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 ~ $\sqrt{\Delta p}$ (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).

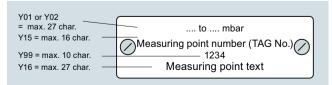
The approval label is located on the opposite side.

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



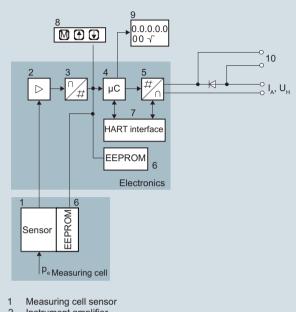
Design

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III - Technical description

Function

Operation of electronics with HART communication



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

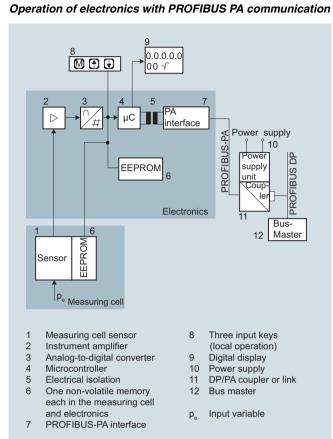
The diode circuit (10) protects against incorrect polarity.

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.



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.

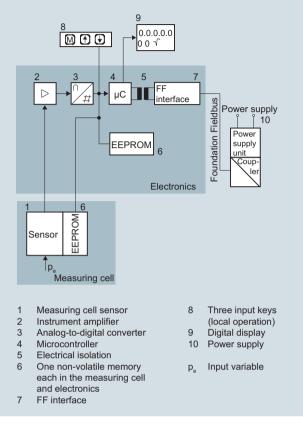
Using the three input buttons (8) you can parameterize the pressure transmitter directly at the measuring point. The input buttons can also be used to control the view of the results, the error messages and the operating modes on the display (9).

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

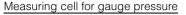
The bridge output voltage created by the sensor (1, Figure "Function diagram of electronics") is amplified by the measuring amplifier (2) and digitized in the analog-to-digital converter (3). The digital information is evaluated in the microcontroller, its linearity and temperature response corrected,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

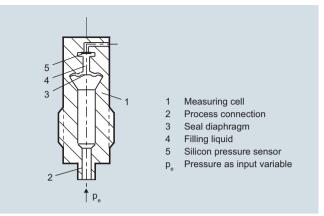
The data specific to the measuring cell, the electronics data, and the parameter data are stored in the two non-volatile memories (6). The one memory is coupled to the measuring cell, the other to the electronics. As the result of this modular design, the electronics and the measuring cell can be replaced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

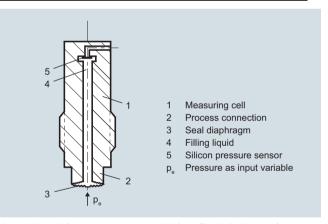




Measuring cell for gauge pressure, function diagram

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



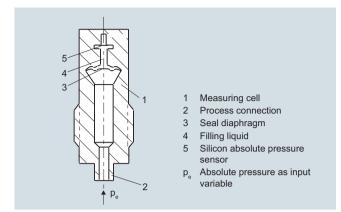
Measuring cell for gauge pressure, with front-flush diaphragm for paper industry, function diagram

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)

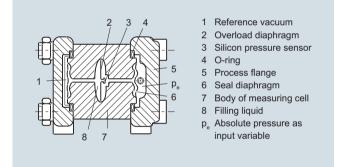
Measuring cell for absolute pressure from gauge pressure series



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

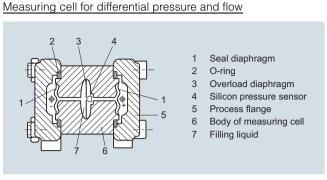


Measuring cell for absolute pressure from differential pressure series, function diagram

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 $\ensuremath{\mathsf{p}_{e}}$ 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.



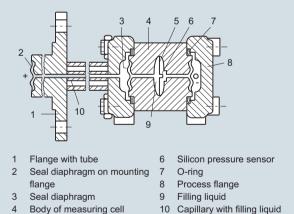
Measuring cell for differential pressure and flow, function diagram

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



- 5
- - Overload diaphragm
- Body of measuring cell
- 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

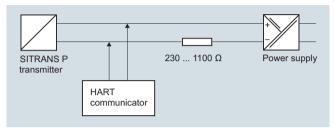
Depending on the version, there are a range of options for parameterizing the pressure transmitter and for setting or scanning the parameters.

Parameterization using the input buttons (local operation)

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

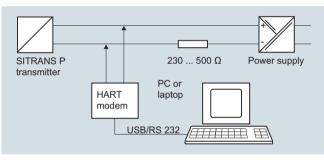
Parameterization using HART

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 (DS III HART)	HART communication
Start of scale	x	х
Full-scale value	x	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		х
¹⁾ Cancel apart from write protection		

Diagnostic functions for DS III with HART

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

Available physical units of display for DS III with HART

Table style: Technical specifications 2

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

Parameterization through PROFIBUS PA interface

Fully digital communication through PROFIBUS PA, profile 3.0, is particularly user-friendly. Through the PROFIBUS the DS III with PROFIBUS PA is connected to a process control system, e. g. SIMATIC PSC 7. Communication is possible even in a potentially explosive environment.

For parameterization through PROFIBUS you need suitable software, e.g. SIMATIC PDM (Process Device Manager).

Parameterization through FOUNDATION Fieldbus interface

Fully digital communication through FOUNDATION Fieldbus is particularly user-friendly. Through the FOUNDATION Fieldbus the DS III with FOUNDATION Fieldbus is connected to a process control system. Communication is possible even in a potentially explosive environment.

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

Adjustable parameters for DS III with PROFIBUS PA and FOUNDATION Fieldbus

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

Cancel apart from write protection
 Only differential pressure

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- 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 energiantics				
Technical specifications				
SITRANS P, DS III series for gauge pressure				
Input				
Measured variable	Gauge pressure		1	
Span (fully adjustable) or measuring range, max. operating pressure (in accordance with 2014/68/EU Pressure Equipment Directive) and max. test pressure (pursuant to DIN 16086)	HART	PROFIBUS PA/ FOUNDATION Fieldbus		
(for oxygen measurement, max. 100 bar/10 MPa/1450 psi and 60 °C (140 °F) ambient temperature/process temperature)	Span	Nominal measuring range	Max. operating pres- sure MAWP (PS)	Max. perm. test pressure
	8.3 250 mbar 0.83 25 kPa 0.12 3.6 psi	250 mbar 25 kPa 3.6 psi	4 bar 400 kPa 58 psi	6 bar 600 kPa 87 psi
	0.01 1 bar 1 100 kPa 0.15 14.5 psi	1 bar 100 kPa 14.5 psi	4 bar 400 kPa 58 psi	6 bar 600 kPa 87 psi
	0.04 4 bar 4 400 kPa 0.58 58 psi	4 bar 400 kPa 58 psi	7 bar 0.7 MPa 102 psi	10 bar 1 MPa 145 psi
	0.16 16 bar 16 1600 kPa 2.3 232 psi	16 bar 1600 kPa 232 psi	21 bar 2.1 MPa 305 psi	32 bar 3.2 MPa 464 psi
	0.63 63 bar 63 6300 kPa 9.1 914 psi	63 bar 6300 kPa 914 psi	67 bar 6.7 MPa 972 psi	100 bar 10 MPa 1450 psi
	1.6 160 bar 0.16 16 MPa 23 2321 psi	160 bar 16 MPa 2321 psi	167 bar 16.7 MPa 2422 psi	250 bar 25 MPa 3626 psi
	4 400 bar 0.4 40 MPa 58 5802 psi	400 bar 40 MPa 5802 psi	400 bar 40 MPa 5802 psi	600 bar 60 MPa 8702 psi
	7 700 bar 0.7 70 MPa 102 10153 psi	700 bar 70 MPa 10153 psi	800 bar 80 MPa 11603 psi	800 bar 80 MPa 11603 psi
Lower measuring limit			I.	I
(for 250mbar/25 kPa/3.6 psi measuring cells, the lower mea- suring 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 	30 mbar a/3 kPa a/0	.44 psia		
 Measuring cell with inert filling liquid 	30 mbar a/3 kPa a/0	.44 psia		
Upper measuring limit		(max. 100 bar/10 MPa e/process temperatur		measurement)
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	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		-	
With HART	$R_{\rm B} = 230 \dots 500 \ \Omega \ ({ m S} R_{\rm B} = 230 \dots 1100 \ \Omega \ ({ m S} R_{\rm B} = 230 \dots 1100 \ \Omega \ ({ m S} R_{\rm B} = 230 \dots 1100 \ \Omega \ ({ m S} R_{\rm B} = 230 \dots 1100 \ \Omega \ ({ m S} R_{\rm B} = 230 \dots 1100 \ \Omega \ ({ m S} R_{\rm B} = 230 \dots 1100 \ \Omega \ ({ m S} R_{\rm B} = 230 \dots 1100 \ \Omega \ ({ m S} R_{\rm B} = 230 \dots 1100 \ \Omega \ ({ m S} R_{\rm B} = 230 \dots 1100 \ \Omega \ ({ m S} R_{\rm B} = 230 \dots 1100 \ \Omega \ ({ m S} R_{\rm B} = 230 \ \dots 1100 \ \Omega \ ({ $	IMATIC PDM) bzw. HART-Communicator)	-	
Physical bus	-		IEC 61158-2	
Protection against polarity reversal		nort-circuit and polarit ainst the other with m		

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

Electrical damping (step width 0.1 s)

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for gauge pressure

Measuring accuracy	Acc. to IEC 6077	0-1
Reference conditions	Stainless steelSilicone oil fillin	alue 0 bar/kPa/psi seal diaphragm
Measuring span ratio r (spread, Turn-Down)	r = max. measur	ing 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	$\leq (0.16 \cdot r + 0.1)^{-1}$	%
• 1 bar/100 kPa/3.6 psi	$\leq (0.05 \cdot r + 0.1)^{-1}$	%
 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 + 0.1:	25) %
• 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	year
• 1 bar/100 kPa/3.6 psi 4 bar/400 kPa/58 psi	≤ (0.25 · 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 years
• 700 bar/70 MPa/10152 psi	\leq (0.25 \cdot r) % in 5	b years
Effect of mounting position		5 kPa/0.000725 psi per 10° inclination ction is possible with position error compensation)
Effect of auxiliary power supply (in percent per change in voltage)	0.005 % per 1 V	
Measuring value resolution for PROFIBUS PA and FOUNDATION Fieldbus	$3 \cdot 10^{-5}$ of nomina	al measuring range

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Transmitters for applications with advanced requirements (Advanced)

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	-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
Design		
Weight (without options)	Die-cast aluminum: \approx 2.0 kg (\approx 4.4 k Stainless steel precision casting: \approx	b) 4.6 kg (≈ 10.1 lb)
Enclosure material	Low-copper die-cast aluminum, GD mat. no. 1.4408	D-AISi 12 or stainless steel precision casting,
Wetted parts materials		
Connection shank	Stainless steel, mat. no. 1.4404/316	
• Oval flange	Stainless steel, mat. no. 1.4404/316	
Seal diaphragm	, , , , , , , , , , , , , , , , , , , ,	L or Hastelloy C276, mat. no. 2.4819
Measuring cell filling	Silicone oil or inert filling liquid (maximum value with oxygen measu (140 °F))	urement pressure 100 bar (1450 psi) at 60 °C
Process connection		837-1, female thread ½ -14 NPT or oval flang 9213 with mounting thread M10 or 7 / ₁₆ -20 U
Material of mounting bracket		
Steel	Sheet-steel, Mat. No. 1.0330, chrom	ne-plated
Stainless steel	Sheet stainless steel, mat. no. 1.430	01 (SS 304)
Power supply $\textit{U}_{ m H}$	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
With intrinsically-safe operation	-	9 24 V
Current consumption		
Basic current (max.)	-	12.5 mA
 Start-up current ≤ basic current 	-	Yes
Max. current in event of fault	-	15.5 mA
Fault disconnection electronics (FDE) available	-	Yes

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for gauge pressure

		IRANS P DS III for gauge pressure
SITRANS P, DS III series for gauge pressure	HART	PROFIBUS PA/ FOUNDATION Fieldbus
Certificates and approvals		
Classification according to PED 2014/68/EU	For gases of fluid group 1 and liquids of f article 4, 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: $U_i = 30 \text{ V}, l_i = 100 \text{ mA},$ $P_i = 750 \text{ mW}; P_i = 300 \Omega$	FISCO supply unit: $U_0 = 17.5$ V, $I_0 = 380$ mA, $P_0 = 5.32$ W Linear barrier: $U_0 = 24$ V, $I_0 = 174$ 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) temperatu -40 +60 °C (-40 +140 °F) temperatu	
- 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: $U_0 = 17.5$ 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 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: $U_{\rm i} = 45 \ {\rm V}$	FISCO supply unit ic: $U_0 = 17.5 \text{ V}, I_0 = 570 \text{ mA}$ Linear barrier:
Effective internel industry of langesitered		$U_{\rm o} = 32$ V, $I_{\rm o} = 132$ mA, $P_{\rm o} = 1$ W $L_{\rm i} = 7$ µH, $C_{\rm i} = 1.1$ nF
- Effective internal inductance/capacitance	$L_i = 0.4 \text{ mH}, C_i = 6 \text{ nF}$	$L_{i} = I \mu \Pi, C_{i} = 1.1 \Pi F$
• Explosion protection acc. to FM	Certificate of Compliance 3008490	
- Identification (XP/DIP) or (IS); (NI)	T4T6; CL I, DIV 2, GP ABCD T4T6; C	1, GP EFG; CL III; CL I, ZN 0/1 AEx ia IIC L 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, GI	1, GP EFG; CL III; Ex ia IIC T4T6; CL I, P FG; CL III

Transmitters for applications with advanced requirements (Advanced)

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 	Tuncton block Tib
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	- Simulation function	Output/input (can be locked within the device with a bridge)
Cyclic data usage	126)	- 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	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 tem- 	Constant value or over parame- terizable ramp function
- Limit monitoring	Yes, one upper and lower warn- ing limit and one alarm limit respectively	perature and electronics tem- perature	
Register (totalizer)	Can be reset, preset, optional direction of counting, simulation function of register output		
- Failure mode	parameterizable (summation with last good value, continuous summation, summation with incorrect value)		
- Limit monitoring	One upper and lower warning limit and one alarm limit respec- tively		
Physical block	1		
Transducer blocks	2		
 Pressure transducer block 			
 Can be calibrated by applying 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 gauge pressure

Selection and Orderin	g data	Artic	le No.		Selection and Ordering data	
ressure transmitter f		7 M F	4033-	Ī	Pressure transmitter for gauge pressure,	
ITRANS P DS III with	HART				SITRANS P DS III with HART	
Click on the Article N ration in the PIA Life	No. for the online configue Cycle Portal.				Explosion protection	•
leasuring cell filling	Measuring cell clean- ing	•		•	 With ATEX, Type of protection: "Intrinsic safety (Ex ia)" 	
ilicone oil	normal	▶ ♦ 1			- "Explosion-proof (Ex d)" ⁷⁾	
ert liquid ¹⁾	grease-free to cleanliness level 2	3			 "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)^{*8)} 	•
easuring span (min.	max.)				- "Ex nA/ic (Zone 2)" ⁹⁾	•
3.3 250 mbar	(0.12 3.6 psi)	• A			- "Intrinsic safety, explosion-proof enclosure	
0.01 1 bar	(0.15 14.5 psi)	► B			and dust explosion protection (Ex ia + Ex d + Zone 1D/2D) ^{*8)10)}	F
0.04 4 bar	(0.58 58 psi)	► C			• FM + CSA intrinsic safe (is) ¹¹⁾	
16 16 bar	(2.32 232 psi)	► D				
.63 63 bar	(9.14 914 psi)	► 🖢 E			• FM + CSA (is + ep) + Ex ia + Ex d (ATEX) + Zone 1D/2D ⁸⁾¹⁰⁾¹¹⁾	
6 160 bar	(23.2 2320 psi)	► 🕈 F			• With FM + CSA, Type of protection:	
.0 400 bar	(58.0 5802 psi)	► • G			- "Intrinsic Safe and Explosion Proof	
.0 700 bar	(102.010153 psi)	J			$(is + xp)^{(7)11}$	
Vetted parts material	s			ī	Electrical connection / cable entry	
Seal diaphragm	Process connection				Screwed gland M20 x1 .5	
Stainless steel	Stainless steel	A			Screwed gland 1/2-14 NPT	
astelloy	Stainless steel	B			Han 7D plug (plastic housing) incl. mating	
astelloy	Hastelloy	c			connector ¹²)	
	seals in conjunction with				 M12 connectors (stainless steel)¹²⁾¹³⁾ 	
rocess connector "fen	nale thread 1/2-14 NPT"			Ī	Display	
recommended versio	,				Without display	•
'ersion for diaphragm : /ith process connector hank"" ^{2) 3) 4) 5)}		Y	0	•	 Without visible display (display concealed, setting: mA) 	
					• With visible display (setting: mA)	٠
Process connection	(D to EN 027 1		0		with customer-specific display (setting as	
Connection shank G			0		specified, Order code "Y21" or "Y22" required)
Female thread 1/2-14			1		Available ex stock	
Stainless steel oval fla connection (Oval flan	ge has no female thread)	2	1	 We can offer shorter delivery times for config the Quick Ship Symbol For details see pa 	
- Mounting thread ⁷ / ₁ IEC 61518/DIN EN 6	6-20 0 NF 10 61518		2			0
- Mounting thread M1	10 to DIN 19213		3		Power supply units see Chap. 7 "Supplementar A guick-start guide is included in the scope of	-
- Mounting thread M1			4		r quier, start guide is included in the scope of	acin
 Male thread M20 x 1.4 Male thread ½ -14 NF 			5		 For oxygen application, add Order code E10. When the manufacture's certificate (calibration) 	
Non-wetted parts mat					ordered for transmitters with diaphragm seals a	ccor
Housing made of die-		F	0		is recommended only to order this certificate ex	kclus
 Housing made of dies Housing stainless ste 			3		phragm seals. The measuring accuracy of the <u>te</u> here.	otal c
	er prodicion dubinig -			3	³⁾ If the acceptance test certificate 3.1.is ordered	for th
Version	rman plata incorintian				mounted diaphragm seals this certificate must	
 Standard Version, Ge setting for pressure u 	rman plate inscription, nit: bar				respective remote seals. The diaphragm seal is to be specified with a se	
U	English plate inscription	. • •	2		The diaphragm seal is to be specified with a sea must be included with the transmitter order nur 7MF403Y and 7MF4900-1B	nber,
Chinese version, Engli	ish plate inscription,	•	3	Ę	⁵⁾ The standard measuring cell filling of configura is silicone oil.	tions
setting for pressure un				e	³⁾ Not in conjunction with Electrical connection "H	an7'
All versions include DV ng instructions in vario	D with compact operat-				⁽⁾ Without cable gland, with blanking plug	
ng manuonona in valio	us Lo la lyuayes.				³⁾ With enclosed cable gland Ex ia and blanking	
				ę) Configurations with HAN and M12 connectors a	are o

- ic.
- ¹⁰⁾ Only in connection with IPA6.
 ¹¹⁾ Explosion protection acc. to FM/CSA: suitable for installations according to NEC 500/505.
 ¹²⁾ Only in connection with Ex approval A, B or E.
- ¹³⁾ M12 delivered without cable socket

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for gauge pressure

Selection and Order	ing data	Article No.	Selection and Ordering data	Article No.
Pressure transmitter	r for gauge pressure		Pressure transmitter for gauge pressure	
SITRANS P DS III with	n PROFIBUS PA (PA)	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 0 3 5 -	SITRANS P DS III with FOUNDATION Fieldbus (FF)	7 M F 4 0 3 5 -
↗ Click on the Article	No. for the online configu-			
ration in the PIA Li	,		Explosion protection	
Measuring cell filling	g Measuring cell clean- ing		None	А
Silicone oil Inert liquid ¹⁾	normal grease-free to cleanliness level 2	1 3	 With ATEX, Type of protection: "Intrinsic safety (Ex ia)" "Explosion-proof (Ex d)"⁷⁾ 	B D
Nominal measuring	-		 "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)"⁸⁾ 	Р
250 mbar 1 bar 4 bar 16 bar 63 bar 160 bar 400 bar	(3.6 psi) (14.5 psi) (58 psi) (232 psi) (914 psi) (2320 psi) (5802 psi)	A B C D E F G	 - "Ex nA/ic (Zone 2)*9) - "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)¹¹) • FM + CSA (is + ep) + Ex ia + Ex d (ATEX) + Zone 1D/2D⁸)¹⁰(11) 	E R F S
700 bar Wetted parts materia Seal diaphragm	(10153 psi) als Process connection	J	 With FM + CSA, Type of protection: "Intrinsic Safe and Explosion Proof (is + xp)"⁷⁾¹¹⁾ 	NC
	n seals in conjunction or	В С Ү 1 Ү 0	 Screwed gland M20 x 1.5 Screwed gland ½-14 NPT M12 connectors (stainless steel)¹²⁾¹³⁾ Display Without display Without visible display (display concealed, setting: bar) 	B C F 0 1
Process connection • Connection shank G • Female thread ½-14 • Stainless steel oval	61/2B to EN 837-1 4 NPT flange with process connec- s no female thread) ⁶⁾ / ₁₆ -20 UNF to 4 61518 /10 to DIN 19213 /12 to DIN 19213 1.5	0 1 2 3 4 5 6	 With visible display (setting: bar) with customer-specific display (setting as specified, Order code "Y21" required) A quick-start guide is included in the scope of deliv ¹⁾ For oxygen application, add Order code E10. ²⁾ When the manufacture's certificate (calibration certificated for transmitters with diaphragm seals accord is recommended only to order this certificate exclusion phragm seals. The measuring accuracy of the total or here. ³⁾ If the acceptance test certificate 3.1 is ordered for the second second	icate) has to be ding to IEC 60770-2, i vely with the dia- ombination is certified ne transmitter with
Non-wetted parts ma • Housing made of di • Housing stainless st	e-cast aluminium	0 3	 mounted diaphragm seals this certificate must also l respective remote seals. The diaphragm seal is to be specified with a separa must be included with the transmitter order number, 7MF403Y and 7MF4900-1B 	te order number and for example
 setting of pressure u International version setting of pressure u Chinese version, Eng setting of pressure u 	n, English label inscription, unit: psi glish label inscription, unit: kPa IVD with compact operating	2	 ⁵⁾ The standard measuring cell filling of configurations is silicone oil. ⁶⁾ M10 fastening thread: Max. span 160 bar (2320 psi) 7/16-20 UNF and M12 fastening thread: Max. span 4 ⁷⁾ Without cable gland, with blanking plug. ⁸⁾ With enclosed cable gland Ex ia and blanking plug. ⁹⁾ Configurations with HAN and M12 connectors are or 10) Only in connection with IP66. ¹¹⁾ Explosion protection acc. to FM/CSA: suitable for inst NEC 500/505. ¹²⁾ M12 delivered without cable socket. ¹³⁾ Only in connection with Ex approval A, B, E or F. 	100 bar (5802 psi) nly available in Ex ic.

¹³⁾ Only in connection with Ex approval A, B, E or F.

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for gauge pressure

Selection and Ordering data	Order	code	_		Selection and Ordering data	Order		-
Further designs Add "- Z " to Article No. and specify Order code.		HART	PA	FF	Further designs Add "-Z" to Article No. and specify Order code.		HART	P
ressure transmitter with mounting racket (1x fixing angle, 2 x nut, 2 x U-					CRN approval Canada (Canadian Registration Number)	E22 ⁴⁾	~	~
vasher or 1 x bracket, 2 x nut, 2 x U- vasher) made of:					Dual seal	E24	1	~
Steel	• A01	✓	✓	1	Explosion-proof "Intrinsic safety" (Ex ia)	E25 ⁵⁾	1	~
Stainless steel 304	A02	✓	✓	✓	to INMETRO (Brazil)			
Stainless steel 316L	A03	~	~	~	(only for transmitter 7MF4B)			
Plug • Han 7D (metal)	A30	~			"Flameproof" explosion protection according to INMETRO (Brazil)	E26 ⁵⁾	✓	~
Han 8D (instead of Han 7D)	A31	~			(only for transmitter 7MF4D)			
• Angled • Han 8D (metal)	A32 A33	√ √			Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil)	E28 ⁵⁾	✓	~
Cable sockets for M12 connectors (metal (CuZn))	A50	~	~	~	(only for transmitter 7MF4P)			
Rating plate inscription					Ex Approval IEC Ex (Ex ia) (only for transmitter 7MF4B)	E45 ⁵⁾	~	~
English	• B11	1	1	1	Ex Approval IEC Ex (Ex d)	E46 ⁵⁾	1	1
• French	 B12 	1	1	1	(only for transmitter 7MF4D)			
Spanish	• B13	✓	1	1	Explosion-proof "Intrinsic safety" to	E55 ⁵⁾	1	1
Italian	• B14	✓	✓	1	NEPSI (China)			
• Cyrillic (russian)	B16	✓	1	~	(only for transmitter 7MF4B)			
English rating plate Pressure units in inH ₂ 0 and/or psi	 B21 	~	~	~	Explosion protection "Explosion-proof" to NEPSI (China)	E56 ⁵⁾	~	~
Quality Inspection Certificate (5-point	C11	✓	1	1	(only for transmitter 7MF4D)			
characteristic curve test) according to EC 60770-2 ¹⁾	- •				Ex protection "Zone 2" to NEPSI (China) (only for transmitter 7MF4E)	E57 ⁵⁾	✓	~
I nspection certificate²⁾ Acc. to EN 10204-3.1	• C12	~	✓	~	Ex protection "Ex ia", "Ex d" and	E58 ⁵⁾	~	~
Factory certificate	• C14	~	~	~	"Zone 2" to NEPSI (China) (only for transmitter 7MF4R)			
Acc. to EN 10204-2.2					"Intrinsic safety" and "Explosion-proof"	E70 ⁵⁾	✓	√
Acceptance certificate (EN 10204-3.1) PMI test of parts in contact with medium	C15	~	~	~	explosion protection acc. to Kosha (Korea) (only for transmitter			
Functional safety (SIL2)	C20	~			7MF4[B, D]Z + E11)			
Devices suitable for use according to EC 61508 and IEC 61511. Includes SIL					Ex-protection Ex ia according to EAC Ex (Russia)	E80	~	1
conformity declaration Functional safety (PROFIsafe)	C21 ³⁾		~		(only for transmitter 7MF4B) Ex-protection Ex d according to EAC Ex	E81	~	~
Certificate and PROFIsafe protocol					(Russia)			
Functional safety (SIL2/3) Devices suitable for use according to	• C23	~			(only for transmitter 7MF4D) Ex-protection Ex nA/ic (Zone 2) according	E82	1	~
EC 61508 and IEC 61511. Includes SIL conformity declaration					to EAC Ex (Russia) (only for transmitter 7MF4E)			
PED for Russia with initial calibration mark	C99	1	~	1	Ex-protection Ex ia + Ex d + Zone 1D/2D according to EAC Ex (Russia)	E83	1	1
Setting of the upper saturation limit of the output signal to 22.0 mA	D05	•			(only for transmitter 7MF4R)	0/5	,	
Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009)	D07	1	~	~	Two coats of lacquer on casing and cover (PU on epoxy)	G10	1	1
Degree of protection IP66/IP68	D12	~	~	~	Transient protector 6 kV (lightning pro- tection)	J01	~	1
only for M20x1.5 and ½-14 NP1) Supplied with oval flange	D37	1	~	~	Process connection Astava	J06	1	1
1 item), PTFE packing and screws in hread of oval flange								
Capri cable gland 4F CrNi and clamping device (848699 + 810634) included	D59	1	1	✓				
Jse in or on zone 1D/2D	E01	✓	~	~				
only together with type of protection Intrinsic safety" (transmitter 7MF4B Ex ia)" and IP66)	201							
Dxygen application	E10	1	1	1				
In the case of oxygen measurement and nert liquid max. 100 bar (1450 psi) at 60°C 140 °F))	210	Ţ	•	•				
		,						
Export approval Korea	E11	✓	~	v				

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Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for gauge pressure

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

We can offer shorter delivery times for configurations designated with ٠ the Quick Ship Symbol . For details see page 10/11 in the appendix.

- 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) Cannot be ordered with remote seal.
- ⁵⁾ Option does not include ATEX approval, but instead includes only the country-specific approval.

Selection and Ordering data	Order	code		
Additional data Please add "- Z " to Article No. and specify Order code(s) and plain text.		HART	PA	FF
Measuring range to be set Specify in plain text (max. 5 characters):	Y01	1	√ 1)	
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 ²⁾	~	~	~
Y15:		,	,	,
variable)	Y16	v	v	v
Max. 27 characters, specify in plain text: Y16:				
Entry of HART address (TAG)	Y17	✓		
Max. 8 characters, specify in plain text: Y17:				
Setting of pressure indication in pres-	Y21	~	✓	✓
Specify in plain text (standard setting: bar): Y21: mbar, bar, kPa, MPa, psi, Note:				
The following pressure units can be selected:				
bar, mbar, mm H ₂ O ^{*)} , inH ₂ O ^{*)} , ftH ₂ O ^{*)} , mmHG, inHG, psi, Pa, kPa, MPa, g/cm ² , kg/cm ² , Torr, ATM or % *) ref. temperature 20 °C				
Setting of pressure indication in non-pressure units ³⁾	Y22 + Y01	1		
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)				
Preset bus address possible between 1 and 126 Specify in plain text: Y25:	Y25		~	1
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 10/11 in the appendix.

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

 \checkmark = available

Ordering example

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

Measuring accuracies for PROFIBUS PA transmitters with Option Y01 are calculated in the same way as for HART devices.
 If you do not wish to have any text engraved for Y15, then do not make any further text entries as "Y15:".

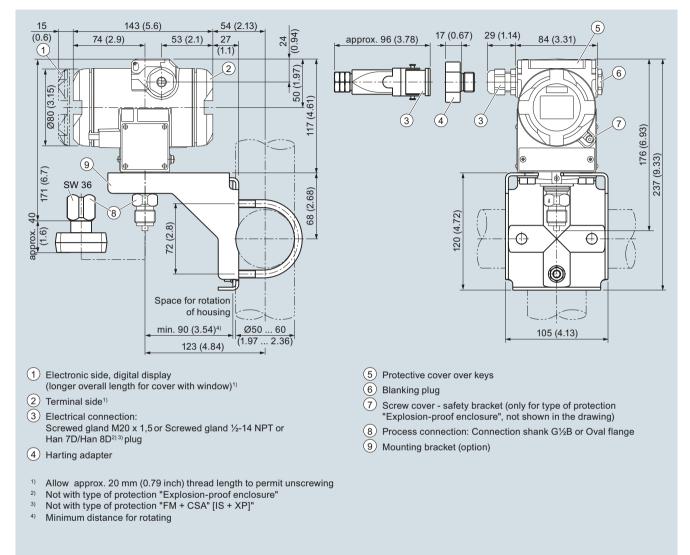
³⁾ Preset values can only be changed over SIMATIC PDM.

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 dia-phragm seals. The measuring accuracy of the <u>total</u> combination is certified here.

