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

for differential pressure and flow

Technical specifications

SITRANS P, DS III for differential pressure and flow

Input

Measured variable

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

Differential pressure and flow

Fieldbus	
Span Nominal measuring max range	x. operating pressure MAWP (PS)
1 20 mbar 20 mbar 32 b 0.1 2 kPa 2 kPa 3.2 l 0.4 8 inH2O 8 inH2O 464	MPa
0.1 6 kPa 6 kPa 16 M) bar MPa 20 psi
2.5 250 mbar 0.2 25 kPa 1 100 inH ₂ O	
6 600 mbar 0.660 kPa 2.4 240 inH ₂ O 600 mbar 60 kPa 240 inH ₂ O	
16 1600 mbar 1.6 160 kPa 16.4 642 inH ₂ O 1600 mbar 160 kPa 642 inH ₂ O	
50 5000 mbar 5500 kPa 20 2000 inH ₂ O 5000 mbar 500 kPa 2000 inH ₂ O	
0.3 30 bar 0.03 3 MPa 4.35 435 psi 30 bar 3 MPa 435 psi	
0.2 25 kPa 25 kPa 42 N) bar MPa 11 psi
0.660 kPa 60 kPa can	0 bar/50 MPa/7250 psi be ordered optionally with Order de D56)
16 1600 mbar 1.6 160 kPa 6.4 642 inH ₂ O 1600 mbar 160 kPa 642 inH ₂ O	
50 5000 mbar 5 500 kPa 20 2000 inH ₂ O 5000 mbar 500 kPa 2000 inH ₂ O	
0.3 30 bar 0.03 3 MPa 4.35 435 psi 30 bar 3 MPa 435 psi	

Lower measuring limit

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

Upper measuring limit

Start of scale value

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

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

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

100 % of max. span

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

Between the measuring limits (fully adjustable)

1/218

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

SITRANS P, DS III for differential pressure and flow			·
Output	HART		PROFIBUS PA/FOUNDATION Fieldbus
Output signal	4 20 mA		Digital PROFIBUS PA and
Ουτροτ διχτιαι	4 ZU IIIA		FOUNDATION Fieldbus signal
Lower limit (infinitely adjustable)	3.55 mA, factory p	reset to 3.84 mA	-
Upper limit (infinitely adjustable)	23 mA, factory pre optionally set to 22 code D05)		-
Load			
Without HART	$R_{\rm B} \le (U_{\rm H} - 10.5 \text{ V})/U_{\rm H}$: Power supply	$^{\prime}$ 0.023 A in Ω , in V	-
With HART		(SIMATIC PDM) or Ω (HART Communica-	-
Physical bus	-		IEC 61158-2
Protection against polarity reversal	Protected against other with max. su		ty reversal. Each connection against the
Electrical damping (step width 0.1 s)	Set to 2 s (0 100) s)	
Measuring accuracy	Acc. to IEC 60770	-1	
Reference conditions (All error data refer always refer to the set span)	 Increasing chara Start-of-scale val Stainless steel se Silicone oil filling Room temperatu 	lue 0 bar/kPa/psi eal diaphragm	
Measuring span ratio r (spread, Turn-Down)	r = max. measurir	ng span/set measuring	span or nom. pressure range
Error in measurement at limit setting incl. hysteresis and reproducibility			
Linear characteristic			
- 20 mbar/2 kPa/0.29 psi	r ≤ 5 : 5 < r ≤ 10 : 10 < r ≤ 20 :	≤ 0.075 % ≤ (0.0029 · r + 0.07 ≤ (0.0045 · r + 0.07)	
- 60 mbar/6 kPa/0.87 psi	$r \le 5$: $5 < r \le 60$:	≤ 0.075 % ≤ (0.005 · r + 0.05) °	%
 - 250 mbar/25 kPa/3.63 psi 600 mbar/60 kPa/8.7 psi 1600 mbar/160 kPa/23.21 psi 5 bar/500 kPa/72.5 psi 30 bar/3 MPa/435 psi 	r≤5: 5 < r≤100:	≤ 0.065 % ≤ (0.004 · r + 0.045)	%
• Square-rooted characteristic (flow > 50 %)			
- 20 mbar/2 kPa/0.29 psi	$r \le 5$: 5 < $r \le 10$: 10 < $r \le 20$:	$\leq 0.075 \%$ $\leq (0.0029 \cdot r + 0.07)$ $\leq (0.0045 \cdot r + 0.07)$	
- 60 mbar/6 kPa/0.87 psi	r ≤ 5 : 5 < r ≤ 60 :	≤ 0.075 % ≤ (0.005 · r + 0.05)	%
 - 250 mbar/25 kPa/3.63 psi 600 mbar/60 kPa/8.7 psi 1600 mbar/160 kPa/23.21 psi 5 bar/500 kPa/72.5 psi 30 bar/3 MPa/435 psi 	r≤5: 5 <r≤100:< td=""><td>≤ 0.065 % ≤ (0.004 · r + 0.045)</td><td>%</td></r≤100:<>	≤ 0.065 % ≤ (0.004 · r + 0.045)	%
• Square-rooted characteristic (flow > 25 50 %)			
- 20 mbar/2 kPa/0.29 psi	$r \le 5$: 5 < $r \le 10$: 10 < $r \le 20$:	≤ 0.15 % ≤ (0.0058 · r + 0.142 ≤ (0.009 · r + 0.142)	2) % %
- 60 mbar/6 kPa/0.87 psi	r ≤ 5 : 5 < r ≤ 60 :	≤ 0.015 % ≤ (0.01 · r + 0.1) %	
- 250 mbar/25 kPa/3.63 psi 600 mbar/60 kPa/8.7 psi 1600 mbar/160 kPa/23.21 psi 5 bar/500 kPa/72.5 psi 30 bar/3 MPa/435 psi	r≤5: 5 < r≤100:	≤ 0.13 % ≤ (0.008 · r + 0.09) °	%

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

SITRANS P, DS III for differential pressure and flow	
Measuring accuracy (continued)	Acc. IEC 60770-1
Influence of ambient temperature (in percent per 28 °C (50 °F))	
• 20 mbar/2 kPa/0.29 psi	\leq (0.15 · r + 0.1) %
• 60 mbar/6 kPa/0.87 psi	\leq (0.075 · r + 0.1) %
 250 mbar/25 kPa/3.63 psi 600 mbar/60 kPa/8.7 psi 1600 mbar/160 kPa/23.21 psi 5 bar/500 kPa/72.5 psi 30 bar/3 MPa/435 psi 	≤ (0.025 · r + 0.125) %
Influence of static pressure	
on the zero point	
- 20 mbar/2 kPa/0.29 psi	\leq (0.15 · r) % per 32 bar (zero offset is possible with position error adjustment)
- 60 mbar/6 kPa/0.87 psi 250 mbar/25 kPa/3.63 psi 600 mbar/60 kPa/8.7 psi 1600 mbar/160 kPa/23.21 psi	\leq (0.1 · r) % per 70 bar (zero offset is possible with position error adjustment)
- 5 bar/500 kPa/72.5 psi 30 bar/3 MPa/435 psi	\leq (0.2 · r) % per 70 bar (zero offset is possible with position error adjustment)
• on the span	
- 20 mbar/2 kPa/0.29 psi	≤ 0.2 % per 32 bar
- 60 mbar/6 kPa/0.87 psi 250 mbar/25 kPa/3.63 psi 600 mbar/60 kPa/8.7 psi 1600 mbar/160 kPa/23.21 psi 5 bar/500 kPa/72.5 psi 30 bar/3 MPa/435 psi	≤ 0.14 % per 70 bar
Long-term stability (temperature change ± 30 °C (± 54 °F))	Static pressure max. 70 bar/7 MPa/ 1015 psi
• 20 mbar/2 kPa/0.29 psi	≤ (0.2 · r) % per year
• 60 mbar/6 kPa/0.87 psi 30 bar/3 MPa/435 psi	\leq (0.25 · r) % in 5 years
 250 mbar/25 kPa/3.63 psi 600 mbar/60 kPa/8.7 psi 1600 mbar/160 kPa/23.21 psi 5 bar/500 kPa/72.5 psi 	≤ (0.125 · r) % in 5 years
Effect of mounting position (in pressure per change in angle)	≤ 0.7 mbar/0.07 kPa/0.028 inH ₂ O per 10° inclination (zero offset is possible with position error adjustment)
Effect of auxiliary power supply (in percent per change in voltage)	0.005 % per 1 V
Measuring value resolution for PROFIBUS PA and FOUNDATION Fieldbus	$3 \cdot 10^{-5}$ of nominal measuring range

