Transmitters for general requirements

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 ~ √∆p (together with a primary differential pressure device (see Chapter "Flow Meters"))

Span (infinitely adjustable)

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

Nominal measuring range

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

Pressure transmitters for level

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

Span (infinitely adjustable)

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

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

Nominal diameter of the mounting flange

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

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

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

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

Design



Front view

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

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

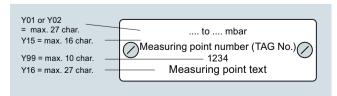
The approval label is located on the opposite side.

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

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

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

Example for an attached measuring point label

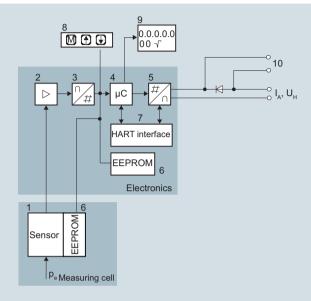


Transmitters for general requirements

SITRANS P DS III - Technical description

Function

Operation of electronics with HART communication



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

Function diagram of electronics

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

The diode circuit (10) protects against incorrect polarity.

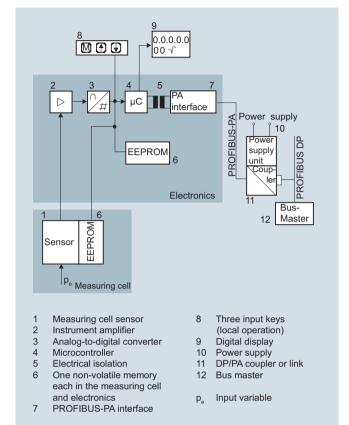
The data specific to the measuring cell, the electronics data, and the parameter data are stored in the two non-volatile memories (6). The one memory is coupled to the measuring cell, the other to the electronics. As the result of this modular design, the electronics and the measuring cell can be replaced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

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

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

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

Operation of electronics with PROFIBUS PA communication



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.

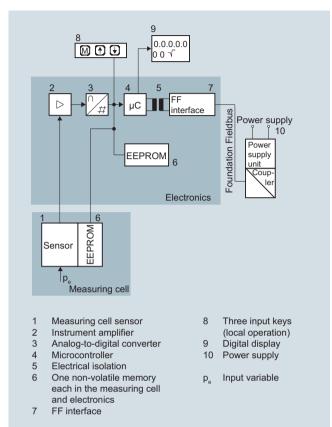
Using the three input buttons (8) you can parameterize the pressure transmitter directly at the measuring point. The input buttons can also be used to control the view of the results, the error messages and the operating modes on the display (9).

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 general requirements

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).

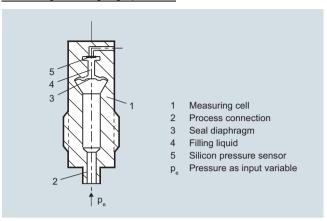
The data specific to the measuring cell, the electronics data, and the parameter data are stored in the two non-volatile memories (6). The one memory is coupled to the measuring cell, the other to the electronics. As the result of this modular design, the electronics and the measuring cell can be replaced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

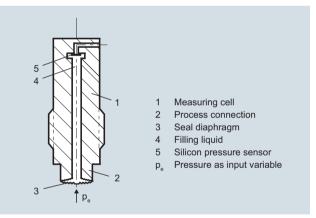
Measuring cell for gauge pressure



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



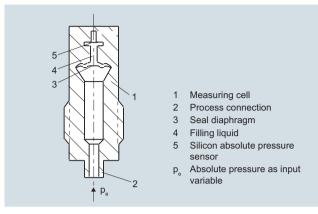
Measuring cell for gauge pressure, with front-flush diaphragm for paper industry, function diagram

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

Transmitters for general requirements

SITRANS P DS III - Technical description

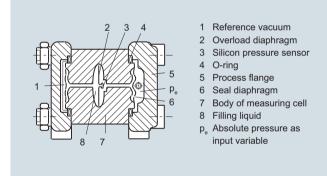
Measuring cell for absolute pressure from gauge pressure series



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

The absolute pressure $_{p}e$ 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



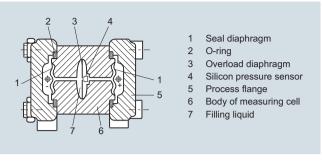
Measuring cell for absolute pressure from differential pressure series, function diagram

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

The difference in pressure between the input pressure p_e and the reference vacuum (1) on the low-pressure side of the measuring cell flexes the measuring diaphragm. This changes the resistance of the four piezo-resistors fitted in the diaphragm in a bridge circuit. This change in resistance results in a bridge output voltage proportional to the absolute pressure.

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

Measuring cell for differential pressure and flow



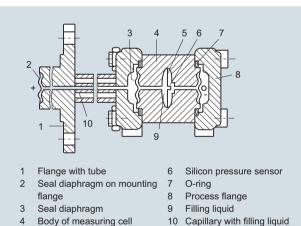
Measuring cell for differential pressure and flow, function diagram

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 absolute 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



Measuring cell for level, function diagram

Overload diaphragm

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.

of mounting flange

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 general requirements

SITRANS P DS III - Technical description

Parameterization DS III

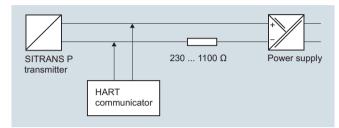
Depending on the version, there are a range of options for parameterizing the pressure transmitter and for setting or scanning the parameters.

Parameterization using the input buttons (local operation)

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

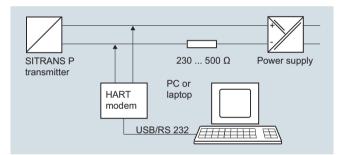
Parameterization using HART

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

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

¹⁾ Cancel apart from write protection

2) Only differential pressure

Diagnostic functions for DS III with HART

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

Available physical units of display for DS III with HART

Table style: Technical specifications 2

Physical variable	Physical dimensions
Pressure (setting can also be made in the factory)	Pa, MPa, kPa, bar, mbar, torr, atm, psi, g/cm², kg/cm², inH ₂ O, inH ₂ O (4 °C), mmH ₂ O, ftH ₂ O (20 °C), inHg, mmHg
Level (height data)	m, cm, mm, ft, in
Volume	m ³ , dm ³ , hI, yd ³ , ft ³ , in ³ , US gallon, lmp. gallon, bushel, barrel, barrel liquid
Mass	g, kg, t, lb, Ston, Lton, oz
volume flow	$\rm m^3/d,m^3/h,m^3/s,l/min,l/s,ft^3/d,ft^3/min,ft^3/s,US$ gallon/min, US gallon/s
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)	X	×
Buttons and/or function disabling	X	X
Source of measured-value display	X	X
Physical dimension of display	×	X
Position of decimal point	X	X
Bus address	X	X
Adjustment of characteristic	X	X
Input of characteristic		X
Freely-programmable LCD		Х
Diagnostics functions		X

Transmitters for general requirements

SITRANS P DS III - Technical description

Diagnostic functions for DS III with PROFIBUS PA and FOUNDATION Fieldbus

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

Physical dimensions available for the display

Thy order annother available for the display				
Physical variable	Physical dimensions			
Pressure (setting can also be made in the factory)	MPa, kPa, Pa, bar, mbar, torr, atm, psi, g/cm², kg/cm², mmH $_2$ O, mmH $_2$ O (4 °C), inH $_2$ O (10 °C), mmHg, inHg			
Level (height data)	m, cm, mm, ft, in, yd			
Volume	m ³ , dm ³ , hl, yd ³ , ft ³ , in ³ , US gallon, lmp. gallon, bushel, barrel, barrel liquid			
volume flow	m³/s, m³/min, m³/h, m³/d, l/s, l/min, l/h, l/d, Ml/d, ft³/s, ft³/min, ft³/h, ft³/d, US gallon/s, US gallon/min, US gallon/h, US gallon/d, bbl/s, bbl/min, bbl/h, bbl/d			
Mass flow	g/s, g/min, g/h, g/d, kg/s, kg/min, kg/h, kg/d, t/s, t/min, t/h, /t/d, lb/s, lb/min, lb/h, lb/d, STon/s, STon/min, STon/h, STon/d, LTon/s, LTon/min, LTon/h, LTon/d			
Total mass flow	t, kg, g, lb, oz, LTon, STon			
Temperature	K, °C, °F, °R			
Miscellaneous	%			

Transmitters for general requirements

SITRANS P DS III for gauge pressure

Technical specifications

SITRANS P, DS III series for gauge pressure					
	HART		PROFIBUS PA and FO	OUNDATION Fieldbus	
Input		_			
Measured variable		1	pressure	I	
Spans (infinitely adjustable) or nominal measuring range and max. permissible test pressure	Span (min max.)	Max. perm. test pressure	Nominal measuring range	Max. perm. test pressure	
	0.01 1 bar (0.15 14.5 psi)	6 bar (87 psi)	1 bar (14.5 psi)	6 bar (87 psi)	
	0.04 4 bar (0.58 58 psi)	10 bar (145 psi)	4 bar (58 psi)	10 bar (145 psi)	
	0.16 16 bar (2.32 232 psi)	32 bar (464 psi)	16 bar (232 psi)	32 bar (464 psi)	
	0.6 63 bar (9.14 914 psi)	100 bar (1450 psi)	63 bar (914 psi)	100 bar (1450 psi)	
	1.6 160 bar (23.2 2320 psi)	250 bar (3626 psi)	160 bar (2320 psi)	250 bar (3626 psi)	
	4.0 400 bar (58 5802 psi)	600 bar (8700 psi)	400 bar (5802 psi)	600 bar (8700 psi)	
	7.0 700 bar (102 10153 psi)	800 bar (11603 psi)	700 bar (10153 psi)	800 bar (11603 psi)	
Lower measuring limit Measuring cell with silicone oil filling Measuring cell with inert filling liquid			(0.44 psia) (0.44 psia)		
Upper measuring limit	100 % of max. spa	an (for oxygen version an	d inert filling liquid; max	(. 120 bar (1740 psi))	
Output					
Output signal	4 20 mA		Digital PROFIBUS PA and FOUNDATION I bus signal		
Lower limit (infinitely adjustable)	3.55 mA, factory preset to 3.84 mA		-		
Upper limit (infinitely adjustable)	23 mA, factory preset to 20.5 mA or optionally set to 22.0 mA				
Load					
Without HART	$R_{\rm B} \leq (U_{\rm H}$ - 10.5 V)/0.023 A in Ω , $U_{\rm H}$: Power supply in V		1		
• With HART	$R_{\rm B} = 230 \dots 500 \Omega$ (SIMATIC PDM) or $R_{\rm B} = 230 \dots 1100 \Omega$ (HART Communicator)				
Physical bus	-		IEC 61158-2		
Protection against polarity reversal	Protected against shor	t-circuit and polarity reve supply	rsal. Each connection a voltage.	gainst the other with ma	
Electrical damping (step width 0.1 s)		Set to 2 s	(0 100 s)		
Measuring accuracy		Acc. to IE	C 60770-1		
Reference conditions (All error data refer always refer to the set span)	Increasing char	acteristic, start-of-scale v silicone oil filling, room t			
(iii ono. data toto, amajo toto, to allo obi opalij	Span ratio r = m	nax. span/set span	Nominal measuring	range ratio r = nominal /set measuring range	
Error in measurement at limit setting incl. hysteresis and reproducibility			3 3	3 2 32	
Linear characteristic					
- r ≤ 10	≤ (0.0029 · r + 0.071) %	,	$\leq (0.0029 \cdot r + 0.071)^{\circ}$	%	
- 10 < r ≤ 30	≤ (0.0045 · r + 0.071) %	,	\leq (0.0045 · r + 0.071) °	%	
- 30 < r ≤ 100	\leq (0.005 · r + 0.05) %		\leq (0.005 · r + 0.05) %		
Long-term stability (temp.erature change \pm 30 °C (\pm 54 °F))					
• 1 4-bar measuring cell	\leq (0.25 · r) % per 5 yea	rs	\leq (0.25 · r) % per 5 years	ars	
• 16 700-bar measuring cell	≤ (0.125 · r) % per 5 ye	ars	\leq (0.125 · r) % per 5 ye	ears	
Influence of ambient temperature					
• at -10 +60 °C (14 140 °F)	\leq (0.08 · r + 0.1) % ¹⁾ (at 700 bar: \leq (0.1 · r +	0.2) % ²⁾	\leq (0.08 · r + 0.1) % ¹⁾ (at 700 bar: \leq (0.1 · r +	· 0.2) % ²⁾	
• at -4010 °C and +60 +85 °C (-40 +14 °F and 140 185 °F)	\leq (0.1 · r + 0.15) %/10 ł	<	≤ (0.1 · r + 0.15) %/10		
Measured Value Resolution	-		3 · 10 ⁻⁵ of nominal mea	asuring range	

Transmitters for general requirements

SITRANS P DS III for gauge pressure

SITRANS P, DS III series for gauge pressure			
	HART	PROFIBUS PA and FOUNDATION Fieldbus	
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	-20 +100 °C	C (-4 +212 °F)	
• In conjunction with dust explosion protection	-20 +60 °C (-4 +140 °F)		
Ambient conditions			
Ambient temperature			
Transmitter (with 4-wire connection, observe temperature values of supplementary 4-wire electronics)	-40 +85 °C	(-40 +185 °F)	
- Display readable	-30 +85 °C	(-22 +185 °F)	
Storage temperature	-50 +85 °C	(-58 +185 °F)	
Climatic class			
- Condensation		dity 0 100 % suitable for use in the tropics	
Electromagnetic Compatibility			
 Emitted interference and interference immunity 	Acc. to IEC 61326 and NAMUR NE 21		
Design			
Weight (without options)	Die-cast aluminum: \approx 2.0 kg (\approx 4.4 lb) Stainless steel precision casting: \approx 4.6 kg (\approx 10.1 lb)		
Enclosure material	Low-copper die-cast aluminum, GD-AISi 12 or	stainless steel precision casting, mat. no. 1.4408	
Wetted parts materials			
Connection shank	Stainless steel, mat. no. 1.4404/31	6L or Hastelloy C4, mat. no. 2.4610	
Oval flange	Stainless steel, ma	at. no. 1.4404/316L	
Seal diaphragm	Stainless steel, mat. no. 1.4404/316	SL or Hastelloy C276, mat. no. 2.4819	
Measuring cell filling		inert filling liquid pressure 100 bar (1450 psi) at 60 °C (140 °F))	
Process connection		1, female thread $\frac{1}{2}$ -14 NPT or oval flange nounting thread M10 or $\frac{7}{16}$ -20 UNF to EN 61518	
Material of mounting bracket			
Steel	Sheet-steel, Mat. No.	1.0330, chrome-plated	
Stainless steel	Sheet stainless steel, r	mat. no. 1.4301 (SS 304)	
Power supply U_{H}		Supplied through bus	
Terminal voltage on transmitter	10.5 45 V DC 10.5 30 V DC in intrinsically-safe mode	-	
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 general requirements

SITRANS P DS III for gauge pressure

SITRANS P, DS III series for gauge pressure	ANS P, DS III series for gauge pressure		
	HART	PROFIBUS PA and FOUNDATION Fieldbus	
Certificates and approvals			
Classification according to PED 97/23/EC	For gases of fluid group 1 and liquids of fluid group 1; complies with requirements of article 3, paragraph 3 (sound engineering practice)		
Explosion protection	DTD 40 43		
Intrinsic safety "i"		FEX 2007 X	
- Marking		IIC T4/T5/T6 Ga/Gb	
- Permissible ambient temperature	-40 +70 °C (-40 +158	5 °F) temperature class T4; 3 °F) temperature class T5; 0 °F) temperature class T6	
- Connection	To certified intrinsically-safe circuits with peak values: $U_{\rm i}$ = 30 V, $I_{\rm i}$ = 100 mA, $P_{\rm i}$ = 750 mW; $R_{\rm i}$ = 300 Ω	FISCO supply unit: $U_0 = 17.5 \text{ V}$, $I_0 = 380 \text{ mA}$, $P_0 = 5.32 \text{ W}$ Linear barrier: $U_0 = 24 \text{ V}$, $I_0 = 174 \text{ mA}$, $P_0 = 1 \text{ W}$	
- Effective internal inductance/capacitance	$L_{\rm i} = 0.4 {\rm mH}, C_{\rm i} = 6 {\rm nF}$	$L_i = 7 \mu H, C_i = 1.1 nF$	
• Explosion-proof "d"	PTB 99 A	ATEX 1160	
- Marking	Ex II 1/2 G Ex	d IIC T4/T6 Gb	
- Permissible ambient temperature	-40 +85 °C (-40 +185 -40 +60 °C (-40 +14	5 °F) temperature class T4; 0 °F) temperature class T6	
- Connection	To circuits with values: $U_{\rm H}$ = 10.5 45 V DC	To circuits with values: $U_{\rm H}$ = 9 32 V DC	
Dust explosion protection for zone 20	PTB 01 A	ATEX 2055	
- Marking		65 T 120 °C P65 T 120 °C	
- Permissible ambient temperature	-40 +85 °C ((-40 +185 °F)	
- Max. surface temperature	120 °C	(248 °F)	
- Connection	To certified intrinsically-safe circuits with peak values: $U_{\rm i}$ = 30 V, $I_{\rm i}$ = 100 mA, $P_{\rm i}$ = 750 mW, $P_{\rm i}$ = 300 Ω	FISCO supply unit: $U_0 = 17.5 \text{ V}$, $I_0 = 380 \text{ mA}$, $P_0 = 5.32 \text{ W}$ Linear barrier: $U_0 = 24 \text{ V}$, $I_0 = 250 \text{ mA}$, $P_0 = 1 \text{ W}$	
- Effective internal inductance/capacitance	$L_{i} = 0.4 \text{ mH}, C_{i} = 6 \text{ nF}$	$L_i = 7 \mu\text{H}, C_i = 1.1 \text{nF}$	
Dust explosion protection for zone 21/22		ATEX 2055	
- Marking	Ex II 2 D IP	65 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: $U_{\rm H} = 9 \dots 32 \text{ V DC}; P_{\rm max} = 1 \text{ W}$	
• Type of protection "n" (zone 2)	PTB 13 AT	TEX 2007 X	
- Marking		A II T4/T5/T6 Gc : IIC T4/T5/T6 Gc	
- Connection (Ex nA)	$U_{\rm m} = 45 \text{ V}$	$U_{\rm m} = 32 \text{ V}$	
- Connections (Ex ic)	To circuits with values: $U_i = 45 \text{ V}$	FISCO supply unit ic: $U_0 = 17.5 \text{ V}, I_0 = 570 \text{ mA}$	
		Linear barrier: $U_0 = 32 \text{ V}, I_0 = 132 \text{ mA}, P_0 = 1 \text{ W}$	
- Effective internal inductance/capacitance	$L_{\rm i} = 0.4 {\rm mH}, C_{\rm i} = 6 {\rm nF}$	$L_{\rm i} = 7 \mu \text{H}, C_{\rm i} = 1.1 \text{nF}$	
Explosion protection acc. to FM		mpliance 3008490	
- Identification (XP/DIP) or (IS); (NI)	DIV 2, GP ABCD T4T6;	EFG; CL III; CL I, ZN 0/1 AEx ia IIC T4T6; CL I, CL II, DIV 2, GP FG; CL III	
• Explosion protection to CSA		mpliance 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		

¹⁾ Conversion of temperature error per 28 °C. Valid for temperature range -3 ... +53 °C < (0.064 . r + 0.08) % / 28 °C (50 °F).

²⁾ Conversion of temperature error per 28 °C. Valid for temperature range -3 ... +53 °C < $(0.08 \cdot r + 0.16)$ % / 28 °C (50 °F).

Transmitters for general requirements

SITRANS P DS III for gauge pressure

STRANS P DS III for gauge p	pressure		
HART communication		FOUNDATION Fieldbus	
HART	230 1100 Ω	communication Function blocks	3 function blocks analog input,
Protocol	HART Version 5.x	FullCtion blocks	1 function blocks analog input,
Software for computer	SIMATIC PDM	 Analog input 	
PROFIBUS PA communication		- Adaptation to customer-specif-	Yes, linearly rising or falling
Simultaneous communication with master class 2 (max.)	4	ic process variables - Electrical damping, adjustable	characteristic 0 100 s
The address can be set using	Configuration tool or local operation (standard setting address 126)	- Simulation function	Output/input (can be locked within the device with a bridge)
Cyclic data usage	120)	- Failure mode	parameterizable (last good value, substitute value, incorrect
Output byte	5 (one measured value) or 10 (two measured values)	- Limit monitoring	value) Yes, one upper and lower warn-
• Input byte	0, 1, or 2 (register operating mode and reset function for	- Limit monitoring	ing limit and one alarm limit respectively
Internal preprocessing	metering)	 Square-rooted characteristic for flow measurement 	Yes
Device profile	PROFIBUS PA Profile for Process Control Devices Version	• PID	Standard FOUNDATION Fieldbus function block
	3.0, class B	 Physical block 	1 resource block
Function blocks	2	Transducer blocks	1 transducer block Pressure with
Analog input	V		calibration, 1 transducer block LCD
 Adaptation to customer-specific process variables 	Yes, linearly rising or falling characteristic	Pressure transducer block	
- Electrical damping, adjustable	0 100 s	- Can be calibrated by applying	Yes
- Simulation function	Input /Output	two pressures	V
- Failure mode	parameterizable (last good value, substitute value, incorrect value)	 Monitoring of sensor limits Simulation function: Measured pressure value, sensor temper- 	Yes Constant value or over parameterizable ramp function
- Limit monitoring	Yes, one upper and lower warn- ing limit and one alarm limit respectively	ature and electronics tempera- ture	
Register (totalizer)	Can be reset, preset, optional direction of counting, simulation function of register output		
- Failure mode	parameterizable (summation with last good value, continuous summation, summation with incorrect value)		
- Limit monitoring	One upper and lower warning limit and one alarm limit respec- tively		
Physical block	1		
Transducer blocks	2		
Pressure transducer block			
 Can be calibrated by applying two pressures 	Yes		
- Monitoring of sensor limits	Yes		
 Specification of a container characteristic with 	Max. 30 nodes		
 Square-rooted characteristic for flow measurement 	Yes		
- Gradual volume suppression	Parameterizable		

Constant value or over parame-

terizable ramp function

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

sured pressure value and sen-

sor temperature

Transmitters for general requirements

SITRANS P DS III for gauge pressure

Selection and Orderin			Arti	_				
Pressure transmitter f	or gauge pressure,		7 M	F	4 0	3	3 -	
SITRANS P DS III with	HART				ij	-		
	lo. for the online configu Cycle Portal.	J-						
Measuring cell filling	Measuring cell clean	-						
Silicone oil	normal	>	1					
Inert liquid ¹⁾	grease-free to		3					
more nquia	cleanliness level 2							
Measuring span (min.	max.)							
0.01 1 bar	(0.15 14.5 psi)		В					
0.04 4 bar	(0.58 58 psi)		С					
0.16 16 bar	(2.32 232 psi)		D					
0.63 63 bar	(9.14 914 psi)		E					
1.6 160 bar	(23.2 2320 psi)	>	F					
4.0 400 bar	(58.0 5802 psi)	>	G					
7.0 700 bar	(102.010153 psi)	>	J					
Wetted parts materials	, , ,							
Seal diaphragm	Process connection							
Stainless steel	Stainless steel	-		Α				
Hastelloy	Stainless steel			В				
Hastelloy	Hastelloy			С				
Version as diaphragm s	eal ^{2) 3) 4) 5)}			Υ				
Process connection								
Connection shank G½	B to FN 837-1	>)			
• Female thread ½-14 N					1			
 Stainless steel oval fla 		_			•			
nection (Oval flange h								
	3-20 UNF to IEC 61518				2			
- Mounting thread M1					3			
- Mounting thread M1					4			
Male thread M20 x 1.5					5			
 Male thread ½ -14 NP 					6			
Non-wetted parts mate	erials							
 Housing made of die- 		>			0			
Housing stainless stee					3			
Version								
 Standard versions 							1	
 International version, 	English label inscrip-						2	
tions, documentation								
(no Order code select	able)							
Explosion protection							١.	
 None With ATEX, Type of presented in the present of the	otaction:						P	١
							E	
- "Intrinsic safety (Ev i	a)"						-	
- "Intrinsic safety (Ex i							ı	١
- "Explosion-proof (Ex	d)" ⁷⁾	•						
 "Explosion-proof (Ex "Intrinsic safety and 		•					F	
 "Explosion-proof (Ex "Intrinsic safety and (Ex ia + Ex d)"8) 	d)" ⁷⁾ flameproof enclosure"	• • •						,
- "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)"8) - "Ex nA/ic (Zone 2)"9 - "Intrinsic safety, exp	d)" ⁷⁾ flameproof enclosure" osion-proof enclosure	• • •					F	•
- "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)"8) - "Ex nA/ic (Zone 2)"9 - "Intrinsic safety, exp and dust explosion p Zone 1D/2D)"8)10)	d)"7) flameproof enclosure" osion-proof enclosure orotection (Ex ia + Ex d +	• • •					F F	2
- "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)"8) - "Ex nA/ic (Zone 2)"9) - "Intrinsic safety, explosion proof 20 (20)"8)10) • FM + CSA intrinsic sa	d)"7) flameproof enclosure" osion-proof enclosure protection (Ex ia + Ex d +	• • •					F F	- -
- "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)"8) - "Ex nA/ic (Zone 2)"9) - "Intrinsic safety and dust explosion properties and dust explosion properties and the safety	d)*7) flameproof enclosure* osion-proof enclosure protection (Ex ia + Ex d (ATEX)*10)	• • •					F F	- -
- "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)"8) - "Ex nA/ic (Zone 2)"9) - "Intrinsic safety, exp and dust explosion p Zone 1D/2D)"8)10) • FM + CSA intrinsic sa • FM + CSA (is + ep) + • With FM + CSA, Type	d)*7) flameproof enclosure* osion-proof enclosure protection (Ex ia + Ex d + fe (is) Ex ia + Ex d (ATEX) ¹⁰⁾ of protection:	•					F F	- -
- "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)" ⁸) - "Ex nA/ic (Zone 2)" ⁹ / - "Intrinsic safety, exp and dust explosion p Zone 1D/2D)" ⁸)10) • FM + CSA intrinsic sa • FM + CSA (is + ep) + • With FM + CSA, Type - "Intrinsic Safe und Ex	d)**7) flameproof enclosure osion-proof enclosure protection (Ex ia + Ex d fe (is) Ex ia + Ex d (ATEX)** of protection: cplosion Proof (is + xp)**	•					F F)
- "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)"8) - "Ex nA/ic (Zone 2)"9) - "Intrinsic safety, exp and dust explosion p Zone 1D/2D)"8)10) • FM + CSA intrinsic sa • FM + CSA (is + ep) + • With FM + CSA, Type - "Intrinsic Safe und Ex	d)*7) flameproof enclosure osion-proof enclosure protection (Ex ia + Ex d + fe (is) Ex ia + Ex d (ATEX) ¹⁰⁾ of protection: explosion Proof (is + xp)** (cable entry	•					F F)
- "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)"8) - "Ex nA/ic (Zone 2)"9) - "Intrinsic safety, exp and dust explosion p Zone 1D/2D)"8)10) • FM + CSA intrinsic sa • FM + CSA (is + ep) + • With FM + CSA, Type - "Intrinsic Safe und Ex	d)*7) flameproof enclosure osion-proof enclosure protection (Ex ia + Ex d + fe (is) Ex ia + Ex d (ATEX) ¹⁰⁾ of protection: explosion Proof (is + xp)** (cable entry 5 (adapter) ¹¹⁾	•					F F	: :: :: ::
- "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)"8) - "Ex nA/ic (Zone 2)"9/ - "Intrinsic safety, exp and dust explosion p Zone 1D/2D)"8)10) • FM + CSA intrinsic sa • FM + CSA (is + ep) + • With FM + CSA, Type - "Intrinsic Safe und Ex Electrical connection • Screwed gland Pg 13 • Screwed gland M20 x	d)*7) flameproof enclosure osion-proof enclosure protection (Ex ia + Ex d + fe (is) Ex ia + Ex d (ATEX) ¹⁰⁾ of protection: explosion Proof (is + xp)** (cable entry 5 (adapter) ¹¹⁾ 1 .5	7)					F F	i i i i i i
- "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)"8") - "Ex nA/ic (Zone 2)"9"/ - "Intrinsic safety, exp and dust explosion p Zone 1D/2D)"8">10"/ • FM + CSA intrinsic sa • FM + CSA (is + ep) + • With FM + CSA, Type - "Intrinsic Safe und Ex Electrical connection of the same points of the safe und Explosion of the same points of the same points of the safe und Explosion of the same points of th	d)*7) flameproof enclosure osion-proof enclosure protection (Ex ia + Ex d + fe (is) Ex ia + Ex d (ATEX) ¹⁰⁾ of protection: explosion Proof (is + xp)** (cable entry 1.5 (adapter) ¹¹⁾ 1.5	7)					F F	IC A B
- "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)"8) - "Ex nA/ic (Zone 2)"9/ - "Intrinsic safety, exp and dust explosion p Zone 1D/2D)"8)10) • FM + CSA intrinsic sa • FM + CSA (is + ep) + • With FM + CSA, Type - "Intrinsic Safe und E: Electrical connection • Screwed gland Pg 13 • Screwed gland M20 x	d)*7) flameproof enclosure osion-proof enclosure orotection (Ex ia + Ex d + fe (is) Ex ia + Ex d (ATEX) ¹⁰⁾ of protection: colosion Proof (is + xp)** 7 cable entry 5. (adapter) ¹¹⁾ 1.5 NPT nousing) incl. mating	7)					F F	IC A B C

Selection and Ordering data		Article No.		
Pressure transmitter for gauge pressure, SITRANS P DS III with HART		7 M F 4 0 3 3 -		
SITRANS P DS III WILLI HART				
Display				
Without display			0	
 Without visible display (display concealed, setting: mA) 	>		1	
• With visible display (setting: mA)			6	
 with customer-specific display (setting as specified, Order code "Y21" or "Y22" required) 			7	

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

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

Included in delivery of the device:

- Brief instructions (Leporello)
- CD-ROM with detailed documentation
- 1) For oxygen application, add Order code E10.
- When the manufacture's certificate (calibration certificate) has to be ordered for transmitters with diaphragm seals according to IEC 60770-2, it is recommended only to order this certificate exclusively with the diaphragm seals. The measuring accuracy of the <u>total</u> combination is certified here
- 3) If the acceptance test certificate 3.1.is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.
- 4) The diaphragm seal is to be specified with a separate order number and must be included with the transmitter order number, for example 7MF403.-.Y..-... and 7MF4900-1...-.B
- 5) The standard measuring cell filling of configurations with remote seals (Y) is silicone oil.
- 6) Not in conjunction with Electrical connection "Screwed gland Pg 13.5" and "Han7D plug".
- 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 only available in Ex ic.
- ¹⁰⁾Only in connection with IP65.
- $^{11)}\mbox{Only}$ in connection with Ex approval A, B or E.
- 12)M12 delivered without cable socket

Transmitters for general requirements

SITRANS P DS III for gauge pressure

Offinality Be in for gauge procedure					
Selection and Ordering data			No.		
Pressure transmitter for gauge pressure					
SITRANS P DS III with PROFIBUS PA (PA)		7MF4034-			
SITRANS P DS III with FOUNDATION Fieldbus (FF)		7MF4035-			
∠ Click on the Article New ration in the PIA Life	lo. for the online configu- Cycle Portal.				
Measuring cell filling	Measuring cell clean-				
Ciliaana ail	ing normal				
Silicone oil Inert liquid ¹⁾	grease-free to	1			
ment ilquid	cleanliness level 2	3			
Nominal measuring ra	nge				
1 bar	(14.5 psi)	В			
4 bar	(58 psi)	С			
16 bar	(232 psi)	D			
63 bar	(914 psi)	E			
160 bar	(2320 psi)	F			
400 bar	(5802 psi)	G			
700 bar	(10153 psi)	J			
Wetted parts materials	}				
Seal diaphragm	Process connection				
Stainless steel	Stainless steel	A			
Hastelloy	Stainless steel	В			
Hastelloy	Hastelloy	С			
Version as diaphragm s	eal ^{2) 3) 4) 5)}	Y			
Process connection					
• Connection shank G1/2	⊵B to EN 837-1	C			
• Female thread ½-14 N	IPT	1			
Stainless steel oval flange with process connec-					
tion (Oval flange has no female thread) 6)					
- Mounting thread ⁷ / ₁₆ -20 UNF to IEC 61518		2			
- Mounting thread M10 to DIN 19213		3			
 Mounting thread M12 to DIN 19213 Male thread M20 x 1.5 		4			
 Male thread M20 x 1.5 Male thread ½ -14 NP 		5			
Non-wetted parts materials					
 Housing made of die-cast aluminium Housing stainless steel precision casting 			3		
	er precision casting	_	3		
Version					
Standard versions	English label incorintions		1		
documentation in 5 la	English label inscriptions,				
(no Order code select	able)				
Explosion protection		-			
• None				Α	
• With ATEX, Type of pro	otection:				
- "Intrinsic safety (Ex i				В	
- "Explosion-proof (Ex				D	
 "Intrinsic safety and 	flameproof enclosure"			Р	
(Ex ia + Ex d)"8)					
- "Ex nA/ic (Zone 2)" ⁹⁾				E	
- "Intrinsic safety, explosion-proof enclosure and				R	
dust explosion protection (Ex ia + Ex d + Zone 1D/2D)*8) 10) (not for DS III FF)					
• FM + CSA intrinsic safe (is)				F	
• FM + CSA intrinsic sale (is) • FM + CSA (is + ep) + Ex ia + Ex d (ATEX) ¹⁰⁾				S	
 With FM + CSA, Type of protection: "Intrinsic Safe und Explosion Proof (is + xp)" 				NC	
Electrical connection/e					
Screwed gland M20 x	•			В	
• Screwed gland 1/2-14 I	NPT			С	
• M12 connectors (stair				F	
,	•				

Selection and Ordering data	Article No.
Pressure transmitter for gauge pressure	
SITRANS P DS III with PROFIBUS PA (PA)	7 M F 4 0 3 4 -
SITRANS P DS III with FOUNDATION Fieldbus (FF)	7 M F 4 0 3 5 -
Display	
Without display	0
 Without visible display (display concealed, setting: bar) 	1
With visible display (setting: bar)	6
 with customer-specific display (setting as specified, Order code "Y21" required) 	7

- Included in delivery of the device:

 Brief instructions (Leporello)

 CD-ROM with detailed documentation
- 1) For oxygen application, add Order code E10.
- 2) When the manufacture's certificate (calibration certificate) has to be ordered for transmitters with diaphragm seals according to IEC 60770-2, it is recommended only to order this certificate exclusively with the diaphragm seals. The measuring accuracy of the <u>total</u> combination is certified here.
- 3) If the acceptance test certificate 3.1.is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.
- 4) The diaphragm seal is to be specified with a separate order number and must be included with the transmitter order number, for example 7MF403.-..Y.-.... and 7MF4900-1...-.B
- 5) The standard measuring cell filling of configurations with remote seals (Y) is silicone oil.
- 6) M10 fastening thread: Max. span 160 bar (2320 psi) 7/16-20 UNF and M12 fastening thread: Max. span 400 bar (5802 psi)
- 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 only available in Ex ic.
- 10) Only in connection with IP65.
- ¹¹⁾M12 delivered without cable socket.
- ¹²⁾Only in connection with Ex approval A, B, E or F.