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 a	a/1.45 psia		
 Measuring cell with inert filling liquid 	100 mbar a/10 kPa a			
 Measuring cell with Neobee 	100 mbar a/10 kPa a			
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. 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
	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 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
	Depending on the p	rocess connection, th	e span may differ fror	m these values
Lower measuring limit	0 mbar a/0 kPa a/0			
Upper measuring limit	100 % of max. span			
Output	HART		PROFIBUS PA/FOU	
Output signal	4 20 mA		Fieldbus signal	A and FOUNDATION
Lower limit (infinitely adjustable)	3.55 mA, factory pre		-	
Upper limit (infinitely adjustable)	23 mA, factory preset to 20.5 mA or optionally set to 22.0 mA			
Without HART	$R_{\rm B} \leq (U_{\rm H} - 10.5 \text{ V})/0.023 \text{ A in }\Omega,$ $U_{\rm H}$: Power supply in V		-	
• With HART	$R_{\rm B} = 230 \dots 500 \Omega$ (3)		-	
Physical bus	-		IEC 61158-2	
Protection against polarity reversal	Protected against sh other with max. supp	nort-circuit and polarit oly voltage.	y reversal. Each conr	nection against the

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

Electrical damping (step width 0.1 s)

Transmitters for applications with advanced requirements (Advanced)

SITEANS P DS III for gauge // backute pressure, with front-flush diaphragm SITEANS P DS III series for gauge and absolute pressure. Actor INF ENT/101 Reserving exercisions (All or or data roler always refer to the set span) Actor INF ENT/101 Preserving gauge table roler (spand, Turn Down)	Transmitters	s for applications with advan	ced requirements (Advanced)			
Description of control into a set of an intervention of control into a set of a	SITRAI	NS P DS III for gauge/absolute pro	essure, with front-flush diaphragm			
Bateman Increasing characteristic Summary probability in the set span in the set span in the set span in the set of spin spin set set set of dipping meaning spin spin set on rom, pressure range Measuing spin ratio r (spined, Turn-Down) r = max. measures spin spin set set set of dipping meaning spin spin set on rom, pressure range - Inserved and the set spin in the set spin in the set spin in the set spin spin set set set set of dipping meaning spin spin set	SITRANS P DS III series for gauge and absolute pressure, v	with front-flush diaphragm				
(All error dual roler always roler to the sol span) earnors are solar and algoring and solar dual role always roler to the sol span)Salardo Salar dual dual roler always roler to the sol span) earnors are solar and algoring and the solar span of non. piesaure range income to the solar span of non. piesaure range 	Measuring accuracy	Acc. to IEC 60770-1				
monomeasurement at limit setting incl. Gauge pressure, front-flush Absolute pressure, front-flush - 1:5 3 COU75 % COU75 % - 1:5 1 COU75 % COU75 % - 1:6 1:5 2 COU75 % COU75 % - 1:6 1:5 2 COU75 % COU75 % - 1:0 1:5 2 COU55 % COU55 % - 1:0 1:5 2 COU55 % COU55 % - 1:0 1:5 2 COU55 % per 1 V COU55 % per 1 V - Componeture Councerion is possible with position error compensition) COU55 % per 1 V - Measuring coll with silicon and		 Start-of-scale value 0 bar/kPa/psi Stainless steel seal diaphragm Silicone oil filling 				
hysteres Secure characteristic Secure pressure, front-flush Absolute pressure, front-flush - r c s 1 0.075 % - - - s c r s 100 - 0.025 % - - r c s 100 - 0.025 % - - r c s 100 - 0.025 % - - r c s 100 - 0.025 % - - r c s 100 - 0.025 % - - r c s 100 - 0.025 % - - r c s 100 - 0.025 % - - r c s 100 - 0.025 % - - r c s 20 (50 °F) - - - - r c s 20 (50 °F) - - - - r c s 20 contrasteristics - - - - r c s 20 contrasteristics - - - - r c s 20 contrasteristics - - - - r c s 20 contrasteristics - - - - r c s 20 contrasteristics - - - - r c s 20 contra	Measuring span ratio r (spread, Turn-Down)	r = max. measuring span/set measuring	span or nom. pressure range			
• Lease obtancelesitioGauge pressure, front-flushAbsolute pressure, front-flush- r < 5 0< 0.075 %< 0.075 %- r < 5 10< 0.075 %< 0.2 %- r < 5 10< 0.05 · r + 0.50 %< 0.4 %Influence of ambient temperature (in pressure particle change)< 0.06 · r + 0.16) %< 0.016 · r + 0.24) %Influence of ambient temperature (in pressure particle change)Smbar0.3 kPa0.04 psi per 10 KComparison time pressure of temperature change)Smbar0.3 kPa0.04 psi per 10 KComparison time pressure part temperature (in pressure part temperature change)Ambar0.04 kPa0.006 per 10° indination (zo zo r) % in 5 yearsEffect of ambient temperature (in pressure part change in wolfge)Authar0.04 kPa0.006 per 10° indination (zo no possible with possibl						
$ \begin{array}{c c c c } + r \le 5 \\ < 0.075 \ \% \\ < 0.005 \ r + 0.05) \ \% \\ < r \le 10 \\ + 0 \le r \le 20 \\ (0.05 \ r + 0.05) \ \% \\ < r \le 0.2 \ \% \\ < 0.2 \ \% \\ < 0.08 \ r + 0.16) \ \% \\ < 0.08 \ r + 0.16) \ \% \\ < 0.08 \ r + 0.16) \ \% \\ < 0.08 \ r + 0.16) \ \% \\ < 0.08 \ r + 0.16) \ \% \\ < 0.08 \ r + 0.16) \ \% \\ < 0.08 \ r + 0.16) \ \% \\ < 0.08 \ r + 0.16) \ \% \\ < 0.08 \ r + 0.16) \ \% \\ < 0.08 \ r + 0.16) \ \% \\ < 0.08 \ r + 0.16) \ \% \\ < 0.08 \ r + 0.16) \ \% \\ < 0.08 \ r + 0.16) \ \% \\ < 0.08 \ r + 0.16) \ \% \\ < 0.08 \ r + 0.16) \ \% \\ < 0.08 \ r + 0.16) \ \% \\ < 0.08 \ r + 0.024) \ \% \\ $		Course avecourse fromt fluch				
- 5 c r < 100< (0.005 · r + 0.05) %< < < 0 2 %- 10 c r < 00< < < < < 0 2 %< < < 0 4 %Inhues of ambient temperature (in percent pre 28 / G9 (F))< (0.08 · r + 0.16) %< (0.16 · r + 0.24) %Iffeet dambont temperature (in percent pre 28 / G9 (F))S mbar/0.3 kPa/0.04 psi per 10 KIffeet dambont temperature (in percent pre 28 / G9 (F))S mbar/0.3 kPa/0.04 psi per 10 KIffeet dambont temperature temperature and antibient temperature temperature and antibient temperatureS mbar/0.3 kPa/0.04 psi per 10 KIffeet damouting position (in pressure per change is 20 °C (±54 °F))< (0.25 · 1) % in 5 yearsIffeet damouting position (in pressure per change is 20 °C (±54 °F))< (0.25 · 1) % in 5 yearsIffeet damouting position (in pressure per change is 20 °C (±54 °F))< < < 0.05 % par 1 VMeasuring value resolution for FPOFIBUS PA and (DVDNAT/ON Feetbas)O 0.05 % par 1 VMeasuring cell with sitione all- < < - < - < 0.05 % par 1 VMeasuring cell with sitione all- < - < - < 0.05 % par 1 VMeasuring cell with sitione all- < - < - < 0.05 % par 1 VMeasuring cell with sitione all- < < - < - < 0.05 % par 1 VMeasuring cell with sitione all- < < - < - < 0.05 % par 1 VInstallation conditions- < - < - - 		•	-			
$ \begin{array}{cccc} -r \le 10 & - & & < \le 0.2 \ \% & \\ - & 0 < r \le 30 & & < < 0.4 \ \% & \\ - & 0 < r \le 30 & & < < 0.4 \ \% & \\ - & 0 < r \le 30 & & \\ - & 0 & & < < 0.4 \ \% & \\ - & 0 & & < < 0.4 \ \% & \\ - & 0 & & < < 0.4 \ \% & \\ - & 0 & & < < 0.4 \ \% & \\ - & 0 & & < < 0.4 \ \% & \\ - & 0 & & < < 0.4 \ \% & \\ - & 0 & & < < 0.4 \ \% & \\ - & 0 & & < < 0.4 \ \% & \\ - & 0 & & - & 0 & \\ - & 0 & - & 0 & & < \\ - & 0 & - & 0 & & < \\ - & 0 & - & 0 & & \\ $						
- 10 < r ≤ 30		≤ (0.003 · 1 + 0.03) %	-			
Influence of ambient emperature (in presence per temperature change) $\leq (0.06 \cdot r + 0.16) \%$ $\leq (0.16 \cdot r + 0.24) \%$ Effect of ambient temperature (in presence per temperature change) $3 mbar/0.3 kPa/0.04 pai per 10 k$ Temperature difference between medium temperature and ambient temperature $3 mbar/0.3 kPa/0.04 pai per 10 k$ Effect of anothing persition (in pressure per change in another (in pressure per change in voltage) $(0.25 \cdot t) \%$ in 5 yearsEffect of auxiliary power supply (in present per change in voltage) 0.056% per 1 VEffect of auxiliary power supply (in present per change in voltage) 0.056% per 1 VEffect of auxiliary power supply (in present per change in voltage) 0.056% per 1 VEffect of auxiliary power supply (in present per change in voltage) 0.056% per 1 VEffect of auxiliary power supply (in present per change in voltage) 0.056% per 1 VEffect of auxiliary power supply (in present per change in voltage) 0.056% per 1 VEffect of auxiliary power supply (in present per change in voltage) 0.056% per 1 VEffect of auxiliary power supply (in present per change in voltage) 0.056% per 1 VEffect of auxiliary power supply (in present per change in voltage) 0.056% per 1 VEffect of auxiliary power supply (in present per change in voltage) 0.056% per 1 VEffect of auxiliary power supply (in present per change in voltage) 0.056% per 1 VEffect of auxiliary power supply (in present per change in voltage) 0.056% per 1 VEffect of auxiliary power supply (in present per change in voltage)<		-				
(in percent per 28 °C (60 °F))Interpretation (PRG) (20 °F)Effect of anyline temperature (Impressure per temperature ofmange)3 mbar0.3 kPal0.04 pai per 10 KLong-term stability (temperature ofmange ± 30 °C (± 54 °F)) $4(0.25 \cdot 1)$ % in 5 yearsEffect of auxiliary power supply (in percent per change in voltage) 0.05 % per 1 VMeasuring value resolution for PROFIBUS PA and FOUNDATION Fieldbas $3 \cdot 10^{-6}$ of nominal measuring range Fated conditions (massuring value resolution for PROFIBUS PA and FOUNDATION Fieldbas 0.05 % per 1 VMeasuring value resolution for PROFIBUS PA and FOUNDATION Fieldbas $0.1 + 85 \cdot C(14 \dots + 185 \cdot T)$ Anbient temperature (Massuring value was under the second seco		-				
(in presure part temperature change)Mata/0.3 kPu0.04 psi per 10 K1 cmperature and ambient temperature3 mba/0.3 kPu0.04 psi per 10 K1 cmperature and ambient temperature4 (0.25 r) % in 5 years1 cmperature and ambient temperature4 (0.4 mba/0.04 kPu0.06 per 10° inclination (zero point correction is possible with position error compensation)1 cmperature and ambient temperature0.005 % per 1 V1 cmperature or change in voltage)0.005 % per 1 V1 measuring value resolution for PROFIBUS PA and3 · 10 ⁵ of nominal measuring range1 cmperature0.005 measure2 cmu0 temperature0.005 measure1 mstallation conditions- 40 + 85 °C (40 + 185 °F)1 measuring cell with solicon oil- 40 + 85 °C (40 + 185 °F)1 Measuring cell with solicon oil- 40 + 85 °C (40 + 185 °F)1 Measuring cell with solicon oil- 40 + 85 °C (40 + 185 °F)1 Measuring cell with necture liquid- 40 + 85 °C (40 + 185 °F)1 mansmitter- 40 + 85 °C (40 + 185 °F)2 condensation- 85 °C (40 + 185 °C)2 conde	(in percent per 28 °C (50 °F))	≤ (0.08 · r + 0.16) %	≤ (0.16 · f + 0.24) %			
• Temperature difference between medium3 mbar/0.3 kPa/0.04 psi per 10 K• temperature and ambient temperature\$(0,25 · f) % in 5 years• Long-tem stability (temperature change ± 20 °C (± 54 °F))\$(0,25 · f) % in 5 years• Long-tem stability (temperature change ± 20 °C (± 54 °F))\$(0,25 · f) % in 5 years• Long-tem stability (temperature change ± 20 °C (± 54 °F))0.005 % per 1 °• Long-tem stability (temperature change ± 10 visitage)0.005 % per 1 °• Measuring value resolution for PROFIBUS PA and FOUNDATION Fieldbus3 · 10° of nominal measuring range• Measuring value resolution for PROFIBUS PA and FOUNDATION Fieldbus0.005 % per 1 °• Measuring value resolution for PROFIBUS PA and FOUNDATION Fieldbus0.005 °C (40 + 185 °F)• Measuring cell with islicone oil-40 + 85 °C (40 + 185 °F)• Measuring cell with inscret liquid-40 + 85 °C (40 + 185 °F)• Measuring cell with inscret liquid-30 + 85 °C (40 + 185 °F)• Obsplay readable-30 + 85 °C (58 + 185 °F)• Storage temperatureFieldbus humidity 0 100 % Condensation permissible, suitable for use in the tropics• Degree of protection (to EC 60529)IF66 (coloral IF66/IF68), NEMA AX• Emitted interference and interference immunityAcc. to IEC 61326 and NAMUR NE 21• Measuring cell with silicone oil-40 + 100 °C (40 + 212 °F)• Measuring cell with silicone oil-40 + 100 °C (40 + 202 °F)• Measuring cell with silicone oil-40 + 100 °C (40 + 202 °F)• Measuring cell with silicone oil-40 + 100 °C (40						
Effect of mounting position (in pressure per change in angle)0.4 kPa/0.006 per 10° inclination (zero point correction is possible with position error compensation)Effect of auxiliary power supply (in percent per change in voltage)0.005 % per 1 VMeasuring value resolution for PROFIBUS PA and OUNDATION Fieldbus3.10° of nominal measuring rangeFated conditions		3 mbar/0.3 kPa/0.04 psi per 10 K				
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 3 · 10 ⁵ of nominal measuring range Measuring cell with solicone oil -40 +85 °C (-40 +185 °F) • Measuring cell with Neobee oil (with front-flush diaphragm) -10 +85 °C (-40 +185 °F) • Measuring cell with hiort liquid -40 +85 °C (-40 +185 °F) • Transmitter -40 +85 °C (-40 +185 °F) • Display readable -30 +85 °C (-40 +185 °F) • Storage temperature -50 +85 °C (-40 +185 °F) • Ondensation -85 °C (-40 +185 °F) • Olighay readable -30 +85 °C (-40 +185 °F) • Ondensation -85 °C (-52 +185 °F) • Olighay readable -30 +85 °C (-40 +185 °F) • Condensation Relative humidity 0 100 % Condensation permissible, suitable for use in the tropics Degree of protection (to IEC 60529) IP66 (optional IP66/P68), NEMA 4X Electromagnetic Compatibility Acc. to IEC 61326 and NAMUR NE 21 • Measuring cell with solicone oil -40 +100 °C (-40 +212 °F) • Measuring cell with solicone oil (with front-flush diaphragm) (roly	Long-term stability (temperature change \pm 30 °C (\pm 54 °F))	≤ (0.25 · r) % in 5 years				
(in percent per change in voltage) 3 · 10 ⁻⁵ of nominal measuring range Measuring value resolution for PROFIBUS PA and 3 · 10 ⁻⁵ of nominal measuring range FOUNDATION Fleidbus Installation conditions Ambient temperature Observe the temperature class in areas subject to explosion hazard. Measuring cell with solicone oil -40 +85 °C (40 +185 °F) Measuring cell with nort fluuid -40 +85 °C (40 +185 °F) Measuring cell with inert liquid -40 +85 °C (40 +185 °F) Measuring cell with inert liquid -40 +85 °C (-40 +185 °F) Storage temperature -50 +85 °C (-58 +185 °F) Observe the temperature oil : 10 +85 °C (-41 +185 °F) Climatic class -50 +85 °C (-58 +185 °F) Condensation Relative humidity 0 100 % Condensation permissible, suitable for use in the tropics Degree of protection (to IEC 60529) IP66 (optional IP66/IP68), NEMA 4X Electromagnetic Compatibility - Measuring cell with solicone oil -40 +100 °C (-40 +212 °F) Measuring cell with solicone oil -40 +100 °C (-40 +302 °F) Measuring cell with solicone oil (with front-flush diaphragm) -40 +100 °C (-40 +302 °F) Measuring cell with solicone oil (with front-flush	Effect of mounting position (in pressure per change in angle)					
FOUNDATION Fieldbus Fated conditions Installation conditions Ambient temperature Ambient temperature Observe the temperature class in areas subject to explosion hazard. • Measuring cell with silicone oil 40 +85 °C (40 +185 °F) • Measuring cell with inert liquid 40 +85 °C (40 +185 °F) • Measuring cell with inert liquid 40 +85 °C (40 +185 °F) • Transmitter -40 +85 °C (40 +185 °F) • Transmitter -40 +85 °C (40 +185 °F) • Storage temperature -50 +85 °C (58 +185 °F) • Storage temperature -50 +85 °C (58 +185 °F) • Condensation Relative humidity 0 100 % Condensation Relative humidity 0 100 % Condensation Condensation permissible, suitable for use in the tropics Degree of protection (to IEC 60529) IP66 (optional IP66/IP68), NEMA 4X Electromagnetic Compatibility Acc to IEC 61326 and NAMUR NE 21 Meduur conditions The max. medium temperature of the front-flush process connections is to be taken into accordance with hire relevant connection standards (e. g. DIN 32876, DIN 11851 etc.). Temperature of medium -40 +150 °C (44 +302 °F) • Measuring cell with silicone oil (with front-flush diaphragm) oil		0.005 % per 1 V				
Installation conditions Condence of the temperature class in areas subject to explosion hazard. Anbient temperature Observe the temperature class in areas subject to explosion hazard. Measuring cell with silicone oil 40		3 · 10 ⁻⁵ of nominal measuring range				
Ambient temperatureObserve the temperature class in areas subject to explosion hazard.• Measuring cell with silicone oil-40 +85 °C (-40 +185 °F)• Measuring cell with next-flush diaphragm)+10 +85 °C (14 +185 °F)• Measuring cell with inert fliquid-40 +85 °C (-40 +185 °F)• Measuring cell with inert fliquid-40 +85 °C (-40 +185 °F)• Transmitter-40 +85 °C (-40 +185 °F)• Display readable-30 +85 °C (-40 +185 °F)• Storage temperature-50 +85 °C (-58 +185 °F)• Cilmatic class-50 +85 °C (-58 +185 °F)• CondensationRelative humidity 0 100 % Condensation permissible, suitable for use in the tropicsDegree of protection (to IEC 60529)IP66 (optional IP66/IP68), NEMA 4XElectromagnetic Compatibility-• Emitted interference and interference immunityAcc. to IEC 61326 and NAMUR NE 21Medium conditions-40 +100 °C (-40 +212 °F)• Measuring cell with silicone oil (with front-flush diaphragm)-40 +120 °C (-41 302 °F)• Measuring cell with silicone oil (with front-flush diaphragm)-40 +120 °C (-41 302 °F)• Measuring cell with silicone oil, with temperature decoupler (only for guage pressure version with front-flush diaphragm)-10 +230 °C (-41 392 °F)• Measuring cell with intert filing liquid-20 +200 °C (-41 392 °F)• Measuring cell with intert filing liquid-20 +100 °C (-41 392 °F)• Measuring cell with intert filing liquid-20 +100 °C (-41 392 °F)• Measuring cell with intert	Rated conditions					
• Measuring cell with silicone oil $-40 \dots +85 \ ^{\circ}C (-40 \dots +185 \ ^{\circ}F)$ • Measuring cell with Neobee oil (with front-flush diaphragm) $-10 \dots +85 \ ^{\circ}C (44 \dots +185 \ ^{\circ}F)$ • Measuring cell with inert liquid $-40 \dots +85 \ ^{\circ}C (-40 \dots +185 \ ^{\circ}F)$ • Transmitter $-40 \dots +85 \ ^{\circ}C (-40 \dots +185 \ ^{\circ}F)$ • Display readable $-30 \dots +85 \ ^{\circ}C (-40 \dots +185 \ ^{\circ}F)$ • Storage temperature $\sin +85 \ ^{\circ}C (-56 \dots +185 \ ^{\circ}F)$ • Cindensation $-80 \dots +85 \ ^{\circ}C (-4 \dots +185 \ ^{\circ}F)$ • CondensationRelative humidity $0 \dots 100 \ ^{\circ}C$ Degree of protection (to IEC 60529)IP66 (optical IP66/IP68), NEMA 4XElectromagnetic Compatibility-• Emitted interference and interference immunityAcc. to IEC 61326 and NAMUR NE 21Medium conditions-40 \ldot +100 \ ^{\circ}C (-40 \ldot +212 \ ^{\circ}F)• Measuring cell with silicone oil $-40 \dots +100 \ ^{\circ}C (-40 \dots +212 \ ^{\circ}F)$ • Measuring cell with silicone oil (with front-flush diaphragm) $-10 \dots +100 \ ^{\circ}C (-40 \dots +302 \ ^{\circ}F)$ • Measuring cell with silicone oil (with front-flush diaphragm) $-40 \dots +100 \ ^{\circ}C (-40 \dots +302 \ ^{\circ}F)$ • Measuring cell with silicone oil (with front-flush diaphragm) $-10 \dots +100 \ ^{\circ}C (-40 \dots +302 \ ^{\circ}F)$ • Measuring cell with silicone oil (with front-flush diaphragm) $-10 \dots +250 \ ^{\circ}C (-4 \dots +392 \ ^{\circ}F)$ • Measuring cell with silicone oil (with front-flush diaphragm) $-10 \dots +250 \ ^{\circ}C (-4 \dots +392 \ ^{\circ}F)$ • Measuring cell with silicone oil (with front-flush diaphragm) $-10 \dots +250 \ ^{\circ}C (-4 \dots +392 \ ^{\circ}F)$ • Measuring cell with silicone oil (with front-flush diaph	Installation conditions					
• Measuring cell with Neobee oil (with front-flush diaphragm) $-10 \dots +85 \ ^{\circ}C (14 \dots +185 \ ^{\circ}F)$ • Measuring cell with inert liquid $-40 \dots +85 \ ^{\circ}C (-40 \dots +185 \ ^{\circ}F)$ • Transmitter $-40 \dots +85 \ ^{\circ}C (-40 \dots +185 \ ^{\circ}F)$ • Display readable $-30 \dots +85 \ ^{\circ}C (-40 \dots +185 \ ^{\circ}F)$ • Storage temperature $-30 \dots +85 \ ^{\circ}C (-40 \dots +185 \ ^{\circ}F)$ • Cimatic class $-50 \dots +85 \ ^{\circ}C (-40 \dots +185 \ ^{\circ}F)$ • CondensationFelative humidity $0 \dots 100 \ ^{\circ}$ Condensation (to IEC 60529)IP66 (optional IP66/IP68), NEMA 4XElectromagnetic Compatibility $-40 \dots +160 \ ^{\circ}C (-40 \dots +212 \ ^{\circ}F)$ • Emitted interference immunityAcc. to IEC 61326 and NAMUR NE 21Medium conditions $-40 \dots +100 \ ^{\circ}C (-40 \dots +212 \ ^{\circ}F)$ • Measuring cell with silicone oil (with front-flush diaphragm) $-40 \dots +150 \ ^{\circ}C (-40 \dots +302 \ ^{\circ}F)$ • Measuring cell with silicone oil (with front-flush diaphragm) $-10 \dots +150 \ ^{\circ}C (-40 \dots +302 \ ^{\circ}F)$ • Measuring cell with silicone oil (with front-flush diaphragm) $-10 \dots +250 \ ^{\circ}C (-40 \dots +392 \ ^{\circ}F)$ • Measuring cell with silicone oil (with front-flush diaphragm) $-10 \dots +200 \ ^{\circ}C (-40 \dots +392 \ ^{\circ}F)$ • Measuring cell with hilterno eidpaperature decoupler (only for gauge pressure version with flush-frouter decoupler (only for gauge pressure version with flush diaphragm) $-10 \dots +200 \ ^{\circ}C (-40 \dots +392 \ ^{\circ}F)$ • Measuring cell with nertifling liquid $-20 \dots +100 \ ^{\circ}C (-40 \dots +392 \ ^{\circ}F)$ • Measuring cell with intertifling liquid $-20 \dots +100 \ ^{\circ}C (-40 \dots +392 \ ^{\circ}F)$ • Measuring cell with intertifling liquid	Ambient temperature	Observe the temperature class in areas	subject to explosion hazard.			
• Measuring cell with inert liquid-40 +85 °C (-40 +185 °F)• Transmitter-40 +85 °C (-40 +185 °F)• Display readable-30 +85 °C (-22 +185 °F)• Storage temperature-50 +85 °C (-56 +185 °F)• Storage temperature-50 +85 °C (-56 +185 °F)• Cimatic class	 Measuring cell with silicone oil 	-40 +85 °C (-40 +185 °F)				
Transmitter-40+85 °C (-40+185 °F)Display readable-30+85 °C (-22+185 °F)Storage temperature-50+85 °C (-52+185 °F) (in the case of Neobee: -20+85 °C (-4+185/°F)) (in the case of Neobee: -20+85 °C (-4+185/°F)) (in the case of Neobee: -20+85 °C (-4+185/°F))Climatic class-• CondensationRelative humidity 0100 % Condensation pormissible, suitable for use in the tropicsDegree of protection (to IEC 60529)IP66 (optional IP66/IP68), NEMA 4XElectromagnetic Compatibility-• Emitted interference and interference immunityAcc. to IEC 61326 and NAMUR NE 21Medium conditionsThe max. medium temperature of the front-flush process connections is to be taken into account in accordance with the relevant connection standards (e. g. DIN 32676, DIN 11851 etc.).Temperature of medium-40+100 °C (-40+212 °F)• Measuring cell with silicone oil (with front-flush diaphragn)-10+150 °C (14302 °F)• Measuring cell with Neobee oil (with temp-decouper (on brow gauge pressure version with fush-mounted diaphragn)-10+150 °C (-14392 °F)• Measuring cell with Neobee oil, with temp, decouper (on brow gauge pressure version with fush-mounted diaphragn)-10+200 °C (-14392 °F)• Measuring cell with Neobee oil, with temp, decouper (on brow gauge pressure version with fush-ford gauge pressure version with fu	Measuring cell with Neobee oil (with front-flush diaphragm)	-10 +85 °C (14 +185 °F)				
• Display readable-30 +85 °C (-22 +185 °F) (in the case of Neobee: -20 +85 °C (-4 +185/°F)) (in the case of Neobee: -20 +85 °C (-4 +185/°F)) (in the case of Neobee: -20 +85 °C (-4 +185/°F))• Climatic class	 Measuring cell with inert liquid 	-40 +85 °C (-40 +185 °F)				
• Storage temperature-50 +85 °C (-58 +185 °F) (for high temperature oil: -10 +85 °C (-4 +185/°F)) (for high temperature oil: -10 +85 °C (-4 +185 °F)) (for high temperature oil: -10 +85 °C (-4 +185 °F)) (for high temperature oil: -10 +85 °C (-4 +185 °F)) (for high temperature oil: -10 +85 °C (-41 +185 °F)) (for high temperature oil: -10 +85 °C (-41 +185 °F)) (for high temperature oil: -10 +85 °C (-41 +185 °F)) (for high temperature oil: -10 +100 °C (-40 +212 °F) -10 +100 °C (-40 +212 °F) -10 +150 °C (-40 +392 °F) -10 +250 °C (-40 +392 °F) -10 +250 °C (-41 +392 °F)	Transmitter	-40 +85 °C (-40 +185 °F)				
In the case of Neobee: -20 +85 °C (-4 +185/°F)) (for high temperature oil: -10 + 85 °C (-4 +185/°F))Climatic class• CondensationRelative humidity 0 100 % Condensation permissible, suitable for use in the tropicsDegree of protection (to IEC 60529)IP66 (optional IP66/IP68), NEMA 4XElectromagnetic Compatibility• Emitted interference and interference immunityAcc. to IEC 61326 and NAMUR NE 21Medium conditionsThe max. medium temperature of the front-flush process connections is to be taken into account in accordance with the relevant connection standards (e. g. DIN 326/C, DIN 11851 etc.).Temperature of medium-40 +100 °C (-40 +212 °F)• Measuring cell with silicone oil (with front-flush diaphragm) (only for gauge pressure version with florth-flush diaphragm)-40 +120 °C (-40 + 392 °F)• Measuring cell with neutering endition in the trop of (-40 + 221 °F)-40 +200 °C (-40 + 392 °F)• Measuring cell with neutering endition in the trop of (-40 + 221 °F)-40 +200 °C (-40 + 392 °F)• Measuring cell with interf filing liquid-20 +100 °C (-41 392 °F)• Measuring cell with neutering endition in the trop of (-41 392 °F)-10 +200 °C (-41 +212 °F)• Measuring cell with interf filing liquid-20 +100 °C (-41 +212 °F)• Measuring cell with interf filing liquid-20 +100 °C (-41 482 °F)	Display readable	-30 +85 °C (-22 +185 °F)				
• CondensationRelative humidity 0 100 % Condensation permissible, suitable for use in the tropicsDegree of protection (to EC 60529)IP66 (ptional IP66/IP68), NEMA 4XIPElectromagnetic Compatibility• Emitted interference and interference immunityAcc. to IEC 61326 and NAMUR NE 21IPMedium conditionsThe max. medium temperature of the front-flush process connections is to be taken in accordance with the relevant connection standards (e. g. DIN 1855 tec.).IPTemperature of medium-00 +100 °C (-40 + 212 °F)IP• Measuring cell with silicone oil (with front-flush diaphragn)-01 + 150 °C (14 302 °F)IP• Measuring cell with silicone oil, with temperature decoupler only for gauge pressure version with front-flush diaphragn)-01 + 200 °C (14 302 °F)IP• Measuring cell with net filing liquid-20 + 200 °C (14 392 °F)IPIP• Measuring cell with net filing liquid-20 + 100 °C (-40 + 212 °F)IPIP• Measuring cell with high-temperature oil (only for gauge pressure version with front-flush diaphragn)IPIP• Measuring cell with high-temperature oil (only for gauge pressure version with front-flush diaphragn)IPIP• Measuring cell with high-temperature oil (only for gauge pressure version with front-flush diaphragn)IPIP• Measuring cell with high-temperature oil (only for gauge pressure version with front-flush diaphragn)IPIP• Measuring cell with high-temperature oil (only for gauge pressure version with front-flush diaphragn)IPIP• Measur	Storage temperature	-50 +85 °C (-58 +185 °F) (in the case of Neobee: -20 +85 °C (-4 +185/°F))				
Condensation pérmissible, suitable for use in the tropicsDegree of protection (to IEC 60529)IP66 (optional IP66/IP68), NEMA 4XElectromagnetic Compatibility• Emitted interference and interference immunityAcc. to IEC 61326 and NAMUR NE 21Medium conditionsThe max. medium temperature of the front-flush process connections is to be taken into account in accordance with the relevant connection standards (e. g. DIN 11851 etc.).Temperature of medium-00 + 100 °C (-40 + 212 °F)• Measuring cell with silicone oil (with front-flush diaphragm)-00 + 150 °C (-40 + 302 °F)• Measuring cell with neuperature decoupler (only for gauge pressure version with front-flush diaphragm)-00 + 200 °C (-41 + 392 °F)• Measuring cell with neuperature oil (only for gauge pressure version with flush-mounted diaphragm)-20 + 100 °C (-4 + 212 °F)• Measuring cell with high-temperature oil (only for gauge pressure version with flush-mounted diaphragm)-20 + 100 °C (-4 + 212 °F)• Measuring cell with high-temperature oil (only for gauge pressure version with flush-mounted diaphragm)-20 + 100 °C (-4 + 212 °F)• Measuring cell with high-temperature oil (only for gauge pressure version with flush - mounted diaphragm)-20 + 100 °C (-4 + 212 °F)• Measuring cell with high-temperature oil (only for gauge pressure version with flush - mounted diaphragm)-20 + 100 °C (-4 + 212 °F)• Measuring cell with high-temperature oil (only for gauge pressure version with flush - mounted diaphragm)-20 + 100 °C (-4 + 212 °F)• Measuring cell with high-temperature oil (only for gauge pressure version with flush - mounted diaphragm) </td <td></td> <td></td> <td></td>						
Electromagnetic CompatibilityArc. to IEC 61326 and NAMUR NE 21Medium conditionsAcc. to IEC 61326 and NAMUR NE 21Medium conditionsThe max. medium temperature of the front-flush process connections is to be taken into account in accordance with the relevant connection standards (e. g. DIN 32676, DIN 11851 etc.).Temperature of medium-40 + 100 °C (-40 + 212 °F)• Measuring cell with silicone oil (with front-flush diaphragm)-40 + 100 °C (-40 + 302 °F)• Measuring cell with silicone oil, with temperature decoupler (only for gauge pressure version with front-flush diaphragm)-10 + 150 °C (14 302 °F)• Measuring cell with Neobee oil, with temperature decoupler 	Condensation	Condensation permissible, suitable for u	se in the tropics			
• Emitted interference and interference immunityAcc. to IEC 61326 and NAMUR NE 21Medium conditionsThe max. medium temperature of the front-flush process connections is to be taken into accordance with the relevant connection standards (e. g. DIN 32676, DIN 11851 etc.).Temperature of medium		IP66 (optional IP66/IP68), NEMA 4X				
Medium conditionsThe max. medium temperature of the front-flush process connection sits to be taken ito account in accordance with the relevant connection standards (e. g. DIN 32676, DIN 11851 etc.).Temperature of medium $-40 \dots + 100 \ C (-40 \dots + 212 \ F)$ Measuring cell with silicone oil (with front-flush diaphragm) $-40 \dots + 150 \ C (-40 \dots + 302 \ F)$ Measuring cell with silicone oil, with temperature decoupler (only for gauge pressure version with front-flush diaphragm) $-40 \dots + 200 \ C (-40 \dots + 392 \ F)$ Measuring cell with necbee oil, with temperature decoupler (only for gauge pressure version with front-flush diaphragm) $-10 \dots + 200 \ C (-40 \dots + 392 \ F)$ Measuring cell with necbee oil, with temperature decoupler (only for gauge pressure version with flush-mounted diaphragm) $-10 \dots + 200 \ C (-4 \dots + 292 \ F)$ Measuring cell with nect filling liquid $-20 \dots + 100 \ C (-4 \dots + 212 \ F)$ Measuring cell with high-temperature oil (only for gauge pressure version with flush-mounted diaphragm) $-10 \dots + 200 \ C (-4 \dots + 212 \ F)$ Measuring cell with high-temperature oil (only for gauge pressure version with flush-mounted diaphragm) $-10 \dots + 200 \ C (-4 \dots + 212 \ F)$ Measuring cell with high-temperature oil (only for gauge pressure version with flush-mounted diaphragm) $-10 \dots + 200 \ C (-4 \dots + 212 \ F)$ Measuring cell with high-temperature oil (only for gauge pressure version with flush-mounted diaphragm) $-10 \dots + 250 \ C (-14 \dots 482 \ F)$	5 1 3					
Into account in accordance with the relevant connection standards (e. g. DIN 32676, DIN 11851 etc.).Temperature of medium• Measuring cell with silicone oil• Measuring cell with silicone oil (with front-flush diaphragm)• Measuring cell with silicone oil (with front-flush diaphragm)• Measuring cell with silicone oil (with front-flush diaphragm)• Measuring cell with silicone oil, with temperature decoupler (only for gauge pressure version with front-flush diaphragm)• Measuring cell with Neobee oil, with temp. decoupler (only for gauge pressure version with flush-mounted diaphragm)• Measuring cell with inert filling liquid• Measuring cell with high-temperature oil (only for gauge press• Measuring cell with high-temperature oil (only for gauge press• Measuring cell with high-temperature oil (only for gauge press• Measuring cell with inert filling liquid• 20 + 100 °C (-4 + 212 °F)• Measuring cell with high-temperature oil (only for gauge press• Measuring cell with high-temperature oil (only for gauge press• Measuring cell with high-temperature oil (only for gauge press• Measuring cell with high-temperature oil (only for gauge press• Measuring cell with high-temperature oil (only for gauge press• Measuring cell with high-temperature oil (only for gauge press• Measuring cell with high-temperature oil (only for gauge press• Measuring cell with high-temperature oil (only for gauge press• Measuring cell with high-temperature oil (only for gauge press• Measuring cell with high-temperature oil (only for gauge press• Measuring cell with high-temperature oil (only fo						
Neasuring cell with silicone oil $-40 \dots + 100 \ ^{\circ}C (-40 \dots + 212 \ ^{\circ}F)$ Measuring cell with silicone oil (with front-flush diaphragm) $-40 \dots + 150 \ ^{\circ}C (-40 \dots + 302 \ ^{\circ}F)$ Measuring cell with Neobee oil (with front-flush diaphragm) $-10 \dots + 150 \ ^{\circ}C (14 \dots 302 \ ^{\circ}F)$ Measuring cell with silicone oil, with temperature decoupler (only for gauge pressure version with front-flush diaphragm) $-10 \dots + 200 \ ^{\circ}C (-40 \dots + 392 \ ^{\circ}F)$ Measuring cell with Neobee oil, with temp decoupler (only for gauge pressure version with flush-mounted diaphragm) $-10 \dots + 200 \ ^{\circ}C (14 \dots 392 \ ^{\circ}F)$ Measuring cell with inert filling liquid $-20 \dots + 100 \ ^{\circ}C (-4 \dots + 212 \ ^{\circ}F)$ Measuring cell with high-temperature oil (only for gauge press $-10 \dots + 250 \ ^{\circ}C (14 \dots 482 \ ^{\circ}F)$	<u>meaium conditions</u>	into account in accordance with the relev				
 Measuring cell with silicone oil (with front-flush diaphragm) Measuring cell with Neobee oil (with front-flush diaphragm) Measuring cell with silicone oil, with temperature decoupler (only for gauge pressure version with front-flush diaphragm) Measuring cell with Neobee oil, with temp. decoupler (only for gauge pressure version with flush-mounted diaphragm) Measuring cell with inert filling liquid -20 +100 °C (-4 +212 °F) Measuring cell with high-temperature oil (only for gauge press -10 +250 °C (14 382 °F) 	Temperature of medium					
 Measuring cell with Neobee oil (with front-flush diaphragm) Measuring cell with silicone oil, with temperature decoupler (only for gauge pressure version with front-flush diaphragm) Measuring cell with Neobee oil, with temp. decoupler (only for gauge pressure version with flush-mounted diaphragm) Measuring cell with inert filling liquid Measuring cell with high-temperature oil (only for gauge press -10 +150 °C (14 302 °F) -40 +200 °C (-40 +392 °F) -10 +200 °C (-4 +212 °F) Measuring cell with high-temperature oil (only for gauge press -10 +250 °C (14 392 °F) 	Measuring cell with silicone oil	-40 +100 °C (-40 +212 °F)				
 Measuring cell with silicone oil, with temperature decoupler (only for gauge pressure version with front-flush diaphragm) Measuring cell with Neobee oil, with temp. decoupler (only for gauge pressure version with flush-mounted diaphragm) Measuring cell with inert filling liquid -20 + 100 °C (-4 + 212 °F) Measuring cell with high-temperature oil (only for gauge press -10 + 250 °C (14 392 °F) 	Measuring cell with silicone oil (with front-flush diaphragm)	-40 +150 °C (-40 +302 °F)				
 (only for gauge pressure version with front-flush diaphragm) Measuring cell with Neobee oil, with temp. decoupler (only for gauge pressure version with flush-mounted diaphragm) Measuring cell with inert filling liquid Measuring cell with high-temperature oil (only for gauge press- -20 +200 °C (-4 +212 °F) Measuring cell with high-temperature oil (only for gauge press- -10 +250 °C (14 392 °F) 	Measuring cell with Neobee oil (with front-flush diaphragm)	-10 +150 °C (14 302 °F)				
gauge pressure version with flush-mounted diaphragm)• Measuring cell with inert filling liquid-20 + 100 °C (-4 +212 °F)• Measuring cell with high-temperature oil (only for gauge pres10 + 250 °C (14 482 °F)		-40 +200 °C (-40 +392 °F)				
Measuring cell with high-temperature oil (only for gauge pres10 +250 °C (14 482 °F)		-10 +200 °C (14 392 °F)				
	 Measuring cell with inert filling liquid 	-20 +100 °C (-4 +212 °F)				
		-10 +250 °C (14 482 °F)				

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for gauge/absolute pressure, with front-flush diaphragm							
SITRANS P DS III series for gauge and absolute 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} : (Process connections acc. to 3A; $R_{a}\text{-value}$ (32 $\mu\text{-inch}$)	≤ 1.6 μm (64 μ-inch) ₂s ≤ 0.8 μm (32 μ-inch)/welds R _a) ≤ 0.8 μm					
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, with front-flush diaphragm								
Certificates and approvals								
Classification according to PED 2014/68/EU	For gases of fluid group 1 and liquids of fluid group 1; complies with requirements of article 4, paragraph 3 (sound engineering practice)							
Explosion protection								
Intrinsic safety "i"	PTB 13 ATEX 2007 X							
- Marking	Ex II 1/2 G Ex ia/ib IIC T4/T5/T6 Ga/Gb							
- Permissible ambient temperature	-40 +85 °C (-40 +185 °F) 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							
- Permissible ambient temperature	-40 +85 °C (-40 +185 °F) temperatu -40 +60 °C (-40 +140 °F) temperatu	re 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: $U_i = 30 \text{ V}, I_i = 100 \text{ mA},$ $P_i = 750 \text{ mW}, R_i = 300 \Omega$	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)	<i>U</i> _m = 45 V	U _m = 32 V						
- Connections (Ex ic)	To circuits with values: $U_{\rm i} = 45 \text{ V}$	FISCO supply unit ic: $U_0 = 17.5 \text{ V}$, $I_0 = 570 \text{ mA}$ Linear barrier: $U_0 = 32 \text{ V}$, $I_0 = 132 \text{ mA}$, $P_0 = 1 \text{ W}$						
- Effective internal inductance/capacitance	$L_{\rm i} = 0.4 {\rm mH}, \ C_{\rm i} = 6 {\rm nF}$	$L_{\rm i} = 7 \ \mu {\rm H}, \ C_{\rm i} = 1.1 \ {\rm nF}$						
 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 1, GP EFG; CL III; Ex ia IIC T4T6; CL I, DIV 2, GP ABCD T4T6; CL II, DIV 2, GP 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.

