (setting: bar)	
Gold ³⁾	Gold	L	 With customer-specific display (setting as specified, Order code "Y21" required) 	7
Version as diaphragm s	seal 4) 5) 6) 7)	Y	Included in delivery of the device:	
 Sealing screw opposi 	PT with flange connection ite process connection 6-20 UNF to IEC 61518	2	 Brief instructions (Leporello) DVD with detailed documentation Sealing plug(s) or sealing screw(s) for the proces ¹⁾ For oxygen application, add Order code E10. 	s flanges(s)
 Mounting thread M1 (only for replacements) Venting on side of pro- 	IO to DIN 19213 nt requirement)	0	2) Not suitable for connection of remote seal. Position of the process flange (see dimensional drawing).	
	6-20 UNF to IEC 61518	6	³⁾ Not in conjunction with max. span 20 and 60 mbar (8	
 Mounting thread M1 (only for replacement 		4	⁴⁾ When the manufacture's certificate (calibration certif ordered for transmitters with diaphragm seals accorr is recommended only to order this certificate exclusion	ding to IEC 60770-2
Non-wetted parts mat	erials		phragm seals. The measuring accuracy of the total c	ombination is certif
process flange screws	Electronics housing		⁵⁾ If the acceptance test certificate 3.1.is ordered for th	e transmitter with
Stainless steel Stainless steel	Die-cast aluminum Stainless steel precision	2 3	mounted diaphragm seals this certificate must also respective remote seals.	be ordered with the
	casting		⁶⁾ The diaphragm seal is to be specified with a separa must be included wiht the transmitter order number,	for example
Version			7MF443Y and 7MF4900-1B	·
 Standard versions International version 	English label inscriptions,	1	7) The standard measuring cell filling for configurations is silicone oil.	with remote seals
documentation in 5 la (no Order code selec	inguages on DVD	2	⁸⁾ Without cable gland, with blanking plug.	
Version	·		⁹⁾ With enclosed cable gland Ex ia and blanking plug.	
 Standard version, Ge setting for pressure up 		1	¹⁰⁾ Configurations with HAN and M12 connectors are or ¹¹⁾ Only in connection with IP66.	ny avallable in Ex i
U	English plate inscription,	2	¹²⁾ Only in connection with Ex approval A, B, E or F. ¹³⁾ M12 delivered without cable socket	
 Chinese version, Engli setting for pressure un 	ish plate inscription,	3		
All versions include DVD SITRANS P in German, I) with documentation for English, French, Italian and pact operating instructions			
in 21 EU languages.	Jact operating instructions			

Order code

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for differential pressure and flow

Selection and Ordering data		Order	code			Selection and Ordering data
Further designs Add "- Z " to Article No. and specify Order code.			HART	PA	FF	Further designs Add "-Z" to Article No. and speci code.
Pressure transmitter with mounting bracket (1x fixing angle, 2 x nut,						Setting of upper limit of output signal to 22.0 mA
2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer) made of:						Manufacturer's declaration ac (MR 0103-2012 and MR 0175-2
SteelStainless steel	•	A01 A02	√ √	√ √	✓ ✓	(only together with seal diaphra Hastelloy and stainless steel)
O-rings for process flanges (instead of FPM (Viton))						Degree of protection IP66/IP6 (only for M20 x 1.5 and ½-14 N
• PTFE (Teflon)	٠	A20	1	✓	~	Process flange screws made
 FEP (with silicone core, approved for food FFPM (Kalrez, compound 4079),)	A21 A22	4	√ √	<i>×</i>	(max. nominal pressure PN20)
for measured medium temperatures -15 100 °C (5 212 °F)		A22	•	•	•	Supplied with oval flange set (2 items), PTFE packings and s
• NBR (Buna N)		A23	✓	✓	✓	thread of process flanges
plug ● Han 7D (metal)		A30	1			Capri cable gland 4F CrNi and device (848699 + 810634) incl
Han 8D (instead of Han 7D)		A31	✓			Use in or on zone 1D/2D
• Angled		A32	1			(only together with type of prote "Intrinsic safety" (transmitter
• Han 8D (metal)		A33	1	,	,	7MF4B Ex ia)"and IP66
Sealing screws (2 units) ¼-18 NPT, with valve in mat. of process flanges	•	A40	~	~	~	Overfilling safety device for fl and non-flammable liquids
Cable sockets for M12 connectors (metal (CuZn))		A50	*	1	~	(max. PN 32 (MAWP 464 psi), b with type of protection "Intrinsic (Ex ia)", to WHG and VbF, not to measuring cell filling "inert liqui
Rating plate inscription (instead of German)						Oxygen application
• English	٠	B11	✓	~	1	(In the case of oxygen measuren
• French	٠	B12	✓	✓	✓	inert liquid max. 100 bar (1450 p
• Spanish		B13	√ √	√ √	√ √	(140 °F))
 Italian Cyrillic (russian) 	•	B14 B16	↓	¥ ✓	↓	Export approval Korea
English rating plate	•	B21	1	1	1	CRN approval Canada (Canadian Registration Number
Pressure units in inH $_2$ O and/or psi						Dual seal
Quality inspection certificate (Five-step factory calibration) to IEC 60770-2 ¹⁾	٠	C11	~	✓	1	Explosion-proof "Intrinsic sat to INMETRO (Brazil)
Inspection certificate ²⁾ to EN 10204-3.1	٠	C12	~	✓	~	(only for transmitter 7MF4
Factory certificate to EN 10204-2.2	٠	C14	✓	~	1	"Flameproof" explosion prote
Functional safety (SIL2) Devices suitable for use according to	٠	C20	~			according to INMETRO (Brazi (only for transmitter 7MF4
IEC 61508 and IEC 61511. Includes SIL conformity declaration						Explosion-proof "Intrinsic saf + Ex d) to INMETRO (Brazil)
Functional safety (PROFIsafe)		C21 ³⁾		✓		(only for transmitter 7MF4
Certificate and PROFIsafe protocol Functional safety (SIL2/3)	٠	C23	~			Ex Approval IEC Ex (Ex ia) (only for transmitter 7MF4
Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration						Ex Approval IEC Ex (Ex d) (only for transmitter 7MF4

Selection and Ordering data	Order	code		
<i>Further designs</i> Add "-Z " to Article No. and specify Order code.		HART	PA	FF
Setting of upper limit of output signal to 22.0 mA	D05	1		
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	~	1	~
Process flange screws made of Monel (max. nominal pressure PN20)	D34	~	1	~
Supplied with oval flange set (2 items), PTFE packings and screws in thread of process flanges	D37	1	1	*
Capri cable gland 4F CrNi and clamping device (848699 + 810634) included	D59	~	~	~
Use in or on zone 1D/2D	E01	~	✓	✓
(only together with type of protection "Intrinsic safety" (transmitter 7MF4B Ex ia)"and IP66)				
Overfilling safety device for flammable and non-flammable liquids	E08	~		
(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")				
Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C	E10	1	~	*
(140 °F))		,	,	,
Export approval Korea	E11	* •	✓ ✓	*
CRN approval Canada (Canadian Registration Number)	E22	•	•	•
Dual seal	E24	~	~	~
Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil) (only for transmitter 7MF4B)	E25 ⁴⁾	~	~	✓
"Flameproof" explosion protection according to INMETRO (Brazil)	E26 ⁴⁾	1	~	*
(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)	E45 ⁴⁾		1	1
(only for transmitter 7MF4B)				
Ex Approval IEC Ex (Ex d) (only for transmitter 7MF4D)	E46 ⁴⁾	~	~	~
Explosion-proof "Intrinsic safety" to NEPSI (China)	E55 ⁴⁾	1	1	~
(only for transmitter 7MF4B)	E56 ⁴⁾			
Explosion protection "Explosion-proof" to NEPSI (China) (only for transmitter 7MF4D)	E90 "	v	¥	v
Explosion-proof "Zone 2" to NEPSI (China)	E57 ⁴⁾	1	*	~
(only for transmitter 7MF4E) Ex protection "Ex ia", "Ex d" and "Zone 2" to NEPSI (China)	E58 ⁴⁾	1	~	~
(only for transmitter 7MF4R) "Intrinsic safety" and "Explosion-proof"	E70 ⁴⁾	1	1	1
explosion protection acc. to Kosha (Korea) (only for transmitter 7MF4[B, D]Z + E11)	2707		Ĵ	•

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for differential pressure and flow

Selection and Ordering data Further designs Add "-Z" to Article No. and specify Order code. Ex-protection Ex ia according to EAC Ex (Russia)	Order E80⁵⁾	code HART	PA	FF
Add "-Z" to Article No. and specify Order code.	E80 ⁵⁾	HART	PA	FF
	E80 ⁵⁾			
(1	1	*
Ex-protection Ex d according to EAC Ex (Russia)	E81 ⁵⁾	~	1	~
Ex-protection Ex nA/ic (Zone 2) according to EAC Ex (Russia)	E82 ⁵⁾	~	~	*
Ex-protection Ex ia + Ex d + Zone 1D/2D according to EAC Ex (Russia)	E83 ⁵⁾	~	~	~
Two coats of lacquer on casing and cover (PU on epoxy)	G10	1	1	~
Interchanging of process connection side	H01	1	1	~
Vent on side for gas measurements	H02	✓	✓	✓
Stainless steel process flanges for verti- cal differential pressure lines (not together with K01, K02 and K04 ⁶⁾	H03	*	1	*
Transient protector 6 kV (lightning pro- tection)	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) ⁷⁾	J08	1	1	*
Vent valve or blanking plug of process flange welded-in (orientation: on left when viewing the display) ⁷⁾	J09	~	1	*
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	* *	* * *	* * *

We can offer shorter delivery times for configurations designated with • the Quick Ship Symbol . For details see page 9/5 in the appendix.

Factory mounting of valve manifolds, see accessories.

Supplementary electronics for 4-wire connection, see accessories.

\checkmark = available

- ¹⁾ 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.
- ²⁾ 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.
- ³⁾ Profisafe transmitters can only be operated with the S7 F Systems V6.1 configuration software in combination with S7-400H
- 4) Option does not include ATEX approval, but instead includes only the countryspecific approval.
- 5) Approval pending.
- 6) Not suitable for connection of remote seal.
- ⁷⁾ Blanking plug is standard configuration. Order option A40 if a vent valve is required instead of a blanking plug.

	<u> </u>			
Selection and Ordering data	Order			
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 (max. 5 characters): Y01: up to mbar, bar, kPa, MPa, psi 		v	√1)	
 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	1	✓	~
Max. 16 characters, specify in plain text: Y15:				
Measuring point text (entry in device	Y16	~	~	~
Max. 27 char., specify in plain text: Y16:				
Entry of HART address (TAG) Axes and the second sec	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-	Y22 ³⁾	1		
pressure units ²⁾ Specify in plain text: Y22: up to l/min, m ³ /h, m, USgpm, (specification of measuring range in pres- sure units "Y01" or "Y02" is essential, unit with max. 5 characters)	+ Y01 or Y02			
Preset bus address possible between 1 and 126 Specify in plain text: Y25:	Y25		1	1
Damping adjustment in seconds (0 100 s)	Y30	~	1	~

 We can offer shorter delivery times for configurations designated with the Quick Ship Symbol . For details see page 9/5 in the appendix.

Factory mounting of valve manifolds, see accessories.

Only Y01, Y15, Y16, Y17, Y21, Y22, Y25 and D05 can be factory preset \checkmark = 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.
- ³⁾ Not in conjunction with over-filling safety device for flammable and nonflammable liquids (Order code "E08")

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for differential pressure and flow