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

		for differential pressure and flow			
SITRANS P, DS III for differential pressure and flow					
Rated conditions					
Degree of protection					
according to EN 60529	IP66 (optional IP66/IP68)				
•					
according to NEMA 250 Target and type of readily recording to the second	Type 4X				
Temperature of medium	100 00 (100 010 01) 00 11	20.00 (4			
Measuring cell with silicone oil filling	-40 +100 °C (-40 +212 °F) -20 +100 °C (-4 +212 °F) with 30 bar measuring cell				
Measuring cell with inert filling liquid	-20 +100 °C (-4 +212 °F)				
 Measuring cell with Neobee fill fluid (FDA-compliant) 	-10 +100 °C (+14 +212 °F)				
 In conjunction with dust explosion protection 	-20 +60 °C (-4 +140 °F)				
Ambient conditions					
 Ambient temperature (silicone oil and inert oil) 					
- Transmitter	-40 +85 °C (-40 +185 °F)				
	-20 +85 °C (-4 +185 °F) with 30 bar	measuring cell			
- Display readable	-30 +85 °C (-22 +185 °F)				
Ambient temperature (Neobee fill fluid)					
- Transmitter	-10 +85 °C (+14 +185 °F)				
Storage temperature	-50 +85 °C (-58 +185 °F)				
Climatic class	30 100 G (30 1100 T)				
	Dolotico humaidita (O. 100.0/				
- Condensation	Relative humidity 0 100 % Condensation permissible, suitable for us	e in the tropics			
Electromagnetic Compatibility	• •	·			
- Emitted interference and interference immunity	Acc. to IEC 61326 and NAMUR NE 21				
Design	7.00. to 120 01020 and 17 (WOTTIVE 21				
•	Die-cast aluminum: ≈ 4.5 kg (≈ 9.9 lb)				
Weight (without options)	Stainless steel precision casting: ≈ 7.1 kg	(≈ 15.6 lb)			
Enclosure material	Low-copper die-cast aluminum, GD-AlSi1 no. 1.4408	2 or stainless steel precision casting, mat.			
Wetted parts materials					
• Seal diaphragm	Stainless steel, mat. no. 1.4404/316L or Hmat. no. 2.4360, tantalum or gold	lastelloy C276, mat. no. 2.4819, Monel,			
Process flanges and sealing screw	Stainless steel, mat. no. 1.4408, Hastelloy mat. no. 2.4360	C4, mat. no. 2.4602 or Monel,			
• O-Ring	FPM (Viton) or optionally: PTFE, FEP, FEP	M and NBR			
Measuring cell filling	Silicone oil or inert filling liquid (maximum	value with oxygen measurement pressure			
Process connection	100 bar (1450 psi) at 60 °C (140 °F)) Female thread ¼-18 NPT and flange conr				
	DIN 19213 or ⁷ / ₁₆ -20 UNF to IEC 61518/E	DIN EN 61518			
Material of mounting bracket					
• Steel	Sheet-steel, Mat. No. 1.0330, chrome-pla	ted			
• Stainless steel 304	Sheet stainless steel, mat. no. 1.4301 (SS	304)			
• Stainless steel 316L	Sheet stainless steel, mat. no. 1.4404 (SS	316L)			
Power supply U_{H}	HART	PROFIBUS PA/ FOUNDATION Fieldbus			
Terminal voltage on transmitter	10.5 45 V DC 10.5 30 V DC in intrinsically-safe mode	-			
Power supply	-	Supplied through bus			
Separate 24 V power supply necessary	_	No			
Bus voltage					
· ·		0 20 //			
• 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 transmitters

for applications with advanced requirements (Advanced)

SITRANS P DS III

for differential pressure and flow

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Certificates and approvals

Classification according to PED 2014/68/EU

Explosion protection

- · Intrinsic safety "i"
- Marking
- Permissible ambient temperature
- Connection
- Effective internal inductance/capacitance
- Explosion-proof "d"
- Marking
- Permissible ambient temperature
- Connection
- Dust explosion protection for zone 20
- Marking
- Permissible ambient temperature
- Max. surface temperature
- Connection
- Effective internal inductance/capacitance
- Dust explosion protection for zone 21/22
- Marking
- Connection
- Type of protection "n" (zone 2)
- Marking
- Connection (Ex nA)
- Connection (Ex ic)
- Effective internal inductance/capacitance
- · Explosion protection acc. to FM
- Identification (XP/DIP) or (IS); (NI)
- · Explosion protection to CSA
- Identification (XP/DIP) or (IS)

HART

PROFIBUS PA/ FOUNDATION Fieldbus

 $U_0 = 17.5 \text{ V}, I_0 = 380 \text{ mA}, P_0 = 5.32 \text{ W}$

 $U_0 = 17.5 \text{ V}, I_0 = 380 \text{ mA}, P_0 = 5.32 \text{ W}$

 $U_0 = 24 \text{ V}, I_0 = 250 \text{ mA}, P_0 = 1 \text{ W}$

 $U_{\rm o}$ = 24 V, $I_{\rm o}$ = 250 mA, $P_{\rm o}$ = 1.2 W

- PN 32/160 (MAWP 464/2320 psi) for gases of fluid group 1 and liquids of fluid group 1; complies with requirements of article 4, paragraph 3 (sound engineering
- PN 420 (MAWP 6092) for gases of fluid group 1 and liquids of fluid group 1; complies with basic safety requirements of Article 4, paragraph 1 (appendix 1); assigned to category III, conformity evaluation module H by the TÜV Nord.

FISCO supply unit:

 $L_i = 7 \mu H$, $C_i = 1.1 nF$

To circuits with values:

 $U_{H} = 9 ... 32 \text{ V DC}$

FISCO supply unit:

 $L_i = 7 \mu H$, $C_i = 1.1 nF$

Linear barrier:

Linear barrier:

PTB 13 ATEX 2007 X

Ex II 1/2 G Ex ia/ib IIC T4/T5/T6 Ga/Gb

-40 ... +85 °C (-40 ... +185 °F) temperature class T4; -40 ... +70 °C (-40 ... +158 °F) temperature class T5; -40 ... +60 °C (-40 ... +140 °F) temperature class T6

To certified intrinsically-safe circuits with peak values:

 $U_i = 30 \text{ V}, I_i = 100 \text{ mA}, P_i = 750 \text{ mW};$ $R_{\rm i} = 300 \, \Omega$

 $L_i = 0.4 \text{ mH}, C_i = 6 \text{ nF}$

PTB 99 ATEX 1160 Ex II 1/2 G Ex d IIC T4/T6 Gb

-40 ... +85 °C (-40 ... +185 °F) temperature class T4; -40 ... +60 °C (-40 ... +140 °F) temperature class T6

To circuits with values: $U_{\rm H} = 10.5 \dots 45 \text{ V DC}$

PTB 01 ATEX 2055 Ex II 1 D Ex ta IIIC T120°C Da Ex II 1/2 D Ex ta/tb IIIC T120°C Da/Db

-40 ... +85 °C (-40 ... +185 °F)

120 °C (248 °F)

To certified intrinsically-safe circuits with peak values:

 $U_{\rm i} = 30 \text{ V}, I_{\rm i} = 100 \text{ mA}, P_{\rm i} = 750 \text{ mW}, R_{\rm i} = 300 \Omega$

 $L_i = 0.4 \text{ mH}, C_i = 6 \text{ nF}$

PTB 01 ATEX 2055

Ex II 2 D Ex tb IIIC T120°C Db

To circuits with values: $U_{\rm H}$ = 10.5 ... 45 V DC; $P_{\text{max}} = 1.2 \text{ W}$

To circuits with values: $U_{H} = 9 \dots 32 \text{ V}$ DC: $P_{\text{max}} = 1 \text{ W}$