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for gauge/a	bsolute pressure, with front	t-flush diaphragm	
HART communication		FOUNDATION Fieldbus	
HART	230 1100 Ω	communication Function blocks	2 function blocks analog input
Protocol	HART Version 5.x	Function blocks	3 function blocks analog input, 1 function block PID
Software for computer	SIMATIC PDM	 Analog input 	
PROFIBUS PA communication Simultaneous communication with	4	 Adaptation to customer-specif- ic 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 operation (standard setting address 126)	- Simulation function	Output/input (can be locked within the device with a bridge)
Cyclic data usage		- Failure mode	parameterizable (last good value, substitute value, incorrect
Output byte	5 (one measured value) or 10 (two measured values)	Limit monitoring	value)
Input byte	0, 1, or 2 (register operating mode and reset function for metering)	- Limit monitoring	Yes, one upper and lower warn- ing limit and one alarm limit respectively
Internal preprocessing		 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 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 tem- perature and electronics tem- 	Constant value or over parame- terizable ramp function
- Limit monitoring	Yes, one upper and lower warn- ing limit and one alarm limit respectively	perature	
Register (totalizer)	Can be reset, preset, optional direction of counting, simulation function of register output		
- Failure mode	parameterizable (summation with last good value, continuous summation, summation with incorrect value)		
- Limit monitoring	One upper and lower warning limit and one alarm limit respec- tively		
 Physical block 	1		
Transducer blocks	2		
Pressure transducer block			
 Can be calibrated by applying 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)

Selection and Ordering	g data	Arti	cle No.	Selection and Ordering data	Article No.
pressure, front-flush c			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 -
Pressure transmitter f pressure, front-flush c SITRANS P DS III HAR	or gauge and absolute diaphragm, Mo. for the online configu- Cycle Portal. Measuring cell cleaning normal grease-free to cleanliness level 2 normal max.) (0.15 14.5 psi) (0.58 58 psi) (2.32 232 psi) (9.14 914 psi) (0.62 18.85 psia) ¹⁾ (0.67 72.5 psia) ¹⁾ (4.35 435 psia) ¹⁾ (4.35 435 psia) ¹⁾ Stainless steel Stainless steel	7 M 1 3 4 B C D E S T U	F 4 1 3 3 -	Pressure transmitter for gauge and absolute	7 M F 4 1 3 3 - 7 M F 4 1 3 3 - 7 Components". elivery of the device t for process connect d in conjunction with s and Q e only available in Ex installations accordin
Non-wetted parts mate • Housing made of die- • Housing stainless stea Version • Standard version, Ger setting for pressure ur • International version, I setting for pressure ur • Chinese version, Englis	cast aluminium el precision casting rman plate inscription, nit: bar English plate inscription, nit: bar sh plate inscription,	_	7 0 3 1 2 3		
setting for pressure uni All versions include DVI instructions in various E	D with compact operating				
 Explosion protection None With ATEX, Type of pro- "Intrinsic safety (Ex i - "Explosion-proof (Ex - "Ex nA/ic (Zone 2)"4; FM + CSA intrinsic sa FM + CSA (is + ep) + Zone 1D/2D⁵)6)77 With FM + CSA, Type - "Intrinsic Safe and Ex 	ia)" (d)" ³⁾) fe (is) ⁵⁾ Ex ia + Ex d (ATEX) +		A D F S NC		
 Electrical connection// Inner thread M20 x 1.3 Female thread ½-14 N Han 7D plug (plastic h connector⁸) M12 connectors (stair 	5 NPT housing) incl. mating		B C D F		

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

Transmitters for applications with advanced requirements (Advanced)

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

Selection and Orderin	g data	Article No.	Selection and Ordering data	Article No.
Pressure transmitter F pressure, front-flush c	P for gauge and absolute liaphragm:		Pressure transmitter P for gauge and absolut pressure, front-flush diaphragm:	e
SITRANS P DS III with P	ROFIBUS PA (PA)	7 M F 4 1 3 4 -	SITRANS P DS III with PROFIBUS PA (PA)	7 M F 4 1 3 4 -
		7 M F 4 1 3 5 -	SITRANS P DS III with FOUNDATION Fieldbus (F	F) 7MF4135-
	lo. for the online configu-			
ration in the PIA Life	Cycle Portal.		Display	
Measuring cell filling Silicone oil	Measuring cell clean- ing normal	1	 Without display Without visible display (display concealed, setting: bar) 	
Inert liquid FDA compliant fill fluid	grease-free to cleanliness level 2	3	 With visible display (setting: bar) With customer-specific display (setting as specified, Order code "Y21" required) 	
Neobee oil	normal	4	A quick-start guide is included in the scope of c	delivery of the device
Nominal measuring ra	nge			
1 bar 4 bar 16 bar 63 bar 1300 mbar a ¹⁾ 5 bar a ¹⁾ 30 bar a ¹⁾	(14.5 psi) (58 psi) (232 psi) (914 psi) (18.85 psia) ¹⁾ (72.5 psia) ¹⁾ (435 psia) ¹⁾	B C D E S T U	 Not with temperature decoupler P00 and P10, no R01, R02, R04, R10 and R11, and can only be o silicone oil. Only available for flanges with options M, N a Without cable gland, with blanking plug Configurations with HAN and M12 connectors a Explosion protection acc. to FM/CSA: suitable fo NEC 500/505. 	rdered in conjunction nd Q. re only available in Ex
		-	6) Only in connection with IP66.	
Wetted parts materials Seal diaphragm	Connection shank		 With enclosed cable gland Ex ia and blanking p Only in connection with Ex approval A, B, E or F 	lug.
Stainless steel Hastellov ²⁾	Stainless steel Stainless steel	AB	⁹⁾ M12 delivered without cable socket	
Non-wetted parts mate • Housing made of die-	cast aluminium	0		
Housing stainless stee	el precision casting	3		
 Setting for pressure un Chinese version, Englisetting for pressure un 	nit: bar English plate inscription, nit: bar sh plate inscription, it: Pascal D with compact operating	1 2 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) + Zone 1D/2D⁵⁾⁶⁾⁷⁾ With FM + CSA, Type 	a)" (d)" ³⁾ fe (is) ⁵⁾ Ex ia + Ex d (ATEX) + of protection:	A D E F S		
(available soon)	$(is + xp)^{(3)5)}$	NC		
Electrical connection/ Screwed gland M20 x Screwed gland ½-14	: 1.5	B		

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			Selection and Ordering data
<i>Further designs</i> Add "- Z " to Article No. and specify Order code.		HART	PA	FF	Further designs Add "-Z" to Article No. and specif
Plug					Explosion-proof "Intrinsic safe
• Han 7D (metal)	A30	1			(China)
 Han 8D (instead of Han 7D) Angled 	A31 A32	√ √			(only for transmitter 7MF4
Han 8D (metal)	A32	1			Explosion protection "Explosi NEPSI (China)
Cable sockets for M12 connectors	A50	1	~	1	(only for transmitter 7MF4
(metal (CuZn))	1.00		-		Ex protection "Zone 2" to NER
Rating plate inscription (instead of German)					(only for transmitter 7MF4
• English	B11	√ √	√ √	√ √	Ex protection "Ex ia", "Ex d" a
FrenchSpanish	B12 B13	↓	↓	¥	to NEPSI (China) (only for transmitter 7MF4
• Italian	B14	1	1	1	"Intrinsic safety" and "Explosic
• Cyrillic (russian)	B16	✓	✓	1	explosion protection acc. to Ko
English rating plate	B21	✓	✓	1	(only for transmitter
Pressure units in inH ₂ 0 and/or psi					7MF4[B, D]Z + E11)
Quality Inspection Certificate (5-point char- acteristic curve test) according to	C11	~	~	~	Ex-protection Ex ia according t (Russia)
IEC 60770-2					Ex-protection Ex d according to
Inspection certificate	C12	✓	✓	1	(Russia)
Acc. to EN 10204-3.1					Ex-protection Ex nA/ic (Zone 2) EAC Ex (Russia)
Factory certificate Acc. to EN 10204-2.2	C14	~	~	~	Ex-protection Ex ia + Ex d + Zo
Functional safety (SIL2)	C20	1			according to EAC Ex (Russia)
Devices suitable for use according to	020				Two coats of lacquer on casin
IEC 61508 and IEC 61511. Includes SIL con- formity declaration					(PU on epoxy)
Functional safety (PROFIsafe)	C21 ¹⁾		~		Transient protector 6 kV (light tion)
Certificate and PROFIsafe protocol					Flanges to EN 1092-1, Form B
Functional safety (SIL2/3) Devices suitable for use according to	C23	~			• DN 25, PN 40 ⁴⁾
IEC 61508 and IEC 61511. Includes SIL con-					• DN 40, PN 40
formity declaration					 DN 40, PN 100 DN 50, PN 16
PED for Russia with initial calibration mark	C99	✓	1	1	• DN 50, PN 40
Setting of the upper saturation limit of the output signal to 22.0 mA	D05	~			• DN 80, PN 16
Degree of protection IP66/IP68	D12	1	~	1	• DN 80, PN 40
(only for M20x1.5 and ½-14 NPT)					 Flanges to ASME B16.5 Stainless steel flange 1" class
Capri cable gland 4F CrNi and clamping	D59	✓	✓	1	Stainless steel flange 11/2" class
device (848699 + 810634) included					Stainless steel flange 2" class
Oxygen application	E10	1	~	~	Stainless steel flange 3" class
(In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140 °F))					 Stainless steel flange 4" class Stainless steel flange 1½" class
Export approval Korea	E11	~	~	1	Stainless steel flange 2" class
CRN approval Canada ²⁾	E22	1	~	1	Stainless steel flange 3" class
(Canadian Registration Number)					Stainless steel flange 4" class
Dual seal	E24	✓	~	1	Threaded connector to DIN 38 form A, thread to ISO 228
Explosion-proof "Intrinsic safety" (Ex ia) to	E25 ³⁾	✓	~	1	• G ³ / ₄ "-A, front-flush ⁵)
INMETRO (Brazil) (only for transmitter 7MF4B)					• G 1"-A, front-flush ⁵⁾
"Flameproof" explosion protection accord-	E26 ³⁾	1	~	1	• G 2"-A, front-flush
ing to INMETRO (Brazil)					Tank connection ⁶⁾
(only for transmitter 7MF4D)					Sealing is included in delivery • TG 52/50, PN 40
Explosion-proof "Intrinsic safety" (Ex ia +	E28 ³⁾	✓	1		• TG 52/150, PN 40
Ex d) to INMETRO (Brazil) (only for transmitter 7MF4P)					
Ex Approval IEC Ex (Ex ia)	E45 ³⁾	1	~	1	
(only for transmitter 7MF4B)					
Ex Approval IEC Ex (Ex d)	E46 ³⁾	~	~	~	
(only for transmitter 7MF4D)					

Selection and Ordering data	Order	code		
Further designs		HART	PA	FF
Add "-Z" to Article No. and specify Order code.				
Explosion-proof "Intrinsic safety" to NEPSI	E55 ³⁾	✓	✓	✓
China)				
only for transmitter 7MF4B)				
Explosion protection "Explosion-proof" to	E56 ³⁾	1	~	~
NEPSI (China) Only for transmitter 7MF4D)				
	E57 ³⁾	1		
Ex protection "Zone 2" to NEPSI (China) only for transmitter 7MF4E)	E97°)	·	v	v
	E58 ³⁾			
Ex protection "Ex ia", "Ex d" and "Zone 2" o NEPSI (China)	E30-,	•	•	•
only for transmitter 7MF4R)				
Intrinsic safety" and "Explosion-proof"	E70 ³⁾	✓	✓	1
explosion protection acc. to Kosha (Korea)				
only for transmitter 7MF4[B, D]Z + E11)				
	F 00			
Ex-protection Ex ia according to EAC Ex Russia)	E80	•	v	•
Ex-protection Ex d according to EAC Ex	E81	1	1	1
Russia)	201			
Ex-protection Ex nA/ic (Zone 2) according to	E82	1	1	1
EAC Ex (Russia)				
Ex-protection Ex ia + Ex d + Zone 1D/2D	E83	✓	✓	✓
according to EAC Ex (Russia)				
Two coats of lacquer on casing and cover	G10	✓	✓	✓
PU on epoxy)				
Transient protector 6 kV (lightning protec- ion)	J01	~	1	~
·				
Flanges to EN 1092-1, Form B1 DN 25, PN 40 ⁴⁾	M11	1	1	1
• DN 40, PN 40	M13	1	1	1
DN 40, PN 100	M23	1	1	1
• DN 50, PN 16	M04	1	✓	1
DN 50, PN 40	M14	1	1	1
DN 80, PN 16	M06	✓	✓	✓
DN 80, PN 40	M16	✓	✓	✓
Flanges to ASME B16.5				
Stainless steel flange 1" class 1504)	M40	✓	1	✓
Stainless steel flange 11/2" class 150	M41	✓	✓	✓
Stainless steel flange 2" class 150	M42	✓	✓	✓
Stainless steel flange 3" class 150	M43	✓	✓	✓
Stainless steel flange 4" class 150	M44	✓	✓	✓
Stainless steel flange 11/2" class 300	M46	~	✓	✓
Stainless steel flange 2" class 300	M47	~	✓	✓
Stainless steel flange 3" class 300	M48	√	✓	✓
Stainless steel flange 4" class 300	M49	✓	~	~
Threaded connector to DIN 3852-2, form A, thread to ISO 228				
• G 34"-A, front-flush ⁵⁾	R01	1	1	1
• G 1"-A, front-flush ⁵⁾	R01	¥ ✓	1	1
• G 2"-A, front-flush	R02	1	1	1
Fank connection ⁶⁾				
Bealing is included in delivery				
• TG 52/50, PN 40	R10	1	1	1
• TG 52/150, PN 40	R11	1	1	1
, -				

Transmitters for applications with advanced requirements (Advanced)

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

Selection and Ordering data	Order	code		
Further designs	oraor	HART	PA	FF
Add "-Z" to Article No. and specify Order code.				· ·
Sanitary process connection according DIN 11851 (Dairy connection with slotted union nut)				
• DN 50, PN 25	N04	4	1	4
• DN 80, PN 25	N06	v	v	v
Tri-Clamp connection according DIN 32676/ISO 2852				
• DN 50/2", PN 16	N14	✓	✓	✓.
• DN 65/3", PN 10	N15	~	~	~
Varivent connection EHEDG compliant				
• Type N = 68 for Varivent housing DN 40 125 and 1½" 6", PN 40	N28	1	~	1
Temperature decoupler up to 200 °C⁷⁾ for version with front-flush diaphragm	P00	1	✓	1
Sanitary process connection to DRD				
• DN 50, PN 40	M32	~	1	~
SMS socket with union nut • 2"	M67	~	1	~
• 2 • 2½"	M68	↓	~	¥
• 3"	M69	✓	✓	1
SMS threaded socket				
• 2"	M73	1	1	1
• 2½" • 3"	M74	4	1	1
• 3 IDF socket with union nut ISO 2853	M75	v	v	v
• 2"	M82	~	~	1
• 2½"	M83	✓	✓	1
• 3"	M84	1	1	1
IDF threaded socket ISO 2853				
• 2" • 2 ¹ ⁄2"	M92 M93	√ √	√ √	√ √
• 272 • 3"	M93 M94	¥ ✓	¥ ✓	¥ √
Sanitary process connection to	11134		-	
NEUMO Bio-Connect screw connection				
EHEDG compliant • DN 50, PN 16	Q05	1	1	1
• DN 65, PN 16	Q06	· /	1	1
• DN 80, PN 16	Q07	✓	✓	1
• DN 100, PN 16	Q08	✓	✓	✓
• DN 2", PN 16	Q13	1	1	1
• DN 2½", PN 16 • DN 3", PN 16	Q14 Q15	√ √	✓ ✓	✓ ✓
• DN 4", PN 16	Q16		1	1
Sanitary process connection to NEUMO				
Bio-Connect flange connection				
EHEDG compliant • DN 50, PN 16	Q23	~	1	1
• DN 65, PN 16	Q24	√	1	1
• DN 80, PN 16	Q25	✓	✓	✓
• DN 100, PN 16	Q26	1	✓.	✓
• DN 2", PN 16	Q31	√ √	√ √	✓ ✓ ✓
• DN 2½", PN 16 • DN 3", PN 16	Q32 Q33	✓ ✓	√ √	✓ ✓
• DN 4", PN 16	Q34	1	~	1
, -				

Coloction and Ordening data	Order	aada		
Selection and Ordering data	Order		DA	
<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 EHEDG compliant				
• DN 50, PN 16	Q39	✓	✓	✓
• DN 65, PN 10	Q40	1	1	1
• DN 80, PN 10	Q41	√ √	✓ ✓	√ √
• DN 100, PN 10 • DN 2½", PN 16	Q42 Q48	✓ ✓	√	↓
• DN 3", PN 10	Q40 Q49	¥ ✓	~	¥.
• DN 4", PN 10	Q50	✓	✓	✓
Bio-Control sanitary process connection EHEDG compliant ⁸⁾				
• DN 50, PN 16	Q53	1	1	1
• DN 65, PN 16	Q54	1	✓	✓
Sanitary process connection to NEUMO Bio-Connect S flange connection EHEDG compliant				
• DN 2", PN 16	Q72	✓	✓	✓
Aseptic threaded socket to DIN 11864-1 Form A				
EHEDG compliant • DN 50, PN 25	N33	7	1	1
• DN 65, PN 25	N34	¥	√	1
• DN 80, PN 25	N35	1	1	
• DN 100, PN 25	N36	1	1	1
Aseptic flange with notch to DIN 11864-2 Form A				
EHEDG compliant				
• DN 50, PN 16	N43	✓	✓	✓
• DN 65, PN 16	N44	✓	✓	✓
• DN 80, PN 16	N45	✓	✓	✓
• DN 100, PN 16	N46	~	1	~
Aseptic flange with groove to DIN 11864-2 Form A EHEDG compliant				
• DN 50, PN 16	N43 + P11	~	~	~
• DN 65, PN 16	N44 + P11	~	~	~
• DN 80, PN 16	N45 + P11	1	~	~
• DN 100, PN 16	N46 + P11	1	✓	~
Aseptic clamp with groove to DIN 11864-3 FormA				
EHEDG compliant				
• DN 50, PN 25	N53	√	1	√
• DN 65, PN 25	N54	1	1	1
• DN 80, PN 16	N55	1	1	4
• DN 100, PN 16	N56	V	V	•
1) Profisafe transmitters can only be operated wit	h the S7	F Syster	ms V6	1 con-

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

2) Cannot be ordered with remote seal.

³⁾ Option does not include ATEX approval, but instead includes only the country-specific approval.

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

⁶⁾ The weldable socket can be ordered under accessories.

7) 3A and EHEDG compliant. The maximum permissible temperatures of the medium depend on the respective cell fillings (see medium conditions).

⁸⁾ 3A compliance ensured only when 3A compliant sealing rings are used.

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 descrip- tion) Max. 16 characters, specify in plain text:	Y15	*	•	•
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	~		
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 possible between 1 and 126 Specify in plain text:	Y25		1	
Y25:	Vao			
Damping adjustment in seconds (0 100 s)	Y30	v	~	

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)

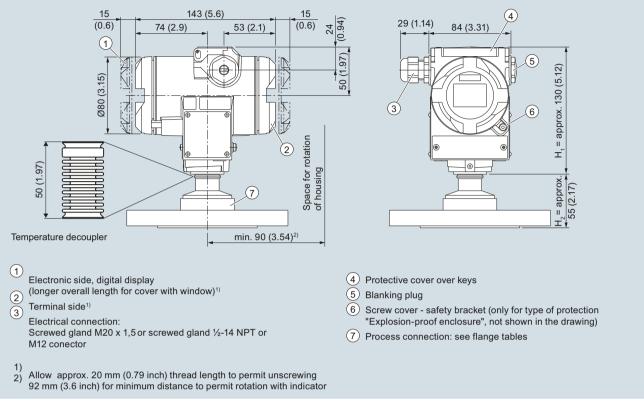
C line: Y21: bar (psi)

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/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					
	Order code	DN	PN	ØD	H ₂
	M11	25	40	115 mm (4.5")	Approx.
	M13	40	40	150 mm (5.9")	52 mm (2")
Ū.	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
	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")	
	M46	11⁄2"	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	50	16	64 mm (2.5")	Approx.
N15	65	10	91 mm (3.6")	52 mm (2")

Other connections

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

Sanitary process connection to DRD

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

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

Q13 2" 16 82 mm (3.2") Q14 2½" 16 105 mm (4.1") Q15 3" 16 105 mm (4.1") Q16 4" 16 145 mm (5.7")

Sanitary process connection to NEUMO Bio-Connect 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
بلسباسيلي ا	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	Q48	21/2"	16	90.9 mm (3.6")	
2	Q49	3"	10	106 mm (4.2")	
	Q50	4"	10	119 mm (4.7")	

Sanitary process connection to NEUMO Bio-Connect S flange connection

Order code	DN	PN	ØD	H ₂
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")

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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	
H H	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	

IDF socket with union nut

Order code			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
M92 M93 M94	2" 2½" 3"	25	64 mm (2.5") 77.5 mm (3.1") 91 mm (3.6")	Approx. 52 mm (2")
	0	20	0111111(0.0)	

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

Aseptic flange with notch to DIN 11864-2 Form A

	Order code	DN	PN	ØD	H ₂
Ξ	N43	50	16	94	Approx.
	N44	65	16	113	52 mm (2")
	N45	80	16	133	
l D	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 mm (2)
	N55	100	16	130	
- D →					

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 2014/68/EU Pressure Equipment Directive) and max. test pressure (pursuant to DIN 16086)	HART	PROFIBUS PA/ FOUNDATION Fieldbus		
	Span	Nominal measuring range	Max. operating 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 a	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
	5,3 160 bar a 0.53 16 MPa a 76.9 2321 psia	160 bar a 16 MPa a 2321 psi	167 bar a 16,7 MPa a 2422 psi	250 bar a 25 MPa a 3626 psi
	13.3 400 bar a 1.3 40 MPa a 192.9 5802 psia	400 bar a 40 MPa a 5802 psia	400 bar a 40 MPa a 5802 psia	600 bar a 60 MPa a 8702 psia
	23.3 700 bar a 2.33 70 MPa a 338 10153 psia	700 bar a 70 MPa a 10153 psia	800 bar a 80 MPa a 11603 psia	800 bar a 80 MPa a 11603 psia
Lower measuring limit			'	'
 Measuring cell with silicone oil filling 	0 mbar a/0 kPa a/0 p	osia		
 Measuring cell with inert filling liquid 				
- for process temperature -20 °C < 9 \leq +60 °C (-4 °F < 9 \leq +140 °F)	30 mbar a/3 kPa a/0	1.44 psia		
- for process temperature $60 \degree C < 9 \le +100 \degree C$ (max. 85 $\degree C$ for measuring cell 30 bar) (140 $\degree F < 9 \le +212 \degree F$ (max. 185 $\degree F$ for measuring cell 435 psi))	30 mbar a + 20 mba 3 kPa a + 2 kPa a · (0.44 psi a + 0.29 ps	(9 - 60 °C)/°C		
Upper measuring limit		ement max. 100 bar/1 e/process temperatur		60 °C (140 °F)
Start of scale value	Between the measur	ring limits (fully adjust	able)	
Output	HART		PROFIBUS PA/FOU	NDATION Fieldbus
Output signal	4 20 mA		Digital PROFIBUS P FOUNDATION Field	
 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	$R_{\rm B} \leq (U_{\rm H}$ - 10.5 V)/0.023 A in Ω , $U_{\rm H}$: Power supply in V			
• With HART	$R_{\rm B} = 230 \dots 500 \ \Omega \ (S_{\rm B} = 230 \dots 1100 \ \Omega \ tor)$	SIMATIC PDM) or (HART Communica-	-	
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 series for absolute pressure (from the ga	uge pressure series)
Measuring accuracy	Acc. to IEC 60770-1
Reference conditions (All error data refer always refer to the set span)	 Increasing characteristic Start-of-scale value 0 bar/kPa/psi Stainless steel seal diaphragm Silicone oil filling Room temperature 25 °C (77 °F)
Measuring span ratio r (spread, Turn-Down)	r = max. measuring span/set measuring span or nom. pressure range
Error in measurement at limit setting incl. hysteresis and reproducibility	
Linear characteristic	
- r ≤ 10	≤ 0.1 %
- 10 < r ≤ 30	≤ 0.2 %
Influence of ambient temperature (in percent per 28 °C (50 °F))	
• 250 mbar a/25 kPa a/3.6 psia	≤ (0.15 · r + 0.1) %
 1300 mbar a/130 kPa a/18.8 psia 5 bar a/500 kPa a/72.5 psia 30 bar a/3000 kPa a/435 psia 100 bar a/10 MPa a/1450 psia 160 bar a/16 MPa a/2321 psia 400 bar a/40 MPa a/5802 psia 700 bar a/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	-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)

ITALIS		advanced requirements (Advanced
	SITRANS P DS III for abso	lute pressure (from gauge pressure series
SITRANS P DS III series for absolute pressure (from	n the gauge pressure series)	
Design		
Weight (without options)	≈ 1.5 kg (≈ 3.3 lb)	
Enclosure material	Low-copper die-cast aluminur no. 1.4408	n, GD-AISi 12 or stainless steel precision casting, mat.
Wetted parts materials		
Connection shank	Stainless steel, mat. no. 1.440	4/316L or Hastelloy C4, mat. no. 2.4602
Oval flange	Stainless steel, mat. no. 1.440	4/316L
Seal diaphragm	Stainless steel, mat. no. 1.440	4/316L or Hastelloy C276, mat. no. 2.4819
Measuring cell filling	Silicone oil or inert filling liquic (maximum value with oxygen (140 °F))	t measurement pressure 100 bar (1450 psi) at 60 °C
Process connection		837-1, female thread $\frac{1}{2}$ -14 NPT or oval flange DIN 19213 with mounting thread M10 or $\frac{7}{16}$ -20 UNF
Material of mounting bracket		
• Steel	Sheet-steel, Mat. No. 1.0330,	chrome-plated
Stainless steel	Sheet stainless steel, mat. no.	1.4301 (SS 304)
Power supply $U_{\rm H}$	HART	PROFIBUS PA/FOUNDATION Fieldbus
Terminal voltage on transmitter	10.5 45 V DC 10.5 30 V DC in intrinsically	-safe mode
Power supply		Supplied through bus
Separate 24 V power supply necessary	-	No
Bus voltage		
• Not Ex	-	9 32 V
With intrinsically-safe operation	-	9 24 V
Current consumption		
Basic current (max.)	-	12.5 mA
 Start-up current ≤ basic current 	-	Yes
Max. current in event of fault	-	15.5 mA
Fault disconnection electronics (FDE) available	-	Yes

Transmitters for applications with advanced requirements (Advanced)

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

SITRANS P DS III series for absolute pressure (from the	gauge pressure series)											
Certificates and approvals	HART	PROFIBUS PA/ FOUNDATION Fieldbus										
Classification according to PED 2014/68/EU	For gases of fluid group 1 and liquids of fl article 4, paragraph 3 (sound engineering	uid group 1; complies with requirements of g practice)										
Explosion protection												
Intrinsic safety "i"	PTB 13 ATEX 2007 X											
- 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 V, I_i = 100 mA, P_i = 750 mW; R_i = 300 Ω	FISCO supply unit: $U_{o} = 17.5 \text{ V}, I_{o} = 380 \text{ mA}, P_{o} = 5.32 \text{ W}$ Linear barrier: $U_{o} = 24 \text{ V}, I_{o} = 250 \text{ mA}, P_{o} = 1.2 \text{ W}$										
- 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) temperatu -40 +60 °C (-40 +140 °F) temperatu											
- 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: $U_{o} = 17.5 \text{ V}, I_{o} = 380 \text{ mA}, P_{o} = 5.32 \text{ W}$ Linear barrier: $U_{o} = 24 \text{ V}, I_{o} = 250 \text{ mA}, P_{o} = 1.2 \text{ W}$										
- Effective internal inductance/capacitance	$L_{\rm i} = 0.4$ mH, $C_{\rm i} = 6$ nF	$L_{\rm i} = 7 \ \mu {\rm H}, \ C_{\rm i} = 1.1 \ {\rm nF}$										
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	The state of the s										
- 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 V	<i>U</i> _m = 32 V										
- Connection (Ex ic)	To circuits with values: $U_{\rm i}$ = 45 V	FISCO supply unit ic: $U_{o} = 17.5$ V, $I_{o} = 570$ mA Linear barrier: $U_{o} = 32$ V, $I_{o} = 132$ mA, $P_{o} = 1$ 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											
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, GP											

Transmitters for applications with advanced requirements (Advanced)

	SITRANS	P DS III for absolute pressure (from gauge pressure series)
HART communication		FOUNDATION Fieldbus	
HART	230 1100 Ω	communication	
Protocol	HART Version 5.x	Function blocks	3 function blocks analog input, 1 function block PID
Software for computer	SIMATIC PDM	 Analog input 	
PROFIBUS PA communication		- Adaptation to customer-specif-	Yes, linearly rising or falling
Simultaneous communication with master class 2 (max.)	4	ic process variables - 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)	C C	ing limit and one alarm limit respectively
Internal preprocessing		 Square-rooted characteristic for flow measurement 	Yes
Device profile	PROFIBUS PA Profile for Pro-	• PID	Standard FOUNDATION
	cess Control Devices Version		Fieldbus function block
	3.0, class B	 Physical block 	1 resource block
Function blocks	2	Transducer blocks	1 transducer block Pressure with calibration, 1 transducer block
Analog input	Man linearch winter (19		LCD
 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 tem- 	Constant value or over parame- terizable ramp function
- Limit monitoring	Yes, one upper and lower warn- ing limit and one alarm limit respectively	perature and electronics tem- perature	
Register (totalizer)	Can be reset, preset, optional direction of counting, simulation function of register output		
- Failure mode	parameterizable (summation with last good value, continuous summation, summation with incorrect value)		
- Limit monitoring	One upper and lower warning limit and one alarm limit respec- tively		
Physical block	1		
Transducer blocks	2		
Pressure transducer block			
 Can be calibrated by applying 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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Pressure Measurement

Transmitters for applications with advanced requirements (Advanced)

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

Selection and Orderin	•		cle No.	
Pressure transmitters f		7 N	F423	3 -
rom gauge pressure s SITRANS P DS III with I			-	
	lo. for the online configu	-		
ration in the PIA Life				
Measuring cell filling	Measuring cell cleaning			
Silicone oil	normal	• 1		
nert liquid ¹⁾	grease-free to	3		
	cleanliness level 2			
Measuring span (min.	•			
8.3 250 mbar a 43 1300 mbar a	(0.12 3.62 psia) (0.62 18.85 psia)	• D		
13 1300 mbar a 0.16 5 bar a	(0.62 18.65 psia) (2.32 72.5 psia)	G		
1 30 bar a	(14.5 435 psia)	• H		
5,3 160 bar a ²⁾	(76.9 2 321 psia)	• L		
13,3 400 bar a ²⁾	(192.9 5 802 psia)	• N		
23,3 700 bar a ²⁾	(338 10 153 psia)	• N		
Wetted parts materials				
Seal diaphragm	Process connection	-		
Stainless steel	Stainless steel	•	A	
Hastelloy	Stainless steel		B C	
Hastelloy Jersion for diaphragms	Hastelloy seals in conjunction with		Y1	
process connector "fem	ale thread 1/2-14 NPT"			
(recommended versio	,		V O	
Version for diaphragm s with process connector	seals in conjunction		Y O	
with process connector shank" ^{3) 4) 5) 6) 7)}				
Process connection				
Connection shank G ^½	2B to EN 837-1	•	0	
• Female thread 1/2-14 N		•	1	
 Stainless steel oval flan 	ange with process ge has no female thread			
		·	2	
- Mounting thread ⁷ / ₁₀ IEC 61518/DIN EN 6	51518			
 Mounting thread M1 			3	
- Mounting thread M1			4	
 Male thread M20 x 1.5 Male thread ½ -14 NP 			5 6	
Non-wetted parts mate				
 Housing made of die- 		•	0	
 Housing stainless stee 			3	
Version	-			
Standard version, Ger		•		1
setting for pressure un				
 International version, I setting for pressure ur 	English plate inscription nit: bar			2
Chinese version, Engli	sh plate inscription,	•	;	3
setting for pressure uni	it: Pascal			
All versions include DVI ng instructions in vario	D with compact operat-			
Explosion protection	uo Lo iunguageo.	_		
None				Α
 With ATEX, Type of pr 	otection:			
- "Intrinsic safety (Ex i	,	•		в
- "Explosion-proof (Ex	,	•		D
 "Intrinsic safety and (Ex ia + Ex d)"¹⁰⁾ 	flameproof enclosure"	*		Р
- "Ex nA/ic (Zone 2)"1	1)			Е
- "Intrinsic safety, exp	losion-proof enclosure	•		R
and dust explosion r	protection (Ex ia+ Ex d +			
 FM + CSA intrinsic sa FM + CSA (is + op) + 	. ,			F S
• FM + CSA (is + ep) + Zone 1D/2D ¹⁰⁾¹²⁾¹³⁾	EXIA + EXU(ATEX) +			3
• With FM + CSA, Type	of protection:			
 "Intrinsic Safe and E (is + xp)"⁹⁾¹³⁾ 	xpiosion Proof			NC