Selection and Orderin	g data	Article No.	Selection and Ordering data	Article No.
	HART pressure trans-	7 M F 4 5 3 3 -	SITRANS P DS III with HART pressure trans-	7MF4533-
mitters for differential PN 420 (MAWP 6092 p			mitters for differential pressure and flow, PN 420 (MAWP 6092 psi)	
	No. for the online configu-		Electrical connection/cable entry	
ration in the PIA Life			 Screwed gland Pg 13.5¹²⁾ 	
Measuring cell filling	Measuring cell		Screwed gland M20x1.5	
• •	cleaning		 Screwed gland ½-14 NPT 	
Silicone oil	normal	1	 Han 7D plug (plastic housing) incl. mating connector¹²⁾¹³⁾ 	
Inert liquid ¹⁾	grease-free to cleanliness level 2	3	 M12 connectors (stainless steel)^{14) 15)} 	
Measuring span (min.			Display	_
2.5 250 mbar	(1.004 100.4 inH ₂ O)	D	Without display	
6 600 mbar	(2.409 240.9 inH ₂ O)	E	Without visible display	
16 1600 mbar	(6.424 642.4 inH ₂ O)	F	(display concealed, setting: mA)	
50 5000 mbar	(20.08 2008 inH ₂ O)	G	 With visible display (setting: mA) 	
0.3 30 bar	(4.35 435 psi)	H	 with customer-specific display 	
Wetted parts materials			(setting as specified, Order code "Y21" or "Y22"	
(stainless steel process			required)	
Seal diaphragm	Parts of measuring cell		Power supply units see Chap. 7 "Supplementary C	•
Stainless steel	Stainless steel	A	Scope of delivery: Pressure transmitter as ordered extra ordering item)	(Instruction Man
Hastelloy	Stainless steel	В	C ,	
Gold ²⁾	Gold	L	¹⁾ For oxygen application, add Order code E10.	
Version for diaphragm	seal 3) 4) 5) 6)	Y	²⁾ Not in conjunction with max. span 600 mbar (240.9	- ·
Process connection			³⁾ When the manufacture's certificate (calibration cert	ificate) has to be
	PT with flange connection		ordered for transmitters with diaphragm seals acco is recommended only to order this certificate exclusion	
 Sealing screw opposi 	ite process connection		phragm seals. The measuring accuracy of the total	
- Mounting thread 7/1	₆ -20 UNF to IEC 61518	3	here.	
- Mounting thread M1	12 to DIN 19213	1	4) If the acceptance test certificate 3.1.is ordered for the acceptance test certificate 3.1.is	he transmitter wit
(only for replaceme			mounted diaphragm seals this certificate must also	be ordered with t
	ocess flanges, location of		respective remote seals.	
	ocess flanges (see dimen-		⁵⁾ The diaphragm seal is to be specified with a separa must be included wiht the transmitter order number	ate order number
sional drawing)	₆ -20 UNF to IEC 61518	7	7MF453Y and 7MF4900-1B	, ioi example
 Mounting thread 71 Mounting thread M1 		5	⁶⁾ The standard measuring cell filling for configuration	s with remote sea
(only for replaceme		5	is silicone oil.	
Non-wetted parts mat	erials		⁷⁾ Not in conjunction with Electrical connection "Screw "Han7D plug".	ed gland Pg 13.5
process flange screws	Electronics housing		⁸⁾ Without cable gland, with blanking plug	
Stainless steel	Die-cast aluminum	2	⁹⁾ With enclosed cable gland Ex ia and blanking plug	
Stainless steel	Stainless steel precision	3	¹⁰⁾ Configurations with HAN and M12 connectors are o	
	casting ⁷⁾		¹¹⁾ Only in connection with IP66.	
Version			¹²⁾ Only in connection with Ex approval A, B or E.	
 Standard version, Ge 	rman plate inscription,	1	¹³⁾ Permissible only for crimp-contact of conductor cro	an exertion 1 mm ²
setting for pressure u				ss-section 1 mm
	nit: bar)		¹⁴⁾ Only in connection with Ex approval A, B, E or F.	
International version,	English plate inscription,	2		
 International version, setting for pressure up 	English plate inscription, nit: bar		¹⁵⁾ M12 delivered without cable socket.	
 International version, setting for pressure up Chinese version, Engli 	English plate inscription, nit: bar ish plate inscription,	2 3	Minz delivered without cable socket.	
 International version, setting for pressure up Chinese version, Engli setting for pressure un 	English plate inscription, nit: bar ish plate inscription, it: Pascal		Minz delivered without cable socket.	
 International version, setting for pressure ui Chinese version, Engli setting for pressure un All versions include DVE 	English plate inscription, nit: bar ish plate inscription, it: Pascal D with documentation for		MT2 delivered without cable socket.	
 International version, setting for pressure ui Chinese version, Engli setting for pressure un All versions include DVE SITRANS P in German, I 	English plate inscription, nit: bar ish plate inscription, it: Pascal) with documentation for English, French, Italian and		MT2 delivered without cable socket.	
 International version, setting for pressure u Chinese version, Engli setting for pressure un All versions include DVE SITRANS P in German, I Spanish. Includes Comp 	English plate inscription, nit: bar ish plate inscription, it: Pascal D with documentation for		MT2 delivered without cable socket.	
 International version, setting for pressure ui Chinese version, Engli setting for pressure un All versions include DVE SITRANS P in German, for Spanish. Includes Comp in 21 EU languages. 	English plate inscription, nit: bar ish plate inscription, it: Pascal) with documentation for English, French, Italian and		MT2 delivered without cable socket.	
 International version, setting for pressure up Chinese version, Engli setting for pressure up All versions include DVE SITRANS P in German, f Spanish. Includes Comp in 21 EU languages. Explosion protection None 	English plate inscription, nit: bar ish plate inscription, it: Pascal 0 with documentation for English, French, Italian and bact operating instructions		² M 12 delivered without cable socket.	
 International version, setting for pressure un Chinese version, Engli setting for pressure un All versions include DVE SITRANS P in German, I Spanish. Includes Comp in 21 EU languages. Explosion protection None With ATEX, Type of pr 	English plate inscription, nit: bar ish plate inscription, it: Pascal 0 with documentation for English, French, Italian and pact operating instructions	3 	"M 12 delivered without cable socket.	
 International version, setting for pressure un Chinese version, Engli setting for pressure un All versions include DVE SITRANS P in German, f Spanish. Includes Comp in 21 EU languages. Explosion protection None With ATEX, Type of pr - "Intrinsic safety (Ex 	English plate inscription, nit: bar ish plate inscription, iit: Pascal 0 with documentation for English, French, Italian and bact operating instructions rotection: ia)"	3	"M 12 delivered without cable socket.	
 International version, setting for pressure un Chinese version, Engli setting for pressure un All versions include DVE SITRANS P in German, I Spanish. Includes Comp in 21 EU languages. Explosion protection None With ATEX, Type of pr 	English plate inscription, nit: bar ish plate inscription, iit: Pascal 0 with documentation for English, French, Italian and bact operating instructions rotection: ia)"	3 	"M 12 delivered without cable socket.	
 International version, setting for pressure un Chinese version, Engli setting for pressure un All versions include DVE SITRANS P in German, I Spanish. Includes Comp in 21 EU languages. Explosion protection None With ATEX, Type of pr - "Intrinsic safety (Ex - "Explosion-proof (Ex - "Intrinsic safety and 	English plate inscription, nit: bar ish plate inscription, iit: Pascal 0 with documentation for English, French, Italian and bact operating instructions rotection: ia)"	3 А В	"M 12 delivered without cable socket.	
 International version, setting for pressure un Chinese version, Engli setting for pressure un All versions include DVE SITRANS P in German, I Spanish. Includes Comp in 21 EU languages. Explosion protection None With ATEX, Type of pr - "Intrinsic safety (Ex - "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)"⁹ 	English plate inscription, nit: bar ish plate inscription, it: Pascal 0 with documentation for English, French, Italian and bact operating instructions rotection: ia)" < d)" ⁸) flameproof enclosure"	3 B D P	"M 12 delivered without cable socket.	
 International version, setting for pressure un Chinese version, Engli setting for pressure un All versions include DVE SITRANS P in German, f Spanish. Includes Comp in 21 EU languages. Explosion protection None With ATEX, Type of pr - "Intrinsic safety (Ex - "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)"⁹) - "Ex nA/ic (Zone 2)"¹¹ 	English plate inscription, nit: bar ish plate inscription, it: Pascal 0 with documentation for English, French, Italian and bact operating instructions rotection: ia)" < (d)" ⁸⁾ flameproof enclosure"	3 A D P E	"M 12 delivered without cable socket.	
 International version, setting for pressure un Chinese version, Engli setting for pressure un All versions include DVE SITRANS P in German, f Spanish. Includes Comp in 21 EU languages. Explosion protection None With ATEX, Type of pr - "Intrinsic safety (Ex - "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)") "Ex nA/ic (Zone 2)"¹¹ "Intrinsic safety, expl 	English plate inscription, nit: bar ish plate inscription, it: Pascal 0 with documentation for English, French, Italian and bact operating instructions rotection: ia)" < d)" ⁸) flameproof enclosure"	3 B D P	"M 12 delivered without cable socket.	
 International version, setting for pressure un Chinese version, Engli setting for pressure un All versions include DVE Stanish. Includes Comp in 21 EU languages. Explosion protection None With ATEX, Type of pr - "Intrinsic safety (Ex - "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)") Ex nA/ic (Zone 2)"¹¹ "Intrinsic safety, explosion protection protection (Ex ia + Ex d)") 	English plate inscription, nit: bar ish plate inscription, it: Pascal 0 with documentation for English, French, Italian and bact operating instructions rotection: ia)" < d)" ⁸) flameproof enclosure" 0) losion-proof enclosure and ection (Ex ia + Ex d +	3 A D P E	"M 12 delivered without cable socket.	
 International version, setting for pressure un Chinese version, Engli setting for pressure un All versions include DVE SITRANS P in German, I Spanish. Includes Comp in 21 EU languages. Explosion protection None With ATEX, Type of pr "Intrinsic safety (Ex "Explosion-proof (Ex "Intrinsic safety and (Ex ia + Ex d)⁽⁹⁾ "Ex nA/ic (Zone 2)⁽¹⁾ "Intrinsic safety, explosion protezion protezion protezion (Ex explosion protezion (Ex explosion) Tex nA/ic (Zone 2)⁽¹⁾ "Intrinsic safety, explosion protezion (Ex explosion) There is the explosion protezion (Ex explosion) The explosion protezion (Ex explosion) There is the explosion protezion (Ex explosion) There is the explosion protezion (Ex explosion) There is the explosion protezion (Ex explosion) The explosion (Ex explosion) There is the explosion protezion (Ex explosion) 	English plate inscription, nit: bar ish plate inscription, it: Pascal 0 with documentation for English, French, Italian and bact operating instructions rotection: ia)" < d)" ⁸) flameproof enclosure" 0) losion-proof enclosure and ection (Ex ia + Ex d +	3 A B D P E R	"M 12 delivered without cable socket.	
 International version, setting for pressure un Chinese version, Engli setting for pressure un All versions include DVE SITRANS P in German, I Spanish. Includes Comp in 21 EU languages. Explosion protection None With ATEX, Type of pr - "Intrinsic safety (Ex - "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)") - "Ex nA/ic (Zone 2)"1 - "Intrinsic safety, expl dust explosion prote Zone 1D/2D)"9)11 FM + CSA (is + ep) + With FM + CSA, Type 	English plate inscription, nit: bar ish plate inscription, it: Pascal 0 with documentation for English, French, Italian and bact operating instructions rotection: ia)" < d)" ⁸ flameproof enclosure" 0) losion-proof enclosure and ection (Ex ia + Ex d + afe (is) Ex ia + Ex d (ATEX) ¹¹ of protection:	3 	"M 12 delivered without cable socket.	
 International version, setting for pressure un Chinese version, Engli setting for pressure un All versions include DVE SITRANS P in German, I Spanish. Includes Comp in 21 EU languages. Explosion protection None With ATEX, Type of pr - "Intrinsic safety (Ex - "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)⁹⁹) "Ex nA/ic (Zone 2)¹¹ "Intrinsic safety, explosion protection protection explosion protection (Ex - "Intrinsic safety and (Ex ia + Ex d)⁹⁹) "Ex nA/ic (Zone 2)¹¹ FM + CSA intrinsic safet 	English plate inscription, nit: bar ish plate inscription, it: Pascal 0 with documentation for English, French, Italian and bact operating instructions rotection: ia)" < d)" ⁸ flameproof enclosure" 0) losion-proof enclosure and ection (Ex ia + Ex d + afe (is) Ex ia + Ex d (ATEX) ¹¹ of protection:	3 	"M 12 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 Selection and Ordering data Article No Pressure transmitters for differential pressure Pressure transmitters for differential pressure and flow, PN 420 (MAWP 6092 psi) and flow, PN 420 (MAWP 6092 psi) SITRANS P DS III with PROFIBUS PA (PA) 7MF4534 -SITRANS P DS III with PROFIBUS PA (PA) 7MF4534 -SITRANS P DS III with FOUNDATION Fieldbus (FF) 7MF4535-SITRANS P DS III with FOUNDATION Fieldbus (FF) 7MF4535-↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal Explosion protection Measuring cell filling Measuring cell None A cleaning • With ATEX. Type of protection: Silicone oil normal 1 - "Intrinsic safety (Ex ia)" в Inert liquid¹⁾ grease-free to 3 - "Explosion-proof (Ex d)"7) п cleanliness level 2 "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)"⁸⁾ Ρ Nominal measuring range - "Ex nA/ic (Zone 2)" 9) 250 mbar (100.4 inH₂O) D E 600 mbar (240.9 inH₂O) Е - "Intrinsic safety, explosion-proof enclosure and R dust explosion protection (Ex ia + Ex d + Zone 1D/2D)^{*8)}¹⁰⁾ (not for DS III FF) 1600 mbar (642.4 inH₂O) F (2008 inH₂O) G 5 bar • FM + CSA intrinsic safe (is) F н 30 har (435 psi) • FM + CSA (is + ep) + Ex ia + Ex d (ATEX)¹⁰⁾ s Wetted parts materials • With FM + CSA, Type of protection: (stainless steel process flanges) "Intrinsic safety and explosion-proof (is + xp)"⁷⁾, max PN 360 NC Seal diaphragm Parts of measuring cell Stainless steel Stainless steel A Electrical connection/cable entry Hastelloy Stainless steel В Screwed gland M20 x 1.5 Gold²⁾ Gold L. Screwed gland ½-14 NPT Version for diaphragm seal ^{3) 4) 5) 6)} γ M12 connectors (stainless steel) 11) 12) **Process connection** Display Female thread ¹/₄-18 NPT with flange connection • Without (display hidden) Sealing screw opposite process connection Without visible display - Mounting thread 7/16-20 UNF to IEC 61518 (display concealed, setting: bar) 3 - Mounting thread M12 to DIN 19213 • With visible display (setting: bar) 1 (only for replacement requirement) With customer-specific display (setting as • Venting on side of process flanges, location of specified, Order code "Y21" required) vent valve at top of process flanges (see dimen-Included in delivery of the device: sional drawing). Brief instructions (Leporello) - Mounting thread 7/16-20 UNF to IEC 61518 DVD with detailed documentation 7 - Mounting thread M12 to DIN 19213 Sealing plug(s) or sealing screw(s) for the process flanges(s) 5 (only for replacement requirement) ¹⁾ For oxygen application, add Order code E10. Non-wetted parts materials ²⁾ Not in conjunction with max. span 600 mbar (240.9 inH₂O) Process flange screws Electronics housing ³⁾ When the manufacture's certificate (calibration certificate) has to be Stainless steel Die-cast aluminum 2 ordered for transmitters with diaphragm seals according to IEC 60770-2, it is recommended only to order this certificate exclusively with the dia-Stainless steel Stainless steel precision 3 phragm seals. The measuring accuracy of the total combination is certified casting here. Version ⁴⁾ If the acceptance test certificate 3.1.is ordered for the transmitter with Standard version, German plate inscription, mounted diaphragm seals this certificate must also be ordered with the setting for pressure unit: bar respective remote seals. • International version, English plate inscription, 2 ⁵⁾ The diaphragm seal is to be specified with a separate order number and setting for pressure unit: bar must be included wiht the transmitter order number, for example 7MF453.-..Y..-... and 7MF4900-1....-.B · Chinese version, English plate inscription, 3 setting for pressure unit: Pascal ⁶⁾ The standard measuring cell filling for configurations with remote seals (Y) All versions include DVD with documentation for is silicone oil SITRANS P in German, English, French, Italian and 7) Without cable gland, with blanking plug. Spanish. Includes Compact operating instructions ⁸⁾ With enclosed cable gland Ex ia and blanking plug. in 21 EU languages. ⁹⁾ Configurations with HAN and M12 connectors are only available in Ex ic.