Transmitters for general requirements

SITRANS P DS III for gauge pressure

Selection and Ordering data		Order			
Further designs Add "-Z" to Article No. and specify Order code.			HART	PA	FF
Pressure transmitter with mounting bracket (1x fixing angle, 2 x nut, 2 x U-					
washer or 1 x bracket, 2 x nut, 2 x U- washer) made of:					
• Steel		A01	1	1	1
Stainless steel Plug		A02	•	•	•
Han 7D (metal)		A30	✓.		
Han 8D (instead of Han 7D)Angled		A31 A32	1		
• Han 8D (metal)		A33	1		
Cable sockets for M12 connectors		A50	✓	✓	✓
(metal (CuZn)) Rating plate inscription					
(instead of German)					
• English		B11 B12	1	1	1
FrenchSpanish		B13	1	*	V
• Italian	•	B14	✓	✓	1
Cyrillic (russian) Tradiab ration rules	•	B16	1	1	1
English rating plate Pressure units in inH ₂ 0 and/or psi		B21	V	•	•
Quality inspection certificate (Five-step factory calibration) to IEC 60770-2 ¹⁾	•	C11	✓	✓	✓
Inspection certificate ²⁾ Acc. to EN 10204-3.1	•	C12	✓	✓	✓
Factory certificate Acc. to EN 10204-2.2	•	C14	✓	✓	✓
Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration	•	C20	✓		
Functional safety (PROFIsafe) Certificate and PROFIsafe protocol		C21 ³⁾		✓	
Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration	•	C23	✓		
Device passport Russia (For price request please contact the technical support		C99	✓	✓	✓
www.siemens.com/automation/support-request)					
Setting of upper limit of output signal to 22.0 mA		D05	✓		
Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009)		D07	√	√	√
Degree of protection IP66/IP68 (only for M20x1.5 and ½-14 NPT)		D12	√	✓	✓
Supplied with oval flange (1 item), PTFE packing and screws in thread of oval flange		D37	√	✓	✓
Capri cable gland 4F CrNi and clamping device (848699 + 810634) included		D59	✓	✓	✓
Use in or on zone 1D/2D (only together with type of protection "Intrinsic safety" (transmitter 7MF4B. Ex ia)" and IP65)		E01	✓	√	✓
Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140 °F))		E10	✓	✓	1
Export approval Korea		E11	√	1	✓
CRN approval Canada (Canadian Registration Number)		E22	√	V	✓

Selection and Ordering data	Order	code		
Further designs	Jidel	HART	PA	FF
Add "-Z" to Article No. and specify Order code.		1174111		••
Dual seal	E24	✓	✓	✓
Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil)	E25 ⁴⁾	✓	✓	✓
(only for transmitter 7MF4B)				
"Flameproof" explosion protection according to INMETRO (Brazil) (only for transmitter 7MF4D)	E26 ⁴⁾	✓	✓	1
Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil) (only for transmitter 7MF4).)	E28 ⁴⁾	✓	✓	
Ex Approval IEC Ex (Ex ia) (only for transmitter 7MF4B)	E45 ⁴⁾	✓	✓	✓
Ex Approval IEC Ex (Ex d) (only for transmitter 7MF4	E46 ⁴⁾	✓	✓	✓
Explosion-proof "Intrinsic safety" to NEPSI (China) (only for transmitter 7MF4B)	E55 ⁴⁾	✓	✓	✓
Explosion protection "Explosion-proof" to NEPSI (China) (only for transmitter 7MF4D)	E56 ⁴⁾	✓	✓	✓
Ex protection "Zone 2" to NEPSI (China) (only for transmitter 7MF4E)	E57 ⁴⁾	✓	✓	✓
Ex protection "Ex ia", "Ex d" and "Zone 2" to NEPSI (China)	E58 ⁴⁾	✓	✓	✓
(only for transmitter 7MF4R) "Intrinsic safety" and "Explosion-proof" explosion protection acc. to Kosha (Korea) (only for transmitter	E70 ⁴⁾	✓	✓	✓
7MF4[B, D]Z + E11)				
Two coats of lacquer on casing and cover (PU on epoxy)	G10	1	✓	✓
Transient protector 6 kV (lightning protection)	J01	✓	✓	✓
Oval flange NAM (ASTAVA)	J06	✓	✓	1
 We can offer shorter delivery times for conf 	iguratio	ns desid	nated	d with

- We can offer shorter delivery times for configurations designated with the Quick Ship Symbol . For details see page 9/5 in the appendix.
- When the manufacture's certificate (calibration certificate) has to be ordered for transmitters with diaphragm seals according to IEC 60770-2, it is recommended only to order this certificate exclusively with the diaphragm seals. The measuring accuracy of the <u>total</u> combination is certified here.
- 2) If the acceptance test certificate 3.1.is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.
- ³⁾ Profisafe transmitters can only be operated with the S7 F Systems V6.1 configuration software in combination with S7-400H
- 4) Option does not include ATEX approval, but instead includes only the country-specific approval.

Transmitters for general requirements

SITRANS P DS III for gauge pressure

Selection and Ordering data	Order	aada		
	Order		DA	
Additional data Please add "-Z" to Article No. and specify Order code(s) and plain text.		HART	PA	FF
Measuring range to be set	Y01	✓	√ 1)	
Specify in plain text (max. 5 characters): Y01: up to mbar, bar, kPa, MPa, psi				
Stainless steel tag plate and entry in device variable (measuring point description) Max. 16 characters, specify in plain text:	Y15	✓	✓	✓
Y15:				
	Y16	✓	✓	✓
Max. 27 characters, specify in plain text: Y16:				
Entry of HART address (TAG)	Y17	1		
Max. 8 characters, specify in plain text: Y17:				
Setting of pressure indication in pressure units	Y21	✓	✓	✓
Specify in plain text (standard setting: bar): Y21: mbar, bar, kPa, MPa, psi, Note: The following pressure units can be				
selected:				
bar, mbar, mm H_2O^*), inH_2O^*), ftH_2O^*), mmHG, $inHG$, psi, Pa, kPa, MPa, g/cm^2 , kg/cm^2 , Torr, ATM or % *) ref. temperature 20 °C				
Setting of pressure indication in	Y22 +	1		
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" is essential, unit with max. 5 characters)	Y01			
Preset bus address	Y25		1	1
possible between 1 and 126 Specify in plain text: Y25:				
Damping adjustment in seconds (0 100 s)	Y30	✓	✓	✓

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

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

✓ = available

Ordering example

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

B line: A01 + Y01 + Y21

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

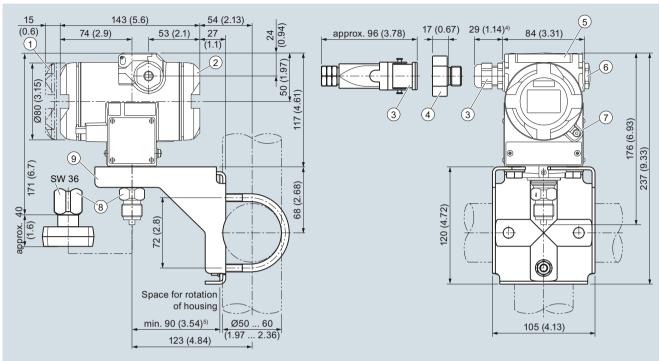
C line: Y21: bar (psi)

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 general requirements

SITRANS P DS III for gauge pressure

Dimensional drawings



- 1 Electronic side, digital display (longer overall length for cover with window)1)
- 2 Terminal side¹⁾
- 3 Electrical connection: Screwed gland Pg 13,5 (adapter)(Adapter)2)3), Screwed gland M20 x 1,5 or Screwed gland 1/2-14 NPT or Han 7D/Han 8D2)3)plug
- 4 Harting adapter
- Allow approx. 20 mm (0.79 inch) thread length to permit unscrewing
 Not with type of protection "Explosion-proof enclosure"
- Not with type of protection "FM + CSA" [IS + XP]"
- For Pg 13,5 with adapter approx. 45 mm (1.77 inch)
- 5) Minimum distance for rotating

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

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

Transmitters for general requirements

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

Technical specifications

SITRANS P DS III series for gauge and absolu	•	iusn diaphragm	DDOFIE : 2 D			
	HART		PROFIBUS PA and FO	UNDATION Fieldbus		
nput of gauge pressure, with front-flush liaphragm						
Measured variable		Gauge press	ure, front-flush			
pans (infinitely adjustable) or nominal measur- ng range and max. permissible test pressure	Span (min max.)	Max. perm. test pressure	Nominal measuring range	Max. perm. test pres- sure		
	0.01 1 bar (0.15 14.5 psi)	6 bar (87 psi)	1 bar (14.5 psi)	6 bar (87 psi)		
	0.04 4 bar (0.58 58 psi)	10 bar (145 psi)	4 bar (58 psi)	10 bar (145 psi)		
	0.16 16 bar (2.32 232 psi)	32 bar (464 psi)	16 bar (232 psi)	32 bar (464 psi)		
	0.6 63 bar (9.14 914 psi)	100 bar (1450 psi)	63 bar (914 psi)	100 bar (1450 psi)		
ower measuring limit		100 mbar	a (1.45 psia)			
lpper measuring limit	100 % of max. span		100 % of the max. nom	inal measuring range		
nput of absolute pressure, with front-flush liaphragm						
leasured variable		Absolute pres	sure, front-flush			
Spans (infinitely adjustable) or ominal measuring range and nax. permissible test pressure	Span (min max.)	Max. perm. test pressure	Nominal measuring range	Max. perm. test pressure		
nav. pormiosibio tost prossuro	43 1300 mbar a (0.62 18.85 psia)	10 bar a (145 psia)	1300 mbar a (18.85 psia)	10 bar a (145 psia)		
	0.16 5 bar a (2.32 72.5 psia)	30 bar a (435 psia)	5 bar a (72.5 psia)	30 bar a (435 psia)		
	1 30 bar a (14.5 435 psia)	100 bar a (1450 psia)	30 bar a (435 psia)	100 bar a (1450 psia)		
ower measuring limit		0 bar a	(0 psia)			
Ipper measuring limit	100 % of max. span		100 % of the max. nominal measuring range			
Dutput Dutput signal	4 20 mA	4 20 mA Digital PROFIBL bus signal				
Lower limit (infinitely adjustable)	3.55 mA, factory preset	to 3.84 mA	-			
Upper limit (infinitely adjustable)	23 mA, factory preset to set to 22.0 mA	20.5 mA or optionally	-			
oad						
Without HART	$R_{\rm B} \le (U_{\rm H} - 10.5 \text{ V})/0.023$ $U_{\rm H}$: Power supply in V	3 A in Ω,	-			
With HART	$R_{\rm B} = 230 \dots 500 \Omega$ (SIM $R_{\rm B} = 230 \dots 1100 \Omega$ (HA		-			
Physical bus	-		IEC 61158-2			
rotection against polarity reversal	Protected against short		rsal. Each connection ag voltage.	ainst the other with ma		
lectrical damping (step width 0.1 s)		Set to 2 s	(0 100 s)			
leasuring accuracy		Acc. to IE	EC 60770-1			
Reference conditions All error data refer always refer to the set span)	Increasing chara		ralue 0 bar, stainless stee emperature 25 °C (77 °F			
	Span ratio r = ma	ax. span/set span		range ratio r = nominal set measuring range		
error in measurement at limit setting incl. ysteresis and reproducibility		1		T		
	Gauge pressure, front-flush	Absolute pressure, front-flush	Gauge pressure, front-flush	Absolute pressure, front-flush		
Linear characteristic						
- r ≤ 10	≤ (0.0029 · r + 0.071) %	≤ 0.2 %	\leq (0.0029 · r + 0.071) %			
- 10 < r ≤ 30	\leq (0.0045 · r + 0.071) %	≤ 0.4 %	\leq (0.0045 · r + 0.071) %	≤ 0.4 %		
- 30 < r ≤ 100	\leq (0.005 · r + 0.05) %	-	\leq (0.005 · r + 0.05) %	-		
ong-term stability temperature change ± 30 °C (± 54 °F))	\leq (0.25 · r) % per 5 years		≤ (0.25 · r) % per 5 years			

Transmitters for general requirements

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

SITRANS P DS III series for gauge and absolu	HART	,	PROFIBUS PA and FO	UNDATION Fieldbus			
	Gauge pressure,	Absolute pressure,	Gauge pressure,	Absolute pressure,			
	front-flush	front-flush	front-flush	front-flush			
Influence of ambient temperature	4)		4)				
• at -10 +60 °C (14 140 °F)	$\leq (0.1 \cdot r + 0.2) \%^{1)}$	≤ (0.2 · r + 0.3) %	$\leq (0.1 \cdot r + 0.2) \%^{1)}$	≤ (0.2 · r + 0.3) %			
• at -4010 °C and 60 85 °C (-40 +14 °F and 140 185 °F)	\leq (0.1 · r + 0.15) %/10 K		≤ (0.1 · r + 0.15) %/10 K	≤ (0.2 · r + 0.3) %/10 l			
nfluence of mounting position		0.1 mbar (0.04 inH ₂	O) per 10° inclination				
Measured Value Resolution	-		3 · 10 ⁻⁵ of nominal meas	suring range			
nfluence of the medium temperature							
Temperature difference between medium temperature and ambient temperature		3 mbar/10 K	(0.04 psi/10 K)				
Rated conditions							
Installation conditions							
Ambient temperature	Observe	•	areas subject to explosion	n hazard.			
 Measuring cell with silicone oil 			(-40 +185 °F)				
 Measuring cell with Neobee oil (with front-flush diaphragm) 			(14 +185 °F)				
 Measuring cell with inert liquid (not with front- flush diaphragm) 		-20 +85 °C (-4 +185 °F)					
 Transmitter (with 4-wire connection, observe temperature values of supplementary 4-wire electronics) 		-40 +85 °C (-40 +185 °F)					
Display readable		-30 +85 °C	(-22 +185 °F)				
Storage temperature		n the case of Neobee: -2	(-58 +185 °F) 0 +85 °C (-4 +185/°I 10 + 85 °C (14 185 °				
Climatic class	,	9 11 11 11 11		<i>''</i>			
- Condensation	Со		dity 0 100 % suitable for use in the trop	oics			
Degree of protection (to IEC 60529)		•	66/IP68), NEMA 4X				
• Electromagnetic Compatibility		` '	•				
- Emitted interference and interference immunity		Acc. to IEC 61326	and NAMUR NE 21				
Medium conditions			process connections is to tandards (e. g. DIN 3267)				
Temperature of medium							
Measuring cell with silicone oil		-40 +100 °C	(-40 +212 °F)				
 Measuring cell with silicone oil (with front-flush diaphragm) 		-40 +150 °C	(-40 +302 °F)				
 Measuring cell with Neobee oil (with front-flush diaphragm) 		-10 +150 °C	C (14 302 °F)				
 Measuring cell with silicone oil, with tempera- ture decoupler (only for gauge pressure ver- sion with front-flush diaphragm) 		-40 +200 °C	(-40 +392 °F)				
 Measuring cell with Neobee oil, with tempera- ture decoupler (only for gauge pressure version with flush-mounted diaphragm) 		-10 +200 °C	C (14 392 °F)				
Measuring cell with inert filling liquid		-20 +100 °C	C (-4 +212 °F)				
 Measuring cell with high-temperature oil (only for gauge pressure version with front-flush dia- phragm) 		-10 +250 °C	C (14 482 °F)				
Design							
Weight (without options)		≈ 1.5 kg	(≈ 3.3 lb)				
Enclosure material	Low-copper die-cast a	aluminum, GD-AlSi12 or s	stainless steel precision c	asting, mat. no. 1.4408			
Wetted parts materials	Stainless s	teel, mat. no. 1.4404/316	L or Hastelloy C276, mat	. no. 2.4819			
Measuring cell filling		Silicone oil or i	nert filling liquid				
Process connection			per EN and ASME armaceutical flanges				
Surface quality touched-by-media	R _a -va (Process connections	lues \leq 0.8 μ m (32 μ -inch) acc. to 3A; R _a -values \leq 0)/welds R _{a)} ≤ 1.6 µm (64 µ 1.8 µm (32 µ-inch)/welds F	u-inch) R _a) ≤ 0.8 μm (32 μ-inch			

Transmitters for general requirements

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

SITRANS P DS III series for gauge and absolu	te pressure, with front-flush diaphragm	
	HART	PROFIBUS PA and FOUNDATION Fieldbus
Power supply U_{H}		Supplied through bus
Terminal voltage on transmitter	10.5 45 V DC 10.5 30 V DC in intrinsically-safe mode	-
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
Certificates and approvals		
Classification according to PED 97/23/EC		group 1; complies with requirements of article 3, engineering practice)
Explosion protection		
Intrinsic safety "i"	PTB 13 A	TEX 2007 X
- Marking		IIC T4/T5/T6 Ga/Gb
- Permissible ambient temperature	-40 +70 °C (-40 +15	5°F) temperature class T4; 8°F) temperature class T5; 10°F) temperature class T6
- Connection	To certified intrinsically-safe circuits with peak values:	FISCO supply unit: $U_0 = 17.5 \text{ V}$, $I_0 = 380 \text{ mA}$, $P_0 = 5.32 \text{ W}$
	$U_{\rm i} = 30 \text{ V}, I_{\rm i} = 100 \text{ mA},$ $P_{\rm i} = 750 \text{ mW}; R_{\rm i} = 300 \Omega$	Linear barrier: $U_0 = 24 \text{ V}$, $I_0 = 250 \text{ mA}$, $P_0 = 1.2 \text{ W}$
- Effective internal inductance/capacitance	$L_{\rm i} = 0.4 {\rm mH}, C_{\rm i} = 6 {\rm nF}$	$L_{\rm i} = 7 \mu \text{H}, C_{\rm i} = 1.1 \text{nF}$
• Explosion-proof "d"	PTB 99 A	ATEX 1160
- Marking	Ex II 1/2 G Ex	d IIC T4/T6 Gb
- Permissible ambient temperature		5 °F) temperature class T4; 10 °F) temperature class T6
- Connection	To circuits with values: $U_{\rm H}$ = 10.5 45 V DC	To circuits with values: $U_{H} = 9 \dots 32 \text{ V DC}$
Dust explosion protection for zone 20	PTB 01 /	ATEX 2055
- Marking		P65 T 120 °C IP65 T 120 °C
- 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:	$U_0 = 17.5 \text{ V}, I_0 = 380 \text{ mA}, P_0 = 5.32 \text{ W}$
	$U_{\rm i} = 30 \text{ V, } I_{\rm i} = 100 \text{ mA,}$ $P_{\rm i} = 750 \text{ mW, } P_{\rm i} = 300 \Omega$	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		ATEX 2055
- Marking	Ex II 2 D IF	P65 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 A	TEX 2007 X
- Marking		nA II T4/T5/T6 Gc c IIC T4/T5/T6 Gc
- Connection (Ex nA)	$U_{\rm m} = 45 \text{ V}$	$U_{\rm m} = 32 {\rm V}$
- Connections (Ex ic)	To circuits with values: $U_i = 45 \text{ V}$	FISCO supply unit ic: $U_0 = 17.5 \text{ V}$, $I_0 = 570 \text{ mA}$
Effective internal industrance/conscitation	1 - 04mH C - 6 nF	Linear barrier: $U_0 = 32 \text{ V}, I_0 = 132 \text{ mA}, P_0 = 1 \text{ W}$
- Effective internal inductance/capacitance	$L_{\rm i} = 0.4 {\rm mH}, C_{\rm i} = 6 {\rm nF}$	$L_{\rm i} = 7 \mu \text{H}, C_{\rm i} = 1.1 \text{nF}$

Transmitters for general requirements

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

SITRANS P DS III series for gauge and abs	HART	PROFIBUS PA and FOUNDATION Fieldbus
Certificates and approvals (continued)		
• Explosion protection acc. to FM	Ce	ertificate of Compliance 3008490
- Identification (XP/DIP) or (IS); (NI)		CL II, DIV 1, GP EFG; CL III; CL I, ZN 0/1 AEx ia IIC T4T6; GP ABCD T4T6; CL II, DIV 2, GP FG; CL III
Explosion protection to CSA	Ce	ertificate of Compliance 1153651
- Identification (XP/DIP) or (IS)		II, DIV 1, GP EFG; CL III; Ex ia IIC T4T6; CL I, DIV 2, GP ABCD IT6; CL II, DIV 2, GP FG; CL III

¹⁾ Conversion of temperature error per 28 °C. Valid for temperature range -3 ... +53 °C < (0.064 . r + 0.08) % / 28 °C (50 °F).

Hygiene version

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

Transmitters for general requirements

SITRANS P DS III for gauge/a	absolute pressure, with front	-flush diaphragm	
HART communication		FOUNDATION Fieldbus	
HART	230 1100 Ω	communication	
Protocol	HART Version 5.x	Function blocks	3 function blocks analog input, 1 function block PID
Software for computer	SIMATIC PDM	Analog input	
PROFIBUS PA communication		- Adaptation to customer-specif-	Yes, linearly rising or falling
Simultaneous communication with master class 2 (max.)	4	ic process variables	characteristic
The address can be set using	Configuration tool or local	- Electrical damping, adjustable	0 100 s
aaa. 666 6a. 86 66. asg	operation (standard setting address 126)	- Simulation function	Output/input (can be locked within the device with a bridge)
Cyclic data usage	,	- Failure mode	parameterizable (last good value, substitute value, incorrect
Output byte	5 (one measured value) or		value)
	10 (two measured values)	- Limit monitoring	Yes, one upper and lower warn-
Input byte	0, 1, or 2 (register operating mode and reset function for		ing limit and one alarm limit respectively
	metering)	- Square-rooted characteristic	Yes
Internal preprocessing		for flow measurement	
Device profile	PROFIBUS PA Profile for Process Control Devices Version	• PID	Standard FOUNDATION Fieldbus function block
	3.0, class B	 Physical block 	1 resource block
Function blocks	2	Transducer blocks	1 transducer block Pressure with
Analog input			calibration, 1 transducer block LCD
 Adaptation to customer-specific process variables 	Yes, linearly rising or falling characteristic	Pressure transducer block	
- Electrical damping, adjustable	0 100 s	 Can be calibrated by applying two pressures 	Yes
- Simulation function	Input /Output	'	Yes
- Failure mode	parameterizable (last good	 Monitoring of sensor limits Simulation function: Measured 	
	value, substitute value, incorrect value)	pressure value, sensor temper-	Constant value or over parameterizable ramp function
- Limit monitoring	Yes, one upper and lower warn-	ature and electronics tempera- ture	
-	ing limit and one alarm limit respectively	taro	
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		
Torres de como la la calca	0		

Transducer blocks

two pressures

characteristic with - Square-rooted characteristic for flow measurement - Gradual volume suppression

• Pressure transducer block - Can be calibrated by applying

- Monitoring of sensor limits

- Specification of a container

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

sured pressure value and sensor temperature

Yes

Yes

Max. 30 nodes

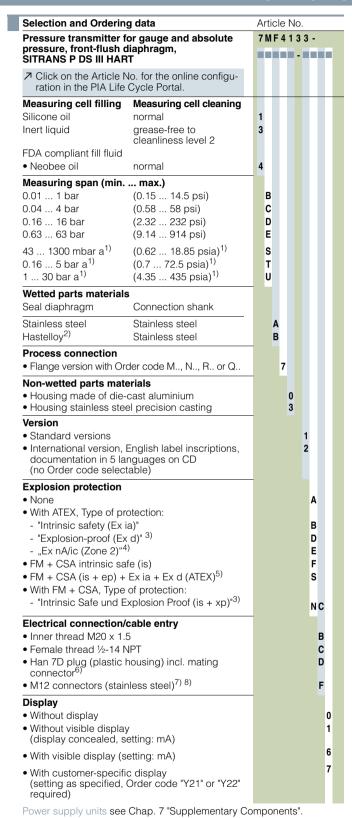
Parameterizable

Constant value or over parame-

terizable ramp function

Transmitters for general requirements

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



- 8) M12 delivered without cable socket
- Not with temperature decoupler P00 and P10, not for process connections R02. R04. R10 and R11, and can only be ordered in conjunction with silicone oil.
- 2) Only available for flanges with options M.., N.. and Q..
- 3) Without cable gland, with blanking plug
- 4) Configurations with HAN and M12 connectors are only available in Ex ic.
- 5) Only in connection with IP65.
- 6) Only in connection with Ex approval A, B or E.
- 7) Only in connection with Ex approval A, B, E or F.

Included in delivery of the device:

- Brief instructions (Leporello)
- CD-ROM with detailed documentation

Transmitters for general requirements

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

Calcation and Oudonin	data	Λt.:	ماء	NIa			
Selection and Orderin		Artio	эе	INC).		
pressure, front-flush o	ofor gauge and absolute liaphragm:						
SITRANS P DS III with P	ROFIBUS PA (PA)	7MF4134-					
SITRANS P DS III with F	OUNDATION Fieldbus (FF)	7MF4135-					
Click on the Article N ration in the PIA Life							
Measuring cell filling	Measuring cell clean- ing						
Silicone oil	normal	1					
Inert liquid	grease-free to cleanliness level 2	3					
FDA compliant fill fluid							
Neobee oil	normal	4					
Nominal measuring ra	nge						
1 bar	(14.5 psi)	В					
4 bar	(58 psi)	С					
16 bar	(232 psi)	D					
63 bar	(914 psi)	E					
1300 mbar a ¹⁾	(18.85 psia) ¹⁾	S					
5 bar a ¹⁾	(72.5 psia) ¹⁾	Т					
30 bar a ¹⁾	(435 psia) ¹⁾	U					
Wetted parts materials	3						
Seal diaphragm	Connection shank						
Stainless steel	Stainless steel		A				
Hastelloy ²⁾	Stainless steel		В				
Process connection • Flange version with O Q	rder code M, N, R or		7				
Non-wetted parts mate	erials						
Housing made of die-				0			
 Housing stainless stee 	el precision casting			3			
Version		_					
 Standard versions 					1		
	English label inscriptions,				2		
documentation in 5 la							
(no Order code select	able)	_			Ш		
Explosion protection							
None None	ata ation.				Α		
 With ATEX, Type of pr "Intrinsic safety (Ex i 					В	,	
- "Explosion-proof (Ex					D		
- "Ex nA/ic (Zone 2)" ⁴					E		
• FM + CSA intrinsic sa					F		
	FM + CSA (is + ep) + Ex ia + Ex d (ATEX) ⁵⁾					;	
• With FM + CSA, Type	of protection:						
 "Intrinsic Safe und E (Available soon) 	xplosion Proof (is + xp)"3)				N	ıc	
Electrical connection/	cable entry						
• Screwed gland M20 x	•					В	
• Screwed gland ½-14	NPT					С	
• M12 connectors (stair	nless steel) ^{6) 7)}					F	

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

Included in delivery of the device:

- Brief instructions (Leporello)
 CD-ROM with detailed documentation
- Not with temperature decoupler P00 and P10, not for process connections R01, R02, R04, R10 and R11, and can only be ordered in conjunction with silicone oil.
- $^{2)}\,$ Only available for flanges with options M.., N.. and Q..
- 3) Without cable gland, with blanking plug
- $^{\rm 4)}$ Configurations with HAN and M12 connectors are only available in Ex ic.
- ⁵⁾ Only in connection with IP65.
- $^{6)}\,$ Only in connection with Ex approval A, B, E or F.
- 7) M12 delivered without cable socket

Transmitters for general requirements

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

Salaatian and Ordaning data	0.4				Soloation and Ordering data	Order	oods.	•	
Selection and Ordering data Further designs	Order	HART	PΔ	FF	Selection and Ordering data Further designs	Order	HART	ΡΔ	FF
Add "-Z" to Article No. and specify Order code.		HANI	FA	FF	Add "-Z" to Article No. and specify Order code.		HANI	FA	FF
Plug • Han 7D (metal)	A30	1			Explosion-proof "Intrinsic safety" to NEPSI (China)	E55 ²⁾	✓	✓	✓
Han 8D (instead of Han 7D)	A31	1			(only for transmitter 7MF4B)				
• Angled	A32	✓			Explosion protection "Explosion-proof" to	E56 ²⁾	✓	✓	✓
Han 8D (metal)	A33	✓			NEPSI (China)				
Cable sockets for M12 connectors	A50	✓	✓	✓	(only for transmitter 7MF4D)	2)	,	,	
(metal (CuZn))					Ex protection "Zone 2" to NEPSI (China) (only for transmitter 7MF4E)	E57 ²⁾	✓	✓	√
Rating plate inscription (instead of German) • English	B11	1	1	1	Ex protection "Ex ia", "Ex d" and "Zone 2"	E58 ²⁾	1	1	1
• French	B12	✓	✓	✓	to NEPSI (China)	L30 ·	·	·	·
• Spanish	B13	1	1	1	(only for transmitter 7MF4R)	- 1			
ItalianCyrillic (russian)	B14 B16	✓	✓	1	"Intrinsic safety" and "Explosion-proof" explosion protection acc. to Kosha (Korea)	E70 ²⁾	✓	✓	✓
English rating plate	B21	1	1	1	(only for transmitter				
Pressure units in inH ₂ 0 and/or psi					7MF4[B, D]Z + E11)				
Quality inspection certificate (Five-step factory calibration) to IEC 60770-2	C11	✓	√	1	Two coats of lacquer on casing and cover (PU on epoxy)	G10	✓	✓	✓
Inspection certificate	C12	✓	✓	✓	Transient protector 6 kV (lightning protection)	J01	✓	✓	✓
Acc. to EN 10204-3.1 Factory certificate	C14	1	1	1	Flanges to EN 1092-1, Form B1				
Acc. to EN 10204-2.2	C14	•	•	Ť	• DN 25, PN 40 ³⁾	M11	V	1	1
Functional safety (SIL2)	C20	1			 DN 25, PN 100³⁾ DN 40, PN 40 	M21 M13	✓	√	1
Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL con-					• DN 40, PN 100	M23	1	1	1
formity declaration					• DN 50, PN 16	M04	√	V	√
Functional safety (PROFIsafe)	C21 ¹⁾		✓		DN 50, PN 40DN 80, PN 16	M14 M06	1	√	1
Certificate and PROFIsafe protocol	000				• DN 80, PN 40	M16	1	1	1
Functional safety (SIL2/3) Devices suitable for use according to	C23	✓			Flanges to ASME B16.5				
IEC 61508 and IEC 61511. Includes SIL conformity declaration					• Stainless steel flange 1" class 1503)	M40	✓	✓	✓
Device passport Russia	C99	1	_	1	• Stainless steel flange 1½" class 150	M41 M42	√	√	1
(For price request please contact the technical	Caa	•	•	Ť	 Stainless steel flange 2" class 150 Stainless steel flange 3" class 150 	M43	V	V	V
support www.siemens.com/automation/support-request.)					 Stainless steel flange 4" class 150 	M44	✓	✓	✓
Setting of upper limit of output signal to	D05	✓			• Stainless steel flange 1" class 300 ³⁾	M45	√	1	1
22.0 mA					 Stainless steel flange 1½" class 300 Stainless steel flange 2" class 300 	M46 M47	✓	V	√
Degree of protection IP66/IP68	D12	✓	✓	✓	• Stainless steel flange 3" class 300	M48	✓	✓	✓
(only for M20x1.5 and ½-14 NPT)	D59	1	1	1	• Stainless steel flange 4" class 300	M49	✓	✓	✓
Capri cable gland 4F CrNi and clamping device (848699 + 810634) included	DJa	•	•	·	Threaded connector to DIN 3852-2, form A, thread to ISO 228 ⁴⁾				
Oxygen application	E10	✓	✓	1	• G ¾"-A, front-flush	R01	✓	✓	✓
(In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140 °F))					• G 1"-A, front-flush	R02	1	1	1
Export approval Korea	E11	1	1	1	• G 2"-A, front-flush Tank connection ⁵⁾	R04	٧	•	•
CRN approval Canada	E22	·	· /	1	Sealing is included in delivery				
(Canadian Registration Number)				,	• TG 52/50, PN 40	R10	✓	✓	✓
Dual seal	E24	✓	✓	✓	• TG 52/150, PN 40	R11	✓	✓	✓
Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil)	E25 ²⁾	✓	✓	✓	Sanitary process connection according DIN 11851 (Dairy connection with slotted				
(only for transmitter 7MF4B)					union nut) • DN 50, PN 25	N04	1	1	1
"Flameproof" explosion protection accord-	E26 ²⁾	✓	✓	1	• DN 80, PN 25	N06	1	✓	1
ing to INMETRO (Brazil) (only for transmitter 7MF4					Tri-Clamp connection according DIN 32676/ISO 2852				
Explosion-proof "Intrinsic safety" (Ex ia +	E28 ²⁾	✓	✓		• DN 50/2", PN 16	N14	✓	✓	✓
Ex d) to INMETRO (Brazil) (only for transmitter 7MF4P)					• DN 65/3", PN 10	N15	✓	✓	✓
Ex Approval IEC Ex (Ex ia)	E45 ²⁾	✓	✓	✓	Varivent connection Certified to EHEDG				
(only for transmitter 7MF4B)	-1				 Type N = 68 for Varivent housing 	N28	✓	✓	✓
Ex Approval IEC Ex (Ex d) (only for transmitter 7MF4	E46 ²⁾	✓	1	✓	DN 40 125 und 1½" 6", PN 40				

Transmitters for general requirements

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

Selection and Ordering data	Order	code		
Further designs		HART	PA	FF
Add "-Z" to Article No. and specify Order code.				
Temperature decoupler up to 200 °C ⁶⁾	P00	✓	✓	✓
for version with front-flush diaphragm				
Temperature decoupler up to 250 °C	P10	✓	✓	✓
Measuring cell filling: High-temperature oil,				
only in conjunction with measuring cell filling				
silicone oil				
Sanitary process connection to DRD				
• DN 50, PN 40	M32	✓	✓	✓
SMS socket with union nut				
• 2"	M67	✓	✓	✓
• 21/2"	M68	✓	✓	✓
• 3"	M69	✓	✓	✓
SMS threaded socket				
• 2"	M73	1	1	1
• 21/2"	M74	1	1	1
• 3"	M75	1	1	1
•				
IDF socket with union nut ISO 2853 • 2"	M82	1	1	1
• 2 • 2½"	M83	✓	*	*
• 3"	M84		*	1
•	WI64	V	•	•
IDF threaded socket ISO 2853				
• 2"	M92	✓	✓	✓
• 2½"	M93	✓	✓	V
• 3"	M94	✓	✓	✓
Sanitary process connection to				
NEUMO Bio-Connect screw connection				
Certified to EHEDG	005		,	,
• DN 50, PN 16	Q05	1	1	1
• DN 65, PN 16	Q06	1	√	√
• DN 80, PN 16	Q07 Q08	✓	*	*
DN 100, PN 16DN 2", PN 16	Q13	V	1	1
• DN 2½", PN 16	Q14	V	*	*
• DN 3", PN 16	Q14	V	*	*
• DN 4", PN 16	Q16	1	1	1
,	QIU	•	•	•
Sanitary process connection to NEUMO				
Bio-Connect flange connection Certified to EHEDG				
• DN 50, PN 16	Q23	1	1	1
• DN 65, PN 16	Q24	1	1	1
• DN 80, PN 16	Q25	1	1	1
• DN 100, PN 16	Q26	1	1	1
• DN 2", PN 16	Q31	1	1	1
• DN 2½", PN 16	Q32	1	1	1
• DN 3", PN 16	Q33	1	1	1
• DN 4", PN 16	Q34	✓	1	1
Sanitary process connection to				
NEUMO Bio-Connect clamp connection				
Certified to EHEDG				
• DN 50, PN 16	Q39	✓	1	✓
• DN 65, PN 10	Q40	✓	✓	✓
• DN 80, PN 10	Q41	✓	✓	✓
• DN 100, PN 10	Q42	✓	✓	✓
• DN 21/2", PN 16	Q48	✓	✓	✓
• DN 3", PN 10	Q49	✓	✓	✓
• DN 4", PN 10	Q50	✓	✓	✓
Sanitary process connection to				
NEUMO Bio-Connect S flange connection				
Certified to EHEDG				
• DN 2", PN 16	Q72	✓	✓	1

Selection and Ordering data	Order	code		
Further designs Add "-Z" to Article No. and specify Order code.	Oraci	HART	PA	FF
Aseptic threaded socket to DIN 11864-1 Form A approved according to EHEDG • DN 50, PN 25 • DN 65, PN 25 • DN 80, PN 25 • DN 100, PN 25	N33 N34 N35 N36	* * * *	* * * * *	V V V
Aseptic flange with notch to DIN 11864-2 Form A approved according to EHEDG • DN 50, PN 16 • DN 65, PN 16 • DN 80, PN 16 • DN 100, PN 16 Aseptic flange with groove to DIN 11864-2	N43 N44 N45 N46	* * * *	* * * *	
Form A approved according to EHEDG • DN 50, PN 16	N43 +	1	./	./
• DN 65, PN 16	P11 N44 + P11		√	*
• DN 80, PN 16	N45 + P11		√	√
DN 100, PN 16 Aseptic clamp with groove to DIN 11864-3 FormA approved according to EHEDG	N46 + P11	•	√	V
 DN 50, PN 25 DN 65, PN 25 DN 80, PN 16 DN 100, PN 16 	N53 N54 N55 N56	✓ ✓ ✓ ✓	V V V	✓ ✓ ✓

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.