Transmitters for applications with advanced requirements (Advanced)

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

Selection and Orderin	ng data	Article No.	Selection and Ordering data	Article No.
Pressure transmitters from gauge pressure	for absolute pressure series		Pressure transmitters for absolute pressure from gauge pressure series	
SITRANS P DS III with F	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 -
	FOUNDATION Fieldbus (FF)	7 M F 4 2 3 5 -	SITRANS P DS III with FOUNDATION Fieldbus (FF)	7 M F 4 2 3 5 -
↗ Click on the Article I	No. for the online configu-			
ration in the PIA Life	-		Explosion protection	
Measuring cell filling	Measuring cell cleaning		None With ATEX. Type of protection:	Α
Silicone oil	normal	1	 With ATEX, Type of protection: "Intrinsic safety (Ex ia)" 	в
Inert liquid ¹⁾	grease-free to	3	- "Explosion-proof (Ex d)" ⁸⁾	D
	cleanliness level 2		- "Intrinsic safety and flameproof enclosure"	P
Nominal measuring ra	ange		$(Ex ia + Ex d)^{(9)}$	
250 mbar a	(3.62 psia)	D	- "Ex nA/ic (Zone 2)" ¹⁰⁾	E
1300 mbar a	(18.85 psia)	F	- "Intrinsic safety, explosion-proof enclosure and	R
5 bar a	(72.5 psia)	G	dust explosion protection (Ex ia + Ex d +	
30 bar a	(435 psia)	н	Zone 1D/2D) ^{"9) 11)} (not for DS III FF)	
160 bar a ²⁾	(2 321 psia)	L	• FM + CSA intrinsic safe (is) ¹²⁾	F
400 bar a ²⁾	(5 802 psia)	M	• FM + CSA (is + ep) + Ex ia + Ex d (ATEX) + Zone 1D/2D ⁹⁾¹¹⁾¹²	S
700 bar a ²⁾	(10 153 psia)	N		
Wetted parts material	S		With FM + CSA, Type of protection: - "Intrinsic Safe and Explosion Proof	NC
Seal diaphragm	Process connection		$(is + xp)^{*8)12}$	NC
Stainless steel	Stainless steel	Α	Electrical connection/cable entry	-
Hastelloy	Stainless steel	в	Screwed gland M20 x 1.5	В
Hastelloy	Hastelloy	с	Screwed gland ¹ / ₂ -14 NPT	c
	seals in conjunction with	¥1	• M12 connectors (stainless steel) ^{13) 14)}	Ē
process connector "fen	nale thread 1/2-14 NPT"		Display	
(recommended versio			Without display	
Version for diaphragm		Y 0	Without display Without visible display	
with process connector "G½B connection shan	r (سالم) (4) (5) (6) (7)		(display concealed, setting: bar)	
			With visible display (setting: bar)	
Process connection		0	with customer-specific display	
Connection shank G ¹		0	(setting as specified, Order code "Y21" or "Y22"	
 Female thread ½-14 I Staiplage steel eval file 		· · · · ·	required)	
tion (Oval flange has	ange with process connec- no female thread)		A quick-start guide is included in the scope of deliv	very of the device
- Mounting thread 7/1	e-20 UNF to	2	1) For evugen application, add Order code E10	
IEC 61518/DIN EN 6	61518		 For oxygen application, add Order code E10. Available soon 	
 Mounting thread M1 	10 to DIN 19213	3	³⁾ Version 7MF4233-1DY only up to max. span 200 n	nbar a (2.9 psia).
- Mounting thread M1	12 to DIN 19213	4	4) When the manufacture's certificate (calibration certificate)	ficate) has to be
 Male thread M20 x 1.3 		5	ordered for transmitters with diaphragm seals accor	
 Male thread ½ -14 NF 	PT	6	is recommended only to order this certificate exclus phragm seals. The measuring accuracy of the total of	
Non-wetted parts mat	erials		here.	
• Housing made of die-	-cast aluminium	0	5) If the acceptance test certificate 3.1.is ordered for t mounted diaphragm apple this certificate must also	
 Housing stainless ste 	el precision casting	3	mounted diaphragm seals this certificate must also respective remote seals.	De ordered with th
Version			⁶⁾ The diaphragm seal is to be specified with a separa	ate order number a
 Standard version, Ge setting for pressure u 		1	must be included wiht the transmitter order number, 7MF423Y and 7MF4900-1B	for example
0 1	English plate inscription,	2	 7) The standard measuring cell filling for configurations is silicone oil. 8) With set to be a good with blacking a place 	s with remote seals
 Chinese version, Engli setting for pressure un 	ish plate inscription,	3	 ⁸⁾ Without cable gland, with blanking plug. ⁹⁾ With enclosed cable gland Ex ia and blanking plug. ¹⁰⁾ Coefigurations with UN and M12 conservations are an enclosed by the service of the s	
0 1	D with compact operating		 ¹⁰⁾ Configurations with HAN and M12 connectors are o ¹¹⁾Only in connection with IP66. 	,
			 ¹²⁾ Explosion protection acc. to FM/CSA: suitable for ins NEC 500/505. ¹³⁾ Only in connection with Exponencyal A. B. E or E 	stallations accordin

- ¹³⁾ Only in connection with Ex approval A, B, E or F.
 ¹⁴⁾ M12 delivered without cable socket.

Transmitters for applications with advanced requirements (Advanced)

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

Selection and Ordering data	Order				Selection and Ordering data	Order	codo		
Further designs	Order	HART	PA	FF	Further designs	Order	HART	PA	FF
Add "-Z" to Article No. and specify Order					Add "-Z" to Article No. and specify Order				
code.					code.				
Pressure transmitter with mounting					CRN approval Canada	E22 ⁴⁾	✓	✓	✓
bracket (1x fixing angle, 2 x nut, 2 x U- washer or 1 x bracket, 2 x nut, 2 x U-					(Canadian Registration Number) Dual seal	E24	~	~	1
washer) made of:					Explosion-proof "Intrinsic safety" (Ex ia)	E25 ⁴⁾	· •		1
Steel		1	1	1	to INMETRO (Brazil)	L2J /	•	·	•
Stainless steel 304 Stainless steel 316L	7102	✓ ✓	√ √	√ √	(only for transmitter 7MF4B)				
Plug	A00				"Flameproof" explosion protection according to INMETRO (Brazil)	E26 ⁴⁾	~	1	~
• Han 7D (metal)	A30	~			(only for transmitter 7MF4				
Han 8D (instead of Han 7D)	A31	✓			Explosion-proof "Intrinsic safety"	E28 ⁴⁾	1	1	
• Angled	A32	1			(Ex ia + Ex d) to INMETRO (Brazil)				
• Han 8D (metal)	A33	√			(only for transmitter 7MF4P)	= 4=4)	,	,	,
Cable sockets for M12 connectors (metal (CuZn))	A50	~	~	~	Ex Approval IEC Ex (Ex ia) (only for transmitter 7MF4B)	E45 ⁴⁾	~	•	~
Rating plate inscription (instead of Ger-					Ex Approval IEC Ex (Ex d)	E46 ⁴⁾	1	1	1
man)					(only for transmitter 7MF4D)	240			-
• English		1	1	1	Explosion-proof "Intrinsic safety" to	E55 ⁴⁾	~	1	✓
• French		1	1	1	NEPSI (China)				
Spanish Italian		√ √	√ √	√ √	(only for transmitter 7MF4B)	====(1)	,	,	
• Cyrillic (russian)	B16		1	1	Explosion protection "Explosion-proof" to NEPSI (China)	E56 ⁴⁾	~	•	•
English rating plate		~	1	~	(only for transmitter 7MF4D)				
Pressure units in inH $_20$ and/or psi					Explosion-proof "Zone 2" to NEPSI	E57 ⁴⁾	1	✓	✓
Quality Inspection Certificate (5-point	C11	✓	✓	✓	(China)				
characteristic curve test) according to					(only for transmitter 7MF4E)	FF0 4)	,	,	,
IEC 60770-2 ¹⁾					Ex protection "Ex ia", "Ex d" and "Zone 2" to NEPSI (China)	E58 ⁴⁾	v	v	v
•	C12	~	~	~	(only for transmitter 7MF4R)				
Acc. to EN 10204-3.1		,	,	,	"Intrinsic safety" and "Explosion-proof"	E70 ⁴⁾	✓	✓	✓
Factory certificate Acc. to EN 10204-2.2	C14	•	•	~	explosion protection acc. to Kosha (Korea) (only for transmitter				
	C15				7MF4[B, D]Z + E11)				
Acceptance certificate (EN 10204-3.1) PMI test of parts in contact with medium	015	v	·	•	Ex-protection Ex ia according to EAC Ex	E80	✓	✓	✓
	C20	~			(Russia)		,	,	
Devices suitable for use according to IEC					Ex-protection Ex d according to EAC Ex (Russia)	E81	~	~	~
61508 and IEC 61511. Includes SIL confor- mity declaration					Ex-protection Ex nA/ic (Zone 2) according	E82	~	1	1
Functional safety (PROFIsafe)	C21 ³⁾		1		to EAC Ex (Russia)				
Certificate and PROFIsafe protocol	•=-				Ex-protection Ex ia + Ex d + Zone 1D/2D according to EAC Ex (Russia)	E83	~	1	~
	C23	✓			Two coats of lacquer on casing and	G10	1	✓	✓
Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL confor-					cover (PU on epoxy)				
mity declaration					Transient protector 6 kV (lightning protect.)	J01	~	1	✓
PED for Russia with initial calibration	C99	✓	1	1	Oval flange NAM (ASTAVA)	J06	1	✓	✓
mark					Marine approvals		,	,	,
Setting of the upper saturation limit of the output signal to 22.0 mA	D05	~			 Det Norske Veritas Germanischer Lloyd (DNV-GL) 	S10	~	~	~
Manufacturer's declaration acc. to NACE	D07	1	1	1	Lloyds Register (LR)	S11	✓	1	✓
(MR 0103-2012 and MR 0175-2009)	507		•		French marine classification society	S12	✓	1	✓
Degree of protection IP66/IP68	D12	~	1	1	Bureau Veritas (BV) • American Bureau of Shipping (ABS)	S14	~	1	1
(only for M20 x 1.5 and ½-14 NPT)					Russian Maritime Register (RMR)	S14	~	~	¥.
Supplied with oval flange	D37	~	~	~	Korean Register of Shipping (KR)	S17	✓	✓	✓
(1 item), PTFE packing and screws in thread of oval flange					 We can offer shorter delivery times for conf 	iguratior	ns desig	gnated	d with
Capri cable gland 4F CrNi and clamping	D59	1	1	1	the Quick Ship Symbol . For details see p	age 10/	11 in th	e app	endix.
device (848699 + 810634) included	035				1) When the manufacture's certificate (calibration				
Use in or on zone 1D/2D	E01	✓	✓	✓	for transmitters with diaphragm seals according mended only to order this certificate exclusively				
(only together with type of protection					The measuring accuracy of the total combination				5415.
"Intrinsic safety" (transmitter 7MF4B Ex ia) and IP65)					2) If the acceptance test certificate 3.1 is ordered				
	E10				mounted diaphragm seals this certificate mus respective remote seals.	also be	ordered	a with	ine
Oxygen application (In the case of oxygen measurement and	E10	v	v	v	3) Profisafe transmitters can only be operated wi	th the S7	F Syste	ems V6	5.1
inert liquid max. 100 bar (1450 psi) at 60°C					configuration software in combination with S7- ⁴⁾ Cannot be ordered with remote seal.	400H.			
(140 °F))					5) Option does not include ATEX approval, but in	stead in	cludes	only th	е
Export approval Korea	E11	1	1	1	country-specific approval.				

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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	√ 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 variable)	Y16	1	1	*
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 pres-	Y21	~	*	✓
Specify in plain text (standard setting: bar): Y21: mbar, bar, kPa, MPa, psi,				
Note: The following pressure units can be selected:				
bar, mbar, mm H ₂ O [*]), inH ₂ O [*]), ftH ₂ O [*]), mmHG, inHG, psi, Pa, kPa, MPa, g/cm ² , kg/cm ² , Torr, ATM or % *) ref. temperature 20 °C				
Setting of pressure indication in non-pressure units ³⁾	Y22 + Y01	~		
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)				
Preset bus address possible between 1 and 126 Specify in plain text: Y25:	¥25		~	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 10/11 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

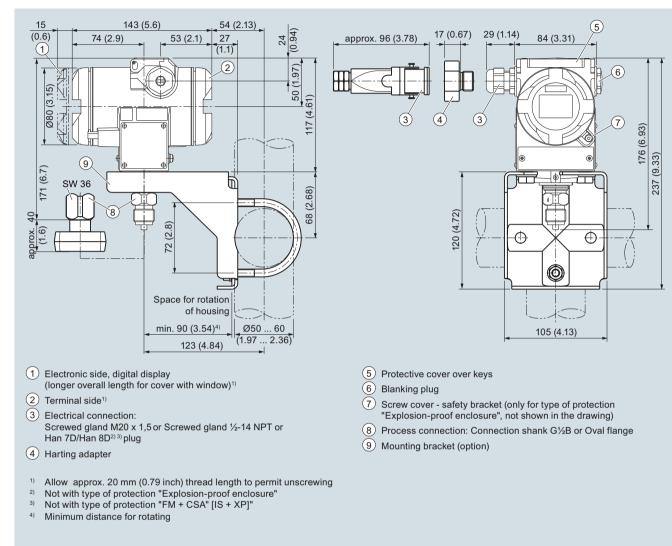
- ¹⁾ Measuring accuracies for PROFIBUS PA transmitters with Option Y01 are calculated in the same way as for HART devices.
- ²⁾ Only absolute pressure units selectable. Negative pressure values not permitted.

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



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

Transmitters for applications with advanced requirements (Advanced)

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

Technical specifications

SITRANS P, DS III for absolute pressure (from the differenti	al pressure series)					
Input						
Measured variable	Absolute pressure					
Span (fully adjustable) or measuring range, max. operating pressure (in accordance with 2014/68/EU Pressure Equipment Directive) and max. test pressure (pursuant to DIN 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 a	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/0 kPa a/0 p	osia				
 Measuring cell with inert filling liquid 						
- for process temperature -20 °C < 9 \leq +60 °C (-4 °F < 9 \leq +140 °F)	30 mbar a/3 kPa a/0.44 psia					
- for process temperature 60 °C < $9 \le +100$ °C (max. 85 °C for measuring cell 30 bar) (140 °F < $9 \le +212$ °F (max. 185 °F for measuring cell 435 psi))	30 mbar a + 20 mba 3 kPa a + 2 kPa a · (0.44 psi a + 0.29 ps	θ - 60 °C)/°C				
Upper measuring limit		ement max. 100 bar/1 e/process temperatur	0 MPa/1450 psi and 60 °C (140 °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	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 V)/0.023 A in Ω , $U_{\rm H}$: Power supply in V		-			
• With HART	$R_{\rm B} = 230 \dots 500 \ \Omega \ (S_{\rm B} = 230 \dots 1100 \ \Omega \ tor)$		-			
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)

SITRANS P, DS III for absolute pressure (from the different	ial pressure series)
Measuring accuracy	Acc. to IEC 60770-1
Reference conditions (All error data refer always refer to the set span)	 Increasing characteristic Start-of-scale value 0 bar/kPa/psi Stainless steel seal diaphragm Silicone oil filling Room temperature 25 °C (77 °F)
Measuring span ratio r (spread, Turn-Down)	r = max. measuring span/set measuring span or nom. pressure range
Error in measurement at limit setting incl. hysteresis and reproducibility	
Linear characteristic	
- r ≤ 10	≤ 0.1 %
- 10 < r ≤ 30	≤ 0.2 %
Influence of ambient temperature (in percent per 28 °C (50 °F))	
• 250 mbar a/25 kPa a/3.6 psia	$\leq (0.15 \cdot r + 0.1) \%$
• 1300 mbar a/130 kPa a/18.8 psia 5 bar a/500 kPa a/72.5 psia 30 bar a/3000 kPa a/435 psia 100 bar a/10 MPa a/1450 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	-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 p	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)					
Enclosure material	Low-copper die-cast aluminum no. 1.4408	, GD-AlSi12 or stainless steel precision casting, mat.				
Wetted parts materials						
Seal diaphragm	Stainless steel, mat. no. 1.4404, mat. no. 2.4360, tantalum or go	/316L or Hastelloy C276, mat. no. 2.4819, Monel, Id				
Process flanges and sealing screw	Stainless steel, mat. no. 1.4408 2.4360	, Hastelloy C4, mat. no. 2.4602 or Monel, mat. no.				
• O-Ring	FPM (Viton) or optionally: PTFE,	, FEP, FEPM and NBR				
Measuring cell filling	Silicone oil or inert filling liquid (maximum value with oxigen me (140 °F))	(maximum value with oxigen measurement pressure 100 bar (1450 psi) at 60 °C				
Process connection		$^{1}\!$				
Material of mounting bracket						
Steel	Sheet-steel, Mat. No. 1.0330, cl	Sheet-steel, Mat. No. 1.0330, chrome-plated				
Stainless steel	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-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)

S

SITRANS P DS III for absolute pressure (from differential pressure series)					
SITRANS P, DS III for absolute pressure (from the d	lifferential pressure series)				
Certificates and approvals	HART PROFIBUS PA/ FOUNDATION Fields				
Classification according to PED 2014/68/EU	For gases of fluid group 1 and liquids of fluid group 1; complies with requirements article 4, paragraph 3 (sound engineering practice)				
Explosion protection					
Intrinsic safety "i"	PTB 13 ATEX 2007 X				
- Marking	Ex II 1/2 G Ex ia/ib IIC T4/T5/T6 Ga/Gb				
- Permissible ambient temperature	-40 +85 °C (-40 +185 °F) temperature class T4; -40 +70 °C (-40 +158 °F) temperature class T5; -40 +60 °C (-40 +140 °F) temperature class T6				
- Connection	$ \begin{array}{ll} \mbox{To certified intrinsically-safe circuits with} & \mbox{FISCO supply unit:} \\ \mbox{peak values:} & U_{i} = 30 \ V, \ l_{i} = 100 \ mA, \\ \mbox{P}_{i} = 750 \ mW; \ R_{i} = 300 \ \Omega & \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$				
- Effective internal inductance/capacitance	$L_{\rm i} = 0.4 \text{ mH}, C_{\rm i} = 6 \text{ nF}$ $L_{\rm i} = 7 \mu \text{H}, C_{\rm i} = 1.1 \text{ nF}$				
• Explosion-proof "d"	PTB 99 ATEX 1160				
- Marking	Ex II 1/2 G Ex d IIC T4/T6 Gb				
- Permissible ambient temperature	-40 +85 °C (-40 +185 °F) temperature class T4; -40 +60 °C (-40 +140 °F) temperature class T6				
- Connection	To circuits with values: $_{\rm H}$ = 10.5 45 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	$ \begin{array}{ll} \mbox{To certified intrinsically-safe circuits with peak values:} \\ U_i = 30 \ V, \ l_i = 100 \ mA, \\ P_i = 750 \ mW, \ R_i = 300 \ \Omega \end{array} \end{array} \begin{array}{ll} \mbox{FISCO supply unit:} \\ U_o = 17.5 \ V, \ l_o = 380 \ mA, \ P_o = 5.32 \ W \\ \mbox{Linear barrier:} \\ U_o = 24 \ V, \ l_o = 250 \ mA, \ P_o = 1.2 \ W \end{array} $				
- Effective internal inductance/capacitance	$L_{\rm i} = 0.4 \text{ mH}, C_{\rm i} = 6 \text{ nF}$ $L_{\rm i} = 7 \mu \text{H}, C_{\rm i} = 1.1 \text{ nF}$				
 Dust explosion protection for zone 21/22 	PTB 01 ATEX 2055				
- Marking	Ex II 2 D Ex to IIIC T120°C Db				
- Connection	To circuits with values: $U_{\rm H} = 10.5 \dots 45 \text{ V DC}; P_{\rm max} = 1.2 \text{ W}$ To circuits with values: $U_{\rm H} = 9 \dots 32 \text{ V DC}; P_{\rm max} = 1 \text{ W}$				
 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)	$U_{\rm m} = 45 \text{ V}$ $U_{\rm m} = 32 \text{ V}$				
- Connection (Ex ic)	To circuits with values: $U_i = 45 \text{ V}$ FISCO supply unit ic: $U_o = 17.5 \text{ V}, I_o = 570 \text{ mA}$ Linear barrier: $U_o = 32 \text{ V}, I_o = 132 \text{ mA}, P_o = 1 \text{ W}$				
- Effective internal inductance/capacitance	$L_{i} = 0.4 \text{ mH}, C_{i} = 6 \text{ nF}$ $L_{i} = 7 \mu \text{H}, C_{i} = 1.1 \text{ nF}$				
Explosion protection acc. to FM	Certificate of Compliance 3008490				
- Identification (XP/DIP) or (IS); (NI)	CL I, DIV 1, GP ABCD T4T6; CL II, DIV 1, GP EFG; CL III; CL I, ZN 0/1 AEx ia I T4T6; CL I, DIV 2, GP ABCD T4T6; CL II, DIV 2, GP FG; CL III				
Explosion protection to CSA	Certificate of Compliance 1153651				
- Identification (XP/DIP) or (IS)	CL I, DIV 1, GP ABCD T4T6; CL II, DIV 1, GP EFG; CL III; Ex ia IIC T4T6; CL DIV 2, GP ABCD T4T6; CL II, DIV 2, GP FG; CL III				

Pressure Measurement

Transmitters for applications with advanced requirements (Advanced)

	SITRANS P DS	S III for absolute pressure (from	differential pressure series)
HART communication		FOUNDATION Fieldbus	
HART	230 1100 Ω	communication	
Protocol	HART Version 5.x	Function blocks	3 function blocks analog input, 1 function block PID
Software for computer	SIMATIC PDM	 Analog input 	
PROFIBUS PA communication		- 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	- Simulation function	Output/input (can be locked within the device with a bridge)
Cyclic data usage	address 126)	- Failure mode	parameterizable (last good value, substitute value, incorrect
Output byte	5 (one measured value) or 10 (two measured values)	- Limit monitoring	value) Yes, one upper and lower warn-
Input byte	0, 1, or 2 (register operating mode and reset function for metering)	, , , , , , , , , , , , , , , , , , ,	ing limit and one alarm limit respectively
Internal preprocessing		 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 two pressures 	Yes
- Simulation function	Input /Output	- Monitoring of sensor limits	Yes
- Failure mode	parameterizable (last good value, substitute value, incorrect value)	 Simulation function: Measured pressure value, sensor tem- 	Constant value or over parame- terizable ramp function
- Limit monitoring	Yes, one upper and lower warn- ing limit and one alarm limit respectively	perature and electronics tem- perature	
Register (totalizer)	Can be reset, preset, optional direction of counting, simulation function of register output		
- Failure mode	parameterizable (summation with last good value, continuous summation, summation with incorrect value)		
- Limit monitoring	One upper and lower warning limit and one alarm limit respec- tively		
 Physical block 	1		
Transducer blocks	2		
Pressure transducer block			
 Can be calibrated by applying 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 absolute pressure (from differential pressure series)

Selection and Orderin	g data	Article No		Selection and Ordering da	ata	Article No.
Pressure transmitters	for absolute pressure	7 M F 4 3 3	3 -	Pressure transmitters for	absolute pressure	7 M F 4 3 3 3 -
from differential press SITRANS P DS III with	sure series,			from differential pressure SITRANS P DS III with HA	series,	
↗ Click on the Article N	No. for the online configu-			Electrical connection/cabl	le entry	
ration in the PIA Life	Cycle Portal.			Screwed gland M20 x 1.5		В
Measuring cell filling	Measuring cell			Screwed gland 1/2-14 NPT		С
	cleaning			 Han 7D plug (plastic hous 	sing) incl.	D
Silicone oil	normal	1		mating connector ¹⁴⁾		
Inert liquid ¹⁾	grease-free to cleanliness level 2	3		M12 connectors (stainless	s steel) ^{15) 16)}	F
Measuring span (min.	max.)			DisplayWithout display		0
8.3 250 mbar a	(0.12 3.62 psia)	D		Without display Without visible display		1
43 1300 mbar a	(0.62 18.85 psia)	F		(display concealed, settin	ia: mA)	· · · · · · · · · · · · · · · · · · ·
0.16 5 bar a	(2.32 72.5 psia)	G		With visible display (setting)	0 /	6
1 30 bar a	(14.5 435 psia)	н		with customer-specific dis	0,	7
5.3 100 bar a	(76.9 1450 psia)	KE		(setting as specified, Orde		
Wetted parts materials				required)		
Seal diaphragm	Parts of measuring cell			Power supply units see Cha	ap. 7 "Supplementary Co	omponents".
Stainless steel	Stainless steel	Α		Included in delivery of the c	device:	
Hastelloy	Stainless steel	В		Quick-start guide		- () (-)
Hastelloy	Hastelloy	С		 Sealing plug(s) or sealing 	screw(s) for the process	s tianges(s)
Tantalum	Tantalum	E		¹⁾ For oxygen applications, a	add Order code F10	
Monel	Monel	Ĥ		²⁾ Version 7MF4333-1DY or		nbar a (2.9 psia).
Gold	Gold	L		3) When the manufacture's ce		
Version for diaphragm		Y		ordered for transmitters wit		
Process connection				is recommended only to or phragm seals. The measur		
	PT with flange connection			here.	ling accuracy of the total of	ornbination is certilled
	0			4) If the acceptance test cert	tificate 3.1.is ordered for th	ne transmitter with
 Sealing screw opposi Mounting thread ⁷/₁₁ 		2		mounted diaphragm seals	this certificate must also	be ordered with the
IEC 61518/DIN EN 6	6-20 UNF 10 31518	4		respective remote seals.		
- Mounting thread M1		0		5) The diaphragm seal is to b must be included wiht the	transmitter order number	for example
(only for replacement		,		7MF433Y and 7MF4	4900-1B	·
Vent on side of proces				⁶⁾ The standard measuring c	ell filling for configurations	with remote seals (Y)
- Mounting thread 7/1	6-20 UNF to	6		is silicone oil.	(70.0 4450))	
IEC 61518/DIN EN 6	õ1518			7) Not for span "5.3 100 ba valve in the process flange	ar a (76.9 1450 psia)". P e (see dimensional drawin	osition of the top vent
 Mounting thread M1 		4		⁸⁾ Not in conjunction with Ele	ctrical connection "Han7[) nlua"
(only for replacemer	nt requirement)			⁹⁾ Without cable gland, with I	blanking plug	- I9 ·
Non-wetted parts mate	erials			¹⁰⁾ With enclosed cable gland		
process flange screws	Electronics housing			¹¹⁾ Configurations with HAN a		nly available in Ex ic.
Stainless steel	Die-cast aluminum	2		 ¹²⁾ Only in connection with IP(¹³⁾ Explosion protection acc. t 	bb. to EM/CSA: quitable for inc	tallations appording to
Stainless steel	Stainless steel precision casting ⁸⁾	3		NEC 500/505. ¹⁴⁾ Only in connection with Ex	apporval A, B or E.	taliations according to
Version				¹⁵⁾ Only in connection with Ex		
 Standard version, Ger setting for pressure up 			1	¹⁶⁾ M12 delivered without cab	le socket.	
	English plate inscription,		2			
setting for pressure u						
 Chinese version, Engli setting for pressure un 			3			
All versions include DV	D with compact operating					
instructions in various E	U languages.	_				
Explosion protectionNone			Α			
With ATEX, Type of pr	otection.		^			
- "Intrinsic safety (Ex i			в			
- "Explosion-proof (Ex			D			
· · · ·	flameproof enclosure"		P			
(Ex ia + Ex d)" ¹⁰			ſ			
- "Ex nA/ic (Zone 2)"1	1)		Е			
	losion-proof enclosure and ection (Ex ia+ Ex d +		R			
 FM + CSA intrinsic sa 	ife (is)13)		F			
• FM \pm CSA mumsic sa	Evia + Evid (ATEV) -		S			
• FM + CSA (is + ep) + Zone 1D/2D ¹⁰⁾¹²⁾¹³⁾	LA 1a + EX U (ALEA) +		3			
With FM + CSA, Type						
- "Intrinsic Safe and E			NC			
(is + xp)" ⁹⁾¹³⁾						

Transmitters for applications with advanced requirements (Advanced)