¹⁰⁾Only in connection with IP66.

¹¹⁾Only in connection with Ex approval A, B, E or F.

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7

12)M12 delivered without cable socket

Order code

HART PA FF

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for differential pressure and flow

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Selection and Ordering data	Order	code			Selection and Ordering data
Further designs		HART	PA	FF	Further designs
Add "-Z" to Article No. and specify Order code.					Add "-Z" to Article No. and speci
Pressure transmitter with mounting bracket					Use in or on zone 1D/2D
(1x fixing angle, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer) made of:					(only together with type of prote
Steel	A01	~	✓	1	"Intrinsic safety" (transmitter 7MF4B Ex ia)"and IP66
Stainless steel	A02	1	✓	✓	Export approval Korea
-rings for process flanges					Dual seal
nstead of FPM (Viton)) PTFE (Teflon)	A20	~	✓	~	Explosion-proof "Intrinsic sa INMETRO (Brazil)
FEP (with silicone core, approved for food)	A21	1	1	1	(only for transmitter 7MF4
 FFPM (Kalrez, compound 4079), for measured medium temperatures -15 100 °C (5 212 °F) 	A22	~	•	~	"Flameproof" explosion prote ing to INMETRO (Brazil)
• NBR (Buna N)	A23	✓	✓	1	(only for transmitter 7MF4
Plug					Explosion-proof "Intrinsic saf
Han 7D (metal)	A30	✓			d) to INMETRO (Brazil)
Han 8D (instead of Han 7D)	A31	1			(only for transmitter 7MF4 Ex Approval IEC Ex (Ex ia)
• Angled • Han 8D (metal)	A32 A33	√ √			(only for transmitter 7MF4
· · · · ·	A33 A40	↓			Ex Approval IEC Ex (Ex d)
Sealing screws (2 units) 4-18 NPT, with valve in mat. of process flanges	A40	v	v	¥	(only for transmitter 7MF4
Cable sockets for M12 connection metal (CuZn))	A50	~	~	~	Explosion-proof "Intrinsic sat to NEPSI (China)
Rating plate inscription (instead of German)					(only for transmitter 7MF4 Ex prot. "Explosion-proof" to I
English	B11	✓	✓	1	(only for transmitter 7MF4
French	B12	1	1	1	Explosion-proof "Zone 2" to I
Spanish Italian	B13 B14	√ √	√ √	√ √	(only for transmitter 7MF4
Cyrillic (russian)	B14	↓	¥	1	Ex protection "Ex ia", "Ex d" a
English rating plate	B21	1	~	1	NEPSI (China)
Pressure units in inH ₂ O and/or psi	521		•		(only for transmitter 7MF4
uality inspection certificate (Five-step fac- bry calibration) to IEC 60770-2	C11	~	✓	✓	"Intrinsic safety" and "Explosi explosion protection acc. to Ke
nspection certificate	C12	✓	✓	✓	(only for transmitter 7MF4[B, D]Z + E11)
Acc. to EN 10204-3.1					Ex-protection Ex ia acc. to EAC
Factory certificate Acc. to EN 10204-2.2	C14	~	~	~	Ex-protection Ex d acc. to EAC
Functional safety (SIL2) Devices suitable for use according to	C20	~			Ex-protection Ex nA/ic (Zone 2 EAC Ex (Russia)
EC 61508 and IEC 61511. Includes SIL confor- nity declaration					Ex-protection Ex ia + Ex d + Zo according to EAC Ex (Russia)
Functional safety (PROFIsafe) Certificate and PROFIsafe protocol	C21 ¹⁾		~		Two coats of lacquer on casi (PU on epoxy)
Functional safety (SIL2/3)	C23	✓			Interchanging of process con
Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL confor- mity declaration					Stainless steel process flang differential pressure lines
Device passport Russia	C99	1	~	1	Transient protector 6 kV (light
Setting of upper limit of output signal to 22.0		1			Chambered graphite gasket fo
mA Manufacturer's declaration acc. to NACE	D07			1	EPDM O-rings for process fla val (WRC/WRAS)
MR 0103-2012 and MR 0175-2009) only together with seal diaphragm made of	207	•	•	·	Vent valve or blanking plug o flange welded-in (orientation:
lastelloy and stainless steel)					viewing the display) ⁵⁾
Degree of protection IP66/IP68 only for M20 x 1.5 and ½-14 NPT)	D12	~	1	1	Vent valve or blanking plug o flange welded-in (orientation: viewing the display) ⁵⁾
Nom. press. rating PN 500 (MAWP 7250 psi) Only for measuring cell 600 mbar 30 bar (240 inH ₂ O 435 psi), SIL- and Ex-options not possible)) ²⁾	D56	~			 Profisafe transmitters can only figuration software in combina Tested according to IEC 6101
Capri cable gland 4F CrNi and clamping device (848699 + 810634) included	D59	1	1	~	of fluids 2 in accordance with f media suitable. ³⁾ Option does not include ATEX try-specific approval.

Add " 7" to Article No. and appoint. Order cards				
Add "-Z" to Article No. and specify Order code.				,
Use in or on zone 1D/2D	E01	~	~	~
(only together with type of protection "Intrinsic safety" (transmitter 7MF4B Ex ia)"and IP66)				
Export approval Korea	E11	✓	✓	✓
Dual seal	E24	✓	✓	
Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil)	E25 ³⁾	~	~	~
(only for transmitter 7MF4B)				
"Flameproof" explosion protection accord- ing to INMETRO (Brazil)	E26 ³⁾	~	~	~
(only for transmitter 7MF4D)				
Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil)	E28 ³⁾	~	~	
(only for transmitter 7MF4P)	- 4-3)	,		
Ex Approval IEC Ex (Ex ia) (only for transmitter 7MF4B)	E45 ³⁾	~	~	1
Ex Approval IEC Ex (Ex d) (only for transmitter 7MF4D)	E46 ³⁾	~	~	~
Explosion-proof "Intrinsic safety" to NEPSI (China)	E55 ³⁾	~	~	~
(only for transmitter 7MF4B)				
Ex prot. "Explosion-proof" to NEPSI (China) (only for transmitter 7MF4D)	E56 ³⁾	~	~	*
Explosion-proof "Zone 2" to NEPSI (China)	E57 ³⁾	~	1	~
(only for transmitter 7MF4E)				
Ex protection "Ex ia", "Ex d" and "Zone 2" to NEPSI (China)	E58 ³⁾	1	~	~
(only for transmitter 7MF4R)	E70 ³⁾			
"Intrinsic safety" and "Explosion-proof" explosion protection acc. to Kosha (Korea) (only for transmitter	E703)	v	v	v
ŻΜĔ4[Β, D]Ζ + Ε11)				
Ex-protection Ex ia acc. to EAC Ex (Russia)	E80 ⁴⁾		1	1
Ex-protection Ex d acc. to EAC Ex (Russia)	E81 ⁴⁾	✓	~	1
Ex-protection Ex nA/ic (Zone 2) according to EAC Ex (Russia)	E82 ⁴⁾	~	1	*
Ex-protection Ex ia + Ex d + Zone 1D/2D according to EAC Ex (Russia)	E83 ⁴⁾	4	~	*
Two coats of lacquer on casing and cover (PU on epoxy)	G10	•	~	1
Interchanging of process connection side	H01	✓	1	✓
Stainless steel process flanges for vertical differential pressure lines	H03	1	~	~
Transient protector 6 kV (lightning protection)	J01	✓	✓	✓
Chambered graphite gasket for process flange	J02	✓	✓	✓
EPDM O-rings for process flange with appro- val (WRC/WRAS)	J05	~	~	1
Vent valve or blanking plug of process flange welded-in (orientation: on right when viewing the display) ⁵⁾	J08	~	1	~
Vent valve or blanking plug of process flange welded-in (orientation: on left when viewing the display) ⁵⁾	J09	~	1	*
 Profisafe transmitters can only be operated with t 	he S7 F	Systen	ns V6.	1 con-

ers can only be operated with the S7 F Systems V6.1 con-a in combination with S7-400H

to IEC 61010. Only for measuring materials of the group rdance with PED permissible. Not for use with dangerous

Option does not include ATEX approval, but instead includes only the country-specific approval.

⁴⁾ Approval pending.
 ⁵⁾ 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 differential pressure and flow

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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: 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	1	*	*
Max. 16 characters, specify in plain text: Y15:				
Measuring point text (entry in device vari- able)	Y16	1	~	~
Max. 27 char., specify in plain text: Y16:				
Entry of HART address (TAG)	Y17	✓		
Max. 8 char., specify in plain text: Y17:				
Setting of pressure indication in pressure	Y21	✓	✓	✓
units Specify in plain text (standard setting: bar): Y21: mbar, bar, kPa, MPa, psi,				
Note: The following pressure units can be selected: bar, mbar, mm H ₂ O [*]), 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	Y22 +	✓		
non-pressure units ²⁾ Specify in plain text: Y22: up to l/min, m ³ /h, m, USgpm, (specification of measuring range in pressure units "Y01" or "Y02" is essential, unit with max. 5 characters)	Y01 or Y02			
Preset bus address	Y25		✓	✓
possible between 1 and 126 Specify in plain text: 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. \checkmark = available

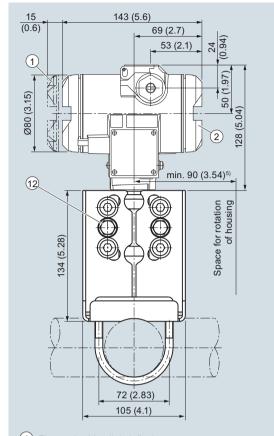
 $^{1)}$ Measuring accuracies for PROFIBUS PA transmitters with Option Y01 are calculated in the same way as for HART devices.

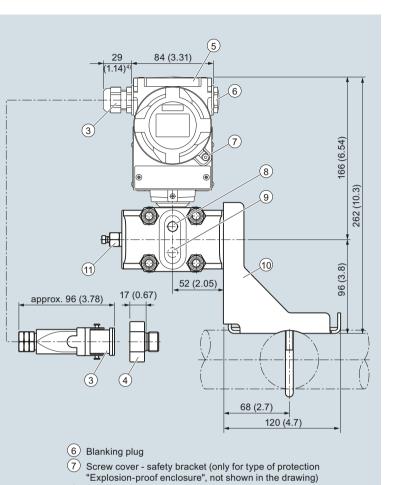
²⁾ Preset values can only be changed over SIMATIC PDM.

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for differential pressure and flow

Dimensional drawings





8 Lateral venting for liquid measurement (Standard)

(9) Lateral venting for gas measurement (suffix H02)

12 Process connection: 1/4-18 NPT (IEC 61518)

(10) Mounting bracket (option)

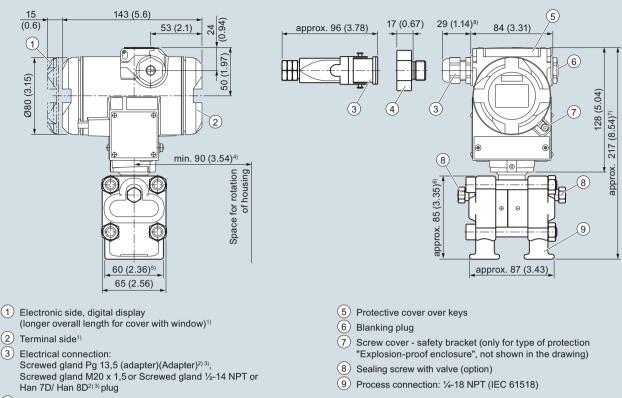
(1) Sealing screw with valve (option)

- (1) Electronic side, digital display (longer overall length for cover with window)¹⁾
- 2 Terminal side¹⁾
- 3 Electrical connection: Screwed gland Pg 13,5 (adapter)(Adapter)^{2) 3)}, Screwed gland M20 x 1,5 or Screwed gland ½-14 NPT or Han 7D/ Han 8D^{2) 3)} plug
- (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]"
- ⁴⁾ For Pg 13,5 with adapter approx. 45 mm (1.77 inch)
- ⁵⁾ 92 mm (3.62 inch) for minimum distance to permit rotation with indicator

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



(4) Harting adapter

(2)

3

- Allow approx. 20 mm (0.79 inch) thread length to permit unscrewing 1)
- Not with type of protection "Explosion-proof enclosure" 2) 3)
- Not with type of protection "FM + CSA" [IS + XP]"
- 4) 92 mm (3.6 inch) for minimum distance to permit rotation with indicator
- 5) 74 mm (2.9 inch) for PN ≥ 420 (MAWP ≥ 6092 psi)
- 91 mm (3.6 inch) for PN ≥ 420 (MAWP ≥ 6092 psi) 6)
- 219 mm (8.62 inch) for PN \ge 420 (MAWP \ge 6092 psi) 7)
- 8) For Pg 13,5 with adapter approx. 45 mm (1.77 inch)

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

SITRANS P DS III for level				
Input				
Measured variable	Level			
Span (fully adjustable) or measuring range, max. operating pressure (in accordance with 97/23/EC 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			I	
Measuring cell with silicone oil filling	-100 % of max. span or 30 mbar a/3 kPa a/0.44 psia depending on mounting flange			
Measuring cell with inert filling liquid	-100 % of max. span or 30 mbar a/3 kPa a/0.44 psia depending on mounting flange			
Upper measuring limit	100 % of max. spar	ı		
Start of scale value	Between the measu	uring limits (fully adjust	able)	
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 pr	eset to 3.84 mA	-	
Upper limit (infinitely adjustable)	23 mA, factory pres optionally set to 22.		-	
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 , n V	-	
• With HART	$R_{\rm B} = 230 \dots 500 \Omega$ $R_{\rm B} = 230 \dots 1100 \Omega$ tor)	(SIMATIC PDM) or (HART Communica-	-	
Physical bus	-		IEC 61158-2	
Protection against polarity reversal	Protected against s			
	Each connection against the other with max. supply voltage.			