 $^{^{\}rm 3)}$ Special seal in Viton included in the scope of delivery

⁴⁾ Lower measuring limit -100 mbar (1.45 psi).

 $^{^{5)}\,}$ The weldable socket can be ordered under accessories.

⁶⁾ Certified to 3A and EHEDG. The maximum permissible temperatures of the medium depend on the respective cell fillings (see medium conditions).

Transmitters for general requirements

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)	
Stainless steel tag plate and entry in device variable (measuring point description) Max. 16 characters, specify in plain text:	Y15	✓	✓	•
Y15: Measuring point text (entry in device variable) Max. 27 characters, specify in plain text:	Y16	✓	✓	,
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:	Y25		✓	•
	Y30	,	,	

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

✓ = available

ordering example

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

B line: A22 + Y01 + Y21

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

C line: Y21: bar (psi)

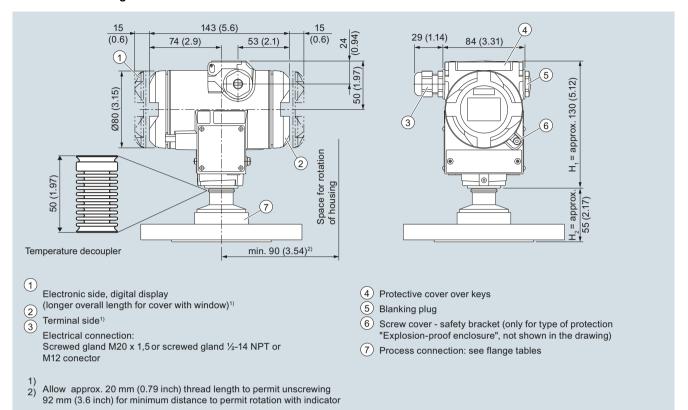
¹⁾ Measuring accuracies for PROFIBUS PA transmitters with Option Y01 are calculated in the same way as for HART devices.

 $^{^{2)}\,}$ Preset values can only be changed over SIMATIC PDM.

Transmitters for general requirements

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 H_1 and H_2 .

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

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

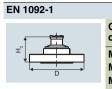
Only the height H₂ is indicated in the dimensions of the flanges.

Transmitters for general requirements

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

Flanges as per EN and ASME

Flange to EN



Order code	DN	PN	ØD	H ₂
M11	25	40	115 mm (4.5")	Approx.
M21	25	100	140 mm (5.5")	52 mm (2")
M13	40	40	150 mm (5.9")	
M23	40	100	170 mm (6.7")	
M04	50	16	165 mm (6.5")	
M14	50	40	165 mm (6.5")	
M06	80	16	200 mm (7.9")	
M16	80	40	200 mm (7.9")	

Flanges to ASME

ASME B16.5



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

NuG and pharmaceutical connections

Connections to DIN



union with slotted union nut)							
Order code	DN	PN	ØD	H ₂			
N04 N06	50 80	25 25	92 mm (3.6") 127 mm (5.0")	Approx. 52 mm (2")			

Tri-Clamp nach DIN

3	2676				
	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
T

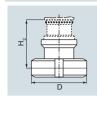
Order code	DN	PN	ØD	H ₂
N28	40 125	40	84 mm (3.3")	Approx. 52 mm (2")

Sanitary process connection to DRD Order DN PN



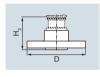
Order code	DN	PN	ØD	H ₂
M32	50	40	105 mm (4.1")	Approx. 52 mm (2")

Sanitary process screw connection to NEUMO Bio-Connect



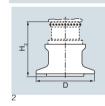
Ī	Order code	DN	PN	ØD	H ₂
	Q05	50	16	82 mm (3.2")	Approx.
	Q06	65	16	105 mm (4.1")	52 mm (2")
	Q07	80	16	115 mm (4.5")	
	Q08	100	16	145 mm (5.7")	
	Q13	2"	16	82 mm (3.2")	
	Q14	21/2"	16	105 mm (4.1")	
	Q15	3"	16	105 mm (4.1")	
	Q16	4"	16	145 mm (5.7")	

Sanitary process connection to NEUMO Bio-Connect flange connection



Order code	DN	PN	ØD	H ₂
Q23	50	16	110 mm (4.3")	Approx.
Q24	65	16	140 mm (5.5")	52 mm (2")
Q25	80	16	150 mm (5.9")	
Q26	100	16	175 mm (6.9")	
Q31	2"	16	100 mm (3.9")	
Q32	21/2"	16	110 mm (4.3")	
Q33	3"	16	140 mm (5.5")	
Q34	4"	16	175 mm (6.9")	

Sanitary process connection to NEUMO Bio-Connect clamp connection



Order code	DN	PN	ØD	H ₂
Q39	50	16	77.4 mm (3.0")	Approx.
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")	
Q47	2"	16	77.4 mm (3.0")	
Q48	21/2"	16	90.9 mm (3.6")	
Q49	3"	10	106 mm (4.2")	
Q50	4"	10	119 mm (4.7")	

Sanitary process connection to NEUMO Bio-Connect S flange connection



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

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

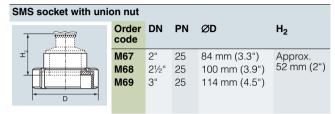


Order code	DN	PN	ØD	H ₂
R01	3/4"	60	37 mm (1.5")	Approx. 45 mm (1.8")
R02	1"	60	48 mm (1.9")	Approx. 47 mm (1.9")
R04	2"	60	78 mm (3.1")	Approx. 52 mm (2")

Transmitters for general requirements

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

Tank connection TG 52/50 and TG52/150 Order DN PN H_2 code R10 63 mm (2.5") 25 40 Approx. 63 mm (2.5")Approx. 170 mm R11 25 40 63 mm (2.5") (6.7")



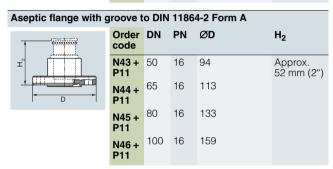
ode		PN	ØD	H ₂
174	2½"	25	85 x 1/6 mm	Approx. 52 mm (2")
 	73 74	73 2" 74 2½"	73 2" 25 74 2½" 25	73 2" 25 70 x 1/6 mm 74 2½" 25 85 x 1/6 mm

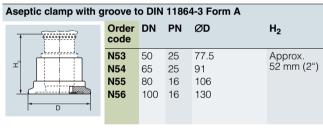
IDF socket with unio	n nut				
	Order code	DN	PN	ØD	H ₂
1	M82	2"	25	77 mm (3")	Approx.
(No. 1)	M83	21/2"	25	91 mm (3.6")	52 mm (2")
D	M84	3"	25	106 mm (4.2")	

IDF threaded socket					
	Order code	DN	PN	ØD	H ₂
1		2" 2½"		64 mm (2.5") 77.5 mm (3.1")	Approx. 52 mm (2")
D	M94	3"	25	91 mm (3.6")	

	25	Ø D 78 × 1/6" 95 × 1/6"	H₂ Approx. 52 mm (2")
	25	110 x ¼" 130 x ¼"	02 IIIII (2)
1	00	00 25	00 25 130 x 1/4"

Aseptic flange with n	otch to	DIN 1	1864	-2 Form A	
	Order code	DN	PN	ØD	H ₂
1	N43	50	16	94	Approx. 52 mm (2")
	N44	65	16	113	52 mm (2")
	N45	80	16	133	
l D l	N46	100	16	159	





Transmitters for general requirements

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

Technical specifications

	(from the gauge press		DDOEDDIE DA and E	OUNDATION Fieldhire		
Innut	HART		FRUFIDUS PA and F	OUNDATION Fieldbus		
Input Measured veriable		Abaskit	o proceuro			
Measured variable	Coon (min man)	Absolute				
Spans (infinitely adjustable) or nominal measuring range and max. permissible test pressure	Span (min max.)	Max. perm. test pressure	Nominal measuring range	Max. perm. test pres sure		
	8.3 250 mbar a (0.12 3.62 psia)	6 bar a (87 psia)	250 mbar a (3.6 psia)	6 bar a (87 psia)		
	43 1300 mbar a (0.62 18.85 psi a)	10 bar a (145 psia)	1300 mbar a (18.9 psi a)	10 bar a (145 psia)		
	160 5000 mbar a (2.32 72.5 psia)	30 bar a (435 psia)	5 bar a (72.5 psia)	30 bar a (435 psia)		
	1 30 bar a (14.5 435 psia)	100 bar a (1450 psia)	30 bar a (435 psia)	100 bar a (1450 psia)		
Lower measuring limit						
 Measuring cell with silicone oil filling 		0 mbar	a (0 psia)			
Upper measuring limit		100 % of	max. span			
Output						
Output signal	4 20 mA		Digital PROFIBUS PA and FOUNDATION Fieldbus signal			
 Lower limit (infinitely adjustable) 	3.55 mA, factory preset	to 3.84 mA	-			
 Upper limit (infinitely adjustable) 	23 mA, factory preset to set to 22.0 mA	20.5 mA or optionally				
Load						
Without HART	$R_{\rm B} \le (U_{\rm H} - 10.5 \text{ V})/0.023$ $U_{\rm H}$: Power supply in V	3 A in Ω,	-			
• With HART	$R_{\rm B} = 230 \dots 500 \Omega$ (SIM $R_{\rm B} = 230 \dots 1100 \Omega$ (HA	ATIC PDM) or ART Communicator)	-			
Physical bus	-		IEC 61158-2			
Protection against polarity reversal		Protected against short-on connection against the				
Electrical damping (step width 0.1 s)		Set to 2 s	(0 100 s)			
Measuring accuracy		Acc. to If	EC 60770-1			
Reference conditions (All error data refer always refer to the set span)	Increasing chara	acteristic, start-of-scale v silicone oil filling, room				
	Span ratio r = m	ax. span/set span	Nominal measuring range ratio r = nominal measuring range/set measuring range			
Error in measurement at limit setting incl. hysteresis and reproducibility						
Linear characteristic						
- r ≤ 10	≤ 0.1 %		≤ 0.1 %			
- 10 < r ≤ 30	≤ 0.2 %		≤ 0.2 %			
Long-term stability (temperature change ± 30 °C (± 54 °F))	≤ (0.1 · r) %/year		≤ (0.1 · r) %/year			
Influence of ambient temperature						
• at -10 +60 °C (14 140 °F)	\leq (0.1 · r + 0.2) % ¹⁾		$\leq (0.1 \cdot r + 0.2) \%^{1)}$			
• at -4010 °C and 60 85 °C (-40 +14 °F and 140 185 °F)	\leq (0.1 · r + 0.15) %/10 k		\leq (0.1 · r + 0.15) %/10	K		
			3 · 10 ⁻⁵ of nominal me			

Transmitters for general requirements

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

SITRANS P DS III series for absolute pressure	(from the gauge pressure series)	
	HART	PROFIBUS PA and FOUNDATION Fieldbus
Rated conditions		
Degree of protection (to IEC 60529)	IP66 (optional IP6	66/IP68), NEMA 4X
Temperature of medium		
Measuring cell with silicone oil filling		(-40 +212 °F) F) with 30 bar a measuring cell
Measuring cell with inert filling liquid	-20 +100 °C	C (-4 +212 °F)
• In conjunction with dust explosion protection	-20 +60 °C	(-4 +140 °F)
Ambient conditions		
Ambient temperature		
- Transmitter (with 4-wire connection, observe temperature values of supplementary 4-wire electronics)	-40 +85 °C	(-40 +185 °F)
- Display readable	-30 +85 °C	(-22 +185 °F)
Storage temperature	-50 +85 °C	(-58 +185 °F)
Climatic class		
- Condensation		idity 0 100 % 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)	≈ 1.5 kg	y (≈ 3.3 lb)
Enclosure material	Low-copper die-cast aluminum, GD-AlSi 12 or	stainless steel precision casting, mat. no. 1.4408
Wetted parts materials		
Connection shank	Stainless steel, mat. no. 1.4404/31	16L or Hastelloy C4, mat. no. 2.4610
Oval flange	Stainless steel, m	at. no. 1.4404/316L
Seal diaphragm	Stainless steel, mat. no. 1.4404/316	6L or Hastelloy C276, mat. no. 2.4819
Measuring cell filling		inert filling liquid pressure 100 bar (1450 psi) at 60 °C (140 °F))
Process connection		female thread $\frac{1}{2}$ -14 NPT or oval flange mounting thread M10 or $^{7}\rm{I_{16}}\text{-}20$ UNF to IEC 61518
Material of mounting bracket		
• Steel	Sheet-steel, Mat. No.	1.0330, chrome-plated
• Stainless steel	Sheet stainless steel, r	mat. no. 1.4301 (SS 304)
Power supply U_{H}		Supplied through bus
Terminal voltage on transmitter	10.5 45 V DC 10.5 30 V DC in intrinsically-safe mode	-
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 general requirements

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

SITRANS P DS III series for absolute pressure	(from the gauge pressure series)	
	HART	PROFIBUS PA and FOUNDATION Fieldbus
Certificates and approvals		
Classification according to PED 97/23/EC		group 1; complies with requirements of article 3, engineering practice)
Explosion protection	DTD 40.43	TEV 000E V
Intrinsic safety "i"		TEX 2007 X
- Marking		IIC T4/T5/T6 Ga/Gb
- Permissible ambient temperature	-40 +70 °C (-40 +15	5 °F) temperature class T4; 8 °F) temperature class T5; 0 °F) temperature class T6
- Connection	To certified intrinsically-safe circuits with peak values: $U_{\rm i}$ = 30 V, $I_{\rm i}$ = 100 mA, $P_{\rm i}$ = 750 mW; $R_{\rm i}$ = 300 Ω	FISCO supply unit: $U_0 = 17.5 \text{ V}$, $I_0 = 380 \text{ mA}$, $P_0 = 5.32 \text{ W}$ Linear barrier: $U_0 = 24 \text{ V}$, $I_0 = 250 \text{ mA}$, $P_0 = 1.2 \text{ W}$
- Effective internal inductance/capacitance	$L_i = 0.4 \text{ mH}, C_i = 6 \text{ nF}$	$L_i = 7 \mu\text{H}, C_i = 1.1 \text{nF}$
• Explosion-proof "d"	· ·	ATEX 1160
- Marking		d IIC T4/T6 Gb
- Permissible ambient temperature	-40 +85 °C (-40 +18	5 °F) temperature class T4; 0 °F) temperature class T6
- Connection	To circuits with values: $U_{\rm H}$ = 10.5 45 V DC	To circuits with values: $U_{\rm H}$ = 9 32 V DC
Dust explosion protection for zone 20	PTB 01 A	ATEX 2055
- Marking		⁹ 65 T 120 °C P65 T 120 °C
- Permissible ambient temperature	-40 +85 °C	(-40 +185 °F)
- Max. surface temperature	120 °C	(248 °F)
- Connection	To certified intrinsically-safe circuits with peak values: $U_{\rm i}=30$ V, $I_{\rm i}=100$ mA, $P_{\rm i}=750$ mW, $R_{\rm i}=300$ Ω	FISCO supply unit: $U_0 = 17.5 \text{ V}, I_0 = 380 \text{ mA}, P_0 = 5.32 \text{ W}$ Linear barrier: $U_0 = 24 \text{ V}, I_0 = 250 \text{ mA}, P_0 = 1.2 \text{ W}$
- Effective internal inductance/capacitance	$L_i = 0.4 \text{ mH}, C_i = 6 \text{ nF}$	$L_i = 7 \mu H, C_i = 1.1 \text{nF}$
Dust explosion protection for zone 21/22	PTB 01 A	ATEX 2055
- Marking	Ex II 2 D IF	P65 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 A	TEX 2007 X
- Marking		nA II T4/T5/T6 Gc c IIC T4/T5/T6 Gc
- Connection (Ex nA)	<i>U</i> _m = 45 V	$U_{\rm m} = 32 {\rm V}$
- Connection (Ex ic)	To circuits with values: $U_i = 45 \text{ V}$	FISCO supply unit ic: $U_0 = 17.5 \text{ V}$, $I_0 = 570 \text{ mA}$
		Linear barrier: $U_0 = 32 \text{ V}$, $I_0 = 132 \text{ mA}$, $P_0 = 1 \text{ W}$
- Effective internal inductance/capacitance	$L_{\rm i} = 0.4 {\rm mH}, \ C_{\rm i} = 6 {\rm nF}$	$L_{i} = 7 \mu H, C_{i} = 1.1 nF$
• Explosion protection acc. to FM	Certificate of Co	mpliance 3008490
- Identification (XP/DIP) or (IS); (NI)		GP EFG; CL III; CL I, ZN 0/1 AEx ia IIC T4T6; T6; CL II, DIV 2, GP FG; CL III
• Explosion protection to CSA	Certificate of Con	mpliance 1153651
- Identification (XP/DIP) or (IS)		FG; CL III; Ex ia IIC T4T6; CL I, DIV 2, GP ABCD V 2, GP FG; CL III

 $^{^{1)}}$ Conversion of temperature error per 28 °C. Valid for temperature range -3 ... +53 °C < (0.08. r + 0.16) % / 28 °C (50 °F).

Transmitters for general requirements

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

Transducer blocks

two pressures

characteristic with - Square-rooted characteristic for flow measurement - Gradual volume suppression

• Pressure transducer block - Can be calibrated by applying

- Monitoring of sensor limits

- Specification of a container

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

sured pressure value and sensor temperature

2

Yes

Yes

Max. 30 nodes

Parameterizable

Constant value or over parame-

terizable ramp function

Transmitters for general requirements

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

Selection and Orderin	g data		Art	icle	N	Э.	
Pressure transmitters			7 N	IF 4	1 2	3 3	-
from gauge pressure s SITRANS P DS III with							
Click on the Article N ration in the PIA Life	lo. for the online configu Cycle Portal.						
Measuring cell filling	Measuring cell cleaning						
Silicone oil	normal		1				
Inert liquid ¹⁾	grease-free to cleanliness level 2		3				
Measuring span (min. 8.3 250 mbar a	•		_				
43 1300 mbar a	(0.12 3.62 psia) (0.62 18.85 psia)	•	D F				
0.16 5 bar a	(2.32 72.5 psia)	•	G				
1 30 bar a	(14.5 435 psia)		H				
	. , ,						
Wetted parts materials Seal diaphragm	Process connection						
Stainless steel	Stainless steel	•		Α			
Hastelloy	Stainless steel			В			
Hastellov	Hastelloy			С			
Version for diaphragm	seal ^{2) 3) 4) 5) 6)}			Y			
Process connection							
 Connection shank G¹/₂ 				C			
• Female thread ½-14 N				1			
 Stainless steel oval flagge 							
nection (Oval flange h	6-20 UNF to EN 61518			2	,		
 Mounting thread 71 Mounting thread M1 				3			
- Mounting thread M1				4			
 Male thread M20 x 1. 				5	5		
 Male thread ½ -14 NF 	rΤ			6	6		
Non-wetted parts mat	erials						
 Housing made of die- 	_,				0		
 Housing stainless ste 	el precision casting()				3		
Version		_					
Standard versions	En allah dahari					1	
 International version, tions, documentation 	English label inscrip- in 5 languages on CD					2	
(no Order code selec							
Explosion protection	•						
							Α
• None							
 With ATEX, Type of pr 	otection:	•					
 With ATEX, Type of pr - "Intrinsic safety (Ex 	ia)"	•					В
 With ATEX, Type of pr "Intrinsic safety (Ex "Explosion-proof (Ex 	(a)" (a)" ⁸⁾	•					D
 With ATEX, Type of pr "Intrinsic safety (Ex "Explosion-proof (Ex 	(a)" (a)" ⁸⁾	•					
 With ATEX, Type of pr "Intrinsic safety (Ex "Explosion-proof (Ex "Intrinsic safety and (Ex ia + Ex d)") 	a)" (d)" ⁸⁾ flameproof enclosure"	•					D P
 With ATEX, Type of pr "Intrinsic safety (Ex "Explosion-proof (Ex "Intrinsic safety and (Ex ia + Ex d)"9) "Ex nA/ic (Zone 2)"1 	a)" (d)" ⁸⁾ flameproof enclosure"	•					D P E
 With ATEX, Type of pr "Intrinsic safety (Ex "Explosion-proof (Ex "Intrinsic safety and (Ex ia + Ex d)*9) "Ex nA/ic (Zone 2)*1 "Intrinsic safety exp "Intrinsic safety exp 	a)" (d)"8) flameproof enclosure" (d) (d) (d) (d)	•					D P
With ATEX, Type of pr - "Intrinsic safety (Ex - "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)") - "Ex nA/ic (Zone 2)" - "Intrinsic safety, exp and dust explosion Zone 1D/2D)" 9)11)	(a)" (d)"8) flameproof enclosure" (d) flosion-proof enclosure protection (Ex ia+ Ex d +	•					D P E
With ATEX, Type of pr - "Intrinsic safety (Ex - "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)"9) - "Ex nA/ic (Zone 2)"1 - "Intrinsic safety, exp and dust explosion Zone 1D/2D)"9)11) FM + CSA intrinsic sa	ia)" (d)"8) flameproof enclosure" (0) losion-proof enclosure protection (Ex ia+ Ex d +	•					D P E R
With ATEX, Type of pr - "Intrinsic safety (Ex - "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)"9) - "Ex nA/ic (Zone 2)"1 - "Intrinsic safety, exp and dust explosion Zone 1D/2D)"9)11) FM + CSA intrinsic sa	ia)" (cd)"8) flameproof enclosure" (d) (losion-proof enclosure protection (Ex ia + Ex d (ATEX)	•					D P E R
With ATEX, Type of pr - "Intrinsic safety (Ex - "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)"9") - "Ex nA/ic (Zone 2)"1" - "Intrinsic safety, exp and dust explosion Zone 1D/2D)"9)11) FM + CSA intrinsic sa - FM + CSA (is + ep) + - With FM + CSA, Type	ia)" (cd)"8) flameproof enclosure" (d) (losion-proof enclosure protection (Ex ia + Ex d (ATEX)	•					D P E R
With ATEX, Type of pr - "Intrinsic safety (Ex - "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)"9) - "Ex nA/ic (Zone 2)"1 - "Intrinsic safety, exp and dust explosion Zone 1D/2D)"9)11) FM + CSA intrinsic sa FM + CSA (is + ep) + With FM + CSA, Type - "Intrinsic Safe und E Electrical connection/	ia)" (d)"8) flameproof enclosure" (d) losion-proof enclosure protection (Ex ia + Ex d + fe (is) Ex ia + Ex d (ATEX) ¹¹⁾ of protection: xplosion Proof (is + xp)" (able entry	•					D P E R F S
With ATEX, Type of pr - "Intrinsic safety (Ex - "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)"9) - "Ex nA/ic (Zone 2)"1 - "Intrinsic safety, exp and dust explosion Zone 1D/2D)"9)11) FM + CSA intrinsic sa FM + CSA (is + ep) + With FM + CSA, Type - "Intrinsic Safe und E Electrical connection/ Screwed gland Pg 13	ia)" (d)"8) flameproof enclosure" (d) losion-proof enclosure protection (Ex ia+ Ex d + fe (is) Ex ia + Ex d (ATEX) ¹¹⁾ of protection: xplosion Proof (is + xp)" (able entry 5 ¹²⁾	•					D P E R
With ATEX, Type of pr - "Intrinsic safety (Ex - "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)"9) - "Ex nA/ic (Zone 2)"1 - "Intrinsic safety, exp and dust explosion Zone 1D/2D)"9)11) FM + CSA intrinsic sa FM + CSA (is + ep) + With FM + CSA, Type - "Intrinsic Safe und E Electrical connection/ Screwed gland Pg 13 Screwed gland M20x	ia)" (d)"8) flameproof enclosure" (d) flameproof enclosure (e) flosion-proof enclosure (f) flosion-proof enclosure (f) flosion-proof enclosure (f) flosion-proof enclosure (f) flosion-proof (ix + xx) (xx + xx	•					D P E R F S NC A B
With ATEX, Type of pr - "Intrinsic safety (Ex - "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)"9") - "Ex nA/ic (Zone 2)"1" - "Intrinsic safety, exp and dust explosion Zone 1D/2D)"9)11) FM + CSA intrinsic sa - FM + CSA (is + ep) + With FM + CSA, Type - "Intrinsic Safe und E Electrical connection/ - Screwed gland Pg 13 - Screwed gland M20x - Screwed gland ½-14	ia)" (d)"8) flameproof enclosure" (d) flameproof enclosure protection (Ex ia + Ex d + fe (is) Ex ia + Ex d (ATEX) ¹¹⁾ of protection: explosion Proof (is + xp)" (able entry .5 ¹²⁾ 1.5 NPT						D P E R F S N C A B C
 "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)"9) "Ex nA/ic (Zone 2)"1 "Intrinsic safety, explosion and dust explosion Zone 1D/2D)"9)11) FM + CSA intrinsic sa FM + CSA (is + ep) + With FM + CSA, Type 	ia)" (d)"8) flameproof enclosure" (d) flameproof enclosure protection (Ex ia + Ex d + fe (is) Ex ia + Ex d (ATEX) ¹¹⁾ of protection: explosion Proof (is + xp)" (able entry .5 ¹²⁾ 1.5 NPT						D P E R F S NC A B

Selection and Ordering data		Article No.	
Pressure transmitters for absolute pressure from gauge pressure series SITRANS P DS III with HART		7 M F 4 2 3 3 -	
Display Without display Without visible display (display concealed, setting: mA)	•		0
 With visible display (setting: mA) with customer-specific display (setting as specified, Order code "Y21" or "Y22" required 	•		6 7

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

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

Included in delivery of the device:

- Brief instructions (Leporello)
- CD-ROM with detailed documentation
- 1) For oxygen application, add Order code E10.
- $^{2)}\,$ Version 7MF4233-1DY... only up to max. span 200 mbar a (80 in H $_2{\rm O}$ a).
- 3) When the manufacture's certificate (calibration certificate) has to be ordered for transmitters with diaphragm seals according to IEC 60770-2, it is recommended only to order this certificate exclusively with the diaphragm seals. The measuring accuracy of the total combination is certified here. If the acceptance test certificate 3.1. is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.
- 4) If the acceptance test certificate 3.1 is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.
- 5) The diaphragm seal is to be specified with a separate order number and must be included with the tranmitter order number, for example 7MF423.-.Y..-... and 7MF4900-1...-.B
- 6) The standard measuring cell filling for configurations with remote seals (Y) is silicone oil.
- 7) Not in conjunction with Electrical connection "Screwed gland Pg 13.5" and "Han7D plug".
- 8) Without cable gland, with blanking plug.
- 9) With enclosed cable gland Ex ia and blanking plug.
- ¹⁰⁾Configurations with HAN and M12 connectors are only available in Ex ic.
- ¹¹⁾Only in connection with IP65.
- ¹²⁾Only in connection with Ex apporval A, B or E.
- ¹³⁾Only in connection with Ex apporval A, B, E or F.
- ¹⁴⁾M12 delivered without cable socket

Transmitters for general requirements

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

			<u> </u>				
Selection and Orderin	Article No.						
Pressure transmitters for absolute pressure							
from gauge pressure							
SITRANS P DS III with F	PROFIBUS PA (PA)		F 4 2				
SITRANS P DS III with F	OUNDATION Fieldbus (FF)	7MF4235-					
Click on the Article N ration in the PIA Life	No. for the online configu- Cycle Portal.			-	ľ		
Measuring cell filling	Measuring cell						
Silicone oil	cleaning normal	1					
Inert liquid ¹⁾	grease-free to	3					
	cleanliness level 2						
Nominal measuring ra	inge						
250 mbar a	(3.62 psia)	D					
1300 mbar a	(18.85 psia)	F					
5 bar a	(72.5 psia)	G					
30 bar a	(435 psia)	Н					
Wetted parts materials							
Seal diaphragm	Process connection	_					
Stainless steel	Stainless steel		A				
Hastelloy	Stainless steel		В				
Hastelloy Version as diaphragm s	Hastelloy 2001 2) 3) 4) 5) 6)		C Y				
		- 1	•				
• Connection shank G1	6D to EN 927 1		0				
• Female thread ½-14 N			1				
	ange with process connec-		'				
tion (Oval flange has	no female thread)						
- Mounting thread ⁷ / ₁	₆ -20 UNF to IEC 61518		2				
 Mounting thread M1 			3				
 Mounting thread M1 			4				
Male thread M20 x 1.			5				
• Male thread ½ -14 NF		_	6				
Non-wetted parts mat							
Housing made of die-Housing stainless ste			3				
	er precision casting	_	3				
Version • Standard versions							
	English label inscriptions,				1 2		
documentation in 5 la				ĺ	_		
(no Order code selec							
Explosion protection							
None					Α		
 With ATEX, Type of pr 							
- "Intrinsic safety (Ex					В		
- "Explosion-proof (Ex					D		
- "Intrinsic safety and (Ex is + Ex d)"8)	flameproof enclosure"				P		
- "Ex nA/ic (Zone 2)"	9)				E		
	losion-proof enclosure and				R		
dust explosion prote	ection (Ex ia + Ex d + not for DS III FF)						
					L		
• FM + CSA intrinsic sa					F		
• FM + CSA (is + ep) +					S		
 With FM + CSA, Type "Intrinsic Safe and F 	Explosion Proof (is + xp)"7)				N	С	
-					IN	Ü	
• Scrowed gland M20 x						В	
 Screwed gland M20 > Screwed gland ½-14 						С	
M12 connectors (stail	nless steel) 11) 12)					F	
2 331001010 (31411							

Selection and Ordering data	Article No.	
Pressure transmitters for absolute pressure from gauge pressure series		
SITRANS P DS III with PROFIBUS PA (PA)	7 M F 4 2 3 4 -	
SITRANS P DS III with FOUNDATION Fieldbus (FF)	7 M F 4 2 3 5 -	
Display		
Without display		0
Without visible display		1
(display concealed, setting: bar)		
 With visible display (setting: bar) 		6
 with customer-specific display 		7
(setting as specified, Order code "Y21" or "Y22" required)		

- Included in delivery of the device:
 Brief instructions (Leporello)
 CD-ROM with detailed documentation
- 1) For oxygen application, add Order code E10.
- 2) Version 7MF4233-1DY... only up to max. span 200 mbar a (2.9 psia).
- 3) When the manufacture's certificate (calibration certificate) has to be ordered for transmitters with diaphragm seals according to IEC 60770-2, it is recommended only to order this certificate exclusively with the diaphragm seals. The measuring accuracy of the total combination is certified
- 4) If the acceptance test certificate 3.1.is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.
- 5) The diaphragm seal is to be specified with a separate order number and must be included with the tranmitter order number, for example 7MF423.-..Y..-.... and 7MF4900-1...-.B
- 6) The standard measuring cell filling for configurations with remote seals (Y) is silicone oil.
- 7) Without cable gland, with blanking plug.
- 8) With enclosed cable gland Ex ia and blanking plug.
- 9) Configurations with HAN and M12 connectors are only available in Ex ic.
- ¹⁰⁾Only in connection with IP65.
- ¹¹⁾Only in connection with Ex approval A, B, E or F.
- ¹²⁾M12 delivered without cable socket.

Transmitters for general requirements

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

Selection and Ordering data		Order code			
Further designs			HART	PA	FF
Add "-Z" to Article No. and specify Order code.					
Pressure transmitter with mounting bracket (1x fixing angle, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer) made of:					
Steel Stainless steel		A01 A02	1	1	1
Plug	_	702	Ţ	Ť	
 Han 7D (metal) Han 8D (instead of Han 7D) Angled Han 8D (metal) 		A30 A31 A32 A33	* * * * * *		
Cable sockets for M12 connectors (metal (CuZn))		A50	✓	✓	✓
Rating plate inscription (instead of Ger-					
9 -		B11 B12	*	4	√
• Spanish	•	B13	✓	✓	✓
	٠	B14	✓.	1	✓
Cyrillo (racolari)	•	B16	✓	✓.	✓.
English rating plate Pressure units in inH ₂ 0 and/or psi	•	B21	✓	✓	✓
duanty mepeemen comments (interested	•	C11	✓	✓	✓
factory calibration) to IEC 60770-2 ¹⁾					
Inspection certificate ²⁾ Acc. to EN 10204-3.1	•	C12	✓	✓	✓
Factory certificate Acc. to EN 10204-2.2	•	C14	✓	✓	✓
Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration	•	C20	✓		
Functional safety (PROFIsafe) Certificate and PROFIsafe protocol		C21 ³⁾		✓	
Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration	•	C23	✓		
Device passport Russia (For price request please contact the technical support		C99	✓	✓	✓
www.siemens.com/automation/support-request)					
Setting of upper limit of output signal to 22.0 mA		D05	✓		
Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009)		D07	✓	✓	✓
Degree of protection IP66/IP68 (only for M20 x 1.5 and ½-14 NPT)		D12	✓	✓	✓
Supplied with oval flange (1 item), PTFE packing and screws in thread of oval flange		D37	✓	✓	✓
Capri cable gland 4F CrNi and clamping device (848699 + 810634) included		D59	✓	✓	1

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	1	✓	✓
(only together with type of protection "Intrinsic safety" (transmitter 7MF4B Ex ia)" and IP65)				
Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140 °F))	E10	✓	✓	✓
Export approval Korea	E11	✓	✓	✓
CRN approval Canada (Canadian Registration Number)	E22	✓	✓	✓
Dual seal	E24	✓	✓	✓
Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil)	E25 ⁴⁾	1	✓	✓
(only for transmitter 7MF4B)	4)			
"Flameproof" explosion protection according to INMETRO (Brazil)	E26 ⁴⁾	V	V	•
(only for transmitter 7MF4)				
Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil)	E28 ⁴⁾	✓	✓	
(only for transmitter 7MF4P)	- 4-4)	1	,	
Ex Approval IEC Ex (Ex ia) (only for transmitter 7MF4	E45 ⁴⁾	•	✓	•
Ex Approval IEC Ex (Ex d) (only for transmitter 7MF4D)	E46 ⁴⁾	✓	✓	✓
Explosion-proof "Intrinsic safety" to NEPSI (China)	E55 ⁴⁾	✓	✓	✓
(only for transmitter 7MF4B) Explosion protection "Explosion-proof"	E56 ⁴⁾	✓	✓	✓
to NEPSI (China) (only for transmitter 7MF4D)				
Explosion-proof "Zone 2" to NEPSI (China)	E57 ⁴⁾	✓	✓	✓
(only for transmitter 7MF4				
Ex protection "Ex ia", "Ex d" and "Zone 2" to NEPSI (China)	E58 ⁴⁾	✓	✓	✓
(only for transmitter 7MF4R)				
"Intrinsic safety" and "Explosion-proof" explosion protection acc. to Kosha (Korea)	E70 ⁴⁾	✓	✓	✓
(only for transmitter 7MF4[B, D]Z + E11)				
Two coats of lacquer on casing and cover (PU on epoxy)	G10	1	1	√
Transient protector 6 kV (lightning protection)	J01	✓	✓	✓
Oval flange NAM (ASTAVA)	J06	1	✓	✓

- We can offer shorter delivery times for configurations designated with the Quick Ship Symbol . For details see page 9/5 in the appendix.
- When the manufacture's certificate (calibration certificate) has to be ordered for transmitters with diaphragm seals according to IEC 60770-2, it is recommended only to order this certificate exclusively with the diaphragm seals. The measuring accuracy of the <u>total</u> combination is certified here.
- 2) If the acceptance test certificate 3.1 is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.
- 3) Profisafe transmitters can only be operated with the S7 F Systems V6.1 configuration software in combination with S7-400H
- 4) Option does not include ATEX approval, but instead includes only the country-specific approval.