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

Selection and Ordering data Article No. Pressure transmitter for absolue pressure from differential pressure series Article No. SITRANS P DS III with PODIBUS PA (PA) 7MF 4 3 3 4 - SITRANS P DS III with PODIBUSTION Fieldclaus (FF) 7MF 4 3 3 4 - A Clok on the Article No. for the omine configu- ration in the PALIE Oyde Portal 7MF 4 3 3 4 - Measuring cell illing durant field No. 1 to cleaning 5 Measuring cell illing durant field No. 1 to cleaning 1 Streaked gland Xo: 1 5 5	e serie
from differential pressure series fm f4 3 3 4 - 7 SITRANS P DS III with POOFIBUS PA (PA) 7M F4 3 3 4 - 7 SITRANS P DS III with POOFIBUS PA (PA) 7M F4 3 3 4 - 7 SITRANS P DS III with POOFIBUS PA (PA) 7M F4 3 3 5 - 7 Zolck on the Article No. for the online configuration with PA Life (2) events 7M F4 3 3 5 - 7 Measuring cell filling (Passuring cell connection/cable entry 5 Silcone oil commal fm f4 3 5 - 7 Inert liquid 11 grass-free to construction/cable entry 5 Soltone a (1850 psia) F 6 Solton a (1850 psia) F 6 Soltone a (1850 psia) F 6 Solton a (1850 psia) F 6 Solton a (1850 psia) F 6 Wetted parts materials Stainless steel 6 Stainless steel Stainless steel 6 Monel Monel 6 Hasteloy Heasteloy F Process connection 7 6 Monel Monel 6 Monel Monel 6 Monel Monel 6 Monel	0.
STRANS P DS III with PROFIBUS PA (PA) 7M F 4 3 3 4- STRANS P DS III with FOUNDATION Fieldbus (FF) 7M F 4 3 3 5- Z Cick on the Article No. for the online configu- ration in the Zritle Roy for the online configu- ration in the Zritle Cycle Portal. 7M F 4 3 3 5- Z Cick on the Article No. for the online configu- ration in the Zritle Cycle Portal. 7M F 4 3 3 5- Silicone oil Inert liquid ¹⁰ rease-free to cleaning 1 Silicone oil Inert liquid ¹⁰ rease-free to cleaning 1 So bar a (3E 2 psia) (30 bar a C So bar a (72.5 psia) (1450 psia) C Wetted parts materials Seal diaphragm Parts of measuring cell KE Manel Monel Monel Monel KE Monel Monel Monel Monel KE Press connection - Sealing strew opposite process connection - Mounting thread 7/ ₁₆ 20 UNF to IEC 61518/DIN EN 61518 2 Monet of process frange ? - Mounting thread 7/ ₁₆ 20 UNF to IEC 61518/DIN EN 61518 2 Monet of process frange ? - Mounting thread 7/ ₁₆ 20 UNF to IEC 61518/DIN EN 61518 2 Monet of process frange ? - Mounting thread 7/ ₁₆ 20 UNF to IEC 61518/DIN EN 61518 2 Monet of process frange ? - Mounting thread 7/ ₁₆ 20 UNF to IEC 61518/DIN EN 61518 2 Monet	
P Click on the Article No. for the online configuration in the PIA. Life Cycle Portal. Measuring cell filling Measuring cell cleanings inert liquid ¹ cleaning inert liquid ¹ grease-free to cleanings level 2 Normial measuring range b 250 mbar a (18.85 paia) 5 bar a (72.5 psia) 5 bar a (72.5 psia) 100 bar a (1450 psia) 100 b	34-
Vick on the Article No. for the online configuration in the PIA Life Cycle Portal. Measuring cell filling Converted parts measuring cell canings Silicone oil normal grease-free to cleanings level 2 5 Norminal measuring range D 250 mbar a (18.85 paia) 0 5 bar a (72.5 psia) 0 30 bar a (435 psia) 0 100 bar a (1450 psia) K 100 bar a (1450 psia) K 110 bar a (1450 psia) K 121 Sainless steel Stainless steel 8 121 Sainless steel 1 6 122 Sondar Gold Cold C Version As diaphragm Parts of measuring cell A 123 bar a (1450 psia) K 123 constanting thread 1/10.00 Higgs connection A 124 constanting thread 1/10.00 Higgs connection A 125 constant guide of process connection C 126 of 15/80/10 K M518 A 126 of 15/80/10 K M51	35-
Measuring cell filling Measuring cell cleaning Image: Connection cell cell cell cell cell cell cell cel	
cleaning Inertiquid1)cleanings grasse-free to cleanings level 21Nominal measuring range 200 mbar a(18.85 psia)P200 mbar a(18.85 psia)F5 bar a(72.5 psia)G30 bar a(1450 psia)H100 bar a(1450 psia)KEWetted parts materials Seal disphragm callStainless steelAStainless steelStainless steelBHastelloyStainless steelBHastelloyStainless steelBMonelHLGoldGoldCVersion as diaphragm seal (13.9 0+15.6)PProcess connection • Mounting thread (1-18 PMT with flange connection • Mounting thread (1-18 PMT with flang	в
Inert liquid ¹⁾ grease-free to cleanliness level 2 3 Nominal measuring range 250 mbar a (3.62 psia) D 1300 mbar a (18.65 psia) F 5 bar a (72.5 psia) G 300 bar a (1450 psia) KE Without visible display (setting: bar) • With visible display (setting: bar) Seal diaphragm Parts of measuring cell Stainless steel Stainless steel Stainless steel Stainless steel Hastelloy Hastelloy Freese comection KE Freese comection Process connection • Mounting thread Vi-18 NPT with flange connection Process connection • Mounting thread Vi-20 UNF to Lic C 615 R/DIN En 61518 2 • Mounting thread Vi-20 UNF to Lic C 615 R/DIN En 61518 6 • Mounting thread Vi-18 NPT with flange connection 6 •	С
Nominal measuring range 250 mbar a (3 62 psia) 250 mbar a (3 62 psia) 100 mbar a (18 85 psia) 5 bar a (72.5 psia) 30 bar a (435 psia) 4 (435 psia) 9 bar a (455 psia) 9 bar a (456 psia) 9 bar a <td>F</td>	F
1300 mbar a (18.85 psia) 5 bar a (72.5 psia) 30 bar a (455 psia) 100 bar a (1450 psia) Wetted parts materials KE Seal diaphragm Parts of measuring cell Stainless steel Stainless steel Hastelloy Hastelloy Hastelloy Hastelloy Monel Monel Gold Gold Wersion as diaphragm seal 2 ¹ 3 ¹ 4 ¹ 5 ¹ 6 ¹ Y Process connection For expany seals. The measuring accuracy of the total combination here. • Mounting thread 1 ¹ / ₁₆ ⁻² 2 UNF to informent equirement) Y • Mounting thread 1 ¹ / ₁₆ ⁻² 2 UNF to informent equirement) 6 • Mounting thread M10 to Din 19213 (only for pelacement equirement) 6 • Mounting thread M10 to Din 19213 (only for pelacement equirement) 6 • Mounting thread M10 to Din 19213 (only for pelacement equirement) 6 • Stainless steel Stainless steel steel stainless steel procision costing for pressure unit: bar 1 • Stainless steel Stainless steel procision costing for pressure unit: bar 1 • Mounting thread 1 ¹ / ₁₆ ⁻² 0 UNF to incole costing blace inscription, casting broressite ing to press	0
5 bar a (72.5 psia) 30 bar a (435 psia) 30 bar a (435 psia) Wetted parts materials (1450 psia) Seal diaphragm Parts of measuring cell Stainless steel Stainless steel Hastelloy Stainless steel Hastelloy Hastelloy Tantalum Tantalum Monel Monel Gold Gold Version as diaphragm seal 21 31 4) 5) 6) Y Process connection Sealing screw opposite process connection • Sealing screw opposite process connection 2 • Mounting thread Y-18 PVT with flange connection 2 • Mounting thread Y-18 PVT with flange connection 2 • Mounting thread Y-16 PVC State 0 • Mounting thread Y-16 PVC State 0 • Mounting thread Y-16 PVC State 0 • Mounting thread M10 to DIN 19213 (only for replacement requirement) 0 • Mounting thread M10 to DIN 19213 (only for replacement requirement) 6 • Stainless steel Disc ast aluminum (only for replacement requirement) 2 Stainless steel Disc ast aluminum (only for prebacement requirement)	1
30 bar a (435 psia) 30 bar a (435 psia) 100 bar a (1450 psia) Wetted parts materials For explanding the process flag of the device: Seal diaphragm Parts of measuring cell Stainless steel Stainless steel Hastelloy Stainless steel Hastelloy Hastelloy Gold Gold Gold Gold Gold Gold Gold Gold Version as diaphragm seal 21 31 45 6) Y Process connection Process connection Female thread ½-18 NPT with flage connection 2 Nounting thread ½-20 UNF to [EC 61518/DIN EN 61518 2 Mounting thread ½-20 UNF to [EC 61518/DIN EN 61518 6 Mounting thread ½-20 UNF to [EC 61518/DIN EN 61518 6 Mounting thread ½-20 UNF to [EC 61518/DIN EN 61518 6 Mounting thread ½-20 UNF to [EC 61518/DIN EN 61518 6 Mounting thread ½-20 UNF to [EC 61518/DIN EN 61518 6 Mounting thread ½-20 UNF to [EC 61518/DIN EN 61518 6 Norney thread ½-20 UNF to [EC 61518/DIN EN 61518 6 Norne replacement requirement) 7	6
Substration (1450 psia) KE Wetted parts materials Specified, Order code "Y21" required) Seal diaphragm Parts of measuring cell Stainless steel Stainless steel Hastelloy Stainless steel Hastelloy Hastelloy Cold Gold C Gold Gold Gold L Version as diaphragm seal 2) 3/4/5/6 Y Process connection Y Foreass connection Y Foreass connection Y Foreass connection Y Mounting thread 7/16*20 UNF to IEC 61518/DIN EN 61518 2 Mounting thread 7/16*20 UNF to IEC 61518/DIN EN 61518 6 Mounting thread 7/16*20 UNF to IEC 61518/DIN EN 61518 6 Mounting thread 7/16*20 UNF to IEC 61518/DIN EN 61518 6 Monet ge screw poposite process connection 6 Mounting thread 7/16*20 UNF to IEC 61518/DIN EN 61518 6 More thread 7/16*20 UNF to IEC 61518/DIN EN 61518 6 Monet ge screw sellange 70 6 Mounting thread 7/16*20 UNF to IEC 61518/DIN EN 61518 6 More tread scale steel precision casting <t< td=""><td>7</td></t<>	7
Wetted parts materials Seal diaphragm Parts of measuring cell Stainless steel Stainless steel Hastelloy Stainless steel Hastelloy Stainless steel Monel Monel Monel Monel Gold L Version as diaphragm seal 2) 3) 4) 5) 6) Y Process connection Y Female thread ½-18 NPT with flange connection Y Sealing screw opposite process connection Y Mounting thread 71,6-20 UNF to IEC 61518/DIN EN 61518 2 Mounting thread 71,6-20 UNF to IEC 61518/DIN EN 61518 2 Mounting thread 71,6-20 UNF to IEC 61518/DIN EN 61518 6 Mounting thread 71,6-20 UNF to IEC 61518/DIN EN 61518 6 Mounting thread 71,6-20 UNF to IEC 61518/DIN EN 61518 6 Monuming thread 71,6-20 UNF to IEC 61518/DIN EN 61518 6 Mounting thread 71,6-20 UNF to IEC 61518/DIN EN 61518 6 Mounting thread 71,6-20 UNF to IEC 61518/DIN EN 61518 6 Monuming thread 71,6-20 UNF to IEC 61518/DIN EN 61518 6 Monuting thread 71,6-20 UNF to IEC 61518/DIN EN 61518 6 Monutable gand kink blanking plug 9	·
 Seal diaphragm Parts of measuring cell Stainless steel Stainless steel Hastelloy Hastelloy Hastelloy Hastelloy Hastelloy Contrantalum Tantalum Tantalum Tantalum Tantalum Tantalum Tantalum Gold Gold Gold Gold Gold Version as diaphragm seal ² (3) (4) (5) (6) Y Process flange (2) (3) (4) (5) (6) Y Process flange (7) Mounting thread M10 to DIN 19213 (only for replacement requirement) Vert on ide of process flange 7) Mounting thread M10 to DIN 19213 (only for replacement requirement) Mon-wetted parts materials process flange screws Electorics housing Stainless steel Die-cast aluminum Stainles	
Stainless steel A Hastelloy Stainless steel B Hastelloy Tantalum Tantalum Tantalum Tantalum Tantalum Gold Gold L Yersion as diaphragm seal 2) 3) 4) 5) 6) Y Process connection Yersion as diaphragm seal 2) 3) 4) 5) 6) Y Process connection Yersion as diaphragm seal 2) 3) 4) 5) 6) Y Process connection Yersion as diaphragm seal 2) 3) 4) 5) 6) Y Process connection Process connection Process connection - Mounting thread 7/1c=20 UNF to IEC 61518/DIN EN 61518 2 - Mounting thread 7/1c=20 UNF to IEC 61518/DIN EN 61518 0 - Mounting thread 7/1c=20 UNF to IEC 61518/DIN EN 61518 6 - Mounting thread 7/1c=20 UNF to IEC 61518/DIN EN 61518 6 - Mounting thread 7/1c=20 UNF to IEC 61518/DIN EN 61518 6 - Mounting thread 7/1c=20 UNF to IEC 61518/DIN EN 61518 6 - Mounting thread 7/1c=20 UNF to IEC 61518/DIN EN 61518 6 - Mounting thread 7/1c=20 UNF to IEC 61518/DIN EN 61518 6 - Mounting thread 7/1c=20 UNF to IEC 61518/DIN EN 61518 6 - Mounting thread 7/1c=20 UNF to Cast alumi	s)
Hastelloy Hastelloy C 2 Hastelloy Tantalum Tantalum E Monel Monel E Monel Monel H Gold Gold L Version as diaphragm seal 2) 3) 4) 5) 6) Y Process connection Female thread 1/4-18 NPT with flange connection - Mounting thread 7/ ₁₆ :20 UNF to IEC 61518/DIN EN 61518 2 - Mounting thread 7/ ₁₆ :20 UNF to IEC 61518/DIN EN 61518 2 - Mounting thread M10 to DIN 19213 (only for replacement requirement) 0 - Mounting thread M10 to DIN 19213 (only for replacement requirement) 6 Non-wetted parts materials process flange screws Electronics housing 2 Stainless steel Die-cast aluminum Stainless steel Die-cast aluminum casting for pressure unit: bar • Standard version, German plate inscription, setting for pressure unit: bar 1 • Chinese version 2 • Chinese version, English 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 2 • Chinese version, English plate inscri	- /
TantalumTantalumEMonelMonelHGoldGoldLGoldGoldLVersion as diaphragm seal 2/3/4/5/6YProcess connectionYFemale thread 1/-18 NPT with flange connectionYSealing screw opposite process connectionYMounting thread 7/16-20 UNF to2IEC 61518/DIN EN 615182Mounting thread 7/16-20 UNF to2(only for replacement requirement)6Vertion side of process flange 716Mounting thread 7/16-20 UNF to6IEC 61518/DIN EN 615186Mounting thread 7/16-20 UNF to6IEC 61518/DIN EN 615187Not for nominal measuring range 100 bar a (1450 psia). Positicvent use in the process flange (see dimensional drawing).Version3Stainless steelDie-cast aluminumStainless steelDie-cast aluminumStainless steelDie-cast aluminumStainless steelStainless steel precision casting for pr	
Non-lightMonelHGoldGoldLGoldGoldLGoldGoldLVersion as diaphragm seal? (3) (4) 5) (6)YProcess connectionYFemale thread ¼-18 NPT with flange connectionProcess connection• Sealing screw opposite process connection2• Mounting thread 7/ ₁₆ -20 UNF to2• Mounting thread 7/ ₁₆ -20 UNF to2• Mounting thread M10 to DIN 192130(only for replacement requirement)0• Vent on side of process flange 7)6• Mounting thread M10 to DIN 192136(only for replacement requirement)6• Mounting thread M10 to DIN 192136(only for replacement requirement)6• Mounting thread M10 to DIN 192136• Mounting thread Stainless steelDie-cast aluminum22Stainless steelDie-cast aluminum23Stainless steelDie-cast aluminum23• International version, German plate inscription, setting for pressure unit: bar• International version, English plate inscription, setting for pressure unit: bar• Chinese version, English plate inscription, setting for pressure unit: bar	
 Monch Gold Gold C Gold C Version as diaphragm seal 2) 3) 4) 5) 6) Process connection Female thread /-18 NPT with flange connection - Sealing screw opposite process connection - Mounting thread //₁₆-20 UNF to LEC 61518/DIN EN 61518 Mounting thread //₁₆-20 UNF to LEC 61518/DIN EN 61518 Vent on side of process flange 7) Mounting thread 7/₁₆-20 UNF to LEC 61518/DIN EN 61518 Mounting thread //₁₆-20 UNF to LEC 61518/DIN EN 61518 Mounting thread 7/₁₆-20 UNF to LEC 61518/DIN EN 61518 Mounting thread 7/₁₆-20 UNF to LEC 61518/DIN EN 61518 Mounting thread 7/₁₆-20 UNF to LEC 61518/DIN EN 61518 Mounting thread 10 to DIN 19213 (only for replacement requirement) Vent on side of process flange 7) Mounting thread M10 to DIN 19213 (only for replacement requirement) Version Stainless steel Die-cast aluminum Conserve on the bar Co	60770-2
Version as diaphragm seal 2) 3) 4) 5) 6) Y Process connection Process connection Female thread ¼-18 NPT with flange connection 4 Mounting thread 7/ ₁₆ -20 UNF to 2 IEC 61518/DIN EN 61518 2 Mounting thread M10 to DIN 19213 (only for replacement requirement) 0 Version as diaphragm seals the process flange 7 ¹ 6 Mounting thread 7/ ₁₆ -20 UNF to IEC 61518/DIN EN 61518 6 Mounting thread M10 to DIN 19213 (only for replacement requirement) 6 Nonwetted parts materials process flange screws Electronics housing 6 Stainless steel Die-cast aluminum stainless steel Die-cast aluminum casting for pressure unit: bar 1 Version 1 2 • Standard version, English plate inscription, setting for pressure unit: bar 1 • International version, English plate inscription, setting for pressure unit: bar 2 • Chinese version, English plate inscription, 3	
Process connection Female thread ¼-18 NPT with flange connection • Sealing screw opposite process connection • Mounting thread ¼-18 NPT with flange connection • Mounting thread 1/4-18 NPT with flange connection • Vent on side of process flange 7) • Mounting thread 1/4-18 NPT with flange connection • Mounting thread 1/4-18 NPT with flange connection • Mounting thread 1/4-18 NPT with flange connection • Net on side of process flange 7) • Mounting thread 1/4-18 NPT with flange • Mounting thread 1/4-18 NPT with flange • Mounting thread 1/4-18 NPT with flange • Mounting thread 1/4-18 NPT • Minting thread 1/4-18 NPT • Nor wetted parts materials process flange screws Elec	i is certifi
Female thread ¼-18 NPT with flange connection • Sealing screw opposite process connection • Mounting thread 7/ ₁₆ -20 UNF to IEC 61518/DIN EN 61518 2 • Mounting thread M10 to DIN 19213 (only for replacement requirement) 0 • Vent on side of process flange 7) 6 • Mounting thread M10 to DIN 19213 (only for replacement requirement) 6 • Mounting thread M10 to DIN 19213 (only for replacement requirement) 6 • Mounting thread M10 to DIN 19213 (only for replacement requirement) 6 • Mounting thread M10 to DIN 19213 (only for replacement requirement) 6 • Mounting thread M10 to DIN 19213 (only for replacement requirement) 6 • Mounting thread M10 to DIN 19213 (only for replacement requirement) 6 • Mounting thread M10 to DIN 19213 (only for replacement requirement) 6 • Mounting thread Stainless steel Die-cast aluminum casting 2 • Stainless steel Die-cast aluminum casting 2 • 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, 3	ter with
 Sealing screw opposite process connection Mounting thread ⁷/₁₆-20 UNF to IEC 61518/DIN EN 61518 Mounting thread M10 to DIN 19213 (only for replacement requirement) Vent on side of process flange ⁷/ Mounting thread ⁷/₁₆-20 UNF to IEC 61518/DIN EN 61518 Mounting thread ⁷/₁₆-20 UNF to IEC 61518/DIN EN 61518 Mounting thread M10 to DIN 19213 (only for replacement requirement) Mounting thread M10 to DIN 19213 (only for replacement requirement) 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 Die-cast aluminum Stainless steel Die-cast aluminum Stainless steel Stainless steel precision casting Version Standard version, German plate inscription, setting for pressure unit: bar International version, English plate inscription, setting for pressure unit: bar Chinese version, English plate inscription, Stainless process on, English plate inscription, Stainless procesure unit: bar Chinese version, English plate inscription, Stainless procesure unit: bar Stainless procesure unit: bar	I with the
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(only for replacement requirement) Non-wetted parts materials process flange screws Image: Stain and Stain	la in Ev i
Non-wetted parts materials process flange screws Electronics housing Stainless steel Die-cast aluminum 2 Stainless steel Stainless steel precision casting 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 3	
Stainless steel Die-Cast aufminum 2 Stainless steel Stainless steel precision casting 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, 3	ccording
Stainless steel Stainless steel precision 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, 3	
Version • Standard version, German plate inscription, setting for pressure unit: bar • International version, English plate inscription, setting for pressure unit: bar • Chinese version, English plate inscription, 3	
 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, 3 	
 setting for pressure unit: bar International version, English plate inscription, setting for pressure unit: bar Chinese version, English plate inscription, 3 	
 setting for pressure unit: bar Chinese version, English plate inscription, 3 	
Chinese version, English plate inscription,	
setting for pressure unit. Pascal	
All versions include DVD with compact operating	
instructions in various EU languages.	
Explosion protection None A	
With ATEX, Type of protection:	
- "Intrinsic safety (Ex ia)" B	
- "Explosion-proof (Ex d)" ⁸⁾	
- "Intrinsic safety and flameproof enclosure"	
$(Ex ia + Ex d)^{(*9)}$	
- "Ex nA/ic (Zone 2)" ¹⁰⁾ E - "Intrinsic safety, explosion-proof enclosure and R	
- Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D) ^{*9) 11)} (not for DS III FF)	
• FM + CSA intrinsic safe (is) ¹² F	
• FM + CSA (is + ep) + Ex ia + Ex d (ATEX) + Zone 1D/2D ⁹⁾¹¹⁾¹²	
• With FM + CSA, Type of protection:	
- "Intrinsic Safe and Explosion Proof (is + xp)" ⁸⁾¹²⁾	

Transmitters for applications with advanced requirements (Advanced)

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

Selection and Ordering data	Order			
<i>Further designs</i> Add "- Z " to Article No. and specify Order code.		HART	PA	FF
Pressure transmitter with mounting bracket (1x fixing angle, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut,				
2 x U-washer) made of: • Steel • Stainless steel 304 • Stainless steel 316L	A01 A02 A03	* * *	* * *	* * *
O-rings for process flanges (instead of FPM (Viton)) • PTFE (Teflon) • FEP (with silicone core, approved for food) • FFPM (Kalrez, compound 4079), for measured medium temperatures -15 100 °C (5 212 °F)) • NBR (Buna N)	A20 A21 A22 A23	* * *	* * *	* * *
Plug • Han 7D (metal) • Han 8D (instead of Han 7D) • Angled • Han 8D (metal) Sealing screw	A30 A31 A32 A33 A40	* * * *	~	•
14-18 NPT, with valve in mat. of process flanges Cable sockets for M12 connectors (metal (CuZn))	A50	~	✓	~
Rating plate inscription (instead of German) • English • French • Spanish • Italian • Cyrillic (russian)	B11 B12 B13 B14 B16	* * * *	* * * * *	* * * * *
English rating plate Pressure units in inH ₂ 0 and/or psi	B21	1	1	1
Quality Inspection Certificate (5-point char- acteristic curve test) according to IEC 60770-2 ¹⁾ Inspection certificate ²⁾	C11 C12	✓ ✓	✓ ✓	✓ ✓
Acc. to EN 10204-3.1 Factory certificate Acc. to EN 10204-2.2	C14	~	•	~
Acceptance certificate (EN 10204-3.1) PMI test of parts in contact with medium	C15	~	1	~
Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL confor- mity declaration	C20	1		
Functional safety (PROFIsafe) Certificate and PROFIsafe protocol	C21 ³⁾		~	
Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL confor- mity declaration	C23	*		
PED for Russia with initial calibration mark	C99	~	1	1

Selection and Ordering data	Order	code		
Setting of the upper saturation limit of the 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	~	✓	~
Supplied with oval flange (1 item), PTFE packing and screws in thread of process flange	D37	~	✓	1
Capri cable gland 4F CrNi and clamping device (848699 + 810634) included	D59	✓	1	1

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.				
Use in or on zone 1D/2D	E01	~	~	~
(only together with type of protection "Intrinsic safety" (transmitter				
7MF4B Ex ia)" and IP66)				
Oxygen application	E10	✓	✓	✓
(In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140 °F))				
Export approval Korea	E11	✓	✓	✓
CRN approval Canada (Canadian Registration Number)	E22 ⁴⁾	1	~	~
Dual seal	E24	✓	✓	✓
Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil)	E25 ⁵⁾	✓	~	~
(only for transmitter 7MF4B)				
"Flameproof" explosion protection accord- ing to INMETRO (Brazil)	E26 ⁵⁾	~	~	~
(only for transmitter 7MF4D)				
Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil)	E28 ⁵⁾	~	~	
(only for transmitter 7MF4P)	-)			
Ex Approval IEC Ex (Ex ia) (only for transmitter 7MF4B)	E45 ⁵⁾	~	~	~
Ex Approval IEC Ex (Ex d)	E46 ⁵⁾	1	1	1
(only for transmitter 7MF4D)	L40 %	•	•	•
Explosion-proof "Intrinsic safety"	E55 ⁵⁾	~	✓	✓
to NEPSI (China)				
(only for transmitter 7MF4B)	E56 ⁵⁾			
Explosion protection "Explosion-proof" to NEPSI (China)	E20°)	•	v	•
(only for transmitter 7MF4D)				
Explosion-proof "Zone 2" to NEPSI (China)	E57 ⁵⁾	✓	✓	✓
(only for transmitter 7MF4E)	5)			
Ex protection "Ex ia", "Ex d" and "Zone 2" to NEPSI (China) (only for transmitter 7MF4R)	E58 ⁵⁾	~	~	~
"Intrinsic safety" and "Explosion-proof"	E70 ⁵⁾	1	1	1
explosion protection acc. to Kosha (Korea)	E70**	•	•	•
(only for transmitter 7MF4[B, D]Z + E11)				
Ex-protection Ex ia according to EAC Ex (Russia)	E80	~	✓	~
Ex-protection Ex d according to EAC Ex (Russia)	E81	~	~	~
Ex-protection Ex nA/ic (Zone 2) according to EAC Ex (Russia)	E82	1	~	*
Ex-protection Ex ia + Ex d + Zone 1D/2D according to EAC Ex (Russia)	E83	~	~	~
Two coats of lacquer on casing and cover (PU on epoxy)	G10	~	1	~
Interchanging of process connection side	H01	1	1	✓
Vent on side for gas measurements	H02	✓	✓	✓
Stainless steel process flanges for vertical differential pressure lines	H03	~	~	~
(not together with K01, K02 and K04) ⁶⁾				

-				
Selection and Ordering data	Order	code		
<i>Further designs</i> Add "- Z " 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	~	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	~	1	1
Vent valve or blanking plug of process flange welded-in (orientation: on left when viewing the display)^7)	J09	*	1	1
Process flange	I/O4	,	,	,
Hastelloy Monel	K01 K02	1 1	√	×
Stainless steel with PVDF insert	K02	· /	·	1
max. PN 10 (MAWP 145 psi),	104	•	•	•
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				
Marine approvals				
Det Norske Veritas	S10	1	1	1
Germanischer Lloyd (DNV-GL) • Lloyds Register (LR)	S11	1	~	1
French marine classification society	S12	¥	¥	~
Bureau Veritas (BV)	0.2			
American Bureau of Shipping (ABS)	S14	1	✓	1
 Russian Maritime Register (RMR) 	S16	✓	✓	1
 Korean Register of Shipping (KR) 	S17	1	~	~

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⁾ Cannot be ordered with remote seal.

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

6) Not suitable for connection of remote seals.

 Blanking plug is standard configuration. Order option A40 if a vent valve is required instead of a blanking plug.

Transmitters for applications with advanced requirements (Advanced)

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

Selection and Ordering data	Order	code		
Additional data		HART	PA	FF
Please add "-Z" to Article No. and specify Order code(s) and plain text.				
Measuring range to be set Specify in plain text (max. 5 characters): Y01: up to mbar a, bar a, kPa _{abs} , MPa _{abs} , psia ²⁾	Y01	•	√ 1)	
Stainless steel tag plate and entry in device variable (measuring point descrip- tion) Max. 16 characters, specify in plain text: Y15:	Y15	1	•	*
Measuring point text (entry in device vari- able) Max. 27 characters, specify in plain text:	Y16	*	1	1
Y16: Entry of HART address (TAG) Max. 8 characters, specify in plain text: Y17:	¥17	✓		
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 non-pressure units ³⁾	Y22 + 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 char- acters)				
Preset bus address possible between 1 and 126 Specify in plain text: Y25:	Y25		•	•
Damping adjustment in seconds (0 100 s)	Y30	~	~	~

Factory mounting of valve manifolds, see accessories.

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

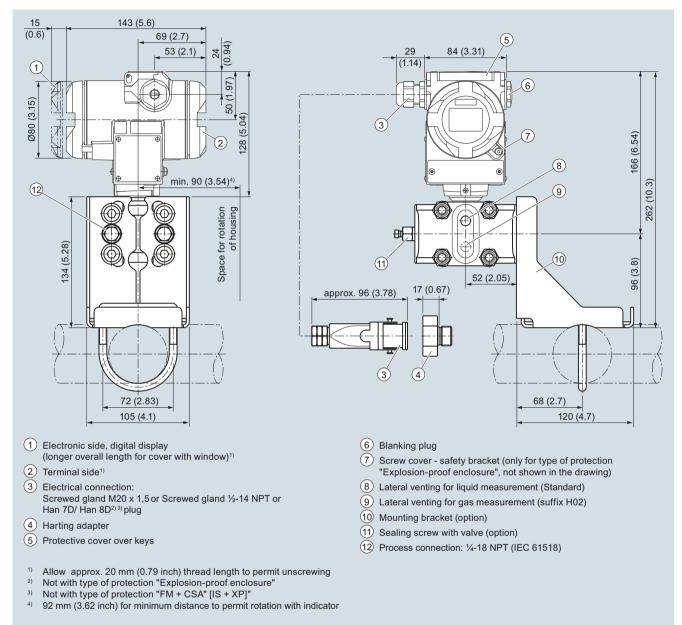
✓ = available

- 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-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



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

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for differential pressure and flow

Technical specifications

SITRANS P, DS III for differential pressure and flow

Input

Measured variable

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

Differential pressure and flow

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

Lower measuring limit

- Measuring cell with silicone oil filling
- Measuring cell with inert filling liquid
- for process temperature -20 °C < $\vartheta \le +60$ °C (-4 °F < $\vartheta \le +140$ °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 $^{\circ}\text{F} < 9 \le +212 \,^{\circ}\text{F}$ (max. 185 $^{\circ}\text{F}$ for measuring cell 435 psi))

Upper measuring limit

Start of scale value

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

-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 - 140 °F)/°F

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

Between the measuring limits (fully adjustable)

Pressure Measurement

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			
Output	HART		PROFIBUS PA/FOUNDATION Fieldbus
Output signal	4 20 mA		Digital PROFIBUS PA and FOUNDATION Fieldbus signal
Lower limit (infinitely adjustable)	3.55 mA, factory pr	reset to 3.84 mA	-
Upper limit (infinitely adjustable)	23 mA, factory pre- optionally set to 22 code D05)		-
Load			
Without HART	$R_{\rm B} \le (U_{\rm H} - 10.5 \text{ V})/U_{\rm H}$: Power supply i		-
With HART	$R_{\rm B} = 230 \dots 500 \ \Omega$ $R_{\rm B} = 230 \dots 1100 \ \Omega$ tor)	(SIMATIC PDM) or 2 (HART Communica-	-
Physical bus	-		IEC 61158-2
Protection against polarity reversal	Protected against so other with max. sup		ty reversal. Each connection against the
Electrical damping (step width 0.1 s)	Set to 2 s (0 100	s)	
Measuring accuracy	Acc. to IEC 60770-	1	
Reference conditions (All error data refer always refer to the set span)	 Increasing chara Start-of-scale validities Stainless steel set Silicone oil filling Room temperature 	ue 0 bar/kPa/psi al diaphragm	
Measuring span ratio r (spread, Turn-Down)	r = max. measurin	g span/set measuring	span or nom. pressure range
Error in measurement at limit setting incl. hysteresis and reproducibility			
Linear characteristic			
- 20 mbar/2 kPa/0.29 psi	r ≤ 5 : 5 < r ≤ 10 : 10 < r ≤ 20 :	$\leq 0.075 \%$ $\leq (0.0029 \cdot r + 0.07^{-1})$ $\leq (0.0045 \cdot r + 0.07^{-1})$	
- 60 mbar/6 kPa/0.87 psi	r ≤ 5 : 5 < r ≤ 60 :	$\leq 0.075 \%$ $\leq (0.005 \cdot r + 0.05) \%$	%
- 250 mbar/25 kPa/3.63 psi 600 mbar/60 kPa/8.7 psi 1600 mbar/160 kPa/23.21 psi 5 bar/500 kpa/72.5 psi 30 bar/3 MPa/435 psi	r ≤ 5 : 5 < r ≤ 100 :	≤ 0.065 % ≤ (0.004 · r + 0.045)	%
 Square-rooted characteristic (flow > 50 %) 			
- 20 mbar/2 kPa/0.29 psi	r ≤ 5 : 5 < r ≤ 10 : 10 < r ≤ 20 :	$ \leq 0.075 \% \leq (0.0029 \cdot r + 0.07)^{-1} \leq (0.0045 \cdot r + 0.07)^{-1} $	
- 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 + 0.142 ≤ (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 :	$\leq (0.15 \cdot r + 0.1) \%$					
• 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						
	\leq (0.15 \cdot r) % per 32 bar (zero-point correction is possible with position error adjustment)					
	\leq (0.1 \cdot r) % per 70 bar (zero-point correction is possible with position error adjustment)					
	\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 \pm 30 °C (\pm 54 °F))	Static pressure max. 70 bar/7 MPa/ 1015 psi					
• 20 mbar/2 kPa/0.29 psi :	≤ (0.2 · r) % per year					
• 60 mbar/6 kPa/0.87 psi 30 bar/3 MPa/435 psi	≤ (0.25 · r) % in 5 years					
• 250 mbar/25 kPa/3.63 psi : 600 mbar/60 kPa/8.7 psi 1600 mbar/160 kPa/23.21 psi 5 bar/500 kpa/72.5 psi	≤ (0.125 · r) % in 5 years					
	\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)

DS III for diff	arantial i	hraeellira an	

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 \dots +100 °C (-40 \dots +212 °F) -20 \dots with 30 bar measuring cell	+100 °C (-4 +212 °F)
 Measuring cell with inert filling liquid 	-20 +100 °C (-4 +212 °F)	
 In conjunction with dust explosion protection 	-20 +60 °C (-4 +140 °F)	
Ambient conditions		
Ambient temperature		
- Transmitter	-40 +85 °C (-40 +185 °F) -20 +85 °C (-4 +185 °F) with 30 k	par measuring cell
- 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 fo	r use in the tropics
 Electromagnetic Compatibility 		
- Emitted interference and interference immunity	Acc. to IEC 61326 and NAMUR NE 21	
Design		
Weight (without options)	Die-cast aluminum: \approx 4.5 kg (\approx 9.9 lb) Stainless steel precision casting: \approx 7.1	kg (≈ 15.6 lb)
Enclosure material	Low-copper die-cast aluminum, GD-A no. 1.4408	ISi12 or stainless steel precision casting, mat.
Wetted parts materials		
• Seal diaphragm	Stainless steel, mat. no. 1.4404/316L o mat. no. 2.4360, tantalum or gold	or Hastelloy C276, mat. no. 2.4819, Monel,
Process flanges and sealing screw	Stainless steel, mat. no. 1.4408, Haste mat. no. 2.4360	lloy C4, mat. no. 2.4602 or Monel,
• O-Ring	FPM (Viton) or optionally: PTFE, FEP, F	EPM and NBR
Measuring cell filling	Silicone oil or inert filling liquid (maximum value with oxygen measure (140 °F))	ement pressure 100 bar (1450 psi) at 60 °C
Process connection	Female thread $^{1\!\!/}_{16}\text{-}18$ NPT and flange c DIN 19213 or $^{7}\!/_{16}\text{-}20$ UNF to IEC 6151	onnection with mounting thread M10 to 8/DIN EN 61518
Material of mounting bracket		
• Steel	Sheet-steel, Mat. No. 1.0330, chrome-	plated
Stainless steel	Sheet stainless steel, mat. no. 1.4301	(SS 304)
Power supply $m{\textit{U}}_{m{ extsf{ extsf extsf{ extsf{ extsf{ extsf{ extsf{ extsf{ extsf extsf{ extsf} extsf{ extsf{ extsf} extsf{ extsf} extsf{ extsf} extsf{ extsf{ extsf} extsf{ extsf{ extsf{ extsf{ extsf} extsf{ extsf{ exts} extsf} extsf} extsf} extsf} extsf} extsf} extsf} extsf} exts$	HART	PROFIBUS PA/ FOUNDATION Fieldbus
Terminal voltage on transmitter	10.5 45 V DC 10.5 30 V DC in intrinsically-safe mo	ode -
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 Eault disconnection electronics (EDE) available	-	15.5 mA
Fault disconnection electronics (FDE) available	-	Yes

Transmitters for applications with advanced requirements (Advanced)

Certificates and approvals	HART	PROFIBUS PA/ FOUNDATION Fieldbus				
Classification according to PED 2014/68/EU	group 1; complies with requirements practice)	gases of fluid group 1 and liquids of fluid of article 4, paragraph 3 (sound engineering				
	 PN 420 (MAWP 6092) for gases of fluid group 1 and liquids of fluid group 1; complies with basic safety requirements of Article 4, paragraph 1 (appendix 1); assigned to category III, conformity evaluation module H by the TÜV Nord. 					
Explosion protection						
Intrinsic safety "i"	PTB 13 ATEX 2007 X					
- Marking	Ex II 1/2 G Ex ia/ib IIC T4/T5/T6 Ga/Gb					
- Permissible ambient temperature	-40 +85 °C (-40 +185 °F) tempera -40 +70 °C (-40 +158 °F) tempera -40 +60 °C (-40 +140 °F) tempera	ture class T5;				
- Connection	To certified intrinsically-safe circuits with peak values: $U_{\rm i}$ = 30 V, $l_{\rm i}$ = 100 mA, $P_{\rm i}$ = 750 mW; $R_{\rm i}$ = 300 Ω	h FISCO supply unit: $U_0 = 17.5 \text{ V}, I_0 = 380 \text{ mA}, P_0 = 5.32 \text{ W}$ Linear barrier: $U_0 = 24 \text{ V}, I_0 = 250 \text{ mA}, P_0 = 1.2 \text{ W}$				
- Effective internal inductance/capacitance	$L_{\rm i} = 0.4 {\rm mH}, C_{\rm i} = 6 {\rm nF}$	$L_{\rm i} = 7 \ \mu {\rm H}, \ C_{\rm i} = 1.1 \ {\rm nF}$				
• 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) tempera -40 +60 °C (-40 +140 °F) tempera	ture class T4; ture class T6				
- Connection	To circuits with values: $U_{\rm H}$ = 10.5 45 V DC	To circuits with values: $U_{\rm H} = 9 \dots 32 \text{ V DC}$				
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: $U_i = 30 \text{ V}, I_i = 100 \text{ mA},$ $P_i = 750 \text{ mW}, R_i = 300 \Omega$	th FISCO supply unit: $U_0 = 17.5 \text{ V}, I_0 = 380 \text{ mA}, P_0 = 5.32 \text{ W}$ Linear barrier: $U_0 = 24 \text{ V}, I_0 = 250 \text{ mA}, P_0 = 1 \text{ W}$				
- Effective internal inductance/capacitance	$L_{\rm i} = 0.4 {\rm mH}, C_{\rm i} = 6 {\rm nF}$	$L_{\rm i} = 7 \mu\text{H}, C_{\rm i} = 1.1 \text{nF}$				
Dust explosion protection for zone 21/22	PTB 01 ATEX 2055					
- Marking	Ex II 2 D Ex tb IIIC T120°C Db					
- Connection	To circuits with values: $U_{\rm H}$ = 10.5 45 DC; $P_{\rm max}$ = 1.2 W	V To circuits with values: $U_{\rm H} = 9 \dots 32$ 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 IIC 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: $U_{\rm i} = 45 \ {\rm V}$	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, D T4T6; CL I, DIV 2, GP ABCD T4T6; CL II, DI	IV 1, GP EFG; CL III; CL I, ZN 0/1 AEx ia IIC V 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, D DIV 2, GP ABCD T4T6; CL II, DIV 2, G	IV 1, GP EFG; CL III; Ex ia IIC T4T6; CL I, GP FG; CL III				

Transmitters for applications with advanced requirements (Advanced)