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for level

SITRANS P DS III for level			
Measuring accuracy	Acc. to IEC 60770-1		
Reference conditions	 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			
- 250 mbar/25 kPa/3.6 psi	$r \le 5$: $\le 0.125 \%$ $5 < r \le 10$: $\le (0.007 \cdot r + 0.09) \%$		
- 600 mbar/60 kPa/8.7 psi	$r \le 5$: ≤ 0.125 % $5 < r \le 25$: $\le (0.007 \cdot r + 0.09)$ %		
- 1600 mbar/160 kPa/23.21 psi 5 bar/500 kPa/72.5 psi	$ \begin{array}{ll} r \leq 5: & \leq 0.125 \ \% \\ 5 < r \leq 30: & \leq (0.007 \cdot r + 0.09) \ \% \end{array} $		
Influence of ambient temperature (in percent per 28 °C (50 °F))			
• 250 mbar/25 kPa/3.6 psi	\leq (0.4 · r + 0.16) %		
• 600 mbar/60 kPa/8.7 psi	≤ (0.24 · r + 0.16) %		
• 1600 mbar/160 kPa/23.21 psi 5 bar/500 kPa/72.5 psi	$\leq (0.2 \cdot r + 0.16) \%$		
Influence of static pressureon the zero point			
- 250 mbar/25 kPa/3.6 psi	\leq (0.3 · r) % per nominal pressure		
- 600 mbar/60 kPa/8.7 psi	\leq (0.15 · r) % per nominal pressure		
- 1600 mbar/160 kPa/23.21 psi 5 bar/500 kPa/72.5 psi	\leq (0.1 · r) % per nominal pressure		
• on the span	\leq (0.1 · r) % per nominal pressure		
Long-term stability (temperature change \pm 30 °C (\pm 54 °F))	≤ (0.25 · r)% in 5 years static pressure max. 70 bar/7 MPa/1015 psi		
Effect of mounting position	Depending on filling liquid of mounting flange		
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 to IEC 60529	IP66 (optional IP66/IP68), NEMA 4X		
Temperature of medium	Note: Always take into account assignment of max. permissible operating temperature to max. permissible operating pressure of the respective flange connection!		
Measuring cell with silicone oil filling High processes side	$-40 \dots + 100^{10} \circ C (-40 \dots + 212^{10} \circ F)$		
- High-pressure side	$p_{abs} \ge 1$ bar: -40 +175 °C (-40 +347 °F) $p_{abs} < 1$ bar: -40 +80 °C (-40 +176 °F) 40 +100 °C (-40 +176 °F)		
- Low-pressure side Ambient conditions	-40 +100 °C (-40 +212 °F) -20 +60 °C (-4 +140 °F) in conjunction with dust explosion protection		
Ambient temperature			
 Ambient temperature Transmitter (with 4-wire connection, observe temperature values of sup- 	-40 +85 °C (-40 +185 °F)		
plementary 4-wire electronics)			
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 61226 and NAMUE NE 01		
- Emitted interference and interference immunity	Acc. to IEC 61326 and NAMUR NE 21		

Transmitters for applications with advanced requirements (Advanced)

ITATISTI	tters for applications with advance	ceu requirements (Auvanceu)		
		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-AlSimat. no. 1.4408	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. 2.4610 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	Flange to EN and ASME		
Low-pressure side	Female thread $^{1\!\!/}_{-}18$ NPT and flange con DIN 19213 or $^{7}/_{16}$ -20 UNF to EN 61518	Female thread_14-18 NPT and flange connection with mounting thread M10 to		
Power supply $U_{ m H}$	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		
	-	Yes		
Fault disconnection electronics (FDE) available	-	165		

1

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for level

Certificates and approvals	HART	PROFIBUS PA/ FOUNDATION Fieldbus		
Classification according to PED 97/23/EC		For gases of fluid group 1 and liquids of fluid group 1; complies with requirements of article 3, paragraph 3 (sound engineering 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/Gł	Ex II 1/2 G Ex ia/ib IIC T4/T5/T6 Ga/Gb		
- Permissible ambient temperature	-40 +70 °C (-40 +158 °F) temper	-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 we peak values: $U_{\rm i}$ = 30 V, $l_{\rm i}$ = 100 mA, $P_{\rm i}$ = 750 mW; $R_{\rm i}$ = 300 Ω	ith FISCO supply unit: $U_0 = 17.5$ V, $I_0 = 380$ mA, $P_0 = 5.32$ W Linear barrier: $U_0 = 24$ V, $I_0 = 250$ mA, $P_0 = 1.2$ W		
- Effective internal inductance/capacitance	$L_{\rm i} = 0.4 \rm mH, C_{\rm i} = 6 \rm nF$	$L_{\rm i} = 7 \ \mu {\rm H}, \ C_{\rm i} = 1.1 \ {\rm nF}$		
 Explosion-proof "d" 	PTB 99 ATEX 1160	PTB 99 ATEX 1160		
- Marking	Ex II 1/2 G Ex d IIC T4/T6 Gb	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	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 we peak values: $U_{\rm i}$ = 30 V, $l_{\rm i}$ = 100 mA, $P_{\rm i}$ = 750 mW, $R_{\rm i}$ = 300 Ω	ith FISCO supply unit: $U_0 = 17.5$ V, $I_0 = 380$ mA, $P_0 = 5.32$ W Linear barrier: $U_0 = 24$ V, $I_0 = 250$ mA, $P_0 = 1.2$ W		
- Effective internal inductance/capacitance	$L_{\rm i} = 0.4 {\rm mH}, C_{\rm i} = 6 {\rm nF}$	$L_{\rm i} = 7 \mu {\rm H}, C_{\rm i} = 1.1 {\rm nF}$		
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 II T4/T5/T6 Gc Ex II 2/3 G Ex ic IIC T4/T5/T6 Gc			
- Connection (Ex nA)	<i>U</i> _m = 45 V	<i>U</i> _m = 32 V		
- Connection (Ex ic)	To circuits with values: $U_{\rm i}$ = 45 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	$L_{\rm i} = 0.4 {\rm mH}, C_{\rm i} = 6 {\rm nF}$	$L_{\rm i} = 7 \ \mu {\rm H}, \ C_{\rm i} = 1.1 \ {\rm nF}$		
 Explosion protection acc. to FM 	Certificate of Compliance 3008490			
- Identification (XP/DIP) or (IS); (NI)	T4T6;			
• Explosion protection to CSA		CL I, DIV 2, GP ABCD T4T6; CL II, DIV 2, GP FG; CL III		
 Explosion protection to CSA Identification (XP/DIP) or (IS) 	CL I, DIV 1, GP ABCD T4T6; CL II, E	Certificate of Compliance 1153651 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		

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

Transmitters for applications with advanced requirements (Advanced)

Internal preprocessingPROFIBUS PA Profile for Process Control Devices Version 3.0, class B• PIDStandard FOUNDATION File bus function blockFunction blocks2• Physical block1 resource block• Analog input-2Transducer blocks1 transducer block Pressure calibration, 1 transducer block• Adaptation to customer-specific ic process variablesYes, linearly rising or falling characteristic• Pressure transducer block1 transducer block• Electrical damping, adjustable - Simulation function0 100 s Input/Output• Can be calibrated by applying two pressuresYes		
HART 230 1100 Ω communication 3 function blocks analog in Protocol HART Version 5.x SimATIC PDM Function blocks 3 function blocks analog in PROFIBUS PA communication simultaneous communication with master class 2 (max.) - Adaptation to customer-specific process variables - Electrical damping, adjustable 0 100 s The address can be set using Configuration tool or local operation (standard setting address 126) - Failure mode Parameterizable (last good value, substitute value, incovalue) Cyclic data usage 5 (one measured value) or 10 (two measured values) - Limit monitoring Yes, one upper and lower virg limit and one alarm limit respectively • Input byte 0, 1, or 2 (register operating mode and reset function for metering) - Square-rooted characteristic for flow measurement Yes Protocion blocks 2 - Profile for Process Control Devices Version 3.0, class B - Pripuical block 1 resource block Function blocks 2 - Adaptation to customer-specific coperating mode and reset function of along limit and one alarm limit respectively - Square-rooted characteristic for flow measurement - Square-rooted characteristic for flow measurement Device profile PROFIBUS PA Profile for Process Variables - Can be calibrated by applying thand characteristic - PID St	ut	
HAR12301100 ΩProtocolHART Version 5.xFunction blocks3 function blocks analog in 1 function blocksSoftware for computerSIMATIC PDM• Analog input• Analog inputPROFIBUS PA communication simultaneous communication with master class 2 (max.)4• Analog input• Analog inputThe address can be set using Ocyclic data usageConfiguration tool or local operation (standard setting address 126)• Electrical damping, adjustable operation (standard setting address 126)0 100 sCyclic data usage5 (one measured value) or 10 (two measured value) or 10 (two measured value)• Elicit monitoringOutput/input (can be locked within the device with a brid oparameterizable (last good value, substitute value, inco- value)Internal preprocessingDevice profilePROFIBUS PA Profile for Pro- cess Control Devices Version 3.0, class B• Physical block1 resource blockFunction blocks2• Physical block1 resource block• Physical block1 resource block• Analog input• Analog input• Can be calibrated by applying two pressuresYes• Simulation function• Adaptation for ucutomer-specif- ic process variablesYes, linearly rising or falling characteristic• Pressure transducer block• Can be calibrated by applying two pressures• Adaptation function0 100 s• Monitoring of sensor limitsYes	ut	
Protocol HARI Version 5.x 1 function block PID Software for computer SIMATIC PDM 1 function block PID PROFIBUS PA communication with master class 2 (max.) 4 - Adaptation to customer-specific process variables - Electrical damping, adjustable 0 100 s The address can be set using Configuration tool or local operation (standard setting address 126) - Failure mode - Uutput/input (can be locked within the device with a brid parameterizable (last good value, substitute value, incovalue) • Output byte 5 (one measured value) or 10 (two measured value) or 10 (two measured value) or 10 (two measured values)) - Limit monitoring Yes, one upper and lower v ing limit and one alarm limit respectively • Input byte 0, 1, or 2 (register operating mode and reset function for metering) - Square-rooted characteristic for flow measurement Yes Device profile PROFIBUS PA Profile for Process Control Devices Version 3.0, class B - PID Standard FOUNDATION File bus function block • Analog input - Adaptation to customer-specific ic process variables - Ves, linearly rising or falling characteristic - PID • Analog input - Can be calibrated by applying ic prosesures - Simulation function Yes • Adaptation to customer-specific ic process variables 0 100 s - Can be calibrated by applying two press		
PROFIBUS PA communication master class 2 (max.)4Adaptation to customer-specif- ic process variablesYes, linearly rising or falling characteristicThe address can be set using Output byteConfiguration tool or local operation (standard setting address 126)- Adaptation to customer-specif- ic process variables0 100 sCyclic data usageConfiguration tool or local operation (standard setting address 126)- Simulation functionOutput/input (can be locked within the device with a brid output/input (can be locked within the device with a brid output/input (can be locked within the device with a brid output/input (can be locked within the device with a brid operation (standard setting address 126)- Limit monitorionOutput/input (can be locked within the device with a brid output/input (can be locked within the device with a brid output substitute value, substitute value, substitute value, inco- value)Input byte5 (one measured value) or 10 (two measured values) 0 (two measured values)- Limit monitoringYes, one upper and lower v ing limit and one alarm limit respectivelyInternal preprocessingPROFIBUS PA Profile for Pro- cess Control Devices Version 3.0, class B- PIDStandard FOUNDATION Fid bus function blockFunction blocks2- Adaptation to customer-specif- ic process variablesYes, linearly rising or falling characteristic- Pressure transducer block- I transducer block- Adaptation to customer-specif- ic process variablesYes, linearly rising or falling characteristic- Pressure transducer block- Yes- Adaptation to customer-specif- ic	ut,	
Simultaneous communication with master class 2 (max.)4- Adaptation to customer-specif- ic process variablesTes, interary fisting of failing characteristicThe address can be set usingConfiguration tool or local operation (standard setting address 126)- Simulation function0 100 sCyclic data usageConfiguration tool or local operation (standard setting address 126)- Failure modeOutput/input (can be locked within the device with a brid value, substitute value, incover value)• Output byte5 (one measured value) or 10 (two measured values)- Limit monitoringYes, one upper and lower v ing limit and one alarm limit respectively• Input byte0, 1, or 2 (register operating metering)- Square-rooted characteristic for flow measurementYesInternal preprocessingPROFIBUS PA Profile for Pro- cess Control Devices Version 3.0, class B• PIDStandard FOUNDATION Fid bus function blockFunction blocks2Yes, linearly rising or falling ic process variables• Pressure transducer block1 transducer block Pressure calibration, 1 transducer block• Adaptation to customer-specif- ic process variables0 100 s Input/Output• Pressure transducer blockYes• Electrical damping, adjustable - Simulation function0 100 s Input/Output• Pressure transducer blockYes		
The address can be set usingConfiguration tool or local operation (standard setting address 126)Checked adapting, adjustableOutput/input (can be locked within the device with a brid value, substitute value, and value)Cyclic data usage- Simulation functionOutput/input (can be locked within the device with a brid value, substitute value, income value)• Output byte5 (one measured values) 10 (two measured values)- Failure modeparameterizable (last good value, substitute value, income value)• Input byte5 (one measured values) 0, 1, or 2 (register operating mode and reset function for metering)- Limit monitoringYes, one upper and lower v ing limit and one alarm limit respectivelyInternal preprocessingPROFIBUS PA Profile for Pro- cess Control Devices Version 3.0, class BStandard FOUNDATION File bus function blockFunction blocks2• PIDStandard FOUNDATION File bus function block• Analog input-Yes, linearly rising or falling characteristic• Pressure transducer block• Electrical damping, adjustable s Simulation function0 100 s Input/Output• Pressure transducer block1 transducer block• Simulation function0 100 s Input/Output0 100 s Input/Output• Pressure transducer blockYes		
Cyclic data usageSimulation functionOutput four team be locked within the device with a brid within the device with a brid value, substitute value, inco- value)• Output byte5 (one measured value) or 10 (two measured values)- Failure modeparameterizable (last good value)• Input byte5 (one measured value) or 10 (two measured values)- Limit monitoringYes, one upper and lower v ing limit and one alarm limit respectively• Input byte0, 1, or 2 (register operating mode and reset function for metering)- Square-rooted characteristic for flow measurementYesInternal preprocessingPROFIBUS PA Profile for Pro- cess Control Devices Version 3.0, class B- PIDStandard FOUNDATION File bus function blockFunction blocks2Transducer block1 resource block• Analog input-Yes, linearly rising or falling characteristic• Pressure transducer block• Electrical damping, adjustable0 100 s Input/Output• Can be calibrated by applying two pressuresYes• Simulation functionInput/Output- Monitoring of sensor limitsYes		
Cyclic data usage- Failure modeparameterizable (last good value, substitute value, incov value)• Output byte5 (one measured value) or 10 (two measured values)- Limit monitoringYes, one upper and lower v ing limit and one alarm limit respectively• Input byte0, 1, or 2 (register operating mode and reset function for metering)- Limit monitoringYes, one upper and lower v ing limit and one alarm limit respectivelyInternal preprocessingPROFIBUS PA Profile for Pro- cess Control Devices Version 3.0, class B• PIDStandard FOUNDATION Fid bus function blockFunction blocks2• Physical block1 resource block• Analog input-2• Pressure transducer blocks1 transducer block Pressure calibration, 1 transducer block• Electrical damping, adjustable - Simulation function0 100 s• Pressures• Monitoring of sensor limitsYes		
• Output byte5 (one measured value) or 10 (two measured values)• Limit monitoring• Value, substitute value, income value)• Input byte0, 1, or 2 (register operating mode and reset function for metering)- Limit monitoring• Electrical damping, adjustable c Simulation function• Can be calibrated by applying two pressures• Value, substitute value, income value)• Input byte0, 1, or 2 (register operating mode and reset function for metering)• Limit monitoring• Limit monitoring• Input byte0, 1, or 2 (register operating mode and reset function for metering)• Square-rooted characteristic for flow measurementYes• Device profilePROFIBUS PA Profile for Pro- cess Control Devices Version 3.0, class B• PIDStandard FOUNDATION File bus function block• Analog input• Physical block1 resource block• Adaptation to customer-specif- ic process variablesYes, linearly rising or falling characteristic• Pressure transducer block• Can be calibrated by applying two pressures• Simulation functionInput/Output• Monitoring of sensor limitsYes	reat	
 Input byte Input byte Input byte Internal preprocessing Device profile PROFIBUS PA Profile for Process Control Devices Version 3.0, class B Function blocks Analog input Adaptation to customer-specificic process variables Electrical damping, adjustable Simulation function Input/Output 		
Internal preprocessing PROFIBUS PA Profile for Process Control Devices Version 3.0, class B • PID Standard FOUNDATION File bus function block Function blocks 2 • Physical block 1 resource block • Analog input - Adaptation to customer-specific process variables • Ves, linearly rising or falling characteristic • Pressure transducer block 1 transducer block • Electrical damping, adjustable 0 100 s • One source calibrated by applying two pressures Yes	ing limit and one alarm limit	
Device profile PROFIBUS PA Profile for Process Control Devices Version 3.0, class B • PID Standard FOUNDATION Fields bus function block Function blocks 2 • Physical block 1 resource block • Analog input - - Adaptation to customer-specific characteristic • Pressure transducer block 1 transducer block • Electrical damping, adjustable 0 100 s 0 100 s • Can be calibrated by applying two pressures Yes		
3.0, class B • Physical block 1 resource block Function blocks 2 Transducer blocks 1 transducer block Pressure calibration, 1 transducer block • Analog input - Adaptation to customer-specific ic process variables Yes, linearly rising or falling characteristic • Pressure transducer block 1 cesource block 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	d-	
 Analog input Adaptation to customer-specific process variables Electrical damping, adjustable Simulation function Input/Output Monitoring of sensor limits Yes 		
 Adaptation to customer-specific process variables Electrical damping, adjustable Simulation function Input/Output Yes, linearly rising or falling characteristic Pressure transducer block Can be calibrated by applying two pressures Monitoring of sensor limits Yes 		
ic process variables characteristic • Pressure transducer block - Electrical damping, adjustable 0 100 s - Can be calibrated by applying Yes - Simulation function Input/Output - Monitoring of sensor limits Yes	ck	
- Simulation function Input/Output - Monitoring of sensor limits 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 temper- ature and electronics tempera- 	ne-	
- Limit monitoring Yes, one upper and lower warn- ing limit and one alarm limit		
respectively Mounting flange		
Register (totalizer) Can be reset, preset, optional diameter Nominal diameter Nominal diameter Nominal pressure Acc. to EN 1092-1	Nominal pressure	
- Failure mode parameterizable (summation PN 40		
with last good value, continuous - DN100 PN16, PN40		
summation, summation with incorrect value) • To ASME B16.5		
- Limit monitoring One upper and lower warning - 3 inch class 150, class 300		
limit and one alarm limit respec- tively - 4 inch class 150, class 300	class 150, class 300	
Physical block 1		
Transducer blocks 2		
Pressure transducer block		
- Can be calibrated by applying Yes two pressures		
- Monitoring of sensor limits Yes		
- Specification of a container Max. 30 nodes characteristic with		
- Square-rooted characteristic Yes for flow measurement		
- Gradual volume suppression and implementation point of square-root extraction		
- Simulation function for mea- sured pressure value and sen- sor temperature Constant value or over parame- terizable ramp function		