Transmitters for general requirements

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

Selection and Ordering data	Order	code		
Additional data	0.00	HART	PA	FF
Please add "-Z" to Article No. and specify Order code(s) and plain text.				
Measuring range to be set Specify in plain text (max. 5 characters): Y01: up to mbar a, bar a, kPa _{abs} , MPa _{abs} , psia ²)	Y01	✓	√ 1)	
Stainless steel tag plate and entry in device variable (measuring point description) Max. 16 characters, specify in plain text: Y15:	Y15	✓	✓	✓
Measuring point text (entry in device variable) Max. 27 characters, specify in plain text:	Y16	✓	✓	✓
Y16: Entry of HART address (TAG) Max. 8 characters, 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 H ₂ O*, inH ₂ O*, ftH ₂ O*, mmHG, inHG, psi, Pa, kPa, MPa, g/cm², kg/cm², Torr, ATM or % *) ref. temperature 20 °C	Y21	✓	✓	•
Setting of pressure indication in non-pressure units ³⁾ Specify in plain text: Y22: up to I/min, m ³ /h, m, USgpm, (specification of measuring range in pressure units "Y01" is essential, unit with max. 5 characters)	Y22 + Y01	√		
Preset bus address possible between 1 and 126 Specify in plain text: Y25:	Y25		✓	✓
Damping adjustment in seconds (0 100 s)	Y30	✓	✓	✓

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

Factory mounting of valve manifolds, see accessories.

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

✓ = available

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

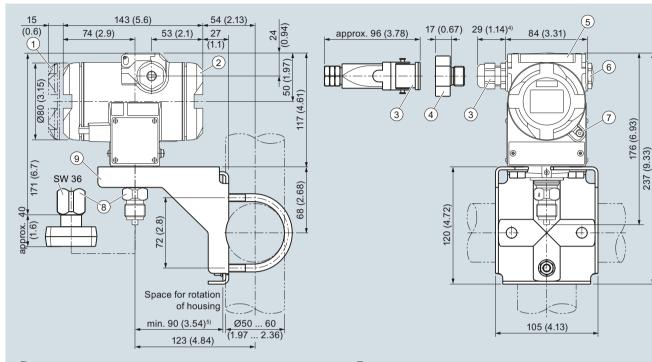
²⁾ Only absolute pressure units selectable. Negative pressure values not permitted.

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

Transmitters for general requirements

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

Dimensional drawings



- 1 Electronic side, digital display (longer overall length for cover with window)1)
- 2 Terminal side¹⁾
- 3 Electrical connection: Screwed gland Pg 13,5 (adapter)(Adapter)2)3), Screwed gland M20 x 1,5 or Screwed gland 1/2-14 NPT or Han 7D/Han 8D2)3)plug
- 4 Harting adapter
- Allow approx. 20 mm (0.79 inch) thread length to permit unscrewing
 Not with type of protection "Explosion-proof enclosure"
- Not with type of protection "FM + CSA" [IS + XP]"
- For Pg 13,5 with adapter approx. 45 mm (1.77 inch)
- 5) Minimum distance for rotating

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

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

Transmitters for general requirements

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

Technical specifications

SITRANS P, DS III for absolute pressure (from	•	re series)					
	HART		PROFIBUS PA and Fe	OUNDATION Fieldbus			
Input							
Measured variable		Absolute	pressure				
Spans (infinitely adjustable) or nominal measuring range and max. permissible operating pressure	Span (min max.)	Maximum operating pressure	Nominal measuring range	Maximum operating pressure			
	8.3 250 mbar a (0.12 3.62 psia)	32 bar a (464 psia)	250 mbar a (3.62 psia)	32 bar a (464 psia)			
	43 1300 mbar a (0.62 18.85 psia)	32 bar a (464 psia)	1300 bar a (18.85 psia)	32 bar a (464 psia)			
	160 5000 mbar a (2.32 72.52 psia)	32 bar a (464 psia)	5 bar a (72.5 psia)	32 bar a (464 psia)			
	1 30 bar a (14.5 435 psia)	160 bar a (2320 psia)	30 bar a (435 psia)	160 bar a (2320 psia)			
	5.3 100 bar a (76.9 1450 psia)	160 bar a (2320 psia) (for connection thread M10 and 7/16-20 UNF in the process flanges)	100 bar a (1450 psia)	160 bar a (2320 psia) (for connection thread M10 and 7/16-20 UNF in the process flanges)			
Lower measuring limit							
Measuring cell with silicone oil filling		0 mbar a	r a (0 psia)				
Upper measuring limit		100 % of	f max. span				
Output							
Output signal	4 20 mA		Digital PROFIBUS PA and FOUNDATION Fieldbus signal				
 Lower limit (infinitely adjustable) 	3.55 mA, factory preset	to 3.84 mA	-				
Upper limit (infinitely adjustable)	23 mA, factory preset to set to 22.0 mA	20.5 mA or optionally	1				
Load							
Without HART	$R_{\rm B} \le (U_{\rm H} - 10.5 \text{ V})/0.023$ $U_{\rm H}$: Power supply in V	3 A in Ω ,	-				
With HART	$R_{\rm B} = 230 \dots 500 \Omega \text{ (SIM)}$ $R_{\rm B} = 230 \dots 1100 \Omega \text{ (HA)}$		-				
Physical bus	-		IEC 61158-2				
Protection against polarity reversal	Protected against shor		rsal. Each connection a voltage.	gainst the other with max.			
Electrical damping (step width 0.1 s)		Set to 2 s	(0 100 s)				
Measuring accuracy		Acc. to IE	C 60770-1				
Reference conditions (All error data refer always refer to the set span)	Increasing char	acteristic, start-of-scale v silicone oil filling, room t					
	Span ratio r = m	ax. span/set span		range ratio r = nominal /set measuring range			
Error in measurement at limit setting incl. hysteresis and reproducibility							
Linear characteristic							
- r ≤ 10	≤ 0.1 %		≤ 0.1 %				
- 10 < r ≤ 30	≤ 0.2 %		≤ 0.2 %				
Long-term stability (temperature change \pm 30 °C (\pm 54 °F))	≤ (0.1 · r) %/year		≤ (0.1 · r) %/year				
Influence of ambient temperature							
• at -10 +60 °C (14 140 °F)	\leq (0.1 · r + 0.2) % ¹⁾		\leq (0.1 · r + 0.2) % ¹⁾				
• at -4010 °C and 60 85 °C (-40 +14 °F and 140 185 °F)	\leq (0.1 · r + 0.15) %/10 h	<	\leq (0.1 · r + 0.15) %/10				
Measured Value Resolution	-		3 · 10 ⁻⁵ of nominal me	asuring range			

Transmitters for general requirements

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

SITRANS P, DS III for absolute pressure (from the differential pressure series)				
	HART	PROFIBUS PA and FOUNDATION Fieldbus		
Rated conditions				
Degree of protection (to IEC 60529)	IP66 (optional IP	66/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	C (-4 +212 °F)		
• In conjunction with dust explosion protection	-20 +60 °C	; (-4 +140 °F)		
Ambient conditions				
Ambient temperature				
 Transmitter (with 4-wire connection, observe temperature values of supplementary 4-wire electronics) 	-40 +85 °C	(-40 +185 °F)		
- Display readable	-30 +85 °C	(-22 +185 °F)		
Storage temperature	-50 +85 °C	(-58 +185 °F)		
Climatic class				
- Condensation		idity 0 100 % 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)	≈ 4.5 kg (≈ 9.9 (lb)			
Enclosure material	Low-copper die-cast aluminum, GD-AlSi12 or stainless steel precision casting, mat. no. 1.440			
Wetted parts materials				
Seal diaphragm		by C276, mat. no. 2.4819, Monel, mat. no. 2.4360, m or gold		
 Process flanges and sealing screw 	Stainless steel, mat. no. 1.4408, Hastelloy 0	C4, mat. no. 2.4610 or Monel, mat. no. 2.4360		
• O-Ring	FPM (Viton) or optionally:	PTFE, FEP, FEPM and NBR		
Measuring cell filling	(maximum value with oxigen measurement	inert filling liquid pressure 100 bar (1450 psi) at 60 °C (140 °F))		
Process connection	1/4-18 NPT and flange connection with mour to IEC	nting thread M10 to DIN 19213 or ⁷ / ₁₆ -20 UNF C 61518		
Material of mounting bracket				
• Steel	Sheet-steel, Mat. No.	1.0330, chrome-plated		
Stainless steel	Sheet stainless steel, r	mat. no. 1.4301 (SS 304)		
Power supply $ extstyle{U}_{ extstyle{H}}$		Supplied through bus		
Terminal voltage on transmitter	10.5 45 V DC 10.5 30 V DC in intrinsically-safe mode	-		
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 general requirements

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

Certificates and approvals Classification according to PED 97/23/EC Explosion protection Intrinsic safety "i" Marking Permissible ambient temperature - Connection To	PTB 13 AT Ex II 1/2 G Ex ia/ib I -40 +85 °C (-40 +185 -40 +70 °C (-40 +158 -40 +60 °C (-40 +158	engineering practice) EX 2007 X IIC T4/T5/T6 Ga/Gb		
Classification according to PED 97/23/EC Explosion protection Intrinsic safety "i" - Marking - Permissible ambient temperature - Connection To	paragraph 3 (sound a PTB 13 AT Ex II 1/2 G Ex ia/ib I -40 +85 °C (-40 +185 -40 +70 °C (-40 +158	engineering practice) EX 2007 X IIC T4/T5/T6 Ga/Gb		
Explosion protection Intrinsic safety "i" Marking Permissible ambient temperature Connection	paragraph 3 (sound a PTB 13 AT Ex II 1/2 G Ex ia/ib I -40 +85 °C (-40 +185 -40 +70 °C (-40 +158	engineering practice) EX 2007 X IIC T4/T5/T6 Ga/Gb		
 Intrinsic safety "i" Marking Permissible ambient temperature - Connection To	Ex II 1/2 G Ex ia/ib I -40 +85 °C (-40 +185 -40 +70 °C (-40 +158	IIC T4/T5/T6 Ga/Gb		
- Marking- Permissible ambient temperature- ConnectionTo	Ex II 1/2 G Ex ia/ib I -40 +85 °C (-40 +185 -40 +70 °C (-40 +158	IIC T4/T5/T6 Ga/Gb		
- Permissible ambient temperature - Connection To	-40 +85 °C (-40 +185 -40 +70 °C (-40 +158			
- Connection To	-40 +70 °C (-40 +158	°F) temperature class T4;		
	· ·	°F) temperature class T5;		
U_{i}	alues:	FISCO supply unit: $U_{\rm o}=17.5$ V, $I_{\rm o}=380$ mA, $P_{\rm o}=5.32$ W Linear barrier: $U_{\rm o}=24$ V, $I_{\rm o}=250$ mA, $P_{\rm o}=1.2$ W		
- Effective internal inductance/capacitance Li	$_{i}$ = 0.4 mH, C_{i} = 6 nF	$L_{i} = 7 \mu H, C_{i} = 1.1 nF$		
• Explosion-proof "d"	PTB 99 A	TEX 1160		
- Marking	Ex II 1/2 G Ex d IIC T4/T6 Gb			
- Permissible ambient temperature	-40 +85 °C (-40 +185 -40 +60 °C (-40 +140			
- Connection To	o 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 A	TEX 2055		
- Marking	Ex II 1 D IP65 T 120 °C Ex II 1/2 D IP65 T 120 °C			
- Permissible ambient temperature	-40 +85 °C (-40 +185 °F)		
- Max. surface temperature	120 °C ((248 °F)		
va <i>U</i> i	o certified intrinsically-safe circuits with peak alues: $I_i = 30 \text{ V}$, $I_i = 100 \text{ mA}$, $I_i = 750 \text{ mW}$, $I_i = 300 \Omega$	FISCO supply unit: $U_{\rm o}=17.5$ V, $I_{\rm o}=380$ mA, $P_{\rm o}=5.32$ W Linear barrier: $U_{\rm o}=24$ V, $I_{\rm o}=250$ mA, $P_{\rm o}=1.2$ W		
- Effective internal inductance/capacitance L;	$_{i} = 0.4 \text{ mH}, C_{i} = 6 \text{ nF}$	$L_i = 7 \mu H, C_i = 1.1 \text{ nF}$		
Dust explosion protection for zone 21/22	PTB 01 A			
- Marking	Ex II 2 D IP6			
- Connection To		To circuits with values: $U_{\rm H}$ = 9 32 V DC; $P_{\rm max}$ = 1 W		
Type of protection "n" (zone 2)	PTB 13 AT	EX 2007 X		
- Marking	Ex II 2/3 G Ex n/ Ex II 2/3 G Ex ic			
- Connection (Ex nA) Un	$I_{\rm m} = 45 \text{ V}$	$U_{\rm m} = 32 {\rm V}$		
	o circuits with values: f = 45 V	FISCO supply unit ic: $U_0 = 17.5 \text{ V}$, $I_0 = 570 \text{ mA}$ Linear barrier: $U_0 = 32 \text{ V}$, $I_0 = 132 \text{ mA}$, $P_0 = 1 \text{ W}$		
Effective internal industrinas/conscitance	. = 0.4 mH .C. = 6 nE			
 Effective internal inductance/capacitance L_i Explosion protection acc. to FM 	$_{\rm i}$ = 0.4 mH, $C_{\rm i}$ = 6 nF	$L_i = 7 \mu\text{H}, C_i = 1.1 \text{nF}$		
- Identification (XP/DIP) or (IS); (NI)	CL I, DIV 1, GP ABCD T4T6; CL II, DIV 1, GC I, DIV 2, GP ABCD T4T6	P EFG; CL III; CL I, ZN 0/1 AEx ia IIC T4T6;		
Explosion protection to CSA	Certificate of Com			
		G; CL III; Ex ia IIC T4T6; CL I, DIV 2, GP ABCD		

 $^{^{1)}}$ Conversion of temperature error per 28 °C. Valid for temperature range -3 ... +53 °C < (0.08. r + 0.16) % / 28 °C (50 °F).

Transmitters for general requirements

	SITRANS P D	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 Simultaneous communication with	4	- Adaptation to customer-specific process variables	Yes, linearly rising or falling characteristic
master class 2 (max.)		- Electrical damping, adjustable	0 to 100 s
The address can be set using	Configuration tool or local 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	- Limit monitoring	ing limit and one alarm limit respectively
Internal preprocessing	metering)	 Square-rooted characteristic for flow measurement 	Yes
Device profile	PROFIBUS PA Profile for Process Control Devices Version	• PID	Standard FOUNDATION Field- bus function block
- · · · · · ·	3.0, class B	Physical block	1 resource block
Function blocks • Analog input	2	Transducer blocks	1 transducer block Pressure with calibration, 1 transducer block
- Adaptation to customer-specific process variables	Yes, linearly rising or falling characteristic	Pressure transducer block	LCD
- Electrical damping, adjustable	0 100 s	- Can be calibrated by applying	Yes
- Simulation function	Input /Output	two pressures - Monitoring of sensor limits	Yes
- Failure mode	parameterizable (last good value, substitute value, incorrect value)	- Simulation function: Measured pressure value, sensor temper-	Constant value or over parameterizable ramp function
- Limit monitoring	Yes, one upper and lower warn- ing limit and one alarm limit respectively	ature and electronics tempera- ture	
Register (totalizer)	Can be reset, preset, optional direction of counting, simulation function of register output		
- Failure mode	parameterizable (summation with last good value, continuous summation, summation with incorrect value)		
- Limit monitoring	One upper and lower warning limit and one alarm limit respec- tively		
 Physical block 	1		

Transducer blocks

two pressures

characteristic with - Square-rooted characteristic for flow measurement - Gradual volume suppression

• Pressure transducer block - Can be calibrated by applying

- Monitoring of sensor limits

- Specification of a container

and implementation point of square-root extraction

- Simulation function for measured pressure value and sensor temperature 2

Yes

Yes

Max. 30 nodes

Parameterizable

Constant value or over parameterizable ramp function

Transmitters for general requirements

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

Selection and Orderin	g data	Α	rti	cl	е	No).	
	for absolute pressure	7	M	F	4	3 3	3	-
from differential press SITRANS P DS III with		E						-
✓ Click on the Article New ration in the PIA Life	No. for the online configu- Cycle Portal.							
Measuring cell filling	Measuring cell clean-					Ī		
Silicone oil	ing normal	1						
Inert liquid ¹⁾	grease-free to	3						
mert liquid	cleanliness level 2	ľ						
Measuring span (min.	•		L					
8.3 250 mbar a	(0.12 3.62 psia)		D					
43 1300 mbar a	(0.62 18.85 psia)		F					
0.16 5 bar a	(2.32 72.5 psia)		G					
1 30 bar a 5.3 100 bar a	(14.5 435 psia) (76.9 1450 psia)		H K					
Wetted parts materials			•					
Seal diaphragm	Parts of measuring cell							
Stainless steel	Stainless steel			Α				
Hastelloy	Stainless steel			В				
Hastelloy	Hastelloy			С				
Tantalum	Tantalum			Ε				
Monel	Monel			Н				
Gold	Gold			L				
Version for diaphragm	seal ^{2) 3) 4) 3) 0)}			Y				
Process connection	OT with flance connection							
Female thread ½-18 NF • Sealing screw opposi	T with flange connection							
	₆ -20 UNF to EN 61518				2			
 Mounting thread M1 					0			
(only for replacement	nt requirement)				٦			
 Vent on side of proces 	ss flange ⁷⁾							
	₆ -20 UNF to EN 61518				6			
 Mounting thread M1 (only for replacement 					4			
Non-wetted parts mat								
process flange screws	Electronics housing							
Stainless steel	Die-cast aluminum					2		
Stainless steel	Stainless steel precision casting ⁸⁾					3		
Version	- Caotting	۱						
Standard versions							1	
	English label inscriptions,						2	
documentation in 5 la (no Order code selec	nguages on CD							
Explosion protection								
• None								Α
 With ATEX, Type of pr 								
	- \"							В
- "Intrinsic safety (Ex								D
- "Intrinsic safety (Ex- "Explosion-proof (Ex	(d)" ⁹⁾							_
 "Intrinsic safety (Ex "Explosion-proof (Ex "Intrinsic safety and								Р
 "Intrinsic safety (Ex "Explosion-proof (Ex "Intrinsic safety and (Ex ia + Ex d)" 10) 	(d)" ⁹⁾ flameproof enclosure"							
 "Intrinsic safety (Ex "Explosion-proof (Ex "Intrinsic safety and (Ex ia + Ex d)" 10) "Ex nA/ic (Zone 2)"1 	t d)" ⁹⁾ flameproof enclosure" 1)							P E R
 "Intrinsic safety (Ex "Explosion-proof (Ex "Intrinsic safety and (Ex ia + Ex d)" 10) "Ex nA/ic (Zone 2)" 1 "Intrinsic safety, expl 	(d)" ⁹⁾ flameproof enclosure"							E
- "Intrinsic safety (Ex - "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)" 10) - "Ex nA/ic (Zone 2)" 1 - "Intrinsic safety, explosion prote Zone 1D/2D)" 10)12) • FM + CSA intrinsic sa	r d)*9) flameproof enclosure* 1) osion-proof enclosure and ection (Ex ia+ Ex d + fe (is)							E
 "Intrinsic safety (Ex "Explosion-proof (Ex "Intrinsic safety and (Ex ia + Ex d)" 10) "Ex nA/ic (Zone 2)" 1 "Intrinsic safety, explosion prote zone 1D/2D)" 10) 12) FM + CSA intrinsic sa FM + CSA (is + ep) + 	(d)*9) flameproof enclosure* 1) osion-proof enclosure and ection (Ex ia+ Ex d + fe (is) Ex ia + Ex d (ATEX)*12)							E R
- "Intrinsic safety (Ex - "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)" 10) - "Ex nA/ic (Zone 2)" 1 - "Intrinsic safety, explosion prote Zone 1D/2D)" 1012) • FM + CSA intrinsic sa • FM + CSA (is + ep) + • With FM + CSA, Type	flameproof enclosure" socion-proof enclosure and ection (Ex ia+ Ex d + fe (is) Ex ia + Ex d (ATEX) ¹²⁾ of protection:							E R F S
 "Intrinsic safety (Ex "Explosion-proof (Ex "Intrinsic safety and (Ex ia + Ex d)" 10) "Ex nA/ic (Zone 2)" 1 "Intrinsic safety, explosion prote Zone 1D/2D)" 10) 12) FM + CSA intrinsic sa FM + CSA (is + ep) + With FM + CSA, Type "Intrinsic Safe und E 	flameproof enclosure" 1) osion-proof enclosure and ection (Ex ia+ Ex d + fe (is) Ex ia + Ex d (ATEX) ¹²⁾ of protection: xplosion Proof (is + xp)" ⁹⁾							E R
- "Intrinsic safety (Ex - "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)" 10) - "Ex nA/ic (Zone 2)" 1 - "Intrinsic safety, expl dust explosion prote Zone 1D/2D)" 10) 12) • FM + CSA intrinsic sa • FM + CSA (is + ep) + • With FM + CSA, Type - "Intrinsic Safe und E	r d)*9) flameproof enclosure* 1) osion-proof enclosure and ection (Ex ia+ Ex d + fe (is) Ex ia + Ex d (ATEX)*12) of protection: xplosion Proof (is + xp)*9) cable entry							E R F S
- "Intrinsic safety (Ex - "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)" 10) - "Ex nA/ic (Zone 2)" 1 - "Intrinsic safety, expl dust explosion prote Zone 1D/2D)" 10) 12) • FM + CSA intrinsic sa • FM + CSA (is + ep) + • With FM + CSA, Type - "Intrinsic Safe und E Electrical connection/ • Screwed gland Pg 13	(d)*9) flameproof enclosure* flooring proof enclosure and ection (Ex ia+ Ex d + fe (is) Ex ia + Ex d (ATEX)*12) of protection: xplosion Proof (is + xp)**9) cable entry .5*13)							E R F S NC
- "Intrinsic safety (Ex - "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)" 10) - "Ex nA/ic (Zone 2)" 1 - "Intrinsic safety, expl dust explosion prote Zone 1D/2D)" 10) 12) • FM + CSA intrinsic sa • FM + CSA (is + ep) + • With FM + CSA, Type - "Intrinsic Safe und E Electrical connection/ • Screwed gland Pg 13 • Screwed gland M20 >	rd)*9) flameproof enclosure* 1) osion-proof enclosure and ection (Ex ia+ Ex d + fe (is) Ex ia + Ex d (ATEX)*12) of protection: xplosion Proof (is + xp)**9) cable entry .5*13) 1.5							E R F S
- "Intrinsic safety (Ex - "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)" 10) - "Ex nA/ic (Zone 2)" 1 - "Intrinsic safety, explosion prote Zone 1D/2D)" 1012) FM + CSA intrinsic sa - FM + CSA (is + ep) + With FM + CSA, Type - "Intrinsic Safe und E Electrical connection/ - Screwed gland Pg 13 - Screwed gland M20 > - Screwed gland ½-14	r d)*9) flameproof enclosure* 1) osion-proof enclosure and ection (Ex ia+ Ex d + fe (is) Ex ia + Ex d (ATEX)*12) of protection: xplosion Proof (is + xp)**9) cable entry .5*13) 1.5 NPT							E R F S NC
- "Intrinsic safety (Ex - "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)" 10) - "Ex nA/ic (Zone 2)" - "Intrinsic safety, explosion prote zone 1D/2D)" 1012) • FM + CSA intrinsic sa • FM + CSA (is + ep) + • With FM + CSA, Type	r d)*9) flameproof enclosure* 1) osion-proof enclosure and ection (Ex ia+ Ex d + fe (is) Ex ia + Ex d (ATEX)** of protection: xplosion Proof (is + xp)** cable entry .5** NPT housing) incl. mating							E R F S NC

Selection and Ordering data	Article No.	
Pressure transmitters for absolute pressure from differential pressure series, SITRANS P DS III with HART	7 M F 4 3 3 3 -	
Display Without display Without visible display (display concealed, setting: mA) With visible display (setting: mA) with customer-specific display (setting as specified, Order code "Y21" or "Y22" required)		0 1 6 7

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

Included in delivery of the device:

- Brief instructions (Leporello)
- CD-ROM with detailed documentation
- Sealing plug(s) or sealing screw(s) for the process flanges(s)
- 1) For oxygen applications, add Order code E10.
- ²⁾ Version 7MF4333-1DY... only up to max. span 200 mbar a (2.9 psia).
- 3) When the manufacture's certificate (calibration certificate) has to be ordered for transmitters with diaphragm seals according to IEC 60770-2, it is recommended only to order this certificate exclusively with the diaphragm seals. The measuring accuracy of the total combination is certified here.
- 4) If the acceptance test certificate 3.1.is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.
- 5) The diaphragm seal is to be specified with a separate order number and must be included with the tranmitter order number, for example 7MF433.-.Y..-... und 7MF4900-1...-.B
- 6) The standard measuring cell filling for configurations with remote seals (Y) is silicone oil
- 7) Not for span "5.3 ... 100 bar a (76.9 ... 1450 psia)". Position of the top vent valve in the process flange (see dimensional drawing).
- 8) Not in conjunction with Electrical connection "Screwed gland Pg 13.5" and "Han7D plug".
- 9) Without cable gland, with blanking plug
- ¹⁰⁾With enclosed cable gland Ex ia and blanking plug
- $^{11)}\mbox{Configurations}$ with HAN and M12 connectors are only available in Ex ic.
- ¹²⁾Only in connection with IP65.
- $^{13)}\mbox{Only}$ in connection with Ex approval A, B or E.
- ¹⁴⁾Only in connection with Ex approval A, B, E or F.
- ¹⁵⁾M12 delivered without cable socket.

Transmitters for general requirements

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

		SI	TR	٩N	S F	PD
Selection and Orderin	g data	Artic	le No	Э.		
Pressure transmitter f	or absolute pressure					
from differential press		7145	40	o 4		
SITRANS P DS III with F	` ,	7 M F				
	OUNDATION Fieldbus (FF)	7 M F				
ration in the PIA Life	No. for the online configu- Cycle Portal.					
Measuring cell filling	Measuring cell clean- ing					
Silicone oil	normal	1				
Inert liquid ¹⁾	grease-free to cleanliness level 2	3				
Nominal measuring ra	•					
250 mbar a	(3.62 psia)	D				
1300 mbar a	(18.85 psia)	F				
5 bar a	(72.5 psia)	G H				
30 bar a 100 bar a	(435 psia) (1450 psia)	KE				
	` ' '					
Wetted parts materials Seal diaphragm	Parts of measuring cell					
Stainless steel	Stainless steel	А				
Hastelloy	Stainless steel	В				
Hastellov	Hastelloy	C				
Tantalum	Tantalum	E				
Monel	Monel	Н				
Gold	Gold	L				
Version as diaphragm s	seal ^{2) 3) 4) 5) 6)}	Y				
 Sealing screw opposi 	₆ -20 UNF to IEC 61518 0 to DIN 19213		2 0			
 Vent on side of proce Mounting thread ⁷/₁ 	ss flange ⁷⁾ ₆ -20 UNF to IEC 61518		6			
 Mounting thread M1 (only for replacement 	0 to DIN 19213 nt requirement)		4			
Non-wetted parts mate process flange screws		-				
Stainless steel	Die-cast aluminum		2			
Stainless steel	Stainless steel precision casting		3			
Version						
Standard versions	English John Singer 1			1		
 International version, documentation in 5 la (no Order code selec 				2		
Explosion protection • None					A	
 None With ATEX, Type of pr 	otection:				^	
- "Intrinsic safety (Ex					В	
- "Explosion-proof (Ex	(d)" ⁸⁾				D	
- "Intrinsic safety and	flameproof enclosure"				Р	
(Ex ia + Ex d)" 9)	٦١					
- "Ex nA/ic (Zone 2)"1"					E	
dust explosion prote Zone 1D/2D)**9) 11) (osion-proof enclosure and ection (Ex ia + Ex d + not for DS III FF)				R	
• FM + CSA intrinsic sa	fe (is)				F	
• FM + CSA (is + ep) +					S	
• With FM + CSA, Type						
	explosion Proof (is + xp)" 8)				NC	
Electrical connection/	•					
 Screwed gland M20 > Screwed gland 16 14 					B	
 Screwed gland ½-14 M12 connectors (stair 	nless steel) ¹²⁾¹³⁾				F	
- WITZ CONNECTORS (Stall	11000 01001)					

Selection and Ordering data	Article No.
Pressure transmitter for absolute pressure from differential pressure series	
SITRANS P DS III with PROFIBUS PA (PA)	7 M F 4 3 3 4 -
SITRANS P DS III with FOUNDATION Fieldbus (FF)	7 M F 4 3 3 5 -
Display	
Without display	0
Without visible display	1
(display concealed, setting: bar)	
 With visible display (setting: bar) 	6
With customer-specific display (setting as	7
specified, Order code "Y21" required)	

Included in delivery of the device:

- Brief instructions (Leporello)
 CD-ROM with detailed documentation
- Sealing plug(s) or sealing screw(s) for the process flanges(s)
- 1) For oxygen application, add Order code E10.
- $^{2)}$ Version 7MF4334-1DY... only up to max. span 200 mbar a (80 inH $_2$ O a).
- 3) When the manufacture's certificate (calibration certificate) has to be ordered for transmitters with diaphragm seals according to IEC 60770-2, it is recommended only to order this certificate exclusively with the diaphragm seals. The measuring accuracy of the total combination is certified
- 4) If the acceptance test certificate 3.1.is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.
- 5) The diaphragm seal is to be specified with a separate order number and must be included with the tranmitter order number, for example 7MF433.-..Y..-... und 7MF4900-1...-.B
- 6) The standard measuring cell filling for configurations with remote seals (Y) is silicone oil.
- 7) Not for nominal measuring range 100 bar a (1450 psia). Position of the top vent valve in the process flange (see dimensional drawing).
- 8) Without cable gland, with blanking plug
- 9) With enclosed cable gland Ex ia and blanking plug
- $^{10)}$ Configurations with HAN and M12 connectors are only available in Ex ic.
- ¹¹⁾Only in connection with IP65.
- ¹²⁾Only in connection with Ex approval A, B, E or F.
- 13)M12 delivered without cable socket

Transmitters for general requirements

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

·				entiai
Selection and Ordering data	Order			
Further designs Add "-Z" to Article No. and specify Order code.		HART	PA	FF
Pressure transmitter with mounting				
bracket (1x fixing angle, 2 x nut, 2 x U-				
washer or 1 x bracket, 2 x nut, 2 x U- washer) made of:				
• Steel	A01	1	1	1
Stainless steel	A02	1	✓	1
O-rings for process flanges				
(instead of FPM (Viton))				
• PTFE (Teflon)	A20	1	✓	1
• FEP (with silicone core, approved for food)	A21	✓	✓	✓
 FFPM (Kalrez, compound 4079), 	A22	✓	✓	✓
for measured medium temperatures -15 100 °C (5 212 °F))				
• NBR (Buna N)	A23	1	1	1
,	7.20			
Plug A Han 7D (motal)	A30	1		
Han 7D (metal)Han 8D (instead of Han 7D)	A30 A31	1		
• Angled	A32	1		
• Han 8D (metal)	A33	✓		
Sealing screw	A40	1	1	1
1/4-18 NPT, with valve in mat. of process flanges	5			
Cable sockets for M12 connectors	A50	1	1	1
(metal (CuZn))				
Rating plate inscription				
(instead of German)				
• English	B11	V	✓.	✓.
• French	B12	V	1	1
• Spanish	B13	√	1	1
Italian Cyrillic (russian)	B14 B16	✓	V	V
, , ,		1	1	1
English rating plate Pressure units in inH ₂ 0 and/or psi	B21	•	•	٧
Quality inspection certificate (Five-step	C11	1	-	1
factory calibration) to IEC 60770-2 ¹⁾				
Inspection certificate ²⁾	C12	✓	✓	✓
Acc. to EN 10204-3.1				
Factory certificate	C14	✓	✓	✓
Acc. to EN 10204-2.2				
Functional safety (SIL2)	C20	✓		
Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL confor-				
mity declaration				
Functional safety (PROFIsafe)	C21 ³⁾		1	
Certificate and PROFIsafe protocol				
Functional safety (SIL2/3)	C23	✓		
Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL confor-				
mity declaration				
Device passport Russia	C99	1	1	1
(For price request please contact the technical	000			
<pre>support www.siemens.com/automation/support-request)</pre>				
	DOF	1		
Setting of upper limit of output signal to 22.0 mA	D05	•		
Manufacturer's declaration acc. to NACE	D07	1	1	1
(MR 0103-2012 and MR 0175-2009)				
(only together with seal diaphragm made of Hastelloy and stainless steel)				
, ,	D10	.,	./	./
Degree of protection IP66/IP68 (only for M20 x 1.5 and ½-14 NPT)	D12	•	•	•
Supplied with oval flange	D37	1	1	1
	501		·	
(1 item), PTFE packing and screws in thread of process flange				
(1 item), PTFE packing and screws in thread	D59	✓	1	1

Selection and Ordering data	Order	oodo		
Further designs	Order	HART	ΡΔ	FF
Add "-Z" to Article No. and specify Order code.		· iAiti		•
Use in or on zone 1D/2D (only together with type of protection "Intrinsic safety" (transmitter 7MF4B Ex ia)" and IP65)	E01	✓	✓	✓
Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140 °F))	E10	✓	✓	✓
Export approval Korea	E11	✓	✓	✓
CRN approval Canada (Canadian Registration Number)	E22	✓	✓	✓
Dual seal	E24	1	✓	✓
Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil)	E25 ⁴⁾	✓	✓	✓
(only for transmitter 7MF4B) "Flameproof" explosion protection according to INMETRO (Brazil) (only for transmitter 7MF4D)	E26 ⁴⁾	✓	✓	✓
Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil) (only for transmitter 7MF4P)	E28 ⁴⁾	1	✓	
Ex Approval IEC Ex (Ex ia) (only for transmitter 7MF4B)	E45 ⁴⁾	✓	✓	✓
Ex Approval IEC Ex (Ex d) (only for transmitter 7MF4D)	E46 ⁴⁾	1	✓	✓
Explosion-proof "Intrinsic safety" to NEPSI (China)	E55 ⁴⁾	1	✓	✓
(only for transmitter 7MF4B) Explosion protection "Explosion-proof" to NEPSI (China)	E56 ⁴⁾	✓	✓	✓
(only for transmitter 7MF4D) Explosion-proof "Zone 2" to NEPSI (China)	E57 ⁴⁾	1	✓	✓
(only for transmitter 7MF4E) Ex protection "Ex ia", "Ex d" and "Zone 2" to NEPSI (China)	E58 ⁴⁾	1	✓	✓
(only for transmitter 7MF4R)	E70 ⁴⁾		1	1
"Intrinsic safety" and "Explosion-proof" explosion protection acc. to Kosha (Korea) (only for transmitter	E/U ⁷	·	•	•
ŻMF4[Β, D]Z + E11)				
Two coats of lacquer on casing and cover (PU on epoxy)	G10	√	✓	√
Interchanging of process connection side	H01	✓	✓	1
Vent on side for gas measurements	H02	✓	✓	✓
Stainless steel process flanges for vertical differential pressure lines (not together with K01, K02 and K04) ⁵⁾	H03	✓	✓	✓
Transient protector 6 kV (lightning protection)	J01	1	✓	✓
Chambered graphite gasket for process flange	J02	1	✓	✓
Chambered PTFE graphite gasket	J03	1	✓	✓
EPDM O-rings for process flange with approval (WRC/WRAS)	J05	✓	✓	✓
Vent valve or blanking plug of process flange welded-in (orientation: on right when viewing the display) ⁶⁾	J08	1	1	1
Vent valve or blanking plug of process flange welded-in (orientation: on left when viewing the display) ⁶⁾	J09	1	✓	✓

Transmitters for general requirements

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

Selection and Ordering data	Order	code		
Further designs Add "-Z" to Article No. and specify Order code.		HART	PA	FF
Process flange				
Hastelloy	K01	✓	✓	✓
Monel	K02	✓	✓	✓
• Stainless steel with PVDF insert max. PN 10 (MAWP 145 psi), max. temperature of medium 90 °C (194 °F) For ½-14 NPT inner process connection on the side in the middle of the process flange, vent valve not possible	K04	✓	•	✓

- When the manufacture's certificate (calibration certificate) has to be ordered for transmitters with diaphragm seals according to IEC 60770-2, it is recommended only to order this certificate exclusively with the diaphragm seals. The measuring accuracy of the total combination is certified
- 2) If the acceptance test certificate 3.1.is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.
- ³⁾ Profisafe transmitters can only be operated with the S7 F Systems V6.1 configuration software in combination with S7-400H
- 4) Option does not include ATEX approval, but instead includes only the country-specific approval.
- ⁵⁾ Not suitable for connection of remote seals.
- 6) Blanking plug is standard configuration. Order option A40 if a vent valve is required instead of a blanking plug.

