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 Chap.ter "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).

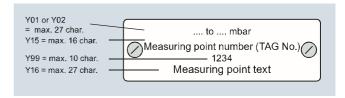
The approval label is located on the opposite side.

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 kevs.

Example for an attached measuring point label



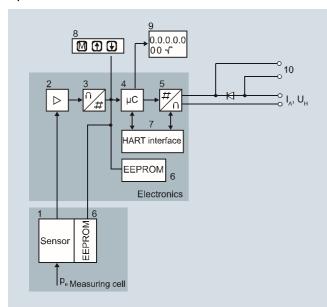
Transmitters for general requirements

SITRANS P DS III

Technical description

Function

Operation of electronics with HART communication



- Measuring cell sensor
- 2 Instrument amplifier
- 3 Analog-to-digital converter
- 4 Microcontroller
- 5 Digital-to-analog converter
- One non-volatile memory each in the measuring cell and electronics
- 7 HART interface
- 8 Three input keys (local operation)
- 9 Digital display
- 10 Diode circuit and connection for external ammeter
- I, 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.

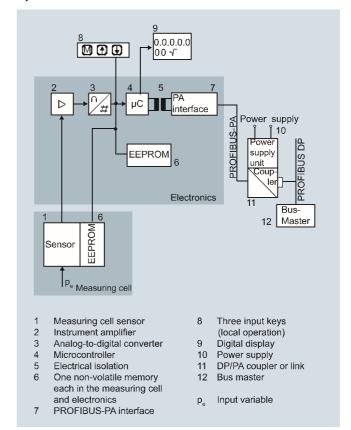
The data specific to the measuring cell, the electronics data, and the parameter data are stored in the two non-volatile memories (6). The one memory is coupled to the measuring cell, the other to the electronics. As the result of this modular design, the electronics and the measuring cell can be replaced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

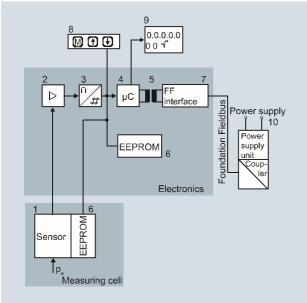
Using the three input buttons (8) you can parameterize the pressure transmitter directly at the measuring point. The input buttons can also be used to control the view of the results, the error messages and the operating modes on the display (9).

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



- 1 Measuring cell sensor
- 2 Instrument amplifier
- 3 Analog-to-digital converter
- 4 Microcontroller
- 5 Electrical isolation
- 6 One non-volatile memory each in the measuring cell and electronics
- 7 FF interface

- 8 Three input keys (local operation)
- 9 Digital display
- 10 Power supply
- p_e Input variable

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).

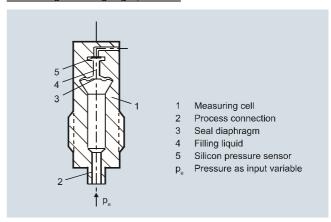
The data specific to the measuring cell, the electronics data, and the parameter data are stored in the two non-volatile memories (6). The one memory is coupled to the measuring cell, the other to the electronics. As the result of this modular design, the electronics and the measuring cell can be replaced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

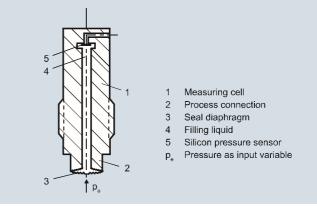
Measuring cell for gauge pressure



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



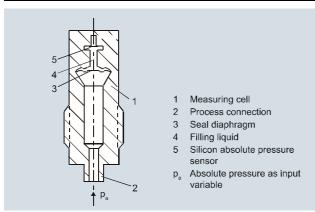
Measuring cell for gauge pressure, with front-flush diaphragm for paper industry, function diagram

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

Transmitters for general requirements

SITRANS P DS III
Technical description

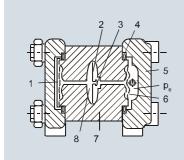
Measuring cell for absolute pressure from gauge pressure series



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

The absolute pressure $_{\rm p}{\rm e}$ 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



- 1 Reference vacuum
- 2 Overload diaphragm
- 3 Silicon pressure sensor
- 4 O-ring
- 5 Process flange
- 6 Seal diaphragm
- 7 Body of measuring cell
- 8 Filling liquid
- p_e Absolute pressure as input variable

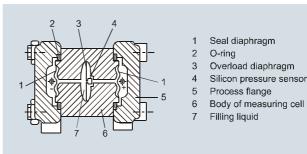
Measuring cell for absolute pressure from differential pressure series, function diagram

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



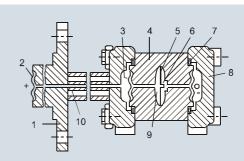
Measuring cell for differential pressure and flow, function diagram

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



- 1 Flange with tube
- 2 Seal diaphragm on mounting flange
- 3 Seal diaphragm
- 4 Body of measuring cell
- 5 Overload diaphragm
- 6 Silicon pressure sensor
- 7 O-ring
- 8 Process flange
- 9 Filling liquid
- 10 Capillary with filling liquid of mounting flange

Measuring cell for level, function diagram

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

This changes the resistance of the four piezo-resistors fitted in the diaphragm in a bridge circuit.

This change in resistance results in a bridge output voltage proportional to the differential pressure.

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

Transmitters for general requirements

SITRANS P DS III
Technical description

Parameterization DS III

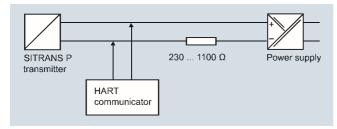
Depending on the version, there are a range of options for parameterizing the pressure transmitter and for setting or scanning the parameters.

Parameterization using the input buttons (local operation)

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

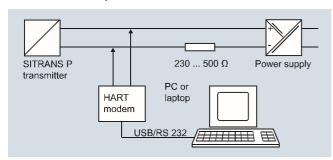
Parameterization using HART

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

Parameters	Input keys (DS III HART)	HART communication
Start of scale	X	X
Full-scale value	X	X
Electrical damping	X	Χ
Start-of-scale value without application of a pressure ("Blind setting")	X	X
Full-scale value without application of a pressure ("Blind setting")	Х	X
Zero adjustment	X	X
current transmitter	X	X
Fault current	X	X
Disabling of buttons, write protection	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

Cancel apart from write protection

Diagnostic functions for DS III with HART

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

Available physical units of display for DS III with HART

Table style: Technical specifications 2

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

Only differential pressure

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Diagnostic functions for DS III with PROFIBUS PA and FOUNDATION Fieldbus

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

Physical dimensions available for the display

Physical variable	Physical dimensions
Pressure (setting can also be made in the factory)	MPa, kPa, Pa, bar, mbar, torr, atm, psi, g/cm², kg/cm², mmH $_2$ O, mmH $_2$ O (4 °C), ftH $_2$ O (20 °C), mmHg, inHg
Level (height data)	m, cm, mm, ft, in, yd
Volume	m ³ , dm ³ , hl, yd ³ , ft ³ , in ³ , US gallon, lmp. gallon, bushel, barrel, barrel liquid
volume flow	$\rm m^3/s,m^3/min,m^3/h,m^3/d,l/s,l/min,l/h,l/$ d, Ml/d, $\rm ft^3/s,ft^3/min,ft^3/h,ft^3/d,US$ gallon/s, US gallon/min, US gallon/h, US gallon/d, bbl/s, bbl/min, bbl/h, bbl/d
Mass flow	g/s, g/min, g/h, g/d, kg/s, kg/min, kg/h, kg/d, t/s, t/min, t/h, /t/d, lb/s, lb/min, lb/h, lb/d, STon/s, STon/min, STon/h, STon/d, LTon/s, LTon/min, LTon/h, LTon/d
Total mass flow	t, kg, g, lb, oz, LTon, STon
Temperature	K, °C, °F, °R
Miscellaneous	%

Pressure Measurement Transmitters for general requirements SITRANS P DS III for gauge pressure

Technical specifications

SITRANS P. DS III series for gauge pressure				
Sittians 1, bs in series for gauge pressure	HART		PROFIBUS PA and F	OUNDATION Fieldbus
Input				
Measured variable		Gau	ge pressure	
Spans (infinitely adjustable) or nominal measuring range and	Span (min max.)	Max. perm. test pressure	Nominal measuring range	Max. perm. test pressure
max. permissible 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			ar a (0.44 psia)	
Measuring cell with inert filling liquid			ar a (0.44 psia)	
Upper measuring limit	100 % of max. sp	an (for oxygen version	and inert filling liquid; max	x. 120 bar (1740 psi))
Output	4 00 4		D: :: I DD OFIDI IO DA	LEOUND ATION ET L
Output signal	4 20 mA		bus signal	and FOUNDATION Field
Lower limit (infinitely adjustable)	3.55 mA, factory prese		-	
Upper limit (infinitely adjustable)	23 mA, factory preset t set to 22.0 mA	o 20.5 mA or optionally	-	
Load				
• Without HART	$R_{\rm B} \le (U_{\rm H} - 10.5 \text{ V})/0.02$ $U_{\rm H}$: Power supply in V		-	
• With HART	$R_{\rm B} = 230 \dots 500 \Omega$ (SIM) $R_{\rm B} = 230 \dots 1100 \Omega$ (H)		-	
Physical bus	-		IEC 61158-2	
Protection against polarity reversal	Protected against shor	sup	eversal. Each connection a ply voltage.	gainst the other with ma
Electrical damping (step width 0.1 s)			2 s (0 100 s)	
Measuring accuracy			DIEC 60770-1	
Reference conditions (All error data refer always refer to the set span)	Increasing characterist ing, room te	ic, start-of-scale value mperature 25 °C (77 °F	0 bar, stainless steel seal F)) r: Span ratio (r = max. s	diaphragm, silicone oil span / set span)
Error in measurement at limit setting incl. hysteresis and reproducibility Linear characteristic			≤ 0.075 %	
- r ≤ 10	< (0.0000 r + 0.071) %	,	≥ 0.075 %	
- 10 < r ≤ 30	$\leq (0.0029 \cdot r + 0.071) \%$ $\leq (0.0045 \cdot r + 0.071) \%$			
- 10 < 1 ≤ 30 - 30 < r ≤ 100	$\leq (0.0045 \cdot r + 0.071) \%$ $\leq (0.005 \cdot r + 0.05) \%$	J		
Long-term stability (temperature change ± 30 °C (± 54 °F))	2 (0.000 1 1 0.00) 70			
■ 1 4-bar measuring cell ■ 1 4-bar measuring cell	≤ (0.25 · r) % per 5 yea	rs	≤ 0.25 % per 5 years	
• 16 700-bar measuring cell	≤ (0.125 · r) % per 5 ye		≤ 0.125 % per 5 years	
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⁾	≤ 0.3 %	
• at -4010 °C and +60 +85 °C (-40 +14 °F and 140 185 °F)	\leq (0.1 · r + 0.15) %/10 H	<	≤ 0.25 %/10 K	
Measured Value Resolution	-		$3 \cdot 10^{-5}$ of nominal me	asuring range

Pressure Measurement 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)	IP65 (option	nal IP65/IP68)
Temperature of medium		
 Measuring cell with silicone oil filling 	-40 +100 °C	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	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	g (≈ 3.3 lb)
Enclosure material	Low-copper die-cast aluminum, GD-AlSi 12 or stainless steel precision casting, mat. no. 1.44	
Wetted parts materials		
Connection shank	Stainless steel, mat. no. 1.4404/316L or Hastelloy C4, mat. no. 2.4610	
Oval flange	Stainless steel, mat. no. 1.4404/316L	
Seal diaphragm	Stainless steel, mat. no. 1.4404/310	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	Connection shank $G\frac{1}{2}B$ to DIN EN 837-(PN 160 (MAWP 2320 psi)) to DIN 19213 with r	-1, female thread $\frac{1}{2}$ -14 NPT or oval flange mounting thread M10 or $^{7}/_{16}$ -20 UNF to EN 61518
Material of mounting bracket		
Steel	Sheet-steel, Mat. No.	1.0330, chrome-plated
Stainless steel	Sheet stainless steel,	mat. no. 1.4301 (SS 304)
Power supply $ extbf{ extit{U}}_{dash}$		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

Pressure Measurement Transmitters for general requirements

SITRANS P DS III for gauge pressure

	HART	PROFIBUS PA and FOUNDATION Fieldbus	
Certificates and approvals	HALL	THE IDOUTA and I CONDATION I REGIDES	
Classification according to PED 97/23/EC	For gases of fluid group 1 and liquids of fluid group 1; complies with requirements of article 3 paragraph 3 (sound engineering practice)		
Explosion protection			
Intrinsic safety "i"	PTB 13 A	TEX 2007 X	
- Marking	Ex II 1/2 G Ex ia/ib	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: $U_i=30$ V, $I_i=100$ mA, $P_i=750$ mW; $R_i=300$ Ω	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, $I_{\rm o}$ = 174 mA, $P_{\rm o}$ = 1 W	
- Effective internal inductance/capacitance	$L_{i} = 0.4 \text{ mH}, C_{i} = 6 \text{ nF}$	$L_{i} = 7 \mu H, C_{i} = 1.1 nF$	
Explosion-proof "d"	PTB 99	ATEX 1160	
- Marking	Ex II 1/2 G Ex	d IIC T4/T6 Gb	
- Permissible ambient temperature	-40 +85 °C (-40 +18 -40 +60 °C (-40 +14	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: $U_{\rm H}$ = 9 32 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: $U_i = 30 \text{ V}, I_i = 100 \text{ mA},$	FISCO supply unit: $U_0 = 17.5 \text{ V}$, $I_0 = 380 \text{ mA}$, $P_0 = 5.32 \text{ W}$ Linear barrier:	
	$P_{\rm i} = 750 {\rm mW}, R_{\rm i} = 300 \Omega$	$U_0 = 24 \text{ V}, I_0 = 250 \text{ mA}, P_0 = 1 \text{ W}$	
- Effective internal inductance/capacitance	$L_{\rm j} = 0.4 {\rm mH}, C_{\rm j} = 6 {\rm nF}$	$L_{i} = 7 \mu H, C_{i} = 1.1 nF$	
Dust explosion protection for zone 21/22	PTB 01 /	ATEX 2055	
- Marking	Ex II 2 D IF	P65 T 120 °C	
- Connection	To circuits with values: $U_{H} = 10.5 \dots 45 \text{ V DC}$; $P_{\text{max}} = 1.2 \text{ W}$	To circuits with values: $U_H = 9 \dots 32 \text{ V DC}$; $P_{\text{max}} = 1 \text{ W}$	
Type of protection "n" (zone 2)	PTB 13 A	TEX 2007 X	
- Marking		nA T4/T5/T6 Gc 	
- Connection (Ex nA)	$U_{\rm m} = 45 \text{ V}$	$U_{\rm m}$ = 32 V	
- Connections (Ex ic)	To circuits with values: $U_i = 45 \text{ V}$	FISCO supply unit ic: $U_{\rm o}$ = 17.5 V, $I_{\rm o}$ = 570 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		mpliance 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 DIV 2, GP ABCD T4T6; CL II, DIV 2, GP FG; CL III		
Explosion protection to CSA	Certificate of Compliance 1153651		
- Identification (XP/DIP) or (IS)	CL I, DIV 1, GP ABCD T4T6; CL II, DIV 1, GP E	FG; CL III; Ex ia IIC T4T6; CL I, DIV 2, GP ABC IV 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 . r + 0.16) % / 28 °C (50 °F).

Transmitters for general requirements

SITRANS P DS III for gauge pressure

HART communication	
HART	230 1100 Ω
Protocol	HART Version 5.x
Software for computer	SIMATIC PDM
PROFIBUS PA communication	
Simultaneous communication with master class 2 (max.)	4
The address can be set using	Configuration tool or local opera- tion (standard setting address 126)
Cyclic data usage	
Output byte	5 (one measured value) or 10 (two measured values)
• Input byte	0, 1, or 2 (register operating mode and reset function for metering)
Internal preprocessing	
Device profile	PROFIBUS PA Profile for Process Control Devices Version 3.0, Class B
Function blocks	2
Analog input	
 Adaptation to customer-specific process variables 	Yes, linearly rising or falling characteristic
- Electrical damping, adjustable	0 100 s
- Simulation function	Input /Output
- Failure mode	parameterizable (last good value, substitute value, incorrect value)
- Limit monitoring	Yes, one upper and lower warn- ing limit and one alarm limit respectively
Register (totalizer)	Can be reset, preset, optional direction of counting, simulation function of register output
- Failure mode	parameterizable (summation with last good value, continuous summation, summation with incorrect value)
- Limit monitoring	One upper and lower warning limit and one alarm limit respec- tively
Physical block	1
Transducer blocks	2
Pressure transducer block	
 Can be calibrated by applying two pressures 	Yes
- Monitoring of sensor limits	Yes
 Specification of a container characteristic with 	Max. 30 nodes
 Square-rooted characteristic for flow measurement 	Yes
 Gradual volume suppression and implementation point of square-root extraction 	Parameterizable
- Simulation function for mea- sured pressure value and sen- sor temperature	Constant value or over parameterizable ramp function

FOUNDATION Fieldbus communication

Function blocks

- Analog input
 - Adaptation to customer-specific process variables
 - Electrical damping, adjustable
- Simulation function
- Failure mode
- Limit monitoring
- Square-rooted characteristic for flow measurement
- PII
- Physical block

Transducer blocks

- Pressure transducer block
- Can be calibrated by applying two pressures
- Monitoring of sensor limits
- Simulation function: Measured pressure value, sensor temperature and electronics temperature

3 function blocks analog input, 1 function block PID

Yes, linearly rising or falling characteristic

0 ... 100 s

Output/input (can be locked within the device with a bridge)

parameterizable (last good value, substitute value, incorrect value)

Yes, one upper and lower warning limit and one alarm limit respectively

Yes

Standard FOUNDATION Fieldbus function block

1 resource block

1 transducer block Pressure with calibration, 1 transducer block LCD

Yes

Yes

Constant value or over parameterizable ramp function

sor temperature

Transmitters for general requirements

SITRANS P DS III for gauge pressure

Screwed gland M20 x1 .5 Screwed gland ½-14 NPT Han 7D plug (plastic housing) incl. mating	Selection and Ordering	g data		Arti	cle	No	Э.		
Silicone oil normal prease-free to cleanliness level 2 Measuring span (min max.)									
Inert liquid ¹ grease-free to cleanliness level 2 3	Measuring cell filling		•						
Cleanliness level 2 Measuring span (min max.)	Silicone oil	•	▶ •	1					
0.01 1 bar	Inert liquid ¹⁾			3					
0.04 4 bar	Measuring span (min.	max.)							
0.16 16 bar (2.32 232 psi)									
0.63 63 bar (9.14 914 psi) 1.6 160 bar (23.2 2320 psi) 4.0 400 bar (58.0 5802 psi) 7.0 700 bar (102.0 10153 psi) Wetted parts materials Seal diaphragm Process connection Stainless steel Stainless steel Hastelloy Stainless steel Hastelloy Hastelloy Version as diaphragm seal ^{21,3} 4,5) Process connection • Connection shank G½B to EN 837-1 • Female thread ½-14 NPT • Stainless steel oval flange with process connection (Oval flange has no female thread) - Mounting thread M10 to DIN 19213 - Mounting thread M12 to DIN 19213 - Mounting thread M12 to DIN 19213 - Male thread ½ -14 NPT Non-wetted parts materials • Housing made of die-cast aluminium • Housing stainless steel precision casting ⁶) Version • Standard versions • International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection • None • With ATEX, Type of protection: - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d) * - "Ex nA/ic (Zone 2)* - "Ex nA/ic (Zone 2)* - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d) + Zone 1D/2D)* - "EN CSA, Type of protection: - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d) + Zone 1D/2D)* • FM + CSA intrinsic safe (is) • FM + CSA, Type of protection: - "Intrinsic Safe und Explosion Proof (is + xp)* • Screwed gland M20 x1.5		1 /		_					
1.6 160 bar (23.2 2320 psi) 4.0 400 bar (58.0 5802 psi) 7.0 700 bar (102.0 10153 psi) Wetted parts materials Seal diaphragm Process connection Stainless steel Stainless steel Hastelloy Stainless steel Hastelloy Hastelloy Version as diaphragm seal 2 3 4 5 5 Process connection Connection shank G½B to EN 837-1 • Female thread ½-14 NPT • Stainless steel oval flange with process connection (Oval flange has no female thread) - Mounting thread ½-14 NPT • Stainless steel oval flange with process connection (Oval flange has no female thread) - Mounting thread ½-14 NPT • Male thread ½-14 NPT Non-wetted parts materials • Housing thread M12 to DIN 19213 • Male thread ½-14 NPT Non-wetted parts materials • Housing stainless steel precision casting 6) Version • Standard versions • International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection: • 'Intrinsic safety (Ex ia)' • "Explosion-proof (Ex d)"7) • 'Intrinsic safety (Ex ia)' • "Explosion-proof (Ex d)"7) • 'Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)'* • FM + CSA (is + ep) + Ex ia + Ex d (ATEX) • FM + CSA (is + ep) + Ex ia + Ex d (ATEX) • With FM + CSA, Type of protection: • 'Intrinsic Safe und Explosion Proof (is + xp)*7) Electrical connection / cable entry • Screwed gland Pg 13.5 (adapter) 10) • Screwed gland ½-14 NPT Han 7D plud (plastic housing) incl. mating		' ' '		_					
4.0 400 bar (58.0 5802 psi) 7.0 700 bar (102.0 10153 psi) J Wetted parts materials Seal diaphragm Process connection Stainless steel Stainless steel Hastelloy Stainless steel Hastelloy Hastelloy CC Version as diaphragm seal 2) 3) 4) 5) Process connection • Connection shank G/zB to EN 837-1 • Female thread ½-14 NPT • Stainless steel oval flange with process connection (Oval flange has no female thread) • Mounting thread M10 to DIN 19213 • Mounting thread M10 to DIN 19213 • Male thread M20 x 1.5 • Male thread ½-14 NPT Non-wetted parts materials • Housing made of die-cast aluminium • Housing stainless steel precision casting ⁶) Version • Standard version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection • With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)" ⁷⁷ - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)* ⁶³ • FM + CSA intrinsic safe (is) • FM + CSA, Type of protection: - "Intrinsic Safe und Explosion Proof (is + xp)* ⁷⁷ • Screwed gland Pg 13.5 (adapter) ¹⁰⁰ • Screwed gland M20 x1 .5 • Screwed gland M20 x1 NPT • Han 7D pluc (plastic housing) incl. mating		' '							
Wetted parts materials Seal diaphragm Process connection Stainless steel Stainless steel Hastelloy Stainless steel Hastelloy Hastelloy Coversion as diaphragm seal ²⁾ ³⁾ ⁴⁾ ⁵⁾ Process connection • Connection shank Gi/2B to EN 837-1 • Female thread ½-14 NPT • Stainless steel oval flange with process connection (Oval flange has no female thread) • Mounting thread M10 to DIN 19213 • Mounting thread M10 to DIN 19213 • Male thread ½-14 NPT Non-wetted parts materials • Housing made of die-cast aluminium • Housing stainless steel precision casting ⁶⁾ Version • Standard versions • International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection • None • With ATEX, Type of protection: • "Intrinsic safety (Ex ia)" • "Explosion-proof (Ex d)* ⁷⁷ • "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)* ²⁸ • FM + CSA intrinsic safe (is) • FM + CSA, Type of protection: • "Intrinsic Safe und Explosion Proof (is + xp)* ⁷⁷ • With FM + CSA, Type of protection: • "Intrinsic Safe und Explosion Proof (is + xp)* ⁷⁷ • Screwed gland Pg 13.5 (adapter)* ¹⁰⁰ • Screwed gland M20 x1.5									
Wetted parts materials Seal diaphragm									
Seal diaphragm Process connection Stainless steel Stainless steel Hastelloy Stainless steel Hastelloy Hastelloy C C Version as diaphragm seal ²⁾ ³⁾ ⁴⁾ ⁵⁾ Process connection • Connection shank Gl/2B to EN 837-1 • Female thread ¹ /2-14 NPT • Stainless steel oval flange with process connection (Oval flange has no female thread) - Mounting thread ⁷ / ₁₆ - ² 0 UNF to IEC 61518 - Mounting thread M10 to DIN 19213 - Mounting thread M12 to DIN 19213 - Mounting thread M12 to DIN 19213 - Male thread ¹ / ₂ -14 NPT Non-wetted parts materials • Housing made of die-cast aluminium • Housing stainless steel precision casting ⁶) Version • Standard versions • International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection • None • With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)" ⁷) - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)* - "FM + CSA intrinsic safe (is) • FM + CSA (is + ep) + Ex ia + Ex d (ATEX) • With FM + CSA, Type of protection: - "Intrinsic Safe und Explosion Proof (is + xp)" ⁷⁾ • Electrical connection / cable entry • Screwed gland M20 x1 .5 • Screwed gland M20 x1 .5 • Screwed gland M2-14 NPT • Han 7D pluc (plastic housing) incl. mating		· · · · · · · · · · · · · · · · · · ·		, o					
Hastelloy Stainless steel Hastelloy Hastelloy Version as diaphragm seal 2) 3) 4) 5) Process connection Connection shank G/B to EN 837-1 Female thread 1/2-14 NPT Stainless steel oval flange with process connection (Oval flange has no female thread) Mounting thread 1/16-20 UNF to IEC 61518 Mounting thread M10 to DIN 19213 Mounting thread M12 to DIN 19213 Male thread M20 x 1.5 Male thread 1/2-14 NPT Non-wetted parts materials Housing made of die-cast aluminium Housing stainless steel precision casting 3 Version Standard versions International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection None With ATEX, Type of protection: "Intrinsic safety (Ex ia)" "Explosion-proof (Ex d)*7) "Intrinsic safety and flameproof enclosure (Ex ia + Ex d)*0 "Ex na/ic (Zone 2)*0 "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)*8 FM + CSA (is + ep) + Ex ia + Ex d (ATEX) With FM + CSA, Type of protection: "Intrinsic Safe und Explosion Proof (is + xp)*7) Electrical connection / cable entry Screwed gland M20 x1 .5 Screwed gland M20 x1 .5 Screwed gland M20 x1 A NPT Han 7D plug (plastic housing) incl. mating	•								
Hastelloy Version as diaphragm seal 2) 3) 4) 5) Process connection • Connection shank G½B to EN 837-1 • Female thread ½-14 NPT • Stainless steel oval flange with process connection (Oval flange has no female thread) - Mounting thread 7/ ₁₆ -20 UNF to IEC 61518 - Mounting thread M10 to DIN 19213 - Mounting thread M12 to DIN 19213 - Mounting thread M12 to DIN 19213 • Male thread M20 x 1.5 • Male thread ½-14 NPT Non-wetted parts materials • Housing made of die-cast aluminium • Housing stainless steel precision casting ⁶) Version • Standard versions • International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection • None • With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Ex plosion-proof (Ex d)*7) - "Intrinsic safety, and flameproof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)*3) • FM + CSA intrinsic safe (is) • FM + CSA, Type of protection: - "Intrinsic Safe und Explosion Proof (is + xp)*7) • With FM + CSA, Type of protection: - "Intrinsic Safe und Explosion Proof (is + xp)*7) • Screwed gland M20 x1 .5 • Screwed gland M20 x1 ANPT • Han 7D plug (plastic housing) incl. mating	Stainless steel	Stainless steel	>		Α				
Version as diaphragm seal ^{2) (3) (4) (5)} Process connection • Connection shank G1/2B to EN 837-1 • Female thread 1/2-14 NPT • Stainless steel oval flange with process connection (Oval flange has no female thread) - Mounting thread 1/2-0 UNF to IEC 61518 - Mounting thread M10 to DIN 19213 - Mounting thread M12 to DIN 19213 • Male thread M20 x 1.5 • Male thread 1/2 -14 NPT Non-wetted parts materials • Housing made of die-cast aluminium • Housing stainless steel precision casting (6) Version • Standard versions • International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection • None • With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)" - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)" • FM + CSA intrinsic safe (is) • FM + CSA (is + ep) + Ex ia + Ex d (ATEX) • With FM + CSA, Type of protection: - "Intrinsic Safe und Explosion Proof (is + xp)" • Screwed gland M20 x1 .5 • Screwed gland M20 x1 NPT • Han 7D plug (plastic housing) incl. mating	•								
Process connection Connection shank G½B to EN 837-1 Female thread ½-14 NPT Stainless steel oval flange with process connection (Oval flange has no female thread) Mounting thread 7/ ₁₆ -20 UNF to IEC 61518 Mounting thread M10 to DIN 19213 Mounting thread M12 to DIN 19213 Male thread M20 x 1.5 Male thread M20 x 1.5 Male thread ½ -14 NPT Non-wetted parts materials Housing made of die-cast aluminium Housing stainless steel precision casting Version Standard versions International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection With ATEX, Type of protection: "Intrinsic safety (Ex ia)" "Explosion-proof (Ex d)"7) "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)"3) "Ex nA/ic (Zone 2)"9) "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)"3) FM + CSA intrinsic safe (is) FM + CSA intrinsic safe (is) FM + CSA, Type of protection: "Intrinsic Safe und Explosion Proof (is + xp)"7) Note that the connection / cable entry Screwed gland Pg 13.5 (adapter) ¹⁰⁾ Screwed gland M20 x 1.5	Hastelloy	Hastelloy							
• Connection shank G½B to EN 837-1 • Fernale thread ½-14 NPT • Stainless steel oval flange with process connection (Oval flange has no female thread) - Mounting thread 7/ ₁₆ -20 UNF to IEC 61518 - Mounting thread M10 to DIN 19213 • Mounting thread M12 to DIN 19213 • Male thread M20 x 1.5 • Male thread M20 x 1.5 • Male thread ½ -14 NPT Non-wetted parts materials • Housing made of die-cast aluminium • Housing stainless steel precision casting ⁶) Version • Standard versions • International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection • None • With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)"7) - "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)"8) - "Ex nA/ic (Zone 2)"9) - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)"8) • FM + CSA intrinsic safe (is) • FM + CSA intrinsic safe (is) • FM + CSA intrinsic safe und Explosion Proof (is + xp)"7) • With FM + CSA, Type of protection: - "Intrinsic Safe und Explosion Proof (is + xp)"7) • Screwed gland Pg 13.5 (adapter) • Screwed gland M20 x 1.5 • Screwed gland M20 x 1.5 • Screwed gland ½-14 NPT • Han 7D plug (plastic housing) incl. mating		eal 4/3/4/3/			Y				
• Female thread ½-14 NPT • Stainless steel oval flange with process connection (Oval flange has no female thread) - Mounting thread 7/ ₁₆ -20 UNF to IEC 61518 - Mounting thread M10 to DIN 19213 - Mounting thread M12 to DIN 19213 • Male thread M20 x 1.5 • Male thread ½-14 NPT • Mon-wetted parts materials • Housing made of die-cast aluminium • Housing stainless steel precision casting • Housing made of die-cast aluminium • Monoretted parts materials • Housing made of die-cast aluminium • Monoretted parts materials • Housing materials • Housing made of die-cast aluminium • Monoretted parts materials • Housing materials • Lauretted parts materials • Lau		D. 511007							
• Stainless steel oval flange with process connection (Oval flange has no female thread) - Mounting thread 7/ ₁₆ -20 UNF to IEC 61518 - Mounting thread M10 to DIN 19213 - Mounting thread M12 to DIN 19213 • Male thread M20 x 1.5 • Male thread ½ -14 NPT Non-wetted parts materials • Housing made of die-cast aluminium • Housing stainless steel precision casting ⁶) Version • Standard versions • International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection • None • With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)" ⁷) - "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)" ⁸) - "Ex nA/ic (Zone 2)" ⁹) - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)" ⁸) • FM + CSA (is + ep) + Ex ia + Ex d (ATEX) • With FM + CSA, Type of protection: - "Intrinsic Safe und Explosion Proof (is + xp)" ⁷) Electrical connection / cable entry • Screwed gland M20 x1 .5									
nection (Oval flange has no female thread) - Mounting thread ⁷ / ₁₆ -20 UNF to IEC 61518 - Mounting thread M10 to DIN 19213 - Mounting thread M12 to DIN 19213 • Male thread M20 x 1.5 • Male thread ½ -14 NPT Non-wetted parts materials • Housing made of die-cast aluminium • Housing stainless steel precision casting ⁶⁾ Version • Standard versions • International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection • None • With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)" - "Explosion-proof (Ex d)" - "Ex nA/ic (Zone 2)" - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)" • FM + CSA (is + ep) + Ex ia + Ex d (ATEX) • With FM + CSA, Type of protection: - "Intrinsic Safe und Explosion Proof (is + xp)" • Screwed gland M20 x 1.5 • Screwed gland M20 x 1.5 • Screwed gland M20 x 1.5 • Screwed gland ½-14 NPT • Han 7D plue (plastic housing) incl. mating			_		'				
- Mounting thread ⁷ / ₁₆ -20 UNF to IEC 61518 - Mounting thread M10 to DIN 19213 - Mounting thread M12 to DIN 19213 • Male thread M20 x 1.5 • Male thread ½ -14 NPT Non-wetted parts materials • Housing made of die-cast aluminium • Housing stainless steel precision casting ⁶) Version • Standard versions • International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection • None • With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)" - "Explosion-proof (Ex d)" - "Intrinsic safety and flameproof enclosure (Ex ia + Ex d)" - "Ex nA/ic (Zone 2)" - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)" - "FM + CSA (is + ep) + Ex ia + Ex d (ATEX) - "Intrinsic Safe und Explosion Proof (is + xp)" - "Screwed gland Pg 13.5 (adapter) (adapter) - Screwed gland ½-14 NPT - Han 7D plue (plastic housing) incl. mating									
- Mounting thread M10 to DIN 19213 - Mounting thread M12 to DIN 19213 • Male thread M20 x 1.5 • Male thread ½ -14 NPT Non-wetted parts materials • Housing made of die-cast aluminium • Housing stainless steel precision casting ⁶⁾ Version • Standard versions • International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection • None • With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)" - "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)" - "Ex nA/ic (Zone 2)" - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)" • FM + CSA intrinsic safe (is) • FM + CSA, Type of protection: - "Intrinsic Safe und Explosion Proof (is + xp)" • With FM + CSA, Type of protection: - "Intrinsic Safe und Explosion Proof (is + xp)" • Screwed gland M20 x 1.5 • Screwed gland M20 x 1.5 • Screwed gland ½-14 NPT • Han 7D pluc (plastic housing) incl. mating					2				
- Mounting thread M12 to DIN 19213 • Male thread M20 x 1.5 • Male thread ½ -14 NPT Non-wetted parts materials • Housing made of die-cast aluminium • Housing stainless steel precision casting ⁶) Version • Standard versions • International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection • None • With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)" ⁷) - "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)" ⁸) - "Ex nA/ic (Zone 2)" ⁹) - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)" ⁸) • FM + CSA intrinsic safe (is) • FM + CSA itrinsic safe (is) • FM + CSA, Type of protection: - "Intrinsic Safe und Explosion Proof (is + xp)" ⁷) • Electrical connection / cable entry • Screwed gland M20 x 1.5 • Screwed gland M20 x 1.5 • Screwed gland ½-14 NPT • Han 7D plug (plastic housing) incl. mating									
 Male thread ½ -14 NPT Non-wetted parts materials Housing made of die-cast aluminium Housing stainless steel precision casting⁶) Version Standard versions International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection None With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)"⁷) - "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)"⁸) - "Ex nA/ic (Zone 2)"⁹) - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)"⁸) FM + CSA (is + ep) + Ex ia + Ex d (ATEX) With FM + CSA, Type of protection: - "Intrinsic Safe und Explosion Proof (is + xp)"⁷) Electrical connection / cable entry Screwed gland M20 x1 .5 Screwed gland M20 x1 .5 Screwed gland ½-14 NPT Han 7D plue (plastic housing) incl. mating 	-				4				
Non-wetted parts materials Housing made of die-cast aluminium Housing stainless steel precision casting ⁶⁾ Version Standard versions International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection None With ATEX, Type of protection: "Intrinsic safety (Ex ia)" "Explosion-proof (Ex d)" ⁷⁾ "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)" ⁸⁾ "Ex nA/ic (Zone 2)" ⁹⁾ "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)" ⁸⁾ FM + CSA intrinsic safe (is) FM + CSA (is + ep) + Ex ia + Ex d (ATEX) With FM + CSA, Type of protection: "Intrinsic Safe und Explosion Proof (is + xp)" ⁷⁾ Electrical connection / cable entry Screwed gland № 1.5 Screwed gland № 1.5 Screwed gland № 1.4 NPT Han 7D plug (plastic housing) incl. mating	 Male thread M20 x 1.5 	;			5				
 Housing made of die-cast aluminium Housing stainless steel precision casting⁶) Version Standard versions International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection None With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)"⁷) - "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)"⁸) - "Ex nA/ic (Zone 2)"⁹) - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)"⁸) FM + CSA (is + ep) + Ex ia + Ex d (ATEX) With FM + CSA, Type of protection: - "Intrinsic Safe und Explosion Proof (is + xp)"⁷) Electrical connection / cable entry Screwed gland M20 x1 .5 Screwed gland M20 x1 .5 Screwed gland ½-14 NPT Han 7D plue (plastic housing) incl. mating 	 Male thread ½ -14 NP 	Τ			6				
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• Standard versions • International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection • None • With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)* ⁷) - "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)* ⁸) - "Ex nA/ic (Zone 2)* ⁹) - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)* ⁸) • FM + CSA intrinsic safe (is) • FM + CSA, Type of protection: - "Intrinsic Safe und Explosion Proof (is + xp)* ⁷) • Screwed gland M20 x1 .5 • Screwed gland M20 x1 .5 • Screwed gland ½-14 NPT • Han 7D plue (plastic housing) incl. mating		el precision casting ^{o)}				3			
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- "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)" ⁷⁾ - "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)" ⁸⁾ - "Ex nA/ic (Zone 2)" ⁹⁾ - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)" ⁸⁾ • FM + CSA intrinsic safe (is) • FM + CSA (is + ep) + Ex ia + Ex d (ATEX) • With FM + CSA, Type of protection: - "Intrinsic Safe und Explosion Proof (is + xp)" ⁷⁾ • Screwed gland Pg 13.5 (adapter) ¹⁰⁾ • Screwed gland M20 x1.5 • Screwed gland ½-14 NPT • Han 7D plug (plastic housing) incl. mating	•		•					Α	
- "Explosion-proof (Ex d)" ⁷⁾ - "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)" ⁸⁾ - "Ex nA/ic (Zone 2)" ⁹⁾ - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)" ⁸⁾ • FM + CSA intrinsic safe (is) • FM + CSA (is + ep) + Ex ia + Ex d (ATEX) • With FM + CSA, Type of protection: - "Intrinsic Safe und Explosion Proof (is + xp)" ⁷⁾ • Screwed gland Pg 13.5 (adapter) ¹⁰⁾ • Screwed gland M20 x1.5 • Screwed gland ½-14 NPT • Han 7D plug (plastic housing) incl. mating	 With ATEX, Type of pro 	otection:							
- "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)" ⁸) - "Ex nA/ic (Zone 2)" ⁹) - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)" ⁸) • FM + CSA intrinsic safe (is) • FM + CSA (is + ep) + Ex ia + Ex d (ATEX) • With FM + CSA, Type of protection: - "Intrinsic Safe und Explosion Proof (is + xp)" ⁷) • Screwed gland Pg 13.5 (adapter) ¹⁰) • Screwed gland M20 x1.5 • Screwed gland ½-14 NPT • Han 7D plug (plastic housing) incl. mating			•					В	
(Ex ia + Ex d)" ⁽⁸⁾ - "Ex nA/ic (Zone 2)" ⁽⁹⁾ - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)" ⁽⁸⁾ • FM + CSA intrinsic safe (is) • FM + CSA (is + ep) + Ex ia + Ex d (ATEX) • With FM + CSA, Type of protection: - "Intrinsic Safe und Explosion Proof (is + xp)" ⁽⁷⁾ • Screwed gland Pg 13.5 (adapter) ¹⁰⁾ • Screwed gland M20 x1.5 • Screwed gland ½-14 NPT • Han 7D plug (plastic housing) incl. mating									
- "Ex nA/ic (Zone 2)"9) - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)"8) • FM + CSA (is + ep) + Ex ia + Ex d (ATEX) • With FM + CSA, Type of protection: - "Intrinsic Safe und Explosion Proof (is + xp)"7) • Screwed gland Pg 13.5 (adapter) ¹⁰⁾ • Screwed gland M20 x1.5 • Screwed gland ½-14 NPT • Han 7D plue (plastic housing) incl. mating	- "Intrinsic safety and t	flameproof enclosure"	•					Р	
- "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)"8) • FM + CSA intrinsic safe (is) • FM + CSA (is + ep) + Ex ia + Ex d (ATEX) • With FM + CSA, Type of protection: - "Intrinsic Safe und Explosion Proof (is + xp)"7) • Screwed gland Pg 13.5 (adapter) ¹⁰⁾ • Screwed gland M20 x1.5 • Screwed gland ½-14 NPT • Han 7D pluc (plastic housing) incl. mating								_	
and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)*8) • FM + CSA intrinsic safe (is) • FM + CSA, (is + ep) + Ex ia + Ex d (ATEX) • With FM + CSA, Type of protection: - "Intrinsic Safe und Explosion Proof (is + xp)*7) • Electrical connection / cable entry • Screwed gland Pg 13.5 (adapter)*10) • Screwed gland M20 x1.5 • Screwed gland ½-14 NPT • Han 7D pluc (plastic housing) incl. mating		opion proof on -!							
• FM + CSA intrinsic safe (is) • FM + CSA (is + ep) + Ex ia + Ex d (ATEX) • With FM + CSA, Type of protection: - "Intrinsic Safe und Explosion Proof (is + xp)" • Screwed gland Pg 13.5 (adapter)¹0) • Screwed gland M20 x1 .5 • Screwed gland ½-14 NPT • Han 7D plug (plastic housing) incl. mating	and dust explosion p							К	
• FM + CSA (is + ep) + Ex ia + Ex d (ATEX) • With FM + CSA, Type of protection: - "Intrinsic Safe und Explosion Proof (is + xp)" • Screwed gland Pg 13.5 (adapter) ¹⁰⁾ • Screwed gland M20 x1 .5 • Screwed gland № -14 NPT • Han 7D plug (plastic housing) incl. mating	. ,	e (is)						F	
With FM + CSA, Type of protection: - "Intrinsic Safe und Explosion Proof (is + xp)" Flectrical connection / cable entry Screwed gland Pg 13.5 (adapter)¹0) Screwed gland M20 x1 .5 Screwed gland №-14 NPT Han 7D plug (plastic housing) incl. mating									
- "Intrinsic Safe und Explosion Proof (is + xp)" Note Electrical connection / cable entry • Screwed gland Pg 13.5 (adapter) 10) • Screwed gland M20 x1 .5 • Screwed gland № -14 NPT • Han 7D plug (plastic housing) incl. mating									
 Screwed gland Pg 13.5 (adapter)¹⁰⁾ Screwed gland M20 x1 .5 Screwed gland ½-14 NPT Han 7D plug (plastic housing) incl. mating)					NC	
 Screwed gland M20 x1.5 Screwed gland ½-14 NPT Han 7D plue (plastic housing) incl. mating 									
 Screwed gland M20 x1.5 Screwed gland ½-14 NPT Han 7D plue (plastic housing) incl. mating 	 Screwed gland Pg 13. 	5 (adapter) ¹⁰⁾						Α	
Han 7D plug (plastic housing) incl. mating			▶•					В	
Han 7D plug (plastic housing) incl. mating			•					С	
o o p p o oto r I V /	 Han 7D plug (plastic hannester 10) 	nousing) incl. mating						D	
• M12 connectors (stainless steel) ¹⁰⁾¹¹⁾	• M12 connectors (state	loss stool\10)11)						F	
TWITE CONTROLOTS (STATISTESS STEET) TO	- witz connectors (stain	icos sicci) -/							