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for level

SITRANS P DS III f	or level				
Selection and Ordering data		Article No.			
Pressure transmitter for level,		7 M F 4 6 3 3 -			
SITRANS P DS III with	HART	Y		-	
Click on the Article N ration in the PIA Life	lo. for the online configu- Cycle Portal.				
Measuring cell filling	Measuring cell cleaning				
Silicone oil	normal	1			
Measuring span (min.					
25 250 mbar 25 600 mbar	(10 100 inH ₂ O) (10 240 inH ₂ O)	DE			
53 1600 mbar	(21 642 inH ₂ O)	F			
0.16 5 bar	(64.3 2000 inH ₂ O)	G			
Process connection of	f low-pressure side				
	T with flange connection				
Mounting thread ⁷ / ₁₆ -2			2		
 Mounting thread M10 (only for replacement 	to DIN 19213 requirement)		0		
Non-wetted parts mate		-			
process flange screws					
Stainless steel	Die-cast aluminum		2		
Stainless steel	Stainless steel precision casting ¹⁾		3		
Version					
 Standard version, German plate inscription, setting for pressure unit: bar) 				1	
International version, English plate inscription, setting for pressure unit: bar				2	
 Chinese version, English plate inscription, setting for pressure unit: Pascal 				3	
All versions include DVD with documentation for SITRANS P in German, English, French, Italian and Spanish. Includes Compact operating instructions in 21 EU languages.					
Explosion protection					
None Mith ATEX Type of pri				Α	
 With ATEX, Type of protection: "Intrinsic safety (Ex ia)" 				в	
- "Explosion-proof (Ex d)" ²⁾				D	
- "Intrinsic safety and flameproof enclosure"				Р	
(Ex ia + Ex d) ^{*3)} - "Ex nA/ic (Zone 2)" ⁴⁾				Е	
 "Ex nA/Ic (Zone 2)" */ "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia+ Ex d + 				R	
• FM + CSA intrinsic safe (is)				F	
 FM + CSA (is + ep) + Ex ia + Ex d (ATEX)⁵⁾ 				S	
 With FM + CSA, Type of protection: "Intrinsic Safe and Explosion Proof (is + xp)"¹⁾ 				N	~
		-		IN .	
 Electrical connection/e Screwed gland Pg 13. 					A
Screwed gland M20x1.5				1	в
 Screwed gland ½-14 NPT 					С
Han 7D plug (plastic housing) incl. mating connector ⁶⁾					
M12 connectors (stainless steel) ^{7) 8)}				r	
Display • Without display					0
Without display Without visible display					1
(display concealed, setting: mA)					
With visible display (setting mA)With customer-specific display (setting as				6	
 with customer-specified, order code 	"Y21" or "Y22" required)				7
-	. ,				

Ordering information

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

ordering example

7MF4633-1EY20-1AA1-Z
Y01
Y01: 80 to 143 mbar (1.16 to 2.1 psi)
7MF4912-3GE01

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

Included in delivery of the device:

- Brief instructions (Leporello)
- DVD with detailed documentation
- Sealing plug(s) or sealing screw(s) for the process flanges(s)
- $^{1)}$ Not in conjunction with electrical connection "Screwed gland Pg 13.5" and "Han7D plug".
- ²⁾ Without cable gland, with blanking plug.
- ³⁾ With enclosed cable gland Ex ia and blanking plug.
- ⁴⁾ Configurations with HAN and M12 connectors are only available in Ex ic.
- ⁵⁾ Only in connection with IP66.
- ⁶⁾ Only in connection with Ex approval A, B or E.
- 7) M12 delivered without cable socket
- ⁸⁾ 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	g data	Article	e No						
Pressure transmitters	7 11 1101	5140							
SITRANS P DS III with P	7 M F	463	4 -						
SITRANS P DS III with F	7 M F								
	1 Y								
Click on the Article N ration in the PIA Life	1=1								
Nominal measuring ra	D								
250 mbar 600 mbar	0 mbar $(100 \text{ inH}_2\text{O})$								
1600 mbar	(= • • • • • 2 •)								
5 bar	· /								
Process connection o Female thread ¼-18 NF • Mounting thread ⁷ / ₁₆ -0 • Mounting thread M10 (only for replacement	T with flange connection 20 UNF to IEC 61518 to DIN 19213		2 D						
Non-wetted parts mate process flange screws									
Stainless steel	Die-cast aluminum		2						
Stainless steel	Stainless steel precision casting		3						
Version		-							
Standard version, Ger				1					
 International version, setting for pressure un 	English plate inscription,			2					
 Chinese version, Engli setting for pressure un 	sh plate inscription,			3					
	with documentation for English, French, Italian and act operating instructions								
Explosion protection		-							
• None	- 4 4'			A					
 With ATEX, Type of pri- "Intrinsic safety (Ex i 				в					
- "Explosion-proof (Ex				D					
- "Intrinsic safety and				Р					
(Ex ia + Ex d) ^{*2)} - "Ex nA/ic (Zone 2)" ³)			Е					
· · · ·	osion-proof enclosure and			R					
dust explosion prote	ection (Ex ia + Ex d + ot for DS III FF)								
 Zone 1D/2D)^{*2/4)} (no FM + CSA intrinsic sa 				F					
• FM + CSA intrinsic sa • FM + CSA (is + ep) +				S					
• With FM + CSA, Type	of protection:			-					
- "Intrinsic Safe and E	xplosion Proof (is + xp)" ¹⁾			N	С				
Electrical connection/	cable entry								
Screwed gland M20 x					В				
Screwed gland ½-14 M12 connectors (stain	NPT Iless steel) ^{5) 6)}				C F				
Display									
Without display Without visible display	1					0 1			
 Without visible display (display concealed, s) 					1				
• With visible display (s	etting: bar)					6			
With customer-specifi					7				
specified, Order code	: ı∠ı iequirea)								

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 d	alivery of the device:

- Included in delivery of the device:Brief instructions (Leporello)DVD with detailed documentation
- 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 connectors are only available in Ex ic.
- ⁴⁾ Only in connection with IP66.
- 5) M12 delivered without cable socket
- ⁶⁾ 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 Ordering data	Order				
Further designs	oraci	HART	PΔ	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	✓	✓	✓	
• FEP (with silicone core, approved for food)	A21	1	1	✓	
 FFPM (Kalrez, compound 4079), for measured medium temperatures 	A22	~	~	~	
-15 100 °C (5 212 °F)					
• NBR (Buna N)	A23	✓	✓	✓	
Plug					
• Han 7D (metal)	A30	✓			
 Han 8D (instead of Han 7D) 	A31	✓			
Angled	A32	1			
• Han 8D (metal)	A33	v			
Sealing screw	A 40	1	~		
1/4-18 NPT, with valve in mat. of process flanges	A40		•	•	
Cable sockets for M12 connectors (metal (CuZn))	A50	~	~	~	
Rating plate inscription					-
(instead of German)					
• English	B11	✓	✓	✓	
• French	B12	✓	✓	✓	
• Spanish	B13	✓ ✓	✓.	✓	
Italian Curillia (russian)	B14	4	1	1	
• Cyrillic (russian)	B16	•	•	•	
English rating plate Pressure units in inH ₂ 0 and/or psi	B21	~	~	~	
Quality inspection certificate (Five-step factory calibration) to IEC 60770-2	C11	~	1	1	
Inspection certificate	C12	~	1	1	
Acc. to EN 10204-3.1					
Factory certificate	C14	✓	✓	✓	
Acc. to EN 10204-2.2					
Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL confor-	C20	1			
mity declaration	e e (1)		,		
Functional safety (PROFIsafe) Certificate and PROFIsafe protocol	C21 ¹⁾		•		
Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL confor- mity declaration	C23	~			
Device passport Russia	C99	~	✓	✓	
Setting of upper limit of output signal to 22.0 mA	D05	~			
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 process flange	D37	~	1	1	
Capri cable gland 4F CrNi and clamping device (848699 + 810634) included	D59	1	1	1	

Selection and Ordering data	Order	code		
Further designs		HART	PA	FF
Add "-Z" to Article No. and specify Order code.				
Use on zone 1D / 2D (only together with type of protection "Intrinsic safety" (transmitter 7MF4B. Ex ia)"and IP66)	E01	1	•	1
Overfilling safety device for flammable 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	E08	*		
cell filling "inert liquid")	E11			
Export approval Korea CRN approval Canada	E11	↓	↓	↓
(Canadian Registration Number)				
Dual seal	E24	~	1	~
Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil) (only for transmitter 7MF4B)	E25 ²⁾	1	~	*
"Flameproof" explosion protection accord- ing to INMETRO (Brazil)	E26 ²⁾	1	✓	~
(only for transmitter 7MF4D) Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil)	E28 ²⁾	✓	✓	
(only for transmitter 7MF4P)				
Ex Approval IEC Ex (Ex ia) (only for transmitter 7MF4B)	E45 ²⁾	~	~	~
Ex Approval IEC Ex (Ex d) (only for transmitter 7MF4D)	E46 ²⁾	~	1	*
Explosion-proof "Intrinsic safety" to NEPSI (China)	E55 ²⁾	~	•	~
(only for transmitter 7MF4B) Explosion protection "Explosion-proof" to	E56 ²⁾	~	✓	~
NEPSI (China) (only for transmitter 7MF4D)	•			
Ex protection "Zone 2" to NEPSI (China) (only for transmitter 7MF4E)	E57 ²⁾	~	~	~
Ex protection "Ex ia", "Ex d" and "Zone 2" to NEPSI (China)	E58 ²⁾	~	~	✓
(only for transmitter 7MF4R) "Intrinsic safety" and "Explosion-proof"	E70 ²⁾	~	✓	~
explosion protection acc. to Kosha (Korea) (only for transmitter 7MF4[B, D]Z + E11)				
Ex-protection Ex ia according to EAC Ex (Russia)	E80 ³⁾	~	1	~
Ex-protection Ex d according to EAC Ex (Russia)	E81 ³⁾	~	*	✓
Ex-protection Ex nA/ic (Zone 2) according to EAC Ex (Russia)	E82 ³⁾	~	~	✓
Ex-protection Ex ia + Ex d + Zone 1D/2D according to EAC Ex (Russia)	E83 ³⁾	1	~	✓
Two coats of lacquer on casing and cover (PU on epoxy)	G10	~	1	✓
Replacement of process connection side	H01	1	1	✓

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.						
Transient protector 6 kV (lightning protec- tion)	J01	1	1	1		
Vent valve or blanking plug of process flange welded-in (orientation: on right when viewing the display) ⁴⁾	J08	~	1	~		
Vent valve or blanking plug of process flange welded-in (orientation: on left when viewing the display) ⁴⁾	J09	1	1	~		

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

2) Option does not include ATEX approval, but instead includes only the country-specific approval.