Selection and Ordering data	Order	code		
Additional data		HART	PA	FF
Please add "-Z" to Article No. and specify Order code(s) and plain text.				
Measuring range to be set	Y01	✓	√ 1)	
Specify in plain text (max. 5 characters): Y01: up to mbar a, bar a, kPa _{abs} , MPa _{abs} , psia ²⁾				
Stainless steel tag plate and entry in device variable (measuring point description)	Y15	✓	✓	✓
Max. 16 characters, specify in plain text:				
Y15:	V40		,	,
Measuring point text (entry in device variable)	Y16	✓	✓	✓
Max. 27 characters, specify in plain text: Y16:				
Entry of HART address (TAG)	Y17	✓		
Max. 8 characters, specify in plain text: Y17:				
Setting of pressure indication in pressure units	Y21	✓	✓	✓
Specify in plain text (standard setting: bar): Y21: mbar, bar, kPa, MPa, psi,				
Note: The following pressure units can be selected:				
bar, mbar, mm H ₂ O*), inH ₂ O*), ftH ₂ O*), mmHG, inHG, psi, Pa, kPa, MPa, g/cm ² , kg/cm ² , Torr, ATM or % *) ref. temperature 20 °C				
Setting of pressure indication in	Y22 +	✓		
non-pressure units ³⁾ Specify in plain text: Y22: up to I/min, m ³ /h, m, USgpm, (specification of measuring range in pressure units "Y01" is essential, unit with max. 5 characters)	Y01			
Preset bus address possible between 1 and 126 Specify in plain text: Y25:	Y25		✓	✓
Damping adjustment in seconds (0 100 s)	Y30	✓	✓	✓

Factory mounting of valve manifolds, see accessories.

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

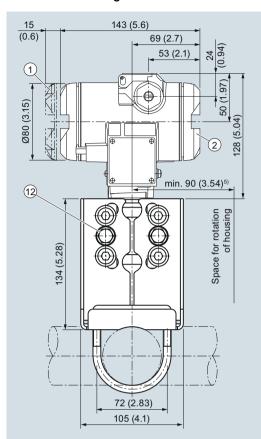
✓ = available

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

Transmitters for general requirements

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

Dimensional drawings



- 1 Electronic side, digital display (longer overall length for cover with window)1)
- (2) Terminal side¹⁾
- 3 Electrical connection: Screwed gland Pg 13,5 (adapter)(Adapter)2)3), Screwed gland M20 x 1,5 or Screwed gland 1/2-14 NPT or Han 7D/ Han 8D2)3)plug
- 4 Harting adapter
- 5 Protective cover over keys

6 Blanking plug

3

29

1.14)

(3)

approx. 96 (3.78)

84 (3.31)

(1)

17 (0.67)

4

52 (2.05)

166 (6.54)

(3.8)

96

262

(8)

(9)

(10)

68 (2.7)

120 (4.7)

- Screw cover safety bracket (only for type of protection "Explosion-proof enclosure", not shown in the drawing)
- 8 Lateral venting for liquid measurement (Standard)
- 9 Lateral venting for gas measurement (suffix H02)
- 10 Mounting bracket (option)
- 11 Sealing screw with valve (option)
- 12) Process connection: 1/4-18 NPT (IEC 61518)
- 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]"
- 92 mm (3.62 inch) for minimum distance to permit rotation with indicator
- 5) For Pg 13,5 with adapter approx. 45 mm (1.77 inch)

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

Transmitters for general requirements

SITRANS P DS III for differential pressure and flow

Technical specifications

SITRANS P, DS III for differential pressure	e and flow			
	HART		PROFIBUS PA and FOUNDATION	ON Fieldbus
Input				
Measured variable	С	Differential pr	essure and flow	
Spans (infinitely adjustable) or nominal measuring range and max. permissible operating pressure	Span (min max.)	Maximum operating pressure	Nominal measuring range	Maximum operating pressure
	1 20 mbar (0.4 8 inH ₂ O)	32 bar (464 psi)	20 mbar (8 inH ₂ O)	32 bar (464 psi)
	1 60 mbar (0.4 24 inH ₂ O)	160 bar	60 mbar (24 inH ₂ O)	160 bar
	2.5 250 mbar (1 100 inH ₂ O)	(2320 psi)	250 mbar (100 inH ₂ O)	(2320 ps
	6 600 mbar (2.4 240 inH ₂ O)		600 mbar (240 inH ₂ O)	
	16 1600 mbar (6.4 642 inH ₂ O)		1600 mbar (642 inH ₂ O)	
	50 5000 mbar (20 2000 inH ₂ O)		5 bar (2000 inH ₂ O)	
	0.3 30 bar (4.35 435 psi)		30 bar (435 psi)	
	2.5 250 mbar (1 100 inH ₂ O)	420 bar	250 mbar (100 inH ₂ O)	420 bar
	6 600 mbar (2.4 240 inH ₂ O)	(6091 psi)	600 mbar (240 inH ₂ O)	(6091 ps
	16 1600 mbar (6.4 642 inH ₂ O)		1600 mbar (642 inH ₂ O)	
	50 5000 mbar (20 2000 inH ₂ O)		5 bar (2000 inH ₂ O)	
	0.3 30 bar (4.35 435 psi)		30 bar (435 psi)	
Lower measuring limit		I		
Measuring cell with silicone oil filling	-100 % of max. span or 30 mba	ır a (0.44 psi	a) (-33 % with 30 bar (435 psi) me	asuring cell)
Jpper measuring limit	· ·	` '	id inert filling liquid; max. 120 bar	o ,
Output	1 ()3		<u> </u>	1 //
Dutput signal	4 20 mA		Digital PROFIBUS PA and FOUNDATION Fieldbus signal	
Lower limit (infinitely adjustable)	3.55 mA, factory preset to 3.84 mA		-	
Upper limit (infinitely adjustable)	23 mA, factory preset to 20.5 mA or o to 22.0 mA	optionally set	-	
oad				
Without HART	$R_{\rm B} \leq$ ($U_{\rm H}$ - 10.5 V)/0.023 A in Ω , $U_{\rm H}$: Power supply in V		-	
With HART	$R_{\rm B}$ = 230 500 Ω (SIMATIC PDM) o $R_{\rm B}$ = 230 1100 Ω (HART Commun		-	
Physical bus	-		IEC 61158-2	
Protection against polarity reversal	Protected against short-circuit and		rsal. Each connection against the voltage.	other with max
Electrical damping (step width 0.1 s)		Set to 2 s	(0 100 s)	
Measuring accuracy		Acc. to IE	EC 60770-1	
Reference conditions All error data refer always refer to the set	Increasing characteristic, st silicone oil	art-of-scale v	value 0 bar, stainless steel seal dia temperature 25 °C (77 °F)	iphragm,
span)	Span ratio r = max. span/set	span	Nominal measuring range ra measuring range/set meas	
Error in measurement at limit setting incl. nysteresis and reproducibility Linear characteristic				
- r ≤ 10	≤ (0.0029 · r + 0.071) %		≤ (0.0029 · r + 0.071) %	
- 1 ≤ 10 - 10 < r ≤ 30	$\leq (0.0029 \cdot 1 + 0.071) \%$ $\leq (0.0045 \cdot r + 0.071) \%$		$\leq (0.0029 \cdot 1 + 0.071) \%$ $\leq (0.0045 \cdot r + 0.071) \%$	
- 10 < 1 ≤ 30 - 30 < r ≤ 100	$\leq (0.0043 \cdot 1 + 0.071) \%$ $\leq (0.005 \cdot r + 0.05) \%$		$\leq (0.0045 \cdot 1 + 0.071) \%$ $\leq (0.005 \cdot r + 0.05) \%$	
- 30 < r ≤ 100 • Square-rooted characteristic (flow > 50 %	,		≥ (0.000 · 1 + 0.00) /o	
			< 0.1 %	
- r ≤ 10	≤ 0.1 %		≤ 0.1 %	
- 10 < r ≤ 30 • Square-rooted characteristic (flow > 25 50 %)	≤ 0.2 %		≤ 0.2 %	
- r ≤ 10	≤ 0.2 %		≤ 0.2 %	
- 10 < r ≤ 30	≤ 0.4 %		≤ 0.2 % ≤ 0.4 %	
10 (1 2 00	= 0.7 /0		_ 0. ₹ /0	

Transmitters for general requirements

SITRANS P, DS III for differential pressure	and flow			
	HART	PROFIBUS PA and FOUNDATION Fieldbus		
Long-term stability (temperature change ± 30 °C (± 54 °F))				
• 250, 600, 1600 and 5000 mbar (0.29, 0.87, 2.32 and 7.25 psi)-measuring cell	≤ (0.125 · r) per 5 years	\leq (0.125 · r) per 5 years		
• 20 mbar (8 inH ₂ O)-measuring cell	≤ (0.2 · r) per year	\leq (0.2 · r) per year		
• 60 mbar (24 inH ₂ O)-measuring cell	≤ (0.25 · r) % per 5 years	≤ (0.25 · r) % per 5 years		
• 30 bar (435 psi)-measuring cell	≤ (0.25 · r) % per 5 years	≤ (0.25 · r) % per 5 years		
Influence of ambient temperature (Twice the value with 20 mbar (8 inH ₂ O)- measuring cell	·			
• at -10 +60 °C (14 140 °F)	\leq (0.08 · r + 0.1) % ¹⁾	$\leq (0.08 \cdot r + 0.1) \%^{1}$		
at -4010 °C and 60 85 °C (-40 +14 °F and 140 185 °F)	≤ (0.1 · r + 0.15) %/10 K	≤ (0.1 · r + 0.15) %/10 K		
nfluence of static pressure				
on the zero point (PKN)	≤ (0.15 · r) % per 70 bar (1015 psi)	≤ (0.15 · r) % per 70 bar (1015 psi)		
- 20 mbar (0.29 psi)-measuring cell	≤ (0.15 · r) % per 32 bar (464 psi)	≤ (0.15 · r) % per 32 bar (464 psi)		
on the span (PKS)	≤ 0.14 % per 70 bar (1015 psi)	≤ 0.14 % per 70 bar (1015 psi)		
- 20 mbar (0.29 psi)-measuring cell	≤ 0.2 % per 32 bar (464 psi)	≤ 0.2 % per 32 bar (464 psi)		
Measured Value Resolution	-	3 · 10 ⁻⁵ of nominal measuring range		
Rated conditions		3 0		
Degree of protection (to EN 60529)	IP66 (optional	IP66/IP68), NEMA 4X		
Femperature of medium	` '	• "		
Measuring cell with silicone oil filling	-40 +100 °C (-40 +212 °F) -20 +1	100 °C (-4 +212 °F) with 30 bar measuring cell		
Measuring cell with inert filling liquid	· ·	-20 +100 °C (-4 +212 °F)		
In conjunction with dust explosion protection	-20 +100 °C (-4 +212 °F) -20 +60 °C (-4 +140 °F)			
Ambient conditions				
Ambient temperature				
Transmitter (with 4-wire connection, observe temperature values of supplementary 4-wire electronics)		°C (-40 +185 °F)		
- Display readable	-30 +85	°C (-22 +185 °F)		
Storage temperature	-50 +85	°C (-58 +185 °F)		
Climatic class				
- Condensation		umidity 0 100 % ole, suitable for use in the tropics		
 Electromagnetic Compatibility 				
- Emitted interference and interference immunity	Acc. to IEC 613	326 and NAMUR NE 21		
Design		151 (95 ")		
Weight (without options)		num: ≈ 4.5 kg (≈ 9.9 lb) on casting: ≈ 7.1 kg (≈ 15.6 lb)		
Enclosure material	Low-copper die-cast aluminum, GD-AlSi12	or stainless steel precision casting, mat. no. 1.440		
Vetted parts materials				
Seal diaphragm	tal	loy C276, mat. no. 2.4819, Monel, mat. no. 2.4360, um or gold		
Measuring cell filling		or inert filling liquid ent pressure 100 bar (1450 psi) at 60 °C (140 °F))		
Process connection	Female thread 1/4-18 NPT and flange conr	nection with mounting thread M10 to DIN 19213 or INF to IEC 61518		
	716 20 0			
Material of mounting bracket				
Material of mounting bracket • Steel	Sheet-steel, Mat. N	No. 1.0330, chrome-plated		

Transmitters for general requirements

SITRANS P, DS III for differential pressure a	and flow			
	HART	PROFIBUS PA and FOUNDATION Fieldbus		
Power supply U_{H}		Supplied through bus		
Terminal voltage on transmitter	10.5 45 V DC 10.5 30 V DC in intrinsically-safe mode			
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		
Certificates and approvals				
Classification according to PED 97/23/EC				
PN 32/160 (MAWP 464/2320 psi)		group 1; complies with requirements of article 3, engineering practice)		
PN 420 (MAWP 6092 psi)	Article 3, paragraph 1 (appendix 1); assigned to o	oup 1; complies with basic safety requirements of category III, conformity evaluation module H by the Nord.		
Explosion protection				
• Intrinsic safety "i"	PTB 13 AT	ΓΕΧ 2007 X		
- Marking	Ex II 1/2 G Ex ia/ib	IIC T4/T5/T6 Ga/Gb		
- Permissible ambient temperature	-40 +85 °C (-40 +185 °F) temperature class T4; -40 +70 °C (-40 +158 °F) temperature class T5; -40 +60 °C (-40 +140 °F) temperature class T6			
- Connection	To certified intrinsically-safe circuits with peak val-	FISCO supply unit:		
	ues: $U_{\rm i} = 30 \text{ V}, \ I_{\rm i} = 100 \text{ mA}, \ P_{\rm i} = 750 \text{ mW}; \ R_{\rm i} = 300 \ \Omega$	$U_0 = 17.5 \text{ V}, I_0 = 380 \text{ mA}, P_0 = 5.32 \text{ W}$ Linear barrier: $U_0 = 24 \text{ V}, I_0 = 250 \text{ mA}, P_0 = 1.2 \text{ W}$		
- Effective internal inductance/capacitance	$L_{i} = 0.4 \text{ mH}, C_{i} = 6 \text{ nF}$	$L_{\rm i} = 7 \mu \text{H}, C_{\rm i} = 1.1 \text{nF}$		
• Explosion-proof "d"	PTB 99 A	ATEX 1160		
- Marking	Ex II 1/2 G Ex	d IIC T4/T6 Gb		
- Permissible ambient temperature	-40 +85 °C (-40 +189 °C (-40 +140 +60 °C (-40 +140 °C (-40 °C (-40 +140 °C (-40 °C (-4	5 °F) temperature class T4; 0 °F) temperature class T6		
- Connection	To circuits with values: $U_{\rm H}$ = 10.5 45 V DC	To circuits with values: $U_{H} = 9 \dots 32 \text{ V DC}$		
• Dust explosion protection for zone 20	PTB 01 A	ATEX 2055		
- Marking		%5 T 120 °C P65 T 120 °C		
- 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: $U_i = 30 \text{ V}, I_j = 100 \text{ mA}, R_i = 300 \text{ C}$	$U_0 = 17.5 \text{ V}, I_0 = 380 \text{ mA}, P_0 = 5.32 \text{ W}$ Linear barrier:		
	$P_{\rm i} = 750 \text{ mW}, R_{\rm i} = 300 \Omega$	$U_0 = 24 \text{ V}, I_0 = 250 \text{ mA}, P_0 = 1 \text{ W}$		
·	'	$L_{\rm i} = 7 \mu \text{H}, C_{\rm i} = 1.1 \text{nF}$		
Dust explosion protection for zone 21/22		ATEX 2055		
- Marking		² 65 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		

Transmitters for general requirements

SITRANS P, DS III for differential pressure and flow					
	HART	PROFIBUS PA and FOUNDATION Fieldbus			
Type of protection "n" (zone 2)	PTB 13 ATEX 2007 X				
- Marking	Ex II 2/3 G Ex nA IIC T4/T5/T6 Gc Ex II 2/3 G Ex ic IIC T4/T5/T6 Gc				
- Connection (Ex nA)	$U_{\rm m} = 45 \text{ V}$	$U_{\rm m} = 32 \text{ V}$			
- Connection (Ex ic)	To circuits with values: $U_i = 45 \text{ V}$	FISCO supply unit ic: $U_0 = 17.5 \text{ V}, I_0 = 570 \text{ mA}$			
		Linear barrier: $U_0 = 32 \text{ V}, I_0 = 132 \text{ mA}, P_0 = 1 \text{ W}$			
- Effective internal inductance/capacitance	$L_{i} = 0.4 \text{ mH}, C_{i} = 6 \text{ nF}$	$L_i = 7 \mu H, C_i = 1.1 nF$			
 Explosion protection acc. to FM 	Certificate of Co	ompliance 3008490			
- Identification (XP/DIP) or (IS); (NI)	CL I, DIV 1, GP ABCD T4T6; CL II, DIV 1, GP EFG; CL III; CL I, ZN 0/1 AEx ia IIC T4T6; CL I, DIV 2, GP ABCD T4T6; CL II, DIV 2, GP FG; CL III				
 Explosion protection to CSA 	Certificate of Co	ompliance 1153651			
- Identification (XP/DIP) or (IS)		EFG; CL III; Ex ia IIC T4T6; CL I, DIV 2, GP ABCD DIV 2, GP FG; CL III			

 $^{^{1)}}$ Conversion of temperature error per 28 °C. Valid for temperature range -3 ... +53 °C < (0.064 . r + 0.08) % / 28 °C (50 °F).

Transmitters for general requirements

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

Transducer blocks

two pressures

characteristic with - Square-rooted characteristic for flow measurement - Gradual volume suppression

• Pressure transducer block - Can be calibrated by applying

- Monitoring of sensor limits

- Specification of a container

and implementation point of square-root extraction

- Simulation function for measured pressure value and sensor temperature

2

Yes

Yes

Max. 30 nodes

Parameterizable

Constant value or over parameterizable ramp function

Transmitters for general requirements

SITRANS P DS III for differential pressure and flow

SITRANS P DS II	i for differential pres	Sure	3 6	ШС	4	IIO	VV		
Selection and Order	_		Αı	tic	le	No).		Ī
	th HART pressure trans- al pressure and flow, 64/2320 psi)				·		3		
Click on the Article ration in the PIA Li	e No. for the online configu fe Cycle Portal.	-							
Measuring cell filling	g Measuring cell clean-								
Silicone oil Inert liquid ¹⁾	normal grease-free to cleanliness level 2	>	1 3						
Measuring span (mi	•								
PN 32 (MAWP 464 ps 1 20 mbar ²⁾	•			В					
	(0.4015 8.03 inH ₂ O)			В					
PN 160 (MAWP 2320 1 60 mbar 2.5 250 mbar 6 600 mbar 16 1600 mbar 50 5000 mbar 0.3 30 bar	(0.4015 24.09 inH ₂ O) (1.004 100.4 inH ₂ O) (2.409 240.9 inH ₂ O) (6.424 642.4 inH ₂ O) (20.08 2008 inH ₂ O) (4.35 435 psi)	> 0 > 0 > 0 > 0 > 0		C D E F G					
Wetted parts materi	als								
(stainless steel proce Seal diaphragm	ss flanges) Parts of measuring cell	_							
Stainless steel Hastelloy	Stainless steel Stainless steel	>		A B	3				
Hastelloy Tantalum ³⁾	Hastelloy Tantalum			C					
Monel ³⁾	Monel			Н	1				
Gold ³⁾	Gold			L	1				
Version for diaphragr	n seal ^{4) 5) 6) 7)}			Y					
 Sealing screw opportunity Mounting thread Nounting Nount	NPT with flange connection pate process connection I_{16} -20 UNF to IEC 61518 M10 to DIN 19213 tent requirement) cess flange I_{10}	>			2				
 Mounting thread ⁷ Mounting thread ⁸ (only for replacem 					6 4				
Non-wetted parts m									
Stainless steel Stainless steel	vs Electronics housing Die-cast aluminum Stainless steel precision casting ⁸⁾	>				2			
Version • Standard versions		•					1 2		
tions, documentation (no Order code sele	n, English label inscrip- on in 5 languages on CD ectable)						_		
Explosion protectionNone	n	•					,		
• With ATEX, Type of	protection:								
 "Intrinsic safety (E "Explosion-proof (x ia)"	•					E		
	nd flameproof enclosure"	•					F		
and dust explosio Zone 1D/2D)" ¹⁰⁾¹²	xplosion-proof enclosure n protection (Ex ia+ Ex d + ²⁾	*					F		
	+ Ex ia + Ex d $(ATEX)^{12}$						F		
 With FM + CSA, Typ "Intrinsic Safe und 	pe of protection: Explosion Proof (is + xp)" ⁹	•					ı	١C	

Selection and Ordering data		Article No.		
SITRANS P DS III with HART pressure trans-		7MF4433-		
mitters for differential pressure and flow, PN 32/160 (MAWP 464/2320 psi)				
Electrical connection/cable entry				
 Screwed gland Pg 13.5¹³⁾ 			Α	
 Screwed gland M20 x 1.5 	$\blacktriangleright lack$		В	
 Screwed gland ½-14 NPT 			С	
Han 7D plug (plastic housing) incl. mating connector ¹³⁾¹⁴⁾			D	
• M12 connectors (stainless steel) ¹⁵⁾¹⁶⁾			F	
Display				
Without display			0	
Without visible display (display concealed, setting: mA)	>		1	
 With visible display (setting: mA) 			6	
 with customer-specific display (setting as specified, Order code "Y21" or "Y22" required) 	•		7	

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

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

Included in delivery of the device:

- Brief instructions (Leporello)
- CD-ROM with detailed documentation
- Sealing plug(s) or sealing screw(s) for the process flanges(s)
- 1) For oxygen application, add Order code E10.
- 2) Not suitable for connection of remote seal. Position of the top vent valve in the process flange (see dimensional drawing).
- $^{3)}$ Not in conjunction with max. span 20 and 60 mbar (8.03 und 24.09 inH $_2$ O))
- 4) When the manufacture's certificate (calibration certificate) has to be ordered for transmitters with diaphragm seals according to IEC 60770-2, it is recommended only to order this certificate exclusively with the diaphragm seals. The measuring accuracy of the <u>total</u> combination is certified here.
- 5) If the acceptance test certificate 3.1.is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.
- 6) The diaphragm seal is to be specified with a separate order number and must be included with the tranmitter order number, for example 7MF443.-.Y.-.... und 7MF4900-1...-.B
- 7) The standard measuring cell filling for configurations with remote seals (Y) is silicone oil.
- 8) Not in conjunction with Electrical connection "Screwed gland Pg 13.5" and "Han7D plug".
- 9) Without cable gland, with blanking plug
- ¹⁰⁾With enclosed cable gland Ex ia and blanking plug
- $^{11)}\mbox{Configurations}$ with HAN and M12 connectors are only available in Ex ic.
- ¹²⁾Only in connection with IP65.
- $^{\rm 13)}\mbox{Only}$ in connection with Ex approval A, B or E.
- $^{14)}$ Permissible only for crimp-contact of conductor cross-section 1 mm 2
- $^{15)}\mbox{Only}$ in connection with Ex approval A, B, E or F.
- ¹⁶⁾M12 delivered without cable socket.

Transmitters for general requirements

SITRANS P DS III for differential pressure and flow

Selection and Order	ring data	Article No).
Pressure transmitte	rs for differential pressure		
and flow PN 32/160	(MAWP 464/2320 psi)		
SITRANS P DS III with	n PROFIBUS PA (PA)	7MF443	3 4 -
SITRANS P DS III with	n FOUNDATION Fieldbus (FF)	7MF443	35 -
Click on the Article ration in the PIA L	e No. for the online configu- ife Cycle Portal.		
Measuring cell fillin			
Silicone oil	cleaning normal	1	
Inert liquid ¹⁾	grease-free to	3	
	cleanliness level 2		
Nominal measuring			
PN 32 (MAWP 464 ps 20 mbar ²⁾	(8.03 inH ₂ O)	В	
PN 160 (MAWP 2320			
60 mbar	(24.09 inH ₂ O)	С	
250 mbar	(100.4 inH ₂ O)	D	
600 mbar	(240.9 inH ₂ O)	E	
1600 mbar 5 bar	(642.4 inH ₂ O) (2008 inH ₂ O)	F G	
30 bar	(435 psi)	Н	
Wetted parts materi	als		
(stainless steel proce	ess flanges)		
Seal diaphragm	Parts of measuring cell		
Stainless steel	Stainless steel	A	
Hastelloy	Stainless steel Hastelloy	B	
Hastelloy Tantalum ³⁾	Tantalum	E	
Monel ³⁾	Monel	H	
Gold 3)	Gold	L	
		_	
Version as diaphragr		Y	
Process connection	n seal ^{4) 5) 6) 7)}	Y	
Process connection Female thread 1/4-18	n seal ^{4) 5) 6) 7)} NPT with flange connection	Y	
Process connection Female thread 1/4-18 • Sealing screw oppor	n seal ^{4) 5) 6) 7)} NPT with flange connection osite process connection		
Process connection Female thread 1/4-18 • Sealing screw oppor	n seal ^{4) 5) 6) 7)} NPT with flange connection osite process connection $7/16$ -20 UNF to IEC 61518	2 0	
Process connection Female thread 1/4-18 • Sealing screw oppor - Mounting thread 1/4 (only for replacem	n seal ^{4) 5) 6) 7)} NPT with flange connection osite process connection 7/ ₁₆ -20 UNF to IEC 61518 W10 to DIN 19213 nent requirement)	2	
Process connection Female thread 1/4-18 • Sealing screw oppor - Mounting thread 1/4 - Mounting thread 1/4 - (only for replacen • Venting on side of p	n seal ^{4) 5) 6) 7)} NPT with flange connection osite process connection // ₁₆ -20 UNF to IEC 61518 M10 to DIN 19213 nent requirement) process flanges ²⁾	2	
Process connection Female thread ¼-18 • Sealing screw opport - Mounting thread ¼ - Mounting thread ¼ (only for replacem • Venting on side of ¼ - Mounting thread ¼	NPT with flange connection posite process connection of flam and the flange connection of flange	2 0	
Process connection Female thread 1/4-18 • Sealing screw oppor - Mounting thread 1/4 - Mounting thread 1/4 - (only for replacen • Venting on side of p	n seal ^{4) 5) 6) 7) NPT with flange connection site process connection //₁₆-20 UNF to IEC 61518 M10 to DIN 19213 nent requirement) process flanges²⁾ //₁₆-20 UNF to IEC 61518 M10 to DIN 19213}	2 0	
Process connection Female thread ¼-18 Sealing screw opport Mounting thread ¼ Mounting thread ¼ Only for replacem Venting on side of § Mounting thread ¼ Mounting thread ¼ Only for replacem Non-wetted parts m	NPT with flange connection usite process connection object process connection of flat process connection of flat process flanges flanges flanges flat process flanges	2 0	
Process connection Female thread ¼-18 Sealing screw opport Mounting thread ¼ Mounting thread ¼ Only for replacem Venting on side of µ Mounting thread ¼ Mounting thread ¼ Only for replacem Non-wetted parts m process flange screw	n seal ^{4) 5) 6) 7) NPT with flange connection posite process connection of the process connection of the process connection of the process flanges of the proc}	2 0 6 4	
Process connection Female thread ¼-18 Sealing screw opport Mounting thread ¼ Mounting thread ¼ Only for replacem Venting on side of § Mounting thread ¼ Mounting thread ¼ Only for replacem Non-wetted parts m	NPT with flange connection usite process connection object process connection of flat process connection of flat process flanges flanges flanges flat process flanges	2 0	
Process connection Female thread ¼-18 Sealing screw opport Mounting thread ¼ Mounting thread ¼ Mounting thread ¼ Mounting on side of ¼ Mounting thread ¼ Mounting thread ¼ Mounting thread ¼ Mon-wetted parts m Process flange screw Stainless steel	n seal ^{4) 5) 6) 7)} NPT with flange connection posite process connection 7/ ₁₆ -20 UNF to IEC 61518 W10 to DIN 19213 hent requirement) process flanges ²⁾ 7/ ₁₆ -20 UNF to IEC 61518 W10 to DIN 19213 hent requirement) aterials ys Electronics housing Die-cast aluminum	2 0 6 4	
Process connection Female thread ¼-18 Sealing screw opport Mounting thread ¼ Mon-wetted parts m Process flange screw Stainless steel Stainless steel Version	n seal ^{4) 5) 6) 7) NPT with flange connection site process connection //₁₆-20 UNF to IEC 61518 M10 to DIN 19213 nent requirement) process flanges²⁾ //₁₆-20 UNF to IEC 61518 M10 to DIN 19213 nent requirement) aterials ///// //// ////}	2 0 6 4	
Process connection Female thread 1/4-18 Sealing screw opport Mounting thread 1/4 Mount	n seal ^{4) 5) 6) 7) NPT with flange connection site process connection //₁₆-20 UNF to IEC 61518 M10 to DIN 19213 nent requirement) process flanges²⁾ //₁₆-20 UNF to IEC 61518 M10 to DIN 19213 nent requirement) aterials ///// //// ////}	2 0 6 4	1
Process connection Female thread ¼-18 Sealing screw opport Mounting thread ¼ Mon-wetted parts m Process flange screw Stainless steel Stainless steel Stainless steel Version Standard versions International version	n seal ^{4) 5) 6) 7) NPT with flange connection site process connection //₁₆-20 UNF to IEC 61518 M10 to DIN 19213 nent requirement) process flanges²⁾ //₁₆-20 UNF to IEC 61518 M10 to DIN 19213 nent requirement) aterials ys Electronics housing Die-cast aluminum Stainless steel precision casting n, English label inscriptions,}	2 0 6 4	1 2
Process connection Female thread 1/4-18 Sealing screw opport Mounting thread 1/4 Mount	n seal ^{4) 5) 6) 7) NPT with flange connection site process connection //₁₆-20 UNF to IEC 61518 M10 to DIN 19213 nent requirement) process flanges²⁾ //₁₆-20 UNF to IEC 61518 M10 to DIN 19213 nent requirement) aterials ys Electronics housing Die-cast aluminum Stainless steel precision casting n, English label inscriptions, languages on CD}	2 0 6 4	-
Process connection Female thread ¼-18 Sealing screw opportune Mounting thread ¼ Moun	n seal ^{4) 5) 6) 7) NPT with flange connection site process connection //₁₆-20 UNF to IEC 61518 M10 to DIN 19213 nent requirement) process flanges²⁾ //₁₆-20 UNF to IEC 61518 M10 to DIN 19213 nent requirement) aterials Is Electronics housing Die-cast aluminum Stainless steel precision casting n, English label inscriptions, languages on CD ectable)}	2 0 6 4	2
Process connection Female thread ¼-18 Sealing screw opportune Mounting thread ¼ Moun	n seal 4) 5) 6) 7) NPT with flange connection site process connection // ₁₆ -20 UNF to IEC 61518 M10 to DIN 19213 nent requirement) process flanges ²⁾ // ₁₆ -20 UNF to IEC 61518 M10 to DIN 19213 nent requirement) aterials Is Electronics housing Die-cast aluminum Stainless steel precision casting n, English label inscriptions, languages on CD ectable)	2 0 6 4	-
Process connection Female thread ¼-18 Sealing screw opportune Mounting thread ¼ Moun	n seal 4) 5) 6) 7) NPT with flange connection site process connection // ₁₆ -20 UNF to IEC 61518 M10 to DIN 19213 ment requirement) process flanges ²⁾ // ₁₆ -20 UNF to IEC 61518 M10 to DIN 19213 ment requirement) aterials Is Electronics housing Die-cast aluminum Stainless steel precision casting n, English label inscriptions, languages on CD ectable) n protection:	2 0 6 4	2 A
Process connection Female thread ¼-18 Sealing screw opportune Mounting thread ¼ Mounting thread ¼ Mounting thread ¼ Mounting thread ¼ Mounting on side of ¼ Mounting thread ¼	n seal 4) 5) 6) 7) NPT with flange connection osite process connection // ₁₆ -20 UNF to IEC 61518 M10 to DIN 19213 ment requirement) process flanges ²⁾ // ₁₆ -20 UNF to IEC 61518 M10 to DIN 19213 ment requirement) aterials vs Electronics housing Die-cast aluminum Stainless steel precision casting n, English label inscriptions, languages on CD ectable) n protection: (x ia)"	2 0 6 4	2
Process connection Female thread ¼-18 Sealing screw opporuments Mounting thread ¼ Mo	n seal 4) 5) 6) 7) NPT with flange connection site process connection // ₁₆ -20 UNF to IEC 61518 M10 to DIN 19213 nent requirement) process flanges ²⁾ // ₁₆ -20 UNF to IEC 61518 M10 to DIN 19213 nent requirement) aterials vs Electronics housing Die-cast aluminum Stainless steel precision casting n, English label inscriptions, languages on CD ectable) n protection: ix ia)" Ex d)**8	2 0 6 4	2 A B
Process connection Female thread ¼-18 Sealing screw opportune Mounting thread ¼ Moun	n seal 4) 5) 6) 7) NPT with flange connection site process connection // ₁₆ -20 UNF to IEC 61518 M10 to DIN 19213 nent requirement) process flanges ²⁾ // ₁₆ -20 UNF to IEC 61518 M10 to DIN 19213 nent requirement) aterials vs Electronics housing Die-cast aluminum Stainless steel precision casting n, English label inscriptions, languages on CD ectable) n protection: (x ia)" Ex d) ¹⁸ nd flameproof enclosure"	2 0 6 4	A B D P
Process connection Female thread 1/4-18 Sealing screw opporation Mounting thread 1/4 M	n seal 4) 5) 6) 7) NPT with flange connection site process connection // ₁₆ -20 UNF to IEC 61518 M10 to DIN 19213 nent requirement) process flanges ²⁾ // ₁₆ -20 UNF to IEC 61518 M10 to DIN 19213 nent requirement) aterials vs Electronics housing Die-cast aluminum Stainless steel precision casting n, English label inscriptions, languages on CD ectable) n protection: (x ia)" Ex d)" ⁸) nd flameproof enclosure"	2 0 6 4	A B D P
Process connection Female thread ¼-18 Sealing screw opportune Mounting thread ¼ Moun	n seal 4) 5) 6) 7) NPT with flange connection osite process connection of /1 ₆ -20 UNF to IEC 61518 M10 to DIN 19213 ment requirement) process flanges ²⁾ //1 ₆ -20 UNF to IEC 61518 M10 to DIN 19213 ment requirement) aterials //2 Electronics housing Die-cast aluminum Stainless steel precision casting n, English label inscriptions, languages on CD ectable) n protection: (xi a)" Ex d)" ⁸ od flameproof enclosure" y" 10) kplosion-proof enclosure and	2 0 6 4	A B D P
Process connection Female thread ¼-18 Sealing screw opportune of the Mounting thread ¼ Mounting thread	n seal 4) 5) 6) 7) NPT with flange connection osite process connection osite process connection 7/16-20 UNF to IEC 61518 M10 to DIN 19213 ment requirement) process flanges ²⁾ 7/16-20 UNF to IEC 61518 M10 to DIN 19213 ment requirement) aterials Is Electronics housing Die-cast aluminum Stainless steel precision casting n, English label inscriptions, languages on CD ectable) protection: Ex ia)" Ex d)"8) Ind flameproof enclosure and otection (Ex ia + Ex d + 1) (not for DS III FF)	2 0 6 4	A B D P E R
Process connection Female thread ¼-18 Sealing screw opporation Mounting thread ¼ Mou	NPT with flange connection site process connection osite process connection of /16-20 UNF to IEC 61518 M10 to DIN 19213 ment requirement) process flanges ²⁾ /16-20 UNF to IEC 61518 M10 to DIN 19213 ment requirement) aterials In Electronics housing Die-cast aluminum Stainless steel precision casting The protection: In protecti	2 0 6 4	A B D P E R
Process connection Female thread ¼-18 Sealing screw opporation Mounting thread ¼ Mou	n seal 4) 5) 6) 7) NPT with flange connection site process connection // ₁₆ -20 UNF to IEC 61518 M10 to DIN 19213 ment requirement) process flanges ²⁾ // ₁₆ -20 UNF to IEC 61518 M10 to DIN 19213 ment requirement) aterials Is Electronics housing Die-cast aluminum Stainless steel precision casting n, English label inscriptions, languages on CD ectable) n protection: Ex (a) "8) Ind flameproof enclosure and otection (Ex ia + Ex d + 1)(not for DS III FF) safe (is) H = Ex ia + Ex d (ATEX) 11)	2 0 6 4	A B D P E R