Selection and Ordering data		Article No.	
Pressure transmitter for gauge pressure, SITRANS P DS III with HART		7 M F 4 0 3 3 -	
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.
- $^{10)}\rm Not$ in conjunction with types of protection "Explosion-proof" and "Ex nA", "Intrinsic safety" and "Explosion-proof".
- ¹¹⁾M12 delivered without cable socket

Transmitters for general requirements

SITRANS P DS III for gauge pressure

Onlandar and Onlanda		At: - 1 -	NI-		
Selection and Orderin	•	Article	NO.		
Pressure transmitter f					
SITRANS P DS III with	` ,		034-		
	FOUNDATION Fieldbus	7 M F 4	7MF4035-		
(FF)					
Measuring cell filling	Measuring cell clean-				
0.11	ing				
Silicone oil Inert liquid ¹⁾	normal	1 3			
mert iiquid 7	grease-free to 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	C			
riastelloy Version as diaphragm s	2) 3) 4) 5)	Y			
	Cai				
Process connection Connection shank G1/2	-D to EN 927 1	,			
• Female thread ½-14 N		1			
 Stainless steel oval flation (Oval flange has it 	nge with process connec-				
	3-20 UNF to IEC 61518	2			
 Mounting thread 716 Mounting thread M1 		3			
•		4			
- Mounting thread M1					
 Male thread M20 x 1.5 Male thread ½ -14 NP 		5			
Non-wetted parts mate					
 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					
Explosion protection		_			
• None			A		
 With ATEX, Type of pre- 	otection:				
- "Intrinsic safety (Ex i			В		
- "Explosion-proof (Ex			D		
- "Intrinsic safety and			P		
(Ex ia + Ex d)" ⁸⁾	•				
 "Ex nA/ic (Zone 2)"⁹⁾ 			E		
	osion-proof enclosure and		R		
dust explosion prote	ction (Ex ia + Ex d +				
Zone 1D/2D) ⁽⁸⁾ (not					
 FM + CSA intrinsic sa 	te (is)		F		
• FM + CSA (is + ep) +	Ex ia + Ex d (ATEX)		S		
• With FM + CSA, Type	of protection:				
	xplosion Proof (is + xp)" ⁷⁾		NC		
Electrical connection/					
 Screwed gland M20 x 	•		В		
• Screwed gland ½-14	NPT		С		
• M12 connectors (stair	nless steel) ¹⁰⁾ 11) 12)		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)	7MF4035-	
Display		
Without display		0
 Without visible display (display concealed, setting: bar) 		1
With visible display		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.
- 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 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.
- $^{10)}\mathrm{M}12$ delivered without cable socket
- ¹¹⁾Not available with protection type "Ex d" bestellbar (Options D, P, N and R)
- 12) Not with protection types "Explosion-proof" and protection type "Ex nA", "Intrinsic safe" and "Explosion proof".

Transmitters for general requirements

SITRANS P DS III for gauge pressure

Selection and Ordering data		Order	code		
Further designs Add "-Z" to Article No. and specify Order code.			HART	PA	FF
Pressure transmitter with mounting					
bracket (1x fixing angle, 2 x nut, 2 x U- washer or 1 x bracket, 2 x nut, 2 x U-					
washer) made of:					
• Steel		A01	✓.	✓.	✓.
• Stainless steel		A02	✓	✓	✓
Plug			,		
• Han 7D (metal, gray)		A30	√		
 Han 8U (instead of Han 7D) 		A31 A32	√		
● Angled ● Han 8D (metal, gray)		A33	∀		
* **		A50	1	./	./
Cable sockets for M12 connectors (stainless steel)		ASU	•	•	•
Rating plate inscription (instead of Ger-					
man) - E		D44	,	,	,
• English		B11 B12	1	√	1
FrenchSpanish	-	= : =	√	∨	· /
• Italian	•	B14	1	<i>'</i>	1
	•	B21	1	· •	1
English rating plate Pressure units in inH ₂ 0 and/or psi	_	BZI	•	•	•
Quality inspection certificate (Five-step factory calibration) to IEC 60770-2 ¹⁾	•	C11	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 confor-	•	C20	✓		
mity declaration		2)			
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	1	✓	1
Degree of protection IP65/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	✓	✓	1
Use in or on zone 1D/2D		E01	✓	✓	✓
(only together with type of protection "Intrinsic safety" (transmitter 7MF4B Ex ia)")					
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	1	1	1
CRN approval Canada (Canadian Registration Number)		E22	1	✓	1
Canadian Registration Number) Dual seal		E24	1	1	1
_ 			,	,	,
Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil) (only for transmitter 7MF4B)		E25 ⁴⁾	~	V	V

Selection and Ordering data	Order	code		
Further designs Add "-Z" to Article No. and specify Order code.		HART	PA	FF
"Flameproof" explosion protection according to INMETRO (Brazil) (only for transmitter 7MF4)	E26 ⁴⁾	✓	✓	✓
Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil) (only for transmitter 7MF4P)	E28 ⁴⁾	✓	✓	
Ex Approval IEC Ex (Ex ia) (only for transmitter 7MF4B)	E45 ⁴⁾	✓	✓	✓
Ex Approval IEC Ex (Ex id) (only for transmitter 7MF4D)	E46 ⁴⁾	✓	✓	✓
Explosion-proof "Intrinsic safety" to NEPSI (China)	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⁾	✓	✓	✓
"Intrinsic safety" and "Explosion-proof" explosion protection acc. to Kosha (Korea) (only for transmitter 7MF4[B, D]Z + E11)	E70 ⁴⁾	✓	✓	✓
Two coats of lacquer on casing and cover (PU on epoxy)	G10	✓	✓	✓
Transient protector 6 kV (lightning protection)	J01	√	✓	✓
 We can offer shorter delivery times for cont 	iauratio	ac doci	anataa	N 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	code		
	Order		D4	FF
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				
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:				
	Y21	./	./	./
sure units	121	•	•	•
Specify in plain text (standard setting: bar): Y21: mbar, bar, kPa, MPa, psi, Note:				
The following pressure units can be selected:				
bar, mbar, mm $H_2O^{*)}$, $inH_2O^{*)}$, $itH_2O^{*)}$, 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 +	✓		
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		✓	✓
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

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

A01 + Y01 + Y21 B line:

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

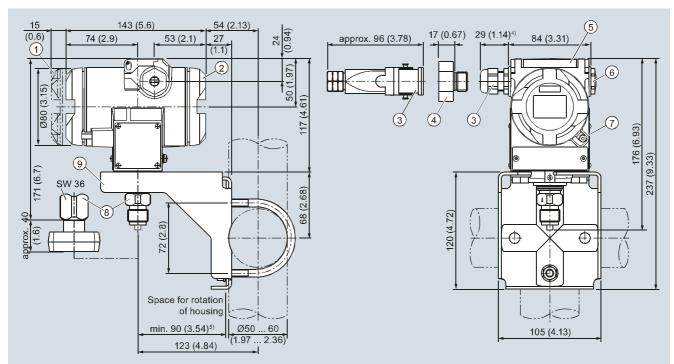
Y21: bar (psi) C line:

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



- (longer overall length for cover with window)¹⁾
- 2 Terminal side¹⁾
- 3 Electrical connection: Screwed gland Pg 13,5 (adapter)(Adapter)^{2/3}, Screwed gland M20 x 1,5 or Screwed gland ½-14 NPT or Han 7D/Han 8D^{2/3} plug
- 4 Harting adapter
- 1) Allow approx. 20 mm (0.79 inch) thread length to permit unscrewing
- 2) Not with type of protection "Explosion-proof enclosure"
- 3) Not with type of protection "FM + CSA" [IS + XP]"
- 4) For Pg 13,5 with adapter approx. 45 mm (1.77 inch)
- 5) 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 G½B or Oval flange
- 9 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	te pressure, with front-	flush diaphragm			
	HART		PROFIBUS PA and FO	OUNDATION Fieldbus	
Input of gauge pressure, with front-flush diaphragm		Course presse	ura frant fluab		
Measured variable	0	,	ure, front-flush	M	
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)	
Lower measuring limit		100 mbar a	a (1.45 psia)	"	
Upper measuring limit	100 % of max. span		100 % of the max. nom	ninal measuring range	
Input of absolute pressure, with front-flush diaphragm					
Measured variable		Absolute pres	sure, front-flush		
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	
	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)	
Lower measuring limit	0 bar a (0 psia)				
Upper measuring limit	100 % of max. span		100 % of the max. nom	ninal measuring range	
Output Output signal	4 20 mA		Digital PROFIBUS PA a bus signal	and FOUNDATION Field-	
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	$R_{\rm B} \le (U_{\rm H} - 10.5 { m V})/0.02$ $U_{\rm H}$: Power supply in V	3 A in Ω ,	-		
• With HART	$R_{\rm B}$ = 230 500 Ω (SIM $R_{\rm B}$ = 230 1100 Ω (HA		-		
Physical bus	-		IEC 61158-2		
Protection against polarity reversal	Protected against short		rsal. Each connection aç voltage.	gainst the other with max.	
Electrical damping (step width 0.1 s)		Set to 2 s	(0 100 s)		
Measuring accuracy			EC 60770-1		
Reference conditions (All error data refer always refer to the set span)	Increasing characteristi	ing, room temperature 2		diaphragm, silicone oil fill- io	
Error in measurement at limit setting incl. hysteresis and reproducibility					
	Gauge pressure, front-flush	Absolute pressure, front-flush	Gauge pressure, front-flush	Absolute pressure, front-flush	
Linear characteristic			≤ 0.075 %	≤ 0.2 %	
- r ≤ 10	$\leq (0.0029 \cdot r + 0.071) \%$				
- 10 < r ≤ 30	$\leq (0.0045 \cdot r + 0.071) \%$	≤ 0.4 %			
- 30 < r ≤ 100	$\leq (0.005 \cdot r + 0.05) \%$		< 0.0E 9/ 2025		
Long-term stability (temperature change \pm 30 °C (\pm 54 °F))	\leq (0.25 · r) % per 5 years		≤ 0.25 % per 5 years		

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

	HART		PROFIBUS PA and	FOUNDATION Fieldbus	
	Gauge pressure,	Absolute pressure,	Gauge pressure,	Absolute pressure,	
	front-flush	front-flush	front-flush	front-flush	
nfluence of ambient temperature	-11				
• at -10 +60 °C (14 140 °F)	$\leq (0.1 \cdot r + 0.2) \%^{1)}$	\leq (0.2 · r + 0.3) %	≤ 0.3 %	≤ 0.5 %	
• at -4010 °C and 60 85 °C (-40 +14 °F and 140 185 °F)	\leq (0.1 · r + 0.15) %/10 K	$\leq (0.2 \cdot r + 0.3) \%/10 $ k	< ≤ 0.25 %/10 K	≤ 0.5 %/10 K	
nfluence of mounting position		0.1 mbar (0.04 inh	nH ₂ O) per 10° inclination		
Measured Value Resolution	-		3 · 10 ⁻⁵ of nominal measuring 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					
nstallation conditions					
Ambient temperature	Observe	the temperature class	n areas subject to explo	osion hazard.	
Measuring cell with silicone oil		-40 +85 °C	C (-40 +185 °F)		
Measuring cell with Neobee oil (with front-flush diaphragm)		-10 +85 °C	C (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	C (-40 +185 °F)		
Display readable		-30 +85 °C	C (-22 +185 °F)		
Storage temperature		-50 +85 °C	C (-58 +185 °F)		
	(in the case of Neobee: -20 +85 °C (-4 +185/°F)) (for high temperature oil: -10 + 85 °C (14 185 °F))				
· Climatic class	(1)	or riigit tomporatare oii.	10 1 00 0 (11 10	,	
- Condensation		Relative hur	nidity 0 100 %		
Condition	Co		, suitable for use in the	tropics	
Degree of protection (to IEC 60529)	IP65, IP68, NEMA	A 4X, enclosure cleanin	g, resistant to lyes, stea	m to 150 ° C (302 °F)	
Electromagnetic Compatibility					
- Emitted interference and interference immunity		Acc. to IEC 6132	6 and NAMUR NE 21		
Medium conditions			process connections is standards (e.g. DIN 32	s to be taken into account 2676, DIN 11851 etc.).	
Temperature of medium					
Measuring cell with silicone oil		-40 +100 °	C (-40 +212 °F)		
Measuring cell with silicone oil (with front-flush diaphragm)		-40 +150 °	C (-40 +302 °F)		
Measuring cell with Neobee oil (with front-flush diaphragm)		-10 +150	°C (14 302 °F)		
Measuring cell with silicone oil, with tempera- ture decoupler (only for gauge pressure ver- sion with front-flush diaphragm)		-40 +200 °	C (-40 +392 °F)		
Measuring cell with inert filling liquid		-20 +100 °	°C (-4 +212 °F)		
 Measuring cell with high-temperature oil (only for gauge pressure version with front-flush dia- phragm) 			°C (14 482 °F)		
Design					
Veight (without options)		≈ 1.5 k	g (≈ 3.3 lb)		
Enclosure material	Low-copper die-cast a	aluminum, GD-AlSi12 oi	stainless steel precisio	on casting, mat. no. 1.440	
Vetted parts materials	Stainless s	steel, mat. no. 1.4404/3	6L or Hastelloy C276, r	mat. no. 2.4819	
Measuring cell filling		Silicone oil o	inert filling liquid		
Process connection		 Flanges as 	per EN and ASME		
		•	narmaceutical flanges		
Surface quality touched-by-media	P vc	lues < 0.8 um (32 u-inc	h)/welds $R_{a} \le 1.6 \mu m$ (6	64 u-inch)	

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

	ate pressure, with front-flush diaphragm HART	PROFIBUS PA and FOUNDATION Fieldbus
Davies avenue II	MANI	
Power supply <i>U</i>_H Ferminal voltage on transmitter	10.5 45 V DC	Supplied through bus
reminal voltage on transmitter	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)
xplosion protection		
Intrinsic safety "i"	PTB 13 A	TEX 2007 X
- Marking	Ex II 1/2 G Ex ia/ib	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 "		40 °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	$L_i = 0.4 \text{mH}, C_i = 6 \text{nF}$	$L_{i} = 7 \mu\text{H}, C_{i} = 1.1 \text{nF}$
Explosion-proof "d"		ATEX 1160
- Marking		d IIC T4/T6 Gb
- Permissible ambient temperature	-40 +85 °C (-40 +18	15 °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: $U_{\rm H}$ = 9 32 V DC
Dust explosion protection for zone 20		ATEX 2055
- Marking	Ex II 1 D IF	P65 T 120 °C IP65 T 120 °C
- Permissible ambient temperature	-40 +85 °C	(-40 +185 °F)
- Max. surface temperature		; (248 °F)
- Connection	To certified intrinsically-safe circuits with peak values:	,
	$U_{\rm i} = 30 \text{ V}, I_{\rm i} = 100 \text{ mA},$ $P_{\rm i} = 750 \text{ mW}, P_{\rm i} = 300 \Omega$	Linear barrier: $U_0 = 24 \text{ V}$, $I_0 = 250 \text{ mA}$, $P_0 = 1 \text{ W}$
- Effective internal inductance/capacitance	$L_{i} = 0.4 \text{ mH}, C_{i} = 6 \text{ nF}$	$L_i = 7 \mu H$, $C_i = 1.1 nF$
Dust explosion protection for zone 21/22	PTB 01 /	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: $U_{\rm H} = 9 \dots 32 \rm V DC;$ $P_{\rm max} = 1 \rm W$
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 ∨	$U_{\rm m}$ = 32 V
- Connections (Ex ic)	To circuits with values:	FISCO supply unit ic:
	$U_{\rm i}=45~{ m V}$	$U_0 = 17.5 \text{ V}, I_0 = 570 \text{ mA}$ Linear barrier:
		$U_0 = 32 \text{ V}, I_0 = 132 \text{ mA}, P_0 = 1 \text{ W}$
- Effective internal inductance/capacitance	$L_{\rm i} = 0.4 {\rm mH}, \ C_{\rm i} = 6 {\rm nF}$	$L_{i} = 7 \mu H, C_{i} = 1,1 nF$

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	olute pressure, with front-flush diaphragm			
	HART	PROFIBUS PA and FOUNDATION Fieldbus		
Certificates and approvals (continued)				
• Explosion protection acc. to FM	Certificate of Compliance 3008490			
- Identification (XP/DIP) or (IS); (NI)	CL I, DIV 1, GP ABCD T4T6; CL II, DIV 1, CL I, DIV 2, GP ABCD T4	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 Co	ompliance 1153651		
- Identification (XP/DIP) or (IS)		EFG; CL III; Ex ia IIC T4T6; CL I, DIV 2, GP ABCD IV 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/absolute pressure, with front-flush diaphragm

HART communication	
HART	230 1100 Ω
Protocol	HART Version 5.x
Software for computer	SIMATIC PDM
PROFIBUS PA communication	
Simultaneous communication with master class 2 (max.)	4
The address can be set using	Configuration tool or local operation (standard setting address 126)
Cyclic data usage	
Output byte	5 (one measured value) or 10 (two measured values)
• Input byte	0, 1, or 2 (register operating mode and reset function for metering)
Internal preprocessing	
Device profile	PROFIBUS PA Profile for Process Control Devices Version 3.0, Class B
Function blocks	2
 Analog input 	
 Adaptation to customer-specific process variables 	Yes, linearly rising or falling characteristic
- Electrical damping, adjustable	0 100 s
- Simulation function	Input /Output
- Failure mode	parameterizable (last good value, substitute value, incorrec value)
- Limit monitoring	Yes, one upper and lower warn- ing limit and one alarm limit respectively
• Register (totalizer)	Can be reset, preset, optional direction of counting, simulation function of register output
- Failure mode	parameterizable (summation with last good value, continuous summation, summation with incorrect value)
- Limit monitoring	One upper and lower warning limit and one alarm limit respec- tively
Physical block	1
Transducer blocks	2
Pressure transducer block	
 Can be calibrated by applying two pressures 	Yes
- Monitoring of sensor limits	Yes
 Specification of a container characteristic with 	Max. 30 nodes
 Square-rooted characteristic for flow measurement 	Yes
 Gradual volume suppression and implementation point of square-root extraction 	Parameterizable
- Simulation function for mea- sured pressure value and sen- sor temperature	Constant value or over parameterizable ramp function

FOUNDATION Fieldbus communication

Function blocks

- Analog input
 - Adaptation to customer-specific process variables
 - Electrical damping, adjustable
- Simulation function
- Failure mode

- Limit monitoring

- Square-rooted characteristic for flow measurement
- Physical block Transducer blocks

- Pressure transducer block
- Can be calibrated by applying two pressures
- Monitoring of sensor limits
- Simulation function: Measured pressure value, sensor temperature and electronics temperature

3 function blocks analog input, 1 function block PID

Yes, linearly rising or falling characteristic

0 ... 100 s

Output/input (can be locked within the device with a bridge)

parameterizable (last good value, substitute value, incorrect value)

Yes, one upper and lower warning limit and one alarm limit respectively

Standard FOUNDATION Fieldbus function block

1 resource block

1 transducer block Pressure with calibration, 1 transducer block LCD

Yes

Constant value or over parameterizable ramp function

sor temperature

Transmitters for general requirements

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

Selection and Orderin	g data	Arti	cle	N	0.		
Pressure transmitter f	or gauge and absolute	7 M	F	l 1	3 3	-	
pressure, front-flush o SITRANS P DS III HAF	diaphragm.				-		
Measuring cell filling	Measuring cell cleaning						H
Silicone oil	normal	1					
Inert liquid	grease-free to	3					
	cleanliness level 2						
FDA compliant fill fluid							
Neobee oil	normal	4					
Vleasuring span (min.							
0.01 1 bar	(0.15 14.5 psi)	В					
0.04 4 bar	(0.58 58 psi)	C					
0.16 16 bar 0.63 63 bar	(2.32 232 psi) (9.14 914 psi)	D E					
	` '						
13 1300 mbar a ¹⁾	(0.62 18.85 psia) ¹⁾	S					
0.05 5 bar a ¹⁾ 0.3 30 bar a ¹⁾	(0.7 72.5 psia) ¹⁾ (4.35 435 psia) ¹⁾	T					
	. , ,						
Wetted parts material: Seal diaphragm	s Connection shank						
Stainless steel Hastelloy ²⁾	Stainless steel Stainless steel		A B				
-	Stalliless steel	_	_				
Process connection	der code M, N, R or Q		,	,			
		-	Ŀ				
Non-wetted parts mate • Housing made of die-				0			
 Housing made of die- Housing stainless ste 				3			
Version	1 0	-					
 Standard versions 					1		
 International version, 	English label inscriptions,				2		
documentation in 5 la	nguages on CD						
(no Order code selec	table)	_					
Explosion protection							
None None Nith ATEX Type of pr	ata atian.					Α	
 With ATEX, Type of pr "Intrinsic safety (Exit 						В	
- "Explosion-proof (Ex						D	
- "Ex nA/ic (Zone 2)" ⁴	1)					E	
• FM + CSA intrinsic sa						F	
• FM + CSA (is + ep) +	Ex ia + Ex d (ATEX)					s	
 With FM + CSA, Type 							
- "Intrinsic Safe und E	explosion Proof (is + xp)"3)					NC	
Electrical connection/	cable entry						
 Inner thread M20 x 1. 	<u>-</u>					В	
 Female thread ½-14 N 						С	
 M12 connectors (stair 	nless steel) ^{5) 6) 7)}					F	
Display							
 Without display 							0
Without visible display (display a second of the							1
(display concealed, s	0 ,						6
 with visible display, se 	etting: mA						
• with customer-specific							7
(setting as specified, required)	Order code "Y21" or "Y22"						

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

Included in delivery of the device:
• Brief instructions (Leporello)

required)

• CD-ROM with detailed documentation

- 1) 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
- $^{\rm 4)}\,$ Bei Konfiguration mit Stecker HAN und M12 ist nur Zündschutzart Ex ic möglich.
- 5) M12 delivered without cable socket
- $^{6)}\,$ Not available with protection type "Ex d" (options D and N)
- $^{7)}\,$ Not with protection types "Explosion-proof" and "Ex nA", "Intrinsic safe" and "Explosion proof"

Transmitters for general requirements

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

Onlantia a sund Ondania		Λ	.1.	NI.			
Selection and Orderin	-	Arti	cle	NC).		
Pressure transmitter F pressure, front-flush o	ofor gauge and absolute liaphragm:						
SITRANS P DS III with	PROFIBUS PA (PA)	7MF4134-					
	FOUNDATION Fieldbus	7MF4135-					
(FF)							
				-			
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	}						
Seal diaphragm	Connection shank						
Stainless steel	Stainless steel		A				
Hastelloy ²⁾	Stainless steel		В				
Process connection		1					
	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	nguages on CD						
(no Order code select	able)	_					
Explosion protection							
None					Α		
 With ATEX, Type of present 							
- "Intrinsic safety (Ex i					В		
- "Explosion-proof (Ex					D		
• FM + CSA intrinsic sa					F		
• FM + CSA (is + ep) +	EXIA + EX O (ATEX)				S		
• With FM + CSA, Type	of protection: xplosion Proof (is + xp)" ³⁾						
- Intrinsic Safe und E (Available soon)	xpiosion riooi (is + xp) 9/				N	С	
Electrical connection/	cable entry						
 Screwed gland M20 x 	-					В	
• Screwed gland ½-14	NPT					С	
Han 7D plug (plastic I	nousing) incl. mating					D	
connector ⁴⁾							
• M12 connectors (stair	nless steel)					F	

Article No.	
7MF4134-	
7MF4135-	
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	7MF4134-

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..
- $^{
 m 3)}$ Without cable gland, with blanking plug
- 4) Not in conjunction with types of protection "Explosion-proof" and "Ex ic", "Intrinsic safety" and "Explosion-proof".
- ⁵⁾ M12 delivered without cable socket
- $^{6)}\,$ Not available with protection type "Ex d" (optionen D and N)
- 7) Not with protection types "Explosion-proof" and "Ex nA", "Intrinsic safe" and "Explosion proof".