PTB 13 ATEX 2007 X

Ex II 2/3 G Ex nA IIC T4/T5/T6 Gb/Gc Ex II 2/3 G Ex ic IIC T4/T5/T6 Gb/Gc

 $U_{\rm m} = 45 \, {\rm V}$

To circuits with values:

 $U_{\rm i} = 45 \text{ V}$

 $U_{\rm m} = 32 \, {\rm V}$ FISCO supply unit ic: $U_0 = 17.5 \text{ V}, I_0 = 570 \text{ mA}$

Linear barrier: $U_0 = 32 \text{ V}, I_0 = 132 \text{ mA}, P_0 = 1 \text{ W}$ $L_i = 7 \mu H$, $C_i = 1.1 nF$

 $L_i = 0.4 \text{ mH}, C_i = 6 \text{ nF}$

Certificate of Compliance 3008490

CL I, DIV 1, GP ABCD T4...T6; CL II, DIV 1, GP EFG; CL III; CL I, ZN 0/1 AEx ia IIC T4...T6; CL I, DIV 2, GP ABCD T4...T6; CL II, DIV 2, GP FG; CL III

Certificate of Compliance 115365

CL I, DIV 1, GP ABCD T4...T6; CL II, DIV 1, GP EFG; CL III; Ex ia IIC T4...T6; CL I, DIV 2, GP ABCD T4...T6; CL II, DIV 2, GP FG; CL III

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

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

• Pressure transducer block

Can be calibrated by applying two pressures

- Monitoring of sensor limits

- Specification of a container

and implementation point of square-root extraction

- Simulation function for measured pressure value and sensor temperature

characteristic with - Square-rooted characteristic

for flow measurement - Gradual volume suppression Yes

Yes

Yes

Max. 30 nodes

Parameterizable

Constant value or over parame-

terizable ramp function

Pressure transmitters

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

for differential pressure and flow

ioi dillerentiai p	nessure and now						
Selection and Orde	ering data		Arti	cle i	No.		
	vith HART pressure trans-	7	7 M	F 4 4	4 3 :	3 -	
PN 32/160 (MAWP	tial pressure and flow, 464/2320 psi)				-		
	ele No. for the online configu- Life Cycle Portal.						
Measuring cell filli				П		П	П
Silicone oil	cleaning normal		1				
Inert liquid ¹⁾	grease-free to		3				
FDA compliant fill fl	cleanliness level 2						
Neobee oil	normal		4				
Measuring span (n	nin max.)						
PN 32 (MAWP 464)	osi)						
1 20 mbar ³⁾	(0.4 8 inH ₂ O)		В				
PN 160 (MAWP 232							
1 60 mbar	(0.4 24 inH ₂ O)		C				
2.5 250 mbar	(1.004 100.4 inH ₂ O)		D				
6 600 mbar	(2.4 240 inH ₂ O) (6.4 642 inH ₂ O)		E F				
16 1600 mbar 50 5000 mbar	(6.4 642 InH ₂ O) (20 2000 inH ₂ O)		G				
0.3 30 bar	(4.35 435 psi)		H				
			Н				
Wetted parts mate (stainless steel proc							
Seal diaphragm	Parts of measuring cell						
Stainless steel	Stainless steel			Α			
Hastelloy	Stainless steel			В			
Hastelloy	Hastelloy			C			
Tantalum ⁴⁾	Tantalum			E			
Monel ⁴⁾	Monel			Н			
Gold ⁴⁾	Gold			L			
Version for diaphrag	gm seal ^{5) 6) 7) 8)}			Υ			
Process connection							
Female thread 1/4-18	NPT with flange connection						
	posite process connection						
- Mounting thread	1 ⁷ / ₁₆ -20 UNF to			2			
IEC 61518/DIN E							
	M10 to DIN 19213 ment requirement)			0			
 Vent on side of pre 							
- Mounting thread	⁷ / ₁₆ -20 UNF to			6			
IEC 61518/DIN E	EN 61518						
/ 1 () 1	M10 to DIN 19213			4			
	ment requirement)						
Non-wetted parts i	naterials ws Electronics housing						
Stainless steel Stainless steel	Die-cast aluminum				2		
Stairliess steel	Stainless steel precision casting ⁹⁾			•	3		
Version							
	German plate inscription,					1	
setting for pressur	e unit: bar						
	on, English plate inscription,					2	
 setting for pressur Chinese version F 	nglish plate inscription,					3	
setting for pressure							
All versions include	DVD with compact operat-						

Selection and Ordering data	Article No.			
SITRANS P DS III with HART pressure trans- mitters for differential pressure and flow, PN 32/160 (MAWP 464/2320 psi)	7 M F 4 4 3 3 -			
Explosion protection None With ATEX, Type of protection: "Intrinsic safety (Ex ia)" "Explosion-proof (Ex d)"10)	A B			
- "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)"11) - "Ex nA/ic (Zone 2)"12) - "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia+ Ex d + Zone 1D/2D)"11)13)	P E R			
 Zone 1D/2D)**(1)(3) FM + CSA intrinsic safe (is)¹⁴⁾ FM + CSA (is + ep) + Ex ia + Ex d (ATEX) + Zone 1D/2D¹¹)¹³)¹⁴) With FM + CSA, Type of protection: - "Intrinsic Safe and Explosion Proof (is + xp)**10)¹⁴) 	F S NC			
Electrical connection/cable entry • Screwed gland M20 x 1.5 • Screwed gland ½-14 NPT • Device plug Han 7D (plastic housing) incl. mating connector 15)16) • Device plugs M12 (stainless steel) 17)18)	B C D			
Display Without display Without visible display (display concealed, setting: mA) With visible display (setting: mA) With visible display (setting: mA) with customer-specific display (setting as specified, Order code "Y21" or "Y22" required)	0 1 6	1		

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

Included in delivery of the device:

- Quick-start guide
- Sealing plug(s) or sealing screw(s) for the process flanges(s)
- 1) For oxygen application, add Order code E10.
- Available for measuring ranges 250 mbar ... 5 bar.
 Not suitable for connection of remote seal. Position of the top vent valve in the process flange (see dimensional drawing).
- 4) Not in conjunction with max. span 20 and 60 mbar (8.03 and 24.09 inH₂O))
- 5) When the manufacture's certificate (calibration certificate) has to be ordered for transmitters with diaphragm seals according to IEC 60770-2, it is recommended only to order this certificate exclusively with the diaphragm seals. The measuring accuracy of the total combination is certified here.
- 6) If the acceptance test certificate 3.1.is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the respective remote seals.
- 7) The diaphragm seal is to be specified with a separate order number and must be included with the transmitter order number, for example 7MF443.-.Y.-.... and 7MF4900-1...-.B
- 8) The standard measuring cell filling for configurations with remote seals (Y) is silicone oil
- 9) Not in conjunction with Electrical connection "device plug Han 7D".
- 10) Without cable gland, with blanking plug
- ¹¹⁾With enclosed cable gland Ex ia and blanking plug
- ¹²⁾Configurations with device plugs Han and M12 are only available in Ex ic.
- 13)Only in connection with IP66.
- 14) Explosion protection acc. to FM/CSA: suitable for installations according to NEC 500/505.
- 15) Only in connection with Ex apporval A, B or E.
- ¹⁶⁾ Permissible only for crimp-contact of conductor cross-section 1 mm²
- 17) Only in connection with Ex approval A, B, E or F.
- 18) M12 delivered without cable socket.

ing instructions in various EU languages.