		SITRANS P DS III for d	ifferential pressure and flow
HART communication		FOUNDATION Fieldbus	
HART	230 1100 Ω	communication	2 function blocks and a input
Protocol	HART Version 5.x	Function blocks	3 function blocks analog input, 1 function block PID
Software for PC	SIMATIC PDM	 Analog input 	
PROFIBUS PA communication		- Adaptation to customer-	Yes, linearly rising or falling
Simultaneous communication with master class 2 (max.)	4	specific process variables - 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		- 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)	Ĵ	ing limit and one alarm limit respectively
Internal preprocessing	motoring)	 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	Yes
- Failure mode	parameterizable (last good value, substitute value, incorrect value)	 Monitoring of sensor limits Simulation function: Measured pressure value, sensor tem- 	Constant value or over parame- terizable ramp function
- Limit monitoring	Yes, one upper and lower warn- ing limit and one alarm limit respectively	perature and electronics tem- perature	
Register (totalizer)	Can be reset, preset, optional direction of counting, simulation function of register output		
- Failure mode	parameterizable (summation with last good value, continuous summation, summation with incorrect value)		
- Limit monitoring	One upper and lower warning limit and one alarm limit respec- tively		
 Physical block 	1		
Transducer blocks	2		
Pressure transducer block			
 Can be calibrated by applying 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 Orde	ering data		Article No	Э.	-	Selection and Ordering data	Article No.
SITRANS P DS III w	vith HART pressure trans-		7 M F 4 4 3	33-		SITRANS P DS III with HART pressure trans-	7 M F 4 4 3 3 -
mitters for different PN 32/160 (MAWP 4	tial pressure and flow, 464/2320 psi)					mitters for differential pressure and flow, PN 32/160 (MAWP 464/2320 psi)	
Click on the Article ration in the PIA L	le No. for the online configu- _ife Cvcle Portal.					Explosion protection None	А
Measuring cell fillir	,					With ATEX, Type of protection:	^
	cleaning					- "Intrinsic safety (Ex ia)"	В
Silicone oil		-	1			- "Explosion-proof (Ex d)" ⁹⁾	D
Inert liquid ¹⁾	grease-free to cleanliness level 2		3			 "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)"¹⁰ 	Р
· · · /		_				- "Ex nA/ic (Zone 2)" ¹¹⁾	Е
Measuring span (m PN 32 (MAWP 464 p						- "Intrinsic safety, explosion-proof enclosure	B
$1 \dots 20 \text{ mbar}^{2)}$	(0.4015 8.03 inH₂O) ►		в			and dust explosion protection (Ex ia+ Ex d +	
	ξ 2,		5			Zone 1D/2D) ^{#10)12)}	
PN 160 (MAWP 2320	1 /		•			• FM + CSA intrinsic safe (is) ¹³⁾	F
1 60 mbar 2.5 250 mbar	(0.4015 24.09 inH ₂ O) ► (1.004 100.4 inH ₂ O) ►		C D			• FM + CSA (is + ep) + Ex ia + Ex d (ATEX) + Zone 1D/2D ¹⁰⁾¹²⁾¹³⁾	S
2.5 250 mbar 6 600 mbar	· · · · · · · · · · · · · · · · · · ·		E			• With FM + CSA, Type of protection:	
16 1600 mbar			F			- "Intrinsic Safe and Explosion Proof	NC
50 5000 mbar	· · · · · · · · · · · · · · · · · · ·		G			(is + xp)" ⁹⁾¹³⁾	
0.3 30 bar			H		Ī	Electrical connection/cable entry	
Wetted parts mater	· · · · · · · · · · · · · · · · · · ·	-				• Screwed gland M20 x 1.5	в
(stainless steel proc						Screwed gland ¹ / ₂ -14 NPT	С
Seal diaphragm	Parts of measuring cell					 Han 7D plug (plastic housing) incl. mating connector¹⁴⁾¹⁵⁾ 	D
1 8							
Stainless steel Hastelloy	Stainless steel		AB			 M12 connectors (stainless steel)¹⁶⁾¹⁷⁾ 	F
Hastelloy	Hastelloy		C			Display	
Tantalum ³⁾	Tantalum		Ē			Without display	
Monel ³⁾	Monel		Ĥ			Without visible display	
Gold ³⁾	Gold		L			(display concealed, setting: mA)	
Version for diaphrag	Jm seal ^{4) 5) 6) 7)}		Y			With visible display (setting: mA) with customer-specific display	
Process connection						(setting as specified, Order code "Y21" or "Y22" required)	
	posite process connection					Available ex stock	
- Mounting thread IEC 61518/DIN E			2			We can offer shorter delivery times for configuration	
- Mounting thread	M10 to DIN 19213		0		Ι.	the Quick Ship Symbol . For details see page 10 Power supply units see Chap. 7 "Supplementary Col	
 Vent on side of pro 	ment requirement)					Included in delivery of the device:	
 Went off side of pro- Mounting thread IEC 61518/DIN E 			6			Quick-start guide	
						 Sealing plug(s) or sealing screw(s) for the process 	nanges(s)
	M10 to DIN 19213 ment requirement)		4			¹⁾ For oxygen application, add Order code E10.	
Non-wetted parts n	. ,	-			:	2) Not suitable for connection of remote seal. Position of the process flange (see dimensional drawing).	f the top vent valv
•	ws Electronics housing				:	the process flange (see dimensional drawing). ³⁾ Not in conjunction with max. span 20 and 60 mbar (8.	.03 and 24 09 inH
Stainless steel		-	2			⁴⁾ When the manufacture's certificate (calibration certific	
Stainless steel	Stainless steel precision casting ⁸⁾		3			ordered for transmitters with diaphragm seals accord is recommended only to order this certificate exclusiv phragm seals. The measuring accuracy of the total co	ing to IEC 60770- vely with the dia-
Version						here.	
	German plate inscription,			1		⁵⁾ If the acceptance test certificate 3.1.is ordered for the	
setting for pressure						mounted diaphragm seals this certificate must also b respective remote seals.	e ordered with the
 International version setting for pressure 	on, English plate inscription, ▶			2		respective remote seals. ⁶⁾ The diaphragm seal is to be specified with a separate	a order number a
0 1	nglish plate inscription.	•		3		 Ine diapnragm seal is to be specified with a separate must be included wiht the transmitter order number, f 7MF443,Y and 7MF4900-1B 	
	DVD with compact operat-				:	 The standard measuring cell filling for configurations 	with remote seals
	arious EU languages.					is silicone oil.	
		- 1				⁸⁾ Not in conjunction with Electrical connection "Han7D	plug".
					ę	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 on	ly available in Ex i

- ¹¹⁾Configurations with HAN and M12 connectors are only available in Ex ic. ¹²⁾Only in connection with IP66.
- ¹³⁾ Explosion protection acc. to FM/CSA: suitable for installations according to NEC 500/505.
- ¹⁴⁾ Only in connection with Ex apporval A, B or E.
- ¹⁵⁾Permissible only for crimp-contact of conductor cross-section 1 mm²
- ¹⁶⁾Only in connection with Ex approval A, B, E or F.
- ¹⁷⁾M12 delivered without cable socket.

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for differential pressure and flow

Selection and Ordering	g data	Article No.	Selection and Ordering data	Article No.
Pressure transmitters and flow PN 32/160 (M	for differential pressure AWP 464/2320 psi)		Pressure transmitters for differential pressure and flow PN 32/160 (MAWP 464/2320 psi)	
SITRANS P DS III with P	ROFIBUS PA (PA)	7 M F 4 4 3 4 -	SITRANS P DS III with PROFIBUS PA (PA)	7 M F 4 4 3 4 -
SITRANS P DS III with F	OUNDATION Fieldbus (FF)	7 M F 4 4 3 5 -	SITRANS P DS III with FOUNDATION Fieldbus (FF)	7 M F 4 4 3 5 -
↗ Click on the Article N	No. for the online configu-			
ration in the PIA Life Measuring cell filling	Measuring cell		Explosion protection	
measuring cen ming	cleaning		 None With ATEX, Type of protection: 	A
Silicone oil	normal	1	- "Intrinsic safety (Ex ia)"	В
Inert liquid ¹⁾	grease-free to cleanliness level 2	3	- "Explosion-proof (Ex d)" ⁸⁾	D
Nominal measuring ra			 "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)"⁹⁾ 	Р
PN 32 (MAWP 464 psi)	lige		- "Ex nA/ic (Zone 2)" ¹⁰⁾	E
20 mbar ²⁾	(8.03 inH ₂ O)	В	- "Intrinsic safety, explosion-proof enclosure and	R
PN 160 (MAWP 2320 ps	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) ¹²⁾	F
250 mbar	(100.4 inH ₂ O)	D	• FM + CSA (is + ep) + Fx ia + Fx d (ATFX)+	S
600 mbar	(240.9 inH ₂ O)	E	• FM + CSA (is + ep) + Ex ia + Ex d (ATEX)+ Zone 1D/2D ⁹⁾¹¹⁾¹²⁾	9
1600 mbar	(642.4 inH ₂ O)	F	 With FM + CSA, Type of protection: 	
5 bar 30 bar	(2008 inH ₂ O) (435 psi)	G	 "Intrinsic Safe and Explosion Proof (is + xp)"⁸⁾¹²⁾ 	NC
Wetted parts materials			Electrical connection/cable entry	-
(stainless steel process			Screwed gland M20 x 1.5	в
Seal diaphragm	Parts of measuring cell		Screwed gland 1/2-14 NPT	c
Stainless steel	Stainless steel	A	M12 connectors (stainless steel) ^{13) 14)}	F
Hastelloy	Stainless steel	B	Display	_
Hastelloy	Hastelloy	c	Without display	
Tantalum ³⁾	Tantalum	E	Without visible display	
Monel ³⁾	Monel	H	(display concealed, setting: bar)	
Gold ³⁾	Gold	L	With visible display (setting: bar)	
Version as diaphragm s	seal 4/ 5/ 6/ 7/	Y	 With customer-specific display (setting as specified, Order code "Y21" required) 	
Process connection	T with flange connection		Included in delivery of the device:	
 Sealing screw opposit 	0		Quick-start guide	
- Mounting thread ⁷ / ₁₀ IEC 61518/DIN EN 6	a-20 UNF to	2	 Sealing plug(s) or sealing screw(s) for the process 	s flanges(s)
			¹⁾ For oxygen application, add Order code E10.	
- Mounting thread M1		0	2) Not suitable for connection of remote seal. Position the process flange (see dimensional drawing).	of the top vent valv
(only for replacementVenting on side of pro			³⁾ Not in conjunction with max. span 20 and 60 mbar (4	3.03 and 24.09 in⊢
		c	4) When the manufacture's certificate (calibration certificate)	ficate) has to be
 Mounting thread ⁷/₁₀ IEC 61518/DIN EN 6 		6	ordered for transmitters with diaphragm seals accor is recommended only to order this certificate exclus	
- Mounting thread M1		4	phragm seals. The measuring accuracy of the total of	
(only for replacemer	. ,		⁵⁾ If the acceptance test certificate 3.1.is ordered for t	he transmitter with
Non-wetted parts mate process flange screws			mounted diaphragm seals this certificate must also	
Stainless steel	Die-cast aluminum	2	 respective remote seals. ⁶⁾ The diaphragm seal is to be specified with a separation 	ate order number a
Stainless steel	Stainless steel precision	2 3	must be included wiht the transmitter order number	
	casting		7MF443Y and 7MF4900-1B 7) The standard measuring cell filling for configuration:	s with remote seal
Version			is silicone oil.	
 Standard versions 		1	 ⁸⁾ Without cable gland, with blanking plug. ⁹⁾ With applaced cable gland Ex is and blanking plug. 	
	English label inscriptions,	2	⁹⁾ With enclosed cable gland Ex ia and blanking plug. ¹⁰⁾ Configurations with HAN and M12 connectors are of a state of the state	
documentation in 5 la (no Order code select			¹¹⁾ Only in connection with IP66.	
Version	•		¹²⁾ Explosion protection acc. to FM/CSA: suitable for ins NEC 500/505.	tallations accordin
 Standard version, Ger 	rman plate inscription.	1	¹³⁾ Only in connection with Ex approval A, B, E or F.	
setting for pressure ur	nit: bar		¹⁴⁾ M12 delivered without cable socket	
 International version, I setting for pressure ur 	English plate inscription,	2		
Chinese version, Englis		3		
setting for pressure uni				
All versions include DVI	D with compact operating			
instructions in various E				

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for differential pressure and flow

κ.	

Selection and Ordering data	Order	code			Selection and Ordering data	Order	code		
Further designs		HART	PA	FF	Further designs		HART	PA	FF
Add "-Z" to Article No. and specify Order code.					Add "-Z" to Article No. and specify Order code.				
Pressure transmitter with mounting bracket (1x fixing angle, 2 x nut,					Setting of the upper saturation limit of the output signal to 22.0 mA	D05	1		
2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer) made of:					Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009)	D07	1	~	✓
Steel Stainless steel 304	A01 A02	✓ ✓	√ √	~	only together with seal diaphragm made of				
Stainless steel 316L	A03	1	1	1	Hastelloy and stainless steel) Degree of protection IP66/IP68	D12	~	1	1
O-rings for process flanges					(only for M20 x 1.5 and ½-14 NPT)	DIZ	•	•	
(instead of FPM (Viton)) • PTFE (Teflon)	A20	~	1	~	Process flange screws made of Monel (max. nominal pressure PN20)	D34	~	~	~
• FEP (with silicone core, approved for food)	A21	1	1	√	Supplied with oval flange set	D37	1	1	~
 FFPM (Kalrez, compound 4079), for measured medium temperatures -15 100 °C (5 212 °F) 	A22	1	~	~	(2 items), PTFE packings and screws in thread of process flanges	537		•	·
• NBR (Buna N)	A23	~	~	~	Capri cable gland 4F CrNi and clamping device (848699 + 810634) included	D59	~	✓	~
▶ Han 7D (metal)	A30	~			Use in or on zone 1D/2D	E01	1	 Image: A start of the start of	✓
Han 7D (metal) Han 8D (instead of Han 7D)	A30	¥			(only together with type of protection	-01			Ĵ
• Angled	A32	1			"Intrinsic safety" (transmitter 7MF4B Ex ia)"and IP66)				
• Han 8D (metal)	A33	4	,	,	Overfilling safety device for flammable	E08	1		
Sealing screws (2 units) 1/4-18 NPT, with valve in mat. of process	A40	~	~	~	and non-flammable liquids				
flanges					(max. PN 32 (MAWP 464 psi), basic device with type of protection "Intrinsic safety				
Cable sockets for M12 connectors (metal (CuZn))	A50	~	~	~	(Ex ia)", to WHG and VbF, not together with measuring cell filling "inert liquid")				
Rating plate inscription					Oxygen application	E10	✓	✓	✓
(instead of German)	D11	,	,	~	(In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C				
2.19.1011	B11 B12	√ √	√ √	↓	(140 °F))				
	B13	✓	1	✓	Export approval Korea	E11	✓	✓	✓
Italian Cyrillic (russian)	B14 B16	√ √	✓ ✓	√ √	CRN approval Canada (Canadian Registration Number)	E22 ⁴⁾	~	~	~
	B21	1	✓	✓	Dual seal	E24	1	✓	✓
Pressure units in inH ₂ O and/or psi					Explosion-proof "Intrinsic safety" (Ex ia)	E25 ⁵⁾	✓	✓	✓
Quality Inspection Certificate (5-point characteristic curve test) according to IEC 60770-2 ¹⁾	C11	~	~	~	to INMETRO (Brazil) (only for transmitter 7MF4B)				
0	C12	1	~	~	"Flameproof" explosion protection according to INMETRO (Brazil)	E26 ⁵⁾	~	1	✓
•	C14	1		1	(only for transmitter 7MF4				
Acceptance certificate (EN 10204-3.1)	C15	1	✓	1	Explosion-proof "Intrinsic safety" (Ex ia	E28 ⁵⁾	1	✓	
PMI test of parts in contact with medium					+ Ex d) to INMETRO (Brazil) (only for transmitter 7MF4P)				
Functional safety (SIL2) Devices suitable for use according to	C20	~			Ex Approval IEC Ex (Ex ia)	E45 ⁵⁾	1	1	✓
IEC 61508 and IEC 61511. Includes SIL conformity declaration					(only for transmitter 7MF4B)		·		
Functional safety (PROFIsafe) Certificate and PROFIsafe protocol	C21 ³⁾		✓		Ex Approval IEC Ex (Ex d) (only for transmitter 7MF4D)	E46 ⁵⁾	1	1	~
	C23	~			Explosion-proof "Intrinsic safety" to	E55 ⁵⁾	✓	✓	√
Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL					NEPSI (China) (only for transmitter 7MF4B)				
conformity declaration					Explosion protection "Explosion-proof"	E56 ⁵⁾	✓	✓	✓
PED for Russia with initial calibration mark	C99	~	~	~	to NEPSI (China) (only for transmitter 7MF4D)				
					Explosion-proof "Zone 2" to NEPSI	E57 ⁵⁾	✓	✓	✓
					(China) (only for transmitter 7MF4E)				
					Ex protection "Ex ia", "Ex d" and "Zone	E58 ⁵⁾	~	1	1
					2" to NEPSI (China) (only for transmitter 7MF4R)	230 /	,	·	·
					"Intrinsic safety" and "Explosion-proof"	E70 ⁵⁾	1	~	✓
					explosion protection acc. to Kosha (Korea) (only for transmitter				

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for differential pressure and flow

	r code		
Further designs Add "-2" to Article No. and specify Order code.	HART	PA	FF
Ex-protection Ex ia according to EAC Ex [880 (Russia)	~	1	~
Ex-protection Ex d according to EAC Ex (Russia)	~	~	~
Ex-protection Ex nA/ic (Zone 2) according E82 to EAC Ex (Russia)	1	~	~
Ex-protection Ex ia + Ex d + Zone 1D/2D E83 according to EAC Ex (Russia)	~	~	~
Two coats of lacquer on casing and G10 cover (PU on epoxy)	1	1	1
Interchanging of process connection side H01	✓	✓	✓
Vent on side for gas measurements H02	✓	✓	✓
Stainless steel process flanges for H03 vertical differential pressure lines	~	1	~
(not together with K01, K02 and K04 ⁶⁾			
Transient protector 6 kV J01 (lightning protection)	1	1	~
Chambered graphite gasket for J02 process flange	*	1	~
Chambered PTFE graphite gasket J03	1	1	✓
EPDM O-rings for process flange with J05 approval (WRC/WRAS)	~	~	~
Vent valve or blanking plug of process flange welded-in (orientation: on right when viewing the display) ⁷⁾	*	1	~
Vent valve or blanking plug of process flange welded-in (orientation: on left when viewing the display) ⁷⁾	~	1	~
Process flange			
• Hastelloy K01	✓	✓	1
• Monel K02	✓	✓	✓
• Stainless steel with PVDF insert max. PN 10 (MAWP 145 psi),	1	1	~
max. temperature of medium 90 °C (194 °F)			
For 1/2-14 NPT inner process connection			
on the side in the middle of the process flange, vent valve not possible			
Marine approvals			
Det Norske Veritas Germanischer Lloyd (DNV-GL)	~	✓	~
• Lloyds Register (LR) S11	✓	✓	1
• French marine classification society Bureau Veritas (BV) S12	~	~	~
American Bureau of Shipping (ABS) S14	1	1	1
Russian Maritime Register (RMR) Korean Register of Shipping (KR) S17	4	√ √	4
• NOTEAU DEDISTELOT SUIDODO (NB)	v	V	V

We can offer shorter delivery times for configurations designated with ٠ the Quick Ship Symbol . For details see page 10/11 in the appendix.

Factory mounting of valve manifolds, see accessories.

✓ = 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 recom-mended 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) Cannot be ordered with remote seal.
- ⁵⁾ Option does not include ATEX approval, but instead includes only the country-specific approval.
- 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.

Selection and Ordering data	Order	code		
Additional data Please add "-Z" to Article No. and specify Order code(s) and plain text.		HART	PA	FF
Measuring range to be set Specify in plain text: • in the case of linear characteristic curve	V01		v 1)	
 In the case of square rooted characteristic curve (max. 5 characters): 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 		↓	• • •	
Stainless steel tag plate and entry in device variable (measuring point description) Max. 16 characters, specify in plain text:	Y15	1	~	*
Y15:		,	,	,
Measuring point text (entry in device variable) Max. 27 char., specify in plain text: Y16:	Y16	v	•	•
Entry of HART address (TAG) Max. 8 char., specify in plain text: Y17:	Y17	1		
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⁾ +	~		
Specify in plain text: Y22: up to I/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	~
Damping adjustment in seconds (0 100 s)	Y30	1	1	~
 We can offer shorter delivery times for conf the Quick Ship Symbol				d with

the Quick Ship Symbol . For details see page 10/11 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.
- Not in conjunction with over-filling safety device for flammable and non-flammable liquids (Order code "E08")

Pressure Measurement

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for differential pressure and flow

Selection and Orderin	g data	Arti	cle No.	Selection and Ordering data	Article No.
	HART pressure trans-	7 M	F4533-	SITRANS P DS III with HART pressure trans-	7 M F 4 5 3 3 -
mitters for differential pressure and flow, PN 420 (MAWP 6092 psi)				mitters for differential pressure and flow, PN 420 (MAWP 6092 psi)	
↗ Click on the Article N	No. for the online configu-			Electrical connection/cable entry	
ration in the PIA Life	Cycle Portal.			Screwed gland M20x1.5	B
Measuring cell filling	Measuring cell			 Screwed gland ½-14 NPT 	C
	cleaning			 Han 7D plug (plastic housing) incl. mating con- nector¹³⁾¹⁴⁾ 	
Silicone oil	normal	1			
Inert liquid ¹⁾	grease-free to cleanliness level 2	3		M12 connectors (stainless steel) ^{15) 16)}	F
Maaauming anan (min		_		Display	
Measuring span (min. 2.5 250 mbar		D		Without display	
6 600 mbar	(1.004 100.4 inH ₂ O) (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	(0.424 042.4 III 1 ₂ O) (20.08 2008 inH ₂ O)	G		 With visible display (setting: mA) with customer-specific display 	
0.3 30 bar	(4.35 435 psi)	H		(setting as specified, Order code "Y21" or "Y22"	
Wetted parts materials		_ ''		required)	
(stainless steel process				Power supply units see Chap. 7 "Supplementary	Components".
Seal diaphragm	Parts of measuring cell			Scope of delivery: Pressure transmitter as ordered	·
1 8				extra ordering item)	I (Instruction Manu
Stainless steel	Stainless steel		AB	o ,	
Hastelloy Gold ²⁾	Stainless steel Gold			 For oxygen application, add Order code E10. Notice and the second s	0.11.0
Gold ²⁷ Version for diaphragm s			L Y	 ²⁾ Not in conjunction with max. span 600 mbar (240. ³⁾ When the manufacture's certificate (calibration ce 	
	50al - / - / - /			ordered for transmitters with diaphragm seals acc	ording to IEC 60770
Process connection				is recommended only to order this certificate excl	usively with the dia-
	PT with flange connection			phragm seals. The measuring accuracy of the tota	l combination is cer
Sealing screw opposi				 ⁴⁾ If the acceptance test certificate 3.1.is ordered for 	r the transmitter with
 Mounting thread ⁷/₁ IEC 61518/DIN EN 6 			3	mounted diaphragm seals this certificate must als	the transmitter with t
- Mounting thread M1			1	respective remote seals.	
(only for replacement				⁵⁾ The diaphragm seal is to be specified with a sepa	
	ocess flanges, location of			must be included wiht the transmitter order number 7MF453Y and 7MF4900-1B	er, for example
vent valve at top of pr	ocess flanges (see dimen-			⁶⁾ The standard measuring cell filling for configuration	ons with remote seal
sional drawing)				is silicone oil.	
- Mounting thread 7/1	₆ -20 UNF to		7	7) Not in conjunction with Electrical connection "Han	7D plug".
IEC 61518/DIN EN 6			_	 Without cable gland, with blanking plug ⁹⁾ With enclosed cable gland Ex ia and blanking plu 	
 Mounting thread M1 (only for replacement 			5	¹⁰⁾ Configurations with HAN and M12 connectors are	
	. ,	-		¹¹⁾ Only in connection with IP66.	
Non-wetted parts mate process flange screws				12) Explosion protection acc. to FM/CSA: suitable for in	nstallations accordir
				NEC 500/505. ¹³⁾ Only in connection with Ex approval A, B or E.	
Stainless steel	Die-cast aluminum		2 3	¹⁴⁾ Permissible only for crimp-contact of conductor c	ross-section 1 mm ²
Stainless steel	Stainless steel precision casting ⁷⁾		3	¹⁵⁾ Only in connection with Ex approval A, B, E or F.	
Version	5	_		¹⁶⁾ M12 delivered without cable socket.	
Standard version, Ge	rman plate inscription		1		
setting for pressure u					
	English plate inscription,		2		
setting for pressure u	nit: bar				
Chinese version, Engli	sh plate inscription,		3		
setting for pressure un					
	D with compact operating				
instructions in various E	U languages.	_			
Explosion protection					
None			Α		
• With ATEX, Type of pr			_		
 "Intrinsic safety (Ex "Explosion-proof (Ex 			В		
	,		D		
- "Intrinsic safety and	flameproof enclosure"		Р		
(Ex ia + Ex d)" ⁹⁾	0)				
- "Ex nA/ic (Zone 2)" ¹			E		
- "Intrinsic safety, expl	osion-proof enclosure and		R		
uusi explosion prote Zone 10/2011/9)11)	ection (Ex ia+ Ex d +				
 FM + CSA intrinsic sa 			F		
• FM + CSA (is $\pm pn$) \pm	Ex ia + Ex d (ΔTEX) +		s		
• FM + CSA (is + ep) + Zone 1D/2D ⁹⁾¹¹⁾¹²⁾	LAIGT LAG (AILA) T		3		
• With FM + CSA, Type					
 "Intrinsic safety and (is + xp)" ⁸⁾¹²⁾, max 	explosion-proof		NC		

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for differential pressure and flow

Selection and Ordering	g data	Article No).	Selection and Ordering data	Article No.
Pressure transmitters and flow, PN 420 (MAW	for differential pressure /P 6092 psi)			Pressure transmitters for differential pressu and flow, PN 420 (MAWP 6092 psi)	re
SITRANS P DS III with P	ROFIBUS PA (PA)	7 M F 4 5 3	34 -	SITRANS P DS III with PROFIBUS PA (PA)	7 M F 4 5 3 4 -
SITRANS P DS III with F	OUNDATION Fieldbus (FF)	7 M F 4 5 3	35-	SITRANS P DS III with FOUNDATION Fieldbus (I	FF) 7 M F 4 5 3 5 -
	lo. for the online configu-				
ration in the PIA Life Measuring cell filling	Measuring cell	_		Explosion protection	
Silicone oil	cleaning normal	1		 None With ATEX, Type of protection: "Intrinsic safety (Ex ia)" 	AB
Inert liquid ¹⁾	grease-free to cleanliness level 2	3		 "Explosion-proof (Ex d)"⁷⁾ "Intrinsic safety and flameproof enclosure" 	D
Nominal measuring ra	nge			(Ex ia + Ex d)" ⁸⁾	
250 mbar	(100.4 inH ₂ O)	D		- "Ex nA/ic (Zone 2)" ⁹⁾	E
600 mbar	(240.9 inH ₂ O)	E		 "Intrinsic safety, explosion-proof enclosure and short surplasing protection (Enclosure) 	nd R
1600 mbar	(642.4 inH ₂ O)	F		dust explosion protection (Ex ia + Ex d + Zone 1D/2D) ^{v8) 10)} (not for DS III FF)	
5 bar 20 bar	(2008 inH ₂ O)	G		• FM + CSA intrinsic safe (is) ¹¹⁾	F
30 bar	(435 psi)	н		• FM + CSA (is + ep) + Ex ia + Ex d (ATEX)+	S
Wetted parts materials				• FM + CSA (is + ep) + Ex ia + Ex d (ATEX)+ Zone 1D/2D ⁹⁾¹⁰⁾¹¹⁾	
(stainless steel process	0 /			 With FM + CSA, Type of protection: 	
Seal diaphragm Stainless steel	Parts of measuring cell Stainless steel	A		 "Intrinsic safety and explosion-proof (is + xp)"⁷⁾¹¹, max PN 360 	NC
Hastelloy	Stainless steel	B		Electrical connection/cable entry	_
Gold ²⁾	Gold	L		 Screwed gland M20 x 1.5 	В
Version for diaphragm s	eal 3) 4) 5) 6)	Y		 Screwed gland ½-14 NPT 	C
Process connection				 M12 connectors (stainless steel) ^{12) 13)} 	F
Female thread 1/4-18 NP	T with flange connection			Display	
 Sealing screw opposit 	e process connection			 Without (display hidden) 	
 Mounting thread ⁷/₁₆ IEC 61518/DIN EN 6 	-20 UNF to	3		 Without visible display 	
				(display concealed, setting: bar)	
 Mounting thread M1. (only for replacement 		1		• With visible display (setting: bar)	
 Venting on side of provent valve at top of provent 	cess flanges, location of ocess flanges (see dimen-			 With customer-specific display (setting as specified, Order code "Y21" required) Included in delivery of the device: 	
sional drawing). - Mounting thread ⁷ / ₁₆ IEC 61518/DIN EN 6	-20 UNF to	7		 Quick-start guide Sealing plug(s) or sealing screw(s) for the pro- 	ocess flanges(s)
 Mounting thread M1. (only for replacement 	2 to DIN 19213	5		 For oxygen application, add Order code E10. Not in conjunction with max. span 600 mbar (24) 	10 9 inH ₂ O)
Non-wetted parts mate	1 ,			3) When the manufacture's certificate (calibration	certificate) has to be
Process flange screws	Electronics housing			ordered for transmitters with diaphragm seals a is recommended only to order this certificate e	clusively with the dia-
Stainless steel Stainless steel	Die-cast aluminum Stainless steel precision	2		 phragm seals. The measuring accuracy of the to here. 4) If the acceptance test certificate 3.1.is ordered 	
	casting			mounted diaphragm seals this certificate must	also be ordered with th
Version				respective remote seals.	
 Standard version, Ger setting for pressure ur 			1	⁵⁾ The diaphragm seal is to be specified with a see must be included wiht the transmitter order nun 7MF453Y and 7MF4900-1B	parate order number a hber, for example
 International version, E setting for pressure ur 	English plate inscription, nit: bar		2	 6) The standard measuring cell filling for configura is silicone oil. 	tions with remote seals
 Chinese version, Englis setting for pressure uni 			3	 Without cable gland, with blanking plug. With enclosed cable gland Ex ia and blanking plug. 	blua
0 1	D with compact operating			 ⁹⁾ Configurations with HAN and M12 connectors a ¹⁰⁾ Only in connection with IP66. 	
				¹¹⁾ Explosion protection acc. to FM/CSA: suitable for NEC 500/505.	
				¹²⁾ Only in connection with Ex approval A, B, E or I ¹³⁾ M12 delivered without cable socket	Ξ.

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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	Order	code		
Further designs		HART	PA	FF	Setting of the upper saturation limit of the	D05	✓		
Add "-Z" to Article No. and specify Order code.					output signal to 22.0\ mA				
Pressure transmitter with mounting bracket (1x fixing angle, 2 x nut, 2 x U-washer or 1 x					Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009)	D07	*	~	~
bracket, 2 x nut, 2 x U-washer) made of: • Steel	A01	~	1	~	(only together with seal diaphragm made of Hastelloy and stainless steel)				
Stainless steel 304	A02	√	✓	1	Degree of protection IP66/IP68	D12	✓	✓	✓
Stainless steel 316L	A03	✓	✓	✓	(only for M20 x 1.5 and $\frac{1}{2}$ -14 NPT)				
O-rings for process flanges (instead of FPM (Viton)) • PTFE (Teflon)	A20	v	1	¥.	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	1		
• FEP (with silicone core, approved for food)	A21	1	1	√ ✓	Capri cable gland 4F CrNi and clamping	D59	✓	✓	✓
 FFPM (Kalrez, compound 4079), for measured medium temperatures 	A22	•	•	v	device (848699 + 810634) included				
-15 100 °C (5 212 °F)					Use in or on zone 1D/2D	E01	~	~	~
• NBR (Buna N) Plug	A23	~	1	1	(only together with type of protection "Intrinsic safety" (transmitter 7MF4B Ex ia)"and IP66)				
• Han 7D (metal)	A30	✓			Export approval Korea	E11	✓	✓	✓
Han 8D (instead of Han 7D)	A31	1			CRN approval Canada	E22 ³⁾	✓	✓	✓
AngledHan 8D (metal)	A32 A33	√ √			(Canadian Registration Number)				
Sealing screws (2 units)	A40	1	1	~	Dual seal	E24	~	~	~
1/4-18 NPT, with valve in mat. of process flanges					Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil)	E25 ⁴⁾	~	~	1
Cable sockets for M12 connection (metal (CuZn))	A50	v	•	v	(only for transmitter 7MF4B)				
Rating plate inscription (instead of German)					"Flameproof" explosion protection accord-	E26 ⁴⁾	✓	~	✓
• English	B11	✓	✓	1	ing to INMETRO (Brazil) (only for transmitter 7MF4D)				
• French	B12	✓.	1	√	Explosion-proof "Intrinsic safety" (Ex ia + Ex	F284)	1	1	
SpanishItalian	B13 B14	√ √	4	√ √	d) to INMETRO (Brazil)	220 /	•	•	
Cyrillic (russian)	B14 B16	↓	¥	¥	(only for transmitter 7MF4P)				
English rating plate	B21	1	1	1	Ex Approval IEC Ex (Ex ia)	E45 ⁴⁾	✓	~	✓
Pressure units in in H_2O and/or psi					(only for transmitter 7MF4B)				
Quality Inspection Certificate (5-point charac	C11	✓	✓	✓	Ex Approval IEC Ex (Ex d)	E46 ⁴⁾	~	~	~
teristic curve test) according to IEC 60770-2					(only for transmitter 7MF4D) Explosion-proof "Intrinsic safety"	E55 ⁴⁾			
Inspection certificate Acc. to EN 10204-3.1	C12	1	1	~	to NEPSI (China)	E33.4	•	•	•
Factory certificate	C14	1	7	~	(only for transmitter 7MF4B)				
Acc. to EN 10204-2.2	014	•	•	•	Ex prot. "Explosion-proof" to NEPSI (China) (only for transmitter 7MF4D)	E56 ⁴⁾	~	~	~
Acceptance certificate (EN 10204-3.1)	C15	1	1	~	Explosion-proof "Zone 2" to NEPSI (China)	E57 ⁴⁾	1	1	1
PMI test of parts in contact with medium					(only for transmitter 7MF4		•	•	•
Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL confor-	C20	1			Ex protection "Ex ia", "Ex d" and "Zone 2" to NEPSI (China)	E58 ⁴⁾	*	~	*
mity declaration					(only for transmitter 7MF4R)				
Functional safety (PROFIsafe) Certificate and PROFIsafe protocol	C21 ¹⁾		1		"Intrinsic safety" and "Explosion-proof" explosion protection acc. to Kosha (Korea)	E70 ⁴⁾	~	~	~
Functional safety (SIL2/3)	C23	1			(only for transmitter 7MF4[B, D]Z + E11)				
Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL confor- mity declaration					Ex-protection Ex ia acc. to EAC Ex (Russia)	E80	~	~	~
PED for Russia with initial calibration mark	C99	1	1	1	Ex-protection Ex d acc. to EAC Ex (Russia)	E81	✓	✓	✓
	033	•	•	•	Ex-protection Ex nA/ic (Zone 2) according to EAC Ex (Russia)	E82	~	~	✓
					Ex-protection Ex ia + Ex d + Zone 1D/2D according to EAC Ex (Russia)	E83	*	~	*

Order code

Transmitters for applications with advanced requirements (Advanced)

Selection and Ordering data

SITRANS P DS III for differential pressure and flow

Selection and Ordering data	Order	code		
Further designs		HART	PA	FF
Add "-Z" to Article No. and specify Order code.				
Two coats of lacquer on casing and cover (PU on epoxy)	G10	~	~	4
Interchanging of process connection side	H01	1	✓	1
Stainless steel process flanges for vertical differential pressure lines	H03	1	1	~
Transient protector 6 kV (lightning protection)	J01	✓	✓	1
Chambered graphite gasket for process flange	J02	✓	✓	1
EPDM O-rings for process flange with approval (WRC/WRAS)	J05	1	1	~
Vent valve or blanking plug of process flange welded-in (orientation: on right when viewing the display) ⁵⁾	J08	•	1	1
Vent valve or blanking plug of process flange welded-in (orientation: on left when viewing the display) ⁵⁾	J09	1	~	*
Marine approvals				
Det Norske Veritas	S10	✓	✓	✓
Germanischer Lloyd (DNV-GL)	011		,	,
Lloyds Register (LR)	S11	*	*	*
 French marine classification society Bureau Veritas (BV) 	S12	v	v	v
American Bureau of Shipping (ABS)	S14	1	1	1
Russian Maritime Register (RMR)	S16	1	1	1
Korean Register of Shipping (KR)	S17	✓	✓	1

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

²⁾ Tested according to IEC 61010. Only for measuring materials of the group of fluids 2 in accordance with PED permissible. Not for use with dangerous media suitable.