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

Further designs Add "-Z" to Article No. and specify Order code. Plug • Angled • Han 8D (metal, gray) Cable sockets for M12 connectors (stainless steel) Rating plate inscription (instead of German) • English • French • Spanish • Italian English rating plate Pressure units in inH ₂ 0 and/or psi Quality inspection certificate (Five-step factory calibration) to IEC 60770-2 Inspection certificate Acc. to EN 10204-3.1 Factory certificate Acc. to EN 10204-2.2 Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Punctional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Punctional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Punctional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Punctional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Device passport Russia (For price request please contact the technical support www.siemens.com/automation/support-request.) Setting of upper limit of output signal to 22.0 mA Degree of protection IP65/IP68 (only for M20x1.5 and ½-14 NPT) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140°F)) Export approval Canada (Canadian Registration Number) Dual seal Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil) (only for transmitter 7MF4D) Explosion-proof "Intrinsic safety" (Ex ia + Exfort transmitter 7MF4P) Explosion-proof "Intrinsic safety" (Ex ia + Exfort transmitter 7MF4P) Export	r code	Order code		
• Angled • Han 8D (metal, gray) Cable sockets for M12 connectors (stainless steel) Rating plate inscription (instead of German) • English • French • Spanish • Italian English rating plate Pressure units in inH ₂ 0 and/or psi Quality Inspection certificate (Five-step factory calibration) to IEC 60770-2 Inspection certificate Acc. to EN 10204-3.1 Factory certificate Acc. to EN 10204-2.2 Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Punctional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Device passport Russia (For price request please contact the technical support www.siemens.com/automation/support-request.) Setting of upper limit of output signal to 22.0 mA Degree of protection IP65/IP68 (only for M20x1.5 and ½-14 NPT) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140°F)) Export approval Korea CRN approval Canada (Canadian Registration Number) Dual seal Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil) (only for transmitter 7MF4B) "Flameproof" explosion protection according to INMETRO (Brazil) (only for transmitter 7MF4B) Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil) (only for transmitter 7MF4P) Ex Approval IEC Ex (Ex ia)	HAR	T PA	FF	
• Han 8D (metal, gray) Cable sockets for M12 connectors (stainless steel) Rating plate inscription (instead of German) • English • French • Spanish • Italian English rating plate Pressure units in inH₂0 and/or psi Quality inspection certificate (Five-step factory calibration) to IEC 60770-2 Inspection certificate Acc. to EN 10204-3.1 Factory certificate Acc. to EN 10204-2.2 Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Device passport Russia (For price request please contact the technical support www.siemens.com/automation/support-request.) Setting of upper limit of output signal to 22.0 mA Degree of protection IP65/IP68 (only for M20x1.5 and ⅓-14 NPT) Oxygen application CRN approval Korea CRN approval Korea CRN approval Canada (Canadian Registration Number) Dual seal Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil) (only for transmitter 7MF4B) "Flameproof" explosion protection according to INMETRO (Brazil) (only for transmitter 7MF4B) Ex Approval IEC Ex (Ex ia) E456				
Cable sockets for M12 connectors (stainless steel) Rating plate inscription (instead of German) • English • French • Spanish • Italian Brush rating plate Pressure units in inH ₂ 0 and/or psi Quality inspection certificate (Five-step factory calibration) to IEC 60770-2 Inspection certificate Acc. to EN 10204-3.1 Factory certificate Acc. to EN 10204-2.2 Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (FROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Punctional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Device passport Russia (For price request please contact the technical support www.siemens.com/automation/support-request.) Setting of upper limit of output signal to 22.0 mA Degree of protection IP65/IP68 (only for M20x1.5 and ½-14 NPT) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140°F)) Export approval Korea CRN approval Canada (Canadian Registration Number) Dual seal Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil) (only for transmitter 7MF4B) "Flameproof" explosion protection according to INMETRO (Brazil) (only for transmitter 7MF4P) Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil) (only for transmitter 7MF4P)	1			
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• French • Spanish • Italian B14 English rating plate Pressure units in inH ₂ 0 and/or psi Quality inspection certificate (Five-step factory calibration) to IEC 60770-2 Inspection certificate Acc. to EN 10204-3.1 Factory certificate Acc. to EN 10204-2.2 Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Device passport Russia (For price request please contact the technical support www.siemens.com/automation/support-request.) Setting of upper limit of output signal to 22.0 mA Degree of protection IP65/IP68 (only for M20x1.5 and ½-14 NPT) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140 °F)) Export approval Korea CRN approval Canada (Canadian Registration Number) Dual seal Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil) (only for transmitter 7MF4			,	
• Spanish • Italian English rating plate Pressure units in inH ₂ 0 and/or psi Quality inspection certificate (Five-step factory calibration) to IEC 60770-2 Inspection certificate Acc. to EN 10204-3.1 Factory certificate Acc. to EN 10204-2.2 Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Device passport Russia (For price request please contact the technical support www.siemens.com/automation/support-request.) Setting of upper limit of output signal to 22.0 mA Degree of protection IP65/IP68 (only for M20x1.5 and ½-14 NPT) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140°F)) Export approval Korea CRN approval Canada (Canadian Registration Number) Dual seal Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil) (only for transmitter 7MF4	√	√	✓	
English rating plate Pressure units in inH20 and/or psi Quality inspection certificate (Five-step factory calibration) to IEC 60770-2 Inspection certificate Acc. to EN 10204-3.1 Factory certificate Acc. to EN 10204-2.2 Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Punctional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Device passport Russia (For price request please contact the technical support www.siemens.com/automation/support-request.) Setting of upper limit of output signal to 22.0 mA Degree of protection IP65/IP68 (only for M20x1.5 and ½-14 NPT) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140 °F)) Export approval Korea E11 CRN approval Canada (Canadian Registration Number) Dual seal Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil) (only for transmitter 7MF4B) "Flameproof" explosion protection according to INMETRO (Brazil) (only for transmitter 7MF4D) Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil) (only for transmitter 7MF4P) Ex Approval IEC Ex (Ex ia) E45	✓	1	✓	
Pressure units in inH20 and/or psi Quality inspection certificate (Five-step factory calibration) to IEC 60770-2 Inspection certificate Acc. to EN 10204-3.1 Factory certificate Acc. to EN 10204-2.2 Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Punctional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Device passport Russia (For price request please contact the technical support www.siemens.com/automation/support-request.) Setting of upper limit of output signal to 22.0 mA Degree of protection IP65/IP68 (only for M20x1.5 and ½-14 NPT) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140°F)) Export approval Korea E11 CRN approval Canada (Canadian Registration Number) Dual seal Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil) (only for transmitter 7MF4B) "Flameproof" explosion protection according to INMETRO (Brazil) (only for transmitter 7MF4D) Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil) (only for transmitter 7MF4P) Ex Approval IEC Ex (Ex ia) E45	✓	✓	✓	
Quality inspection certificate (Five-step factory calibration) to IEC 60770-2 Inspection certificate Acc. to EN 10204-3.1 Factory certificate Acc. to EN 10204-2.2 Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Device passport Russia (For price request please contact the technical support www.siemens.com/automation/support-request.) Setting of upper limit of output signal to 22.0 mA Degree of protection IP65/IP68 (only for M20x1.5 and ½-14 NPT) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140 °F)) Export approval Korea E11 CRN approval Canada (Canadian Registration Number) Dual seal Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil) (only for transmitter 7MF4B) "Flameproof" explosion protection according to INMETRO (Brazil) (only for transmitter 7MF4D) Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil) (only for transmitter 7MF4P) Ex Approval IEC Ex (Ex ia) E45	✓	✓	✓	
Inspection certificate Acc. to EN 10204-3.1 Factory certificate Acc. to EN 10204-2.2 Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Punctional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Device passport Russia (For price request please contact the technical support www.siemens.com/automation/support-request.) Setting of upper limit of output signal to 22.0 mA Degree of protection IP65/IP68 (only for M20x1.5 and ½-14 NPT) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140°F)) Export approval Korea E11 CRN approval Canada (Canadian Registration Number) Dual seal Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil) (only for transmitter 7MF4B) "Flameproof" explosion protection according to INMETRO (Brazil) (only for transmitter 7MF4D) Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil) (only for transmitter 7MF4P) Ex Approval IEC Ex (Ex ia) E45	✓	✓	✓	
Factory certificate Acc. to EN 10204-2.2 Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Device passport Russia (For price request please contact the technical support www.siemens.com/automation/support-request.) Setting of upper limit of output signal to 22.0 mA Degree of protection IP65/IP68 (only for M20x1.5 and ½-14 NPT) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140°F)) Export approval Korea E11 CRN approval Canada (Canadian Registration Number) Dual seal Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil) (only for transmitter 7MF4B) "Flameproof" explosion protection according to INMETRO (Brazil) (only for transmitter 7MF4D) Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil) (only for transmitter 7MF4P) Ex Approval IEC Ex (Ex ia) C21 C22 C23 C24 C25 C25 C25 C26 C27 C27 C27 C27 C27 C27 C27	✓	✓	✓	
Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Device passport Russia (For price request please contact the technical support www.siemens.com/automation/support-request.) Setting of upper limit of output signal to 22.0 mA Degree of protection IP65/IP68 (only for M20x1.5 and ½-14 NPT) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140 °F)) Export approval Korea E11 CRN approval Canada (Canadian Registration Number) Dual seal Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil) (only for transmitter 7MF4B) "Flameproof" explosion protection according to INMETRO (Brazil) (only for transmitter 7MF4D) Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil) (only for transmitter 7MF4P) Ex Approval IEC Ex (Ex ia) C21 C21 C21 C21 C21 C21 C21 C2	✓	✓	✓	
Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Functional safety (PROFIsafe) Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Device passport Russia (For price request please contact the technical support www.siemens.com/automation/support-request.) Setting of upper limit of output signal to 22.0 mA Degree of protection IP65/IP68 (only for M20x1.5 and ½-14 NPT) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140°F)) Export approval Korea E11 CRN approval Canada (Canadian Registration Number) Dual seal Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil) (only for transmitter 7MF4B) "Flameproof" explosion protection according to INMETRO (Brazil) (only for transmitter 7MF4D) Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil) (only for transmitter 7MF4P) Ex Approval IEC Ex (Ex ia) C21 C21 C21 C22 C23 C23 C23 C23	1			
Certificate and PROFIsafe protocol Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration Device passport Russia (For price request please contact the technical support www.siemens.com/automation/support-request.) Setting of upper limit of output signal to 22.0 mA Degree of protection IP65/IP68 (only for M20x1.5 and ½-14 NPT) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140 °F)) Export approval Korea CRN approval Canada (Canadian Registration Number) Dual seal Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil) (only for transmitter 7MF4				
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(For price request please contact the technical support www.siemens.com/automation/support-request.) Setting of upper limit of output signal to 22.0 mA Degree of protection IP65/IP68 (only for M20x1.5 and ½-14 NPT) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140°F)) Export approval Korea E11 CRN approval Canada (Canadian Registration Number) Dual seal E24 Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil) (only for transmitter 7MF4B) "Flameproof" explosion protection according to INMETRO (Brazil) (only for transmitter 7MF4D) Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil) (only for transmitter 7MF4D) Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil) (only for transmitter 7MF4P) Ex Approval IEC Ex (Ex ia)	✓			
22.0 mA Degree of protection IP65/IP68 (only for M20x1.5 and ½-14 NPT) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140°F)) Export approval Korea CRN approval Canada (Canadian Registration Number) Dual seal Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil) (only for transmitter 7MF4B) "Flameproof" explosion protection according to INMETRO (Brazil) (only for transmitter 7MF4D) Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil) (only for transmitter 7MF4D) Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil) (only for transmitter 7MF4P)	√	✓	✓	
(only for M20x1.5 and ½-14 NPT) Oxygen application (In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140 °F)) Export approval Korea CRN approval Canada (Canadian Registration Number) Dual seal Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil) (only for transmitter 7MF4B) "Flameproof" explosion protection according to INMETRO (Brazil) (only for transmitter 7MF4D) Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil) (only for transmitter 7MF4D) Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil) (only for transmitter 7MF4P) Ex Approval IEC Ex (Ex ia)	✓			
(In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140°F)) Export approval Korea CRN approval Canada (Canadian Registration Number) Dual seal Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil) (only for transmitter 7MF4B) "Flameproof" explosion protection according to INMETRO (Brazil) (only for transmitter 7MF4D) Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil) (only for transmitter 7MF4P) Ex Approval IEC Ex (Ex ia) E11 E22 E23 E24 E25 E26 E26 E27 E27 E28 E28 E28 E28 E28 E28	✓	1	✓	
CRN approval Canada (Canadian Registration Number) Dual seal Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil) (only for transmitter 7MF4B) "Flameproof" explosion protection according to INMETRO (Brazil) (only for transmitter 7MF4D) Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil) (only for transmitter 7MF4P) Ex Approval IEC Ex (Ex ia) E22	✓	✓	1	
(Canadian Registration Number) Dual seal Ezplosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil) (only for transmitter 7MF4B) Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil) (only for transmitter 7MF4D) Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil) (only for transmitter 7MF4P) Ex Approval IEC Ex (Ex ia) E45	✓	✓	✓	
Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil) (only for transmitter 7MF4B) "Flameproof" explosion protection according to INMETRO (Brazil) (only for transmitter 7MF4D) Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil) (only for transmitter 7MF4P) Ex Approval IEC Ex (Ex ia) E25	✓	✓	✓	
INMETRO (Brazil) (only for transmitter 7MF4B) "Flameproof" explosion protection according to INMETRO (Brazil) (only for transmitter 7MF4D) Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil) (only for transmitter 7MF4P) Ex Approval IEC Ex (Ex ia) E26	1	✓	✓	
"Flameproof" explosion protection according to INMETRO (Brazil) (only for transmitter 7MF4D) Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil) (only for transmitter 7MF4P) Ex Approval IEC Ex (Ex ia) E266 E266	2) 🗸	✓	✓	
(only for transmitter 7MF4D.) Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil) (only for transmitter 7MF4P) Ex Approval IEC Ex (Ex ia) E456	2) 🗸	✓	1	
Ex d) to INMETRO (Brazil) (only for transmitter 7MF4P) Ex Approval IEC Ex (Ex ia) E45	2)	,		
	, v	V		
(only for transmitter 7MF4	!) ~	✓	✓	
Ex Approval IEC Ex (Ex id) (only for transmitter 7MF4)	2) 🗸	✓	✓	
"Intrinsic safety" and "Explosion-proof" explosion protection acc. to Kosha (Korea) (only for transmitter	2) 🗸	✓	✓	

Selection and Ordering data	Order			
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	✓	✓	✓
Transient protector 6 kV (lightning protection)	J01	✓	✓	✓
Flanges to EN 1092-1, Form b1				
• DN 25, PN 40 ³)	M11	✓	✓	✓
• DN 25, PN 100 ³⁾	M21	√	V	V
DN 40, PN 40DN 40, PN 100	M13 M23	√	✓	✓
• DN 50, PN 16	M04	✓	*	V
• DN 50, PN 40	M14	✓	✓	✓
• DN 80, PN 16	M06	✓	✓	✓
• DN 80, PN 40	M16	✓	✓	✓
Flanges to ASME B16.5				
• Stainless steel flange 1" class 1503)	M40	✓	✓	✓
• Stainless steel flange 1½" class 150	M41	✓	✓.	✓.
• Stainless steel flange 2" class 150	M42	√	1	1
Stainless steel flange 3" class 150Stainless steel flange 4" class 150	M43 M44	√	✓	√
• Stainless steel flange 1" class 300 ³⁾	M45	√	*	V
• Stainless steel flange 1½" class 300	M46	1	·	1
• Stainless steel flange 2" class 300	M47	✓	✓	✓
• Stainless steel flange 3" class 300	M48	✓	✓	✓
 Stainless steel flange 4" class 300 	M49	✓	✓	✓
Threaded connector to DIN 3852-2,				
form A, thread to ISO 228 ⁴⁾	D04		,	_
• G ¾"-A, front-flush	R01	√	√	1
G 1"-A, front-flushG 2"-A, front-flush	R02 R04	V	v	V
Tank connection ⁵⁾	1104		·	·
Sealing is included in delivery				
• TG 52/50, PN 40	R10	1	✓	1
• TG 52/150, PN 40	R11	1	✓	✓
Sanitary process connection according DIN 11851 (Dairy connection with slotted union nut)				
• DN 50, PN 25	N04	1	✓	1
• DN 80, PN 25	N06	✓	✓	✓
Tri-Clamp connection according DIN 32676/ISO 2852				
• DN 50/2", PN 16	N14	1	1	1
• DN 65/3", PN 10	N15	✓	✓	✓
Varivent connection Certified to EHEDG				
 Type N = 68 for Varivent housing DN 40 125 und 1½" 6", PN 40 	N28	✓	✓	1
Temperature decoupler up to 200 °C ⁶⁾ for version with front-flush diaphragm	P00	✓	✓	✓
Temperature decoupler up to 250 °C Measuring cell filling: High-temperature oil, only in conjunction with measuring cell filling silicone oil	P10	✓	✓	1
Bio-Control sanitary process connection				
Certified to EHEDG				
• DN 50, PN 16	Q53	✓	✓	✓
• DN 65, PN 16	Q54	✓	✓	✓
• DN 50, PN 40	M32	✓	✓	✓
SMS socket with union nut				
• 2"	M67	✓	✓	✓
• 2½"	M68	√	V	V
• 3"	M69	✓	✓	√

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

Selection and Ordering data	Order	code		
Further designs Add "-Z" to Article No. and specify Order code.		HART	PA	FF
SMS threaded socket				
• 2"	M73	✓	✓	✓
• 21/2"	M74	✓	✓	✓
• 3"	M75	✓	✓	✓
IDF socket with union nut ISO 2853				
• 2"	M82	✓	✓.	✓.
• 21/2"	M83	✓,	√	1
• 3"	M84	✓	✓	✓
IDF threaded socket ISO 2853		,	,	,
• 2" - 01/"	M92	√	1	1
• 2½" • 3"	M93 M94	√	√	✓
	IVI94			
Sanitary process connection to NEUMO Bio-Connect screw connection Certified to EHEDG				
• DN 50, PN 16	Q05	✓	✓	✓
• DN 65, PN 16	Q06	✓	✓	✓
• DN 80, PN 16	Q07	✓	✓	✓
• DN 100, PN 16	Q08	✓.	✓	✓
• DN 2", PN 16	Q13	√	1	1
• DN 2½", PN 16	Q14	✓	✓	1
• DN 3", PN 16	Q15	√	√	√
• DN 4", PN 16	Q16	V	•	•
Sanitary process connection to NEUMO Bio-Connect flange connection Certified to EHEDG				
• DN 50, PN 16	Q23	1	✓	1
• DN 65, PN 16	Q24	✓	✓	✓
• DN 80, PN 16	Q25	✓	✓	✓
• DN 100, PN 16	Q26	✓	✓	1
• DN 2", PN 16	Q31	✓.	✓.	1
• DN 2½", PN 16	Q32	1	1	1
• DN 3", PN 16	Q33	√	√	4
• DN 4", PN 16	Q34	•	٧	•
Sanitary process connection to NEUMO Bio-Connect clamp connection Certified to EHEDG				
• DN 50, PN 16	Q39	✓	✓	✓
• DN 65, PN 10	Q40	✓	✓	✓
• DN 80, PN 10	Q41	✓	✓	✓
• DN 100, PN 10	Q42	✓.	✓.	1
• DN 2½", PN 16	Q48	√	1	1
• DN 3", PN 10	Q49	1	√	1
• DN 4", PN 10	Q50	•	•	•
Sanitary process connection to NEUMO Bio-Connect S flange connection Certified to EHEDG				
• DN 50, PN 16	Q63	✓	✓	1
• DN 65, PN 10	Q64	√	1	1
• DN 80, PN 10	Q65	√	√	V
• DN 100, PN 10	Q66	√	√	1
• DN 2", PN 16	Q72	√	√	√
DN 2½", PN 10DN 3", PN 10	Q73 Q74	√	√	√
• DN 4", PN 10	Q74 Q75	∀	v	v
· DIV T, I IV IO	G/ J		•	•

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

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

 $^{^{\}rm 2)}$ Option does not include ATEX approval, but instead includes only the country-specific approval.

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⁾ The maximum permissible temperatures of the medium depend on the respective cell fillings.

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	FF
Please add "-Z" to Article No. and specify Order code(s) and plain text.				
Measuring range to be set	Y01	✓	√ 1)	
Specify in plain text (max. 5 characters): Y01: up to mbar, bar, kPa, MPa, psi				
Stainless steel tag plate and entry in device variable (measuring point descrip-	Y15	✓	✓	✓
tion) 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)	Y 17	✓		
Max. 8 characters, specify in plain text: Y17:				
Setting of pressure indicator in pressure units	Y21	✓	✓	✓
Specify in plain text (standard setting: bar): Y21: mbar, bar, kPa, MPa, psi, Note:				
The following pressure units can be selected:				
bar, mbar, mm H ₂ O ^{*)} , inH ₂ O ^{*)} , ftH ₂ O ^{*)} , mmHG, inHG, psi, Pa, kPa, MPa, g/cm ² , kg/cm ² , Torr, ATM or %				
*) ref. temperature 20 °C				
Setting of pressure indication in non-pressure units ²⁾	Y22 + Y01	V		
Specify in plain text: Y22: up to I/min, m ³ /h, m, USgpm,				
(specification of measuring range in pressure units "Y01" is essential, unit with max. 5 characters)				
Preset bus address	Y25		1	1
possible between 1 and 126				
Specify in plain text: Y25:				
Damping adjustment in seconds (0 100 s)	Y 30	✓	✓	✓
Only VO1 V15 V16 V17 V21 V22 V25 and [)0E 00r	ho foo	torun	rooot

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

✓ = available

ordering example

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

B line: A22 + Y01 + Y21

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

C line: Y21: bar (psi)

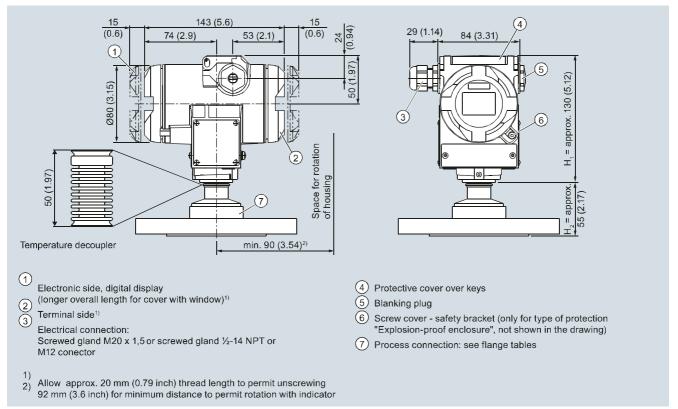
¹⁾ Measuring accuracies for PROFIBUS PA transmitters with Option Y01 are calculated in the same way as for HART devices.

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 .

 H_1 = Height of the SITRANS P300 up to a defined cross-section

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

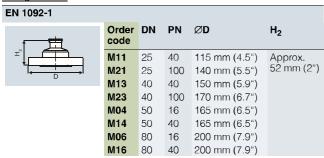
Only the height H₂ is indicated in the dimensions of the flanges.