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

for differential pressure and flow

	g data	Articl	e No.		Selec
Pressure transmitters and flow PN 32/160 (M	for differential pressure AWP 464/2320 psi)				Press and fl
SITRANS P DS III with P	PROFIBUS PA (PA)	7 M F	4434	١-	SITRA
SITRANS P DS III with F	OUNDATION Fieldbus (FF)	7 M F	4435	i -	SITRA
7 Click on the Article № ration in the PIA Life	No. for the online configu- Cycle Portal.				Explo
Measuring cell filling	Measuring cell cleaning				• Non
Silicone oil Inert liquid ¹⁾	normal grease-free to cleanliness level 2	1			- "In - "E> - "In
FDA compliant fill fluid ³ • Neobee oil	2) normal	4			- in (E) - "E)
Nominal measuring ra	inge				- L/ - "In
PN 32 (MAWP 464 psi)	3.				du
20 mbar ³⁾	(8.03 inH ₂ O)	В			Zo
PN 160 (MAWP 2320 ps	si)				• FM -
60 mbar	(24 inH ₂ O)	С			• FIVI -
250 mbar	(100 inH ₂ O)	D			• With
600 mbar	(240 inH ₂ O)	E			- "In
1600 mbar	(642 inH ₂ O)	F			(is
5 bar	(2000 inH ₂ O)	G			Electr
30 bar	(435 psi)	Н			• Scre
Wetted parts materials	3				• Scre
(stainless steel process	flanges)				• Devi
Seal diaphragm	Parts of measuring cell				Displa
Stainless steel	Stainless steel	Α			• With
Hastelloy	Stainless steel	В			• With
Hastelloy	Hastelloy	С			(disp
Tantalum ⁴⁾	Tantalum	E			• With
Monel ⁴⁾	Monel	Н			• With
Gold ⁴⁾	Gold	L			(sett
Version as diaphragm s	seal ^{5) 6) 7) 8)}	Y			Includ
Process connection					• Quic • Seal
Female thread 1/4-18 NF	T with flange connection				
 Sealing screw onnosi 					1) For
	te process connection				
- Mounting thread 7/1	e-20 UNF to		2		3) Not
 Mounting thread ⁷/₁, IEC 61518/DIN EN 6 	₆ -20 UNF to 31518				3) Not the
 Mounting thread ⁷/₁, IEC 61518/DIN EN 6 Mounting thread M1 	₆ -20 UNF to 61518 0 to DIN 19213		2		3) Not the 4) Not
 Mounting thread ⁷/₁, IEC 61518/DIN EN 6 	₆ -20 UNF to 51518 0 to DIN 19213 nt requirement)				3) Not the 4) Not 5) Wh
 Mounting thread ⁷/₁, IEC 61518/DIN EN 6 Mounting thread M1 (only for replacement of the control of the control	g-20 UNF to 61518 0 to DIN 19213 nt requirement) ocess flanges ³⁾ 6-20 UNF to		0		3) Not the 4) Not 5) Wh ord
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- Mounting thread ⁷ / ₁ , IEC 61518/DIN EN 6 - Mounting thread M1 (only for replacemen • Venting on side of procuring thread ⁷ / ₁ , IEC 61518/DIN EN 6 - Mounting thread M1 (only for replacement	g-20 UNF to 61518 0 to DIN 19213 nt requirement) coess flanges ³⁾ g-20 UNF to 61518 0 to DIN 19213 nt requirement) erials Electronics housing Die-cast aluminum Stainless steel precision		6		3) Not the 4) Not 5) Wh ord is re phr her 6) If th mo res; 7) The mu 7M 8) The
- Mounting thread ⁷ / ₁ , IEC 61518/DIN EN 6 - Mounting thread M1 (only for replacemer • Venting on side of proc - Mounting thread ⁷ / ₁ , IEC 61518/DIN EN 6 - Mounting thread M1 (only for replacemer Non-wetted parts mate process flange screws Stainless steel Stainless steel	g-20 UNF to 61518 0 to DIN 19213 nt requirement) coess flanges ³⁾ g-20 UNF to 61518 0 to DIN 19213 nt requirement) erials Electronics housing Die-cast aluminum		0 6 4 2		3) Not the 4) Not the 4) Not 5) Wh ord is rephrese 6) If the mores 7) The mu 7M 8) The is s
- Mounting thread ⁷ / ₁ , IEC 61518/DIN EN 6 - Mounting thread M1 (only for replacemer • Venting on side of proc - Mounting thread ⁷ / ₁ , IEC 61518/DIN EN 6 - Mounting thread M1 (only for replacemer Non-wetted parts mate process flange screws Stainless steel Stainless steel	g-20 UNF to 61518 0 to DIN 19213 nt requirement) coess flanges ³⁾ g-20 UNF to 61518 0 to DIN 19213 nt requirement) erials Electronics housing Die-cast aluminum Stainless steel precision		0 6 4 2 3		3) Not the 4) Not the 4) Not ord is re phr here 6) If the more resp; 7) The mus 7MI 8) The is s
- Mounting thread 7/ ₁₁ IEC 61518/DIN EN 6 - Mounting thread M1 (only for replacemer • Venting on side of proc - Mounting thread 7/ ₁₁ IEC 61518/DIN EN 6 - Mounting thread M1 (only for replacemer Non-wetted parts mate process flange screws Stainless steel Stainless steel Version • Standard versions	g-20 UNF to 51518 0 to DIN 19213 ht requirement) becess flanges ³⁾ g-20 UNF to 51518 0 to DIN 19213 ht requirement) because flanges side of the flant side		0 6 4 2 3 3		3) Not the 4) Not of 5) Wh ord is rephr her 6) If the mo res; 7) The mu 7M 8) The is s 9) With 11) Cot
- Mounting thread 7/ ₁₁ IEC 61518/DIN EN 6 - Mounting thread M1 (only for replacemer • Venting on side of proc - Mounting thread 7/ ₁₁ IEC 61518/DIN EN 6 - Mounting thread M1 (only for replacemer Non-wetted parts mate process flange screws Stainless steel Stainless steel Version • Standard versions	er-20 UNF to 61518 0 to DIN 19213 at requirement) access flanges ³⁾ er-20 UNF to 61518 0 to DIN 19213 at requirement) erials Electronics housing Die-cast aluminum Stainless steel precision casting English label inscriptions, nguages on DVD		0 6 4 2 3		3) Not the 4) Not ord is rephr her 6) If the mo res; 7) The mu 7M 8) The is s 9) Wit 11) Cot 12) Onl 13) Exp
- Mounting thread ⁷ / ₁ , IEC 61518/DIN EN 6 - Mounting thread M1 (only for replacemer) - Venting on side of process of the second of the s	er-20 UNF to 61518 0 to DIN 19213 at requirement) access flanges ³⁾ er-20 UNF to 61518 0 to DIN 19213 at requirement) erials Electronics housing Die-cast aluminum Stainless steel precision casting English label inscriptions, nguages on DVD		0 6 4 2 3 3		3) Not the 4) Not the 4) Not 5) Wh ord is rephr her 6) If the mo res; 7) The mu 7M 8) The is s 9) Wit 10) Wit 11) Cot 12) Onl 13) Exp. NE
- Mounting thread ⁷ / ₁ , IEC 61518/DIN EN 6 - Mounting thread M1 (only for replacemer • Venting on side of proc - Mounting thread ⁷ / ₁ , IEC 61518/DIN EN 6 - Mounting thread M1 (only for replacemer Non-wetted parts material process flange screws Stainless steel Version • Standard versions • International version, documentation in 5 Ia (no Order code selectives)	g-20 UNF to 61518 0 to DIN 19213 at requirement) becess flanges ³⁾ g-20 UNF to 61518 0 to DIN 19213 at requirement) erials Electronics housing Die-cast aluminum Stainless steel precision casting English label inscriptions, nguages on DVD table)		2 3 1 2 2		3) Not the 4) Not the 4) Not 5) Wh ord is rephrese 6) If the mores 7) The mu 7M 8) The is s 9) Wit 11) Cot 12) Onl 13) Exp. NE. 14) Onl
- Mounting thread ⁷ / ₁ , IEC 61518/DIN EN 6 - Mounting thread M1 (only for replacemer) - Venting on side of process of the second of the s	er20 UNF to 61518 0 to DIN 19213 at requirement) access flanges ³⁾ er20 UNF to 61518 0 to DIN 19213 at requirement) erials Electronics housing Die-cast aluminum Stainless steel precision casting English label inscriptions, nguages on DVD table) erman plate inscription,		0 6 4 2 3 3		3) Not the 4) Not the 4) Not 5) Wh ord is rephrese 6) If the mores 7) The mu 7M 8) The is s 9) Wit 11) Cot 12) Onl 13) Exp. NE. 14) Onl
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- Mounting thread 7/1, IEC 61518/DIN EN 6 - Mounting thread M1 (only for replacemer) - Venting on side of processory - Mounting thread 7/1, IEC 61518/DIN EN 6 - Mounting thread M1 (only for replacemer) Non-wetted parts material process flange screws Stainless steel Stainless steel Version - Standard versions - International version, documentation in 5 la (no Order code selective) Version - Standard version, Gesetting for pressure uses the selection of	g-20 UNF to 61518 0 to DIN 19213 at requirement) becess flanges ³⁾ g-20 UNF to 51518 0 to DIN 19213 at requirement) becess flanges ³⁾ g-20 UNF to 51518 0 to DIN 19213 at requirement) becass a flangement because the flangemen		0 6 4 2 3		3) Not the 4) Not the 4) Not 5) Wh ord is rephrese 6) If the mores 7) The mu 7M 8) The is s 9) Wit 11) Cot 12) Onl 13) Exp. NE. 14) Onl
- Mounting thread 7/1, IEC 61518/DIN EN 6 - Mounting thread M1 (only for replacemer) - Venting on side of processory - Mounting thread 7/1, IEC 61518/DIN EN 6 - Mounting thread M1 (only for replacemer) Non-wetted parts material process flange screws Stainless steel Stainless steel Version - Standard versions - International version, documentation in 5 Ia (no Order code selection of the setting for pressure und international version, setting for pressure und chinese version, Englis setting for pressure und setting for pressure und setting for pressure und control on the setting for pressure und setting for	g-20 UNF to 61518 0 to DIN 19213 at requirement) becess flanges ³⁾ g-20 UNF to 51518 0 to DIN 19213 at requirement) becess flanges ³⁾ g-20 UNF to 51518 0 to DIN 19213 at requirement) becass a flangement because the flangemen		0 6 4 2 3		3) Not the 4) Not the 4) Not ord is rephrhering for the mores, 7) The mu: 7 The is s