Selection and Ordering data	Article No.
Pressure transmitters for differential pressure and flow PN 32/160 (MAWP 464/2320 psi)	
SITRANS P DS III with PROFIBUS PA (PA)	7 M F 4 4 3 4 -
SITRANS P DS III with FOUNDATION Fieldbus (FF)	7 M F 4 4 3 5 -
Electrical connection/cable entry	
 Screwed gland M20 x 1.5 	В
• Screwed gland ½-14 NPT	С
M12 connectors (stainless steel) ^{12) 13)}	F
Display	
Without display	0
Without visible display	1
(display concealed, setting: bar)	
 With visible display (setting: bar) 	6
With customer-specific display	7
(setting as specified, Order code "Y21" required)	

Included in delivery of the device:

- Brief instructions (Leporello)
- CD-ROM with detailed documentation
- Sealing plug(s) or sealing screw(s) for the process flanges(s)
- 1) For oxygen application, add Order code E10.
- 2) Not suitable for connection of remote seal. Position of the top vent valve in the process flange (see dimensional drawing).
- 3) Not in conjunction with max. span 20 and 60 mbar (8.03 und 24.09 inH₂O))
- 4) When the manufacture's certificate (calibration certificate) has to be ordered for transmitters with diaphragm seals according to IEC 60770-2, it is recommended only to order this certificate exclusively with the diaphragm seals. The measuring accuracy of the total combination is certified here.
- 5) If the acceptance test certificate 3.1.is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.
- 6) The diaphragm seal is to be specified with a separate order number and must be included with the tranmitter order number, for example 7MF443.-.Y.-.... und 7MF4900-1...-.B
- 7) The standard measuring cell filling for configurations with remote seals (Y) is silicone oil.
- 8) Without cable gland, with blanking plug.
- ⁹⁾ With enclosed cable gland Ex ia and blanking plug.
- $^{10)}\mbox{Configurations}$ with HAN and M12 connectors are only available in Ex ic.
- ¹¹⁾Only in connection with IP65.
- $^{12)}\mbox{Only}$ in connection with Ex approval A, B, E or F.
- ¹³⁾M12 delivered without cable socket

Transmitters for general requirements

Selection and Ordering data	Order	code		
Further designs		HART	PA	FF
Add "-Z" to Article No. and specify Order code.				
Pressure transmitter with mounting bracket (1x fixing angle, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer) made of:				
	A01 A02	✓	*	✓
O-rings for process flanges				
(instead of FPM (Viton))	400	,	,	,
PTFE (Teflon)FEP (with silicone core, approved for food)	A20 A21	√	*	1
FFPM (Kalrez, compound 4079), for measured medium temperatures -15 100 °C (5 212 °F)	A22	*	*	*
NBR (Buna N)	A23	✓	✓	✓
plug • Han 7D (motal)	A 20	1		
Han 7D (metal)Han 8D (instead of Han 7D)	A30 A31	✓		
Angled	A32	1		
Han 8D (metal)	A33	✓		
Sealing screws (2 units)	A40	1	1	1
1/4-18 NPT, with valve in mat. of process flanges				
Cable sockets for M12 connectors (metal (CuZn))	A50	✓	✓	✓
Rating plate inscription				
(instead of German)				
9 -	B11	√	1	1
	B12 B13	√	✓	1
· · · · · · · · · · · · · · · · · · ·	B14	1	1	1
	B16	1	1	1
English rating plate	B21	1	1	1
Pressure units in inH ₂ O and/or psi				
Quality inspection certificate (Five-step factory calibration) to IEC 60770-2 ¹⁾	C11	✓	✓	✓
Inspection certificate ²⁾ to EN 10204-3.1	C12	✓	✓	✓
Factory certificate to EN 10204-2.2	C14	✓	✓	✓
Functional safety (SIL2)	C20	✓		
Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration				
Functional safety (PROFIsafe) Certificate and PROFIsafe protocol	C21 ³⁾		✓	
Functional safety (SIL2/3)	C23	1		
Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration				
Device passport Russia	C99	✓	1	1
(For price request please contact the technical support www.siemens.com/automation/support-				
request)				

Selection and Ordering data	Order			
Further designs Add "-Z" to Article No. and specify Order code.		HART	PA	FF
Setting of upper limit of	D05	1		
output signal to 22.0 mA	200			
Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009)	D07	✓	✓	✓
(only together with seal diaphragm made of Hastelloy and stainless steel)				
Degree of protection IP66/IP68 (only for M20 x 1.5 and ½-14 NPT)	D12	✓	✓	✓
Process flange screws made of Monel (max. nominal pressure PN20)	D34	✓	✓	1
Supplied with oval flange set	D37	1	1	1
(2 items), PTFE packings and screws in thread of process flanges	20.			
Capri cable gland 4F CrNi and clamping device (848699 + 810634) included	D59	✓	✓	✓
Use in or on zone 1D/2D	E01	✓	✓	✓
(only together with type of protection "Intrinsic safety" (transmitter 7MF4B Ex ia) "and IP65)				
Overfilling safety device for flammable	E08	1		
and non-flammable liquids (max. PN 32 (MAWP 464 psi), basic device with type of protection "Intrinsic safety (Ex ia)", to WHG and VbF, not together with measuring cell filling "inert liquid")				
Oxygen application	E10	1	1	1
(In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140°F))				
Export approval Korea	E11	1	1	1
CRN approval Canada (Canadian Registration Number)	E22	✓	✓	✓
Dual seal	E24	1	1	1
Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil)	E25 ⁴⁾	✓	✓	✓
(only for transmitter 7MF4				
"Flameproof" explosion protection according to INMETRO (Brazil)	E26 ⁴⁾	✓	✓	✓
(only for transmitter 7MF4	40			
Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil)	E28 ⁴⁾	✓	✓	
(only for transmitter 7MF4P)	E45 ⁴⁾	,	,	,
Ex Approval IEC Ex (Ex ia) (only for transmitter 7MF4B)		•	✓	•
Ex Approval IEC Ex (Ex d) (only for transmitter 7MF4D)	E46 ⁴⁾	√	✓	✓
Explosion-proof "Intrinsic safety" to NEPSI (China)	E55 ⁴⁾	1	✓	✓
(only for transmitter 7MF4B)	4)			
Explosion protection "Explosion-proof" to NEPSI (China) (only for transmitter 7MF4D)	E56 ⁴⁾	•	•	•
Explosion-proof "Zone 2" to NEPSI (China)	E57 ⁴⁾	✓	✓	✓
(only for transmitter 7MF4E)	 (4)		,	
Ex protection "Ex ia", "Ex d" and "Zone 2" to NEPSI (China) (only for transmitter 7MF4R)	E58 ⁴⁾	•	V	√
"Intrinsic safety" and "Explosion-proof"	E70 ⁴⁾	1	1	1
explosion protection acc. to Kosha (Korea) (only for transmitter 7MF4[B, D]Z + E11)				
/				

Transmitters for general requirements

SITRANS P DS III for differential pressure and flow

Selection and Ordering data	Order	code		
Further designs Add "- Z " to Article No. and specify Order code.		HART	PA	FF
Two coats of lacquer on casing and cover (PU on epoxy)	G10	✓	✓	✓
Interchanging of process connection side	H01	✓	✓	✓
Vent on side for gas measurements	H02	✓	✓	✓
Stainless steel process flanges for vertical differential pressure lines (not together with K01, K02 and K04) ⁵⁾	H03	✓	✓	✓
Transient protector 6 kV (lightning protection)	J01	✓	✓	✓
Chambered graphite gasket for process flange	J02	✓	✓	✓
Chambered PTFE graphite gasket	J03	✓	✓	✓
EPDM O-rings for process flange with approval (WRC/WRAS)	J05	✓	✓	✓
Vent valve or blanking plug of process flange welded-in (orientation: on right when viewing the display) ⁶⁾	J08	✓	✓	✓
Vent valve or blanking plug of process flange welded-in (orientation: on left when viewing the display) ⁶⁾	J09	✓	✓	✓
Process flange				
HastelloyMonel	K01 K02	√	√	√
• Stainless steel with PVDF insert max. PN 10 (MAWP 145 psi), max. temperature of medium 90 °C (194 °F) For ½-14 NPT inner process connection on the side in the middle of the process flange, vent valve not possible	K04	✓	✓	•

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

Factory mounting of valve manifolds, see accessories.

Supplementary electronics for 4-wire connection, see accessories.

- ✓ = available
- When the manufacture's certificate (calibration certificate) has to be ordered for transmitters with diaphragm seals according to IEC 60770-2, it is recommended only to order this certificate exclusively with the diaphragm seals. The measuring accuracy of the total combination is certified here.
- 2) If the acceptance test certificate 3.1.is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.
- 3) Profisafe transmitters can only be operated with the S7 F Systems V6.1 configuration software in combination with S7-400H
- 4) Option does not include ATEX approval, but instead includes only the countryspecific approval.
- 5) Not suitable for connection of remote seal.
- 6) 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 (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		✓	√ 1)	
Stainless steel tag plate and entry in device variable (measuring point description) Max. 16 characters, specify in plain text: Y15:	Y15	✓	✓	✓
Measuring point text (entry in device variable) Max. 27 char., specify in plain text: Y16:	Y16	✓	✓	✓
Entry of HART address (TAG) Max. 8 char., specify in plain text: Y17:	Y17	1		
Setting of pressure indicator 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 ^{*)} , inH ₂ O ^{*)} , ftH ₂ O ^{*)} , mmHG, inHG, psi, Pa, kPa, MPa, g/cm ² , kg/cm ² , Torr, ATM or % *) ref. temperature 20 °C	Y21	✓	✓	✓
Setting of pressure indicator in non-pressure units ²) Specify in plain text: Y22: up to I/min, m³/h, m, USgpm, (specification of measuring range in pressure units "Y01" or "Y02" is essential, unit with max. 5 characters)	Y22 ³⁾ + 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	✓	✓

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

Factory mounting of valve manifolds, see accessories.

Only Y01, Y15, Y16, Y17, Y21, Y22, Y25 und 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.
- 3) Not in conjunction with over-filling safety device for flammable and non-flammable liquids (Order code "E08")

Transmitters for general requirements

SITRANS P DS III for differential pressure and flow

SITRANS P DS III with	g data	Artic	10 1	10.	
SITRANS P DS III with HART pressure trans-		7 M F	4 5	3	3 -
mitters for differential PN 420 (MAWP 6092 p		100			
	•				
ration in the PIA Life	No. for the online configu- Cycle Portal.				
Measuring cell filling	Measuring cell		Ħ	ı	П
0.11	cleaning				
Silicone oil	normal	1			
Measuring span (min.	-				
2.5 250 mbar 6 600 mbar	(1.004 100.4 inH ₂ O) (2.409 240.9 inH ₂ O)	D			
6 600 mbar	(6.424 642.4 inH ₂ O)	E F			
50 5000 mbar	(20.08 2008 inH ₂ O)	G			
0.3 30 bar	(4.35 435 psi)	Н			
Wetted parts materials	. ,	- 11			
(stainless steel process					
Seal diaphragm	Parts of measuring cell				
Stainless steel	Stainless steel	Δ			
Hastelloy	Stainless steel	В	3		
Gold ¹⁾	Gold (2) (3) (4) (5)	L			
Ausführung als Membra	andruckmittler 2) 3) 4) 3)	Y			
Process connection	T '11 (1				
	T with flange connection				
 Sealing screw opposit Mounting thread ⁷/₄ 	te process connection ₆ -20 UNF to IEC 61518		3		
 Mounting thread 716 Mounting thread M1 			1		
(only for replacemen	nt requirement)				
 Venting on side of pro 	ocess flanges, location of				
vent valve at top of pro sional drawing)	ocess flanges (see dimen-				
	6-20 UNF to IEC 61518		7		
 Mounting thread M1 			5		
(only for replacemen					
Non-wetted parts mate					
process flange screws	Electronics housing				
Stainless steel	Die-cast aluminum		2		
Stainless steel	Stainless steel precision casting ⁶⁾		3		
	casting				
Vareion					
Version ■ Standard versions					1
Standard versionsInternational version, I	English label inscriptions,				1
 Standard versions International version, I documentation in 5 la 	nguages on CD				
Standard versions International version, I documentation in 5 la (no Order code selections)	nguages on CD				
 Standard versions International version, documentation in 5 la (no Order code select Explosion protection 	nguages on CD				2
 Standard versions International version, documentation in 5 la (no Order code select Explosion protection None 	nguages on CD table)				
 Standard versions International version, I documentation in 5 later (no Order code select Explosion protection None With ATEX, Type of protection 	nguages on CD table)				2
 Standard versions International version, documentation in 5 la (no Order code select Explosion protection None 	nguages on CD table) otection:				2 A B
 Standard versions International version, I documentation in 5 lat (no Order code select Explosion protection None With ATEX, Type of protection "Intrinsic safety (Ex in the context of the context of	nguages on CD table) otection: (a)" (cd)" ⁷⁾				2 A
 Standard versions International version, I documentation in 5 la (no Order code select Explosion protection None With ATEX, Type of property (Ex in the image) "Explosion-proof (Ex in the image) "Intrinsic safety and (Ex ia + Ex d)" 	nguages on CD table) otection: (a)" (d)" ⁷⁾ flameproof enclosure"				A B D
• Standard versions • International version, I documentation in 5 la (no Order code select Explosion protection • None • With ATEX, Type of proper interinsic safety (Ex in the image) in the image is a select sel	otection: (a)" flameproof enclosure"				A B D P
Standard versions International version, documentation in 5 la (no Order code select Explosion protection None With ATEX, Type of promoter in the select i	otection: (a)" flameproof enclosure" osion-proof enclosure and				A B D P
Standard versions International version, documentation in 5 la (no Order code select Explosion protection None With ATEX, Type of promoter in the select i	otection: (a)" flameproof enclosure" osion-proof enclosure and				A B D P
Standard versions International version, I documentation in 5 la (no Order code select Explosion protection None With ATEX, Type of primite a safety (Eximite in a safety)) Fixed in a safety (Eximite in a safety) Fixed in a safety (Eximite in a safety) Standard Version (Eximit	otection: a)" flameproof enclosure" osion-proof enclosure and ection (Ex ia+ Ex d + fe (is)				A B D P
Standard versions International version, I documentation in 5 la (no Order code select Explosion protection None With ATEX, Type of primite a "Explosion-proof (Eximite a "Explosion-proof (Eximite a "Ex nA/ic (Zone 2)"8) "Intrinsic safety and (Eximite a "Ex nA/ic (Zone 2)"9) "Intrinsic safety, explodust explosion prote Zone 1D/2D)"8) FM + CSA intrinsic sa FM + CSA (is + ep) +	otection: a)" flameproof enclosure" osion-proof enclosure and ection (Ex ia+ Ex d + fe (is) Ex ia + Ex d (ATEX) ¹⁰⁾				A B D P E R
Standard versions International version, I documentation in 5 la (no Order code select Explosion protection None With ATEX, Type of production in 1 la management in	otection: (a)" flameproof enclosure" osion-proof enclosure and ection (Ex ia + Ex d + fe (is) Ex ia + Ex d (ATEX) ¹⁰⁾ of protection:	-			A B D P E R
Standard versions International version, I documentation in 5 la (no Order code select Explosion protection None With ATEX, Type of production in 1 la management in	otection: (a)" flameproof enclosure" osion-proof enclosure and ection (Ex ia + Ex d + fe (is) Ex ia + Ex d (ATEX) ¹⁰⁾ of protection:	_			A B D P E R
Standard versions International version, I documentation in 5 la (no Order code select Explosion protection None With ATEX, Type of primiter and the provided in the provided	otection: a)" (a)" flameproof enclosure" osion-proof enclosure and ection (Ex ia + Ex d + fe (is) Ex ia + Ex d (ATEX) ¹⁰⁾ of protection: explosion-proof	-			A B D P E R
Standard versions International version, I documentation in 5 la (no Order code select Explosion protection None With ATEX, Type of produce in the internation in 5 la (no Order code select Explosion protection The intrinsic safety (Ex i but in the internation	otection: (a)" flameproof enclosure" osion-proof enclosure and ection (Ex ia + Ex d + fe (is) Ex ia + Ex d (ATEX) ¹⁰⁾ of protection: explosion-proof 360 cable entry	_			A B D P E R F S
Standard versions International version, I documentation in 5 la (no Order code select Explosion protection None With ATEX, Type of primiter and the provided in the provided	otection: (a)" (a)" flameproof enclosure" osion-proof enclosure and ection (Ex ia + Ex d + fe (is) Ex ia + Ex d (ATEX) ¹⁰⁾ of protection: explosion-proof (360 cable entry (5 ¹¹⁾	-			A B D P E R
• Standard versions • International version, I documentation in 5 lat (no Order code select Explosion protection • None • With ATEX, Type of produce in the internation in 5 lat (no Order code select Explosion protection) • With ATEX, Type of produce in internation in internat	otection: (a)" flameproof enclosure" osion-proof enclosure and ection (Ex ia + Ex d + fe (is) Ex ia + Ex d (ATEX) ¹⁰⁾ of protection: explosion-proof (360 cable entry (.5 ¹¹⁾ 1.5 NPT	-			A B D P E R F S NC
Standard versions International version, I documentation in 5 la (no Order code select Explosion protection None With ATEX, Type of problem in the internation in 5 la (no Order code select Explosion protection) Intrinsic safety (Ex i - "Explosion-proof (Ex - "Intrinsic safety and (Ex ia + Ex d)"8) - "Ex nA/ic (Zone 2)"9) - "Intrinsic safety, and dust explosion protection protection in the intrinsic safety explosion protection in the intrinsic safety and (is + xp)" 7), max PN Electrical connection/ Screwed gland Pg 13 Screwed gland M20x*	otection: (a)" flameproof enclosure" osion-proof enclosure and ection (Ex ia + Ex d + fe (is) Ex ia + Ex d (ATEX) ¹⁰⁾ of protection: explosion-proof (360 cable entry (.5 ¹¹⁾ 1.5 NPT				A B D P E R S NC

Selection and Ordering data	Article No.
SITRANS P DS III with HART pressure trans-	7MF4533-
mitters for differential pressure and flow, PN 420 (MAWP 6092 psi)	
Display	
Without display	0
Without visible display	1
(display concealed, setting: mA)	
 With visible display (setting: mA) 	6
 with customer-specific display (setting as specified, Order code "Y21" or "Y22" required) 	7

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

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

- $^{\rm 1)}$ Not in conjunction with max. span 600 mbar (240.9 in $\rm H_2O)$
- When the manufacture's certificate (calibration certificate) has to be ordered for transmitters with diaphragm seals according to IEC 60770-2, it is recommended only to order this certificate exclusively with the diaphragm seals. The measuring accuracy of the total combination is certified here.
- 3) If the acceptance test certificate 3.1.is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.
- 4) The diaphragm seal is to be specified with a separate order number and must be included with the tranmitter order number, for example 7MF453.-.Y..... und 7MF4900-1....-B
- 5) The standard measuring cell filling for configurations with remote seals (Y) is silicone oil.
- 6) Not in conjunction with Electrical connection "Screwed gland Pg 13.5" and "Han7D plug".
- 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 only available in Ex ic.
- ¹⁰⁾Only in connection with IP65.
- ¹¹⁾Only in connection with Ex approval A, B or E.
- $^{12)}$ Permissible only for crimp-contact of conductor cross-section 1 mm 2
- ¹³⁾Only in connection with Ex approval A, B, E or F.
- ¹⁴⁾M12 delivered without cable socket.

Transmitters for general requirements

SITRANS P DS III for differential pressure and flow

Selection and Orde				NI	Ω	
Dracelira tranomitta		Arti	cle	IN	<u>. </u>	
and flow, PN 420 (N	ers for differential pressure MAWP 6092 psi)					
SITRANS P DS III wit	th PROFIBUS PA (PA)	7 M	F 4	5	34-	
SITRANS P DS III with FOUNDATION Fieldbus (FF)			F 4	5	35-	
	le No. for the online configu- Life Cycle Portal.	1=	ľ		Т	-
Nominal measuring	g range					
250 mbar	(100.4 inH ₂ O)	D				
600 mbar	(240.9 inH ₂ O)	E				
1600 mbar	(642.4 inH ₂ O)	F				
5 bar	(2008 inH ₂ O)	G				
30 bar	(435 psi)	Н				
Wetted parts mater						
(stainless steel proc	ess flanges)					
Seal diaphragm	Parts of measuring cell					
Stainless steel	Stainless steel		Α			
Hastelloy	Stainless steel		В			
Gold 1)	Gold		L			
Ausführung als Mem	nbrandruckmittler ^{2) 3) 4) 5)}		Y			
Process connection	n	-				
	NPT with flange connection					
	osite process connection					
	⁷ / ₁₆ -20 UNF to IEC 61518		3			
- Mounting thread			1			
	ment requirement)					
 Venting on side of 	process flanges, location of					
vent valve at top of	f process flanges (see dimen-					
vent valve at top of sional drawing).						
vent valve at top of sional drawing). - Mounting thread	⁷ / ₁₆ -20 UNF to IEC 61518		7			
vent valve at top of sional drawing). - Mounting thread - Mounting thread	⁷ / ₁₆ -20 UNF to IEC 61518 M12 to DIN 19213		7 5			
vent valve at top of sional drawing). - Mounting thread (only for replacer	⁷ / ₁₆ -20 UNF to IEC 61518 M12 to DIN 19213 ment requirement)					
vent valve at top of sional drawing). - Mounting thread - Mounting thread (only for replacer	7/ ₁₆ -20 UNF to IEC 61518 M12 to DIN 19213 ment requirement)					
vent valve at top of sional drawing). - Mounting thread - Mounting thread (only for replacer Non-wetted parts n Process flange screen	7/ ₁₆ -20 UNF to IEC 61518 M12 to DIN 19213 ment requirement) naterials ws Electronics housing	-				
vent valve at top of sional drawing). - Mounting thread - Mounting thread (only for replacer Non-wetted parts in Process flange screen Stainless steel	7/ ₁₆ -20 UNF to IEC 61518 M12 to DIN 19213 ment requirement) naterials ws Electronics housing Die-cast aluminum	-		2		
vent valve at top of sional drawing). - Mounting thread - Mounting thread (only for replacer Non-wetted parts n Process flange screen	7/ ₁₆ -20 UNF to IEC 61518 M12 to DIN 19213 ment requirement) naterials ws Electronics housing Die-cast aluminum Stainless steel precision	_				
vent valve at top of sional drawing). - Mounting thread - Mounting thread (only for replacer Non-wetted parts in Process flange screen Stainless steel Stainless steel	7/ ₁₆ -20 UNF to IEC 61518 M12 to DIN 19213 ment requirement) naterials ws Electronics housing Die-cast aluminum			2		
vent valve at top of sional drawing). - Mounting thread - Mounting thread (only for replacer Non-wetted parts in Process flange screen Stainless steel Stainless steel	7/ ₁₆ -20 UNF to IEC 61518 M12 to DIN 19213 ment requirement) naterials ws Electronics housing Die-cast aluminum Stainless steel precision			2		
vent valve at top of sional drawing). - Mounting thread - Mounting thread (only for replacer Non-wetted parts in Process flange screen Stainless steel Stainless steel Version • Standard versions	7/ ₁₆ -20 UNF to IEC 61518 M12 to DIN 19213 ment requirement) naterials ws Electronics housing Die-cast aluminum Stainless steel precision casting	-		2	1	
vent valve at top of sional drawing). - Mounting thread - Mounting thread (only for replacer Non-wetted parts in Process flange screen Stainless steel Stainless steel Version • Standard versions • International version	7/ ₁₆ -20 UNF to IEC 61518 M12 to DIN 19213 ment requirement) naterials ws Electronics housing Die-cast aluminum Stainless steel precision casting on, English label inscriptions,	-		2	1 2	
vent valve at top of sional drawing). - Mounting thread - Mounting thread (only for replacer Non-wetted parts in Process flange screen Stainless steel Stainless steel Version • Standard versions • International version	7/ ₁₆ -20 UNF to IEC 61518 M12 to DIN 19213 ment requirement) naterials ws Electronics housing Die-cast aluminum Stainless steel precision casting on, English label inscriptions, 5 languages on CD			2		
vent valve at top of sional drawing). - Mounting thread - Mounting thread (only for replacer Non-wetted parts in Process flange screen Stainless steel Stainless steel Version • Standard versions • International version documentation in Standard code see	7/ ₁₆ -20 UNF to IEC 61518 M12 to DIN 19213 ment requirement) naterials ws Electronics housing Die-cast aluminum Stainless steel precision casting on, English label inscriptions, 5 languages on CD lectable)	-		2		
vent valve at top of sional drawing). - Mounting thread - Mounting thread (only for replacer Non-wetted parts in Process flange screen Stainless steel Stainless steel Version • Standard versions • International version documentation in Standard code see Explosion protections	7/ ₁₆ -20 UNF to IEC 61518 M12 to DIN 19213 ment requirement) naterials ws Electronics housing Die-cast aluminum Stainless steel precision casting on, English label inscriptions, 5 languages on CD lectable)	-		2	2	
vent valve at top of sional drawing). - Mounting thread - Mounting thread (only for replacer Non-wetted parts in Process flange screen Stainless steel Stainless steel Version • Standard versions • International version documentation in Standard code see Explosion protection • None	7/ ₁₆ -20 UNF to IEC 61518 M12 to DIN 19213 ment requirement) naterials ws Electronics housing Die-cast aluminum Stainless steel precision casting on, English label inscriptions, 5 languages on CD lectable)	-		2		
vent valve at top of sional drawing). - Mounting thread - Mounting thread (only for replacer Non-wetted parts in Process flange screen Stainless steel Stainless steel Version • Standard versions • International version documentation in Section (no Order code sees) Explosion protection • None • With ATEX, Type of	7/ ₁₆ -20 UNF to IEC 61518 M12 to DIN 19213 ment requirement) naterials ws Electronics housing Die-cast aluminum Stainless steel precision casting on, English label inscriptions, 5 languages on CD lectable) on	-		2	2	
vent valve at top of sional drawing). - Mounting thread - Mounting thread (only for replacer Non-wetted parts in Process flange screet Stainless steel Stainless steel Version • Standard versions • International version documentation in form of the commentation of the commentati	7/ ₁₆ -20 UNF to IEC 61518 M12 to DIN 19213 ment requirement) naterials ws Electronics housing Die-cast aluminum Stainless steel precision casting on, English label inscriptions, 5 languages on CD lectable) on f protection: Ex ia)"	-		2	2 A	
vent valve at top of sional drawing). - Mounting thread - Mounting thread (only for replacer Non-wetted parts in Process flange screen Stainless steel Stai	7/ ₁₆ -20 UNF to IEC 61518 M12 to DIN 19213 ment requirement) naterials ws Electronics housing Die-cast aluminum Stainless steel precision casting on, English label inscriptions, 5 languages on CD lectable) on f protection: Ex ia)" (Ex d)"6)	-		2	2 A B	
vent valve at top of sional drawing). - Mounting thread - Mounting thread (only for replacer Non-wetted parts in Process flange screen Stainless steel Stai	7/ ₁₆ -20 UNF to IEC 61518 M12 to DIN 19213 ment requirement) naterials ws Electronics housing Die-cast aluminum Stainless steel precision casting on, English label inscriptions, 5 languages on CD lectable) on f protection: Ex ia)" (Ex d)"6) ind flameproof enclosure"	-		2	A B D	
vent valve at top of sional drawing). - Mounting thread - Mounting thread (only for replacer Non-wetted parts in Process flange screen Stainless steel Stai	7/ ₁₆ -20 UNF to IEC 61518 M12 to DIN 19213 ment requirement) naterials ws Electronics housing Die-cast aluminum Stainless steel precision casting on, English label inscriptions, 5 languages on CD lectable) on f protection: Ex ia)" (Ex d)"6) ind flameproof enclosure"	-		2	A B D	
vent valve at top of sional drawing). - Mounting thread - Mounting thread (only for replacer Non-wetted parts in Process flange screet Stainless steel Stainless steel Stainless steel Version • Standard versions • International version documentation in second course for the commentation of the commentation in second course for the course for	7/ ₁₆ -20 UNF to IEC 61518 M12 to DIN 19213 ment requirement) naterials ws Electronics housing Die-cast aluminum Stainless steel precision casting on, English label inscriptions, 5 languages on CD lectable) on f protection: Ex ia)" (Ex d)"6) and flameproof enclosure" (2)" 8) explosion-proof enclosure and	-		2	A B D P	
vent valve at top of sional drawing). - Mounting thread - Mounting thread (only for replacer Non-wetted parts in Process flange screet Stainless steel Stainless steel Stainless steel Version • Standard versions • International version documentation in second course for the commentation of the commentation in second course for the course for	7/ ₁₆ -20 UNF to IEC 61518 M12 to DIN 19213 ment requirement) naterials ws Electronics housing Die-cast aluminum Stainless steel precision casting on, English label inscriptions, 5 languages on CD lectable) on f protection: Ex ia)" (Ex d)"6) and flameproof enclosure" (2)" 8) explosion-proof enclosure and	-		2	A B D P	
vent valve at top of sional drawing). - Mounting thread - Mounting thread (only for replacer Non-wetted parts in Process flange screet Stainless steel Stainless steel Stainless steel Version • Standard versions • International version documentation in 6 (no Order code se Explosion protection • None • With ATEX, Type of "Explosion-proof a"Intrinsic safety (I are intrinsic safety (I are intrinsic safety, endited in the intrinsic safety en	7/ ₁₆ -20 UNF to IEC 61518 M12 to DIN 19213 ment requirement) naterials ws Electronics housing Die-cast aluminum Stainless steel precision casting on, English label inscriptions, 5 languages on CD lectable) on if protection: Ex ia)" (Ex d)"6) and flameproof enclosure" 2)" 8) explosion-proof enclosure and rotection (Ex ia + Ex d + 0 (not for DS III FF)	-		2	A B D P E R	
vent valve at top of sional drawing). - Mounting thread - Mounting thread (only for replacer Non-wetted parts in Process flange screet Stainless steel Stainless steel Stainless steel Version • Standard versions • International versiod documentation in Section (no Order code sees) Explosion protection • None • With ATEX, Type of a "Intrinsic safety (I "Explosion-proof "Intrinsic safety (I "Ex nA/ic (Zone 2 "Intrinsic safety, a (Ex ia + Ex d)") • "Ex nA/ic (Zone 2 "Intrinsic safety, a dust explosion produst explosion production in the production of the	7/ ₁₆ -20 UNF to IEC 61518 M12 to DIN 19213 ment requirement) naterials ws Electronics housing Die-cast aluminum Stainless steel precision casting on, English label inscriptions, 5 languages on CD lectable) on f protection: Ex ia)" (Ex d)"6) and flameproof enclosure" 2)" 8) explosion-proof enclosure and rotection (Ex ia + Ex d + (not for DS III FF) e safe (is)	-		2	A B D P E R	
vent valve at top of sional drawing). - Mounting thread conly for replacer Non-wetted parts in Process flange screet Stainless steel Stainless steel Stainless steel Version • Standard versions • International versiod documentation in Section (no Order code sees) Explosion protection • None • With ATEX, Type of the "Explosion-proof" intrinsic safety (I the safety are the safety of the safety are the safety of the safet	7/ ₁₆ -20 UNF to IEC 61518 M12 to DIN 19213 ment requirement) naterials ws Electronics housing Die-cast aluminum Stainless steel precision casting on, English label inscriptions, 5 languages on CD lectable) on f protection: Ex ia)" (Ex d)"6) and flameproof enclosure" 2)" 8) explosion-proof enclosure and rotection (Ex ia + Ex d + 0 (not for DS III FF) e safe (is) 0) + Ex ia + Ex d (ATEX)9)	-		2	A B D P E R	
vent valve at top of sional drawing). - Mounting thread conly for replacer Non-wetted parts in Process flange screet Stainless steel Stainle	7/ ₁₆ -20 UNF to IEC 61518 M12 to DIN 19213 ment requirement) naterials ws Electronics housing Die-cast aluminum Stainless steel precision casting on, English label inscriptions, 5 languages on CD lectable) on f protection: Ex ia)" (Ex d)"6) and flameproof enclosure" 2)" 8) explosion-proof enclosure and rotection (Ex ia + Ex d + 2) (not for DS III FF) e safe (is) b) + Ex ia + Ex d (ATEX) ⁹⁾ repe of protection:	_		2	A B D P E R R	
vent valve at top of sional drawing). - Mounting thread - Mounting thread (only for replacer Non-wetted parts in Process flange screen Stainless steel Stain	7/ ₁₆ -20 UNF to IEC 61518 M12 to DIN 19213 ment requirement) naterials ws Electronics housing Die-cast aluminum Stainless steel precision casting on, English label inscriptions, 5 languages on CD lectable) on f protection: Ex ia)" (Ex d)"6) ind flameproof enclosure" 2)" 8) explosion-proof enclosure and rotection (Ex ia + Ex d + 1) (not for DS III FF) is safe (is) i) + Ex ia + Ex d (ATEX) ⁹⁾ rpe of protection: and explosion-proof	-		2	A B D P E R R	
vent valve at top of sional drawing). - Mounting thread - Mounting thread (only for replacer Non-wetted parts in Process flange screet Stainless steel Stainless steel Stainless steel Version • Standard versions • International versic documentation in Standard version of the compart o	7/ ₁₆ -20 UNF to IEC 61518 M12 to DIN 19213 ment requirement) naterials ws Electronics housing Die-cast aluminum Stainless steel precision casting on, English label inscriptions, 5 languages on CD lectable) on f protection: Ex ia)" (Ex d)"6) and flameproof enclosure" 2)" 8) explosion-proof enclosure and rotection (Ex ia + Ex d + 2) (not for DS III FF) e safe (is) a) + Ex ia + Ex d (ATEX) ⁹⁾ are of protection: and explosion-proof PN 360			2	A B D P E R R	
vent valve at top of sional drawing). - Mounting thread - Mounting thread (only for replacer Non-wetted parts in Process flange screet Stainless steel Stainless steel Stainless steel Stainless steel Version • Standard versions • International versic documentation in Standard version of the commentation of the commentation of the commentation of the commentation in Standard version of the commentation of the commentati	7/ ₁₆ -20 UNF to IEC 61518 M12 to DIN 19213 ment requirement) naterials ws Electronics housing Die-cast aluminum Stainless steel precision casting on, English label inscriptions, folianguages on CD lectable) on f protection: Ex ia)" (Ex d)"6) Ind flameproof enclosure" 2)" 8) explosion-proof enclosure and rotection (Ex ia + Ex d + 0 (not for DS III FF) It safe (is) 0) + Ex ia + Ex d (ATEX)9) If proof protection: Ind explosion-proof PN 360 on/cable entry	-		2	A B D P E R R	C
vent valve at top of sional drawing). - Mounting thread - Mounting thread (only for replacer Non-wetted parts in Process flange screet Stainless steel Stainless steel Stainless steel Version • Standard versions • International versic documentation in Standard version of the compart o	7/ ₁₆ -20 UNF to IEC 61518 M12 to DIN 19213 ment requirement) naterials ws Electronics housing Die-cast aluminum Stainless steel precision casting on, English label inscriptions, 5 languages on CD lectable) on f protection: Ex ia)" (Ex d)"6) Ind flameproof enclosure" 2)" 8) explosion-proof enclosure and rotection (Ex ia + Ex d + (not for DS III FF) Is safe (is) 1) + Ex ia + Ex d (ATEX)9) Ind explosion-proof PN 360 on/cable entry 20 x 1.5			2	A B D P E R R	