Transmitters for general requirements

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

Flanges as per EN and ASME

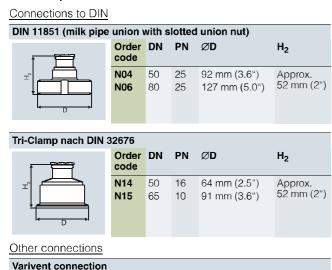
Flange to EN

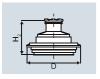


Flanges to ASME

ASME B16.5 Order DN PΝ ØD Η code M40 110 mm (4.3") 1" 150 Approx. 52 mm (2") M41 150 130 mm (5.1") 11/2" 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 11/2" 300 155 mm (6.1") 2" M47 300 165 mm (6.5") M48 3" 300 210 mm (8.1") M49 4" 300 255 mm (10.0")

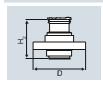
NuG and pharmaceutical connections





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

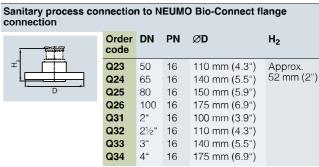
Biocontrol connection

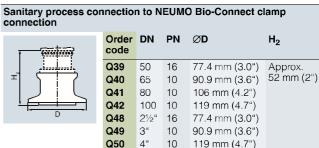


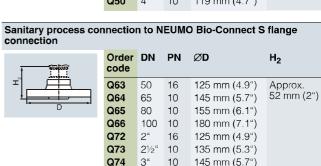
Order code	DN	PN	ØD	H ₂
Q53	50	16	90 mm (3.5")	Approx.
Q54	65	16	120 mm (4.7")	52 mm (2")

Sanitary process connection to DRD H_2 Order DN PΝ ØD code M32 Approx. 52 mm (2") 40 50 105 mm (4.1")

Sanitary process screw connection to NEUMO Bio-Connect Order DN PΝ ØD code Approx. 52 mm (2") Q05 50 16 82 mm (3.2") Q06 105 mm (4.1") 65 16 115 mm (4.5") Q07 80 16 145 mm (5.7") 008 100 16 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")







Q75

4"

10

180 mm (7.1")

(6.7")

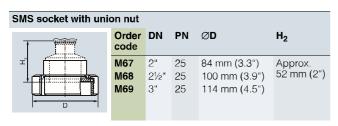
Pressure Measurement

Transmitters for general requirements

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

Threaded connection G¾", G1" and G2" acc. to DIN 3852								
	Order code	DN	PN	ØD	H ₂			
	R01	3/4"	60	37 mm (1.5")	Approx. 45 mm (1.8")			
D	R02	1"	60	48 mm (1.9")	Approx. 47 mm (1.9")			
	R04	2"	60	78 mm (3.1")	Approx. 52 mm (2")			

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



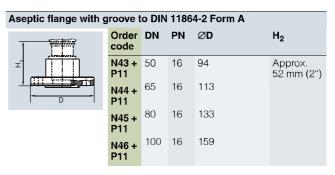
SMS threaded socket								
- CHORINAGE	Order code	DN	PN	ØD	H ₂			
T D	M73 M74 M75	2" 2½" 3"	25	70 x 1/6 mm 85 x 1/6 mm 98 x 1/6 mm	Approx. 52 mm (2")			

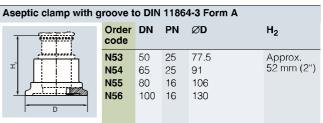
IDF socket with union nut								
1 1	Order code	DN	PN	ØD	H ₂			
I ()	M82	2"	25	77 mm (3")	Approx.			
	M83	21/2"	25	91 mm (3.6")	52 mm (2")			
D	M84	3"	25	106 mm (4.2")				

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

Aseptic threaded socket to DIN 11864-1 Form A									
(1000)	Order code	DN	PN	ØD	H ₂				
	N33	50	25	78 x 1/6"	Approx.				
ı i	N34	65	25	95 x 1/6"	52 mm (2")				
	N35	80	25	110 x ¼"					
D	N36	100	25	130 x ¼"					

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





Transmitters for general requirements

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

Technical specifications

	HART		PROFIBUS PA and F	OUNDATION Fieldbus			
Input							
Measured variable		Absolut	e pressure				
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 pre sure			
nam por modero tott processe	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	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 prese	t to 3.84 mA	н				
 Upper limit (infinitely adjustable) 	23 mA, factory preset t set to 22.0 mA	o 20.5 mA or optionally					
Load							
Without HART	$R_{\rm B} \leq (U_{\rm H} - 10.5 \rm V)/0.02$ $U_{\rm H}$: Power supply in V	$23 \text{ A in } \Omega$,	-				
• With HART	$R_{\rm B} = 230 \dots 500 \Omega$ (SIN $R_{\rm B} = 230 \dots 1100 \Omega$ (H		-				
Physical bus	-		IEC 61158-2				
Protection against polarity reversal	Protected against shor	t-circuit and polarity reve supply	ersal. 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 II	EC 60770-1				
Reference conditions (All error data refer always refer to the set span)	Increasing characterist	ic, start-of-scale value 0 ing, room temperature 2 (r = max. sp					
Error in measurement at limit setting incl. hysteresis and reproducibility							
• Linear characteristic			≤ 0.1 %				
- r ≤ 10	≤ 0.1 %						
- 10 < r ≤ 30	≤ 0.2 %						
Long-term stability (temperature change ± 30 °C (± 54 °F))	≤ (0.1 · r) %/year		≤ 0.1 %/year				
nfluence of ambient temperature							
• at -10 +60 °C (14 140 °F)	\leq (0.1 · r + 0.2) % ¹⁾		≤ 0.3 %				
• at -4010 °C and 60 85 °C (-40 +14 °F and 140 185 °F)	\leq (0.1 · r + 0.15) %/10 H	<	≤ 0.25 %/10 K				
Measured Value Resolution	-		3 · 10 ⁻⁵ of nominal me	asuring range			

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

	HART	PROFIBUS PA and FOUNDATION Fieldbus	
Rated conditions			
Degree of protection (to IEC 60529)	IP65 (option	nal IP65/IP68)	
Temperature of medium			
Measuring cell with silicone oil filling		C (-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	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 %	
	Condensation permissible,	suitable for use in the tropics	
Electromagnetic Compatibility			
- Emitted interference and interference immu- nity	Acc. to IEC 61326	6 and NAMUR NE 21	
Design			
Weight (without options)	≈ 1.5 kg (≈ 3.3 lb)		
Enclosure material	Low-copper die-cast aluminum, GD-AISi 12 or stainless steel precision casting, mat. no. 1.440		
Wetted parts materials			
Connection shank	Stainless steel, mat. no. 1.4404/3	16L or Hastelloy C4, mat. no. 2.4610	
Oval flange	Stainless steel, m	nat. 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	Connection shank G½B to EN 837-1, (PN 160 (MAWP 2320 psia)) to DIN 19213 with the contraction of the contrac	female thread $\%$ -14 NPT or oval flange mounting thread M10 or $^7/_{16}$ -20 UNF to IEC 615 $^{\circ}$	
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 $\emph{\textbf{U}}_{ee}$		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)

	HART	PROFIBUS PA and FOUNDATION Fieldbus		
Certificates and approvals				
Classification according to PED 97/23/EC		group 1; complies with requirements of article 3, lengineering practice)		
Explosion protection				
Intrinsic safety "i"	PTB 13 A	TEX 2007 X		
- Marking	Ex II 1/2 G Ex ia/ib	IIC T4/T5/T6 Ga/Gb		
- Permissible ambient temperature	-40 +70 °C (-40 +15	85°F) temperature class T4; 8°F) temperature class T5; 40°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: $U_{\rm o}$ = 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	$L_{i} = 0.4 \text{ mH}, C_{i} = 6 \text{ nF}$	$L_{i} = 7 \mu H, C_{i} = 1.1 nF$		
Explosion-proof "d"	PTB 99	ATEX 1160		
- Marking	Ex II 1/2 G Ex	d IIC T4/T6 Gb		
- Permissible ambient temperature		35 °F) temperature class T4; 40 °F) temperature class T6		
- Connection	To circuits with values: $U_{\rm H}$ = 10.5 45 V DC	To circuits with values: $U_{\rm H}$ = 9 32 V DC		
Dust explosion protection for zone 20	PTB 01	ATEX 2055		
- Marking	Ex II 1 D 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	C (248 °F)		
- Connection	To certified intrinsically-safe circuits with peak values: $U_{\rm i} = 30 \text{ V}, I_{\rm i} = 100 \text{ mA},$	FISCO supply unit: $U_{\rm o}$ = 17.5 V, $I_{\rm o}$ = 380 mA, $P_{\rm o}$ = 5.32 W Linear barrier:		
	$P_{\rm i} = 750 {\rm mW}, R_{\rm i} = 300 \Omega$	$U_0 = 24 \text{ V}, I_0 = 250 \text{ mA}, P_0 = 1.2 \text{ W}$		
- Effective internal inductance/capacitance	$L_{i} = 0.4 \text{ mH}, C_{i} = 6 \text{ nF}$	$L_i = 7 \mu H$, $C_i = 1.1 nF$		
Dust explosion protection for zone 21/22	PTB 01	ATEX 2055		
- Marking	Ex II 2 D II	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)	$U_{\rm m} = 45 \text{ V}$	<i>U</i> _m = 32 V		
- Connection (Ex ic)	To circuits with values: $U_{\rm i} = 45 \ { m V}$	FISCO supply unit ic: $U_0 = 17.5 \text{ V}$, $I_0 = 570 \text{ mA}$		
		Linear barrier: $U_{\rm o}$ = 32 V, $I_{\rm o}$ = 132 mA, $P_{\rm o}$ = 1 W		
- Effective internal inductance/capacitance	$L_{\rm i} = 0.4 {\rm mH}, C_{\rm i} = 6 {\rm nF}$	$L_{i} = 7 \mu H, C_{i} = 1,1 nF$		
Explosion protection acc. to FM	Certificate of Co	mpliance 3008490		
- Identification (XP/DIP) or (IS); (NI)	CL I, DIV 1, GP ABCD T4T6; CL II, DIV 1, CL I, DIV 2, GP ABCD T4	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 Compliance 1153651			
- Identification (XP/DIP) or (IS)	CL I, DIV 1, GP ABCD T4T6; CL II, DIV 1, GP EFG; CL III; Ex ia IIC T4T6; CL I, DIV 2, GP ABC T4T6; CL II, DIV 2, GP FG; CL III			

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

Transmitters for general requirements

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

HART communication	
HART	230 1100 Ω
Protocol	HART Version 5.x
Software for computer	SIMATIC PDM
PROFIBUS PA communication	
Simultaneous communication with master class 2 (max.)	4
The address can be set using	Configuration tool or local opera- tion (standard setting address 126)
Cyclic data usage	
Output byte	5 (one measured value) or 10 (two measured values)
• Input byte	0, 1, or 2 (register operating mode and reset function for metering)
Internal preprocessing	
Device profile	PROFIBUS PA Profile for Pro- cess Control Devices Version 3.0, Class B
Function blocks	2
 Analog input 	
 Adaptation to customer-specific process variables 	Yes, linearly rising or falling characteristic
- Electrical damping, adjustable	0 to 100 s
- Simulation function	Input /Output
- Failure mode	parameterizable (last good value, substitute value, incorrect value)
- Limit monitoring	Yes, one upper and lower warn- ing limit and one alarm limit respectively
Register (totalizer)	Can be reset, preset, optional direction of counting, simulation function of register output
- Failure mode	parameterizable (summation with last good value, continuous summation, summation with incorrect value)
- Limit monitoring	One upper and lower warning limit and one alarm limit respec- tively
Physical block	1
Transducer blocks	2
Pressure transducer block	
 Can be calibrated by applying two pressures 	Yes
- Monitoring of sensor limits	Yes
 Specification of a container characteristic with 	Max. 30 nodes
 Square-rooted characteristic for flow measurement 	Yes
 Gradual volume suppression and implementation point of square-root extraction 	Parameterizable
- Simulation function for mea- sured pressure value and sen- sor temperature	Constant value or over parameterizable ramp function

FOUNDATION Fieldbus communication

Function blocks

- Analog input
 - Adaptation to customer-specific process variables
 - Electrical damping, adjustable
 - Simulation function
- Failure mode

- Limit monitoring

- Square-rooted characteristic for flow measurement
- PID
- Physical block
 Transducer block

Transducer blocks

- Pressure transducer block
- Can be calibrated by applying two pressures
- Monitoring of sensor limits
- Simulation function: Measured pressure value, sensor temperature and electronics temperature

3 function blocks analog input, 1 function block PID

Yes, linearly rising or falling characteristic

0 ... 100 s

Output/input (can be locked within the device with a bridge)

parameterizable (last good value, substitute value, incorrect value)

Yes, one upper and lower warning limit and one alarm limit respectively

Yes

Standard FOUNDATION Fieldbus function block

1 resource block

1 transducer block Pressure with calibration, 1 transducer block LCD

Yes

Yes

Constant value or over parameterizable ramp function

sor temperature

Transmitters for general requirements

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

Selection and Orderin	g data		Arti	cle	N	Э.	
Pressure transmitters t			7 M	F 4	2	3 3	-
from gauge pressure s SITRANS P DS III with I	eries HART					-	
Measuring cell filling	Measuring cell				۱		
	cleaning						
Silicone oil	normal		1				
Inert liquid ¹⁾	grease-free to cleanliness level 2		3				
Measuring span (min.	max.)						
8.3 250 mbar a	(0.12 3.62 psia)		D				
43 1300 mbar a	(0.62 18.85 psia)		F				
0.16 5 bar a	(2.32 72.5 psia)		G				
1 30 bar a	(14.5 435 psia)	•	Н				
Wetted parts materials							
Seal diaphragm	Process connection						
Stainless steel	Stainless steel			Α			
Hastelloy	Stainless steel			В			
Hastelloy	Hastelloy			С			
Version for diaphragm s	seal ^{2) 3) 4) 5) 6)}			Y			
Process connection							
 Connection shank G½ 				0			
• Female thread ½-14 №				1			
• Stainless steel oval fla							
nection (Oval flange h							
	₆ -20 UNF to EN 61518			2			
- Mounting thread M1				3			
- Mounting thread M1				4			
 Male thread M20 x 1.5 				5 6			
 Male thread ½ -14 NF 	1			J			
			•				
•	erials						
 Housing made of die- 	erials cast aluminium	•			0		
Housing made of die-Housing stainless stee	erials cast aluminium	•			0		
Housing made of die-Housing stainless steeVersion	erials cast aluminium	•				1	
 Housing made of die- Housing stainless steed Version Standard versions 	erials cast aluminium el precision casting ⁷⁾	•				1 2	
 Housing made of die- Housing stainless sterior Version Standard versions International version. 	erials cast aluminium el precision casting ⁷⁾ English label inscrip-	•				1 2	
 Housing made of die- Housing stainless sterior Version Standard versions International version. 	erials cast aluminium el precision casting ⁷⁾ English label inscripin 5 languages on CD	•					
 Housing made of die- Housing stainless sterior Standard versions International version, tions, documentation (no Order code selection) 	erials cast aluminium el precision casting ⁷⁾ English label inscripin 5 languages on CD	•	-				
 Housing made of die- Housing stainless sterior Standard versions International version, tions, documentation (no Order code selection) Explosion protection None 	erials cast aluminium el precision casting ⁷⁾ English label inscripin 5 languages on CD table)	•	-				
 Housing made of die- Housing stainless sterior Standard versions International version, tions, documentation (no Order code selection) Explosion protection None With ATEX, Type of protection 	erials cast aluminium el precision casting ⁷⁾ English label inscripin 5 languages on CD table) otection:	•					Α
 Housing made of die- Housing stainless sterior Standard versions International version, tions, documentation (no Order code selection) Explosion protection None With ATEX, Type of production in the control of the	erials cast aluminium el precision casting ⁷⁾ English label inscripin 5 languages on CD table) otection:	•					A B
 Housing made of die- Housing stainless stered Version Standard versions International version, tions, documentation (no Order code selection) Explosion protection None With ATEX, Type of properties of the propertie	erials cast aluminium el precision casting ⁷⁾ English label inscripin 5 languages on CD table) otection: ia)" (cd)"8)	•					A B D
 Housing made of die- Housing stainless stered Version Standard versions International version, tions, documentation (no Order code selection) None With ATEX, Type of promotion of the properties of the properti	erials cast aluminium el precision casting ⁷⁾ English label inscripin 5 languages on CD table) otection:	•					A B
 Housing made of die- Housing stainless stered Version Standard versions International version, tions, documentation (no Order code selection) None With ATEX, Type of properties of the propert	erials cast aluminium el precision casting ⁷⁾ English label inscripin 5 languages on CD table) otection: ia)" (d)"8) flameproof enclosure"	•					A B D P
 Housing made of die- Housing stainless stered Version Standard versions International version, tions, documentation (no Order code selection) None With ATEX, Type of properties of the propert	erials cast aluminium el precision casting ⁷⁾ English label inscripin 5 languages on CD table) otection: (a)" (a)"8) flameproof enclosure"	•					A B D P
 Housing made of die- Housing stainless stering Standard versions International version, tions, documentation (no Order code selection) None With ATEX, Type of properties of the propertie	erials cast aluminium el precision casting ⁷⁾ English label inscripin 5 languages on CD table) otection: ia)" (d)"8) flameproof enclosure"	•					A B D P
 Housing made of die- Housing stainless stering Standard versions International version, tions, documentation (no Order code selection) None With ATEX, Type of praction in the safety (Eximal in Explosion-proof (Eximal in Explosion-proof (Eximal in Explosion-proof (Eximal in Eximal in Exim	erials cast aluminium el precision casting ⁷⁾ English label inscrip- in 5 languages on CD table) otection: ia)" (x d)" ⁸⁾ flameproof enclosure" (b) losion-proof enclosure protection (Ex ia+ Ex d +	•					A B D P
 Housing made of die- Housing stainless sterions Standard versions International version, tions, documentation (no Order code selection) None With ATEX, Type of proper intrinsic safety (Eximal internation) "Explosion-proof (Eximal intrinsic safety and (Eximal intrinsic safety, and (Eximal intrinsic safety, expand dust explosion proof intrinsic safety, expand continuous intrinsic safety, expand continuous intrinsic safety, expand continuous intrinsic safety. 	erials cast aluminium el precision casting ⁷⁾ English label inscrip- in 5 languages on CD table) otection: ia)" (c d)"8) flameproof enclosure" o) losion-proof enclosure protection (Ex ia+ Ex d +	•					A B D P E R
 Housing made of die- Housing stainless sterior Version Standard versions International version, tions, documentation (no Order code selection) None With ATEX, Type of praction in the properties of the	erials cast aluminium el precision casting ⁷⁾ English label inscrip- in 5 languages on CD table) otection: ia)" (a d)" ⁸⁾ flameproof enclosure" o) losion-proof enclosure orotection (Ex ia + Ex d + fe (is) Ex ia + Ex d (ATEX) of protection:	•					A B D P E R
 Housing made of die- Housing stainless sterior Version Standard versions International version, tions, documentation (no Order code selection) None With ATEX, Type of praction in the properties of the	erials cast aluminium el precision casting ⁷⁾ English label inscrip- in 5 languages on CD table) otection: ia)" (c d)"8) flameproof enclosure" (o) losion-proof enclosure derication (Ex ia + Ex d + fe (is) Ex ia + Ex d (ATEX)	•					A B D P E R
 Housing made of die- Housing stainless sterior Version Standard versions International version, tions, documentation (no Order code selection) None With ATEX, Type of praction in the properties of the	erials cast aluminium el precision casting ⁷⁾ English label inscrip- in 5 languages on CD table) otection: ia)" (c d)"8) flameproof enclosure" o) losion-proof enclosure protection (Ex ia + Ex d + fe (is) Ex ia + Ex d (ATEX) of protection: xplosion Proof (is + xp)* cable entry	•					A B D P E R F S
 Housing made of die- Housing stainless sterior Version Standard versions International version, tions, documentation (no Order code selection) None With ATEX, Type of praction in the properties of the	erials cast aluminium el precision casting ⁷⁾ English label inscrip- in 5 languages on CD table) otection: ia)" (x d)"8) flameproof enclosure" on losion-proof enclosure protection (Ex ia+ Ex d + ife (is) Ex ia + Ex d (ATEX) of protection: xplosion Proof (is + xp)" (cable entry .5 ¹¹)	•					A B D P E R F S
 Housing made of die- Housing stainless sterior Version Standard versions International version, tions, documentation (no Order code selection) None With ATEX, Type of praction in the properties of the	erials cast aluminium el precision casting ⁷⁾ English label inscrip- in 5 languages on CD table) otection: ia)" (x d)"8) flameproof enclosure" on losion-proof enclosure protection (Ex ia+ Ex d + ife (is) Ex ia + Ex d (ATEX) of protection: xplosion Proof (is + xp)" (cable entry .5 ¹¹)	•					A B D P E R F S
 Housing made of die- Housing stainless sterior Version Standard versions International version, tions, documentation (no Order code selection) None With ATEX, Type of praction in the properties of the	erials cast aluminium el precision casting ⁷⁾ English label inscrip- in 5 languages on CD table) otection: ia)" (a d)" ⁸⁾ flameproof enclosure" o) losion-proof enclosure orotection (Ex ia + Ex d + fe (is) Ex ia + Ex d (ATEX) of protection: xplosion Proof (is + xp)* ⁶ cable entry .5 ¹¹⁾ 1.5 NPT	•					A B D P E R F S N C A
 Housing made of die- Housing stainless sterior Version Standard versions International version, tions, documentation (no Order code selection) None With ATEX, Type of praction in the properties of the	erials cast aluminium el precision casting ⁷⁾ English label inscrip- in 5 languages on CD table) otection: ia)" (a d)" ⁸⁾ flameproof enclosure" o) losion-proof enclosure orotection (Ex ia + Ex d + fe (is) Ex ia + Ex d (ATEX) of protection: xplosion Proof (is + xp)* ⁶ cable entry .5 ¹¹⁾ 1.5 NPT	•					A B D P E R F S N C A B
(no Order code selection None With ATEX, Type of pr "Intrinsic safety (Ex i "Explosion-proof (Ex i "Intrinsic safety and (Ex ia + Ex d)") "Ex nA/ic (Zone 2)"1("Intrinsic safety, exp and dust explosion proof 1D/2D)") FM + CSA intrinsic safety exp and the safety exp and t	erials cast aluminium el precision casting ⁷⁾ English label inscrip- in 5 languages on CD table) otection: ia)" (a d)"8) flameproof enclosure" (b) losion-proof enclosure orotection (Ex ia+ Ex d + fe (is) Ex ia + Ex d (ATEX) of protection: xplosion Proof (is + xp)" (cable entry .511) 1.5 NPT housing) incl. mating	•					A BDP ER FS NC ABC

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			П
Without display			0
 Without visible display (display concealed, setting: mA) 	•		1
With visible display			6
 with customer-specific display (setting as specified, Order code "Y21" or "Y22" required 	•		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 inH₂O a).
- 3) When the manufacture's certificate (calibration certificate) has to be ordered for transmitters with diaphragm seals according to IEC 60770-2, it is recommended only to order this certificate exclusively with the diaphragm seals. The measuring accuracy of the total combination is certified here. 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) Not in conjunction with types of protection "Explosion-proof" and "Ex nA", "Intrinsic safety" and "Explosion-proof".
- ¹²⁾M12 delivered without cable socket
- ¹³⁾Not available with protection type "Ex d" (optiones D, P, N and R)
- ¹⁴⁾Not with protection types "Explosion-proof" and "Ex nA", "Intrinsic safe" and "Explosion proof".

Transmitters for general requirements

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

`	,					
Selection and Orderin	g data	Artio	cle	No.		
Pressure transmitters from gauge pressure	•					
SITRANS P DS III with	PROFIBUS PA (PA)	7 M	F 4	234-		
SITRANS P DS III with FOUNDATION Fieldbus		7MF4235-				
(FF)	1 OUNDATION 1 TOTAL DAG					
Measuring cell filling	Measuring cell		Т			
g	cleaning					
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				
30 bar a	(435 psia)	Н				
Wetted parts materials	3					
Seal diaphragm	Process connection					
Stainless steel	Stainless steel		Α			
Hastelloy	Stainless steel	1	В			
Hastelloy	Hastelloy		С			
Version as diaphragm s	seal ^{2) 3) 4) 5) 6)}		Y			
Process connection						
• Connection shank G1/2			0			
• Female thread ½-14 N			1			
 Stainless steel oval flange with process connection (Oval flange has no female thread) 						
- Mounting thread ⁷ / ₄ .	₆ -20 UNF to IEC 61518		2			
- Mounting thread M1	0 to DIN 19213		3			
- Mounting thread M1			4			
• Male thread M20 x 1.5			5			
• Male thread ½ -14 NF	T		6			
Non-wetted parts mate	erials					
 Housing made of die- 	cast aluminium			0		
Housing stainless stee	el precision casting			3		
Version						
 Standard versions 				1		
	English label inscriptions,			2		
documentation in 5 la (no Order code selec						
Explosion protection	,					
None				Α		
• With ATEX, Type of pr						
- "Intrinsic safety (Ex i	, _,			В		
- "Explosion-proof (Ex	•			D		
- "Intrinsic safety and	flameproof enclosure"			P		
(Ex ia + Ex d)" ⁸⁾ - "Ex nA/ic (Zone 2)" ⁹))			E		
	osion-proof enclosure and			B B		
dust explosion prote	ection (Ex ia + Ex d + for DS III FF)	n				
• FM + CSA intrinsic sa	. ,			F		
• FM + CSA (is + ep) +				S		
With FM + CSA, Type "Intringia Sefa und F				N/O		
	xplosion Proof (is + xp)"7)			NC		
Electrical connection/	•					
 Screwed gland M20 x Screwed gland 14, 14 				В		
Screwed gland ½-14M12 connectors (stair	NF 1			C F		
- WILL CONNECTORS (Stall	11000 01001)					

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	6
 with customer-specific display (setting as specified, Order code "Y21" or "Y22" 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⁾ 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 <u>total</u> combination is certified here.
- 4) If the acceptance test certificate 3.1 is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.
- 5) The diaphragm seal is to be specified with a separate order number and must be included wiht 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⁾M12 delivered without cable socket
- $^{11)}\mbox{Not}$ with protection types "Explosion-proof" and "Ex nA", "Intrinsic safe" and "Explosion proof".

Transmitters for general requirements

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

Selection and Ordering data	С	rder	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:					
*		.01 .02	√	√	1
Plug • Han 7D (metal, gray) • Han 8U (instead of Han 7D) • Angled Han 8D (metal, gray)	A	.30 .31 .32	√ √ √		
Han 8D (metal, gray) Cable sockets for M12 connectors (stainless steel)		.50	√	✓	✓
Rating plate inscription (instead of German)					
• English • French	В	11 12 13	√ √ √	√ √ √	✓ ✓
• Italian	В	14	✓	✓	✓
English rating plate Pressure units in inH ₂ 0 and/or psi	В	21	✓	✓	✓
	С	11	✓	✓	✓
Inspection certificate ²⁾ Acc. to EN 10204-3.1	С	12	✓	✓	✓
Factory certificate Acc. to EN 10204-2.2	С	14	✓	✓	✓
Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration	C	20	✓		
Functional safety (PROFIsafe) Certificate and PROFIsafe protocol	С	21 ³⁾		✓	
Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration	C	23	✓		
Device passport Russia (For price request please contact the technical support	С	99	✓	1	1
www.siemens.com/automation/support-request)					
Setting of upper limit of output signal to 22.0 mA	D	05	✓		
Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009)	D	07	✓	✓	✓
Degree of protection IP65/IP68 (only for M20 x 1.5 and ½-14 NPT)	D	12	✓	✓	✓
Supplied with oval flange (1 item), PTFE packing and screws in thread of oval flange	D	37	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	✓	✓	✓
(only together with type of protection "Intrinsic safety" (transmitter 7MF4B. Ex ia)")				
Oxygen application	E10	✓	✓	✓
(In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140 °F))				
Export approval Korea	E11	✓	✓	✓
CRN approval Canada (Canadian Registration Number)	E22	✓	✓	✓
Dual seal	E24	✓	✓	✓
Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil)	E25 ⁴⁾	✓	✓	✓
(only for transmitter 7MF4B)	4)			
"Flameproof" explosion protection according to INMETRO (Brazil) (only for transmitter 7MF4D)	E26 ⁴⁾	✓	✓	✓
Explosion-proof "Intrinsic safety" (Ex ia	E28 ⁴⁾	1	/	
+ Ex d) to INMETRO (Brazil)				
(only for transmitter 7MF4P)	4)			
Ex Approval IEC Ex (Ex ia) (only for transmitter 7MF4B)	E45 ⁴⁾	✓	✓	✓
Ex Approval IEC Ex (Ex id) (only for transmitter 7MF4	E46 ⁴⁾	✓	✓	✓
Explosion-proof "Intrinsic safety" to NEPSI (China)	E55 ⁴⁾	✓	✓	✓
(only for transmitter 7MF4B)	4)	_		
Explosion protection "Explosion-proof" to NEPSI (China)	E56 ⁴⁾	√	✓	✓
(only for transmitter 7MF4D)				
Explosion-proof "Zone 2" to NEPSI (China)	E57 ⁴⁾	✓	✓	✓
(only for transmitter 7MF4E)				
"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	√	✓	✓
Transient protector 6 kV (lightning protection)	J01	√	✓	✓

- 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		HART	PA	FF
Please add "-Z" to Article No. and specify Order code(s) and plain text.				
Measuring range to be set Specify in plain text (max. 5 characters): Y01: up to mbar, bar, kPa, MPa, psi	Y01	✓	√ 1)	
device variable (measuring point description) Max. 16 characters, specify in plain text:	Y15	✓	✓	✓
Y15: Measuring point text (entry in device variable)	Y16	✓	✓	✓
Max. 27 characters, specify in plain text: Y16:				
Entry of HART address (TAG) Max. 8 characters, specify in plain text: Y17:	Y17	✓		
Setting of pressure indication in pressure units	Y21	✓	✓	✓
Specify in plain text (standard setting: bar): Y21: mbar, bar, kPa, MPa, psi, Note: The following pressure units can be selected:				
bar, mbar, mm H ₂ O ^{*)} , inH ₂ O ^{*)} , ftH ₂ O ^{*)} , mmHG, inHG, psi, Pa, kPa, MPa, g/cm ² , kg/cm ² , Torr, ATM or % *) ref. temperature 20 °C				
Setting of pressure indication in non-pressure units ²⁾ Specify in plain text: Y22: up to //min, m³/h, m, USgpm, (specification of measuring range in pressure units "Y01" is essential, unit with max. 5 characters)	Y22 + Y01	1		
Preset bus address possible between 1 and 126 Specify in plain text: Y25:	Y25		✓	✓
Damping adjustment in seconds (0 100 s)	Y 30	✓	✓	✓

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

Factory mounting of valve manifolds, see accessories.

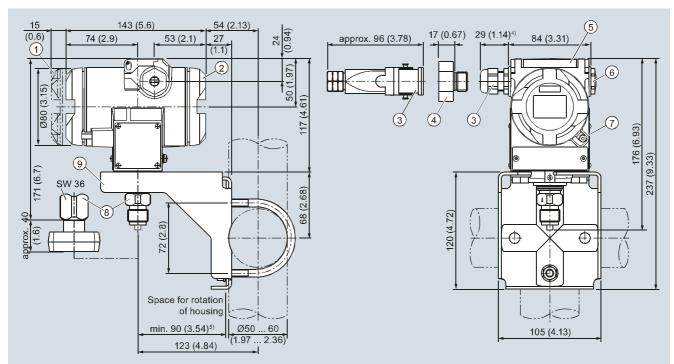
Only Y01, Y15, Y16, Y17, Y21, Y22, Y25 and D05 can be factory preset

- ✓ = available
- 1) Measuring accuracies for PROFIBUS PA transmitters with Option Y01 are calculated in the same way as for HART devices.
- 2) 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



- (longer overall length for cover with window)¹⁾
- 2 Terminal side¹⁾
- 3 Electrical connection: Screwed gland Pg 13,5 (adapter)(Adapter)^{2/3}, Screwed gland M20 x 1,5 or Screwed gland ½-14 NPT or Han 7D/Han 8D^{2/3} plug
- 4 Harting adapter
- 1) Allow approx. 20 mm (0.79 inch) thread length to permit unscrewing
- 2) Not with type of protection "Explosion-proof enclosure"
- 3) Not with type of protection "FM + CSA" [IS + XP]"
- 4) For Pg 13,5 with adapter approx. 45 mm (1.77 inch)
- 5) 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 G½B 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

	HART		PROFIBUS PA and F	OUNDATION Fieldbus	
Input	HAITI		1 HOLIDOS FA AIIU F	CONDATION I ICIUDUS	
Measured variable		Absolute	e pressure		
Spans (infinitely adjustable) or nominal measuring range and	Span (min max.)	Maximum operating pressure	Nominal measuring range	Maximum operating pressure	
max. permissible 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 UNI in the process flanges	
Lower measuring limit		ı			
 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 prese	et to 3.84 mA	-		
Upper limit (infinitely adjustable)	23 mA, factory preset set to 22.0 mA	mA, factory preset to 20.5 mA or optionally - to 22.0 mA			
Load					
Without HART	$R_{\rm B} \le (U_{\rm H} - 10.5 \text{V})/0.0$ $U_{\rm H}$: Power supply in V	23 A in Ω,	-		
• With HART	$R_{\rm B} = 230 \dots 500 \Omega$ (SI $R_{\rm B} = 230 \dots 1100 \Omega$ (H		-		
Physical bus	-		IEC 61158-2		
Protection against polarity reversal	Protected against sho	rt-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	EC 60770-1		
Reference conditions (All error data refer always refer to the set span)		tic, start-of-scale value 0 l emperature 25 °C (77 °F))			
Error in measurement at limit setting incl. hysteresis and reproducibility					
Linear characteristic			≤ 0.1 %		
- r ≤ 10	≤ 0.1 %				
- 10 < r ≤ 30	≤ 0.2 %				
Long-term stability (temperature change ± 30 °C (± 54 °F))	≤ (0.1 · r) %/year		≤ 0.1 %/year		
nfluence of ambient temperature					
• at -10 +60 °C (14 140 °F)	$\leq (0.1 \cdot r + 0.2) \%^{1)}$		≤ 0.3 %		
• at -4010 °C and 60 85 °C (-40 +14 °F and 140 185 °F)	\leq (0.1 · r + 0.15) %/10	K	≤ 0.25 %/10 K		
Measured Value Resolution	_		3 · 10 ⁻⁵ of nominal me	acuring range	

Transmitters for general requirements

SITRANS P DS III for absolute pressure

(from differential pressure series)

	HART	PROFIBUS PA and FOUNDATION Fieldbus	
Rated conditions			
Degree of protection (to IEC 60529)	IP65 (option	nal IP65/IP68)	
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	Stainless steel, mat. no. 1.4404/316L or Hastelloy C276, mat. no. 2.4819, Monel, mat. no. 2.436 tantalum 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		nting thread M10 to DIN 19213 or ⁷ / ₁₆ -20 UNF 0 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 $ extcolored{ extcolored}_{eta}$		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)