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

in delivery of the device:

- tart guide plug(s) or sealing screw(s) for the process flanges(s)
- gen application, add Order code E10.
- If the conjunction, and Order code ETO.

 ble for measuring ranges 250 mbar ... 5 bar.

 table for connection of remote seal. Position of the top vent valve in cess flange (see dimensional drawing).

 conjunction with max. span 20 and 60 mbar (8.03 and 24.09 inH₂O))
- the manufacture's certificate (calibration certificate) has to be d for transmitters with diaphragm seals according to IEC 60770-2, it mmended only to order this certificate exclusively with the diannseals. The measuring accuracy of the total combination is certified
- cceptance test certificate 3.1.is ordered for the transmitter with ed diaphragm seals this certificate must also be ordered with the
- aphragm seals this certificate must also be ordered with the tive remote seals.

 aphragm seal is to be specified with a separate order number and e included with the transmitter order number, for example 3.-..Y..-.... and 7MF4900-1...-.B
- ndard measuring cell filling for configurations with remote seals (Y)
- cable gland, with blanking plug.
- nclosed cable gland Ex ia and blanking plug.
- urations with device plugs Han and M12 are only available in Ex ic.
- connection with IP66.

Update April 2020

- on protection acc. to FM/CSA: suitable for installations according to
- connection with Ex approval A, B, E or F.
- elivered without cable socket

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

Onlanding and Onlands and date	0			
Selection and Ordering data	Order		DA	
Further designs Add "-Z" to Article No. and specify Order code.		HART	PA	FF
Pressure transmitter with mounting bracket (1x fixing angle, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer) made of:				
SteelStainless steel 304Stainless steel 316L	A01 A02 A03	√ √	✓✓	√ √
O-rings for process flanges (instead of FPM (Viton)) • PTFE (Teflon) • FEP (with silicone core, approved for food) • FFPM (Kalrez, for measured medium temperatures -15 100 °C (5 212 °F)) • NBR (Buna N)	A20 A21 A22 A23	* * * * * * * * * * * * * * * * * * *		\ \ \ \ \
Device plugs ¹⁾ • Han 7D (metal) • Han 8D (instead of Han 7D) • Angled • Han 8D (metal)	A30 A31 A32 A33	* * * * * *		
Sealing screws (2 units) 1/4-18 NPT, with valve in mat. of process flanges	A40	✓	✓	✓
Cable sockets for device plugs M12 (metal (CuZn))	A50	✓	✓	✓
Rating plate inscription (instead of German) • English • French • Spanish • Italian • Cyrillic (russian) English rating plate Pressure units in inH ₂ O and/or psi	B11 B12 B13 B14 B16 B21	****	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Quality Inspection Certificate (5-point characteristic curve test) according to IEC 60770-2 ²⁾	C11	✓	✓	✓
Inspection certificate ³⁾ to EN 10204-3.1	C12	✓	✓	✓
Factory certificate to EN 10204-2.2 Acceptance certificate (EN 10204-3.1) PMI test of parts in contact with medium	C14 C15	√	√	√
Functional safety (SIL2) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration	C20	✓		
Functional safety (PROFIsafe) Certificate and PROFIsafe protocol	C21 ⁴⁾		✓	
Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration	C23	✓		
PED for Russia with initial calibration mark	C99	✓	✓	✓

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

Pressure transmitters for applications with advanced requirements (Advanced) 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
Ex-protection Ex ia according to EAC Ex (Russia)	E80	✓	✓	1
Ex-protection Ex d according to EAC Ex (Russia)	E81	✓	✓	✓
Ex-protection Ex nA/ic (Zone 2) according to EAC Ex (Russia)	E82	✓	✓	✓
Ex-protection Ex ia + Ex d + Zone 1D/2D according to EAC Ex (Russia)	E83	✓	✓	✓
Two coats of lacquer on casing and cover (PU on epoxy)	G10	✓	✓	✓
Interchanging of process connection side	H01	✓	✓	✓
Vent on side for gas measurements	H02	✓	1	✓
Stainless steel process flanges for vertical differential pressure lines (not together with K01, K02 and K04 ⁸⁾	H03	✓	✓	✓
Transient protector 6 kV (lightning protection)	J01	✓	✓	✓
Chambered graphite gasket for process flange	J02	✓	✓	✓
Chambered PTFE graphite gasket	J03	1	1	1
EPDM O-rings for process flange with approval (WRC/WRAS)	J05	✓	✓	✓
Vent valve or blanking plug of process flange welded-in (orientation: on right when viewing the display ⁹⁾	J08	✓	✓	✓
Vent valve or blanking plug of process flange welded-in (orientation: on left when viewing the display) ⁹⁾	J09	✓	✓	✓
Process flange				
Hastelloy	K01	✓	✓	✓
• Monel	K02	✓	✓	✓
 Stainless steel with PVDF insert max. PN 10 (MAWP 145 psi), max. temperature of medium 90 °C (194 °F), for ½-14 NPT inner process connection on the side in the middle of the process flange, vent valve not possible 	K04	•	•	✓
Marine approvals				
Det Norske Veritas Germanischer Lloyd (DNV-GL)	S10	✓	✓	√
Lloyds Register (LR)	S11	1	1	1
 French marine classification society Bureau Veritas (BV) 	S12	1	✓	✓
American Bureau of Shipping (ABS)	S14	√	1	1
Russian Maritime Register (RMR)Korean Register of Shipping (KR)	S16 S17	√	√	1

Factory mounting of valve manifolds, see accessories.

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

Selection and Ordering data	Order	code		
Additional data Please add "-Z" to Article No. and specify Order code(s) and plain text.		HART	PA	FF
Measuring range to be set Specify in plain text:			.41	
 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)	Y17	1		
Max. 8 char., 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 indicator in non-	Y22 ³⁾	1		
pressure units ²) Specify in plain text: Y22: up to I/min, m³/h, m, USgpm, (specification of measuring range in pressure units "Y01" or "Y02" is essential, unit with max. 5 characters)	+ Y01 Of Y02			
Preset bus address possible between 1 and 126	Y25		✓	✓
Specify in plain text: Y25:				
Damping adjustment in seconds (0 100 s)	Y30	✓	1	✓

Factory mounting of valve manifolds, see accessories.