Selection and Ordering data	Article No.
Pressure transmitters for differential pressure and flow, PN 420 (MAWP 6092 psi)	
SITRANS P DS III with PROFIBUS PA (PA)	7 M F 4 5 3 4 -
SITRANS P DS III with FOUNDATION Fieldbus (FF)	7 M F 4 5 3 5 -
	1====-
Display	
Without (display hidden)	0
 Without visible display 	1
(display concealed, setting: bar)	
 With visible display (setting: bar) 	6
 With customer-specific display (setting as 	7
specified. Order code "Y21" required)	

Included in delivery of the device:

- Brief instructions (Leporello)
 CD-ROM with detailed documentation
- Sealing plug(s) or sealing screw(s) for the process flanges(s)
- 1) Not in conjunction with max. span 600 mbar (240.9 inH₂O)
- 2) When the manufacture's certificate (calibration certificate) has to be ordered for transmitters with diaphragm seals according to IEC 60770-2, it is recommended only to order this certificate exclusively with the diaphragm seals. The measuring accuracy of the total combination is certified
- 3) If the acceptance test certificate 3.1.is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.
- 4) The diaphragm seal is to be specified with a separate order number and must be included with the tranmitter order number, for example 7MF453.-..Y..-... und 7MF4900-1....-.B
- 5) The standard measuring cell filling for configurations with remote seals (Y) is silicone oil.
- 6) Without cable gland, with blanking plug.
- 7) With enclosed cable gland Ex ia and blanking plug.
- 8) Configurations with HAN and M12 connectors are only available in Ex ic.
- 9) Only in connection with IP65.
- $^{10)}$ Only in connection with Ex approval A, B, E or F.
- ¹¹⁾M12 delivered without cable socket

Transmitters for general requirements

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.				
Pressure transmitter with mounting				
bracket (1x fixing angle, 2 x nut, 2 x U-				
washer or 1 x bracket, 2 x nut, 2 x U-				
washer) made of:				
• Steel	A01	✓	✓	✓
 Stainless steel 	A02	✓	✓	✓
O-rings for process flanges				
(instead of FPM (Viton))				
PTFE (Teflon)	A20	✓	✓	✓
 FEP (with silicone core, approved for food) 	A21	✓	✓	✓
• FFPM (Kalrez, compound 4079),	A22	✓	✓	1
for measured medium temperatures				
-15 100 °C (5 212 °F)				
• NBR (Buna N)	A23	✓	✓	~
Plug				
Han 7D (metal)	A30	✓		
 Han 8D (instead of Han 7D) 	A31	✓		
Angled	A32	✓		
Han 8D (metal)	A33	✓		
Sealing screws (2 units)	A40	1	1	1
1/4-18 NPT, with valve in mat. of process flanges	A40	•	•	•
,				
Cable sockets for M12 connection	A50	✓	✓	✓
(metal (CuZn))				
Rating plate inscription (instead of German)				
English	B11	✓	✓	✓
• French	B12	✓	✓	✓
Spanish	B13	✓	✓	✓
• Italian	B14	✓	✓	✓
 Cyrillic (russian) 	B16	✓	✓	✓
English rating plate	B21	1	✓	1
Pressure units in inH ₂ O and/or psi				
Quality inspection certificate (Five-step factory calibration) to IEC 60770-2	C11	1	✓	✓
Inspection certificate	C12	1	1	1
Acc. to EN 10204-3.1	012	•	•	•
			,	
Factory certificate	C14	~	✓	✓
Acc. to EN 10204-2.2				
Functional safety (SIL2)	C20	✓		
Devices suitable for use according to				
IEC 61508 and IEC 61511. Includes SIL conformity declaration				
•	0041)		.,	
Functional safety (PROFIsafe) Certificate and PROFIsafe protocol	C21 ¹⁾		V	
·	000	,		
Functional safety (SIL2/3) Devices suitable for use according to	C23	V		
IEC 61508 and IEC 61511. Includes SIL con-				
formity declaration				
Device passport Russia (For price request	C99	1	1	1
please contact the technical support	Caa	•	•	v
www.siemens.com/automation/support-				
request)				
Setting of upper limit of output signal to	D05	✓		
22.0 mA				
Manufacturer's declaration acc. to NACE	D07	✓	✓	✓
(MR 0103-2012 and MR 0175-2009)				
(only together with seal diaphragm made of				
Hastelloy and stainless steel)				
Degree of protection IP66/IP68	D12	✓	✓	✓
(only for M20 x 1.5 and ½-14 NPT)				
Nom. press. rating PN 500 (MAWP 7250 psi)	D56	✓		
(Only for measuring cell 600 mbar 30 bar				
$(240 \text{ inH}_2\text{O} \dots 435 \text{ psi})$, SIL- und Ex-options not possible)) ²⁾				
Capri cable gland 4F CrNi and clamping	D59	✓	✓	✓
device (848699 + 810634) included				

Selection and Ordering data	Order	code		
Further designs	Oraci	HART	DΛ	FF
Add "-Z" to Article No. and specify Order code.		IIAIII	'^	• •
Use in or on zone 1D/2D	E01	./	./	./
(only together with type of protection "Intrinsic safety" (transmitter 7MF4B Ex ia) and IP65)	EUI	·	•	•
Export approval Korea	E11	1	1	1
Dual seal	E24	1	·	1
Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil)		<i>*</i>	✓	✓
(only for transmitter 7MF4B)				
"Flameproof" explosion protection according to INMETRO (Brazil)	E26 ³⁾	✓	✓	✓
(only for transmitter 7MF4D) Explosion-proof "Intrinsic safety" (Ex ia +	E28 ³⁾	1	✓	
Ex d) to INMETRO (Brazil) (only for transmitter 7MF4P)				
Ex Approval IEC Ex (Ex ia) (only for transmitter 7MF4B)	E45 ³⁾	✓	✓	✓
Ex Approval IEC Ex (Ex d) (only for transmitter 7MF4D)	E46 ³⁾	✓	✓	✓
Explosion-proof "Intrinsic safety" to NEPSI (China)	E55 ³⁾	✓	✓	✓
(only for transmitter 7MF4B)				
Ex prot. "Explosion-proof" to NEPSI (China) (only for transmitter 7MF4	E56 ³⁾	✓	✓	1
Explosion-proof "Zone 2" to NEPSI (China) (only for transmitter 7MF4	E57 ³⁾	✓	✓	✓
Ex protection "Ex ia", "Ex d" and "Zone 2" to NEPSI (China)	E58 ³⁾	✓	✓	✓
(only for transmitter 7MF4R)				
"Intrinsic safety" and "Explosion-proof" explosion protection acc. to Kosha (Korea)	E70 ³⁾	✓	✓	✓
(only for transmitter 7MF4[B, D]Z + E11)				
Two coats of lacquer on casing and cover (PU on epoxy)	G10	✓	✓	✓
Interchanging of process connection side	H01	✓	✓	✓
Stainless steel process flanges for vertical differential pressure lines	H03	✓	✓	✓
Transient protector 6 kV (lightning protection)	J01	✓	✓	1
Chambered graphite gasket for process flange	J02	✓	✓	✓
EPDM O-rings for process flange with approval (WRC/WRAS)	J05	✓		
Vent valve or blanking plug of process flange welded-in (orientation: on right when viewing the display) ⁴⁾	J08	✓	✓	✓
Vent valve or blanking plug of process flange welded-in (orientation: on left when viewing the display) $^{4)}$	J09	1	✓	✓

 $^{1)}\,$ Profisafe transmitters can only be operated with the S7 F Systems V6.1 configuration software in combination with S7-400H

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.

media suitable.

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

 ⁴⁾ Blanking plug is standard configuration. Order option A40 if a vent valve is required instead of a blanking plug.

Transmitters for general requirements

SITRANS P DS III for differential pressure and flow

Selection and Ordering data	Order			
Additional data		HART	PA	FF
Please add "-Z" to Article No. and specify Order code(s) and plain text.				
Measuring range to be set				
Specify in plain text: • in the case of linear characteristic curve (max. 5 characters):	Y01	✓	√ 1)	
Y01: up to mbar, bar, kPa, MPa, psi • in the case of square rooted characteristic (max. 5 characters):	Y02	✓		
Y02: up to mbar, bar, kPa, MPa, psi				
Stainless steel tag plate and entry in device variable (measuring point description)	Y15	✓	✓	✓
Max. 16 characters, specify in plain text: Y15:				
Measuring point text (entry in device vari-	Y16	✓	✓	✓
able)				
Max. 27 char., specify in plain text: Y16:	V4=	,		
Entry of HART address (TAG) Max. 8 char., specify in plain text: Y17:	Y17	•		
Setting of pressure indication in pressure	Y21	1	1	1
units		·	·	
Specify in plain text (standard setting: bar): Y21: mbar, bar, kPa, MPa, psi,				
Note: The following pressure units can be selected: bar, mbar, mm H ₂ O [*]), inH ₂ O [*]), ftH ₂ O [*]), mmHG, inHG, psi, Pa, kPa, MPa, g/cm ² , kg/cm ² , Torr, ATM or % *) ref. temperature 20 °C				
Setting of pressure indication in	Y22 +	✓		
non-pressure units ²⁾ Specify in plain text: Y22: up to I/min, m ³ /h, m, USgpm, (specification of measuring range in pressure units "Y01" or "Y02" is essential, unit with max. 5 characters)	Y01 or Y02			
Preset bus address	Y25		✓	✓
possible between 1 and 126 Specify in plain text: Y25:				
Damping adjustment in seconds (0 100 s)	Y30	✓	✓	✓

Factory mounting of valve manifolds, see accessories.

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

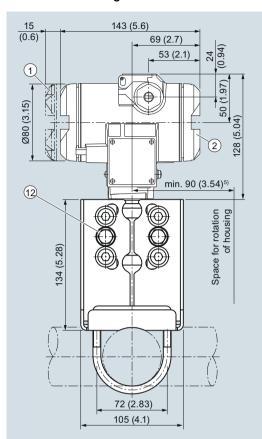
✓ = available

Measuring accuracies for PROFIBUS PA transmitters with Option Y01 are calculated in the same way as for HART devices.
 Preset values can only be changed over SIMATIC PDM.

Transmitters for general requirements

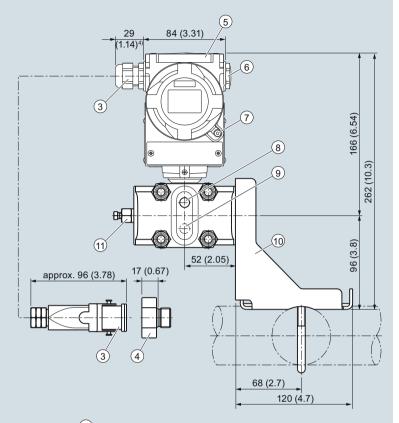
SITRANS P DS III for differential pressure and flow

Dimensional drawings



- 1 Electronic side, digital display (longer overall length for cover with window)¹⁾
- 2 Terminal side¹⁾
- 3 Electrical connection: Screwed gland Pg 13,5 (adapter)(Adapter)²⁾³⁾, Screwed gland M20 x 1,5 or Screwed gland ½-14 NPT or Han 7D/ Han 8D²⁾³⁾ plug
- 4 Harting adapter
- 5 Protective cover over keys
- 1) Allow approx. 20 mm (0.79 inch) thread length to permit unscrewing
- 2) Not with type of protection "Explosion-proof enclosure"
- 3) Not with type of protection "FM + CSA" [IS + XP]"
- 4) 92 mm (3.62 inch) for minimum distance to permit rotation with indicator
- 5) For Pg 13,5 with adapter approx. 45 mm (1.77 inch)

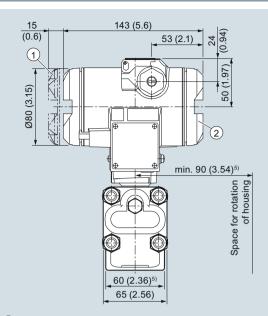
 ${\tt SITRANS\,P\,DS\,III}\ pressure\ transmitters\ for\ differential\ pressure\ and\ flow,\ dimensions\ in\ mm\ (inch)$



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

Transmitters for general requirements

SITRANS P DS III for differential pressure and flow



- approx. 96 (3.78) 17 (0.67) 29 (1.14)⁸⁾ 84 (3.31) 6 (6 (7.14)⁸) 84 (3.31) 7 (1.14)⁸) 84 (3.31) 9 (1.14)⁸) 84 (3.31) 9 (1.14)⁸) 84 (3.31) 9 (1.14)⁸) 84 (3.31) 8 (3.43) 8 (3.43) 8 (3.43) 8 (3.43)
- 1 Electronic side, digital display (longer overall length for cover with window)¹⁾
- 2 Terminal side1)
- 3 Electrical connection: Screwed gland Pg 13,5 (adapter)(Adapter)²⁾³⁾, Screwed gland M20 x 1,5 or Screwed gland ½-14 NPT or Han 7D/ Han 8D²⁾³⁾ plug
- 4 Harting adapter
- 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 (3.6 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 ≥ 420 (MAWP ≥ 6092 psi)
- 7) 219 mm (8.62 inch) for PN \geq 420 (MAWP \geq 6092 psi)
- 8) For Pg 13,5 with adapter approx. 45 mm (1.77 inch)

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

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



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

Transmitters for general requirements

SITRANS P DS III for level

Technical specifications

Technical specifications				
SITRANS P DS III for level				
	HART		PROFIBUS PA or FOU	NDATION Fieldbus
Input				
Measured variable	Level	T		
Spans (infinitely adjustable) or nominal measuring range and max. permissible operating pressure	Span (min max.)	Maximum operating pressure	Nominal measuring range	Maximum operating pressure
	25 250 mbar (10 100 inH ₂ O)	See "Mounting flange"	250 mbar (100 inH ₂ O)	See "Mounting flange"
	25 600 mbar (10 240 inH ₂ O)	See "Mounting flange"	600 mbar (240 inH ₂ O)	See "Mounting flange"
	53 1600 mbar (21 642 inH ₂ O)	See "Mounting flange"	1600 mbar (642 inH ₂ O)	See "Mounting flange"
	160 5000 mbar (64 2000 inH ₂ O)	See "Mounting flange"	5 bar (2000 inH ₂ O)	See "Mounting flange"
Lower measuring limit • Measuring cell with silicone oil filling		-100 % of max. span o	r 500 mbar a (7.25 psia)	
C C	Also ava	ailable as vacuum-resistant	t remote seal: 30 mbar a (0	0.44 psi a)
Upper measuring limit	100 % of max. span		100 % of the max. nom	inal measuring range
Output				
Output signal	4 20 mA		Digital PROFIBUS PA a	
Lower limit (infinitely adjustable)	3.55 mA, factory preset	to 3.84 mA	FOUNDATION Fieldbus	s signal
Upper limit (infinitely adjustable)	23 mA, factory preset to set to 22.0 mA		-	
Load				
Without HART	$R_{\rm B} \le (U_{\rm H} - 10.5 \text{ V})/0.023$ $U_{\rm H}$: Power supply in V	$BA in \Omega$,	-	
• With HART	$U_{\rm H}$: Power supply in V $R_{\rm B} = 230 \dots 500 \Omega$ (SIMATIC PDM) or $R_{\rm B} = 230 \dots 1100 \Omega$ (HART Communicator)			
Physical bus	-		IEC 61158-2	
Protection against polarity reversal	Protected against short	t-circuit and polarity reve supply	rsal. Each connection ag voltage.	ainst the other with max
Electrical damping (step width 0.1 s)		Set to 2 s	(0 100 s)	
Measuring accuracy		Acc. to IE	C 60770-1	
Reference conditions (All error data refer always refer to the set span)	Increasing chara	acteristic, start-of-scale v silicone oil filling, room t	alue 0 bar, stainless stee emperature 25 °C (77 °F	
	Span ratio r = ma	ax. span/set span)		range ratio r = nominal set measuring range
Error in measurement at limit setting incl. hysteresis and reproducibility				
Linear characteristic				
- r ≤ 10	≤ 0.15 %		≤ 0.15 %	
- 10 < r ≤ 30	≤ 0.3 %		≤ 0.3 %	
- 30 < r ≤ 100	≤ (0.0075 · r + 0.075) %		≤ (0.0075 · r + 0.075) %	
Long-term stability (temperature change ± 30 °C (± 54 °F))	\leq (0.25 · r)% every 5 yes static pressure max. 70		≤ (0.25 · r)% every 5 ye static pressure max. 70	
Influence of ambient temperature				
• at -10 +60 °C (14 140 °F)				
- 250 mbar- (100 inH ₂ O)-measuring cell	$\leq (0.5 \cdot r + 0.2) \%^{1) 4}$		$\leq (0.5 \cdot r + 0.2) \%^{1) 4}$	
- 600 mbar- (240 inH ₂ O)-measuring cell	$\leq (0.3 \cdot r + 0.2) \%^{2) 4}$		$\leq (0.3 \cdot r + 0.2) \%^{2) 4}$	
 1600 and 5000 mbar- (642 and 2000 inH₂O)- measuring cell 			$\leq (0.25 \cdot r + 0.2) \%^{3) 4}$	
• at -4010 °C and 60 85 °C (-40 +14 °F and 140 185 °F)				
- 250 mbar- (100 inH ₂ O)-measuring cell	\leq (0.25 · r + 0.15) %/10 doubled values at 10 <		\leq (0.25 · r + 0.15) %/10 doubled values at 10 <	
- 600 mbar- (240 in ${ m H}_2{ m O}$)-measuring cell	\leq (0.15 · r + 0.15) %/10 doubled values at 10 <		\leq (0.15 · r + 0.15) %/10 doubled values at 10 <	
- 1600 and 5000 mbar- (642 and 2000 in $\rm H_2O)$ - measuring cell	\leq (0.12 · r + 0.15) %/10 double values at 10 < r		\leq (0.12 · r + 0.15) %/10 double values at 10 < r	

Transmitters for general requirements

SITRANS P DS III for level	HART	PROFIBUS PA or FOUNDATION Fieldbus
Influence of static pressure		
• on the zero point		
- 250 mbar- (100 inH ₂ O)-measuring cell	≤ (0.3 · r) % per nominal pressure	≤ (0.3 · r) % per nominal pressure
- 600 mbar- (240 inH ₂ O)-measuring cell	≤ (0.15 · r) % per nominal pressure	≤ (0.15 · r) % per nominal pressure
- 1600 and 5000 mbar- (642 and 2000 inH ₂ O)-		≤ (0.1 · r) % per nominal pressure
measuring cell	(0.1 · 1) % per norminal pressure	(0.111) % per nominal pressure
• on the span	≤ (0.1 · r) % per nominal pressure	≤ (0.1 · r) % per nominal pressure
Measured Value Resolution	-	3 · 10 ⁻⁵ of nominal measuring range
Rated conditions		
Degree of protection to IEC 60529	IP66 (optional IP6	66/IP68), NEMA 4X
Temperature of medium	` · ·	max. permissible operating temperature to max.
Measuring cell with silicone oil filling	permissible operating pressure of	f the respective flange connection! (-40 +212 ⁵⁾ °F)
- High-pressure side		
- Low-pressure side		175 °C (-40 +347 °F) -80 °C (-40 +176 °F) (-40 +212 °F)
·		unction with dust explosion protection
Ambient conditions		
Ambient temperature		
 Transmitter (with 4-wire connection, observe temperature values of supplementary 4-wire electronics) 	-40 +85 °C ((-40 +185 °F)
Display readable	-30 +85 °C	(-22 +185 °F)
Storage temperature	-50 +85 °C ((-58 +185 °F)
Climatic class		
- Condensation	Relative humidity 0 100 %, condensatio	n permissible, suitable for use in the tropics
Electromagnetic Compatibility		
- Emitted interference and interference immu-	Acc to IEC 61326	and NAMUR NE 21
nity	7.00. to 120 01020	and IV WOITINE 21
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 s	stainless steel precision casting, mat. no. 1.4408
Wetted parts materials		
High-pressure side		
Seal diaphragm of mounting flange	Hastelloy C276, mat. no. 2.4819, Hastelloy	mat. no. 2.4360, Hastelloy B2, mat. no. 2.4617, C4, mat. no. 2.4610, tantalum, PTFE, ETCFE, elex, mat. no. 1.4462
Measuring cell filling	·	one oil
Process connection	Silico	5
		N and ASME
High-pressure side Lew pressure side	_	N and ASME
Low-pressure side		tion with mounting thread M10 to DIN 19213 or to EN 61518
	/16-7 () () NI	
Power supply U_{\vdash}	716-20 ON	
Power supply <i>U</i> _H Terminal voltage on transmitter	10.5 45 V DC	Supplied through bus
Terminal voltage on transmitter	.0	Supplied through bus
Terminal voltage on transmitter Separate 24 V power supply necessary	10.5 45 V DC	
Terminal voltage on transmitter Separate 24 V power supply necessary Bus voltage	10.5 45 V DC	Supplied through bus - No
Terminal voltage on transmitter Separate 24 V power supply necessary Bus voltage Not Ex	10.5 45 V DC	Supplied through bus - No 9 32 V
Terminal voltage on transmitter Separate 24 V power supply necessary Bus voltage Not Ex With intrinsically-safe operation	10.5 45 V DC	Supplied through bus - No
Terminal voltage on transmitter Separate 24 V power supply necessary Bus voltage Not Ex With intrinsically-safe operation Current consumption	10.5 45 V DC	Supplied through bus No 9 32 V 9 24 V
Terminal voltage on transmitter Separate 24 V power supply necessary Bus voltage Not Ex With intrinsically-safe operation	10.5 45 V DC	Supplied through bus - No 9 32 V
Terminal voltage on transmitter Separate 24 V power supply necessary Bus voltage Not Ex With intrinsically-safe operation Current consumption	10.5 45 V DC	Supplied through bus No 9 32 V 9 24 V
Separate 24 V power supply necessary Bus voltage Not Ex With intrinsically-safe operation Current consumption Basic current (max.)	10.5 45 V DC	Supplied through bus No 9 32 V 9 24 V 12.5 mA

Transmitters for general requirements

SITRANS P DS III for level				
	HART	PROFIBUS PA or FOUNDATION Fieldbus		
Certificates and approvals				
Classification according to PED 97/23/EC		group 1; complies with requirements of article 3, engineering practice)		
Explosion protection				
Intrinsic safety "i"	PTB 13 ATEX 2007 X			
- Marking	Ex II 1/2 G Ex ia/ib IIC T4/T5/T6 Ga/Gb			
- Permissible ambient temperature	-40 +85 °C (-40 +185 °F) temperature class T4; -40 +70 °C (-40 +158 °F) temperature class T5; -40 +60 °C (-40 +140 °F) temperature class T6			
- Connection	To certified intrinsically-safe circuits with peak values: $U_{\rm l}=30$ V, $I_{\rm l}=100$ mA, $P_{\rm l}=750$ mW; $R_{\rm l}=300$ Ω	FISCO supply unit: $U_0 = 17.5 \text{ V}$, $I_0 = 380 \text{ mA}$, $P_0 = 5.32 \text{ W}$ Linear barrier: $U_0 = 24 \text{ V}$, $I_0 = 250 \text{ mA}$, $P_0 = 1.2 \text{ W}$		
- Effective internal inductance/capacitance	$L_{\rm i} = 0.4 {\rm mH}, C_{\rm i} = 6 {\rm nF}$	$L_{i} = 7 \mu H, C_{i} = 1.1 nF$		
• Explosion-proof "d"	PTB 99 A	ATEX 1160		
- Marking	Ex II 1/2 G Ex	d IIC T4/T6 Gb		
- Permissible ambient temperature		5 °F) temperature class T4; 0 °F) temperature class T6		
- Connection	To circuits with values: $U_{\rm H}$ = 10.5 45 V DC	To circuits with values: $U_{\rm H}$ = 9 32 V DC		
• Dust explosion protection for zone 20	PTB 01 A	ATEX 2055		
- Marking		°65 T 120 °C P65 T 120 °C		
- 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: $U_i = 30 \text{ V}$, $I_i = 100 \text{ mA}$,	FISCO supply unit: $U_0 = 17.5 \text{ V}$, $I_0 = 380 \text{ mA}$, $P_0 = 5.32 \text{ W}$		
	$P_{i} = 750 \text{ mW}, P_{i} = 300 \Omega$	Linear barrier: $U_0 = 24 \text{ V}, I_0 = 250 \text{ mA}, P_0 = 1.2 \text{ W}$		
- Effective internal inductance/capacitance	$L_{\rm i} = 0.4 {\rm mH}, C_{\rm i} = 6 {\rm nF}$	$L_{\rm i} = 7 \mu \text{H}, C_{\rm i} = 1.1 \text{nF}$		
Dust explosion protection for zone 21/22	PTB 01 A	ATEX 2055		
- Marking	Ex II 2 D IF	P65 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 A	TEX 2007 X		
- Marking		A II T4/T5/T6 Gc c 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: $U_0 = 17.5 \text{ V}, I_0 = 570 \text{ mA}$		
		Linear barrier: $U_0 = 32 \text{ V}, I_0 = 132 \text{ mA}, P_0 = 1 \text{ W}$		
- Effective internal inductance/capacitance	$L_{\rm i} = 0.4 {\rm mH}, C_{\rm i} = 6 {\rm nF}$	$L_{\rm i} = 7 \mu \text{H}, C_{\rm i} = 1.1 \text{nF}$		
Explosion protection acc. to FM		mpliance 3008490		
- Identification (XP/DIP) or (IS); (NI)	CL I, DIV 1, GP ABCD T4T6; CL II, DIV 1, 0 CL I, DIV 2, GP ABCD T4T	GP EFG; CL III; CL I, ZN 0/1 AEx ia IIC T4T6; F6; CL II, DIV 2, GP FG; CL III		
Explosion protection to CSA		mpliance 1153651		
- Identification (XP/DIP) or (IS)	CL I, DIV 1, GP ABCD T4T6; CL II, DIV 1, GP E T4T6; CL II, DI	FG; CL III; Ex ia IIC T4T6; CL I, DIV 2, GP ABCD V 2, GP FG; CL III		

¹⁾ Conversion of temperature error per 28 °C. Valid for temperature range -3 ... +53 °C < (0.4 \cdot r + 0.16) % / 28 °C (50 °F).

²⁾ Conversion of temperature error per 28 °C. Valid for temperature range -3 ... +53 °C < $(0.24 \cdot r + 0.16)$ % / 28 °C (50 °F).

 $^{^{3)}}$ Conversion of temperature error per 28 °C. Valid for temperature range -3 ... +53 °C < (0.2 · r + 0.16) % / 28 °C (50 °F).

 $^{^{4)}}$ 0.32 instead of 0.16 at 10 < r < 30

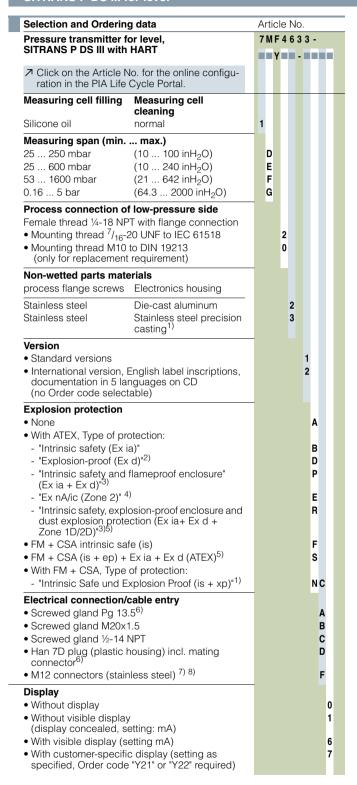
 $^{^{5)}\,}$ This value may be increased if the process connection is sufficiently insulated.

Transmitters for general requirements

			SITHANS F DS III IOI IEVEI
HART communication		FOUNDATION Fieldbus communication	
HART	230 1100 Ω	Function blocks	3 function blocks analog input,
Protocol	HART Version 5.x	Turiotion blocks	1 function block PID
Software for computer	SIMATIC PDM	 Analog input 	
PROFIBUS PA communication		- Adaptation to customer-specif-	Yes, linearly rising or falling
Simultaneous communication with master class 2 (max.)	4	ic process variables - Electrical damping, adjustable	characteristic 0 100 s
The address can be set using	Configuration tool or local	- Simulation function	Output/input (can be locked
Ů	operation (standard setting address 126)		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)	Š	ing limit and one alarm limit respectively
Internal preprocessing	metering)	 Square-rooted characteristic for flow measurement 	Yes
Device profile	PROFIBUS PA Profile for Process Control Devices Version	• PID	Standard FOUNDATION Field- bus function block
	3.0, class B	Physical block	1 resource block
Function blocks • Analog input	2	Transducer blocks	1 transducer block Pressure with calibration, 1 transducer block
- Adaptation to customer-specif-	Yes, linearly rising or falling		LCD
ic process variables	characteristic	Pressure transducer block	V
- Electrical damping, adjustable	0 100 s	 Can be calibrated by applying two pressures 	Yes
- Simulation function	Input/Output parameterizable (last good value, substitute value, incorrect value)	- Monitoring of sensor limits	Yes
- Failure mode		 Simulation function: Measured pressure value, sensor temper- ature and electronics tempera- 	Constant value or over parameterizable ramp function
- Limit monitoring	Yes, one upper and lower warning limit and one alarm limit respectively	ture 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	- DN 80 - DN100 • To ASME B16.5	PN 40 PN16, PN40
	incorrect value)	- 3 inch	class 150, class 300
- Limit monitoring	One upper and lower warning limit and one alarm limit respec- tively	- 4 inch	class 150, class 300
Physical block	1		
Transducer blocks	2		
Pressure transducer block			
- Can be calibrated by applying two pressures	Yes		
- Monitoring of sensor limits	Yes		
- Specification of a container 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 parameterizable ramp function		

Transmitters for general requirements

SITRANS P DS III for level



Ordering information

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

ordering example

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

B line: Y01

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

Item line 2: 7MF4912-3GE01

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

Included in delivery of the device:

- Brief instructions (Leporello)
- CD-ROM with detailed documentation
- Sealing plug(s) or sealing screw(s) for the process flanges(s)
- 1) Not in conjunction with electrical connection "Screwed gland Pg 13.5" and "Han7D plug".
- 2) Without cable gland, with blanking plug.
- 3) With enclosed cable gland Ex ia and blanking plug.
- ⁴⁾ Configurations with HAN and M12 connectors are only available in Ex ic.
- 5) Only in connection with IP65.
- 6) Only in connection with Ex approval A, B or E.
- 7) M12 delivered without cable socket
- 8) Only in connection with Ex approval A, B, E or F.

Transmitters for general requirements

SITRANS P DS III for level

Selection and Orderin	ng data	Artic	le N	0.		
Pressure transmitters	for level					
SITRANS P DS III with I	PROFIBUS PA (PA)	7 M F	4 6	3 4	١-	
SITRANS P DS III with I	FOUNDATION Fieldbus (FF)	7 M F	4 6	3 5	; -	
Click on the Article ration in the PIA Life	No. for the online configu- Cycle Portal.	1 ■ Y		1	П	
Nominal measuring ra	ange				П	
250 mbar	(100 inH ₂ O)	D				
600 mbar 1600 mbar	(240 inH ₂ O)	E F				
5 bar	(642 inH ₂ O) (2000 inH ₂ O)	G				
Process connection of	. 2 /					
	PT with flange connection					
 Mounting thread ⁷/₁₆ 	20 UNF to IEC 61518		2			
 Mounting thread M10 			0			
(only for replacemen	· · · · · · · · · · · · · · · · · · ·					
Non-wetted parts mat process flange screws						
			_			
Stainless steel Stainless steel	Die-cast aluminum Stainless steel precision		2			
Otali liess steel	casting		ŭ			
Version						
 Standard versions 				1		
 International version, documentation in 5 la (no Order code selection) 				2		
Explosion protection						
• None					Α	
With ATEX, Type of p						
- "Intrinsic safety (Ex- "Explosion-proof (Ex					В	
	flameproof enclosure"				D P	
- "Ex nA/ic (Zone 2)"	3)				E	
 "Intrinsic safety, exp dust explosion prote Zone 1D/2D)"²⁾⁴⁾ (n 	losion-proof enclosure and ection (Ex ia + Ex d + ot for DS III FF)				R	
• FM + CSA intrinsic sa					F	
• FM + CSA (is + ep) +	Ex ia + Ex d (ATEX)4)				S	
 With FM + CSA, Type 						
- "Intrinsic Safe und E	Explosion Proof (is + xp)"1)				N C	
Electrical connection	•					
Screwed gland M20: Screwed gland 1/. 1.4.					B	
Screwed gland ½-14M12 connectors (stai					F	
Display						
Without display						0
 Without visible display (display concealed, s 						1
 With visible display (s 						6
With customer-specif	ic display (setting as					7
specified, Order code	e "Y21" 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:
 Brief instructions (Leporello)
 CD-ROM with detailed documentation
- Sealing plug(s) or sealing screw(s) for the process flanges(s)
- 1) Without cable gland, with blanking plug.
- 2) With enclosed cable gland Ex ia and blanking plug.
- 3) Configurations with HAN and M12 connectors are only available in Ex ic.
- 4) Only in connection with IP65.
- 5) M12 delivered without cable socket
- 6) Only in connection with Ex approval A, B, E or F.