SITRANS P, DS III for absolute pressure (from	n the differential 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, lengineering practice)	
Explosion protection			
Intrinsic safety "i"	PTB 13 A	TEX 2007 X	
- Marking	Ex II 1/2 G Ex ia/ib	IIC T4/T5/T6 Ga/Gb	
- Permissible ambient temperature	-40 +70 °C (-40 +15	85°F) temperature class T4; 88°F) temperature class T5; 40°F) temperature class T6	
- Connection	To certified intrinsically-safe circuits with peak values: $U_{\rm i}=30$ V, $I_{\rm i}=100$ mA, $P_{\rm i}=750$ mW; $P_{\rm i}=300$ Ω	FISCO supply unit: $U_{\rm o}$ = 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	$L_{\rm i} = 0.4 {\rm mH}, C_{\rm i} = 6 {\rm nF}$	$L_i = 7 \mu H, C_i = 1.1 nF$	
Explosion-proof "d"	PTB 99	ATEX 1160	
- Marking	Ex II 1/2 G Ex	d IIC T4/T6 Gb	
- Permissible ambient temperature		35 °F) temperature class T4; 40 °F) temperature class T6	
- Connection	To circuits with values: $U_{\rm H}$ = 10.5 45 V DC	To circuits with values: $U_{\rm H}$ = 9 32 V DC	
Dust explosion protection for zone 20	PTB 01.	ATEX 2055	
- Marking	Ex II 1 D 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	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: $U_o = 17.5 \text{ V}$, $I_o = 380 \text{ mA}$, $P_o = 5.32 \text{ W}$ Linear barrier: $U_o = 24 \text{ V}$, $I_o = 250 \text{ mA}$, $P_o = 1.2 \text{ W}$	
- Effective internal inductance/capacitance	$L_i = 0.4 \text{ mH}, C_i = 6 \text{ nF}$	$L_i = 7 \mu H, C_i = 1.1 \text{ nF}$	
Dust explosion protection for zone 21/22		ATEX 2055	
- Marking		P65 T 120 °C	
- Connection			
- Connection	To circuits with values: $U_{\rm H}$ = 10.5 45 V DC; $P_{\rm max}$ = 1.2 W	To circuits with values: $U_{H} = 9 \dots 32 \text{ V DC}$; $P_{\text{max}} = 1 \text{ W}$	
Type of protection "n" (zone 2)	PTB 13 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 V	
- Connection (Ex ic)	To circuits with values: $U_{\rm i} = 45 \text{ V}$	FISCO supply unit ic: $U_{\rm o}$ = 17.5 V, $I_{\rm o}$ = 570 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)	CL I, DIV 1, GP ABCD T4T6; CL II, DIV 1, CL I, DIV 2, GP ABCD T4	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 Co	mpliance 1153651	
- Identification (XP/DIP) or (IS)	CL I, DIV 1, GP ABCD T4T6; CL II, DIV 1, GP E T4T6; CL II, D	FG; CL III; Ex ia IIC T4T6; CL I, DIV 2, GP ABC IV 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 absolute pressure (from differential pressure series)

-	
HART communication	
HART	230 1100 Ω
Protocol	HART Version 5.x
Software for computer	SIMATIC PDM
PROFIBUS PA communication	
Simultaneous communication with master class 2 (max.)	4
The address can be set using	Configuration tool or local opera- tion (standard setting address 126)
Cyclic data usage	
Output byte	5 (one measured value) or 10 (two measured values)
• Input byte	0, 1, or 2 (register operating mode and reset function for metering)
Internal preprocessing	
Device profile	PROFIBUS PA Profile for Process Control Devices Version 3.0, Class B
Function blocks	2
 Analog input 	
 Adaptation to customer-specific process variables 	Yes, linearly rising or falling characteristic
- Electrical damping, adjustable	0 100 s
- Simulation function	Input /Output
- Failure mode	parameterizable (last good value, substitute value, incorrect value)
- Limit monitoring	Yes, one upper and lower warn- ing limit and one alarm limit respectively
Register (totalizer)	Can be reset, preset, optional direction of counting, simulation function of register output
- Failure mode	parameterizable (summation with last good value, continuous summation, summation with incorrect value)
- Limit monitoring	One upper and lower warning limit and one alarm limit respec- tively
Physical block	1
Transducer blocks	2
 Pressure transducer block 	
 Can be calibrated by applying two pressures 	Yes
- Monitoring of sensor limits	Yes
 Specification of a container characteristic with 	Max. 30 nodes
 Square-rooted characteristic for flow measurement 	Yes
 Gradual volume suppression and implementation point of square-root extraction 	Parameterizable
- Simulation function for mea- sured pressure value and sen-	Constant value or over parameterizable ramp function

sor temperature

FOUNDATION	Fieldbus
communication	n

Function blocks

- Analog input
 - Adaptation to customer-specific process variables
- Electrical damping, adjustable
- Simulation function
- Failure mode
- Limit monitoring
- Square-rooted characteristic for flow measurement
- PIE
- Physical block

Transducer blocks

- Pressure transducer block
- Can be calibrated by applying two pressures
- Monitoring of sensor limits
- Simulation function: Measured pressure value, sensor temperature and electronics temperature

3 function blocks analog input, 1 function block PID

Yes, linearly rising or falling characteristic

0 to 100 s

Output/input (can be locked within the device with a bridge)

parameterizable (last good value, substitute value, incorrect value)

Yes, one upper and lower warning limit and one alarm limit respectively

Yes

Standard FOUNDATION Fieldbus function block

1 resource block

1 transducer block Pressure with calibration, 1 transducer block LCD

Yes

Yes

Constant value or over parameterizable ramp function

Transmitters for general requirements

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

(from differential	pressure series)					
Selection and Ordering	g data	Artic	le No).		
Pressure transmitters			433			
from differential press	ure series,			П		
SITRANS P DS III with						
Measuring cell filling	Measuring cell clean- ing					
Silicone oil	normal	1				
Inert liquid ¹⁾	grease-free to	3				
-	cleanliness level 2					
Measuring span (min.						
8.3 250 mbar a	(0.12 3.62 psia)	D				
43 1300 mbar a 0.16 5 bar a	(0.62 18.85 psia) (2.32 72.5 psia)	F G				
1 30 bar a	(14.5 435 psia)	Н				
5.3 100 bar a	(76.9 1450 psia)	KE				
Wetted parts materials	· , ,					
Seal diaphragm	Parts of measuring cell					
Stainless steel	Stainless steel	,				
Hastelloy	Stainless steel	É				
Hastellov	Hastelloy	-				
Tantalum	Tantalum	E				
Monel	Monel	H	1			
Gold	Gold	l				
Version for diaphragm s	ea ^{2) 3) 4) 5) 6)}	١	′			
Process connection						
	T with flange connection					
 Sealing screw opposit 	e process connection					
- Mounting thread ⁷ / ₁₆	3-20 UNF to EN 61518		2			
 Mounting thread M1 (only for replacement 			0			
Vent on side of proces						
- Mounting thread ⁷ / ₁₆			6			
- Mounting thread M1	0 to DIN 19213		4			
(only for replacemen						
Non-wetted parts mate	erials					
process flange screws	Electronics housing					
Stainless steel	Die-cast aluminum		2			
Stainless steel	Stainless steel precision casting ⁸⁾		3			
	casting ⁸⁾					
Version						
Standard versions				1		
 International version, I documentation in 5 lar 	English label inscriptions,			2		
(no Order code select						
Explosion protection		-				
• None				4	۹.	
• With ATEX, Type of pro	otection:					
- "Intrinsic safety (Ex i				E	3	
- "Explosion-proof (Ex	d)" ⁹⁾					
- "Intrinsic safety and	flameproof enclosure"			F	•	
(Ex ia + Ex d)" 10) - "Ex nA/ic (Zone 2)" 11)				-	
	osion-proof enclosure and			ĺ		
dust explosion prote	ction (Ex ia+ Ex d +				1	
Zone 1D/2D)"10)						
• FM + CSA intrinsic sat				F		
• FM + CSA (is + ep) +				5	3	
With FM + CSA, Type "Intringia Cofe und Fy				١,		
	xplosion Proof (is + xp)" 9)			ľ	۱C	
Electrical connection/						
 Screwed gland Pg 13. Screwed gland M20 v 					A B	
 Screwed gland M20 x Screwed gland ½-14 I 					С	
Han 7D plug (plastic h					D	
connector ⁽²⁾						
M12 connectors (stair	iless steel) ^{12) 13)}				F	

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

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

Included in delivery of the device:

- 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
- 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
- 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
- $^{10)}\mbox{With enclosed cable gland Ex}$ ia and blanking plug
- ¹¹⁾Configurations with HAN and M12 connectors are only available in Ex ic.
- ¹²⁾Not in conjunction with types of protection "Explosion-proof" and "Ex nA", "Intrinsic safety" and "Explosion-proof".
- ¹³⁾M12 delivered without cable socket

Transmitters for general requirements

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

Selection and Orderin		Article No.
Pressure transmitter f from differential press		
SITRANS P DS III with	PROFIBUS PA (PA)	7 M F 4 3 3 4 -
• · · · · · · · · · · · · · · · · · · ·	FOUNDATION Fieldbus	7MF4335-
(FF)		
Measuring cell filling	Measuring cell clean-	
Silicone oil	ing normal	1
Inert liquid ¹⁾	grease-free to	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
30 bar a	(435 psia)	H
100 bar a	(1450 psia)	KE
Wetted parts materials Seal diaphragm	Parts of measuring cell	
Stainless steel	Stainless steel	Α
Hastelloy	Stainless steel	В
Hastelloy	Hastelloy	С
Tantalum	Tantalum	E
Monel	Monel	н
Gold	Gold	L
Version as diaphragm s	eal ^{2) 3) 4) 3) 9)}	Υ
Process connection		
	T with flange connection	
 Sealing screw opposit Mounting thread ⁷/₁₆ 	te process connection ₅ -20 UNF to IEC 61518	2
- Mounting thread M1		0
(only for replacement		
 Vent on side of proces Mounting thread ⁷/₁₆ 	ss flange 17 3-20 UNF to IEC 61518	6
- Mounting thread M1 (only for replacement		4
Non-wetted parts mate process flange screws		
Stainless steel Stainless steel	Die-cast aluminum Stainless steel precision casting	2 3
Version	<u> </u>	
 Standard versions 		1
documentation in 5 la		2
(no Order code select	able)	
None		A
• With ATEX, Type of pr	otection:	
- "Intrinsic safety (Ex i		В
- "Explosion-proof (Ex	d)" ⁸⁾	D
 "Intrinsic safety and (Ex ia + Ex d)" ⁹⁾ 	flameproof enclosure"	P
- "Ex nA/ic (Zone 2)"10	osion-proof enclosure and	E R
dust explosion prote Zone 1D/2D) ⁹⁾ (not	osion-proorenciosure and ection (Ex ia + Ex d + for DS III FF)	n
• FM + CSA intrinsic sa	· ·	F
• FM + CSA (is + ep) +	· · ·	S
 With FM + CSA, Type "Intrinsic Safe und E 	of protection: xplosion Proof (is + xp)" ⁸⁾	NC
Electrical connection/	cable entry	-
• Screwed gland M20 x	-	В
• Screwed gland ½-14		C
• M12 connectors (stair	nless steel) ^{11) 12) 13)}	F

Article No.	
7 M F 4 3 3 4 -	
7MF4335-	
	0
	1
	6
	7
	7 M F 4 3 3 4 -

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 in $\rm H_2O$ 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 dia-phragm seals. The measuring accuracy of the <u>total</u> 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⁾M12 delivered without cable socket
- $^{12)}\mbox{Not}$ available with protection type "Ex d" (options D, P, N and R)
- ¹³⁾Not in conjunction with types of protection "Explosion-proof" and "Ex nA", "Intrinsic safety" and "Explosion-proof"

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
Pressure transmitter with mounting bracket (1x fixing angle, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer) made of:				
SteelStainless steel	A01 A02	√	√	1
O-rings for process flanges				
(instead of FPM (Viton)) • PTFE (Teflon) • FEP (with silicone core, approved for food) • FFPM (Kalrez, compound 4079) • NBR (Buna N)	A20 A21 A22 A23	∀ ∀ ∀ ∀	✓✓✓	✓✓✓
 Plug Han 7D (metal, gray) Han 8U (instead of Han 7D) Angled Han 8D (metal, gray) 	A30 A31 A32 A33	√ √ √		
Sealing screw	A 40	✓	✓	✓
¼-18 NPT, with valve in mat. of process flanges Cable sockets for M12 connectors (stainless steel)	A 50	✓	✓	✓
Rating plate inscription				
(instead of German) • English • French	B11 B12	√	√	1
• Spanish	B13	1	√ √	1
Italian English rating plate	B14 B21	√	√	*
Pressure units in inH ₂ 0 and/or psi	011	✓	√	
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 www.siemens.com/automation/support-request)	C99	✓	✓	✓
Setting of upper limit of	D05	✓		
output signal to 22.0 mA Manufacturer's declaration acc. to NACE	D07	✓	✓	1
(MR 0103-2012 and MR 0175-2009) (only together with seal diaphragm made of Hastelloy and stainless steel)				
Degree of protection IP65/IP68 (only for M20 x 1.5 and ½-14 NPT)	D12	✓	✓	✓
Supplied with oval flange (1 item), PTFE packing and screws in thread of process flange	D37	✓	✓	✓

Selection and Ordering data	Order	code		
Further designs	0.00	HART	PA	FF
Add "-Z" to Article No. and specify Order code.				
Use in or on zone 1D/2D	E01	✓	✓	✓
(only together with type of protection "Intrinsic safety"				
(transmitter 7MF4B Ex ia)")				
Oxygen application	E10	✓	✓	1
(In the case of oxygen measurement and inert liquid max. 100 bar (1450 psi) at 60°C (140 °F))				
Export approval Korea	E11	✓	✓	✓
CRN approval Canada (Canadian Registration Number)	E22	✓	✓	✓
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)	E26 ⁴⁾	✓	✓	✓
(only for transmitter 7MF4D) Explosion-proof "Intrinsic safety" (Ex ia +	E28 ⁴⁾	1	./	
Explosion-proof intrinsic safety (Ex Ia + Ex d) to INMETRO (Brazil) (only for transmitter 7MF4P)	E20 '	•	•	
Ex Approval IEC Ex (Ex ia)	E45 ⁴⁾	1	✓	1
(only for transmitter 7MF4B)				
Ex Approval IEC Ex (Ex id)	E46 ⁴⁾	✓	✓	✓
(only for transmitter 7MF4D)	E55 ⁴⁾	,	,	,
Explosion-proof "Intrinsic safety" to NEPSI (China)	E55 '	•	•	•
(only for transmitter 7MF4B)				
Explosion protection "Explosion-proof" to NEPSI (China)	E56 ⁴⁾	✓	✓	✓
(only for transmitter 7MF4D)	EE74)	./	./	./
Explosion-proof "Zone 2" to NEPSI (China) (only for transmitter 7MF4E)	E9/ ''	•	•	•
"Intrinsic safety" and "Explosion-proof"	E70 ⁴⁾	✓	✓	✓
explosion protection acc. to Kosha (Korea) (only for transmitter				
⁷ MF4[B, D]Z + E11)				
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	✓	✓	✓
Transient protector 6 kV (lightning protection)	J01	✓	✓	✓
Process flange	1404	,	,	,
HastelloyMonel	K01 K02	1	√	V
 Stainless steel with PVDF insert 	K04	✓	√	✓
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				
1				

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

²⁾ If the acceptance test certificate 3.1.is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.

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

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

Pressure Measurement Transmitters for general requirements

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

Selection and Ordering data	Order	code		
Additional data		HART	PA	FF
Please add "-Z" to Article No. and specify Order code(s) and plain text.				
Measuring range to be set	Y01	1	√ 1)	
Specify in plain text (max. 5 characters): Y01: up to mbar, bar, kPa, MPa, psi				
Stainless steel tag plate and entry in device variable (measuring point description)	Y15	✓	✓	✓
Max. 16 characters, specify in plain text: Y15:				
Measuring point text (entry in device variable)	Y 16	✓	✓	✓
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 ²⁾ Specify in plain text: Y22: up to //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		✓	1
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

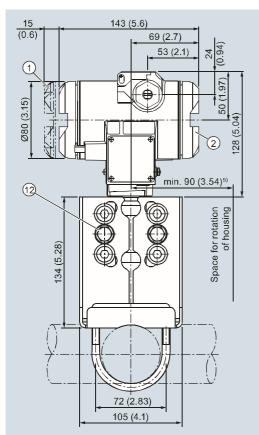
✓ = available

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 absolute pressure (from differential pressure series)

Dimensional drawings



- 1 Electronic side, digital display (longer overall length for cover with window)1)
- 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)(3) (6.54)166 (8) 262 (10.3) (9) (10) (3.8)52 (2.05) 96 17 (0.67) approx. 96 (3.78) (3) (4) 68 (2.7) 120 (4.7)

84 (3.31)

- 6 Blanking plug
- 7 Screw cover safety bracket (only for type of protection "Explosion-proof enclosure", not shown in the drawing)
- Lateral venting for liquid measurement (Standard)
- (9) Lateral venting for gas measurement (suffix H02)
- 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)

Pressure Measurement Transmitters for general requirements SITRANS P DS III for differential pressure and flow

Technical specifications

SITRANS P, DS III for differential pressure an	d flow						
	HART		PROFIBUS PA and F	FOUNDATION Fieldbus			
Input							
Measured variable		Differential p	ll pressure 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 (2320 psi)	60 mbar (24 inH ₂ O)	160 bar (2320 psi)			
	2.5 250 mbar (1 100 inH ₂ O)		250 mbar (100 inH ₂ O)				
	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 (6091 psi)	250 mbar (100 inH ₂ O)	420 bar (6091 psi)			
	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 in H_2O)				
	0.3 30 bar (4.35 435 psi)		30 bar				
	1 /		(435 psi)				
Lower measuring limit	, ,		(435 psi)				
•		 an or 30 mbar a (0.44 ps		435 psi) measuring cell)			
Measuring cell with silicone oil filling	-100 % of max. sp.	an or 30 mbar a (0.44 ps an (for oxygen version a	ia) (-33 % with 30 bar (4				
Measuring cell with silicone oil filling Upper measuring limit	-100 % of max. sp.	, ,	ia) (-33 % with 30 bar (4				
Measuring cell with silicone oil filling Upper measuring limit Output	-100 % of max. sp.	, ,	ia) (-33 % with 30 bar (4	ax. 120 bar (1740 psi))			
Measuring cell with silicone oil filling Upper measuring limit Output Output signal	-100 % of max. sp.	an (for oxygen version a	ia) (-33 % with 30 bar (4 nd inert filling liquid; ma Digital PROFIBUS PA	ax. 120 bar (1740 psi))			
Measuring cell with silicone oil filling Upper measuring limit Output Output signal Lower limit (infinitely adjustable)	-100 % of max. sp. 100 % of max. sp. 4 20 mA 3.55 mA, factory prese	an (for oxygen version a	ia) (-33 % with 30 bar (4 nd inert filling liquid; ma Digital PROFIBUS PA	ax. 120 bar (1740 psi))			
Measuring cell with silicone oil filling Upper measuring limit Output Output signal Lower limit (infinitely adjustable) Upper limit (infinitely adjustable)	-100 % of max. sp. 100 % of max. sp. 4 20 mA 3.55 mA, factory preset	an (for oxygen version a	ia) (-33 % with 30 bar (4 nd inert filling liquid; ma Digital PROFIBUS PA	ax. 120 bar (1740 psi))			
Measuring cell with silicone oil filling Upper measuring limit Output Output signal Lower limit (infinitely adjustable) Upper limit (infinitely adjustable) Load	-100 % of max. sp. 100 % of max. sp. 4 20 mA 3.55 mA, factory preset	et to 3.84 mA to 20.5 mA or optionally	ia) (-33 % with 30 bar (4 nd inert filling liquid; ma Digital PROFIBUS PA	ax. 120 bar (1740 psi))			
Measuring cell with silicone oil filling Upper measuring limit Output Output signal Lower limit (infinitely adjustable) Upper limit (infinitely adjustable) Load Without HART	-100 % of max. sp. 100 % of max. sp. 4 20 mA 3.55 mA, factory preset set to 22.0 mA R _B ≤ (U _H - 10.5 V)/0.0	an (for oxygen version a set to 3.84 mA to 20.5 mA or optionally 23 A in Ω ,	ia) (-33 % with 30 bar (4 nd inert filling liquid; ma Digital PROFIBUS PA	ax. 120 bar (1740 psi))			
Measuring cell with silicone oil filling Upper measuring limit Output Output signal Lower limit (infinitely adjustable) Upper limit (infinitely adjustable) Load Without HART	-100 % of max. sp. 100 % of max. sp. 100 % of max. sp. 4 20 mA 3.55 mA, factory preset set to 22.0 mA $R_{\rm B} \le (U_{\rm H} - 10.5 \text{ V})/0.0$ $U_{\rm H} \cdot \text{Power supply in V}$ $R_{\rm B} = 230 500 \Omega \text{ (SI)}$	an (for oxygen version a set to 3.84 mA to 20.5 mA or optionally 23 A in Ω ,	ia) (-33 % with 30 bar (4 nd inert filling liquid; ma Digital PROFIBUS PA	ax. 120 bar (1740 psi))			
Measuring cell with silicone oil filling Upper measuring limit Output Output signal Lower limit (infinitely adjustable) Upper limit (infinitely adjustable) Load Without HART Physical bus	-100 % of max. sp. 100 % of max. sp. 100 % of max. sp. 4 20 mA 3.55 mA, factory preset set to 22.0 mA $R_{\rm B} \leq (U_{\rm H}$ - 10.5 V)/0.0 $U_{\rm H}$: Power supply in V $R_{\rm B} = 230 \dots 500 \Omega$ (SI $R_{\rm B} = 230 \dots 1100 \Omega$ (Here)	et to 3.84 mA to 20.5 mA or optionally 23 A in Ω, MATIC PDM) or IART Communicator)	ia) (-33 % with 30 bar (4) nd inert filling liquid; made inert filling liqu	ax. 120 bar (1740 psi))			
Measuring cell with silicone oil filling Upper measuring limit Output Output signal Lower limit (infinitely adjustable) Upper limit (infinitely adjustable) Load Without HART With HART Physical bus Protection against polarity reversal	-100 % of max. sp. 100 % of max. sp. 100 % of max. sp. 4 20 mA 3.55 mA, factory preset set to 22.0 mA $R_{\rm B} \leq (U_{\rm H}$ - 10.5 V)/0.0 $U_{\rm H}$: Power supply in V $R_{\rm B} = 230 \dots 500 \Omega$ (SI $R_{\rm B} = 230 \dots 1100 \Omega$ (Here)	et to 3.84 mA to 20.5 mA or optionally 23 A in Ω, MATIC PDM) or IART Communicator) rt-circuit and polarity rev suppl	ia) (-33 % with 30 bar (4) and inert filling liquid; made inert filling liq	ax. 120 bar (1740 psi)) A and bus signal			
Measuring cell with silicone oil filling Upper measuring limit Output Output Signal Lower limit (infinitely adjustable) Upper limit (infinitely adjustable) Load Without HART With HART Physical bus Protection against polarity reversal Electrical damping (step width 0.1 s)	-100 % of max. sp. 100 % of max. sp. 100 % of max. sp. 4 20 mA 3.55 mA, factory preset set to 22.0 mA $R_{\rm B} \leq (U_{\rm H}$ - 10.5 V)/0.0 $U_{\rm H}$: Power supply in V $R_{\rm B} = 230 \dots 500 \Omega$ (SI $R_{\rm B} = 230 \dots 1100 \Omega$ (Here)	et to 3.84 mA to 20.5 mA or optionally 23 A in Ω, MATIC PDM) or IART Communicator) rt-circuit and polarity rev suppl Set to 2.5	ia) (-33 % with 30 bar (4 and inert filling liquid; material profiles PA FOUNDATION Fields	ax. 120 bar (1740 psi))			
Measuring cell with silicone oil filling Upper measuring limit Output Output Signal Lower limit (infinitely adjustable) Upper limit (infinitely adjustable) Upper limit (infinitely adjustable) Load Without HART With HART Physical bus Protection against polarity reversal Electrical damping (step width 0.1 s) Measuring accuracy Reference conditions	-100 % of max. sp. 100 % of max. sp. 100 % of max. sp. 4 20 mA 3.55 mA, factory preset set to 22.0 mA $R_{\rm B} \leq (U_{\rm H} - 10.5 \text{ V})/0.0$ $U_{\rm H}$: Power supply in V $R_{\rm B} = 230 \dots 500 \Omega$ (SI $R_{\rm B} = 230 \dots 1100 \Omega$ (Figure 1).	et to 3.84 mA to 20.5 mA or optionally 23 A in Ω, MATIC PDM) or IART Communicator) rt-circuit and polarity rev suppl Set to 2: Acc. to	ia) (-33 % with 30 bar (4 and inert filling liquid; mathematical proof in the foundation of the founda	ax. 120 bar (1740 psi)) A and pus signal against the other with max I diaphragm, silicone oil fil			
Measuring cell with silicone oil filling Upper measuring limit Output Output Signal Lower limit (infinitely adjustable) Upper limit (infinitely adjustable) Upper limit (infinitely adjustable) Load Without HART With HART Physical bus Protection against polarity reversal Electrical damping (step width 0.1 s) Measuring accuracy Reference conditions (All error data refer always refer to the set span) Error in measurement at limit setting incl.	-100 % of max. sp. 100 % of max. sp. 100 % of max. sp. 4 20 mA 3.55 mA, factory preset set to 22.0 mA $R_{\rm B} \leq (U_{\rm H} - 10.5 \text{ V})/0.0$ $U_{\rm H}$: Power supply in V $R_{\rm B} = 230 \dots 500 \Omega$ (SI $R_{\rm B} = 230 \dots 1100 \Omega$ (Figure 1).	et to 3.84 mA to 20.5 mA or optionally 23 A in Ω, MATIC PDM) or IART Communicator) rt-circuit and polarity rev suppl Set to 2: Acc. to tic, start-of-scale value 0	ia) (-33 % with 30 bar (4 and inert filling liquid; mathematical proof in the foundation of the founda	ax. 120 bar (1740 psi)) A and pus signal against the other with max I diaphragm, silicone oil fil			
Measuring cell with silicone oil filling Upper measuring limit Output Output Signal Lower limit (infinitely adjustable) Upper limit (infinitely adjustable) Upper limit (infinitely adjustable) Load Without HART With HART Physical bus Protection against polarity reversal Electrical damping (step width 0.1 s) Measuring accuracy Reference conditions (All error data refer always refer to the set span) Error in measurement at limit setting incl. hysteresis and reproducibility Linear characteristic	-100 % of max. sp. 100 % of max. sp. 100 % of max. sp. 4 20 mA 3.55 mA, factory preset set to 22.0 mA $R_{\rm B} \leq (U_{\rm H} - 10.5 {\rm V})/0.0 {\rm U}_{\rm H}$; Power supply in V $R_{\rm B} = 230 500 {\rm \Omega}$ (SI $R_{\rm B} = 230 1100 {\rm \Omega}$ (H- Protected against shown in the supply in V	et to 3.84 mA to 20.5 mA or optionally 23 A in Ω, MATIC PDM) or IART Communicator) rt-circuit and polarity rev suppl Set to 2: Acc. to tic, start-of-scale value 0 emperature 25 °C (77 °F)	ia) (-33 % with 30 bar (4 and inert filling liquid; mathematical proof in the foundation of the founda	ax. 120 bar (1740 psi)) A and pus signal against the other with max I diaphragm, silicone oil fil			
 Measuring cell with silicone oil filling Upper measuring limit Output Output Signal Lower limit (infinitely adjustable) Upper limit (infinitely adjustable) Upper limit (infinitely adjustable) Without HART With HART Physical bus Protection against polarity reversal Electrical damping (step width 0.1 s) Measuring accuracy Reference conditions (All error data refer always refer to the set span) Error in measurement at limit setting incl. hysteresis and reproducibility Linear characteristic - r ≤ 10 	-100 % of max. sp. 100 % of max. sp. 100 % of max. sp. 4 20 mA 3.55 mA, factory preset set to 22.0 mA $R_{\rm B} \leq (U_{\rm H} - 10.5 {\rm V})/0.0$ $U_{\rm H}$: Power supply in V $R_{\rm B} = 230 \dots 500 \Omega$ (SI $R_{\rm B} = 230 \dots 1100 \Omega$ (H- Protected against shown in the supplementation of the su	et to 3.84 mA to 20.5 mA or optionally 23 A in Ω, MATIC PDM) or IART Communicator) rt-circuit and polarity rev suppl Set to 2: Acc. to tic, start-of-scale value Cemperature 25 °C (77 °F)	ia) (-33 % with 30 bar (4) and inert filling liquid; mathematical proof in the proof of the proo	ax. 120 bar (1740 psi)) A and pus signal against the other with max I diaphragm, silicone oil fil			
 Measuring cell with silicone oil filling Upper measuring limit Output Output Signal Lower limit (infinitely adjustable) Upper limit (infinitely adjustable) Upper limit (infinitely adjustable) Without HART With HART Physical bus Protection against polarity reversal Electrical damping (step width 0.1 s) Measuring accuracy Reference conditions (All error data refer always refer to the set span) Error in measurement at limit setting incl. hysteresis and reproducibility Linear characteristic r ≤ 10 10 < r ≤ 30 	-100 % of max. sp. 100 % of max. sp. 100 % of max. sp. 4 20 mA 3.55 mA, factory preset set to 22.0 mA $R_{\rm B} \leq (U_{\rm H} - 10.5 \text{ V})/0.0$ $U_{\rm H}$: Power supply in V $R_{\rm B} = 230 \dots 500 \Omega$ (SI $R_{\rm B} = 230 \dots 1100 \Omega$ (H- Protected against shown in the supply in V $R_{\rm B} = 230 \dots 1100 \Omega$ (H- $R_{\rm B} = 230 \dots 1100 \Omega$	et to 3.84 mA to 20.5 mA or optionally 23 A in Ω, MATIC PDM) or IART Communicator) rt-circuit and polarity rev suppl Set to 2: Acc. to tic, start-of-scale value Cemperature 25 °C (77 °F)	ia) (-33 % with 30 bar (4) and inert filling liquid; mathematical proof in the proof of the proo	ax. 120 bar (1740 psi)) A and pus signal against the other with max I diaphragm, silicone oil fil			
Upper measuring limit Output Output signal • Lower limit (infinitely adjustable) • Upper limit (infinitely adjustable) Load • Without HART • With HART Physical bus Protection against polarity reversal Electrical damping (step width 0.1 s) Measuring accuracy Reference conditions (All error data refer always refer to the set span) Error in measurement at limit setting incl. hysteresis and reproducibility • Linear characteristic - r ≤ 10 - 10 < r ≤ 30 - 30 < r ≤ 100	-100 % of max. sp. 100 % of max. sp. 100 % of max. sp. 4 20 mA 3.55 mA, factory preset set to 22.0 mA $R_{\rm B} \leq (U_{\rm H} - 10.5 {\rm V})/0.0$ $U_{\rm H}$: Power supply in V $R_{\rm B} = 230 \dots 500 \Omega$ (SI $R_{\rm B} = 230 \dots 1100 \Omega$ (H- Protected against shown in the supplementation of the su	et to 3.84 mA to 20.5 mA or optionally 23 A in Ω, MATIC PDM) or IART Communicator) rt-circuit and polarity rev suppl Set to 2: Acc. to tic, start-of-scale value Cemperature 25 °C (77 °F)	ia) (-33 % with 30 bar (4) and inert filling liquid; may be provided by the control of the cont	ax. 120 bar (1740 psi)) A and pus signal against the other with max I diaphragm, silicone oil fil			
 Measuring cell with silicone oil filling Upper measuring limit Output Output Signal Lower limit (infinitely adjustable) Upper limit (infinitely adjustable) Upper limit (infinitely adjustable) Without HART With HART Physical bus Protection against polarity reversal Electrical damping (step width 0.1 s) Measuring accuracy Reference conditions (All error data refer always refer to the set span) Error in measurement at limit setting incl. hysteresis and reproducibility Linear characteristic r ≤ 10 10 < r ≤ 30 	-100 % of max. sp. 100 % of max. sp. 100 % of max. sp. 4 20 mA 3.55 mA, factory preset set to 22.0 mA $R_{\rm B} \leq (U_{\rm H} - 10.5 \text{ V})/0.0$ $U_{\rm H}$: Power supply in V $R_{\rm B} = 230 \dots 500 \Omega$ (SI $R_{\rm B} = 230 \dots 1100 \Omega$ (H- Protected against shown in the supply in V $R_{\rm B} = 230 \dots 1100 \Omega$ (H- $R_{\rm B} = 230 \dots 1100 \Omega$	et to 3.84 mA to 20.5 mA or optionally 23 A in Ω, MATIC PDM) or IART Communicator) rt-circuit and polarity rev suppl Set to 2: Acc. to tic, start-of-scale value Cemperature 25 °C (77 °F)	ia) (-33 % with 30 bar (4) and inert filling liquid; mathematical proof in the proof of the proo	ax. 120 bar (1740 psi)) A and pus signal against the other with max I diaphragm, silicone oil fil			