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

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

Pressure transmitters

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

Selection and Ordering	g data		Artic	le	Nc).	
SITRANS P DS III with	HART pressure trans-	7	7 M I	= 4	5 3	3 -	
mitters for differential							
PN 420 (MAWP 6092 p	,						1
ration in the PIA Life							
Measuring cell filling	cleaning						
Silicone oil	normal		1				
Inert liquid ¹⁾	grease-free to cleanliness level 2		3				
Manageria and an Amin							
Measuring span (min. 2.5 250 mbar	max.) (1.004 100 inH ₂ O)		D				
6 600 mbar	(2.4 240 inH ₂ O)		E				
16 1600 mbar	(6.4 642 inH ₂ O)		F				
50 5000 mbar	(20 2000 inH ₂ O)		G				
0.3 30 bar	(4.35 435 psi)		Н				
Wetted parts materials	• • •						
(stainless steel process							
Seal diaphragm	Parts of measuring cell						
Stainless steel	Stainless steel	-		4			
Hastelloy	Stainless steel			3			
Gold ²⁾	Gold						
Version for diaphragm s	seal ^{3) 4) 5) 6)}		,	Y			
Process connection							
	T with flange connection						
 Sealing screw opposit 	e process connection						
- Mounting thread ⁷ / ₁₆ IEC 61518/DIN EN 6				3			
				١.			
 Mounting thread M1 (only for replacement 				1			
	cess flanges, location of						
vent valve at top of pro sional drawing)	ocess flanges (see dimen	I-					
- Mounting thread ⁷ / ₁₆	3-20 UNF to			7			
IEC 61518/DIN EN 6 - Mounting thread M1				Ļ			
(only for replacemen				5			
Non-wetted parts mate							
process flange screws							
Stainless steel	Die-cast aluminum	_			2		
Stainless steel	Stainless steel precision	,			3		
Otali liess steel	casting ⁷⁾	'			٥		
Version							
 Standard version, Ger 	man plate inscription.					1	
setting for pressure ur							
	English plate inscription,					2	
setting for pressure ur							
 Chinese version, English setting for pressure unit 						3	
	D with compact operating						
instructions in various E							
Explosion protection							
• None						Α	
 With ATEX, Type of pro 							
- "Intrinsic safety (Ex i						В	
- "Explosion-proof (Ex						D	
- "Intrinsic safety and	flameproof enclosure"					P	
(Ex ia + Ex d)"9)))						
- "Ex nA/ic (Zone 2)"10		1				E	
 "Intrinsic safety, expli- dust explosion prote 	osion-proof enclosure and ction (Ex ia+ Ex d +	ı				R	
Zone 1D/2D) ^{"9)11)}	COOL (EX IGT EX GT						
• FM + CSA intrinsic sa	fe (is) ¹²⁾					F	
• FM + CSA (is + ep) +	Ex ia + Ex d (ATEX) +					S	
• FM + CSA (is + ep) + Zone 1D/2D ⁹⁾¹¹⁾¹²⁾							
Zone 1D/2D ⁹⁾¹¹⁾¹²⁾ • With FM + CSA, Type - "Intrinsic safety and	of protection:						

Selection and Ordering data	Article No.
SITRANS P DS III with HART pressure transmitters for differential pressure and flow, PN 420 (MAWP 6092 psi)	7 M F 4 5 3 3 -
Electrical connection/cable entry Screwed gland M20x1.5 Screwed gland ½-14 NPT Device plug Han 7D (plastic housing) incl. mating connector 13)14) Device plugs M12 (stainless steel)15) 16)	B C D
Display ■ Without display ■ Without visible display (display concealed, setting: mA) ■ With visible display (setting: mA) ■ with customer-specific display (setting as specified, Order code "Y21" or "Y22" required)	0 1 6 7

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

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

- $^{1)}$ For oxygen application, add Order code E10. $^{2)}$ Not in conjunction with max. span 600 mbar (240.9 inH $_2$ O)
- 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 this certificate must also be ordered with the respective remote seals.

 The diaphragm seal is to be specified with a separate order number and must be included with the transmitter order number, for example 7MF453.-..Y..-... and 7MF4900-1....-.B
- 6) The standard measuring cell filling for configurations with remote seals (Y) is silicone oil.
- 7) Not in conjunction with Electrical connection "device plug Han 7D".
- 8) Without cable gland, with blanking plug
- 9) With enclosed cable gland Ex ia and blanking plug
- $^{10)}$ Configurations with device plugs Han and M12 are only available in Ex ic.
- 11) Only in connection with IP66.
 12) Explosion protection acc. to FM/CSA: suitable for installations according to NEC 500/505.
- 13) Only in connection with Ex approval A, B or E.
- 14) Permissible only for crimp-contact of conductor cross-section 1 mm² 15) Only in connection with Ex approval A, B, E or F.
- 16) M12 delivered without cable socket.

Pressure transmitters for applications with advanced requirements (Advanced) 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) 7 MF 4 5 3 4 - 7 MF 4 5 3 5 - 7 MF 4 5 3 6 - 7 MI	Selection and Order	ing data	Α	rti	cl	е	No	٥.	
SITRANS P DS III with FOUNDATION Fieldbus (FF),7 7 Click on the Article No. for the online configuration in the PIA Life Cycle Portal. Measuring cell filling Measuring cell cleaning Silicone oil normal 1 Inert liquid¹) grease-free to cleanliness level 2 Nominal measuring range 250 mbar (100 inH ₂ O) 5 600 mbar (240 inH ₂ O) 6 600 mbar (240 inH ₂ O) 6 5 bar (2000 inH ₂ O) 6 5 bar (2000 inH ₂ O) 7 5 bar (2000 inH ₂ O) 8 6 daiphragm Parts of measuring cell Stainless steel process flanges) Seal diaphragm Parts of measuring cell Stainless steel Stainless steel 9 Hastelloy Stainless steel 8 Hastelloy Gold 1 Version for diaphragm seal 3) 4) 5) 6) Process connection - Mounting thread 1/4-18 NPT with flange connection - Sealing screw opposite process connection - Mounting thread 1/4-12 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 thread 1/4-12 DIN 19213 (only for replacement requirement) Non-wetted parts materials Process flange screws Electronics housing Stainless steel Die-cast aluminum Stainless steel Die-cast aluminum Stainless steel Die-cast aluminum Stainless steel Die-cast aluminum - Standard version, German plate inscription, setting for pressure unit: bar - International version, English plate inscription, setting for pressure unit: bar - Chinese version, English plate inscription, setting for pressure unit: Pascal All versions include DVD with compact operating									
SITRANS P DS III with FOUNDATION Fieldbus (FF),7 7 Click on the Article No. for the online configuration in the PIA Life Cycle Portal. Measuring cell filling Measuring cell cleaning Silicone oil normal 1 Inert liquid¹) grease-free to cleanliness level 2 Nominal measuring range 250 mbar (100 inH ₂ O) 5 600 mbar (240 inH ₂ O) 6 600 mbar (240 inH ₂ O) 6 5 bar (2000 inH ₂ O) 6 5 bar (2000 inH ₂ O) 7 5 bar (2000 inH ₂ O) 8 6 dalphragm Parts of measuring cell Stainless steel process flanges) Seal diaphragm Parts of measuring cell Stainless steel Stainless steel ABB BBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB	SITRANS P DS III with	PROFIBUS PA (PA)	7	М	F	4	5 :	3 4	
A Click on the Article No. for the online configuration in the PIA Life Cycle Portal. Measuring cell filling		, ,							
Cleaning Inert liquid¹) Inert liquid¹ Inert liquid¹) Inert liquid¹) Inert liquid¹) Inert liquid¹ Inert liquid¹) Inert liquid¹ Inert liquid² Inert li		No. for the online configu-							
Silicone oil Inert liquid¹) grease-free to cleanliness level 2 Nominal measuring range 250 mbar (100 inH₂O) E 1600 mbar (240 inH₂O) F 1600 mbar (642 inH₂O) F 1600 mbar (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 Hastelloy Stainless steel B Gold 2) Gold L Version for diaphragm seal 3) 4) 5) 6) Process connection Female thread ¼-18 NPT with flange connection • Sealing screw opposite process connection • Mounting thread 7/16-20 UNF to IEC 61518/DIN EN 61518 - Mounting thread 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 thread 7/16-20 UNF to IEC 61518/DIN EN 61518 - Mounting thread M12 to DIN 19213 (only for replacement requirement) Non-wetted parts materials Process flange screws Electronics housing Stainless steel Die-cast aluminum Stainless steel Stainless steel precision casting Version • Standard version, German plate inscription, setting for pressure unit: bar • International version, English plate inscription, setting for pressure unit: bar • International version, English plate inscription, setting for pressure unit: bar • Chinese version, English plate inscription, setting for pressure unit: Dascal All versions include DVD with compact operating	Measuring cell filling						Ī		-
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250 mbar (100 inH ₂ O)	Inert liquid ¹⁾		3						
600 mbar (240 inH ₂ O)	Nominal measuring	range							
1600 mbar (642 inH ₂ O)	250 mbar	(100 inH ₂ O)		D					
5 bar (2000 inH ₂ O) G 30 bar (435 psi) Wetted parts materials (stainless steel process flanges) Seal diaphragm Parts of measuring cell Stainless steel Stainless steel Hastelloy Stainless steel Gold ² Gold Version for diaphragm seal ³ ⁴ ⁵ ⁵ ⁶) Process connection Female thread ⁷ / ₁₆ -20 UNF to IEC 61518/DIN EN 61518 - 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 thread M12 to DIN 19213 (only for replacement requirement) Non-wetted parts materials Process flange screws Electronics housing Stainless steel Die-cast aluminum Stainless steel Die-cast aluminum Stainless steel Die-cast aluminum Stainless steel Stainless steel precision casting Version • Standard version, German plate inscription, setting for pressure unit: bar • International version, English plate inscription, setting for pressure unit: bar • International version, English plate inscription, setting for pressure unit: Pascal All versions include DVD with compact operating	600 mbar	(240 inH ₂ O)							
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 Standard version, German plate inscription, setting for pressure unit: bar International version, English plate inscription, setting for pressure unit: bar Chinese version, English plate inscription, setting for pressure unit: Pascal All versions include DVD with compact operating 	Stainless steel						3		
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setting for pressure unit: Pascal All versions include DVD with compact operating	• .							,	
All versions include DVD with compact operating								3	
	0 1								
instructions in various EU languages.									