³⁾ Approval pending.

4) 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	Y01	1	√ 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: Y15:				
Measuring point text (entry in device vari- able)	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_2O^{*}), in H_2O^{*}), ft H_2O^{*}), 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⁾	+ Y01			
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)				
Preset bus address	Y25		✓	✓
possible between 1 and 126 Specify in plain text: Y25:				
Damping adjustment in seconds (0 100 s)	Y30	~	1	~
Only Y01, Y15, Y16, Y17, Y21, Y22, Y25 and I	D05 can	be fac	tory p	reset

✓ = 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.

a) 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 level

Selection and Ordering data	Article No.	Order code	Selection and Ordering data	Article No. Order code
Mounting flange	7 M F 4 9 1	2	Mounting flange	7 M F 4 9 1 2
Directly mounted on the SITRANS P pressure transmitter (converter part) for level, for DS III series	3		Directly mounted on the SITRANS P pressure transmitter (converter part) for level, for DS III series	3
Click on the Article No. for the online configu- ration in the PIA Life Cycle Portal.			Customer-specific tubus length Specify customer-specific length with Y44, see Order Code	
Protection in the PIA Life Cycle Portal. Connection to EN 1092-1 Nominal diameter DN 50 PN 10/16/25/40 PN 100 DN 80 PN 10/16/25/40 DN 100 PN 10/16 PN 25/40 Connection to ASME B16.5 Nominal diameter Nominal pressure 2 inch class 150 class 300 class 400/600 class 900/1500 3 inch class 150 class 300 4 inch class 150 class 300 4 inch class 150 class 300 Cher version, add Order code and plain text: Nominal diameter:; Nominal press.: Wetted parts materials • Coated with PFA • Coated with PFF • Coated with PFF • Coated with PFF • Coated with PFF • Coated with ECTFE ¹⁾ • Monel 400, mat. no. 2.4360 • Hastelloy C276, mat. no. 2.4819 • Hastelloy C276, mat. no. 2.4602 • Tantalum • Titanium, mat. no. 3.7035 (max. 150 °C (302 °F)) • Nickel 201 (max. 260 °C (500 °F)) • Duplex 2205, mat. no. 1.4462 • Duplex 2205, mat. no. 1.4462, incl. main body • Stainless steel 316L, gold plated, thickness approx. 25 µm	A B D G H L M N P Q R T U Z Z A D E O F G J U V O K L O MO Q R S O Z 8	JIY		A 1 A 2 A 3 A 4 A 5 F 1 F 2 F 3 F 4 F 5 D 1 D 2 D 3 D 4 D 5 G 1 G 2 G 3 G 4 D 5 C G 1 G 2 G 3 G 4 C C C 3 G 4 C C C 3 C 4 C C 4 C C 4 C C 5 C C 5 C 5
			101 130 film (3.98 3.91) 130 film (3.91) 151 200 mm (5.94 7.87") 200 mm (7.87") Filling liquid Silicone oil M5 • Silicone oil M50 High-temperature oil	1 2 3

Halocarbon oil (for O2-measurement)

4

7

9

M 1 Y

- Food oil (FDA-listed)

Other version, add Order code and plain text: filling liquid: ...

¹⁾ For vacuum on request

Pressure Measurement

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 Select range, enter desired length in plain text (No entry = standard length)	Y44	*	•	1
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	1	•	•
Oil- and grease-free cleaned version	C10	✓	✓	✓
Oil- and grease-free cleaned and packed ver- sion, <u>not for oxygen application</u> , only in con- junction with halocarbon oil fill fluid, certified by certificate acc. to EN 10204-2.2				
Quality inspection certificate (Five-step factory calibration) to IEC 60770-2	C11	1	~	~
Inspection certificate Acc. to EN 10204-3.1	C12	*	✓	*
2.2 Certificate of FDA approval of fill oil Only in conjunction with filling liquid "Food oil" (FDA listed)"	C17	*	1	1
"Functional safety (SIL2)" certificate to IEC 61508	C20	1	✓	
(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 (only for conjunction with the Order code "C23" in the case of SITRANS P DS III transmitter)	C23	1	~	
Certification acc. to NACE MR-0175 Includes acceptance test certificate 3.1 acc. to EN 10204 (only for wetted parts made of stain- less steel 1.4404/316L and Hastelloy C276)	D07	1	~	1
Certification acc. to NACE MR-0103 Includes acceptance test certificate 3.1 acc. to EN 10204 (only for wetted parts made of stain- less steel 1.4404/316L and Hastelloy C276)	D08	*	~	*
Oil- and grease-free cleaned version Oil- and grease-free cleaned and packed ver- sion, <u>only for oxygen application</u> , 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	E10	•	~	•
Epoxy painting Not possible with negative pressure service Color: transparent, coverage: front and rear of	E15	*	•	*
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.				
One sided-mounting, sealing surface below	H20			

Selection and Ordering data	Order	code		
Further designs	order	HART	PA	FF
Add "-Z" to Article No. and specify Order code.				••
Flanges according to EN 1092-1, sealing surface B1 (stainless steel 316L) (only in combination with "Z" at data position 9)				
DN 25, PN 10/16/25/40	JOA	1	✓	1
DN 25, PN 63/100/160	J0B	✓	¥	✓
DN 40, PN 10/16/25/40	JOC	✓	✓	✓
DN 40, PN 63/100	JOD	✓	✓	✓
DN 40, PN 160	J0E	1	1	1
Sealing surface smooth, form B2 or RFSF (Stainless steel diaphragm) previously DIN 2501, form E	J11	1	~	1
Sealing surface groove, EN 1092-1, form D instead of sealing surface B1 (only for wetted parts made of stainless steel 316L)	J14	1	~	~
Sealing surface with spring according to EN 1092-1, form F, (previously DIN 2512, form F) in stainless steel 316L				
DN 25	J30	✓	✓.	1
DN 40	J31	1	1	1
DN 50 DN 80	J32 J33	✓ ✓	√ √	√ √
DN 100	J33 J34	↓	¥ ✓	↓
DN 125	J35	· •	1	1
Sealing surface with male face according to EN 1092-1, form E (previously DIN 2512, form V13) in stainless steel 316L				
DN 25	J40	√ √	√ √	√ √
DN 40 DN 50	J41 J42	↓	↓	↓
DN 80	J43	· •	1	1
DN 100	J44	1	1	1
DN 125	J45	✓	✓	✓
Sealing surface with female face according to EN 1092-1, form F (previously DIN 2512, form R13) in stainless steel 316L				
DN 25	J50	✓	✓	✓
DN 40	J51	✓	✓	✓
DN 50	J52	1	1	1
DN 80 DN 100	J53 J54	✓ ✓	✓ ✓	√ √
DN 100	J55	↓	~	1
Flange according to ASME B16.5 RF 125 250 AA, in stainless steel 316L (only in combination with "Z" at data position 9)				
1", class 150	J6A	1	✓	✓
1", class 300	J6B	✓	✓	√
1", class 400/600	J6C	1	1	1
1", class 900/1500 114", class 150	J6D	√ √	√ √	4
1½", class 150 1½", class 300	J6E J6F	✓ ✓	√	√ √
1½", class 300/ 1½", class 400/600	J6G	↓	¥	↓
1½", class 900/1500	J6H	1	1	1
Sealing surface B1 or 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)	J12	*	~	~
and for nominal sizes 2", 3", DN 50 and DN 80) Sealing surface RJF (groove) ASME B16.5 instead of sealing surface ASME B16.5 RF	J24	~	~	~
125 250 AA (only for wetted parts made of stainless steel 316L)				

Transmitters for applications with advanced requirements (Advanced)

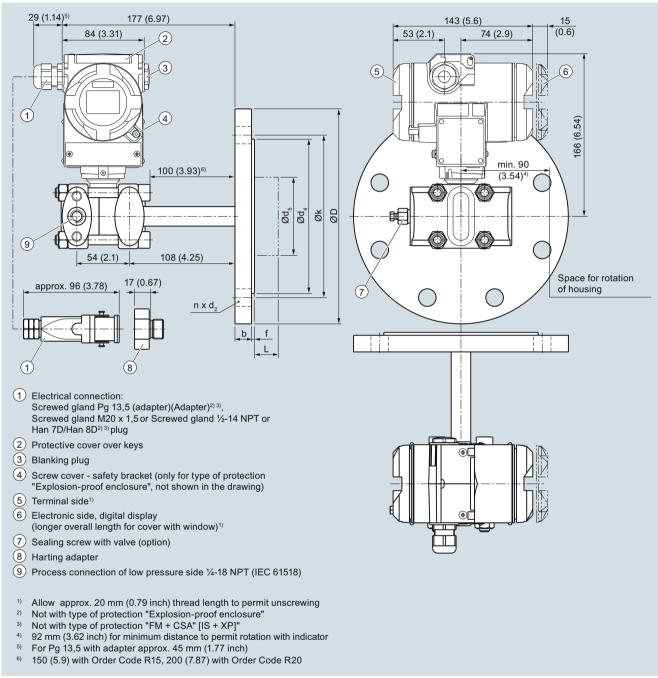
SITRANS P DS III for level

Selection and Ordering data	Order	code		
Further designs		HART	PA	FF
Add "-Z" to Article No. and specify Order code.				
Flange acc. to JIS, in stainless steel 316L (only in combination with "Z" at data position 9)				
JIS DN 50, 10 K 316L	J7A	~	✓	✓
JIS DN 50, 20 K 316L	J7B	1	√ √	1
JIS DN 80, 10 K 316L	J7C	✓	✓	✓
JIS DN 80, 20 K 316L	J7D	~	~	~
Elongated pipe, 150 mm instead of 100 mm,	R15	✓	✓	1
max. medium temperature 250 °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	1	•	1
Negative pressure service				
for use in the low-pressure measuring range for transmitter for level	V04	~	~	~
Note: suffix "Y01" required with pressure trans- mitter				
Extended negative pressure service	-			
for use in the low-pressure measuring range for transmitter for level	V54	1	1	~
Note: suffix "Y01" required with pressure trans- mitter				
 – availabla 				

✓ = available

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for level



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

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	8	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	Nominal	h	D	ا م	4		4	4	4	L.		n

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 = 31/2 inch with tube length L=0.

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III Supplementary electronics for 4-wire connection

Overview



Direct connection of the supplementary electronics to a SITRANS P DS III pressure transmitter with HART produces a transmitter for 4-wire connection.

The supplementary electronics cannot be attached to explosionprotected pressure transmitters. The supplementary electronics is fitted in a light metal housing which is mounted on the left side of the pressure transmitter.

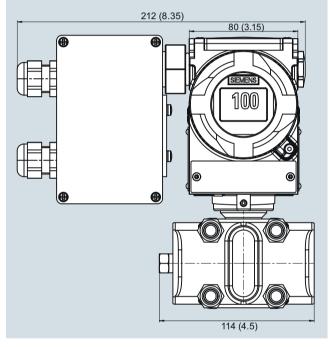
Note on ordering:

The supplementary electronics can only be ordered as an **optional accessory** for the corresponding pressure transmitter.