Transmitters for general requirements SITRANS P DS III for differential pressure and flow

SITRANS P, DS III for differential pressure and		DDOCIDUO DA cond COUNDATION C' . "
	HART	PROFIBUS PA and FOUNDATION Fieldbus
• Square-rooted characteristic (flow > 25 50 %)		≤ 0.2
- r ≤ 10	≤ 0.2 %	
- 10 < r ≤ 30	≤ 0.4 %	
ong-term stability temperature change ± 30 °C (± 54 °F))	≤ (0.25 · r)% every 5 years static pressure max. 70 bar (1015 psi)	≤ 0.25 % every 5 years static pressure max. 70 bar (1015 psi)
20 mbar (0.29 psi)-measuring cell	≤ (0.2 · r) per year	≤ 0.2 per year
250, 600, 1600 and 5000 mbar (0.29, 0.87, 2.32 and 7.25 psi) -measuring cell	\leq (0.125 · r) per 5 years	≤ 0.125 per 5 years
nfluence of ambient temperature		
at -10 +60 °C (14 140 °F)	$\leq (0.08 \cdot r + 0.1) \%^{1}$	≤ 0.3 %
at -4010 °C and 60 85 °C (-40 +14 °F and 140 185 °F)	\leq (0.1 · r + 0.15) %/10 K (Twice the value with 20-mbar (0.29 psi) measuring cell)	≤ 0.25 %/10 K
nfluence of static pressure		
on the zero point (PKN)	≤ (0.15 · r)% per 70 bar (1015 psi)	≤ 0.15 % per 70 bar (1015 psi)
- 20 mbar (0.29 psi)-measuring cell	≤ (0.15 · r)% per 32 bar (464 psi)	≤ 0.15 % per 32 bar (464 psi)
on the span (PKS)	≤ 0.14 % per 70 bar (1015 psi)	-
- 20 mbar (0.29 psi)-measuring cell	≤ 0.2 % per 32 bar (464 psi)	-
Measured Value Resolution	-	3 · 10 ⁻⁵ of nominal measuring range
Rated conditions		
Degree of protection (to EN 60529)	IP65 (optio	nal IP65/IP68)
emperature of medium	· ·	·
Measuring cell with silicone oil filling	-40 +100 °C (-40 +212 °F) -20 +100	o °C (-4 +212 °F) with 30 bar measuring cell
Measuring cell with inert filling liquid	-20 +100 °C	C (-4 +212 °F)
In conjunction with dust explosion protection		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		nidity 0 100 % , suitable for use in the tropics
Electromagnetic Compatibility		
- Emitted interference and interference immunity	Acc. to IEC 61326	3 and NAMUR NE 21
Design		
Veight (without options)	≈ 4.5 kg	g (≈ 9.9 (lb)
Enclosure material	Low-copper die-cast aluminum, GD-AlSi12 or	stainless steel precision casting, mat. no. 1.44
Netted parts materials		
• Seal diaphragm	Stainless steel, mat. no. 1.4404/316L or Hastell tantalu	oy C276, mat. no. 2.4819, Monel, mat. no. 2.43 m or gold
Measuring cell filling		inert filling liquid pressure 100 bar (1450 psi) at 60 °C (140 °F)
Process connection	Female thread $\frac{1}{4}$ -18 NPT and flange connection $\frac{7}{16}$ -20 UNI	ction with mounting thread M10 to DIN 19213 c = to IEC 61518
Material of mounting bracket		
Steel	Sheet-steel, Mat. No.	. 1.0330, chrome-plated
Stainless steel	Shoot stainless stool	mat. no. 1.4301 (SS 304)

Pressure Measurement Transmitters for general requirements SITRANS P DS III for differential pressure and flow

SITRANS P, DS III for differential pressure and	tiow .	
	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	oup 1; complies with basic safety requirements of a category III, conformity evaluation module H by V Nord.
Explosion protection		
Intrinsic safety "i"	PTB 13 A	FEX 2007 X
- Marking		IIC T4/T5/T6 Ga/Gb
- Permissible ambient temperature	-40 +85 °C (-40 +18 -40 +70 °C (-40 +15	5°F) temperature class T4; 8°F) temperature class T5; 0°F) temperature class T6
- Connection	· ·	FISCO supply unit: $U_0 = 17.5 \text{ V, } I_0 = 380 \text{ mA}, P_0 = 5.32 \text{ W}$
	$U_{\rm i} = 30 \text{ V}, \ l_{\rm i} = 100 \text{ mA}, \ P_{\rm i} = 750 \text{ mW}; \ R_{\rm i} = 300 \ \Omega$	
- Effective internal inductance/capacitance	$L_i = 0.4 \text{ mH}, C_i = 6 \text{ nF}$	$L_{i} = 7 \mu H, C_{i} = 1.1 nF$
• Explosion-proof "d"	PTB 99 A	NTEX 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		ATEX 2055
- Marking		965 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	$L_{i} = 0.4 \text{ mH}, C_{i} = 6 \text{ nF}$	$L_{\rm i} = 7 \mu\text{H}, C_{\rm i} = 1.1 \text{nF}$
Dust explosion protection for zone 21/22	'	ATEX 2055
- Marking		265 T 120 °C
- Connection	To circuits with values: $U_{\rm H} = 10.5 \dots 45 \text{ V DC}$;	To circuits with values: $U_{\rm H} = 9 \dots 32 \text{ V DC}$;
30100.0011	$P_{\text{max}} = 1.2 \text{ W}$	$P_{\text{max}} = 1 \text{ W}$

Transmitters for general requirements SITRANS P DS III for differential pressure and flow

SITRANS P, DS III for differential pressure an	d 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 II T4/T5/T6 Gc Ex II 2/3 G Ex ic IIC T4/T5/T6 Gc		
- Connection (Ex nA)	<i>U</i> _m = 45 V	$U_{\rm m}$ = 32 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 	Ce	rtificate 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; P ABCD T4T6; CL II, DIV 2, GP FG; CL III	
• Explosion protection to CSA	Ce	rtificate of Compliance 1153651	
- Identification (XP/DIP) or (IS)		II, DIV 1, GP EFG; CL III; Ex ia IIC T4T6; CL I, DIV 2, GP ABCDT6; 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).

Transmitters for general requirements

SITRANS P DS III for differential pressure and flow

HART communication	
HART	230 1100 Ω
Protocol	HART Version 5.x
Software for PC	SIMATIC PDM
PROFIBUS PA communication	
Simultaneous communication with master class 2 (max.)	4
The address can be set using	Configuration tool or local operation (standard setting address 126)
Cyclic data usage	
Output byte	5 (one measured value) or 10 (two measured values)
Input byte	0, 1, or 2 (register operating mode and reset function for metering)
Internal preprocessing	
Device profile	PROFIBUS PA Profile for Process Control Devices Version 3.0, Class B
Function blocks	2
Analog input	
 Adaptation to customer-specific process variables 	Yes, linearly rising or falling characteristic
- Electrical damping, adjustable	0 100 s
- Simulation function	Input /Output
- Failure mode	parameterizable (last good value, substitute value, incorrect value)
- Limit monitoring	Yes, one upper and lower warn- ing limit and one alarm limit respectively
Register (totalizer)	Can be reset, preset, optional direction of counting, simulation function of register output
- Failure mode	parameterizable (summation with last good value, continuous summation, summation with incorrect value)
- Limit monitoring	One upper and lower warning limit and one alarm limit respec- tively
Physical block	1
Transducer blocks	2
Pressure transducer block	
 Can be calibrated by applying two pressures 	Yes
- Monitoring of sensor limits	Yes
 Specification of a container characteristic with 	Max. 30 nodes
 Square-rooted characteristic for flow measurement 	Yes
 Gradual volume suppression and implementation point of square-root extraction 	Parameterizable
 Simulation function for mea- sured pressure value and sen- 	Constant value or over parameterizable ramp function

sor temperature

FOUNDATION Fieldbus	
communication	

Function blocks

- Analog input
 - Adaptation to customerspecific process variables
- Electrical damping, adjustable
- Simulation function
- Failure mode
- Limit monitoring
- Square-rooted characteristic for flow measurement
- PIE
- Physical block

Transducer blocks

- Pressure transducer block
- Can be calibrated by applying two pressures
- Monitoring of sensor limits
- Simulation function: Measured pressure value, sensor temperature and electronics temperature

3 function blocks analog input, 1 function block PID

Yes, linearly rising or falling characteristic

0 ... 100 s

Output/input (can be locked within the device with a bridge)

parameterizable (last good value, substitute value, incorrect value)

Yes, one upper and lower warning limit and one alarm limit respectively

Yes

Standard FOUNDATION Fieldbus function block

1 resource block

1 transducer block Pressure with calibration, 1 transducer block LCD

Yes

Yes

Constant value or over parameterizable ramp function

Transmitters for general requirements

SITRANS P DS III for differential pressure and flow

10. 4	pressure and now					
Selection and Orde	ring data		Artic	le N	Ο.	
	rith HART pressure trans-		7 M F	4 4	3 3 -	
mitters for different PN 32/160 (MAWP 4	tial pressure and flow, 164/2320 psi)		-		-	
Measuring cell filling	ng Measuring cell clean-					
Silicone oil	ing normal	>	1			
Inert liquid ¹⁾	grease-free to		3			
more negation	cleanliness level 2					
Measuring span (m	in max.)					
PN 32 (MAWP 464 p	osi)					
1 20 mbar ²⁾	(0.4015 8.03 inH ₂ O)	>	В			
PN 160 (MAWP 2320) psi)					
1 60 mbar	(0.4015 24.09 inH ₂ O)	>	С			
2,5 250 mbar	(1.004 100.4 inH ₂ O)		D			
6 600 mbar	(2.409 240.9 inH ₂ O)		E			
16 1600 mbar	(6.424 642.4 inH ₂ O)		F			
50 5000 mbar	(20.08 2008 inH ₂ O)	>	G			
0,3 30 bar	(4.35 435 psi)		Н			
Wetted parts mater						
(stainless steel proc	· ,					
Seal diaphragm	Parts of measuring cell	_				
Stainless steel	Stainless steel		A			
Hastelloy	Stainless steel		E			
Hastelloy	Hastelloy		C			
Tantalum ³⁾	Tantalum		E			
Monel ³⁾	Monel		F			
Gold ³⁾	Gold		L			
Version for diaphrag	m seal ^{4) 5) 6) 7)}		Y			
 Mounting thread (only for replacer Vent on side of producer Mounting thread Mounting thread 	ment requirement) ocess flange ²⁾ 7/ ₁₆ -20 UNF to IEC 61518	•		2 0 6 4		
Non-wetted parts n	naterials					
	ws Electronics housing					
Stainless steel	Die-cast aluminum			2		
Stainless steel	Stainless steel precision casting ⁸⁾	1		3		
Version						
 Standard versions 		•			1	
tions, documentati	on, English label inscrip- on in 5 languages on CD	>			2	
(no Order code se						
Explosion protectionNone	on				А	
With ATEX, Type of	f protection:	_			^	
- "Intrinsic safety (I					В	
- "Explosion-proof		•			D	
- "Intrinsic safety a	nd flameproof enclosure"	•			Р	
(Ex ia + Ex d)"10)						
- "Ex nA/ic (Zone 2		•			E	
 "Intrinsic safety, e and dust explosic Zone 1D/2D)"¹⁰⁾ 	explosion-proof enclosure on protection (Ex ia+ Ex d +	-			R	
• FM + CSA intrinsic	safe (is)				F	
) + Ex ia + Ex d (ATEX)				S	
• With FM + CSA, Ty	pe of protection:					
	d Explosion Proof (is + xp)" ⁹) 🄷			N C	;

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 13.5¹²⁾ 		A		
 Screwed gland M20 x 1.5 	>	В		
 Screwed gland ½-14 NPT 		С		
 Han 7D plug (plastic housing) incl. mating connector ¹²⁾¹³⁾ 		D		
 M12 connectors (stainless steel)^{12) 14)} 		F		
Display				
 Without display 			0	
 Without visible display (display concealed, setting: mA) 	>		1	
 With visible display 			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 oi
- 8) Not in conjunction with Electrical connection "Screwed gland Pg 13.5" and "Han7D plug"
- 9) Without cable gland, with blanking plug
- $^{10)}$ With enclosed cable gland Ex ia and blanking plug
- ¹¹⁾Configurations with HAN and M12 connectors are only available in Ex ic.
- ¹²⁾Not in conjunction with types of protection "Explosion-proof" and "Ex nA", "Intrinsic safety" and "Explosion-proof".
- $^{13)}$ Permissible only for crimp-contact of conductor cross-section 1 mm 2
- ¹⁴⁾M12 delivered without cable socket. Not available with protection type

Transmitters for general requirements

SITRANS P DS III for differential pressure and flow

Selection and Orderi	ng data	Arti	cle	No	٥.		
Pressure transmitter	rs for differential pressure MAWP 464/2320 psi)						
	th PROFIBUS PA (PA)	7 M	F 4	4	3 4		
	th FOUNDATION Fieldbus	7 M					
(FF)	CONDATION FICIUDUS	7 111	, 4	7 (. 1		
Measuring cell filling	Measuring cell cleaning					Ī	
Silicone oil	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							
30 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	(642.4 inH ₂ O)	F					
5 bar	(2008 inH ₂ O)	G					
30 bar	(435 psi)	_ Н					
Wetted parts materia							
(stainless steel proce: Seal diaphragm	Parts of measuring cell						
Stainless steel	Stainless steel		A				
Hastelloy	Stainless steel		В				
Hastelloy	Hastelloy		C				
Tantalum ³⁾	Tantalum		E				
Monel ³⁾	Monel		Н				
Gold ³⁾	Gold		L				
Version as diaphragm			γ				
Process connection			T				
Process connection	NPT with flange connection site process connection t_{16} -20 UNF to IEC 61518 M10 to DIN 19213 ent requirement) rocess flanges ²⁾ t_{16} -20 UNF to IEC 61518		2 0				
Process connection Female thread ¼-18 N Sealing screw oppo - Mounting thread 7 - Mounting thread N (only for replacem Venting on side of p - Mounting thread N (only for replacem	NPT with flange connection site process connection t_{16} -20 UNF to IEC 61518 M10 to DIN 19213 ent requirement) rocess flanges ²⁾ t_{16} -20 UNF to IEC 61518 M10 to DIN 19213 ent requirement)		200				
Process connection Female thread ¼-18 N Sealing screw oppo - Mounting thread 7 - Mounting thread N (only for replacem Venting on side of p - Mounting thread N (only for replacem Mounting thread N (only for replacem	NPT with flange connection site process connection t_{16} -20 UNF to IEC 61518 M10 to DIN 19213 ent requirement) rocess flanges ²⁾ t_{16} -20 UNF to IEC 61518 M10 to DIN 19213 ent requirement)		2 0				
Process connection Female thread ¼-18 N Sealing screw oppo - Mounting thread 7 - Mounting thread N (only for replacem Venting on side of p - Mounting thread N (only for replacem	NPT with flange connection site process connection t_{16} -20 UNF to IEC 61518 M10 to DIN 19213 ent requirement) rocess flanges ²⁾ t_{16} -20 UNF to IEC 61518 M10 to DIN 19213 ent requirement)		2 0				
Process connection Female thread ¼-18 N Sealing screw oppo - Mounting thread 7 - Mounting thread N (only for replacem Venting on side of p - Mounting thread N (only for replacem Non-wetted parts maprocess flange screw Stainless steel Stainless steel Version Standard versions International version	NPT with flange connection site process connection / ₁₆ -20 UNF to IEC 61518 M10 to DIN 19213 ent requirement) rocess flanges ²⁾ / ₁₆ -20 UNF to IEC 61518 M10 to DIN 19213 ent requirement) aterials SElectronics housing Die-cast aluminum Stainless steel precision casting I, English label inscriptions,	-	2 0	2	1 2		
Process connection Female thread ¼-18 N Sealing screw oppo - Mounting thread 7 - Mounting thread N (only for replacem Venting on side of p - Mounting thread N (only for replacem Non-wetted parts maprocess flange screw Stainless steel Stainless steel Version Standard versions International version documentation in 5 (no Order code sele	NPT with flange connection site process connection / ₁₆ -20 UNF to IEC 61518 M10 to DIN 19213 ent requirement) rocess flanges ²⁾ / ₁₆ -20 UNF to IEC 61518 M10 to DIN 19213 ent requirement) aterials size Electronics housing Die-cast aluminum Stainless steel precision casting and process flanges on CD incomplete in the connection of th		2 0	2			
Process connection Female thread ¼-18 N Sealing screw oppo - Mounting thread 7, - Mounting thread N (only for replacem Venting on side of p - Mounting thread N (only for replacem Non-wetted parts maprocess flange screw Stainless steel Stainless steel Version Standard versions International version documentation in 5	NPT with flange connection site process connection / ₁₆ -20 UNF to IEC 61518 M10 to DIN 19213 ent requirement) rocess flanges ²⁾ / ₁₆ -20 UNF to IEC 61518 M10 to DIN 19213 ent requirement) aterials size Electronics housing Die-cast aluminum Stainless steel precision casting and process flanges on CD incomplete in the connection of th		2 0	2			
Process connection Female thread ¼-18 N Sealing screw oppo - Mounting thread 7 - Mounting thread N (only for replacem Venting on side of p - Mounting thread N (only for replacem Non-wetted parts maprocess flange screw Stainless steel Stainless steel Version Standard versions International version documentation in 5 (no Order code sele Explosion protectior	NPT with flange connection site process connection / ₁₆ -20 UNF to IEC 61518 M10 to DIN 19213 ent requirement) rocess flanges ²⁾ / ₁₆ -20 UNF to IEC 61518 M10 to DIN 19213 ent requirement) aterials s Electronics housing Die-cast aluminum Stainless steel precision casting n, English label inscriptions, languages on CD octable)		2 0	2			
Process connection Female thread ¼-18 N Sealing screw oppo - Mounting thread 7 - Mounting thread N (only for replacem Venting on side of p - Mounting thread N (only for replacem Non-wetted parts maprocess flange screw Stainless steel Stainless steel Version Standard versions International version documentation in 5 (no Order code sele Explosion protection None With ATEX, Type of p - "Intrinsic safety (E)	NPT with flange connection site process connection / ₁₆ -20 UNF to IEC 61518 / ₁₀ -20 UNF to IEC		2 0	2			
Process connection Female thread ¼-18 N Sealing screw oppo - Mounting thread 7 - Mounting thread N (only for replacem Venting on side of p - Mounting thread N (only for replacem Monuting thread N (only for replacem Non-wetted parts maprocess flange screw Stainless steel Stainless steel Version Standard versions International version coumentation in 5 (no Order code sele Explosion protection None With ATEX, Type of p - "Intrinsic safety (E: - "Explosion-proof (E	NPT with flange connection site process connection / _{16*} 20 UNF to IEC 61518 / _{10*} 213 ent requirement) aterials s Electronics housing Die-cast aluminum Stainless steel precision casting I, English label inscriptions, languages on CD (ctable) Torotection: x ia)" Ex d)**8)		2 0	2		A B D	
Process connection Female thread ¼-18 N Sealing screw oppo - Mounting thread 7 - Mounting thread N (only for replacem Venting on side of p - Mounting thread N (only for replacem Monuting thread N (only for replacem Non-wetted parts maprocess flange screw Stainless steel Stainless steel Version Standard versions International version coumentation in 5 (no Order code sele Explosion protection None With ATEX, Type of p - "Intrinsic safety (E: - "Explosion-proof (E	NPT with flange connection site process connection / _{16*} 20 UNF to IEC 61518 / _{10*} 213 ent requirement) aterials s Electronics housing Die-cast aluminum Stainless steel precision casting I, English label inscriptions, languages on CD (ctable) Torotection: x ia)" Ex d)**8)		2 0	2		A	
Process connection Female thread ¼-18 N Sealing screw oppo - Mounting thread 7 - Mounting thread N (only for replacem Venting on side of p - Mounting thread N (only for replacem Monuting thread N (only for replacem Non-wetted parts maprocess flange screw Stainless steel Version Standard versions International version documentation in 5 (no Order code sele Explosion protection None With ATEX, Type of p "Intrinsic safety (E) "Explosion-proof (E) "Intrinsic safety, an (Ex ia + Ex d) (9)	NPT with flange connection site process connection / ₁₆ -20 UNF to IEC 61518 / ₄₁₆ -20 UNF to IEC 6151		2 0	2		A B D P	
Process connection Female thread ¼-18 N Sealing screw oppo - Mounting thread N (only for replacem Venting on side of p - Mounting thread N (only for replacem Non-wetted parts materials and series steel Stainless steel Version Standard versions International version documentation in 5 (no Order code selection) None With ATEX, Type of p - "Explosion-proof (f - "Intrinsic safety an (Ex a + Ex d)" - "Ex nA/ic (Zone 2)" - "Intrinsic safety ex and the safety an (Ex safety ex safe	APT with flange connection site process connection / ₁₆ -20 UNF to IEC 61518 M10 to DIN 19213 ent requirement) rocess flanges ²⁾ / ₁₆ -20 UNF to IEC 61518 M10 to DIN 19213 ent requirement) aterials s Electronics housing Die-cast aluminum Stainless steel precision casting In English label inscriptions, languages on CD cotable) protection: x ia)" Ex d)"8) d flameproof enclosure and		2 0	2		A B D P	
Process connection Female thread ¼-18 N Sealing screw oppo - Mounting thread 7, - Mounting thread N (only for replacem Venting on side of p - Mounting thread N (only for replacem Non-wetted parts maprocess flange screw Stainless steel Stainless steel Stainless steel Stainless steel Stainless steel Explosion protection None With ATEX, Type of p - "Explosion-proof (f - "Intrinsic safety an (Ex ia + Ex d)"9) - "Intrinsic safety ex	APT with flange connection site process connection / ₁₆ -20 UNF to IEC 61518 M10 to DIN 19213 ent requirement) rocess flanges ²⁾ / ₁₆ -20 UNF to IEC 61518 M10 to DIN 19213 ent requirement) aterials s Electronics housing Die-cast aluminum Stainless steel precision casting In English label inscriptions, languages on CD cotable) protection: x ia)" Ex d)"8) d flameproof enclosure and		2 0	2		A B D P	
Process connection Female thread ¼-18 N Sealing screw oppo - Mounting thread 7, - Mounting thread N (only for replacem Venting on side of p - Mounting thread N (only for replacem Non-wetted parts maprocess flange screw Stainless steel Version Standard versions International versions cocumentation in 5 (no Order code sele Explosion protection None With ATEX, Type of p - "Intrinsic safety (E: - "Explosion-proof (E: - "Intrinsic safety, an (Ex ia + Ex d)" - "Ex nA/ic (Zone 2)" - "Intrinsic safety, ex dust explosion pro Zone 1D/2D)" (no	APT with flange connection site process connection / ₁₆ -20 UNF to IEC 61518 M10 to DIN 19213 ent requirement) rocess flanges ²⁾ / ₁₆ -20 UNF to IEC 61518 M10 to DIN 19213 ent requirement) aterials s Electronics housing Die-cast aluminum Stainless steel precision casting In the control of		2 0	2		A BDP ER	
Process connection Female thread ¼-18 N Sealing screw oppo - Mounting thread 7 - Mounting thread N (only for replacem Venting on side of p - Mounting thread N (only for replacem Non-wetted parts ma process flange screw Stainless steel Stainless steel Stainless steel Version Standard versions International version documentation in 5 (no Order code sele Explosion protection None With ATEX, Type of p - "Intrinsic safety, ex dust explosion pro Zone 1D/2D)" (no FM + CSA intrinsic seles) FEM + CSA intrinsic seles	NPT with flange connection site process connection / ₁₆ -20 UNF to IEC 61518 / ₁₀ -20 UNF to IEC		2 0	2		A BDP ER	
Process connection Female thread ¼-18 N Sealing screw oppo - Mounting thread 7 - Mounting thread N (only for replacem Venting on side of p - Mounting thread N (only for replacem Non-wetted parts ma process flange screw Stainless steel Stainless steel Stainless steel Version Standard versions International version documentation in 5 (no Order code sele Explosion protection None With ATEX, Type of p - "Intrinsic safety, ex dust explosion pro Zone 1D/2D)" (no FM + CSA intrinsic seles) FEM + CSA intrinsic seles	NPT with flange connection site process connection / ₁₆ -20 UNF to IEC 61518 / ₄₆ -20 UNF to IEC		2 0	2		A BDP ER	

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)	7MF4434-	
SITRANS P DS III with FOUNDATION Fieldbus (FF)	7MF4435-	
Electrical connection/cable entry		
Screwed gland M20 x 1.5	В	
• Screwed gland ½-14 NPT	C	
• M12 connectors (stainless steel) ¹¹⁾ 12) 13)	F	
Display	_	
Without display	0	
Without visible display	1	
(display concealed, setting: bar)		
With visible display	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)
- $^{\rm 3)}$ Not in conjunction with max. span 20 and 60 mbar (8.03 und 24.09 in $\rm H_2O))$
- 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 wiht 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⁾M12 delivered without cable socket
- ¹²⁾Not available with protection type "Ex d" (options D, P, N and R)
- $^{13)}\mbox{Not}$ in conjunction with types of protection "Explosion-proof" and "Ex nA", "Intrinsic safety" and "Explosion-proof".

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
Pressure transmitter with mounting bracket (1x fixing angle, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer) made of:				
SteelStainless steel	A01 A02	√	√	√
O-rings for process flanges (instead of FPM (Viton))				
 PTFE (Teflon) FEP (with silicone core, approved for food) 	A20 A21	√	√	1
FFPM (Kalrez, compound 4079)NBR (Buna N)	A22 A23	√	√	√ ✓
plug • Han 7D (metal, gray)	A30	√		
Han 8U (instead of Han 7D)Angled	A31 A32	√		
Han 8D (metal, gray)Sealing screws (2 unit(s)	A33 A40	√	✓	1
1/2-18 NPT, with valve in mat. of process flanges				
Cable sockets for M12 connectors (stainless steel)	A 50	✓	✓	✓
Rating plate inscription (instead of German)				
• English	B11	✓	✓	1
• French	B12	✓	✓	✓
• Spanish	D.0	√ √	√	1
• Italian				√
English rating plate Pressure units in inH ₂ O and/or psi	B21	✓	✓	✓
Quality inspection certificate (Five-step factory calibration) to IEC 60770-2 ¹⁾	C11	✓	✓	1
Inspection certificate ²⁾ to EN 10204-3.1	C12	✓	✓	✓
Factory certificate 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 ⁵⁾		✓	
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 www.siemens.com/automation/support- request)	C99	✓	✓	✓
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) (only together with seal diaphragm made of Hastelloy and stainless steel)	D07	✓	✓	✓
Degree of protection IP65/IP68 (only for M20 x 1.5 and ½-14 NPT)	D12	✓	✓	✓
Process flange screws made of Monel (max. nominal pressure PN20)	D34	✓	✓	✓
Supplied with oval flange set (2 items), PTFE packings and screws in thread of process flanges	D37	✓	✓	✓

Selection and Ordering data	Order	code		
Further designs Add '-Z" to Article No. and specify Order code.		HART	PA	FF
Use in or on zone 1D/2D (only together with type of protection "Intrinsic safety" (transmitter 7MF4B Ex ia)")	E01	✓	✓	✓
TÜV approval to AD/TRD (only together with type of protection "Intrinsic safety (Ex ia)")	E06	✓		
Overfilling safety device for flammable and non-flammable liquids (max. PN 32 (MAWP 464 psi), basic device with type of protection "Intrinsic safety (Ex ia)", to WHG and VbF, not together with measuring cell filling "inert liquid")	E08	✓		
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) (only for transmitter 7MF4B)	E25 ⁴⁾	✓	✓	✓
"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⁾	✓	✓	
Ex Approval IEC Ex (Ex ia) (only for transmitter 7MF4B)	E45 ⁴⁾	✓	✓	✓
Ex Approval IEC Ex (Ex id) (only for transmitter 7MF4	E46 ⁴⁾	✓	✓	✓
Explosion-proof "Intrinsic safety" to NEPSI (China)	E55 ⁴⁾	✓	✓	✓
(only for transmitter 7MF4B) Explosion protection "Explosion-proof" to NEPSI (China)	E56 ⁴⁾	✓	✓	✓
(only for transmitter 7MF4D) Explosion-proof "Zone 2" to NEPSI (China)	E57 ⁴⁾	✓	✓	✓
(only for transmitter 7MF4				
"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	√	√	√
Interchanging of process connection side	H01	✓	✓	V
Vent on side for gas measurements	H02	✓	✓	✓
Stainless steel process flanges for vertical differential pressure lines (not together with K01, K02 and K04) ³⁾	H03	✓	✓	✓

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

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
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	K04	✓	✓	✓
on the side in the middle of the process flange, vent valve not possible				

Factory mounting of valve manifolds, see accessories.

Supplementary electronics for 4-wire connection, see accessories.

✓ = available

- 1) When the manufacture's certificate (calibration certificate) has to be ordered for transmitters with diaphragm seals according to IEC 60770-2, it is 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) Not suitable for connection of remote seal
- 4) Option does not include ATEX approval, but instead includes only the country-specific approval.
- 5) Profisafe transmitters can only be operated with the S7 F Systems V6.1 configuration software in combination with S7-400H

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	Y01	✓	√ 1)	
in the case of square rooted characteristic (max. 5 characters): Y02: up to mbar, bar, kPa, MPa, psi	Y02	✓		
Stainless steel tag plate and entry in device variable (measuring point description)	Y15	✓	✓	✓
Max. 16 characters, specify in plain text: Y15:				
Measuring point text (entry in device variable)	Y16	✓	✓	✓
Max. 27 char., specify in plain text: Y16:				
Entry of HART address (TAG) Max. 8 char., specify in plain text: Y17:	Y17	✓		
Setting of pressure indicator in	Y21	✓	✓	✓
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				
Setting of pressure indicator in non-	Y22 ³⁾	✓		
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	+ Y01 or Y02			
max. 5 characters)				
Preset bus address possible between 1 and 126 Specify in plain text: Y25:	Y25		✓	✓
Damping adjustment in seconds (0 100 s)	Y30	✓	✓	✓

 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

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

Transmitters for general requirements

SITRANS P DS III for differential pressure and flow

for differential pi	ressure and now		
Selection and Orderin	g data	Artic	le No.
	HART pressure trans-		4533-
mitters for differential	pressure and flow,		
PN 420 (MAWP 6092 p	si)		
Measuring cell filling	Measuring cell		
Silicone oil	cleaning normal	1	
	ПОППА	Ľ	
Measuring span (min.	•		
2.5 250 mbar	(1.004 100.4 inH ₂ O)	D	
6 600 mbar	(2.409 240.9 inH ₂ O)	E	
16 1600 mbar 50 5000 mbar	(6.424 642.4 inH ₂ O) (20.08 2008 inH ₂ O)	F G	
0.3 30 bar	(4.35 435 psi)	Н	
Wetted parts materials (stainless steel process			
Seal diaphragm	Parts of measuring cell		
Stainless steel	Stainless steel Stainless steel	A E	
Hastelloy Gold ¹⁾	Gold	L	
Ausführung als Membra		Y	
Process connection	a.a. ao amando		
	T with flange connection		
Sealing screw opposi	9		
	_s -20 UNF to IEC 61518		3
- Mounting thread M1			1
(only for replacement			
 Venting on side of pro 	cess flanges, location of		
vent valve at top of pr sional drawing)	ocess flanges (see dimen-		
	₆ -20 UNF to IEC 61518		7
- Mounting thread M1			5
(only for replacement			
Non-wetted parts mate	erials		
process flange screws	Electronics housing		
Stainless steel	Die-cast aluminum		2
Stainless steel	Stainless steel precision casting ⁶⁾		3
	casting ^{b)}		
Version			
 Standard versions 			1
	English label inscriptions,		2
documentation in 5 la (no Order code selec			
Explosion protection		-	
None			А
With ATEX, Type of pr	otection:		^
- "Intrinsic safety (Ex i			В
- "Explosion-proof (Ex			D
	flameproof enclosure"		P
(Ex ia + Ex d)"8)	namepreer enclosere		
- "Ex nA/ic (Zone 2)"9)			E
 "Intrinsic safety, expl 	osion-proof enclosure and		R
dust explosion prote	ection (Ex ia+ Ex d +		
• FM + CSA intrinsic sa	fe (is)		F
• FM + CSA (is + ep) +			s
• With FM + CSA, Type			
 "Intrinsic safety and (is + xp)" ⁷⁾, max PN 			NC
(is + xp)" (), max PN	1 360		.,,
Electrical connection/			
 Screwed gland Pg 13 			A
Screwed gland M20x			В
• Screwed gland ½-14			C
 Han 7D plug (plastic lonnector 10)11) 	nousing) incl. mating		D
- M40 (-t-:-	nless steel) ^{12) 13) 14)}		F
 IVITZ connectors (stair 			

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)		1
Display		
Without display		0
Without visible display		1
(display concealed, setting: mA)		
 With visible display 		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)

- 1) Not in conjunction with max. span 600 mbar (240.9 inH₂O)
- 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 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⁾Not in conjunction with types of protection "Explosion-proof" and "Ex nA", "Intrinsic safety" and "Explosion-proof".
- $^{11)}\mbox{Permissible}$ only for crimp-contact of conductor cross-section 1 \mbox{mm}^2
- ¹²⁾M12 delivered without cable socket
- ¹³⁾Not available with protection type "Ex d" (options D, P, N and R)
- ¹⁴⁾Not in conjunction with types of protection "Explosion-proof" and "Ex nA", "Intrinsic safety" and "Explosion-proof".