Selection and Ordering data	Article No.
Pressure transmitters for differential pressure and flow, PN 420 (MAWP 6092 psi)	
SITRANS P DS III with PROFIBUS PA (PA)	7 M F 4 5 3 4 -
SITRANS P DS III with FOUNDATION Fieldbus (FF)	7MF4535-
Explosion protection	
• None	A
 With ATEX, Type of protection: 	
- "Intrinsic safety (Ex ia)"	В
- "Explosion-proof (Ex d)" ⁷⁾	D
- "Intrinsic safety and flameproof enclosure" (Ex ia + Ex d)" ⁸⁾	P
- "Ex nA/ic (Zone 2)" ⁹⁾	E
 "Intrinsic safety, explosion-proof enclosure and dust explosion protection (Ex ia + Ex d + Zone 1D/2D)*8) 10) 	R
• FM + CSA intrinsic safe (is) ¹¹⁾	F
• FM + CSA (is + ep) + Ex ia + Ex d (ATEX)+ Zone 1D/2D ⁹⁾¹⁰⁾¹¹⁾	S
 With FM + CSA, Type of protection: 	
 "Intrinsic safety and explosion-proof (is + xp)"⁷⁾¹¹⁾, max PN 360 	NC
Electrical connection/cable entry	
Screwed gland M20 x 1.5	В
Screwed gland ½-14 NPT	С
Device plugs M12 (stainless steel) 12) 13)	F
Display	
 Without (display hidden) 	0
 Without visible display 	1
(display concealed, setting: bar)	
With visible display (setting: bar)	6
 With customer-specific display (setting as specified, Order code "Y21" required) 	7

Included in delivery of the device:

- Quick-start guide
 Sealing plug(s) or sealing screw(s) for the process flanges(s)
- $^{1)}\,$ For oxygen application, add Order code E10. $^{2)}\,$ Not in conjunction with max. span 600 mbar (240.9 inH $_2$ O)
- 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.
- If the acceptance test certificate 3.1.is ordered for the transmitter with mounted diaphragm seals this certificate must also be ordered with the
- respective remote seals.

 5) The diaphragm seal is to be specified with a separate order number and must be included with the transmitter order number, for example 7MF453.-.Y.-... and 7MF4900-1...-.B

 6) The standard measuring cell filling for configurations with remote seals (Y) is eligenced.
- The standard measuring ceri mining for configurations with remote seals (1) is silicone oil.
 Without cable gland, with blanking plug.
 With enclosed cable gland Ex ia and blanking plug.
 Configurations with device plugs Han and M12 are only available in Ex ic.

- 10) Only in connection with IP66.
- 11) Explosion protection acc. to FM/CSA: suitable for installations according to NEC 500/505.
- 12) Only in connection with Ex approval A, B, E or F.
- 13) M12 delivered without cable socket

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

for differential pressure and flow

Selection and Ordering data	Order	code		
Further designs		HART	PA	FF
Add "-Z" to Article No. and specify Order code.				
Pressure transmitter with mounting bracket (1x fixing angle, 2 x nut, 2 x U-washer or 1 x bracket, 2 x nut, 2 x U-washer) made of:				
• Steel	A01	1	1	✓
Stainless steel 304	A02	✓	1	V
 Stainless steel 316L 	A03	~	✓	✓
O-rings for process flanges (instead of FPM (Viton)) • PTFE (Teflon)	A20	√	√	√
• FEP (with silicone core, approved for food)	A21	1	✓	1
 FFPM (Kalrez, for measured medium temperatures -15 100 °C (5 212 °F)) NBR (Buna N) 	A22 A23	√ √	✓	1
Device plugs ¹⁾	7120		•	
Han 7D (metal)	A30	1		
Han 8D (instead of Han 7D)	A31	1		
• Angled	A32	1		
Han 8D (metal)	A33	1		
Sealing screws (2 units)	A40	1	1	1
1/4-18 NPT, with valve in mat. of process flanges				
Cable sockets for device plugs M12 (metal (CuZn))	A50	✓	✓	✓
Rating plate inscription (instead of German)				
• English	B11	✓	✓	✓
• French	B12	✓	✓	✓
 Spanish 	B13	✓	✓	✓
• Italian	B14	✓	✓	✓
 Cyrillic (russian) 	B16	✓	✓	✓
English rating plate	B21	1	✓	✓
Pressure units in inH ₂ O and/or psi Quality Inspection Certificate (5-point charac-	C11	1	_	-/
teristic curve test) according to IEC 60770-2	CII	•	•	v
Inspection certificate	C12	✓	✓	✓
Acc. to EN 10204-3.1				
Factory certificate	C14	✓	✓	✓
Acc. to EN 10204-2.2				
Acceptance certificate (EN 10204-3.1) PMI test of parts in contact with medium	C15	✓	✓	✓
Functional safety (SIL2)	C20	1		
Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration		·		
Functional safety (PROFIsafe) Certificate and PROFIsafe protocol	C21 ²⁾		✓	
Functional safety (SIL2/3) Devices suitable for use according to IEC 61508 and IEC 61511. Includes SIL conformity declaration	C23	✓		
PED for Russia with initial calibration mark	C99	✓	✓	✓