Technical specifications			
SITRANS P, supplementary electronics for 4-wire connection			
Output			
Output signal	0 20 mA or 4 20 mA		
Load	Max. 750 Ω		
Voltage measurement	Linear (square-rooting in transmitter if necessary)		
Electrical isolation	Between power supply and input/ output		
Measuring accuracy	acc. to IEC 60770-1		
Measurement deviation (in addition to transmitter)	\leq 0.15 % of set span		
Influence of ambient temperature	≤ 0.1 % per 10 K		
Power supply effect	\leq 0.1 % per 10 % change in voltage or frequency		
Load effect	≤ 0.1 % per 100 % change		
Rated conditions			
Ambient temperature			
• 24 V version	-20 +80 °C (-4 +176 °F)		
• 230 V version	-20 +60 °C (-4 +140 °F)		
Storage temperature	-50 +85 °C (-58 +185 °F)		
Degree of protection	IP54 to IEC 60529		
Electromagnetic compatibility (EMC)	IEC 61236		
Condensation	Relative humidity 0 95 % condensation permissible		

Structural design	
Dimensions (W x H x D) in mm (inch)	80 x 120 x 60 (3.15 x 4.72 x 2.36)
Electrical connection	Screw terminals (Pg 13.5 cable inlet) or Han 7D / Han 8D plug
Power supply	
Supply voltage	230 V AC (-10 +6 %, 47 63 Hz, approx. 6 VA) or
	24 V AC/DC (24 V AC ± 10 %, 47 63 Hz, approx. 3 VA)
Permissible ripple (within the speci- fied limits)	Approx. 2.5 V $_{\rm pp}$

Dimensional drawings

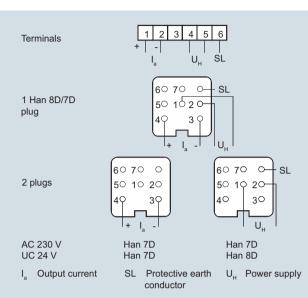


SITRANS P pressure transmitters with supplementary electronics for fourwire connection, dimension drawing, dimensions in mm

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III Supplementary electronics for 4-wire connection

Schematics



Supplementary electronics for 4-wire connection, connection diagram

Selection and	Ordering data	Or	de	er code
connection Article No. of th	y electronics for 4-wire e transmitter B. add "-Z" and Order code.	V		
Power supply 24 V AC/DC	Electrical connection Terminals; 2 Pg screwed glands, to left 2 Han 7D/Han 8D plugs incl. mating connector, to left 1 Han 7D plug incl. mating connector, angled Terminals; 1 Pg screwed gland, downwards 1 Han 8D plug incl. mating connector, downwards		1 3 5 6	
230 V AC	(observe arrangement of plug and differential pressure line) Terminals; 2 Pg screwed glands, to left 2 Han 7D plugs incl. mating connector, to left		7 B	
Output current 0 20 mA 4 20 mA	1		0	
Accessories		Ar	tic	le No.
Instruction Ma German/English		A5	5E(00322799

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III Accessories/Spare Parts

Selection and Ord	ering data	Article No.		Selection and Order	ring data	Artic	le No.
Replacement mea for SITRANS P DS	placement measuring cell for pressure SITRANS P DS III		0 - 0 D B 0	Replacement measuring cell for absolute pressure for SITRANS P DS III (from the pressure series)			4992 -
Click on the Articition in the PIA Li	cle No. for the online configura- fe Cycle Portal.			Click on the Articl tion in the PIA Life	e No. for the online configura- e Cycle Portal.		
Silicone oil	ing Measuring cell cleaning Normal	1		Silicone oil	g Measuring cell cleaning Normal	1	
Inert liquid	grease-free to cleanliness level 2	3		Inert liquid	grease-free to cleanliness level 2	3	
Measured span (m	nin max.)			Measured span (min	n max.)		
0.01 1 bar 0.04 4 bar 0.16 16 bar 0.63 63 bar	(0.15 14.5 psi) (0.6 58 psi) (2.32 232 psi) (9.14 914 psi)	B C D E		8.3 250 mbar a 43 1300 mbar a 0.16 5 bar a 1 30 bar a	(0.12 3.62 psia) (0.62 18.85 psia) (2.32 72.5 psia) (14.5 435 psia)	D F G H	
1.6 160 bar 4.0 400 bar 7.0 700 bar	(23.2 2320 psi) (58.0 5802 psi) (102.0 10153 psi)	F G J		Wetted parts materi Seal diaphragm	ials Process connection	1	
Wetted parts mate Seal diaphragm				Stainless steel Hastelloy Hastelloy	Stainless steel Stainless steel Hastelloy	A E C	
Stainless steel Hastelloy Hastelloy	Stainless steel Stainless steel Hastelloy	A B C		Process connection • Connection shank • Female thread ½-1	ן G½B to EN 837-1	_	0
 Process connection Connection shanh Female thread ¹/₂- Oval flange made 	< G½B to EN 837-1 -14 NPT	0 1		Oval flange made of max. span 160 bar	of stainless steel, (2320 psi) ⁷ / ₁₆ -20 UNF to IEC 61518		2 3
	ar (2320 psi) d ⁷ / ₁₆ -20 UNF to IEC 61518 d M10 to DIN 19213	2 3		<i>Further designs</i> Please add " -Z " to Ar Order code.	ticle No. and specify	Orde	er code
Further designs		Order code	е	Inspection certificat	te	C12	
Please add "-Z" to A Order code.	Article No. and specify			to EN 10204-3.1			
Inspection certific to EN 10204-3.1	ate	C12					

Pressure Measurement

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III Accessories/Spare Parts

Selection and Ordering data Replacement measuring cell for absolute pres- sure (from the differential pressure series) for SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus series PA Click on the Article No. for the online configura-	7 M F	le No	
sure (from the differential pressure series) for SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus series	7 111 1	100	2.
SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus series	- 0 D C		
		-	0 D C
Z Click on the Article No. for the online configura			
tion in the PIA Life Cycle Portal.			
Measuring cell filling Measuring cell cleaning			
Silicone oil Normal	1		
Inert liquid grease-free to cleanliness level 2	3		
Measured span (min max.)			
8.3 250 mbar a (0.12 3.62 psia)	D		
43 1300 mbar a (0.62 18.85 psia)	F		
0.16 5 bar a (2.32 72.5 psia)	G		
1 30 bar a (14.5 435 psia)	н		
5.3 100 bar a (76.9 1450 psia)	KE		
Wetted parts materials			
Seal diaphragm Parts of measuring cell			
Stainless steel Stainless steel	A		
Hastelloy Stainless steel	B		
Hastelloy Hastelloy	C		
Tantalum Tantalum	E		
Monel Monel	н		
Gold Gold	L		
 Mounting thread ⁷/₁₆-20 UNF to IEC 61518 Vent on side of process flange¹⁾ 		2	
	_	2 4 6 2	
 Vent on side of process flange¹⁾ Mounting thread M10 to DIN 19213 Mounting thread ⁷/₁₆-20 UNF to IEC 61518 Non-wetted parts materials 	Orde	4 6	le
Vent on side of process flange ¹⁾ Mounting thread M10 to DIN 19213 Mounting thread ⁷ / ₁₆ -20 UNF to IEC 61518 Non-wetted parts materials Stainless steel process flange screws <i>Further designs</i> Please add "- Z " to Article No. and specify Order code. O-rings for process flanges	Orde	4 6 2	le
 Vent on side of process flange¹⁾ Mounting thread M10 to DIN 19213 Mounting thread ⁷/₁₆-20 UNF to IEC 61518 Non-wetted parts materials Stainless steel process flange screws <i>Further designs</i> Please add "-2" to Article No. and specify Order code. Order code. O-rings for process flanges (instead of FPM (Viton))	Orde	4 6 2	le
 Vent on side of process flange¹⁾ Mounting thread M10 to DIN 19213 Mounting thread ⁷/₁₆-20 UNF to IEC 61518 Non-wetted parts materials Stainless steel process flange screws <i>Further designs</i> Please add "-Z" to Article No. and specify Order code. Orings for process flanges (instead of FPM (Viton)) PTFE (Teflon) 	Orde A20	4 6 2	le
 Vent on side of process flange¹⁾ Mounting thread M10 to DIN 19213 Mounting thread ⁷/₁₆-20 UNF to IEC 61518 Non-wetted parts materials Stainless steel process flange screws <i>Further designs</i> Please add "-Z" to Article No. and specify Order code. Orings for process flanges (instead of FPM (Viton)) PTFE (Teflon) FEP (with silicone core, approved for food) 	A20 A21	4 6 2	le
 Vent on side of process flange¹⁾ Mounting thread M10 to DIN 19213 Mounting thread ⁷/₁₆-20 UNF to IEC 61518 Non-wetted parts materials Stainless steel process flange screws <i>Further designs</i> Please add "-Z" to Article No. and specify Order code. Orings for process flanges (instead of FPM (Viton)) PTFE (Teflon) FEP (with silicone core, approved for food) FFPM (Kalrez, compound 4079), for measured me- 	A20	4 6 2	le
 Vent on side of process flange¹⁾ Mounting thread M10 to DIN 19213 Mounting thread ⁷/₁₆-20 UNF to IEC 61518 Non-wetted parts materials Stainless steel process flange screws <i>Further designs</i> Please add *-Z" to Article No. and specify Order code. Orings 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	4 6 2	le
 Vent on side of process flange¹⁾ Mounting thread M10 to DIN 19213 Mounting thread ⁷/₁₆-20 UNF to IEC 61518 Non-wetted parts materials Stainless steel process flange screws Further designs Please add "-Z" to Article No. and specify Order code. Orings 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 A23	4 6 2	le
 Vent on side of process flange¹⁾ Mounting thread M10 to DIN 19213 Mounting thread ⁷/₁₆-20 UNF to IEC 61518 Non-wetted parts materials Stainless steel process flange screws <i>Further designs</i> Please add *-Z" to Article No. and specify Order code. Orings 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	4 6 2	le
 Vent on side of process flange¹⁾ Mounting thread M10 to DIN 19213 Mounting thread ⁷/₁₆-20 UNF to IEC 61518 Non-wetted parts materials Stainless steel process flange screws Further designs Please add "-Z" to Article No. and specify Order code. Orrings 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 A23	4 6 2	le
 Vent on side of process flange¹⁾ Mounting thread M10 to DIN 19213 Mounting thread ⁷/₁₆-20 UNF to IEC 61518 Non-wetted parts materials Stainless steel process flange screws Further designs Please add "-Z" to Article No. and specify Order code. Orings 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) Inspection certificate to EN 10204-3.1 Process connection G½B 	A20 A21 A22 A23 C12	4 6 2	le
 Vent on side of process flange¹⁾ Mounting thread M10 to DIN 19213 Mounting thread ⁷/₁₆-20 UNF to IEC 61518 Non-wetted parts materials Stainless steel process flange screws Further designs Please add *-Z" to Article No. and specify Order code. Orings 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) Inspection certificate to EN 10204-3.1 Process connection G1/2B Remote seal flanges (not together with K01, K02 and K04) 	A20 A21 A22 A23 C12 D16 D20	4 6 2	le
 Vent on side of process flange¹⁾ Mounting thread M10 to DIN 19213 Mounting thread ⁷/₁₆-20 UNF to IEC 61518 Non-wetted parts materials Stainless steel process flange screws Further designs Please add *-Z" to Article No. and specify Order code. Orings 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) Inspection certificate to EN 10204-3.1 Process connection G½B Remote seal flanges (not together with K01, K02 and K04) 	A20 A21 A22 A23 C12 D16	4 6 2	le
 Vent on side of process flange¹⁾ Mounting thread M10 to DIN 19213 Mounting thread ⁷/₁₆-20 UNF to IEC 61518 Non-wetted parts materials Stainless steel process flange screws Further designs Please add *-Z" to Article No. and specify Order code. Orings 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) Inspection certificate to EN 10204-3.1 Process connection G1/2B Remote seal flanges (not together with K01, K02 and K04) 	A20 A21 A22 A23 C12 D16 D20 H02	4 6 2	le
 Vent on side of process flange¹⁾ Mounting thread M10 to DIN 19213 Mounting thread ⁷/₁₆-20 UNF to IEC 61518 Non-wetted parts materials Stainless steel process flange screws Further designs Please add *-Z* to Article No. and specify Order code. Orings 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) Inspection certificate to EN 10204-3.1 Process connection G1/2B Remote seal flanges (not together with K01, K02 and K04) Vent on side for gas measurements Process flanges without 	A20 A21 A22 A23 C12 D16 D20	4 6 2	le
 Vent on side of process flange¹⁾ Mounting thread M10 to DIN 19213 Mounting thread ⁷/₁₆-20 UNF to IEC 61518 Non-wetted parts materials Stainless steel process flange screws Further designs Please add *-Z* to Article No. and specify Order code. Orings 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) Inspection certificate to EN 10204-3.1 Process connection G1/2B Remote seal flanges (not together with K01, K02 and K04) Vent on side for gas measurements Process flanges without without 	A20 A21 A22 A23 C12 D16 D20 H02 K00	4 6 2	le
 Vent on side of process flange¹⁾ Mounting thread M10 to DIN 19213 Mounting thread ⁷/₁₆-20 UNF to IEC 61518 Non-wetted parts materials Stainless steel process flange screws Further designs Please add *-Z" to Article No. and specify Order code. Orings 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) Inspection certificate to EN 10204-3.1 Process connection G1/2B Remote seal flanges (not together with K01, K02 and K04) Vent on side for gas measurements Process flanges without without with process flange made of Hastelloy 	A20 A21 A22 A23 C12 D16 D20 H02 K00 K01	4 6 2	le
 Vent on side of process flange¹⁾ Mounting thread M10 to DIN 19213 Mounting thread ⁷/₁₆-20 UNF to IEC 61518 Non-wetted parts materials Stainless steel process flange screws Further designs Please add "-Z" to Article No. and specify Order code. Orings for process flanges (instead of FPM (Viton)) PTFE (Teflon) FEPM (Kalrez, compound 4079), for measured medium temperatures -15 100 °C (5 212 °F) NBR (Buna N) Inspection certificate to EN 10204-3.1 Process connection G½B Remote seal flanges (not together with K01, K02 and K04) Vent on side for gas measurements Process flanges without with process flange made of Hastelloy Monel 	A20 A21 A22 A23 C12 D16 D20 H02 K00 K01 K02	4 6 2	le
 Vent on side of process flange¹⁾ Mounting thread M10 to DIN 19213 Mounting thread ⁷/₁₆-20 UNF to IEC 61518 Non-wetted parts materials Stainless steel process flange screws Further designs Please add "-Z" to Article No. and specify Order code. Orings 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) Inspection certificate to EN 10204-3.1 Process connection G1/2B Remote seal flanges (not together with K01, K02 and K04) Vent on side for gas measurements Process flanges without with process flange made of Hastelloy Monel Stainless steel with PVDF insert 	A20 A21 A22 A23 C12 D16 D20 H02 K00 K01	4 6 2	le
 Vent on side of process flange¹⁾ Mounting thread M10 to DIN 19213 Mounting thread ⁷/₁₆-20 UNF to IEC 61518 Non-wetted parts materials Stainless steel process flange screws Further designs Please add "-Z" to Article No. and specify Order code. Orings 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) Inspection certificate to EN 10204-3.1 Process connection G½B Remote seal flanges (not together with K01, K02 and K04) Vent on side for gas measurements Process flanges without with process flange made of Hastelloy Monel Stainless steel with PVDF insert max. PN 10 (MAWP 145 psi) 	A20 A21 A22 A23 C12 D16 D20 H02 K00 K01 K02	4 6 2	le
 Vent on side of process flange¹⁾ Mounting thread M10 to DIN 19213 Mounting thread ⁷/₁₆-20 UNF to IEC 61518 Non-wetted parts materials Stainless steel process flange screws Further designs Please add "-Z" to Article No. and specify Order code. Orings 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) Inspection certificate to EN 10204-3.1 Process connection G½B Remote seal flanges (not together with K01, K02 and K04) Vent on side for gas measurements 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) 	A20 A21 A22 A23 C12 D16 D20 H02 K00 K01 K02	4 6 2	le
 Vent on side of process flange¹⁾ Mounting thread M10 to DIN 19213 Mounting thread ⁷/₁₆-20 UNF to IEC 61518 Non-wetted parts materials Stainless steel process flange screws Further designs Please add "-Z" to Article No. and specify Order code. Orings 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) Inspection certificate to EN 10204-3.1 Process connection G½B Remote seal flanges (not together with K01, K02 and K04) Vent on side for gas measurements Process flanges without with process flange made of Hastelloy Monel Stainless steel with PVDF insert max. PN 10 (MAWP 145 psi) 	A20 A21 A22 A23 C12 D16 D20 H02 K00 K01 K02	4 6 2	le