Transmitters for general requirements

SITRANS P DS III for differential pressure and flow

Pressure transmitters for differential pressure and flow, PN 420 (MAWP 6092 psi) SITRANS P DS III with PROFIBUS PA (PA) SITRANS P DS III with FOUNDATION Fieldbus 7 M F 4 5	
` '	
SITRANS P DS III with FOUNDATION Fieldbus 7 M F 4 5	5 3 4 -
	535-
(FF)	
1	
Nominal measuring 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 in H_2O)	
30 bar (435 psi) H	
Wetted parts materials	
(stainless steel process flanges)	
Seal diaphragm Parts of measuring cell	
Stainless steel Stainless steel A	
Hastelloy Stainless steel B	
Gold 1) Gold L	
Ausführung als Membrandruckmittler ^{2) 3) 4) 5)}	
Process connection	
Female thread 1/4-18 NPT with flange connection	
Sealing screw opposite process connection	
- Mounting thread ⁷ / ₁₆ -20 UNF to IEC 61518 3	
- Mounting thread M12 to DIN 19213	
(only for replacement requirement)	
Venting on side of process flanges, location of	
vent valve at top of process flanges (see dimensional drawing).	
Mounting throad 7/ 20 LINE to IEC 61510	
- Mounting thread M12 to DIN 19213 (only for replacement requirement) 5	
Non-wetted parts materials	
Process flange screws Electronics housing	
	,
Stainloss stool Dio cast aluminum	
	2
	3
Stainless steel Stainless steel precision casting	3
Stainless steel Stainless steel precision casting Version	1
Stainless steel Stainless steel precision casting Version Standard versions	
Stainless steel Stainless steel precision casting Version Standard versions International version, English label inscriptions, documentation in 5 languages on CD	1
Stainless steel Stainless steel precision casting Version Standard versions International version, English label inscriptions,	1
Stainless steel Stainless steel precision casting Version Standard versions International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable)	1
Stainless steel Stainless steel precision casting Version Standard versions International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection None	1
Stainless steel Stainless steel precision casting Version Standard versions International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection None With ATEX, Type of protection:	1 2
Stainless steel Stainless steel precision casting Version Standard versions International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection None With ATEX, Type of protection: - "Intrinsic safety (Ex ia)"	1 2 A B
Stainless steel Stainless steel precision casting Version Standard versions International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection None With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)"6)	1 2 A B D
Stainless steel Stainless steel precision casting Version Standard versions International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection None With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)" - "Intrinsic safety and flameproof enclosure"	1 2 A B
Stainless steel Stainless steel precision casting Version Standard versions International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection None With ATEX, Type of protection: "Intrinsic safety (Ex ia)" "Explosion-proof (Ex d)" "Explosion-proof (Ex d)" "Explosion-proof enclosure" (Ex ia + Ex d)" "Ex ia + Ex d)"	1 2 A B D P
Stainless steel Stainless steel precision casting Version Standard versions International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection None With ATEX, Type of protection: "Intrinsic safety (Ex ia)" "Explosion-proof (Ex d)" "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)" "Ex nA/ic (Zone 2)" 8)	1 2 A B D P E
Stainless steel Stainless steel precision casting Version Standard versions International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection None With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)" - "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)" - "Ex nA/ic (Zone 2)" - "Intrinsic safety, explosion-proof enclosure and	1 2 A B D P
Stainless steel Stainless steel precision casting Version Standard versions International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection None With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)"6) - "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)"7) - "Ex nA/ic (Zone 2)" 8)	1 2 A B D P E
Stainless steel Stainless steel precision casting Version Standard versions International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection None With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)" ⁶) - "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)" ⁷) - "Ex nA/ic (Zone 2)" ⁸) - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)" ⁷) (not for DS III FF) FM + CSA intrinsic safe (is)	1 2 A B D P E R
Stainless steel Stainless steel precision casting Version Standard versions International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection None With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)" - "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)" - "Ex nA/ic (Zone 2)" - "Intrinsic safety, explosion-proof enclosure and	1 2 A B D P E R
Stainless steel Stainless steel precision casting Version Standard versions International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection None With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)"6) - "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)"7) - "Ex nA/ic (Zone 2)" 8) - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)"7) (not for DS III FF) FM + CSA intrinsic safe (is) FM + CSA (is + ep) + Ex ia + Ex d (ATEX) With FM + CSA, Type of protection:	1 2 A B D P E R F S
Stainless steel Stainless steel precision casting Version Standard versions International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection None With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)"6) - "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)"7) - "Ex nA/ic (Zone 2)" 8) - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)"7) (not for DS III FF) FM + CSA intrinsic safe (is) FM + CSA (is + ep) + Ex ia + Ex d (ATEX) With FM + CSA, Type of protection:	1 2 A B D P E R
Stainless steel Stainless steel precision casting Version Standard versions International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection None With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)" ⁶) - "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)" ⁷) - "Ex nA/ic (Zone 2)" ⁸) - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)" ⁷) (not for DS III FF) FM + CSA intrinsic safe (is)	1 2 A B D P E R F S
Stainless steel Stainless steel precision casting Version Standard versions International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection None With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)"6) - "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)"7) - "Ex nA/ic (Zone 2)" 8) - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)"7) (not for DS III FF) FM + CSA intrinsic safe (is) FM + CSA, Type of protection: - "Intrinsic safety and explosion-proof (is + xp)"6), max PN 360 Electrical connection/cable entry	1 2 A B D P E R F S
Stainless steel Stainless steel precision casting Version Standard versions International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection None With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)"6) - "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)"7) - "Ex nA/ic (Zone 2)" 8) - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)"7) (not for DS III FF) FM + CSA intrinsic safe (is) FM + CSA, Type of protection: - "Intrinsic safety and explosion-proof (is + xp)"6), max PN 360 Electrical connection/cable entry Screwed gland M20 x 1.5	1 2 A B D P E R F S N C B
Stainless steel Stainless steel precision casting Version Standard versions International version, English label inscriptions, documentation in 5 languages on CD (no Order code selectable) Explosion protection None With ATEX, Type of protection: - "Intrinsic safety (Ex ia)" - "Explosion-proof (Ex d)" ⁶) - "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)" ⁷) - "Ex nA/ic (Zone 2)" ⁸) - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)" ⁷) (not for DS III FF) FM + CSA intrinsic safe (is) FM + CSA, Type of protection: - "Intrinsic safety and explosion-proof (is + xp)" ⁶), max PN 360 Electrical connection/cable entry	A B D P E R F S

Selection and Ordering data	Article No.
Pressure transmitters for differential pressure and flow, PN 420 (MAWP 6092 psi)	
SITRANS P DS III with PROFIBUS PA (PA)	7MF4534-
SITRANS P DS III with FOUNDATION Fieldbus	7MF4535-
(FF)	
	1===
Display	
 Without (display hidden) 	0
Without visible display	1
(display concealed, setting: bar)	
With visible display	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
- Sealing plug(s) or sealing screw(s) for the process flanges(s)
- 1) Not in conjunction with max. span 600 mbar (240.9 inH₂O)
- 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 wiht 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) M12 delivered without cable socket
- $^{10)}\mbox{Not}$ available with protection type "Ex d" (options D, P, N and R)
- ¹¹⁾Not in conjunction with types of protection "Explosion-proof" and "Ex nA", "Intrinsic safety" and "Explosion-proof".

Transmitters for general requirements

SITRANS P DS III for differential pressure and flow

Selection and Ordering data	Order	codo		
Further designs	Order	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:				
SteelStainless steel	A01 A02	√	√	√
O-rings for process flanges				
(instead of FPM (Viton)) • PTFE (Teflon)	A20	1	√	./
FEP (with silicone core, approved for food)	A21	√	*	V
 FFPM (Kalrez, compound 4079) 	A22	V	√	1
• NBR (Buna N)	A23	✓	✓	✓
Plug • Han 7D (metal, gray)	A30	1		
 Han 8U (instead of Han 7D) 	A31	✓.		
AngledHan 8D (metal, gray)	A32 A33	√		
Sealing screws (2 unit(s)	A40	1	✓	1
1/4-18 NPT, with valve in mat. of process flanges				
Cable sockets for M12 conn. (stainless steel)	A50	✓	✓	✓
Rating plate inscription (instead of German)	B11	1	1	1
EnglishFrench	B12	√	√	V
• Spanish	B13	✓	✓	✓
• Italian	B14	✓ .	✓	✓
English rating plate Pressure units in inH ₂ O 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	1	✓	✓
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 www.siemens.com/automation/support-request)	C99	✓	✓	✓
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) (only together with seal diaphragm made of Hastelloy and stainless steel)	D07	1	✓	✓
Degree of protection IP65/IP68 (only for M20 x 1.5 and ½-14 NPT)	D12	✓	✓	✓
Nom. press. rating PN 500 (MAWP 7250 psi) (Only for measuring cell 600 mbar 30 bar (240 inH $_2$ O 435 psi), SIL- und Ex-options not possible)) 2)	D 56	✓		

Onlandian and Ondarian data				
Selection and Ordering data	Order code			
Further designs		HART	PA	FF
Add "-Z" to Article No. and specify Order code.				
Use in or on zone 1D/2D	E01	✓	✓	✓
(only together with type of protection "Intrinsic safety"				
(transmitter 7MF4B Ex ia)")				
Export approval Korea	E11	1	1	1
Dual seal	E24	·	· /	·
	E25 ³⁾	,	· •	,
Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil)	E25°	V	•	•
(only for transmitter 7MF4B)				
"Flameproof" explosion protection accord-	E26 ³⁾	✓	✓	✓
ing to INMETRO (Brazil)				
(only for transmitter 7MF4D)				
Explosion-proof "Intrinsic safety" (Ex ia +	E28 ³⁾	✓	✓	
Ex d) to INMETRO (Brazil) (only for transmitter 7MF4P)				
Ex Approval IEC Ex (Ex ia)	E45 ³⁾	1	/	/
(only for transmitter 7MF4B)	L-10 /		,	
Ex Approval IEC Ex (Ex id)	E46 ³⁾	1	1	1
(only for transmitter 7MF4D)				
Explosion-proof "Intrinsic safety"	E55 ³⁾	✓	✓	✓
to NEPSI (China)				
(only for transmitter 7MF4B)	3)			
Ex prot. "Explosion-proof" to NEPSI (China)	E56 ³⁾	✓	✓	✓
(only for transmitter 7MF4D)	E==3)	,	,	,
Explosion-proof "Zone 2" to NEPSI (China)	E57 ³⁾	√	✓	V
(only for transmitter 7MF4E)				
"Intrinsic safety" and "Explosion-proof"	E70 ³⁾	✓	✓	✓
explosion protection acc. to Kosha (Korea)				
(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	✓	✓	✓

<sup>Profisale 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</sup> media suitable.

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

Transmitters for general requirements

SITRANS P DS III for differential pressure and flow

Selection and Ordering data	Order	code		
Additional data		HART	PA	FF
Please add "-Z" to Article No. and specify Order code(s) and plain text.				
Measuring range to be set				
Specify in plain text: • in the case of linear characteristic curve (max. 5 characters):	Y01	✓	√ 1)	
 Y01: up to mbar, bar, kPa, MPa, psi in the case of square rooted characteristic (max. 5 characters): Y02: up to mbar, bar, kPa, MPa, psi 	Y02	✓		
Stainless steel tag plate and entry in	Y15	✓	✓	1
device variable (measuring point descrip-				
tion) Max. 16 characters, specify in plain text: Y15:				
Measuring point text (entry in device variable)	Y16	✓	✓	✓
Max. 27 char., specify in plain text: Y16:				
Entry of HART address (TAG)	Y17	✓		
Max. 8 char., specify in plain text: Y17:				
Setting of pressure indication in pressure units	Y21	✓	✓	✓
Specify in plain text (standard setting: bar): Y21: mbar, bar, kPa, MPa, psi,				
Note: The following pressure units can be selected: bar, mbar, mm H ₂ O [*]), inH ₂ O [*]), ftH ₂ O [*]), mmHG, inHG, psi, Pa, kPa, MPa, g/cm ² , kg/cm ² , Torr, ATM or % *) ref. temperature 20 °C				
Setting of pressure indication in	Y22 +	✓		
non-pressure units ²⁾	Y01 or Y02			
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)	102			
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.

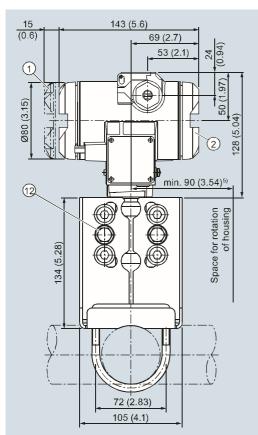
✓ = available

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⁾
- Terminal side1)
- 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

(10) (11) 52 (2.05) 17 (0.67) approx. 96 (3.78) 68 (2.7) 120 (4.7)

84 (3.31

(6)

(6.54)166

96 (3.8)

262 (10.3)

6 Blanking plug

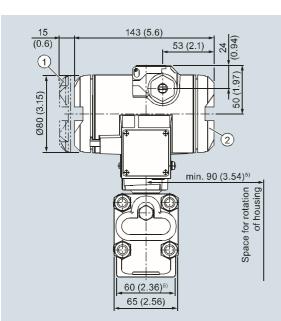
3

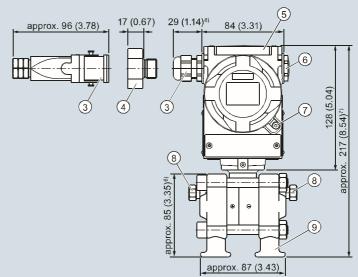
- Screw cover safety bracket (only for type of protection "Explosion-proof enclosure", not shown in the drawing)
- Lateral venting for liquid measurement (Standard)
- 9 Lateral venting for gas measurement (suffix H02)
- Mounting bracket (option)
- (11) Sealing screw with valve (option)
- 12 Process connection: 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 differential pressure and flow, dimensions in mm (inch)

Transmitters for general requirements

SITRANS P DS III for differential pressure and flow





- 1 Electronic side, digital display (longer overall length for cover with window)¹⁾
- 2 Terminal side1
- Screwed gland Pg 13,5 (adapter)(Adapter)^{2) 31}, Screwed gland M20 x 1,5 or Screwed gland ½-14 NPT or Han 7D/ Han 8D^{2) 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 ≥ 420 (MAWP ≥ 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

Pressure Measurement Transmitters for general requirements SITRANS P DS III for level

Technical specifications

SITRANS P DS III for level	HART		PROFIBUS PA or FOL	JNDATION Fieldbus
Input				
Measured variable	Level			
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	Also ava	-100 % of max. span c ailable as vacuum-resistan	or 500 mbar a (7.25 psia) It remote seal: 30 mbar a (
Upper measuring limit	100 % of max. span		100 % of the max. non	ninal measuring range
Output				
Output signal	4 20 mA		Digital PROFIBUS PA a FOUNDATION Fieldbu	
 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	o 20.5 mA or optionally	-	
Load				
Without HART	$R_{\rm B} \le (U_{\rm H} - 10.5 \text{V})/0.02$ $U_{\rm H}$: Power supply in V	23 A in Ω,	-	
With HART	$R_{\rm B} = 230 \dots 500 \Omega$ (SIM $R_{\rm B} = 230 \dots 1100 \Omega$ (HA		-	
Physical bus	-		IEC 61158-2	
Protection against polarity reversal	Protected against short-circuit and polarity reversal. Each connection against the other wisupply 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	EC 60770-1	
Reference conditions (All error data refer always refer to the set span)	Increasing characteristing, room ter	ic, start-of-scale value 0 mperature 25 °C (77 °F))	bar, stainless steel seal r: Span ratio (r = max. s	diaphragm, silicone oil fil pan / set span)
Error in measurement at limit setting incl. hysteresis and reproducibility				
Linear characteristic			≤ 0.15 %	
- r ≤ 10	≤ 0.15 %			
- 10 < r ≤ 30	≤ 0.3 %			
- 30 < r ≤ 100	$\leq (0.0075 \cdot r + 0.075) \%$			
Long-term stability (temperature change \pm 30 °C (\pm 54 °F))	≤ (0.25 · r)% every 5 ye static pressure max. 70		≤ 0.25 % every 5 years static pressure max. 7	
Influence of ambient temperature				
• at -10 +60 °C (14 140 °F)				
- 250 mbar- (100 in ${ m H}_2{ m O}$)-measuring cell	$\leq (0.5 \cdot r + 0.2) \%^{1) 4}$		≤ 0.7 %	
- 600 mbar- (240 inH ₂ O)-measuring cell	$\leq (0.3 \cdot r + 0.2) \%^{2) 4}$		≤ 0.5 %	
- 1600 and 5000 mbar- (642 and 2000 in $\rm H_2O)$ - measuring cell	$\leq (0.25 \cdot r + 0.2) \%^{3) 4}$		≤ 0.45 %	
• 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 <		≤ 0.4 %/10 K	
- 600 mbar- (240 inH ₂ O)-measuring cell	\leq (0.15 · r + 0.15) %/10 doubled values at 10 <		≤ 0.3 %/10 K	
 1600 and 5000 mbar- (642 and 2000 inH₂O)-measuring cell 	\leq (0.12 · r + 0.15) %/10 K \leq 0.27 %/10 K double values at 10 < r \leq 30			

Pressure Measurement Transmitters for general requirements SITRANS P DS III for level

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 % per nominal pressure	
- 600 mbar- (240 inH ₂ O)-measuring cell	≤ (0.15 · r) % per nominal pressure	≤ 0.15 % per nominal pressure	
- 1600 and 5000 mbar- (642 and 2000 inH ₂ O)- measuring cell		≤ 0.1 % per nominal pressure	
• on the span	≤ (0.1 · r) % per nominal pressure	≤ 0.1 % per nominal pressure	
Measured Value Resolution	-	3 · 10 ⁻⁵ of nominal measuring range	
Rated conditions		o to ornaminarmeasaring range	
Degree of protection to IEC 60529	IP65 (aptio	nal IP65/IP68)	
• ,	, , , , , , , , , , , , , , , , , , ,	·	
Temperature of medium	permissible operating pressure of	f max. permissible operating temperature to max of the respective flange connection!	
Measuring cell with silicone oil filling		C (-40 +212 ⁵⁾ °F)	
- High-pressure side	p _{abs} < 1 bar: -40	-175 °C (-40 +347 °F) +80 °C (-40 +176 °F)	
- Low-pressure side	-40 +100 °C -20 +60 °C (-4 +140 °F) in con	C (-40 +212 °F) junction 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 %, condensation	on permissible, suitable for use in the tropics	
Electromagnetic Compatibility	, , , , , , , , , , , , , , , , , , ,		
- Emitted interference and interference immunity	Acc. to IEC 61326 and NAMUR NE 21		
Design			
Weight (without options)			
 To EN (pressure transmitter with mounting flange, without tube) 	≈ 11 13 kg (≈ 24.2 28.7 (lb)	
To ASME (pressure transmitter with mounting flange, without tube)	≈ 11 18 kg ((≈ 24.2 39.7 lb)	
Enclosure material	Low-copper die-cast aluminum, GD-AlSi12 or	stainless steel precision casting, mat. no. 1.440	
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, plex, mat. no. 1.4462	
Measuring cell filling	· ·	cone oil	
Process connection			
High-pressure side	Flange to F	EN and ASME	
• Low-pressure side	Female thread 1/4-18 NPT and flange connec	otion with mounting thread M10 to DIN 19213 or F to EN 61518	
Power supply U_{H}	. 10 ==	Supplied through bus	
Terminal voltage on transmitter	10.5 45 V DC	-	
Separate 24 V power supply necessary	10.5 30 V DC in intrinsically-safe mode	No	
Bus voltage			
•		0 32 V	
• 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	
		45.5	
 Max. current in event of fault 	-	15.5 mA	

Transmitters for general requirements

SITRANS P DS III for level

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		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: $U_{\rm i}=30$ V, $I_{\rm i}=100$ mA, $P_{\rm i}=750$ mW; $P_{\rm i}=300$ Ω	FISCO supply unit: $U_0 = 17.5 \text{ V}$, $I_0 = 380 \text{ mA}$, $P_0 = 5.32 \text{ W}$ Linear barrier: $U_0 = 24 \text{ V}$, $I_0 = 250 \text{ mA}$, $P_0 = 1.2 \text{ W}$			
- Effective internal inductance/capacitance	$L_i = 0.4 \text{ mH}, C_i = 6 \text{ nF}$	$L_i = 7 \mu\text{H}, C_i = 1.1 \text{nF}$			
• Explosion-proof "d"		ATEX 1160			
- Marking	Ex II 1/2 G Ex	d IIC T4/T6 Gb			
- Permissible ambient temperature	-40 +85 °C (-40 +185 °F) temperature class T4; -40 +60 °C (-40 +140 °F) temperature class T6				
- Connection	To circuits with values: $U_{\rm H}$ = 10.5 45 V DC	To circuits with values: $U_{\rm H}$ = 9 32 V DC			
 Dust explosion protection for zone 20 	PTB 01 ATEX 2055				
- Marking	Ex II 1 D 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)			
- Connection	To certified intrinsically-safe circuits with peak values: $U_{\rm i}=30$ V, $I_{\rm i}=100$ mA, $P_{\rm i}=750$ mW, $P_{\rm i}=300$ Ω	FISCO supply unit: $U_0 = 17.5 \text{ V}$, $I_0 = 380 \text{ mA}$, $P_0 = 5.32 \text{ W}$ Linear barrier: $U_0 = 24 \text{ V}$, $I_0 = 250 \text{ mA}$, $P_0 = 1.2 \text{ W}$			
- Effective internal inductance/capacitance	$L_{i} = 0.4 \text{ mH}, C_{i} = 6 \text{ nF}$	$L_{i} = 7 \mu H, C_{i} = 1.1 nF$			
Dust explosion protection for zone 21/22	PTB 01 /	ATEX 2055			
- Marking	Ex II 2 D 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 CIIC T4/T5/T6 Gc			
- Connection (Ex nA)	$U_{m} = 45 \; V$	$U_{\rm m} = 32 \text{ V}$			
- Connection (Ex ic)	To circuits with values: $U_i = 45 \text{ V}$	FISCO supply unit ic: $U_{\rm o}$ = 17.5 V, $I_{\rm o}$ = 570 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 		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 Co	mpliance 1153651			
- Identification (XP/DIP) or (IS)		FG; CL III; Ex ia IIC T4T6; CL I, DIV 2, GP ABCD IV 2, GP FG; CL III			

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

²⁾ Conversion of temperature error per 28 °C. Valid for temperature range -3 ... +53 °C < (0.24 · 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

SITRANS P DS III

			ioi ievei
HART communication		FOUNDATION Fieldbus communication	
HART	230 1100 Ω		O function blocks and as incut
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	4	ic process variables	characteristic
master class 2 (max.)		- Electrical damping, adjustable	0 100 s
The address can be set using	Configuration tool or local operation (standard setting address 126)	- Simulation function	Output/input (can be locked within the device with a bridge)
Cyclic data usage	·	- Failure mode	parameterizable (last good value, substitute value, incorrect
Output byte	5 (one measured value) or 10 (two measured values)	- Limit monitoring	value) 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 Pro-	• PID	Standard FOUNDATION Field-
Bevice prome	cess Control Devices Version		bus function block
	3.0, Class B	 Physical block 	1 resource block
Function blocks	2	Transducer blocks	1 transducer block Pressure with
Analog input			calibration, 1 transducer block LCD
 Adaptation to customer-specific process variables 	Yes, linearly rising or falling characteristic	Pressure transducer block	
- Electrical damping, adjustable	0 100 s	- Can be calibrated by applying	Yes
- Simulation function	Input/Output	two pressures	Yes
- Failure mode	parameterizable (last good	Monitoring of sensor limitsSimulation function: Measured	
	value, substitute value, incorrect value)	pressure value, sensor temperature and electronics tempera-	Constant value or over parameterizable ramp function
- Limit monitoring	Yes, one upper and lower warn- ing limit and one alarm limit	ture	
	respectively	Mounting flange	
Register (totalizer)	Can be reset, preset, optional	Nominal diameter	Nominal pressure
	direction of counting, simulation function of register output	• Acc. to EN 1092-1	
- Failure mode	parameterizable (summation	- DN 80	PN 40
- Tallule Mode	with last good value, continuous	- DN100	PN16, PN40
	summation, summation with incorrect value)	• To ASME B16.5	
- Limit monitoring	One upper and lower warning	- 3 inch	Class 150, class 300
2	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	Yes		

Constant value or over parameterizable ramp function

Yes

Max. 30 nodes

Parameterizable

two pressures

- Monitoring of sensor limits

- Specification of a container

- Gradual volume suppression and implementation point of square-root extraction

- Simulation function for measured pressure value and sensor temperature

characteristic withSquare-rooted characteristic for flow measurement

Transmitters for general requirements

SITRANS P DS III for level

Selection and Ordering	g data	Artio	cle	Nc).			_
Pressure transmitter fo		7 M						
SITRANS P DS III with								
Measuring cell filling	Measuring cell cleaning							
Silicone oil	normal	1						
Measuring span (min.	max.)							
25 250 mbar	(10 100 inH ₂ O)	D						
25 600 mbar	(10 240 inH ₂ O)	E						
53 1600 mbar	(21 642 inH ₂ O)	F						
0.16 5 bar	(64.3 2000 inH ₂ O)	G						
Process connection of	f low-pressure side T with flange connection							
 Mounting thread ⁷/₁₆-² 			2					
 Mounting thread 7₁₆-2 Mounting thread M10 			0					
(only for replacement			ľ					
Non-wetted parts mate	erials							
process flange screws	Electronics housing							
Stainless steel	Die-cast aluminum			2				
Stainless steel	Stainless steel precision casting ¹⁾			3				
Version	-							
 Standard versions 					1			
• International version, E	English label inscriptions,				2			
documentation in 5 lar (no Order code select								
	abie)	_						
Explosion protectionNone					A			
 With ATEX, Type of pro 	otection:				^			
- "Intrinsic safety (Ex i					В			
- "Explosion-proof (Ex					D			
 "Intrinsic safety and (Ex ia + Ex d)"³⁾ 	flameproof enclosure"				P			
- "Ex nA/ic (Zone 2)" 4)				E			
	osion-proof enclosure and				R			
dust explosion prote Zone 1D/2D)*3)	ction (Ex ia+ Ex d +							
 FM + CSA intrinsic sat 	e (is)				F			
• FM + CSA (is + ep) +	, ,				S			
With FM + CSA, Type Watring a Cofe and Free						_		
	xplosion Proof (is + xp)"1)				N	С		
Electrical connection/o						٨		
Screwed gland Pg 13.Screwed gland M20x1						A B		
 Screwed gland 1/2-14 f 						C		
Han 7D plug (plastic h						D		
connector ³⁾								
• M12 connectors (stain	lless steel) ^{5) 6) 7)}					F		
Display								
Without display							0	
Without visible display (display concealed, see							1	
(display concealed, seWith visible display	etting. IIIA)						6	
With visible display With customer-specific	c display (setting as						7	
specified, Order code	"Y21" or "Y22" required)							
							- 4	

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 Y01: 80 to 143 mbar (1.16 to 2.1 psi) 7MF4912-3GE01 C line:

Item line 2:

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 nL.
- $^{5)}\,$ Not in conjunction with types of protection "Explosion-proof" and "Ex nA", "Intrinsic safety" and "Explosion-proof".
- 6) M12 delivered without cable socket
- 7) Not available with protection type "Ex d" (optiones D, P, N and R)

Transmitters for general requirements

SITRANS P DS III for level

Colontion and O	lovina data	۸+: -	lo Ni	lo.			
Selection and Ord Pressure transmit	<u> </u>	Artic	ie iv	iO.			J
		7 1/1 5		2 /			
	with PROFIBUS PA (PA)		7 M F 4 6 3 4 - 7 M F 4 6 3 5 -				
(FF)	with FOUNDATION Fieldbus	/ IVI F					
()		1=1					
Nominal measuring	ng range				Н		
250 mbar	(100 inH ₂ O)	D					
600 mbar	(240 inH ₂ O)	E					
1600 mbar	(642 inH ₂ O)	F					
5 bar	(2000 inH ₂ O)	G					
Process connecti	on of low-pressure side						
	8 NPT with flange connection						
	⁷ / ₁₆ -20 UNF to IEC 61518		2				
 Mounting thread 			0				
	ment requirement)						
Non-wetted parts process flange scr							
Stainless steel Stainless steel	Die-cast aluminum Stainless steel precision		2 3				
Starriess steer	casting		J				
(no Order code s Explosion protect None With ATEX, Type Intrinsic safety Explosion-proc Intrinsic safety Ex ia + Ex d)" ² "Ex nA/ic (Zone	of protection: (Ex ia)" of (Ex d)" of (Ex d)" and flameproof enclosure" 2)" 3)	-			A B D P		
 Intrinsic safety, dust explosion Zone 1D/2D)⁽²⁾ FM + CSA intrins 	explosion-proof enclosure and protection (Ex ia + Ex d + (not for DS III FF) ic safe (is)				R F		
	ep) + Ex ia + Ex d (ATEX)				s		
• With FM + CSA,							
- "Intrinsic Safe u	nd Explosion Proof (is + xp)" ¹⁾				NC	;	
Electrical connect	tion/cable entry	_					
 Screwed gland M 					E	3	
 Screwed gland ½ 	2-14 NPT				C		
M12 connectors	(stainless steel) ^{4) 5)}				F		
Display						l.	
Without display						0	
 Without visible di (display conceale 						1	
 With visible displ 	,					6	
	pecific display (setting as					7	
	code "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.
- $^{\rm 3)}$ Configurations with HAN and M12 connectors are only available in Ex nL.
- 4) M12 delivered without cable socket
- 5) Not in conjunction with types of protection "Explosion-proof" and "Ex nA", "Intrinsic safety" and "Explosion-proof".