³⁾ Cannot be ordered with remote seal.

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

 ⁵ Blanking plug is standard configuration. Order option A40 if a vent valve is required instead of a blanking plug.

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: 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 Stainless steel tag plate and entry in device variable (measuring point descrip- tion) Max. 16 characters, specify in plain text: Y15: Measuring point text (entry in device vari- able) Max. 27 char., specify in plain text: Y16: Entry of HART address (TAG) Max. 8 char., specify in plain text: Y17: Setting of pressure indication in pressure units 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 ³ , inH ₂ O ³ , mH ₂ O ¹ , mO ¹ or Specify in plain text: Y25: ✓ ✓	ocicotion and ordering data	01001	0000		
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): Y02: up to mbar, bar, kPa, MPa, psi• in the case of square rooted characteristic (max. 5 characters): Y02: up to mbar, bar, kPa, MPa, psiStainless steel tag plate and entry in device variable (measuring point descrip- tion) Max. 16 characters, specify in plain text: Y15:Y15✓✓Measuring point text (entry in device vari- able) Max. 27 char, specify in plain text: Y16: Entry of HART address (TAG) Max. 8 char, specify in plain text: Y17:Y17✓Setting of pressure indication in pressure units Specify in plain text (standard setting: bar): Y21: mbar, bar, kPa, MPa, psi, Note: The following pressure units can be selected: bar, mbar, mm H₂O'), inH₂O'), ftH₂O'), mmHG, inHG, psi, Pa, kPa, MPa, g/cm², kg/cm², Torr, ATM or % *) ref. temperature 20 °CY22✓Setting of pressure indication in ron-pressure units²' Specify in plain text: Y17: (specification of measuring range in pressure units "Y01" or "Y02" is essential, unit with max. 5 characters)Y25✓Preset bus address possible between 1 and 126 Specify in plain text: Y25:Y25✓✓	Additional data		HART	PA	FF
Specify in plain text: • in the case of linear characteristic curve (max. 5 characters): Y01: up to mbar, bar, kPa, MPa, psiY01 \checkmark \checkmark 1)• in the case of square rooted characteristic (max. 5 characters): Y02: up to mbar, bar, kPa, MPa, psiY02 \checkmark Stainless steel tag plate and entry in device variable (measuring point descrip- tion) Max. 16 characters, specify in plain text: Y15:Y15 \checkmark \checkmark Measuring point text (entry in device variable) Max. 27 char., specify in plain text: Y16: Entry of HART address (TAG) Max. 8 char., specify in plain text: Y17:Y17 \checkmark Setting of pressure indication in pressure units Specify in plain text (standard setting: bar): Y21: mbar, bar, kPa, MPa, psi, Note: The following pressure units can be selected: bar, mbar, mm H ₂ O ¹ , inH ₂ O ¹ , ftH ₂ O ¹ , mmHG, inHG, psi, Pa, kPa, MPa, g/cm ² , kg/cm ² , Tor, ATM or % *) ref. temperature 20 °CY22 + \checkmark Y01 or Y02Setting 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 pressure units "Y01" or "Y02" is essential, unit with max. 5 characters)Y25 \checkmark Preset bus address possible between 1 and 126 Specify in plain text: Y25:Y25 \checkmark					
• in the case of linear characteristic curve (max. 5 characters): 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 Stainless steel tag plate and entry in device variable (measuring point descrip- tion) Max. 16 characters, specify in plain text: Y15: Measuring point text (entry in device vari- able) Max. 27 char., specify in plain text: Y16: Entry of HART address (TAG) Max. 8 char., specify in plain text: Y17: Setting of pressure indication in pressure units Specify in plain text (standard setting: bar): Y21: mbar, bar, kPa, MPa, psi, Note: The following pressure units can be selected: bar, mbar, mm H ₂ O ¹ , irH ₂ O ¹ , ftH ₂ O ¹ , mmHG, inHG, psi, Pa, kPa, MPa, g/cm ² , Kg/cm ² , Tor, ATM or % *) ref. temperature 20 °C Setting of pressure indication in non-pressure units ² Specify in plain text: Y22: up to //min, m ³ /h, m, USgpm, (specification of measuring range in pressure units "YO1" or "YO2" is essential, unit with max. 5 characters) Preset bus address possible between 1 and 126 Specify in plain text: Y25:					
In the order of mice o		Vot	,	(1)	
Ý01: up to mbar, bar, kPa, MPa, psi• in the case of square rooted characteristic (max. 5 characters): Y02: up to mbar, bar, kPa, MPa, psiStainless steel tag plate and entry in device variable (measuring point descrip- tion)Max. 16 characters, specify in plain text: Y15:Measuring point text (entry in device vari- able)Max. 27 char, specify in plain text: Y16:Phase and pressure indication in pressure unitsSpecify in plain text (standard setting: bar): Y21: mbar, bar, kPa, MPa, psi,Note: The following pressure units can be selected: bar, mbar, mP4_O ¹ , inH2_O ¹ , ftH2O ¹ , mmH6, inHG, psi, Pa, kPa, MPa, g/cm ² , kg/cm ² , Torr, ATM or % *) ref. temperature 20 °CSetting of pressure indication in non-pressure units?Specify in plain text: Y22: up to //min, m ³ /h, m, USgpm, (specification of measuring range in pressure units "V01" or "Y02" is essential, unit with max. 5 characters)Preset bus address possible between 1 and 126 Specify in plain text: Y25:		YU1	v	v '')	
(max. 5 characters): Y02: up to mbar, bar, kPa, MPa, psiY15✓✓✓Stainless steel tag plate and entry in device variable (measuring point descrip- tion) Max. 16 characters, specify in plain text: Y15:Y15✓✓✓Measuring point text (entry in device vari- able) Max. 27 char., specify in plain text: Y16: Entry of HART address (TAG) Max. 8 char., specify in plain text: Y17:Y17✓✓Setting of pressure indication in pressure unitsY17✓✓✓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 ¹ , inH_2O ¹ , ftH_2O ¹ , mmHG, inHG, psi, Pa, kPa, MPa, g/cm ² , kg/cm ² , Torr, ATM or % *) ref. temperature 20 °CY22 + Y02✓✓Setting of pressure indication in non-pressure units? Specify in plain text: Y22: up to //min, m ³ /h, m, USgpm, (specification of measuring range in pressure units "Y01" or "Y02" is essential, unit with max. 5 characters)Y25✓✓Preset bus address possible between 1 and 126 Specify in plain text: Y25:Y25✓✓					
Ý02: up to mbar, bar, kPa, MPa, psiY15✓✓✓Stainless steel tag plate and entry in device variable (measuring point descrip- tion)Y15✓✓✓Max. 16 characters, specify in plain text: Y15:Y16✓✓✓Measuring point text (entry in device vari- able)Y16✓✓✓Max. 27 char., specify in plain text: Y16:Y17✓✓Entry of HART address (TAG) Max. 8 char., specify in plain text: Y17:Y17✓Setting of pressure indication in pressure unitsY21✓✓Specify in plain text (standard setting: bar): Y21: mbar, bar, kPa, MPa, psi, Note:Y21✓✓The following pressure units can be selected: bar, mbar, mm H ₂ O [*]), inH ₂ O [*]), ftH ₂ O [*]), mHG, inHG, psi, Pa, kPa, MPa, g/cm ² , kg/cm ² , Torr, ATM or % *) ref. temperature 20 °CY22 + Y01 or Y02✓Setting of pressure units ²) Specify in plain text: Y22: up to //min, m ³ /h, m, USgpm, (specification of measuring range in pressure units "Y01" or "Y02" is essential, unit with max. 5 characters)Y25✓Preset bus address possible between 1 and 126 Specify in plain text: Y25:Y25✓		Y02	~		
Output: Unit of the section of the se					
Max. 16 characters, specify in plain text: Y15:Y16✓✓Measuring point text (entry in device variable)Max. 27 char., specify in plain text: Y16:Y17✓Max. 27 char., specify in plain text: Y16:Y17✓✓Entry of HART address (TAG)Y17✓✓Max. 8 char., specify in plain text: Y17:Y17✓Setting of pressure indication in pressure unitsY21✓✓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 °CY22 + Y01 or Y02✓Setting of pressure indication in 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)Y25✓Preset bus address possible between 1 and 126 Specify in plain text: Y25:Y25✓	device variable (measuring point descrip-	Y15	1	~	*
Measuring point text (entry in device variable)Y16✓✓✓Max. 27 char., specify in plain text: Y16:Y17✓✓Entry of HART address (TAG)Y17✓✓Max. 8 char., specify in plain text: Y17:Y17✓✓Setting of pressure indication in pressure unitsY21✓✓Specify in plain text (standard setting: bar): Y21: mbar, bar, kPa, MPa, psi, Note: The following pressure units can be selected: bar, mbar, mm H_2O'), inH_2O'), ftH_2O'), mmHG, inHG, psi, Pa, kPa, MPa, g/cm², kg/cm², Torr, ATM or % *) ref. temperature 20 °CY22 + Y02✓Setting of pressure indication in non-pressure units? Specify in plain text: Y22: up to //min, m³/h, m, USgpm, (specification of measuring range in pressure units "V01" or "Y02" is essential, unit with max. 5 characters)Y25✓Preset bus address possible between 1 and 126 Specify in plain text: Y25:Y25✓✓	,				
able) Max. 27 char., specify in plain text: Y16:Y17✓Entry of HART address (TAG) Max. 8 char., specify in plain text: Y17:Y17✓Setting of pressure indication in pressure unitsY21✓✓Specify in plain text (standard setting: bar): Y21: mbar, bar, kPa, MPa, psi, Note: The following pressure units can be selected: bar, mbar, mm H ₂ O ¹), inH ₂ O ¹ , ftH ₂ O ¹), mmHG, inHG, psi, Pa, kPa, MPa, g/cm ² , kg/cm ² , Torr, ATM or % *) ref. temperature 20 °CY22 + Y02✓Setting of pressure indication in non-pressure units ²) Specify in plain text: Y22: up to //min, m ³ /h, m, USgpm, (specification of measuring range in pressure units "Y01" or "Y02" is essential, unit with max. 5 characters)Y25✓Preset bus address Specify in plain text: Y25:Y25✓	Y15:				
Entry of HART address (TAG) Max. 8 char., specify in plain text: Y17:Y17✓Setting of pressure indication in pressure unitsY21✓✓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 ¹ , inH_2O ¹ , ftH_2O ¹ , mmHG, inHG, psi, Pa, kPa, MPa, g/cm ² , kg/cm ² , Torr, ATM or % *) ref. temperature 20 °CY22 + Y02✓Setting of pressure indication in non-pressure units? Specify in plain text: Y22: up to //min, m ³ /h, m, USgpm, (specification of measuring range in pressure units "V01" or "Y02" is essential, unit with max. 5 characters)Y25✓Preset bus address specify in plain text: Y25:Y25✓		Y16	~	~	1
Max. 8 char., specify in plain text: Y17:Setting of pressure indication in pressure unitsY21✓✓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 ¹ , inH_2O ¹ , ftH_2O ¹ , mmHG, inHG, psi, Pa, kPa, MPa, g/cm ² , kg/cm ² , Torr, ATM or % *) ref. temperature 20 °CY22 + Y02✓Setting of pressure indication in non-pressure units ²) Specify in plain text: Y22: up to //min, m ³ /h, m, USgpm, (specification of measuring range in pressure units "Y01" or "Y02" is essential, unit with max. 5 characters)Y25✓Preset bus address Specify in plain text: Y25:Y25✓	Max. 27 char., specify in plain text: Y16:				
Setting of pressure indication in pressure unitsY21✓✓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 ¹ , inH_2O ¹ , ftH_2O ¹ , mmHG, inHG, psi, Pa, kPa, MPa, g/cm ² , kg/cm ² , Torr, ATM or % *) ref. temperature 20 °CY22 + Y02✓Setting of pressure indication in non-pressure units? Specify in plain text: Y22: up to //min, m ³ /h, m, USgpm, (specification of measuring range in pressure units "V01" or "Y02" is essential, unit with max. 5 characters)Y25✓Preset bus address possible between 1 and 126 Specify in plain text: Y25:Y25✓	Entry of HART address (TAG)	Y17	✓		
unitsSpecify in plain text (standard setting: bar): Y21: mbar, bar, kPa, MPa, psi, Note: The following pressure units can be selected: bar, mbar, mm H2O'), inH2O'), ftH2O'), mmHG, inHG, psi, Pa, kPa, MPa, g/cm², kg/cm², Torr, ATM or % *) ref. temperature 20 °CSetting of pressure indication in non-pressure units²! Y22: up to //min, m³/h, m, USgpm, (specification of measuring range in pressure units "Y01" or "Y02" is essential, unit with max. 5 characters)Preset bus address possible between 1 and 126 Specify in plain text: Y25:					
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 //min, m ³ /h, m, USgpm, (specification of measuring range in pressure units "Y01" or "Y02" is essential, unit with max. 5 characters) Preset bus address possible between 1 and 126 Specify in plain text: Y25:		Y21	1	~	~
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 mon-pressure units ²) Specify in plain text: Y22: up to l/min, m ³ /h, m, USgpm, (specification of measuring range in pressure units "YO1" or "YO2" is essential, unit with max. 5 characters) Preset bus address possible between 1 and 126 Specify in plain text: Y25:	Y21: mbar, bar, kPa, MPa, psi,				
non-pressure units ²)Y01 orSpecify in plain text:Y02Y22: up to l/min, m³/h, m, USgpm,Y02(specification of measuring range in pressure units "Y01" or "Y02" is essential, unit with max. 5 characters)Y25Preset bus addressY25possible between 1 and 126 Specify in plain text: Y25:Y25	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 %				
Specify in plain text: Y02 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) Y25 Preset bus address Y25 ✓ possible between 1 and 126 Specify in plain text: Y25: ✓			✓		
Opcosity in 'plain text: Y22: (specification of measuring range in pressure units "Y01" or "Y02" is essential, unit with max. 5 characters) Preset bus address Possible between 1 and 126 Specify in plain text: Y25:	•				
possible between 1 and 126 Specify in plain text: Y25:	Y22: up to I/min, m ³ /h, m, USgpm, (specification of measuring range in pressure units "Y01" or "Y02" is essential, unit with	102			
Specify in plain text: Y25:	Preset bus address	Y25		1	1
	•				
(0 100 s)	Damping adjustment in seconds	Y30	1	~	1

Factory mounting of valve manifolds, see accessories.

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

✓ = available

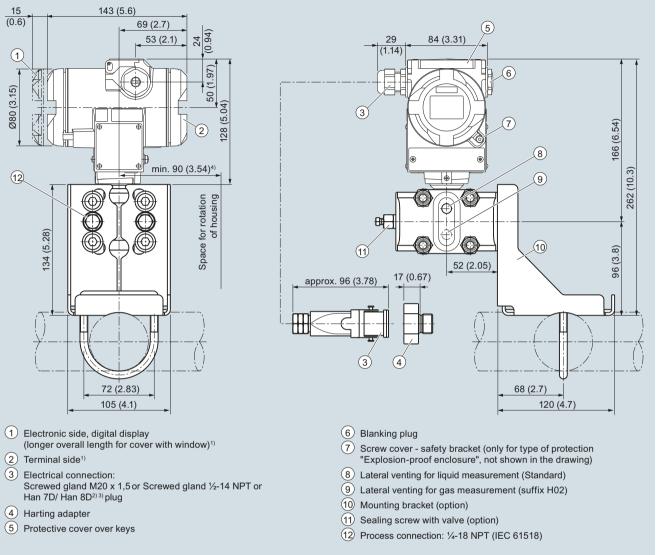
¹⁾ Measuring accuracies for PROFIBUS PA transmitters with Option Y01 are calculated in the same way as for HART devices.

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

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for differential pressure and flow

Dimensional drawings

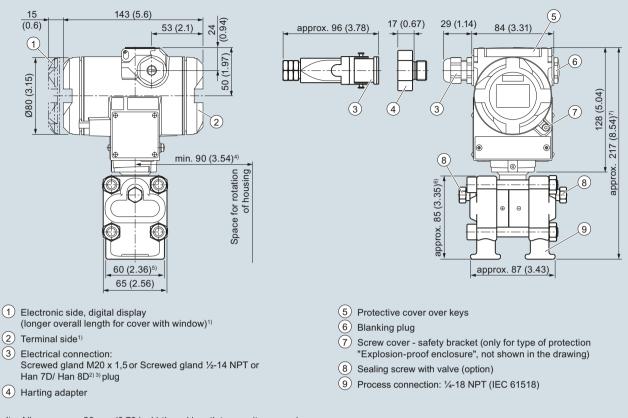


- 1) Allow approx. 20 mm (0.79 inch) thread length to permit unscrewing
- 2) Not with type of protection "Explosion-proof enclosure" 3)
- Not with type of protection "FM + CSA" [IS + XP]"
- 4) 92 mm (3.62 inch) for minimum distance to permit rotation with indicator

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

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for differential pressure and flow



- 1) Allow approx. 20 mm (0.79 inch) thread length to permit unscrewing
- Not with type of protection "Explosion-proof enclosure" Not with type of protection "FM + CSA" [IS + XP]" 2)
- 3)
- 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)
- 6) 91 mm (3.6 inch) for PN \ge 420 (MAWP \ge 6092 psi)
- 7) 219 mm (8.62 inch) for PN ≥ 420 (MAWP ≥ 6092 psi)

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

1

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for level

Technical specifications			
SITRANS P DS III for level			
Input			
Measured variable	Level		
Span (fully adjustable) or measuring range, max. operating pressure (in accordance with 2014/68/EU Pressure Equipment Directive) and max. test pressure (pursuant to DIN 16086)	HART	PROFIBUS PA/ FOUNDATION Fieldbus	
	Span	Nominal measuring range	Max. operating pressure MAWP (PS)
	25 250 mbar 2.5 25 kPa 10 100 inH ₂ O	250 mbar 25 kPa 100 inH ₂ O	See "Mounting flange"
	25 600 mbar 2.560 kPa 10 240 inH ₂ O	600 mbar 60 kPa 240 inH ₂ O	
	53 1600 mbar 5.3160 kPa 21 640 inH ₂ O	1600 mbar 160 kPa 642 inH ₂ O	
	160 5000 mbar 16500 kPa 2.32 72.5 psi	5000 mbar 500 kPa 72.5 psi	
Lower measuring limit		1	1
Measuring cell with silicone oil filling	-100 % of max. spar depending on mour	n or 30 mbar a/3 kPa a hting flange	a/0.44 psia
Measuring cell with inert filling liquid	-100 % of max. spar depending on mour	n or 30 mbar a/3 kPa a hting flange	a/0.44 psia
Upper measuring limit	100 % of max. span		
Start of scale value	Between the measu	ring limits (fully adjust	able)
Output	HART		PROFIBUS PA/FOUNDATION Fieldbus
Output signal	4 20 mA		Digital PROFIBUS PA and FOUNDATION Fieldbus signal
Lower limit (infinitely adjustable)	3.55 mA, factory pre	eset to 3.84 mA	-
Upper limit (infinitely adjustable)	23 mA, factory prese optionally set to 22.0		-
Load			
Without HART	<i>R</i> _B ≤ (<i>U</i> _H - 10.5 V)/0.023 A in Ω, <i>U</i> _H : Power supply in V		-
With HART	$R_{\rm B}$ = 230 500 Ω (SIMATIC PDM) or $R_{\rm B}$ = 230 1100 Ω (HART Communicator)		-
Physical bus	-		IEC 61158-2
Protection against polarity reversal		nort-circuit and polarit ainst the other with m	
Electrical damping (step width 0.1 s)	Set to 2 s (0 100 s	5)	

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for level

SITRANS P DS III for level				
Measuring accuracy	Acc. to IEC 6077			
Reference conditions	 Increasing char Start-of-scale value Stainless steel s Silicone oil filling Room temperat 	alue 0 bar/kPa/psi seal diaphragm g		
Measuring span ratio r (spread, Turn-Down)	r = max. measur	ing 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 ≤ 5 : 5 < r ≤ 10 :	≤ 0.125 % ≤ (0.007 · r + 0.09) %		
- 600 mbar/60 kPa/8.7 psi	r ≤ 5 : 5 < r ≤ 25 :	≤ 0.125 % ≤ (0.007 · r + 0.09) %		
- 1600 mbar/160 kPa/23.21 psi 5 bar/500 kPa/72.5 psi	r ≤ 5 : 5 < r ≤ 30 :	≤ 0.125 % ≤ (0.007 · r + 0.09) %		
Influence of ambient temperature (in percent per 28 °C (50 °F))				
• 250 mbar/25 kPa/3.6 psi	$\leq (0.4 \cdot r + 0.16)^{\circ}$	%		
• 600 mbar/60 kPa/8.7 psi	$\leq (0.24 \cdot r + 0.16)$	%		
• 1600 mbar/160 kPa/23.21 psi 5 bar/500 kPa/72.5 psi	$\leq (0.2 \cdot r + 0.16)^{\circ}$	%		
Influence of static pressure				
on the zero point				
- 250 mbar/25 kPa/3.6 psi	≤ (0.3 · r) % per r	nominal pressure		
- 600 mbar/60 kPa/8.7 psi	. , ,	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 fill	ing 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 nomina	al measuring range		
Rated conditions				
Degree of protection to IEC 60529	IP66 (optional IP6	66/IP68), NEMA 4X		
Temperature of medium	ture to max. perm	e into account assignment of max. permissible operating tempera- nissible operating pressure of the respective flange connection!		
Measuring cell with silicone oil filling	-40 +100 ¹⁾ °C	· · ·		
- High-pressure side	p _{abs} < 1 bar: -40	+175 °C (-40 +347 °F) +80 °C (-40 +176 °F)		
- Low-pressure side Ambient conditions	-40 +100 °C (-4 -20 +60 °C (-4	40 +212 °F) +140 °F) in conjunction with dust explosion protection		
Ambient conditions Ambient temperature				
- Transmitter	-40 +85 °C (-4	0 _ ±185 °E)		
- Display readable	-40 +85 °C (-4)			
Storage temperature	-50 +85 °C (-5			
Climatic class	00 100 0 (-0			
- Condensation	Relative humidity ics	0 100 %, condensation permissible, suitable for use in the trop-		
Electromagnetic Compatibility				
- Emitted interference and interference immunity	Acc. to IEC 6132	6 and NAMUR NE 21		

1

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for level				
SITRANS P DS III for level				
Design				
Weight (without options)				
 To EN (pressure transmitter with mounting flange, without tube) 	≈ 11 13 kg (≈ 24.2 28.7 (lb)			
 To ASME (pressure transmitter with mounting flange, without tube) 	≈ 11 18 kg (≈ 24.2 39.7 lb)			
Enclosure material	Low-copper die-cast aluminum, GD-AlSi12 or stainless steel precision casting, mat. no. 1.4408			
Wetted parts materials				
High-pressure side				
Seal diaphragm of mounting flange	 Stainless steel, WNr. 1.4404/316L coated with PFA coated with PTFE coated with ECTFE gold plated Monel 400, mat. no. 2.4360 Hastelloy C276, mat. no 2.4619 Hastelloy C4, mat. no. 2.4602 Hastelloy C4, mat. no. 2.4602 Tantalum Titanium, mat. no. 3.7035 Nickel 201 Duplex 2205, mat. no. 1.4462 			
Measuring cell filling	Silicone oil			
Process connection				
High-pressure side	Flange to EN and ASME			
Low-pressure side	Female thread $^{1\!\!/}_418$ NPT and flange connection with mounting thread M10 to DIN 19213 or $^{7\!\!/}_{16}\text{-}20$ UNF to IEC 61518/DIN EN 61518			
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		
Fault disconnection electronics (FDE) available		Yes		

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for level

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

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

SITRANS P DS III for level

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for level

HART communication		FOUNDATION Fieldbus communication	
HART	230 1100 Ω	Function blocks	3 function blocks analog input,
Protocol	HART Version 5.x	T UNCTION DIOCKS	1 function block PID
Software for computer	SIMATIC PDM	 Analog input 	
PROFIBUS PA communication Simultaneous communication with	4	 Adaptation to customer-specif- ic process variables 	Yes, linearly rising or falling characteristic
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, incorrect
Output byte	5 (one measured value) or 10 (two measured values)	- Limit monitoring	value) Yes, one upper and lower warn
Input byte	0, 1, or 2 (register operating mode and reset function for metering)	, , , , , , , , , , , , , , , , , , ,	ing limit and one alarm limit respectively
Internal preprocessing	metering)	 Square-rooted characteristic for flow measurement 	Yes
Device profile	PROFIBUS PA Profile for 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 wit
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 tem- perature and electronics tem- 	Constant value or over parameterizable ramp function
- Limit monitoring	Yes, one upper and lower warn- ing limit and one alarm limit respectively	perature Mounting flange	
Register (totalizer)	Can be reset, preset, optional direction of counting, simulation function of register output	Nominal diameter • Acc. to EN 1092-1	Nominal pressure
- Failure mode	parameterizable (summation with last good value, continuous summation, summation with incorrect value)	- DN 80 - DN100 • To ASME B16.5	PN 40 PN16, PN40
- Limit monitoring	One upper and lower warning limit and one alarm limit respec- tively	- 3 inch - 4 inch	class 150, class 300 class 150, class 300
 Physical block 	1		
Transducer blocks	2		
Pressure transducer block			
 Can be calibrated by applying two pressures 	Yes		
- Monitoring of sensor limits	Yes		
 Specification of a container 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 level

Selection and Ordering	y data	Artic	le N	١o			1
Pressure transmitter for		7 M F	- 4 6	63	3 -		
SITRANS P DS III with	HART		(÷			
Click on the Article N ration in the PIA Life	o. for the online configu- Cycle Portal.						
Measuring cell filling	Measuring cell cleaning						
Silicone oil	normal	1					
Measuring span (min.	max.)						
25 250 mbar	(10 100 inH ₂ O)	D					
25 600 mbar 53 1600 mbar	(10 240 inH ₂ O) (21 642 inH ₂ O)	E					
0.16 5 bar	(64.3 2000 inH ₂ O)	G					
Process connection of		_					
Female thread 1/4-18 NP							
 Mounting thread ⁷/₁₆-2 IEC 61518/DIN EN 615 	0 UNF to		2				
 Mounting thread M10 the (only for replacement) 			0				
Non-wetted parts mate	rials	-					
process flange screws	Electronics housing						
Stainless steel	Die-cast aluminum		2	2			
Stainless steel	Stainless steel precision		3	3			
	casting ¹⁾	_					
VersionStandard version, Gerr	man plato inscription				1		
setting for pressure un					•		
International version, E					2		
setting for pressure un					•		
 Chinese version, Englis setting for pressure unit 					3		
0 1) with compact operating						
instructions in various E	J languages.						
Explosion protection							
NoneWith ATEX, Type of pro	tection.				A	•	
- "Intrinsic safety (Ex ia					E	3	
- "Explosion-proof (Ex	·				C)	
- "Intrinsic safety and f	lameproof enclosure"				F	,	
(Ex ia + Ex d)" ³⁾ - "Ex nA/ic (Zone 2)" ⁴⁾					E		
. ,	osion-proof enclosure and				Ē		
dust explosion prote- Zone 1D/2D) ^{"3)5)}	ction (Ex ia+ Ex d +				Ĩ		
 FM + CSA intrinsic saf 					F		
• FM + CSA (is + ep) +					5		
Zone 1D/2D ³⁾⁵⁾⁶⁾							
• With FM + CSA, Type							
	plosion Proof (is + xp)" ¹⁾⁶⁾	-			n	IC	
 Electrical connection/c Screwed gland M20x1 	•					в	
 Screwed gland M20X 1 Screwed gland ½-14 N 						c	
Han 7D plug (plastic h						D	
mating connector ⁷⁾						_	
M12 connectors (stain	IESS STEEL) (1997)					F	
DisplayWithout display							0
 Without display Without visible display 							1
(display concealed, se	etting: mA)						
With visible display (se							6
 With customer-specific 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

Item line 1: B line: C line: Item line 2:	7MF4633-1EY20-1AA1-Z Y01 Y01: 80 to 143 mbar (1.16 to 2.1 psi) 7MF4912-3GE01
Item line 2:	/MF4912-3GE01

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

Included in delivery of the device:

• Quick-start guide

- Sealing plug(s) or sealing screw(s) for the process flanges(s)
- 1) Not in conjunction with Electrical connection "Han7D plug".
- ²⁾ Without cable gland, with blanking plug.
- With enclosed cable gland Ex ia and blanking plug.
 Configurations with HAN and M12 connectors are only available in Ex ic.
- ⁵⁾ Only in connection with IP66. 6) Explosion protection acc. to FM/CSA: suitable for installations according to NEC 500/505.
- 7) Only in connection with Ex approval A, B or E.
- 8) M12 delivered without cable socket
- ⁹⁾ Only in connection with Ex approval A, B, E or F.

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for level

SITRANS P DS I	li tor level							
Selection and Orde	ring data	A	rtic	le	No).		
Pressure transmitte	ers for level							
SITRANS P DS III wit	h PROFIBUS PA (PA)	7	ΜF	4	63	4	-	
SITRANS P DS III wit	h FOUNDATION Fieldbus (FF)	7	ΜF	4	63	5	-	
Click on the Articl ration in the PIA L	e No. for the online configu- ife Cycle Portal.	1	Y		•			
Nominal measuring	range							
250 mbar	(100 inH ₂ O)		D					
600 mbar	(240 inH ₂ O)		E					
1600 mbar 5 bar	(642 inH ₂ O) (2000 inH ₂ O)		F G					
		-	u					
	1 of low-pressure side NPT with flange connection							
 Mounting thread ⁷/ 				2				
IEC 61518/DIN EN	61518							
Mounting thread M (apply for replacement)				0				
(only for replacem								
Non-wetted parts m	vs Electronics housing							
Stainless steel	Die-cast aluminum				2			
Stainless steel	Stainless steel precision				23			
	casting							
Version		-						
	German plate inscription,					1		
 setting for pressure International version 	n, English plate inscription,					2		
setting for pressure						-		
	glish plate inscription,					3		
setting for pressure	unit: Pascal DVD with compact operating							
instructions in variou								
Explosion protection	n	-						
None							A	
With ATEX, Type of								
- "Intrinsic safety (F							В	
 "Explosion-proof "Intrinsic safety a 	nd flameproof enclosure"						D P	
(Ex ia + Ex d)" ²⁾								
- "Ex nA/ic (Zone 2	/						E	
 "Intrinsic safety, e 	xplosion-proof enclosure and						R	
Zone 1D/2D)" ²⁾⁴⁾	otection (Ex ia + Ex d + (not for DS III FF)							
• FM + CSA intrinsic							F	
• FM + CSA (is + ep) + Ex ia + Ex d (ATEX) +						s	
• With FM + CSA, Ty								
	d Explosion Proof (is $+ xp$) ^{"1)5)}						NC	;
Electrical connection	on/cable entry	-						
Screwed gland M2	•						в	3
• Screwed gland 1/2-							С	
M12 connectors (s	tainless steel) ^{6) 7)}						F	:
Display								
Without display								0
 Without visible disp (display concealed) 								1
With visible display								6
	cific display (setting as							7
specified, Order co	bue 121 required)							

Ordering information

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

ordering example

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

Included in delivery of the device: • Quick-start guide

• Sealing plug(s) or sealing screw(s) for the process flanges(s)

- 1) Without cable gland, with blanking plug.
- ²⁾ With enclosed cable gland Ex ia and blanking plug.
 ³⁾ Configurations with HAN and M12 connectors are only available in Ex ic.
- ⁴⁾ Only in connection with IP66.
- 5) Explosion protection acc. to FM/CSA: suitable for installations according to NEC 500/505.
- 6) M12 delivered without cable socket
- $^{7)}\,$ Only in connection with Ex approval A, B, E or F.

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for level

Selection and Ordering data	Order					Order co			
Further designs		HART	PA	FF	Further designs	F	IART	PA	
Add "-Z" to Article No. and specify Order code.					Add "-Z" to Article No. and specify Order code.				
O-rings for process flanges on					Use on zone 1D / 2D	E01	✓	1	
low-pressure side					(only together with type of protection				
(instead of FPM (Viton))			,		"Intrinsic safety" (transmitter 7MF4B Ex ia)"and IP66)				
PTFE (Teflon)	A20	1	1	1					
• FEP (with silicone core, approved for food)	A21	1	√ √	1	Overfilling safety device for flammable and	E08	✓		
• FFPM (Kalrez, compound 4079), for measured medium temperatures	A22	1	•	~	non-flammable liquids				
-15 100 °C (5 212 °F)					(max. PN 32 (MAWP 464 psi), basic device with type of protection "Intrinsic safety (Ex ia)",				
• NBR (Buna N)	A23	1	✓	✓	to WHG and VbF, not together with measuring				
Plug					cell filling "inert liquid")				
• Han 7D (metal)	A30	~			Export approval Korea	E11	✓	✓	
Han 8D (instead of Han 7D)	A31	✓			Dual seal	E24	✓	1	
Angled	A32	1				-			
• Han 8D (metal)	A33	1			Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil)	E25-/	•	v	
Sealing screw					(only for transmitter 7MF4B)				
1/4-18 NPT, with valve in mat. of process flanges	A40	1	✓	✓	"Flameproof" explosion protection accord-	E262)	✓	1	
Cable sockets for M12 connectors	A50	1	1	1	ing to INMETRO (Brazil)	L20 /	•	•	
(metal (CuZn))	A30	•	•	•	(only for transmitter 7MF4D)				
Rating plate inscription					Explosion-proof "Intrinsic safety" (Ex ia +	E28 ²⁾	1	1	
(instead of German)					Ex d) to INMETRO (Brazil)	220 /			
• English	B11	1	1	1	(only for transmitter 7MF4				
• French	B12	1	✓	1	Ex Approval IEC Ex (Ex ia)	E45 ²⁾	1	1	
Spanish	B13	✓	✓	1	(only for transmitter 7MF4B)				
• Italian	B14	1	✓	✓	Ex Approval IEC Ex (Ex d)	E46 ²⁾	1	1	
 Cyrillic (russian) 	B16	✓	✓	✓	(only for transmitter 7MF4D)	L40 /	•	•	
English rating plate	B21	1	✓	1		FFF2)	,	,	
Pressure units in inH ₂ 0 and/or psi					Explosion-proof "Intrinsic safety" to NEPSI (China)	E55 ²⁾	~	v	
Quality Inspection Certificate	C11	1	1	1	(only for transmitter 7MF4B)				
(5-point characteristic curve test)	•		-		Explosion protection "Explosion-proof" to	E56 ²⁾			
according to IEC 60770-2					NEPSI (China)	E30 /	•	•	
Inspection certificate	C12	✓	✓	✓	(only for transmitter 7MF4D)				
Acc. to EN 10204-3.1					Ex protection "Zone 2" to NEPSI (China)	E57 ²⁾	1	1	
Factory certificate	C14	~	1	1	(only for transmitter 7MF4E)	201 /		•	
Acc. to EN 10204-2.2						E58 ²⁾	1		
Acceptance certificate (EN 10204-3.1)	C15	1	1	1	Ex protection "Ex ia", "Ex d" and "Zone 2" to NEPSI (China)	E90-/	•	v	
PMI test of parts in contact with medium	013		•	·	(only for transmitter 7MF4R)				
Functional safety (SIL2)	C20	1			"Intrinsic safety" and "Explosion-proof"	E70 ²⁾	1		
Devices suitable for use according to IEC	020	•			explosion protection acc. to Kosha (Korea)	E70 /	•	•	
61508 and IEC 61511. Includes SIL confor-					(only for transmitter				
mity declaration					7МЁ4[В, D]Z + Е11)				
Functional safety (PROFIsafe)	C21 ¹⁾		1		Ex-protection Ex ia according to EAC Ex	E80	✓	✓	
Certificate and PROFIsafe protocol					(Russia)				
Functional safety (SIL2/3)	C23	~			Ex-protection Ex d according to EAC Ex	E81	✓	✓	
Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL confor-					(Russia)				
mity declaration					Ex-protection Ex nA/ic (Zone 2) according to	E82	✓	✓	
PED for Russia with initial calibration mark	C99	1	1	1	EAC Ex (Russia)				
		1			Ex-protection Ex ia + Ex d + Zone 1D/2D	E83	✓	✓	
Setting of the upper saturation limit of the output signal to 22.0 mA	D05	•			according to EAC Ex (Russia)				
	D10	~	1	1	Two coats of lacquer on casing and cover	G10	✓	✓	_
Degree of protection IP66/IP68 (only for M20x1.5 and ½-14 NPT)	D12	•	•	Ŷ	(PU on epoxy)				
, , , , , , , , , , , , , , , , , , ,	D37	1	~	~	Replacement of process connection side	H01	✓	✓	T
Supplied with oval flange (1 item), PTFE packing and screws in thread	037	v	•	v	-				
of process flange									
	DEC	1	1	1					
Capri cable gland 4F CrNi and clamping device (848699 + 810634) included	D59	v	•	*					

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SITRANS P DS III for level

Transmitters for applications with advanced requirements (Advanced)

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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) ³⁾	J08	~	1	1
Vent valve or blanking plug of process flange welded-in (orientation: on left when viewing the display) ³⁾	J09	1	1	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) Blanking plug is standard configuration. Order option A40 if a vent valve is required instead of a blanking plug.