¹⁾ Not for span 5.3 ... 100 bar (76.9 ... 1450 psi)

Selection and Order	ing data	Article No.	
	ring cell for differential 160 (MAWP 464/2320 psi) for	7 M F 4 9 9 4 -	
	HART, DS III with PROFIBUS	- 0 D C 0	
PA and DS III with FO	UNDATION Fieldbus series		
Click on the Article tion in the PIA Life	No. for the online configura- Cycle Portal.		
	Measuring cell cleaning		
Silicone oil Inert liguid	Normal	1	
mentiiquiu	grease-free to cleanliness level 2	3	
Measured span (min			
PN 32 (MAWP 464 ps		D	
1 20 mbar ¹⁾	(0.4 8 inH ₂ O)	В	
PN 160 (MAWP 2320 1 60 mbar	<u>psi)</u> (0.4 24 inH ₂ O)	с	
2.5 250 mbar	(0.4 24 mm 20) (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 materia			
(stainless steel proces			
Seal diaphragm	Parts of measuring cell		
Stainless steel	Stainless steel	A	
Hastelloy Hastelloy	Stainless steel Hastelloy	B C E	
Tantalum ²⁾	Tantalum		
Monel ²⁾ Gold ²⁾	Monel	H	
Process connection	Gold	L	
	NPT with flange connection		
	site process connection		
- Mounting thread M		0	
	/ ₁₆ -20 UNF to IEC 61518	2	
 Vent on side of proc - Mounting thread <u>N</u> 		4	
- Mounting thread ⁷	/ ₁₆ -20 UNF to IEC 61518	6	
Non-wetted parts ma	aterials		
Stainless steel proces	s flange screws	2 Order code	
	cle No. and specify Order code.	Order code	
O-rings for process (instead of FPM (Vitor	•		
PTFE (Teflon)	1))	A20	
	ore, approved for food)	A21	
	ound 4079), for measured me-	A22	
NBR (Buna N)	15 100 °C (5 212 °F)	A23	
Inspection certificate	8	C12	
to EN 10204-3.1			
Remote seal flanges		D20	
(not together with K01	I, K02 and K04)		
Vent on side for gas measurements		H02	
Stainless steel process flanges for vertical differential pressure lines		H03	
(not together with K01			
Process flanges		1/00	
without	made of	K00	
 with process flange Hastelloy 	maue UI	K01	
- Monel		K02	
	n PVDF insert, max. PN 10	K04	
(MAWP 145 psi), r	nax. temperature of medium		
	¹ / ₂ -14 NPT inner process con- e in the middle of the process		
flange, vent valve			

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 Orderin	g data	Articl	e No.
Replacement measuring cell for differential pressure and PN 420 (MAWP 6092 psi) for SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus series			4995-
Click on the Article N tion in the PIA Life C	No. for the online configura- ycle Portal.		
Measuring cell filling Silicone oil	Measuring cell cleaning Normal	1	
Measured span (min 2.5 250 mbar 6 600 mbar 16 1600 mbar 50 5000 mbar 0.3 30 bar	max.) (1 100 inH ₂ O) (2.4 240 inH ₂ O) (6.4 642 inH ₂ O) (20 2000 inH ₂ O) (4.35 435 psi)	D E F G H	
Wetted parts materials	6	11	
(stainless steel process Seal diaphragm	Parts of measuring cell		
Stainless steel Hastelloy Gold ¹⁾	Stainless steel Stainless steel Gold	A B L	
Vent on side of proces Mounting thread M1	2 to DIN 19213 6-20 UNF to IEC 61518 ss flange		1 3 5 7
Non-wetted parts mate • Stainless steel proces		-	2
Further designs		Orde	r code
Please add "-Z" to Artic code.	le No. and specify Order		
		A20 A21 A22 A23	
Inspection certificate to EN 10204-3.1		C12	
Stainless steel proces differential pressure li		H03	
	es	K00	

¹⁾ Not together with max. span 600 mbar (240 inH₂O)

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III Accessories/Spare F	Parts		
Selection and Ordering data	Article No.	Selection and Ordering data	Article No.
Spare parts/Accessories		Mounting screws	
Mounting bracket and fastening parts for pressure transmitters		For measuring point label, grounding and con- nection terminals or for display (50 units)	7MF4997-1CD
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		Sealing screws (1 set = 2 units) for process flange • made of stainless steel • made of Hastelloy	7MF4997-1CG 7MF4997-1CH
Fieldbus (7MF423C.) • made of steel • made of stainless steel	7MF4997-1AB 7MF4997-1AH	Sealing screws with vent valve Complete (1 set = 2 units) • made of stainless steel • made of Hastelloy	7MF4997-1CP 7MF4997-1CQ
Mounting bracket and fastening parts for pressure transmitters SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus (7MF403A.,B.,D. andF.) For absolute pressure transmitters SITRANS P DS III with HART, DS III with		Application electronics • 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
PROFIBUS PA and DS III with FOUNDATION Fieldbus 7MF423A.,B.,D. andF.) • made of steel • made of stainless steel	7MF4997-1AC 7MF4997-1AJ	Connection board • for SITRANS P DS III • for SITRANS P DS III PROFIBUS PA and FOUNDATION Fieldbus	7MF4997-1DN 7MF4997-1DP
Mounting and fastening brackets For differential pressure transmitters with flange thread M10 SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus (7MF433 and 7MF443)	-	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
 made of steel made of stainless steel 	7MF4997-1AD 7MF4997-1AK	Sealing ring for process connection	see "Fittings"
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 Fieldbus (7MF453)		Weldable sockets for PMC connection • PMC Style Standard: Thread 1½" • PMC Style Minibolt: front-flush 1" Gaskets for PMC connection (packing unit = 5 units)	7MF4997-2HA 7MF4997-2HB
made of steel made of stainless steel	7MF4997-1AE 7MF4997-1AL	 PTFE seal for PMC Style Standard: Thread 1½" Gasket made of Viton for PMC Style Minibolt: 	7MF4997-2HC 7MF4997-2HD
Mounting and fastening brackets For differential and absolute pressure transmit- ters 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) • made of steel • made of stainless steel	7MF4997-1AF 7MF4997-1AM	front-flush 1" Weldable socket for TG52/50 and TG52/150 connection • TG52/50 connection • TG52/150 connection Seals for TG 52/50 and TG 52/150 made of silicone (FDA compliant)	7MF4997-2HE 7MF4997-2HF 7MF4997-2HG
Cover made of die-cast aluminum, including gasket,		Seals for flange connection with front-flush diaphragm Material FPM (Viton), 10 units	
for SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus • without window	7MF4997-1BB	 DN 25, PN 40 (M11) DN 25, PN 100 (M21) 1", class 150 (M40) 1", class 300 (M45) 	7MF4997-2HH 7MF4997-2HJ 7MF4997-2HK 7MF4997-2HL
• with window	7MF4997-1BE	 Available ex stock 	
Cover made of stainless steel, including gasket, for SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus • without window • with window	7MF4997-1BC 7MF4997-1BF	- Availabie en Sluch	
Digital indicator Including mounting material for SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus	7MF4997-1BR		
Measuring point label • without inscription (5 units) • Printed (1 unit)	7MF4997-1CA 7MF4997-1CB-Z		

7MF4997-1CB-Z

Y..:

Data according to Y01 or Y02, Y15, Y16 and Y99 (see "Pressure transmitters")

• Printed (1 unit)

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III Accessories/Spare Parts

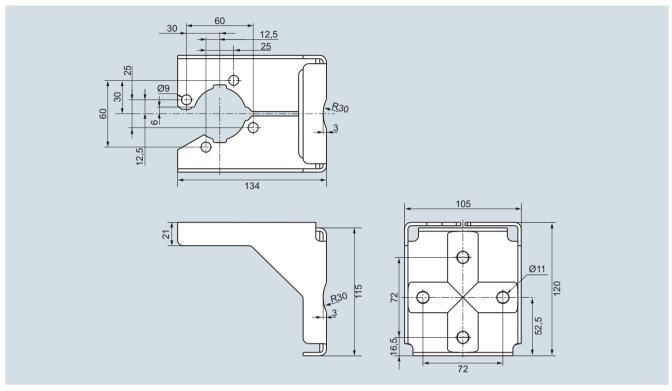
ANS P DS III Accessories/Spare

 Power supply units see Chap. 7 "Supplementary Components".
 1) You can download these operating instructions free-of-charge from our Internet site at www.siemens.com/sitransp. 1

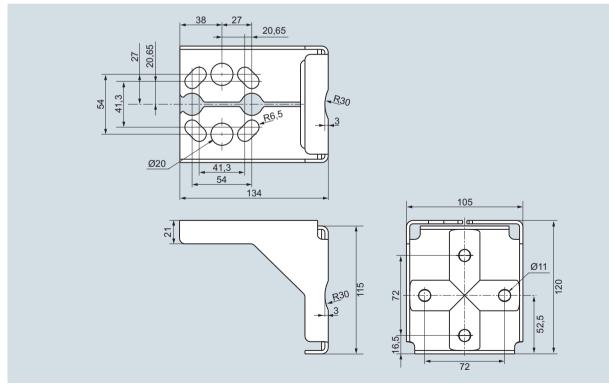
Transmitters for applications with advanced requirements (Advanced)

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)

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Pressure Measurement

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.

Selection and Ordering data

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

La Som	Add "-Z" to the Article No. of the transmitter and add order codes.	Order code
and the	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 certi- fied 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

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.

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

A SC BA	Add "-Z" to the Article No. of the transmitter and add order codes.	Order code
	SITRANS P DSIII 7MF4032, 7MF4232, 7MF4033, 7MF4233, 7MF4034, 7MF4234	Т06
	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

1 11	Add -Z to the Article No. of the transmitter and add Order codes	Order code
(a)	SITRANS P DSIII 7MF4031, 7MF4231	т03
	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

7MF9011-4EA

valve manifold on relative and absolute pressure transmitters



Add -Z to the Article No. of the transmitter Order and add Order codes code SITRANS P DSIII T02 7MF403.-...0.-..., 7MF423.-...0.-... with process connection collar G1/2 A to EN 837-1 with gasket made of PTFE between valve manifold and transmitter Alternative sealing material: Soft iron A70 • Stainless steel, Mat. No. 14571 A71 A72 • copper 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 A02 with the transmitter) Supplied acceptance test certificate to C12 EN 10204- 3.1 for transmitters and mounted valve manifold With manufacturer declaration according D07 to NACE, MR-0175

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
e -en	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

C.C.	Add -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 • Stainless steel Delivery incl. high-pressure test certified by test report to EN 10204-2.2	U03 U04
	Further designs:	
	Delivery includes mounting bracket and mounting clips made of • Steel	A01
	• 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

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

Transmitters for applications with advanced requirements (Advanced)

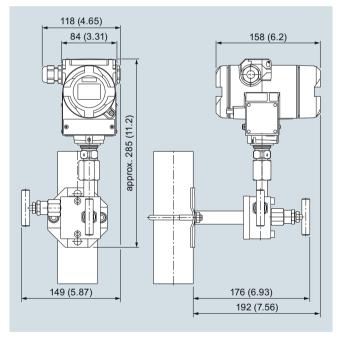
SITRANS P DS III - Factory-mounting of valve manifolds on transmitters

Dimensional drawings

Valve manifolds mounted on SITRANS P DS III



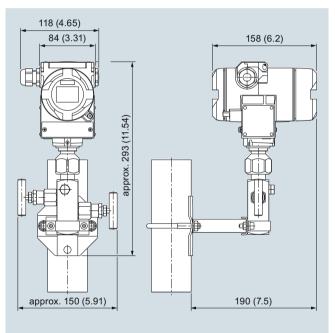
7MF9011-4EA valve manifold with mounted gauge pressure and absolute pressure transmitters



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



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



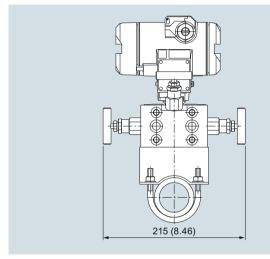
7MF9011-4FA valve manifold with mounted gauge pressure and absolute pressure transmitters, dimensions in mm (inch)

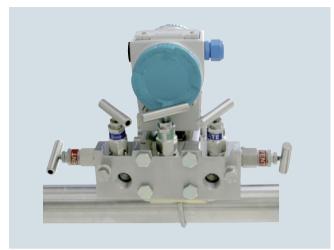
Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III - Factory-mounting of valve manifolds on transmitters

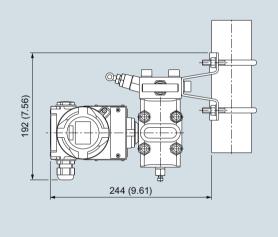


7MF9411-5BA valve manifold with mounted differential pressure transmitter

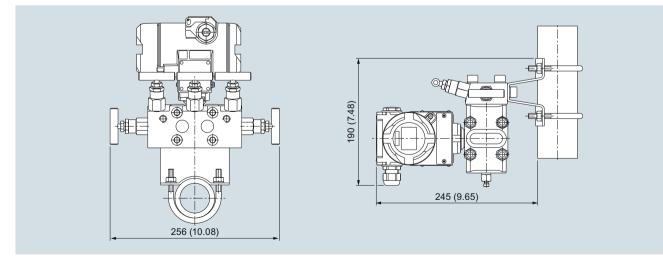




7MF9411-5CA valve manifold with mounted differential pressure transmitter



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)