Transmitters for general requirements SITRANS P DS III for level

Selection and Ordering data	Order	code		
Further designs		HART	PA	FF
Add "-Z" to Article No. and specify Order code.				
O-rings for process flanges on low-pressure side (instead of FPM (Viton)) • PTFE (Teflon) • FEP (with silicone core, approved for food) • FFPM (Kalrez, compound 4079) • NBR (Buna N)	A20 A21 A22 A23	* * * * * * * * * * * * * * * * * * *	✓ ✓ ✓ ✓ ✓	* * * *
Plug • Han 7D (metal, gray) • Han 8U (instead of Han 7D) • Angled • Han 8D (metal, gray)	A30 A31 A32 A33	* * * * * * * * * * * * * * * * * * *		
Sealing screw 1/4-18 NPT, with valve in mat. of process flanges Cable sockets for M12 connectors (stain-	A40 A50	√	√	✓
Rating plate inscription (instead of German) • English • French • Spanish • Italian	B11 B12 B13 B14	* * * * * * * * * * * * * * * * * * *	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
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	✓	✓	1
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 www.siemens.com/automation/support-request)	C 99	✓	✓	√
Setting of upper limit of output signal to 22.0 mA	D05	✓		
Degree of protection IP65/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	✓	√

Selection and Ordering data	Order code					
Further designs		HART PA F				
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)")						
Overfilling safety device for flammable and non-flammable liquids (max. PN 32 (MAWP 464 psi), basic device	E08	✓				
with type of protection "Intrinsic safety (Ex ia)", to WHG and VbF, not together with measuring cell filling "inert liquid")						
Export approval Korea	E11	✓	✓	✓		
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)	E26 ²⁾	✓	✓	✓		
(only for transmitter 7MF4D)	2\					
Explosion-proof "Intrinsic safety" (Ex ia + Ex d) to INMETRO (Brazil)	E28 ²⁾	✓	✓			
(only for transmitter 7MF4P)	E45 ²⁾			,		
Ex Approval IEC Ex (Ex ia) (only for transmitter 7MF4B)	E45 /	•	•	•		
Ex Approval IEC Ex (Ex id) (only for transmitter 7MF4	E46 ²⁾	✓	✓	✓		
Explosion-proof "Intrinsic safety" to NEPSI (China)	E55 ²⁾	✓	✓	✓		
(only for transmitter 7MF4B)						
Explosion protection "Explosion-proof" to NEPSI (China)	E56 ²⁾	✓	✓	✓		
(only for transmitter 7MF4D)	2\					
Ex protection "Zone 2" to NEPSI (China) (only for transmitter 7MF4E)	E57 ²⁾	√	✓	✓		
"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	✓	✓	✓		
Transient protector 6 kV (lightning protection)	J01	✓	✓	✓		

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.

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 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	✓	✓	✓
Measuring point text (entry in device variable)	Y 16	✓	✓	1
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 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/cm², kg/cm², 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" is essential, unit with max. 5 characters)	Y22 ³⁾ + Y01	√		
Preset bus address possible between 1 and 126 Specify in plain text: Y25:	Y2 5		✓	✓
Damping adjustment in seconds (0 100 s)	Y 30	1	✓	1

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

Pressure Measurement Transmitters for general requirements SITRANS P DS III for level

Selection and Orderi	ng data	Art	icl	e l	Vo	o. Ord	. С	00	de
Mounting flange	-	7 N	ΛF	4	9	12-			
Directly mounted on the transmitter (converter series	ne SITRANS P pressure part) for level, for DS III	3							
Connection to EN 10	92-1								
Nominal diameter DN 50	Nominal pressure PN 40	,							
DN 80 DN 100	PN 100 PN 40 PN 16	E [)						
DIN 100	PN 40	H							
Connection to ASME	B16.5								
Nominal diameter	Nominal pressure								
2 inch	class 150	L							
	class 300	N	Λ						
	class 400/600	١	1						
	class 900/1500	F	•						
3 inch	Class 150		2						
	Class 300	F	₹						
4 inch	Class 150	1	Г						
	Class 300	ι	J						
Other version, add Or Nominal diameter:;	der code and plain text: Nominal press.:	2	2				J	1	Υ
Wetted parts materia	ıls								
 Stainless steel 316L 			Α						
 Coated with PFA 			D						
- Coated with PTFE	1)			0					
 Coated with ECTFE¹ 	''		F						
• Monel 400, mat. no.	2.4360		G						
 Hastelloy C276, mat 			J						
 Hastelloy C4, mat. n 	o. 2.4610		U						
 Tantalum 			K						
 Duplex 2205, mat. n 			Q						
•	o. 1.4462, incl. main body		R						
 Stainless steel 316L thickness approx. 29 			S	0					
Tube length	<u> </u>			۰					
• None	(1.07 in ab)			0					
• 50 mm • 100 mm	(1.97 inch) (3,94 inch)			1 2					
• 150 mm	(5,94 mch)			3					
• 200 mm	(7.87 inch)			4					
	der code and plain text:		7	8			K	1	v
material of parts in co	ntact with medium:,		ľ	Ü			ľ	•	•
tubus length:									
Filling liquid									
• Silicone oil M5					1				
Silicone oil M50					2				
High-temperature oi					3				
 Halocarbon oil (for 0 Glycerin/water²⁾ 	2-measurement)				4				
Food oil (FDA-listed)	١				6 7				
,)								
Other version, add	toyt:				9		M	1	Y
Order code and plain filling liquid:	IGAL.								
19 119414									

¹⁾ For vacuum on request

Selection and Ordering data	Order	code		
Further designs		HART	PA	FF
Add "-Z" to Article No. and specify Order code.				
Spark arrester	A01	✓	✓	✓
For mounting on zone 0 (incl. documentation)	Ban	./	./	./
Remote seal nameplate attached out of stainless steel, contains Arti- cle No. and order number of the remote seal supplier	B20	•	•	•
2.2 Certificate for oil-free and grease-free cleaning For inert filling liquid, not for operation with oxygen, Option E10 cannot be selected.	C10	✓	✓	✓
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 Only in conjunction with filling liquid "Food oil" (FDA listed)"	C17	✓	✓	✓
"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	C23	1	1	
(only for conjunction with the Order code "C23" in the case of SITRANS P DS III transmitter)	023	·	•	
Certification acc. to NACE MR-0175 Includes acceptance test certificate 3.1 acc. to EN 10204 (only for wetted parts made of stain- less steel 1.4404/316L and Hastelloy C276)	D07	✓	√	✓
Certification acc. to NACE MR-0103 Includes acceptance test certificate 3.1 acc. to EN 10204 (only for wetted parts made of stain- less steel 1.4404/316L and Hastelloy C276)	D08	✓	✓	✓
Epoxy painting Not possible with vacuum-proof design	E15	✓	✓	✓
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 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)	J12	√	✓	✓
Sealing surface groove, EN 1092-1, form D instead of sealing surface B1 (only for wetted parts made of stainless steel 316L)	J14	✓	✓	✓
Sealing surface RJF (groove) ASME B16.5 instead of sealing surface ASME B16.5 RF 125 250 AA (only for wetted parts made of stainless steel 316L)	J24	✓	✓	✓
Elongated pipe, 150 mm instead of 100 mm, max. medium temperature 250 °C, observe the maximum permissible media temperature of the filling liquid.	R15	✓	√	✓
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.	V04	✓	✓	✓

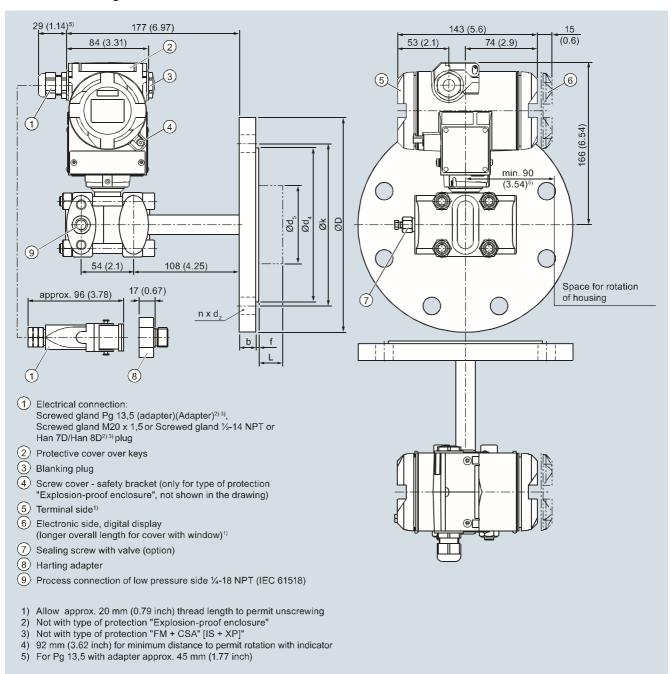
✓ = available

²⁾ Not suitable for use in low-pressure range

Transmitters for general requirements

SITRANS P DS III

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 explosionprotected pressure transmitters. The supplementary electronics is fitted in a light metal housing which is mounted on the left side of the pressure transmitter.

Note on ordering:

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

Technical specifications

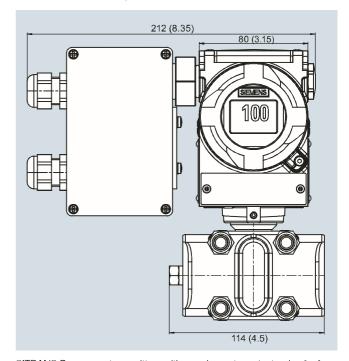
SITRANS P, supplementary electro	onics for 4-wire connection
Output	
Output signal	0 20 mA or 4 20 mA
Load	Max. 750 Ω
Voltage measurement	Linear (square-rooting in transmitter if necessary)
Electrical isolation	Between power supply and input/ output
Measuring accuracy	acc. to IEC 60770-1
Measurement 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 \times H \times D) in mm 80 x 120 x 60 (3.15 x 4.72 x 2.36) (inch) Screw terminals (Pg 13.5 cable inlet) or Han 7D / Han 8U plug Electrical connection Power supply Supply voltage 230 V AC (-10 ... +6 %, 47 ... 63 Hz, approx. 6 VA) or 24 V AC/DC (24 V AC \pm 10 %, 47 ... 63 Hz, approx. 3 VA) Approx. 2.5 V pp

Dimensional drawings

fied limits)

Permissible ripple (within the speci-

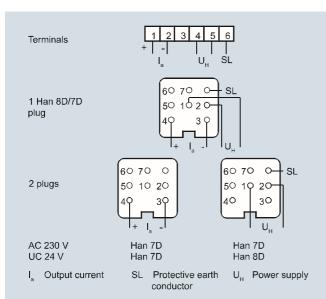


SITRANS P pressure transmitters with supplementary electronics for fourwire connection, dimension drawing, dimensions in mm

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	Selection and Ordering data			er code	
Supplementary electronics for 4-wire connection Article No. of the transmitter 7MF4.33AB. add "-Z" and Order code.					
Power supply	Electrical connection				
24 V AC/DC	Terminals; 2 Pg screwed glands, to left		1		
	2 Han 7D/Han 8U plugs incl. mating connector, to left		3		
	1 Han 7D plug incl. mating connector, angled		5		
	Terminals; 1 Pg screwed gland, downwards		6		
	1 Han 8U plug incl. mating connector, downwards (observe arrangement of plug and differential pressure line)		9		
230 V AC	Terminals; 2 Pg screwed glands, to left		7		
	2 Han 7D plugs incl. mating connector, to left		8		
Output current	:				
0 20 mA			(
4 20 mA			1		
Accessories	Accessories				
Instruction Ma German/English		A	5E	00322799	

Pressure Measurement Transmitters for general requirements SITRANS P DS III Accessories/Spare Parts

Selection and Orde	ring data	Ar	Article No.				
Replacement measuring cell for pressure			7MF4990-				
for SITRANS P DS I	II		0 - 0 D B 0				
Measuring cell fillin Silicone oil Inert liquid	g Measuring cell cleaning Normal grease-free to cleanliness level 2	1 3					
Measured span (mi	n max.)						
0.01 1 bar 0.04 4 bar 0.16 16 bar 0.63 63 bar 1.6 160 bar 4.0 400 bar 7.0 700 bar	(0.15 14.5 psi) (0.6 58 psi) (2.32 232 psi) (9.14 914 psi) (23.2 2320 psi) (58.0 5802 psi) (102.0 10153 psi)	E C E F) 				
Wetted parts mater							
Seal diaphragm	Process connection						
Stainless steel Hastelloy Hastelloy	Stainless steel Stainless steel Hastelloy		A B C				
Process connection	1						
 Connection shank Female thread ½-1 Oval flange made of max. span 160 bar Mounting thread Mounting thread 	4 NPT of stainless steel, (2320 psi) 7/ ₁₆ -20 UNF to IEC 61518			0 1 2 3			
Further designs			dei	r code			
Please add "-Z" to Ar Order code.	ticle No. and specify						
Inspection certifica to EN 10204-3.1	te	C1	2				

Selection and Orde	ring data	А	rticle	No.		
Replacement measuring cell for absolute pressure for SITRANS P DS III (from the			7MF4992-			
pressure series)	•			0-0080		
Measuring cell fillin	g Measuring cell cleaning					
Silicone oil	Normal	1				
Inert liquid	grease-free to cleanliness level 2	3				
Measured span (mir	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 materi	als					
Seal diaphragm	Process connection					
Stainless steel	Stainless steel		Α			
Hastelloy	Stainless steel		В			
Hastelloy	Hastelloy		С			
Process connection	1					
• Connection shank	G½B to EN 837-1		()		
• Female thread ½-1	4 NPT		1			
• Oval flange made						
max. span 160 bar						
	⁷ / ₁₆ -20 UNF to IEC 61518		2			
- Mounting thread	M10 to DIN 19213		3			
Further designs			rder	code		
Please add "-Z" to Ar Order code.	ticle No. and specify					
Inspection certificate to EN 10204-3.1	te	С	12			

Transmitters for general requirements

SITRANS P DS III Accessories/Spare Parts

,				
Selection and Order	ing data	Article No.		
Replacement measu	ring cell for absolute pres-	7MF4993-		
SITRÀNS P DS III with	ential pressure series) for h HART, DS III with PROFIBUS UNDATION Fieldbus series	- 0 D C 0		
Measuring cell filling	Measuring cell cleaning			
Silicone oil	Normal	1		
Inert liquid	grease-free to cleanliness level 2	3		
Measured span (min				
8.3 250 mbar a	(0.12 3.62 psia)	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 E		
Wetted parts materia				
Seal diaphragm	Parts of measuring cell			
Stainless steel	Stainless steel	A		
Hastelloy	Stainless steel	В		
Hastelloy	Hastelloy	C		
Tantalum	Tantalum	E		
Monel	Monel	H		
Gold	Gold			
Process connection	NPT with flange connection			
	<u> </u>			
Seaming screw oppo	site process connection	0		
	/ ₁₆ -20 UNF to IEC 61518	2		
 Vent on side of proc 		-		
- Mounting thread N		4		
	/ ₁₆ -20 UNF to IEC 61518	6		
Non-wetted parts ma	**			
 Stainless steel proc 		2		
Further designs Please add "-Z" to Art Order code.	icle No. and specify	Order code		
	flamen a			
O-rings for process (instead of FPM (Vitor				
(Instead of FPM (Vitor • PTFE (Teflon)	1))	A20		
	ore, approved for food)	A20 A21		
• FEP (with silicone ci • FFPM (Kalrez, comp		A21 A22		
• PPPW (Railez, comp • NBR (Buna N)	Journa 4079)	A23		
	_			
Inspection certificat to EN 10204-3.1	e	C12		
Process connection	G½B	D16		
Remote seal flanges		D20		
(not together with K0	<u> </u>			
Vent on side for gas	measurements	H02		
Process flanges		Koo		
• with process flance	made of	K00		
with process flange	made of	K01		
- Hastelloy - Monel		K01 K02		
Stainless steel with	h PVDE incert	K02 K04		
max. PN 10 (MAW		NU4		
	of medium 90 °C (194 °F)			
For 1/2-14 NPT inne	er process connection on the			
	of the process flange, vent			
valve not possible				
1) Not for span "5.3	100 bar (76.9 1450 psi)"			

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

Selection and Orde	ring data	Article	e No.
Replacement meas	uring cell for differential	7 M F 4	1994-
pressure and PN 32	2/160 (MAWP 464/2320 psi) for	1000	- 0 DC 0
SITRANS P DS III wi PA and DS III with Fi	th HART, DS III with PROFIBUS OUNDATION Fieldbus series		- 0000
•	ng Measuring cell cleaning		
Silicone oil	Normal	1 3	
Inert liquid	grease-free to cleanliness level 2	3	
Measured span (mi			
PN 32 (MAWP 464 p	•		
1 20 mbar ¹⁾	(0.4 8 inH ₂ O)	В	
PN 160 (MAWP 232)) psi)		
1 60 mbar	(0.4 24 inH ₂ O)	С	
2.5 250 mbar	(1 100 inH ₂ O)	D	
6 600 mbar	(2.4 240 inH ₂ O)	E	
16 1600 mbar	(6.4 642 inH ₂ O)	F	
50 5000 mbar	(20 2000 inH ₂ O)	G	
0.3 30 bar	(4.35 435 psi)	Н	
Wetted parts mater	ials		
(stainless steel proc			
Seal diaphragm	Parts of measuring cell		
Stainless steel Hastelloy	Stainless steel Stainless steel	B	
Hastellov	Hastelloy	A B C E	
Tantalum ²⁾ Monel ²⁾	Tantalum	H	
Gold ²⁾	Monel Gold		
Process connectio		_	
	NPT with flange connection		
	osite process connection		
	M10 to DIN 19213		0
	⁷ / ₁₆ -20 UNF to IEC 61518	1	2
 Vent on side of pro 			
Mounting thread Mounting thread	M10 to DIN 19213 ⁷ / ₁₆ -20 UNF to IEC 61518		4 6
Non-wetted parts n		- '	
Stainless steel proce			2
·	see hange corewe	Ordor	
Further designs Please add "-7" to A	rticle No. and specify Order	Order	code
code.	rue of the and opening order		
O-rings for process	s flanges		
(instead of FPM (Vite	=		
PTFE (Teflon)		A20	
	core, approved for food)	A21	
 FFPM (Kalrez, con 	npound 4079)	A22	
• NBR (Buna N)		A23	
Inspection certifica	ite	C12	
to EN 10204-3.1			
Remote seal flange		D20	
(not together with K	טו, KU2 and KU4)		
Vent on side for ga	s measurements	H02	
	cess flanges for vertical	H03	
differential pressur			
(not together with K	01, K02 and K04)		
Process flanges			
without		K00	
 with process flang 	e made of		
- Hastelloy		K01	
- Monel		K02	
- Stainless steel w		K04	
max. PN 10 (MA)			
For 16, 14 NPT in	e of medium 90 °C (194 °F) ner process connection on the		
side in the middl	e of the process flange, vent		
side in the middl valve not possibl	e of the process flange, vent		

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).

Pressure Measurement Transmitters for general requirements SITRANS P DS III Accessories/Spare Parts

Selection and Ordering	g data	Artic	le N	10.	
Replacement measuring	ng cell for differential	7MF4995-			
pressure and PN 420 (MAWP 6092 psi) for IART, DS III with PROFIBUS			- 0 D C 0	
PA and DS III with FOU	NDATION Fieldbus series				
Measuring cell filling	Measuring cell cleaning				
Silicone oil	Normal	1			
Measured span (min					
2.5 250 mbar	(1 100 inH ₂ O)	D			
6 600 mbar	(2.4 240 inH ₂ O)	E			
16 1600 mbar	(6.4 642 inH ₂ O)	F			
50 5000 mbar 0.3 30 bar	(20 2000 inH ₂ O) (4.35 435 psi)	G H			
	1 /	П			
Wetted parts materials (stainless steel process					
Seal diaphragm	Parts of measuring cell				
Stainless steel	Stainless steel	A			
Hastelloy	Stainless steel	В			
Gold ¹⁾	Gold	Ĺ			
Process connection					
Female thread 1/4-18 NP	T with flange				
connection					
 Sealing screw opposit 	'				
- Mounting thread M12 to DIN 19213			1		
- 14	₃ -20 UNF to IEC 61518		3		
 Vent on side of proces 	9				
- Mounting thread M1:			5		
- Mounting thread ⁷ / ₁₆	₃ -20 UNF to IEC 61518		7		
Non-wetted parts mate	erials				
 Stainless steel proces 	s flange screws		2		
Further designs		Order code			
Please add "-Z" to Article No. and specify Order code.					
O-rings for process fla	nges				
(instead of FPM (Viton))		A20			
• PTFE (Teflon)					
FEP (with silicone core, approved for food)FFPM (Kalrez, compound 4079)					
 Reply (Kairez, compos NBR (Buna N) 	una 4079)	A22 A23			
Inspection certificate					
to EN 10204-3.1					
Stainless steel process flanges for vertical differential pressure lines			H03		
without process flange)S	K00			
. •					

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

Selection and Ordering data

Pressure Measurement

Transmitters for general requirements SITRANS P DS III Accessories/Spare Parts

Accessories/Spare Parts	
Selection and Ordering data	Article No.
Spare parts/Accessories	
Mounting bracket and fastening parts for pressure transmitters SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus (7MF403,C.)	
For absolute pressure transmitters SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus (7MF423C.) • made of steel	7MF4997-1AB
made of stainless steel	7MF4997-1AH
Mounting bracket and fastening parts	
for pressure transmitters SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus (7MF403A.,B.,D. andF.) For absolute pressure transmitters SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus 7MF423A.,B.,D. andF.)	
made of steelmade of stainless steel	7MF4997-1AC 7MF4997-1AJ
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)	7WI 4997-1740
made of steelmade of stainless steel	7MF4997-1AD 7MF4997-1AK
Mounting and fastening brackets For differential pressure transmitters with flange thread M12 SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus (7MF453) • made of steel	7MF4997-1AE
made of steel made of stainless steel	7MF4997-1AL
Mounting and fastening brackets For differential and absolute pressure transmitters with flange thread 7/16 -20 UNF SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus (7MF433, 7MF443 and 7MF453) • made of steel • made of stainless steel	7MF4997-1AF 7MF4997-1AM
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
Cover	
made of stainless steel, including gasket, for SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus • without window • with window	7MF4997-1BC 7MF4997-1BF
Digital indicator Including mounting material for SITRANS P DS III with HART, DS III with PROFIBUS PA and DS III with FOUNDATION Fieldbus	7MF4997-1BR
Measuring point label • without inscription (5 units) • Printed (1 unit) Data according to Y01 or Y02, Y15, Y16 and Y99 (see "Pressure transmitters")	7MF4997-1CA 7MF4997-1CB-Z Y:

Selection and Ordering data	ATTICLE INC.
Mounting screws	
For measuring point label, grounding and connection terminals or for display (50 units)	7MF4997-1CD
Sealing screws (1 set = 2 units) for process flange • made of stainless steel • made of Hastelloy	7MF4997-1CG 7MF4997-1CH
Sealing screws with vent valve Complete (1 set = 2 units)	
• made of stainless steel	7MF4997-1CP
made of Hastelloy	7MF4997-1CQ
Electronics for SITRANS P DS III with HART for SITRANS P DS III with PROFIBUS PA for SITRANS P DS III with FOUNDATION Fieldbus	7MF4997-1DK 7MF4997-1DL 7MF4997-1DM
Connection board	
for SITRANS P DS III for SITRANS P DS III PROFIBUS PA and	7MF4997-1DN 7MF4997-1DP
FOUNDATION Fieldbus	7 MI 4337-1DI
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
Sealing ring for process connection	see "Fittings"
Weldable sockets for PMC connection	300 Tittings
 PMC Style Standard: Thread 1½" 	7MF4997-2HA
PMC Style Minibolt: front-flush 1"	7MF4997-2HB
Gaskets for PMC connection (packing unit = 5 units)	
PTFE seal for PMC Style Standard: Thread 1½"	7MF4997-2HC
Gasket made of Viton for PMC Style Minibolt: front-flush 1"	7MF4997-2HD
Weldable socket for TG52/50 and TG52/150	
connection TG52/50 connection	7MF4997-2HE
• TG52/150 connection	7MF4997-2HF
Seals for TG 52/50 and TG 52/150 made of silicone (FDA compliant)	7MF4997-2HG
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)	7MF4997-2HH 7MF4997-2HJ 7MF4997-2HK 7MF4997-2HL
Available ex stock	

Article No.

Transmitters for general requirements

SITRANS P DS III Accessories/Spare Parts

Selection and Ordering data	Article No.
Operating Instructions ¹⁾	
for SITRANS DS III with HART	
- German	A5E00047090
- English	A5E00047092
- French	A5E00053218
- Spanish	A5E00053219
- Italian	A5E00053220
 for SITRANS DS III with PROFIBUS PA 	
- German	A5E00053275
- English	A5E00053276
- French	A5E00053277
- Spanish	A5E00053278
- Italian	A5E00053279
 for SITRANS DS III with FOUNDATION Fieldbus 	
- German	A5E00279629
- English	A5E00279627
Compact operating instructions	
The compact operating instructions are avail-	
able in 21 EU languages on the product CD	
supplied with each transmitter. They can also	
be downloaded from the SITRANS P web	
page.	
Brief instruction (Leporello)	
German, English • for SITRANS DS III with HART	A5E00047093
- German, English	A5E00047093
• for SITRANS DS III with PROFIBUS PA	A5E00053274
- German, English	7.02000027
 for SITRANS DS III with FOUNDATION 	A5E00282355
Fieldbus	
- German, English	
CD with SITRANS P documentation	A5E00090345
German, English, French, Spanish, Italian	
incl. compact operating instructions in 21 EU	
languages	
Certificates (order only via SAP)	
instead of Internet download	A=E022E2406
hard copy (to order)on CD (to order)	A5E03252406 A5E03252407
Operating Instructions for replacement of electronics, measuring cell	A5E00078060
and connection board (only available from the	
Internet) ¹⁾	
HART modem	
• with RS232 interface	7MF4997-1DA
• with USB interface	7MF4997-1DB
Supplementary electronics for 4-wire	See page 1/159
connection	

Available ex stock

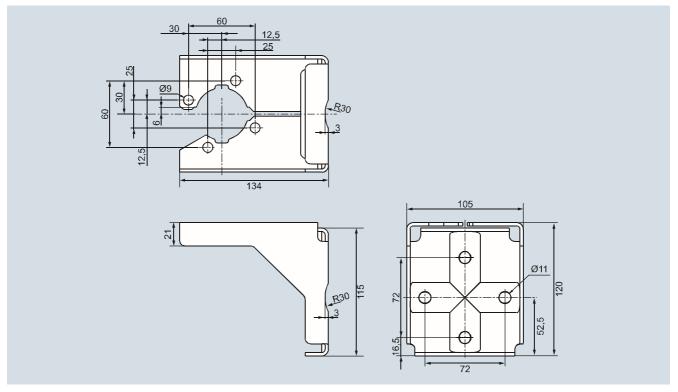
Power supply units see Chap. 7 "Supplementary Components".

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

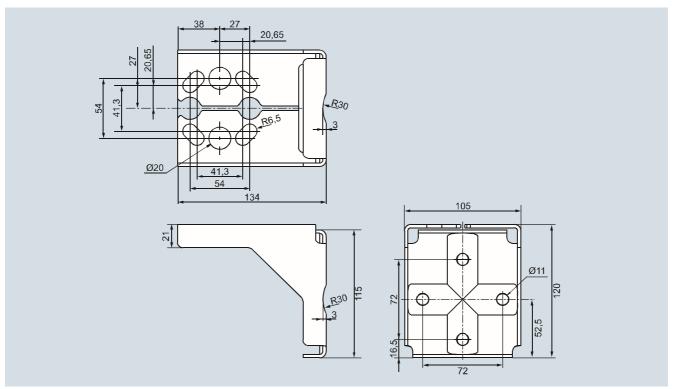
Transmitters for general requirements

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

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

7MF9011-4EA

valve manifold on relative and absolute pressure transmitters



and add Order codes	code
SITRANS P DSIII 7MF4030, 7MF4230 with process connection collar G1/2 A to EN 837-1 with gasket made of PTFE between valve manifold and transmitter	T02
Alternative sealing material:	A 70
Soft ironStainless steel, Mat. No. 14571	A70 A71
• copper	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

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

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

Add 7 to the Article No. of the transmitte



and add Order codes	Order
SITRANS P DSIII 7MF433, 7MF443 and 7MF453 ¹⁾	
mounted with gaskets made of PTFE and screws made of	
 chromized steel 	U01
 made of stainless steel 	U02
Delivery incl. high-pressure test certified by test report to EN 10204-2.2	
Further designs:	
Delivery includes mounting bracket and mounting clips made of	
	A01
mounting clips made of	A01 A02
mounting clips made of • Steel	

7MF9411-5CA valve manifold on differential pressure transmitters



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

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

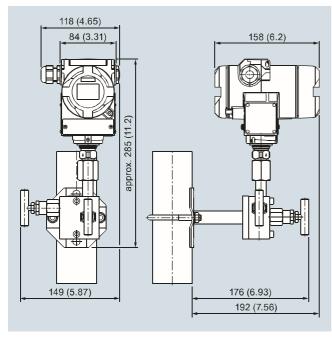
Valve manifolds mounted on SITRANS P DS III



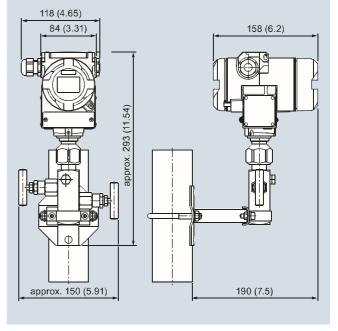
 $7\mbox{MF}9011\mbox{-}4\mbox{EA}$ valve manifold with mounted gauge pressure and absolute pressure transmitters



 $7\mbox{MF}9011\mbox{-}4\mbox{FA}$ 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)



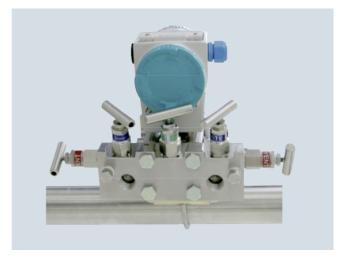
7MF9011-4FA valve manifold with mounted gauge pressure and absolute pressure transmitters, dimensions in mm (inch)

Transmitters for general requirements

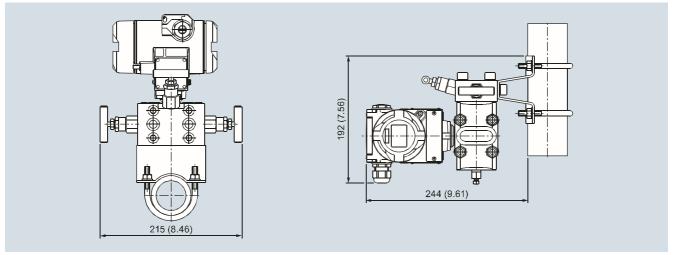
SITRANS P DS III - Factory-mounting of valve manifolds on transmitters



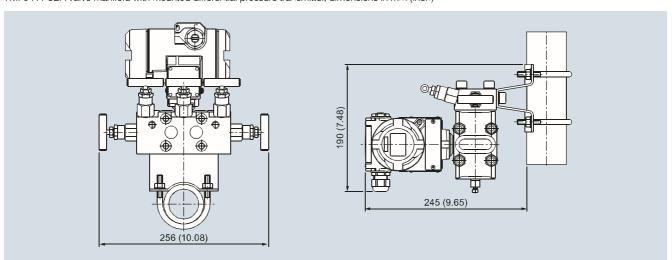
7MF9411-5BA valve manifold with mounted differential pressure transmitter



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



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



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