Selection and Ordering data	Order	code		
Setting of the upper saturation limit of the	D05	√		
output signal to 22.0\ mA				
Manufacturer's declaration acc. to NACE (MR 0103-2012 and MR 0175-2009)	D07	✓	✓	✓
(only together with seal diaphragm made of Hastelloy and stainless steel)				
Degree of protection IP66/IP68 (only for M20 x 1.5 and ½-14 NPT)	D12	✓	✓	✓
Nom. press. rating PN 500 (MAWP 7250 psi) (Only for measuring cell 600 mbar 30 bar (240 inH ₂ O 435 psi), SIL- and Ex-options not possible)) ³⁾	D56	✓		
Capri cable gland 4F CrNi and clamping device (848699 + 810634) included	D59	✓	✓	✓
Use in or on zone 1D/2D ⁴⁾	E01	✓	✓	✓
(only together with type of protection "Intrinsic safety" (transmitter 7MF4B Ex ia)"and IP66)				
Export approval Korea	E11	✓	✓	✓
CRN approval Canada (Canadian Registration Number)	E22 ⁵⁾	✓	✓	✓
Dual seal	E24	✓	✓	✓
Explosion-proof "Intrinsic safety" (Ex ia) to INMETRO (Brazil)	E25 ⁶⁾	✓	✓	✓
(only for transmitter 7MF4B)				
"Flameproof" explosion protection according to INMETRO (Brazil)	E26 ⁶⁾	✓	✓	✓
(only for transmitter 7MF4D) Explosion-proof "Intrinsic safety" (Ex ia + Ex	E28 ⁶⁾	✓	1	
d) to INMETRO (Brazil) (only for transmitter 7MF4P)				
Ex Approval IEC Ex (Ex ia)	E45 ⁶)	1	1	1
(only for transmitter 7MF4B)				
Ex Approval IEC Ex (Ex d)	E46 ⁶⁾	✓	✓	✓
(only for transmitter 7MF4D)	6)	,	,	
Explosion-proof "Intrinsic safety" to NEPSI (China)	E55 ⁶⁾	•	•	V
(only for transmitter 7MF4B) Ex prot. "Explosion-proof" to NEPSI (China)	E56 ⁶⁾	1	1	/
(only for transmitter 7MF4D)	LJU	·	·	·
Explosion-proof "Zone 2" to NEPSI (China)	E57 ⁶⁾	✓	✓	✓
(only for transmitter 7MF4E) Ex protection "Ex ia", "Ex d" and "Zone 2" to	E58 ⁶⁾	1	1	✓
NEPSI (China) (only for transmitter 7MF4R)				
"Intrinsic safety" and "Explosion-proof"	E70 ⁶⁾	✓	1	1
explosion protection acc. to Kosha (Korea) (only for transmitter				
7MF4[B, D]Z + E11)			,	,
Ex-protection Ex ia acc. to EAC Ex (Russia)	E80	√	V	V
Ex-protection Ex d acc. to EAC Ex (Russia)	E81	√	√	√
Ex-protection Ex nA/ic (Zone 2) according to EAC Ex (Russia)	E82	V	√	√
Ex-protection Ex ia + Ex d + Zone 1D/2D according to EAC Ex (Russia)	E83	✓	✓	✓

1/230

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

for differential pressure and flow

Selection and Ordering data	Order	r code		
Further designs		HART	PA	FF
Add "-Z" to Article No. and specify Order code.				
Two coats of lacquer on casing and cover (PU on epoxy)	G10	✓	✓	✓
Interchanging of process connection side	H01	1	✓	✓
Stainless steel process flanges for vertical differential pressure lines	H03	✓	✓	✓
Transient protector 6 kV (lightning protection)	J01	✓	✓	✓
Chambered graphite gasket for process flange	J02	✓	✓	✓
EPDM O-rings for process flange with approval (WRC/WRAS)	J05	✓	✓	✓
Vent valve or blanking plug of process flange welded-in (orientation: on right when viewing the $display)^{7)}$	J08	✓	✓	✓
Vent valve or blanking plug of process flange welded-in (orientation: on left when viewing the display) ⁷⁾	J09	✓	✓	✓
Marine approvals				
Det Norske Veritas Germanischer Lloyd (DNV-GL)	S10	✓	✓	✓
 Lloyds Register (LR) 	S11	✓	✓	✓
 French marine classification society Bureau Veritas (BV) 	S12	✓	✓	✓
 American Bureau of Shipping (ABS) 	S14	1	✓	1
 Russian Maritime Register (RMR) 	S16	1	✓	1
 Korean Register of Shipping (KR) 	S17	✓	✓	✓

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

Selection and Ordering data	Order			
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 (**rev** 5 characters):	Y01	✓	√ 1)	
(max. 5 characters): Y01: up to mbar, bar, kPa, MPa, psi • in the case of square rooted characteristic	Y02	√		
(max. 5 characters): Y02: up to mbar, bar, kPa, MPa, psi				
Stainless steel tag plate and entry in device variable (measuring point description)	Y15	✓	✓	✓
Max. 16 characters, specify in plain text: Y15:				
Measuring point text (entry in device variable)	Y16	✓	✓	✓
Max. 27 char., specify in plain text: Y16:				
Entry of HART address (TAG) Max. 8 char., specify in plain text: Y17:	Y17	✓		
Setting of pressure 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/cm², kg/cm², 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, m³/h, m, USgpm, (specification of measuring range in pressure units "Y01" or "Y02" is essential, unit with max. 5 characters)	Y01 or Y02			
Preset bus address	Y25		✓	✓
possible between 1 and 126 Specify in plain text: Y25:				
Damping adjustment in seconds (0 100 s)	Y30	✓	✓	✓

Factory mounting of valve manifolds, see accessories.

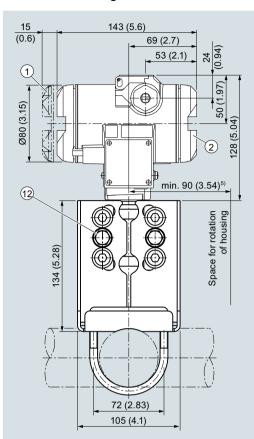
Only Y01, Y15, Y16, Y17, Y21, Y22, Y25 and D05 can be factory preset.

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

Pressure transmitters for applications with advanced requirements (Advanced) SITRANS P.DS III

for differential pressure and flow

Dimensional drawings



- (1) Electronics side, local display (longer overall length for cover with inspection window)¹⁾
- (2) Connection side¹⁾
- (3) Electrical connection:
 - Pg 13.5 screw gland (adapter)²⁾³⁾
 - M20 x 1,5 screw gland
 - 1/2-14 NPT screw gland
 - Han 7D/Han 8D^{2) 3)} device plug
- 4 Harting adapter
- (5) Cover over buttons

6 Blanking plug

(3)

B -

approx. 96 (3.78)

17 (0.67)

(4)

- Safety catch (only for "flameproof enclosure" type of protection; not shown in the drawing)
- (8) Lateral ventilation for liquid measurement (Standard)

84 (3.31)

(

52 (2.05)

166 (6.54)

(3.8)

96

262 (

(8)

(9)

(10)

68 (2.7)

120 (4.7)

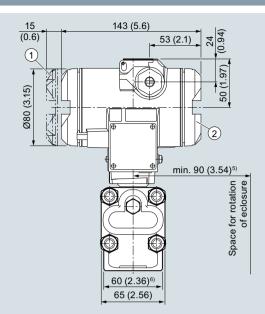
- (9) Lateral ventilation for gas measurement (order option H02)
- 10 Mounting bracket (optional)
- 11) Sealing plug with valve (optional)
- 12 Process connection: 1/4-18 NPT (IEC 61518)
- 1) In addition, allow approx. 20 mm (0.79 inch) for the thread length
- 2) Not with "flameproof enclosure" type of protection
- Not for type of protection "FM + CSA" [is + XP]"
- 4) For Pg 13.5 with adapter, approx. 45 mm (1.77 inch)
- 92 mm (3.62 inch) minimum distance for rotating with indicator

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

1/232

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

for differential pressure and flow



- Electronics side, local display
 (longer overall length for cover with inspection window)¹¹)
- 2 Connection side¹⁾
- (3) Electrical connection:
 - Pg 13.5 screw gland (adapter)^{2) 3)}
 - M20 x 1,5 screw gland
 - 1/2-14 NPT screw gland
 - Han 7D/Han 8D^{2) 3)} device plug
- 4 Harting adapter
- 1) In addition, allow approx. 20 mm (0.79 inch) for the thread length
- Not with "flameproof enclosure" type of protection
- 3) Not for type of protection "FM + CSA" [is + XP]"
- ⁴⁾ For Pg 13.5 with adapter, approx. 45 mm (1.77 inch)
- ⁵⁾ 92 mm (3.62 inch) minimum distance for rotating with indicator
- $^{6)}$ 74 mm (2.9 inch) for PN \geq 420 (MAWP \geq 6092 psi)
- 7) 91 mm (3.6 inch) for PN ≥ 420 (MAWP ≥ 6092 psi)
- 8) 219 mm (8.6 inch) for PN ≥ 420 (MAWP ≥ 6092 psi)

- (5) Cover over buttons
- 6 Blanking plug
- Safety catch (only for "flameproof enclosure" type of protection; not shown in the drawing)
- 8 Sealing plug with valve (optional)
- 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