Additional data				
		HART	PA	FF
Please add "-Z" to Article No. and specify Order code(s) and plain text.				
Measuring range to be set	Y01	✓	√ 1)	
Specify in plain text (max. 5 characters): Y01: up to mbar, bar, kPa, MPa, psi				
Stainless steel tag plate and entry in device variable (measuring point descrip-	Y15	1	1	~
tion) 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⁾	~		
<pre>non-pressure units²) Specify in plain text: Y22: up to l/min, m³/h, m, USgpm, (specification of measuring range in pressure units "Y01" is essential, unit with max. 5 characters)</pre>	+ Y01			
Preset bus address	Y25		1	~
possible between 1 and 126 Specify in plain text: Y25:				
Damping adjustment in seconds (0 100 s)	Y30	*	~	~

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

✓ = available

- 1) Measuring accuracies for PROFIBUS PA transmitters with Option Y01 are calculated in the same way as for HART devices. ²⁾ Preset values can only be changed over SIMATIC PDM.
- Not in conjunction with over-filling safety device for flammable and non-flammable liquids (Order code "E08")

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for level

Selection and Order	ring data	Article	No.	Order code	Selection and Ordering data		Article No.	C
Mounting flange	lounting flange		4912	2	Mounting flange		7 M F 4 9 1	2
	the SITRANS P pressure r part) for level, for DS III	3	1		Directly mounted on the SITRANS F transmitter (converter part) for leve series		3	ľ
ration in the PIA L					Customer-specific tubus length Specify customer-specific length w Order Code	rith Y44, see		
Connection to EN 1						tool without foil		
Nominal diameter DN 50	Nominal pressure PN 10/16/25/40 PN 100	AB			<u> </u>	andard length		
ON 80	PN 10/16/25/40	D) mm (1.97"))0 mm (3.94")	A 1 A 2	
DN 100	PN 10/16 PN 25/40	G H			101 150 mm (3.98 5.91") 15	50 mm (5.91") 90 mm (7.87")	A 3 A 4	
Connection to ASM						50 mm (9.84")	A 5	
Nominal diameter	Nominal pressure				 Wetted parts materials: Stainless s with ECTFE 	teel coated		
2 inch	class 150 class 300	L				andard length		
	class 400/600	N			· · · · · · · · · · · · · · · · · · ·) mm (1.97")	F 1	
	class 900/1500	Р			. ,	0 mm (3.94")	F 2	
3 inch	class 150	Q				50 mm (5.91") 00 mm (7.87")	F 3 F 4	
1 inch	class 300 class 150	R				50 mm (9.84")	F 5	
	class 300 Order code and plain text:	U			Wetted parts materials: Stainless st PFA			
Nominal diameter:		z		J1Y		andard length		
Wetted parts materi					20 50 mm (0.79 1.97") 50) mm (1.97")	D 1	
Stainless steel 316	L	A				00 mm (3.94")	D 2	
 Coated with PFA Coated with PTFE 	-	DE	n			50 mm (5.91")	D 3	
- Coated with ECTF		F				0 mm (7.87") 50 mm (9.84")	D 4 D 5	
Monel 400, mat. no		G			, , ,		0.5	
 Hastelloy C276, ma 		J			Wetted parts materials: Monel 400 Range St.	, andard length		
Hastelloy C4, mat.		U) mm (1.97")	G 1	
Hastelloy C22, mat	. no. 2.4602	V	D			0 mm (3.94")	G 2	
Tantalum		K				50 mm (5.91")	G 3	
 Manum, mai. no. 3 Nickel 201 (max. 26 	3.7035 (max. 150 °C (302 °F))	LO			151 200 mm (5.94 7.87") 20	0 mm (7.87")	G 4	
Duplex 2205, mat.		Q			Wetted parts materials: Hastelloy (2276		
Duplex 2205, mat.	no. 1.4462, incl. main body	R			Range St.	andard length		
• Stainless steel 316		S	D		· · · · · · · · · · · · · · · · · · ·) mm (1.97")	J 1	
thickness approx. 2	25 μm	-)0 mm (3.94")	J 2	
Tube length						50 mm (5.91")	J 3	
 without tube Other version: add O 	order code and plain text:	Z		K 1 Y)0 mm (7.87")	J 4	
	ontact with medium:	20		N 1 1	Wetted parts materials: Tantalum Range St.	andard length		
ubus length:					0	0	K 4	
) mm (1.97"))0 mm (3.94")	K 1 K 2	
						50 mm (5.91")	K 2	
						0 mm (7.87")	K 4	
					Filling liquid			

• Silicone oil M5

• Silicone oil M50

• High-temperature oil

• Food oil (FDA-listed)

Order code and plain text: filling liquid: ...

1) For vacuum on request

Other version, add

Halocarbon oil (for O2-measurement)²⁾

 Oil and grease-free cleaning according to DIN 25410, level 2, and packaging included in scope of delivery. Refer to "Further designs" C10 and E10. 1

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M 1 Y

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for level

Selection and Ordering data	Order	code			
Further designs		HART	PA	FF	
Add "-Z" to Article No. and specify Order code.					
Customer-specific tubus length	Y44	✓	✓	✓	
Select range, enter desired length in plain text (No entry = standard length)					
Spark arrester For mounting on zone 0 (incl. documentation)	A01	1	~	1	
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 (5-point char- acteristic curve test) according to IEC 60770-2	C11	1	1	~	
Inspection certificate Acc. to EN 10204-3.1	C12	~	~	1	
2.2 Certificate of FDA approval of fill oil Only in conjunction with filling liquid "Food oil" (FDA listed)"	C17	~	~	1	
"Functional safety (SIL2)" certificate to IEC 61508	C20	~	~		
(only for conjunction with the Order code "C20" in the case of SITRANS P DS III transmitter)					
"Functional safety (SIL2/3)" certificate to IEC 61508 (only for conjunction with the Order code "C23" in the case of SITRANS P DS III transmitter)	C23	~	~		
Certification acc. to NACE MR-0175	D07	✓	1	1	-
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)					
Certification acc. to NACE MR-0103	D08	✓	✓	1	
Includes acceptance test certificate 3.1 acc. to EN 10204 (only for wetted parts made of stainless steel 1.4404/316L and Hastelloy C276)					
Oil- and grease-free cleaned version	E10	✓	✓	1	
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					
Epoxy painting Not possible with negative pressure service	E15	1	~	1	
Color: transparent, coverage: front and rear of the remote seal, capillary(ies) or connecting tube, process connection of the transmitter. With transmitters 7MF40 and 7MF42, only possible with process connection G½B according to EN 837-1.					
One sided-mounting, sealing surface below	H20				1

Selection and Ordering data	Order	code		
Further designs		HART	PA	FF
Add "-Z" to Article No. and specify Order code.				
Flanges according to EN 1092-1,				
sealing surface B1 (only in combination with "Z" at data				
position 9)				
DN 25, PN 10/16/25/40	JOA	1	1	1
DN 25, PN 63/100/160 DN 40, PN 10/16/25/40	J0B J0C	√ √	√ √	√ √
DN 40, PN 63/100	JOD	1	1	1
DN 40, PN 160	J0E	✓	✓	✓
Sealing surface smooth, form B2 or RFSF (Stainless steel diaphragm)	J11	~	~	*
previously DIN 2501, form E	J14			
Sealing surface groove, EN 1092-1, form D instead of sealing surface B1 (only for wetted parts made of stainless steel 316L)	J14	v	·	•
Sealing surface with spring according to EN 1092-1, form F, (previously DIN 2512, form F) in stainless steel 316L				
DN 25	J30	1	1	1
DN 40 DN 50	J31 J32	√ √	√ √	√ √
DN 80	J33	1	1	1
DN 100	J34	1	1	1
DN 125	J35	~	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	J42 J43	1	1	¥
DN 100	J44	✓	✓	✓
DN 125	J45	~	1	~
Sealing surface with female face according to EN 1092-1, form F (previously DIN 2512, form R13) in stainless steel 316L				
DN 25	J50	✓	✓	✓
DN 40	J51	√ √	√ √	1
DN 50 DN 80	J52 J53	¥ ✓	¥	↓
DN 100	J54	✓	✓	✓
DN 125	J55	1	~	1
Flange according to ASME B16.5 RF 125 250 AA				
(only in combination with "Z" at data				
position 9) 1", class 150	16 4			
1", class 300	J6A J6B	¥	~	¥
1", class 400/600	J6C	✓	✓	1
1", class 900/1500	J6D	1	1	√ √
1½", class 150 1½", class 300	J6E J6F	√ √	√ √	√
1½", class 400/600	J6G	¥	✓	✓
1½", class 900/1500	J6H	✓	✓	✓
Sealing surface B1 or ASME B16.5 RF 125 250 AA	J12	1	✓	~
instead of sealing surface B2 or RFSF				
(only for wetted parts made of Hastelloy C276				
(2.4819), tantalum and Duplex 2205 (1.4462) and for nominal sizes 2", 3", DN 50 and DN 80)				
Sealing surface RJF (groove) ASME B16.5	J24	1	~	~
instead of sealing surface ASME B16.5 RF				
125 250 AA (only for wetted parts made of stainless steel 316L)				
,				

Transmitters for applications with advanced requirements (Advanced)

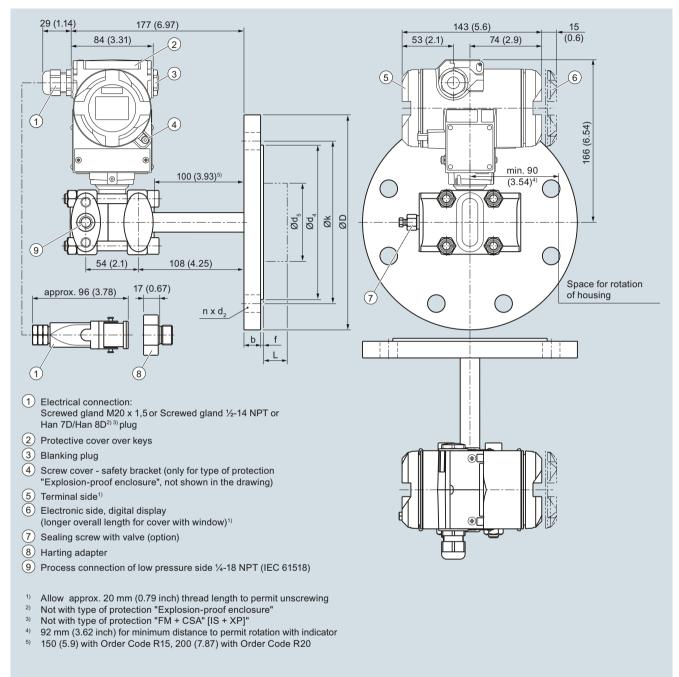
Selection and Ordering data	Order	code		
Further designs		HART	PA	F
Add "-Z" to Article No. and specify Order code				
Flange acc. to JIS, sealing surface RF (only in combination with "Z" at data position 9)				
JIS DN 50, 10 K 316L	J7A	1	✓	~
JIS DN 50, 20 K 316L	J7B	1	✓	v
JIS DN 80, 10 K 316L	J7C	1	√ √	v
JIS DN 80, 20 K 316L	J7D	1	✓	v
Elongated pipe, 150 mm instead of 100 mm,	R15	✓	✓	v
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.		1	~	¥
Negative pressure service				
for use in the low-pressure measuring range for transmitter for level	V04	~	~	۷
Note: suffix "Y01" required with pressure transmitter				
Extended negative pressure service	-			
for use in the low-pressure measuring range for transmitter for level	V54	~	~	۷
Note: suffix "Y01" required with pressure trans- mitter				
✓ = available				

= available

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for level

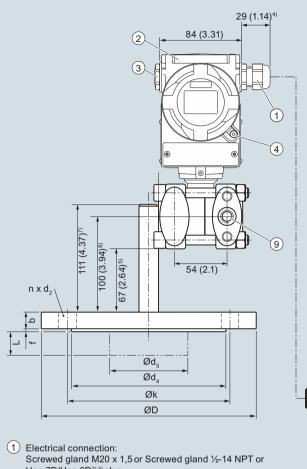
Dimensional drawings

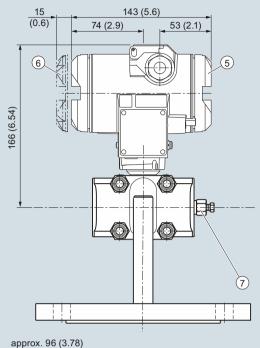


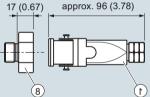
SITRANS P DS III with HART pressure transmitters for level, including mounting flange, dimensions in mm (inch)

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for level







- Han 7D/Han 8D^{2) 3)} plug
- 2 Protective cover over keys
- (3) Blanking plug
- (4) Screw cover safety bracket (only for type of protection "Explosion-proof enclosure", not shown in the drawing)
- 5 Terminal side¹⁾
- (6) Electronic side, digital display
- (longer overall length for cover with window)¹⁾
- 7 Sealing screw with valve (option)
- 8 Harting adapter
- (9) Process connection of low pressure side ¹/₄-18 NPT (IEC 61518)
- 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) 117 (4.61) with Order Code R15, 167 (6.57) with Order Code R20
- 6) 150 (5.19) with Order Code R15, 200 (7.87) with Order Code R20
- ⁷⁾ 161 (6.34) with Order Code R15, 211 (8.31) with Order Code R20

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

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III for level

Connectio	n to EN 1092	2-1										
Nominal diameter	Nominal pressure	b	D	d	d ₂	d ₄	d_5	d _M	f	k	n	L
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
DN 50	PN 10/16/ 25/40	20	165	90	18	102	48.3	45 ¹⁾	2	125	4	0, 50, 100, 150 or 200
	PN 100	28	195	90	26	102	48.3	45 ¹⁾	2	145	8	
DN 80	PN 10/16/ 25/40	24	200	90	18	138	76	72 ²⁾	2	160	8	
	PN 100	32	230	90	26	138	76	72 ²⁾	2	180	8	
DN 100	PN 10/16	20	220	115	18	158	94	89	2	180	8	
	PN 25/40	24	235	115	22	162	94	89	2	190	8	
Connectio	n to ASME B	16.5										
Naminal	Nominal	h	P	لم	لم		4	لم	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 Accessories/Spare Parts

Selection and Ordering data		Artic	Article No. Selection and Ordering data		Article No.		
Replacement measuring cell for pressure for SITRANS P DS III			F4990- 0-0DB0	Replacement measuring cell for absolute pressure for SITRANS P DS III (from the pressure series)			F 4 9 9 2 - 0 - 0 D B
Click on the Artic tion in the PIA Li	cle No. for the online configura- fe Cycle Portal.			Click on the Artic tion in the PIA Life	le No. for the online configura- e Cycle Portal.		
Measuring cell filli Silicone oil Inert liquid Measured span (m 8.3 250 mbar 0.01 1 bar 0.04 4 bar 0.16 16 bar 0.63 63 bar 1.6 160 bar 4.0 400 bar 7.0 700 bar	ing Measuring cell cleaning Normal grease-free to cleanliness level 2 in max.) (0.12 3.6 psi) (0.15 14.5 psi) (0.6 58 psi) (2.32 232 psi) (9.14 914 psi) (23.2 2 320 psi) (58.0 5 802 psi) (102.0 10 153 psi)	1 3 A B C D E F G J		Measuring cell filling Silicone oil Inert liquid Measured span (m 8.3 250 mbar a 43 1300 mbar a 0.16 5 bar a 1 30 bar a Wetted parts mater Seal diaphragm Stainless steel	(0.12 3.62 psia) (0.62 18.85 psia) (2.32 72.5 psia) (14.5 435 psia)	1 3 F G H	A
Wetted parts mate Seal diaphragm		_ 0		Hastelloy Hastelloy	Stainless steel Hastelloy		3
Stainless steel Hastelloy Hastelloy	Stainless steel Stainless steel Hastelloy	E	A B C	 Process connectio Connection shank Female thread ½- Oval flange made 	G½B to EN 837-1 14 NPT		0 1
Process connection • Connection shark • Female thread 1/2- • Oval flange made max apap 160 be	 G1⁄2B to EN 837-1 14 NPT of stainless steel, 		0 1	max. span 160 ba - Mounting thread IEC 61518/DIN E - Mounting thread	r (2320 psi) ⁷ / ₁₆ -20 UNF to	0	2 3
max. span 160 ba - Mounting thread IEC 61518/DIN - Mounting thread	d ⁷ / ₁₆ -20 UNF to		2 3	Order code.	rticle No. and specify		er code
Further designs		Ord	er code	Inspection certifica to EN 10204-3.1	ate	C12	
Please add "-Z" to A Order code.	Article No. and specify			IU EN 10204-3.1			
Inspection certific to EN 10204-3.1	ate	C12					

1

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III Accessories/Spare Parts

Selection and Orderi Replacement measu sure (from the differe	ring cell for absolute pres- ential pressure series) for		١F	49	93-
SITRANS P DS III with	HART, DS III with PROFIBUS UNDATION Fieldbus series	11	1	T	- 0 D C 0
	No. for the online configura-				
	g Measuring cell cleaning				
Silicone oil	Normal	1			
Inert liquid	grease-free to cleanliness level 2	3			
Measured span (min					
8.3 250 mbar a	(0.12 3.62 psia)	0			
43 1300 mbar a	(0.62 18.85 psia)	F			
0.16 5 bar a	(2.32 72.5 psia)	0			
1 30 bar a	(14.5 435 psia)	ŀ	-		
5.3 100 bar a	(76.9 1450 psia)	_ r	E		
Wetted parts materia Seal diaphragm	Parts of measuring cell				
Stainless steel	Stainless steel		Α		
Hastelloy	Stainless steel		В		
Hastelloy	Hastelloy		c		
Tantalum	Tantalum		E		
Monel	Monel		Н		
Gold	Gold		L		
• FFPM (Kalrez, comp	I 61518 iess flange ¹⁾ A10 to DIN 19213 / ₁₆ -20 UNF to I 61518 aterials ess flange screws icle No. and specify flanges n)) pre, approved for food) pound 4079), for measured me- 15 100 °C (5 212 °F)	Or A2 A2 A2 A2 C1	de 0 1 2 3	2 4 6 7 C	ode
to EN 10204-3.1	5		2		
Process connection	G½B	D1	6		
Remote seal flanges (not together with K01		D2	0		
Vent on side for gas	measurements	HO	2		
Process flanges					
 without 		KO	0		
• with process flange	made of				
- Hastelloy		KO			
- Monel		KO			
Stainloss stool with	n PVDF insert	K0	4		
max. PN 10 (MAW					

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

Selection and Orde	ring data	Article No.
	uring cell for differential	7MF4994 -
	/160 (MAWP 464/2320 psi) for	
SITRANS P DS III wit	h HART, DS III with PROFIBUS	- 0 D C 0
PA and DS III with FC	OUNDATION Fieldbus series	
Click on the Articl tion in the PIA Life	e No. for the online configura- cycle Portal.	
•	g Measuring cell cleaning	
Silicone oil	Normal	1
Inert liquid	grease-free to cleanliness level 2	3
Measured span (mi		
PN 32 (MAWP 464 p	si)	
1 20 mbar ¹⁾	(0.4 8 inH ₂ O)	В
PN 160 (MAWP 2320) psi)	
1 60 mbar	(0.4 24 inH ₂ O)	C
2.5 250 mbar	(1 100 inH ₂ O)	D
6 600 mbar	(2.4 240 inH ₂ O)	E
16 1600 mbar	(6.4 642 inH ₂ O)	F
50 5000 mbar	(20 2000 inH ₂ O)	G
0.3 30 bar	(4.35 435 psi)	н
Wetted parts materi		
(stainless steel proce	o ,	
Seal diaphragm	Parts of measuring cell	
Stainless steel	Stainless steel	A
Hastelloy Hastelloy	Stainless steel Hastelloy	A B C
Tantalum ²⁾	Tantalum	Ê
Monel ²⁾	Monel	H
Gold ²⁾	Gold	L
Process connection		
	NPT with flange connection osite process connection	
- Mounting thread		0
- Mounting thread		2
IEC 61518/DIN E		
Vent on side of pro	cess flange	4
 Mounting thread Mounting thread 	7/1==20 LINE to	6
IEC 61518/DIN E	N 61518	U
Non-wetted parts m	aterials	
Stainless steel proce	ess flange screws	2
Further designs		Order code
Please add "-Z" to Art	icle No. and specify Order code.	
O-rings for process	•	
(instead of FPM (Vito	n))	• • • •
 PTFE (Teflon) EEP (with silicone of the second second	core, approved for food)	A20 A21
	pound 4079), for measured me-	A22
	-15 100 °Ć (5 212 °F)	
• NBR (Buna N)		A23
Inspection certification	te	C12
to EN 10204-3.1		
Remote seal flange		D20
(not together with K0	· · · · · · · · · · · · · · · · · · ·	1100
Vent on side for gas		H02
differential pressure	ess flanges for vertical e lines	H03
(not together with K0		
Process flanges		
without		K00
 with process flange 	e made of	
- Hastelloy		K01
- Monel		K02
	th PVDF insert, max. PN 10	K04
	max. temperature of medium or 1/2-14 NPT inner process con-	
	de in the middle of the process	
flange, vent valve		

 $^{1)}$ Not suitable for connection of remote seal $^{2)}$ Only together with max. spans 250, 1600, 5000 and 30000 mbar (100 inH_2O, 642 inH_2O, 2000 inH_2O and 435 psi).

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III Accessories/Spare Parts

Selection and Orderin	g data	Artic	le No.
Replacement measuri pressure and PN 420 (SITRANS P DS III with F PA and DS III with FOU		4995- - 0D0	
Click on the Article N tion in the PIA Life C	No. for the online configura- ycle Portal.	Ш	
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	S		
(stainless steel process	flanges)		
Seal diaphragm	Parts of measuring cell		
Stainless steel Hastelloy Gold ¹⁾	Stainless steel Stainless steel Gold	AB	3
Process connection			
Female thread ¹ / ₄ -18 NF connection	5		
Sealing screw opposi			
 Mounting thread M1 Mounting thread ⁷/₁₁ IEC 61518/DIN EN 6 	₆ -20 UNF to		1 3
 Vent on side of proces Mounting thread M1 Mounting thread ⁷/₁₁ IEC 61518/DIN EN 6 	2 to DIN 19213 ₆ -20 UNF to		5 7
Non-wetted parts mate	erials	-	
Stainless steel proces	s flange screws		2
Further designs		Orde	er code
Please add "-Z" to Artic code.	le No. and specify Order		
 O-rings for process fla (instead of FPM (Viton)) PTFE (Teflon) FEP (with silicone cori FFPM (Kalrez, compo- dium temperatures -15 NBR (Buna N) 		A20 A21 A22 A23	
Inspection certificate		C12	
to EN 10204-3.1			
Stainless steel proces differential pressure li		H03	
without process flang		K00	

¹⁾ Not together with max. span 600 mbar (240 in H_2O)

Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III Accessories/Spare	Parts		
Selection and Ordering data	Article No.	Selection and Ordering data	Article No.
Spare parts/Accessories		Digital indicator	7MF4997-1BR
Mounting bracket and fastening parts		Including mounting material for SITRANS P	
or pressure transmitters		DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus	
SITRANS P DS III with HART, DS III with			
PROFIBUS PA and DS III with FOUNDATION		Measuring point label	ZME4007 10A
ieldbus (7MF403C.)		 without inscription (5 units) Printed (1 unit) 	7MF4997-1CA 7MF4997-1CB-Z
or absolute pressure transmitters		Data according to Y01 or Y02, Y15, Y16 and	Y.::
PROFIBUS PA and DS III with FOUNDATION		Y99 (see "Pressure transmitters")	
Fieldbus (7MF423C.)		Mounting screws	
made of steel	7MF4997-1AB	For measuring point label, grounding and con-	7MF4997-1CD
made of stainless steel 304/1.4301	7MF4997-1AH	nection terminals or for display	7101 4557-100
made of stainless steel 316L/1.4404	7MF4997-1AP	(50 units)	
Iounting bracket and fastening parts		Sealing screws	
or pressure transmitters		(1 set = 2 units) for process flange	
SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION		 made of stainless steel 	7MF4997-1CG
ieldbus (7MF403A.,B.,D. andF.)		 made of Hastelloy 	7MF4997-1CH
or absolute pressure transmitters		Sealing screws with vent valve	
ITRANS P DS III with HART, DS III with ROFIBUS PA and DS III with FOUNDATION		Complete (1 set = 2 units)	
eldbus 7MF423		made of stainless steel	7MF4997-1CP
made of steel	7MF4997-1AC	made of Hastelloy	7MF4997-1CQ
made of stainless steel 304/1.4301	7MF4997-1AJ	Application electronics	
made of stainless steel 316L/1.4404	7MF4997-1AQ	for SITRANS P DS III with HART	7MF4997-1DK
lounting and fastening brackets	-	for SITRANS P DS III with PROFIBUS PA	7MF4997-1DL
or differential pressure transmitters with		 for SITRANS P DS III with FOUNDATION Fieldbus 	7MF4997-1DM
ange thread M10			
ITRANS P DS III with HART, DS III with ROFIBUS PA and DS III with FOUNDATION			7ME4007 1DN
ieldbus (7MF433 and 7MF443)		 for SITRANS P DS III for SITRANS P DS III PROFIBUS PA and 	7MF4997-1DN 7MF4997-1DP
made of steel	7MF4997-1AD	FOUNDATION Fieldbus	7 WII 4997-10F
made of stainless steel 304/1.4301	7MF4997-1AK	O-rings for process flanges made of:	
made of stainless steel 316L/1.4404	7MF4997-1AR	• FPM (Viton)	7MF4997-2DA
lounting and fastening brackets	-	PTFE (Teflon)	7MF4997-2DB
For differential pressure transmitters with		• FEP (with silicone core, approved for food)	7MF4997-2DC
lange thread M12		• FFPM (Kalrez, compound 4079)	7MF4997-2DD
SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION		• NBR (Buna N)	7MF4997-2DE
Fieldbus (7MF453)		Sealing ring for process connection	see "Fittings"
made of steel	7MF4997-1AE	Weldable sockets for PMC connection	
made of stainless steel 304/1.4301	7MF4997-1AL	PMC Style Standard: Thread 1½"	7MF4997-2HA
made of stainless steel 316L/1.4404	7MF4997-1AS	PMC Style Minibolt: front-flush 1"	7MF4997-2HB
lounting and fastening brackets		Gaskets for PMC connection	
or differential and absolute pressure transmit-		(packing unit = 5 units)	
ers with flange thread 7/16 -20 UNF ITRANS P DS III with HART, DS III with		PTFE seal for PMC Style Standard:	7MF4997-2HC
PROFIBUS PA and DS III with FOUNDATION		Thread 11/2"	
ieldbus		 Gasket made of Viton for PMC Style Minibolt: front-flush 1" 	7MF4997-2HD
7MF433, 7MF443 and 7MF453)	71454007445		
made of steel	7MF4997-1AF	Weldable socket for TG52/50 and TG52/150 connection	
made of stainless steel 304/1.4301 made of stainless steel 316L/1.4404	7MF4997-1AM 7MF4997-1AT	TG52/50 connection	7MF4997-2HE
	7 WII 4337-TAT	TG52/150 connection	7MF4997-2HE 7MF4997-2HF
Cover		Seals for TG 52/50 and TG 52/150 made of	7MF4997-2HG
Ade of die-cast aluminum, including gasket,		silicone (FDA compliant)	/1017455/-200
or SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION		Seals for flange connection with front-flush	
ieldbus.		diaphragm	
Compatible for Ex and non-Ex transmitters		M;aterial FKM (Viton); temperature range:	
without window	7MF4997-1BB	-20 +200 °C (-4 +392 °F), 10 units	
with window	7MF4997-1BE	• DN 25, PN 40 (M11)	7MF4997-2HH
over		• 1", class 150 (M40)	7MF4997-2HK
lade of stainless steel, including gasket,		Available ex stock	
or SITRANS P DS III with HART, DS III with			
PROFIBUS PA and DS III with FOUNDATION			
Compatible for Ex and non-Ex transmitters			
Compatible for Ex and non-Ex transmitters without window	7MF4997-1BC		

Transmitters for applications with advanced requirements (Advanced)

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

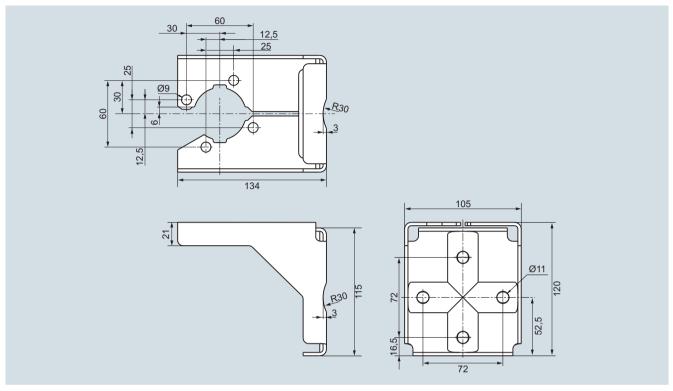
► Available ex stock

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

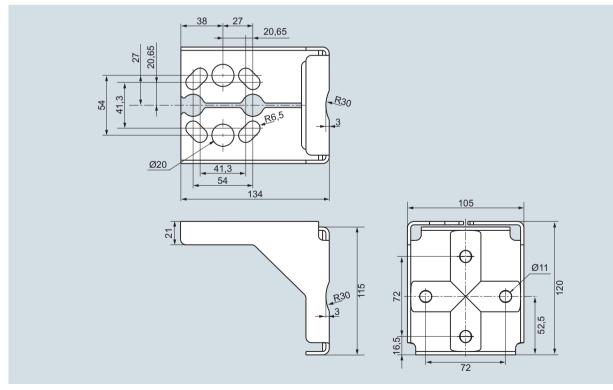
Transmitters for applications with advanced requirements (Advanced)

SITRANS P DS III Accessories/Spare Parts

Dimensional drawings



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



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

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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

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

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 DA	Add "-Z" to the Article No. of the transmitter and add order codes.	Order code
0	SITRANS P DSIII 7MF4032, 7MF4232, 7MF4033, 7MF4233, 7MF4034, 7MF4234	T06
	With process connection oval flange with PTFE gasket and stainless steel mounting screws.	
	Delivery including high-presure test 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

Transmitters for applications with advanced requirements (Advanced)

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

Add -Z to the Article No. of the transmitter and add Order codes	Order code
SITRANS P DSIII 7MF4031, 7MF4231	тоз
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
	and add Order codes SITRANS P DSIII 7MF4031, 7MF4231 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) Supplied acceptance test certificate to EN 10204- 3.1 for transmitters and mounted valve manifold With manufacturer declaration according

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

With manufacturer declaration according **D07** to NACE, MR-0175

7MF9411-5CA

valve manifold on differential pressure transmitters

	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 • 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

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

Transmitters for applications with advanced requirements (Advanced)

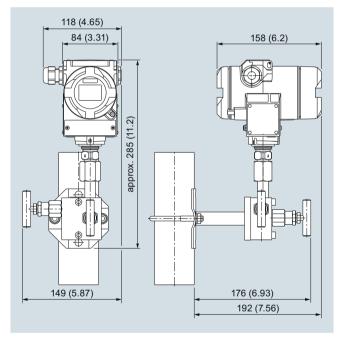
SITRANS P DS III - Factory-mounting of valve manifolds on transmitters

Dimensional drawings

Valve manifolds mounted on SITRANS P DS III



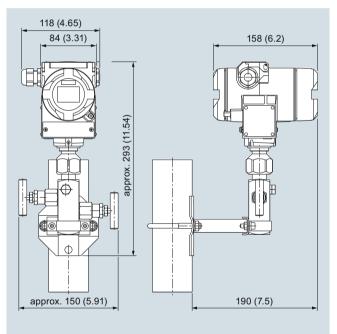
7MF9011-4EA valve manifold with mounted gauge pressure and absolute pressure transmitters



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



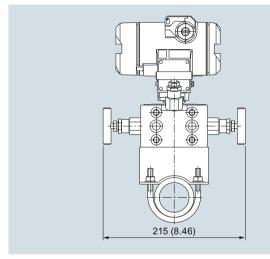
7MF9011-4FA valve manifold with mounted gauge pressure and absolute pressure transmitters, dimensions in mm (inch)

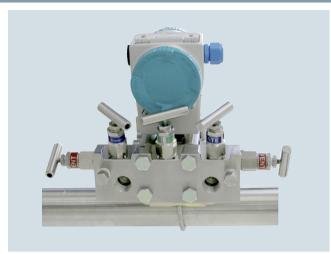
Transmitters for applications with advanced requirements (Advanced)

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

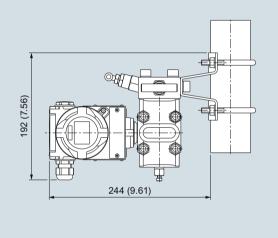


7MF9411-5BA valve manifold with mounted differential pressure transmitter

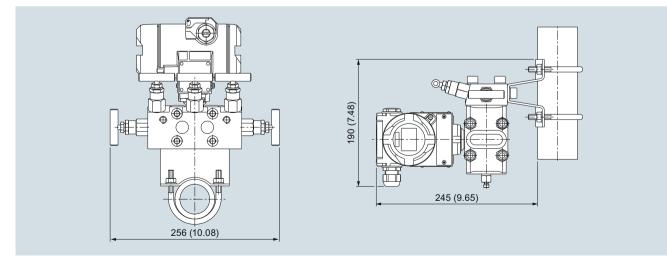




7MF9411-5CA valve manifold with mounted differential pressure transmitter



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)