Transmitters for general requirements

Selection and Ordering data	Order	code		
Further designs		HART	PA	FF
Add "-Z" to Article No. and specify Order code.				
O-rings for process flanges on low-pressure side (instead of FPM (Viton))				
PTFE (Teflon)	A20	✓	✓	✓
 FEP (with silicone core, approved for food) FFPM (Kalrez, compound 4079), for measured medium temperatures -15 100 °C (5 212 °F) 	A21 A22	*	✓	√
• NBR (Buna N)	A23	✓	✓	✓
Plug • Han 7D (metal) • Han 8D (instead of Han 7D) • Angled • Han 8D (metal)	A30 A31 A32 A33	* * *		
Sealing screw 1/4-18 NPT, with valve in mat. of process flanges	A40	✓	✓	✓
Cable sockets for M12 connectors (metal (CuZn))	A50	✓	✓	✓
Rating plate inscription				
(instead of German) • English	B11	1	1	1
• French	B12	✓	✓	✓
• Spanish	B13	✓.	✓.	✓.
• Italian	B14	√	1	1
Cyrillic (russian)	B16			-
English rating plate Pressure units in inH ₂ 0 and/or psi	B21	✓	✓	✓
Quality inspection certificate (Five-step factory calibration) to IEC 60770-2	C11	✓	✓	1
Inspection certificate Acc. to EN 10204-3.1	C12	✓	✓	✓
Factory certificate Acc. to EN 10204-2.2	C14	✓	✓	✓
Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration	C20	✓		
Functional safety (PROFIsafe) Certificate and PROFIsafe protocol	C21 ¹⁾		✓	
Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration	C23	✓		
Device passport Russia (For price request please contact the technical support	C99	✓	✓	✓
www.siemens.com/automation/support-request)				
Setting of upper limit of output signal to 22.0 mA	D05	✓		
Degree of protection IP66/IP68 (only for M20x1.5 and ½-14 NPT)	D12	√	✓	√
Supplied with oval flange (1 item), PTFE packing and screws in thread of process flange	D37	✓	✓	1
Capri cable gland 4F CrNi and clamping device (848699 + 810634) included	D59	✓	1	1

Selection and Ordering data Order code						
Further designs		HART	PA	FF		
Add "-Z" to Article No. and specify Order code.						
Use on zone 1D / 2D	E01	✓	✓	✓		
(only together with type of protection "Intrinsic safety" (transmitter 7MF4B Ex ia)"and IP65)						
Overfilling safety device for flammable and non-flammable liquids	E08	✓				
(max. PN 32 (MAWP 464 psi), basic device with type of protection "Intrinsic safety (Ex ia)", to WHG and VbF, not together with measuring cell filling "inert liquid")						
Export approval Korea	E11	✓	✓	✓		
CRN approval Canada (Canadian Registration Number)	E22	✓	✓	✓		
Dual seal	E24	✓	✓	✓		
Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil)	E25 ²⁾	✓	✓	✓		
(only for transmitter 7MF4B)						
"Flameproof" explosion protection according to INMETRO (Brazil) (only for transmitter 7MF4D)	E26 ²⁾	✓	✓	✓		
Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil)	E28 ²⁾	✓	✓			
(only for transmitter 7MF4P)						
Ex Approval IEC Ex (Ex ia) (only for transmitter 7MF4B)	E45 ²⁾	✓	✓	✓		
Ex Approval IEC Ex (Ex d) (only for transmitter 7MF4	E46 ²⁾	✓	✓	✓		
Explosion-proof "Intrinsic safety" to NEPSI (China)	E55 ²⁾	✓	✓	✓		
(only for transmitter 7MF4B)	0)	_				
Explosion protection "Explosion-proof" to NEPSI (China) (only for transmitter 7MF4D)	E56 ²⁾	√	✓	✓		
Ex protection "Zone 2" to NEPSI (China)	E57 ²⁾	1	1	1		
(only for transmitter 7MF4)	LJI	Ĭ	•	·		
Ex protection "Ex ia", "Ex d" and "Zone 2" to NEPSI (China)	E58 ²⁾	✓	✓	✓		
(only for transmitter 7MF4R)	_,					
"Intrinsic safety" and "Explosion-proof" explosion protection acc. to Kosha (Korea)	E70 ²⁾	✓	✓	✓		
(only for transmitter 7MF4[B, D]Z + E11)						
Two coats of lacquer on casing and cover (PU on epoxy)	G10	✓	✓	✓		
Replacement of process connection side	H01	1	✓	✓		
Transient protector 6 kV (lightning protection)	J01	✓	✓	✓		
Vent valve or blanking plug of process flange welded-in (orientation: on right when viewing the display) ³⁾	J08	✓	1	✓		
Vent valve or blanking plug of process flange welded-in (orientation: on left when viewing the display) ³⁾	J09	✓	✓	✓		

Profisafe transmitters can only be operated with the S7 F Systems V6.1 configuration software in combination with S7-400H
 Option beinhaltet keine ATEX-Zulassung, sondern nur die landesspezifische Zulassung.
 Blanking plug is standard configuration. Order option A40 if a vent valve is required instead of a blanking plug.

Transmitters for general requirements

SITRANS P DS III for level

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

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

Transmitters for general requirements

Selection and Orde	ering data	Article	No. C	ord. c	00	de
Mounting flange	····· 9 ······	7 M F 4				
	Directly mounted on the SITRANS P pressure transmitter (converter part) for level, for DS III series			ı		Ī
Click on the Artic ration in the PIA I	le No. for the online configu- Life Cycle Portal.					
Connection to EN						
Nominal diameter	Nominal pressure					
DN 50	PN 10/16/25/40	A				
	PN 100	В				
DN 80	PN 10/16/25/40	D				
DN 100	PN 10/16 PN 25/40	G H				
Connection to ASI	ME B16.5					
Nominal diameter	Nominal pressure					
2 inch	class 150	L				
	class 300	M				
	class 400/600	N				
3 inch	class 900/1500 class 150	P Q				
3 111011	class 300	R				
4 inch	class 150	T				
	class 300	Ü				
	Order code and plain text: ; Nominal press.:	Z		J	1	Y
Wetted parts mater	rials					
Stainless steel 316	6L	A				
 Coated with PFA 		D				
- Coated with PTF		E 0				
 Coated with ECTF 	E'	F				
 Monel 400, mat. ne 		G				
Hastelloy C276, m		J				
Hastelloy C4, mat.	no. 2.4610	U				
Tantalum Duploy 2205 met	20 1 4462	K Q				
 Duplex 2205, mat. Dupley 2205, mat. 	no. 1.4462, incl. main body	R				
Stainless steel 316		S O				
thickness approx.						
Tube length						
 None 		0				
• 50 mm	(1.97 inch)	1				
• 100 mm	(3.94 inch)	2				
• 150 mm	(5.90 inch)	3				
• 200 mm	(7.87 inch) Order code and plain text:	Z 8		K	1	v
material of parts in o	contact with medium:,	20		,	•	Ì
Filling liquid						
• Silicone oil M5			1			
• Silicone oil M50			2			
High-temperature			3			
Halocarbon oil (for Food oil (FDA lists	=		4			
Food oil (FDA-liste	ea)		7			
Other version, add	in toyt:		9	M	1	Y
Order code and pla filling liquid:	III IGAL					
- '						
1) For vacuum on rec	juest					

Colootion and Ordering date	Oudou	d -		
Selection and Ordering data Further designs	Order	code HART	PA	FF
Add "-Z" to Article No. and specify Order code.		HANI	гA	• •
	A01	-/		./
Spark arrester For mounting on zone 0 (incl. documentation)	AUI	,	•	•
Remote seal nameplate	B20	1	1	✓
attached out of stainless steel, contains Article No. and order number of the remote seal supplier				
Oil- and grease-free cleaned version	C10	✓	✓	✓
Oil- and grease-free cleaned and packed version, not for oxygen application, only in conjunction with halocarbon oil fill fluid, certified by certificate acc. to EN 10204-2.2				
Quality inspection certificate (Five-step factory calibration) to IEC 60770-2	C11	✓	✓	✓
Inspection certificate Acc. to EN 10204-3.1	C12	✓	✓	✓
2.2 Certificate of FDA approval of fill oil	C17	1	✓	1
Only in conjunction with filling liquid "Food oil" (FDA listed)"				
"Functional safety (SIL2)" certificate to IEC 61508	C20	✓	✓	
(only for conjunction with the Order code "C20" in the case of SITRANS P DS III transmitter)				
"Functional safety (SIL2/3)" certificate to IEC 61508	C23	✓	✓	
(only for conjunction with the Order code "C23" in the case of SITRANS P DS III transmitter)				
Certification acc. to NACE MR-0175	D07	✓	✓	✓
Includes acceptance test certificate 3.1 acc. to EN 10204 (only for wetted parts made of stainless steel 1.4404/316L and Hastelloy C276)				
Certification acc. to NACE MR-0103	D08	✓	✓	✓
Includes acceptance test certificate 3.1 acc. to EN 10204 (only for wetted parts made of stainless steel 1.4404/316L and Hastelloy C276)				
Oil- and grease-free cleaned version	E10	✓	✓	✓
Oil- and grease-free cleaned and packed version, only for oxygen application, only inert fill fluid may be used. Max. temperature: 60 °C (140 °F), max. pressure 50 bar (725 psi), only in connection with halocarbon oil, certified by certificate acc. to EN 10204-2.2				
Epoxy painting	E15	✓	✓	✓
Not possible with vacuum-proof design 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 EN837-1.				
Sealing surface B1 or	J12	✓	✓	✓
ASME B16.5 RF 125 250 AA instead of sealing surface B2 or RFSF (only for wetted parts made of Hastelloy C276 (2.4819), tantalum and Duplex 2205 (1.4462) and for nominal sizes 2", 3", DN 50 and DN 80)				
Sealing surface groove, EN 1092-1, form D instead of sealing surface B1 (only for wetted parts made of stainless steel 316L)	J14	✓	1	✓
Sealing surface RJF (groove) ASME B16.5 instead of sealing surface ASME B16.5 RF 125 250 AA (only for wetted parts made of	J24	1	✓	✓
stainless steel 316L)				

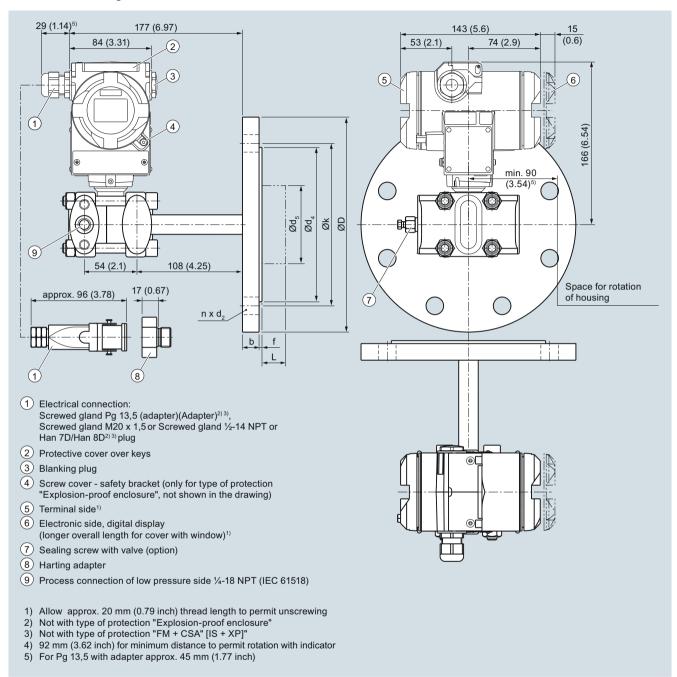
Transmitters for general requirements

Selection and Ordering data	Order	code		
Further designs		HART	PA	FF
Add "-Z" to Article No. and specify Order code.				
Elongated pipe, 150 mm instead of 100 mm,	R15	✓	✓	✓
max. medium temperature 250 $^{\circ}$ C, observe the maximum permissible media temperature of the filling liquid.				
Elongated pipe, 200 mm instead of 100 mm, max. medium temperature 300 °C, observe the maximum permissible media temperature of the filling liquid.	R20	✓	✓	✓
Vacuum-proof design (for use in low-pressure range) Note: suffix "Y01" required with press. transm. ✓ = available	V04	✓	✓	✓

Transmitters for general requirements

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 general requirements

SITRANS P DS III for level

Connection to EN 1092-1

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

Connection to ASME B16.5

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

d: Internal diameter of gasket to DIN 2690

d_M: Effective diaphragm diameter

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

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

Transmitters for general requirements

SITRANS P DS III Supplementary electronics for 4-wire connection

Overview



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

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

Note on ordering:

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

Technical specifications

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

Structural design

Dimensions (W x H x D) in mm

(inch)

Electrical connection

80 x 120 x 60 (3.15 x 4.72 x 2.36)

Screw terminals (Pg 13.5 cable inlet) or Han 7D / Han 8D plug

Power supply

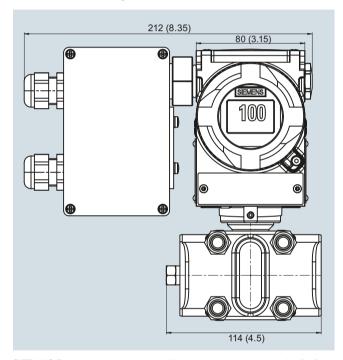
Supply voltage

230 V AC (-10 ... +6 %, 47 ... 63 Hz, approx. 6 VA) or 24 V AC/DC (24 V AC ± 10 %, 47 ... 63 Hz, approx. 3 VA)

Permissible ripple (within the specified limits)

Approx. 2.5 V pp

Dimensional drawings

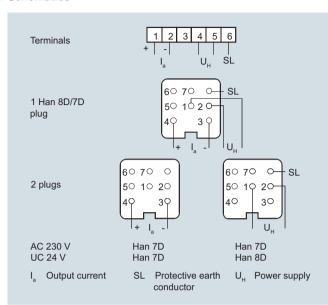


SITRANS P pressure transmitters with supplementary electronics for four-wire connection, dimension drawing, dimensions in mm

Transmitters for general requirements

SITRANS P DS III Supplementary electronics for 4-wire connection

Schematics



Supplementary electronics for 4-wire connection, connection diagram

Selection and	Ordering data	Ord	Order code				
connection Article No. of th	y electronics for 4-wire e transmitter B. add "-Z" and Order code.	V					
Power supply 24 V AC/DC	Electrical connection Terminals; 2 Pg screwed glands, to left 2 Han 7D/Han 8D plugs incl. mating connector, to left 1 Han 7D plug incl. mating	1 3					
	Than 7D plug lind. Inalling connector, angled Terminals; 1 Pg screwed gland, downwards 1 Han 8D plug incl. mating connector, downwards (observe arrangement of plug and differential pressure line)	6					
230 V AC	Terminals; 2 Pg screwed glands, to left 2 Han 7D plugs incl. mating connector, to left	7					
Output current 0 20 mA 4 20 mA	ı	Ī	0				
Accessories	Accessories						
Instruction Manual German/English				0322799			

Transmitters for general requirements

SITRANS P DS III Accessories/Spare Parts

Selection and Ord	lering data	Arti	cle	No.	
Replacement mea for SITRANS P DS	suring cell for pressure 6 III			990- 0-0DB0	
	cle No. for the online configura- ife Cycle Portal.				
Measuring cell fill Silicone oil Inert liquid Measured span (r 0.01 1 bar 0.04 4 bar 0.16 16 bar	ing Measuring cell cleaning Normal grease-free to cleanliness level 2 nin max.) (0.15 14.5 psi) (0.6 58 psi) (2.32 232 psi)	1 3 B C D			
0.63 63 bar 1.6 160 bar 4.0 400 bar 7.0 700 bar Wetted parts mate Seal diaphragm	(9.14 914 psi) (23.2 2320 psi) (58.0 5802 psi) (102.0 10153 psi) erials Process connection	E F G J			
Stainless steel Hastelloy Hastelloy	Stainless steel Stainless steel Hastelloy		A B C		
Process connection Connection shank G½B to EN 837-1 Female thread ½-14 NPT Oval flange made of stainless steel, max. span 160 bar (2320 psi) Mounting thread 7/16-20 UNF to IEC 61518 Mounting thread M10 to DIN 19213			0 1 2 3		
Further designs		Ord	Order code		
Please add "-Z" to Order code.	Article No. and specify				
Inspection certification to EN 10204-3.1	cate	C12	2		

	<u> </u>		11 110	10	No.
	uring cell for absolute NS P DS III (from the				992- 0-0DB0
Click on the Article tion in the PIA Life	e No. for the online configura- e Cycle Portal.	ı			
Measuring cell filling	g Measuring cell cleaning			П	
Silicone oil	Normal	1			
Inert liquid	grease-free to cleanliness level 2	3			
Measured span (mi	n max.)				
8.3 250 mbar a	(0.12 3.62 psia)		D		
43 1300 mbar a	(0.62 18.85 psia)		F		
0.16 5 bar a	(2.32 72.5 psia)		G		
1 30 bar a	(14.5 435 psia)		Н		
Wetted parts mater	ials				
Seal diaphragm	Process connection				
Stainless steel	Stainless steel		A		
Hastelloy	Stainless steel		E	3	
Hastelloy	Hastelloy		C	;	
Process connection	1				
 Connection shank 	G1⁄2B to EN 837-1			0	
• Female thread 1/2-1	4 NPT			1	
Oval flange made					
max. span 160 bar					
 Mounting thread 	⁷ / ₁₆ -20 UNF to IEC 61518			2	
- Mounting thread	M10 to DIN 19213			3	
Further designs		C)rde	er i	code
Please add " -Z " to Ar Order code.	ticle No. and specify				
Inspection certifica	te	C	12		
to EN 10204-3.1					

Transmitters for general requirements

SITRANS P DS III Accessories/Spare Parts

Selection and Ordering data	Article No.	Selection and Ordering data	Article No.
Replacement measuring cell for absolute pres-	7MF4993-	Replacement measuring cell for differential	7MF4994-
sure (from the differential pressure series) for SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus series	- 0 D C 0	pressure and PN 32/160 (MAWP 464/2320 psi) for SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus series	- 0 D C 0
Click on the Article No. for the online configura- tion in the PIA Life Cycle Portal.		Click on the Article No. for the online configura- tion in the PIA Life Cycle Portal.	
Measuring cell filling Measuring cell cleaning Silicone oil Normal Inert liquid grease-free to cleanliness level 2	1 3	Measuring cell filling Measuring cell cleaning Silicone oil Normal Inert liquid grease-free to cleanliness level 2	1 3
Measured span (min max.) 8.3 250 mbar a (0.12 3.62 psia) 43 1300 mbar a (0.62 18.85 psia) 0.16 5 bar a (2.32 72.5 psia) 1 30 bar a (14.5 435 psia) 5.3 100 bar a (76.9 1450 psia) Wetted parts materials Seal diaphragm Parts of measuring cell Stainless steel Hastelloy Stainless steel Hastelloy Hastelloy Tantalum Tantalum Monel Monel Gold Gold Process connection Female thread ¼-18 NPT with flange connection • Sealing screw opposite process connection • Mounting thread M10 to DIN 19213 - Mounting thread M10 to DIN 19213	D F G H K E A B C E H L C C E H C C C C C C C C C C C C C C C C	Measured span (min max.) PN 32 (MAWP 464 psi) 1 20 mbar ¹⁾ (0.4 8 inH ₂ O) PN 160 (MAWP 2320 psi) 1 60 mbar (0.4 24 inH ₂ O) 2.5 250 mbar (1 100 inH ₂ O) 6 600 mbar (2.4 240 inH ₂ O) 16 1600 mbar (6.4 642 inH ₂ O) 50 5000 mbar (20 2000 inH ₂ O) 0.3 30 bar (4.35 435 psi) Wetted parts materials (stainless steel process flanges) Seal diaphragm Parts of measuring cell Stainless steel Stainless steel Hastelloy Stainless steel Hastelloy Hastelloy Tantalum ²) Tantalum Monel ²) Monel Gold ²) Gold Process connection Female thread ¼-18 NPT with flange connection • Sealing screw opposite process connection • Mounting thread M10 to DIN 19213 - Mounting thread M10 to DIN 19213	B C D E F G H A B C E H L
Order code. O-rings for process flanges		Stainless steel process flange screws Further designs	2 Order code
(instead of FPM (Viton)) • PTFE (Teflon) • FEP (with silicone core, approved for food) • FFPM (Kalrez, compound 4079), for measured medium temperatures -15 100 °C (5 212 °F) • NBR (Buna N) Inspection certificate to EN 10204-3.1	A20 A21 A22 A23 C12	Please add "-Z" to Article No. and specify Order code. O-rings for process flanges (instead of FPM (Viton)) • PTFE (Teflon) • FEP (with silicone core, approved for food) • FFPM (Kalrez, compound 4079), for measured medium temperatures -15 100 °C (5 212 °F) • NBR (Buna N)	A20 A21 A22 A23
Process connection G½B	D16	Inspection certificate to EN 10204-3.1	C12
Remote seal flanges (not together with K01, K02 and K04)	D20	Remote seal flanges (not together with K01, K02 and K04)	D20
Vent on side for gas measurements	H02	Vent on side for gas measurements	H02
Process flanges • without • with process flange made of	K00	Stainless steel process flanges for vertical differential pressure lines (not together with K01, K02 and K04)	Н03
 Hastelloy Monel Stainless steel with PVDF insert max. PN 10 (MAWP 145 psi) max.temperature of medium 90 °C (194 °F) For ½-14 NPT inner process connection on the side in the middle of the process flange, vent valve not possible Not for span 5.3 100 bar (76.9 1450 psi) 	K01 K02 K04	Process flanges • without • with process flange made of - Hastelloy - Monel - Stainless steel with PVDF insert, max. PN 10 (MAWP 145 psi), max. temperature of medium 90 °C (194 °F). For ½-14 NPT inner process connection on the side in the middle of the process	K00 K01 K02 K04

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

Transmitters for general requirements

SITRANS P DS III Accessories/Spare Parts

Selection and Ordering	g data	Artic	le N	10.	
	ng cell for differential MAWP 6092 psi) for ART, DS III with PROFIBUS NDATION Fieldbus series			95- -0DC0	
Click on the Article N tion in the PIA Life Cy	lo. for the online configura- ycle Portal.				
Measuring cell filling Silicone oil	Measuring cell cleaning Normal	1			
Measured span (min 2.5 250 mbar 6 600 mbar 16 1600 mbar 50 5000 mbar 0.3 30 bar	max.) (1 100 inH ₂ O) (2.4 240 inH ₂ O) (6.4 642 inH ₂ O) (20 2000 inH ₂ O) (4.35 435 psi)	D E F G			
Wetted parts materials (stainless steel process					
Seal diaphragm	Parts of measuring cell				
Stainless steel Hastelloy Gold ¹⁾	Stainless steel Stainless steel Gold	A B L			
Process connection Female thread ½-18 NP connection • Sealing screw opposit - Mounting thread M12 - Mounting thread ⁷ / ₁₆	e process connection 2 to DIN 19213		1 3		
 Vent on side of proces Mounting thread M12 Mounting thread ⁷/₁₆ 	ss flange 2 to DIN 19213		5 7		
Non-wetted parts mate	erials	=	2		
• Stainless steel process Further designs	s liarige screws	Orde		nde	
Please add "-Z" to Article code.	e No. and specify Order	Orac	00	540	
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		
Inspection certificate to EN 10204-3.1					
Stainless steel process differential pressure lin		H03			
without process flange	es	K00			

 $^{^{1)}}$ Not together with max. span 600 mbar (240.9 inH $_2$ O)

Transmitters for general requirements

SITRANS P DS III Accessories/Spare Parts

Selection and Ordering data	Article No.	Selection and Ordering data	Article No.
Spare parts/Accessories		Mounting screws	
Nounting bracket and fastening parts or pressure transmitters BITRANS P DS III with HART, DS III with		For measuring point label, grounding and connection terminals or for display (50 units)	7MF4997-1CD
PROFIBUS PA and DS III with FOUNDATION Fieldbus (7MF403C.) For absolute pressure transmitters SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus (7MF423C.)	7MF4997-1AB	Sealing screws (1 set = 2 units) for process flange • made of stainless steel • made of Hastelloy Sealing screws with vent valve Complete (1 set = 2 units) • made of stainless steel	7MF4997-1CG 7MF4997-1CH 7MF4997-1CP
made of stainless steel Mounting bracket and fastening parts	7MF4997-1AH	made of statilless steel made of Hastelloy	7MF4997-1CQ
for pressure transmitters SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus (7MF403A.,B.,D. andF.) For absolute pressure transmitters SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus 7MF423A.,B.,D. andF.)	7MF4997-1AC	Application electronics • for SITRANS P DS III with HART • for SITRANS P DS III with PROFIBUS PA • for SITRANS P DS III with FOUNDATION Fieldbus Connection board • for SITRANS P DS III • for SITRANS P DS III PROFIBUS PA and	7MF4997-1DK 7MF4997-1DL 7MF4997-1DN 7MF4997-1DN 7MF4997-1DP
made of claimede clock	7MF4997-1AJ	FOUNDATION Fieldbus	
Mounting and fastening brackets For differential pressure transmitters with flange thread M10 SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus (7MF433 and 7MF443) • made of steel	7MF4997-1AD	O-rings for process flanges made of: • FPM (Viton) • PTFE (Teflon) • FEP (with silicone core, approved for food) • FFPM (Kalrez, compound 4079) • NBR (Buna N)	7MF4997-2DA 7MF4997-2DB 7MF4997-2DC 7MF4997-2DD 7MF4997-2DE
made of stainless steel	7MF4997-1AK	Sealing ring for process connection	see "Fittings"
Mounting and fastening brackets For differential pressure transmitters with flange thread M12 SITRANS P DS III with HART, DS III with		Weldable sockets for PMC connection PMC Style Standard: Thread 1½" PMC Style Minibolt: front-flush 1" Gaskets for PMC connection	7MF4997-2HA 7MF4997-2HB
PROFIBUS PA and DS III with FOUNDATION Fieldbus (7MF453) • made of steel • made of stainless steel	7MF4997-1AE 7MF4997-1AL	(packing unit = 5 units) • PTFE seal for PMC Style Standard: Thread 1½"	7MF4997-2HC
Mounting and fastening brackets		 Gasket made of Viton for PMC Style Minibolt: front-flush 1" 	7MF4997-2HD
For differential and absolute pressure transmitters with flange thread 7/16 -20 UNF SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus (7MF433, 7MF443 and 7MF453) • made of steel	7MF4997-1AF	Weldable socket for TG52/50 and TG52/150 connection • TG52/50 connection • TG52/150 connection Seals for TG 52/50 and TG 52/150 made of connection	7MF4997-2HE 7MF4997-2HF 7MF4997-2HG
made of stainless steel	7MF4997-1AM	silicone (FDA compliant) Seals for flange connection with front-flush	
Cover made of die-cast aluminum, including gasket, for SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus • without window • with window	7MF4997-1BB 7MF4997-1BE	Seals for flange connection with front-flush diaphragm Material FPM (Viton), 10 units • DN 25, PN 40 (M11) • DN 25, PN 100 (M21) • 1", class 150 (M40) • 1", class 300 (M45) Available ex stock	7MF4997-2HH 7MF4997-2HJ 7MF4997-2HK 7MF4997-2HL
Cover			
made of stainless steel, including gasket, for SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus			

Fieldbus • without window

• with window

Digital indicator

- Measuring point label • without inscription (5 units)
- Printed (1 unit) Data according to Y01 or Y02, Y15, Y16 and Y99 (see "Pressure transmitters")

Including mounting material for SITRANS P
DS III with HART, DS III with PROFIBUS PA and
DS III with FOUNDATION Fieldbus

7MF4997-1CA 7MF4997-1CB-Z Y..:

7MF4997-1BC

7MF4997-1BF

7MF4997-1BR

Transmitters for general requirements

SITRANS P DS III Accessories/Spare Parts

- German - English - French - Spanish - Italian - for SITRANS DS III with FOUNDATION Fieldbus - German - English - English, german, spanish, french, italian, dutch - English, estonian, latvian, lithuanian, polish, romanian - English, bulgarian, czech, finnish, slovakian, slovenian - English, danish, greek, portuguese, swedish, hungarian - Korean - Korean - German, English - for SITRANS DS III with HART - German, English - for SITRANS DS III with PROFIBUS PA - German, English - for SITRANS DS III with FOUNDATION Fieldbus - German, English - for SITRANS DS III with FOUNDATION Fieldbus - German, English - for SITRANS DS III with FOUNDATION Fieldbus - German, English - for SITRANS DS III with FOUNDATION Fieldbus - German, English - for SITRANS DS III with FOUNDATION Fieldbus - German, English - for SITRANS DS III with FOUNDATION Fieldbus - German, English - for SITRANS DS III with FOUNDATION Fieldbus - German, English - for OD with SITRANS P documentation German, English, French, Spanish, Italian incl. compact operating instructions in 21 EU languages Certificates (order only via SAP) instead of Internet download - hard copy (to order) - on CD (to order) Operating Instructions for replacement of electronics, measuring cell and connection board (only available from the Internet) HART modem with USB interface A5E00053275 A5E00053275 A5E00053275 A5E00053275 A5E00079627 A5E03434626 A5E03434631 A5E03434631 A5E03434631 A5E03434645 A5E03434645 A5E03434645 A5E03434656 A5	Selection and Ordering data	Article No.
- German - English - English - French - Spanish - Italian - German - English - Italian - German - English - Italian - German - English - German - English - Italian - German - English - German - English - German - English - German - English - German - English, german, spanish, french, italian, dutch - English, bulgarian, czech, finnish, slovakian, slovenian - English, bulgarian, czech, finnish, slovakian, slovenian - English, danish, greek, portuguese, swedish, hungarian - Korean -		
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with USB interface TMF4997-1DB	Internet) ¹⁾	
	HART modem	
Supplementary electronics for 4-wire See page 1/164	with USB interface	7MF4997-1DB

Available ex stock

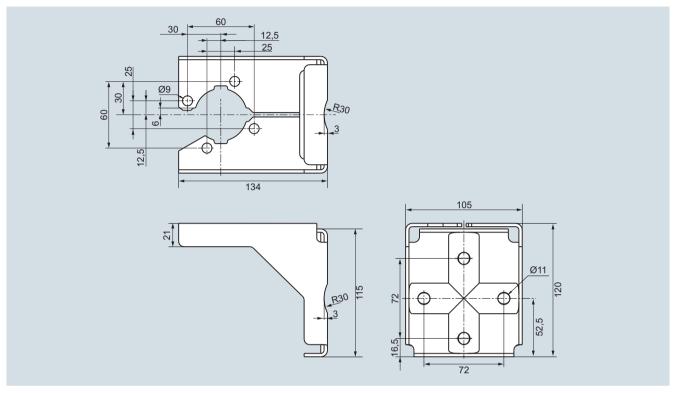
Power supply units see Chap. 7 "Supplementary Components".

1) You can download these operating instructions free-of-charge from our Internet site at www.siemens.com/sitransp.

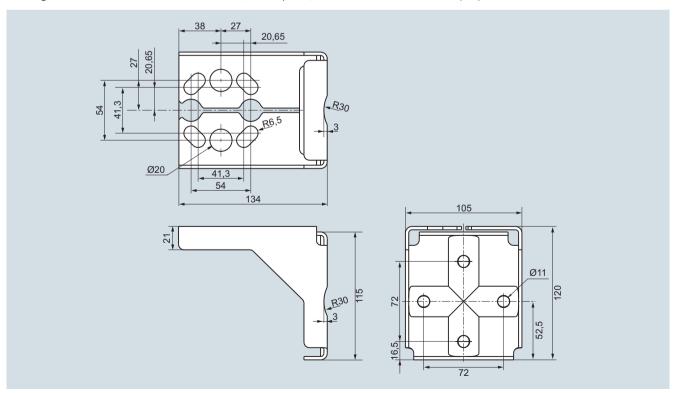
Transmitters for general requirements

SITRANS P DS III Accessories/Spare Parts

Dimensional drawings



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

Transmitters for general requirements

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

Overview

SITRANS P transmitters

- DS III for relative and absolute pressure (both designs) and
- DS III for differential pressure

can be delivered factory-fitted with the following valve manifolds:

- 7MF9011-4EA and 7MF9011-4FA valve manifolds for gauge pressure and absolute pressure transmitters
- 7MF9411-5BA and 7MF9411-5CA valve manifolds for absolute pressure and differential pressure transmitters

Design

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

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

The 7MF9411-5BA and 7MF9411-5CA valve manifolds are sealed with PTFE sealing rings between the transmitter and the valve manifold.

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

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

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

If you order an acceptance test certificate 3.1 to EN10204 when choosing the option "Factory mounting of valve manifolds", a separate certificate is provided for the transmitters and the valve manifolds respectively.

Selection and Ordering data

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



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

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



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

Transmitters for general requirements

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

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



Add -Z to the Article No. of the transmitter and add Order codes	Order code
SITRANS P DSIII 7MF4031, 7MF4231	T03
With process connection female thread ½-14 NPT in-sealed with PTFE sealing tape	
Delivery incl. high-pressure test certified by test report to EN10204-2.2	
Further designs:	
Delivery includes mounting brackets and mounting clips made of stainless steel (instead of the mounting bracket supplied with the transmitter)	A02
Supplied acceptance test certificate to EN 10204- 3.1 for transmitters and mounted valve manifold	C12
With manufacturer declaration according to NACE, MR-0175	D07

7MF9011-4EA

valve manifold on relative and absolute pressure transmitters



· · · · · · · · · · · · · · · · · · ·				
Add -Z to the Article No. of the transmitter and add Order codes	Order code			
SITRANS P DSIII 7MF4030, 7MF4230 with process connection collar G1/2 A to EN 837-1 with gasket made of PTFE between valve manifold and transmitter	T02			
Alternative sealing material: • Soft iron • Stainless steel, Mat. No. 14571 • copper	A70 A71 A72			
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			

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



	Add -Z to the Article No. of the transmitter and add Order codes	Order code
1	SITRANS P DSIII 7MF433, 7MF443 and 7MF453 1)	
	mounted with gaskets made of PTFE and screws made of • chromized steel • made of stainless steel	U01 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
	Steel Stainless steel	A01 A02
	(instead of the mounting bracket supplied with the transmitter)	7102
	Supplied acceptance test certificate to EN 10204-3.1 for transmitters and mounted valve manifold	C12
	With manufacturer declaration according to NACE, MR-0175	D07

7MF9411-5CA valve manifold on differential pressure transmitters



6	$\operatorname{Add} \operatorname{\textbf{-Z}}$ to the Article No. of the transmitter and add Order codes	Order code
	SITRANS P DSIII 7MF443 and 7MF4531 1) mounted with gaskets made of PTFE and screws made of • chromized steel • 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

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

Transmitters for general requirements

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

Dimensional drawings

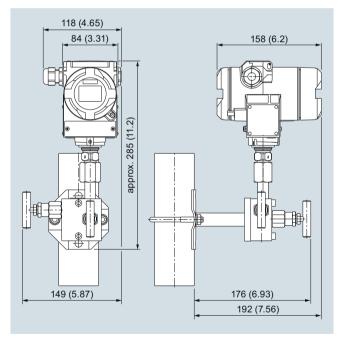
Valve manifolds mounted on SITRANS P DS III



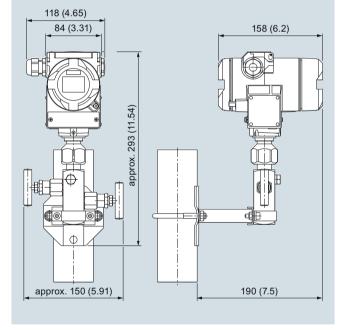
7MF9011-4EA valve manifold with mounted gauge pressure and absolute pressure transmitters



 $7 MF 9011 \hbox{-} 4FA$ valve manifold with mounted gauge pressure and absolute pressure transmitters



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



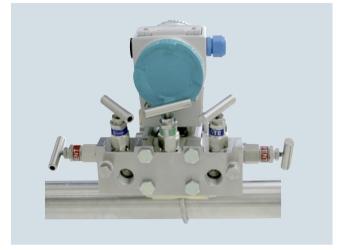
7MF9011-4FA valve manifold with mounted gauge pressure and absolute pressure transmitters, dimensions in mm (inch)

Transmitters for general requirements

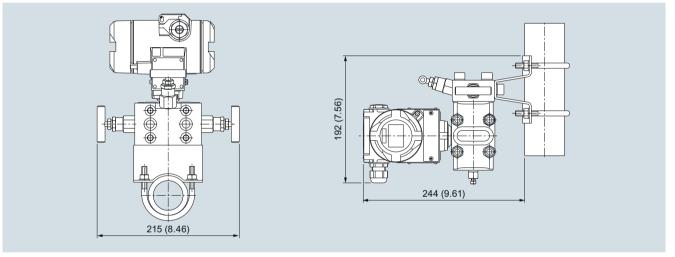
SITRANS P DS III - Factory-mounting of valve manifolds on transmitters



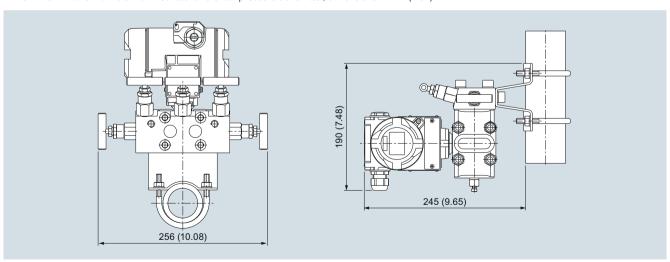
 $7\mbox{MF9411-5BA}$ valve manifold with mounted differential pressure transmitter



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



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



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