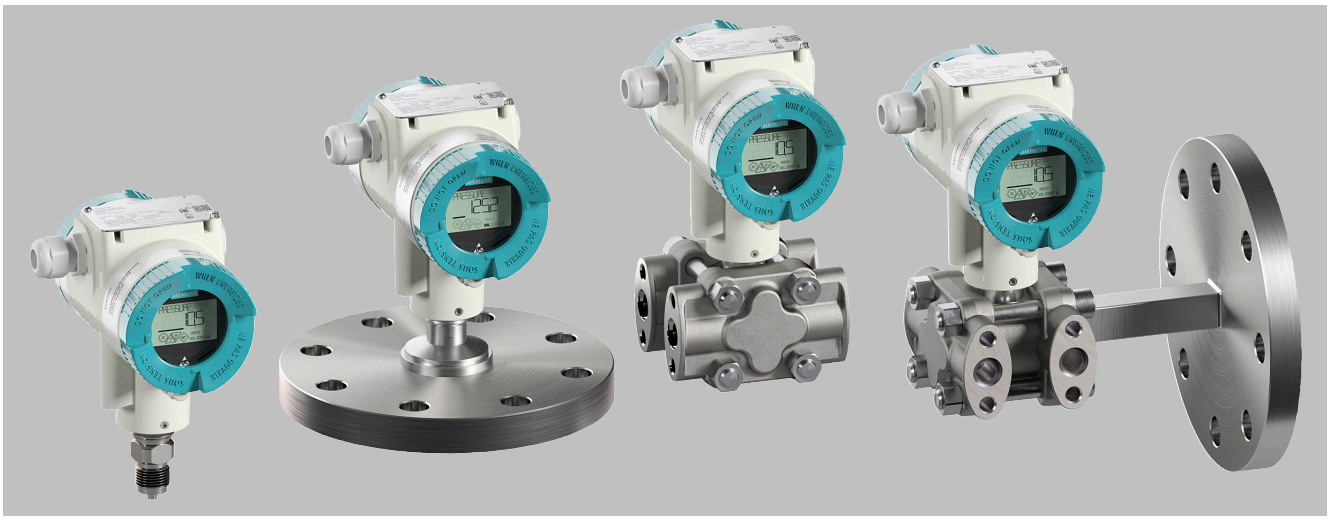
Overview



SITRANS P320/P420 pressure transmitters are digital pressure transmitters featuring extensive user-friendliness and high accuracy. The parameter assignment is performed using input buttons or the HART interface.

The comprehensive functionality makes for precise adjustment of the pressure transmitter to the requirements of the plant. Operation is very user-friendly in spite of the numerous setting options.

Due to their advanced diagnostic functionalities according to NAMUR NE107, the SITRANS P320/P420 pressure transmitters are very suitable for use in chemical plants. Thanks to the advanced diagnostic functions and the process value storage, the SITRANS P420 is "Ready for Digitalization".

The "Remote Safety Handling" function saves customers significant amounts of time and money, because the SIL function can be switched on and validated remotely via SIMATIC PDM. This eliminates travel times and on-site operation via the local display or keyboard.

Parameter assignment using the HART protocol is very easy and quick thanks to the innovative EDD with integrated Quick Start wizard.

The transmitters can be equipped with various types of remote seals for special applications such as the measurement of highly viscous substances.

SITRANS P320/P420 pressure transmitters are available in various versions for measuring:

- Gauge pressure
- Absolute pressure
- Differential pressure
- Level
- Volume flow
- Mass flow

Benefits

- Diagnostic functions in accordance with NAMUR recommendation NE107
- SIL devices developed according to IEC 61508
- SIL validation on the device or remotely with SIMATIC PDM
- Reduction of internal inductance for Ex applications to LI = 0
- Step response time for pressure type T63 = 105 ms and for differential pressure type 135 ms.
- Minimal conformity error
- Very low temperature influence
- Very good long-term stability
- High quality and service life
- High reliability even under extreme chemical and mechanical loads
- For corrosive and non-corrosive gases, vapors and liquids
- Extensive diagnostics and simulation functions
- Separate replacement of measuring cell and electronics without recalibration
- Wetted parts made of high-grade materials (e.g., stainless steel, alloy, gold, Monel, tantalum)
- Infinitely adjustable spans from 0.01 bar to 700 bar (0.15 psi to 10153 psi)
- Convenient parameterization over 4 input buttons and HART interface

Application

SITRANS P320/P420 pressure transmitters can be used in industrial areas with extreme chemical and mechanical loads.

The pressure transmitters can be used in zone 1 or zone 0 with the corresponding Ex approval.

The pressure 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 operated locally over 4 input buttons or programmed externally over HART interface.

Pressure transmitters for gauge pressure

Measured variable:

- Gauge pressure of corrosive and non-corrosive gases, vapors and liquids.

Measuring span (infinitely adjustable)

- For SITRANS P320/P420 with HART: 0.01 bar to 700 bar (0.15 psi to 10153 psi)

There are two series:

- Gauge pressure series
- Differential pressure series

Pressure transmitters for absolute pressure

Measured variable:

- Absolute pressure of corrosive and non-corrosive gases, vapors and liquids.

Measuring span (infinitely adjustable)

- For SITRANS P320/P420 with HART: 8.3 mbar a to 160 bar a (0.12 to 2 321 psi a)

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 overpressure
- Flow $q \sim \sqrt{\Delta p}$ (together with a primary differential pressure transducer (see section "Flowmeters"))

Measuring span (infinitely adjustable)

- For SITRANS P320/P420 with HART: 1 mbar to 160 bar (0.0145 to 2 321 psi)

Pressure transmitters for level

Measured variable:

- Level of corrosive and non-corrosive liquids in open and closed vessels.

Measuring span (infinitely adjustable)

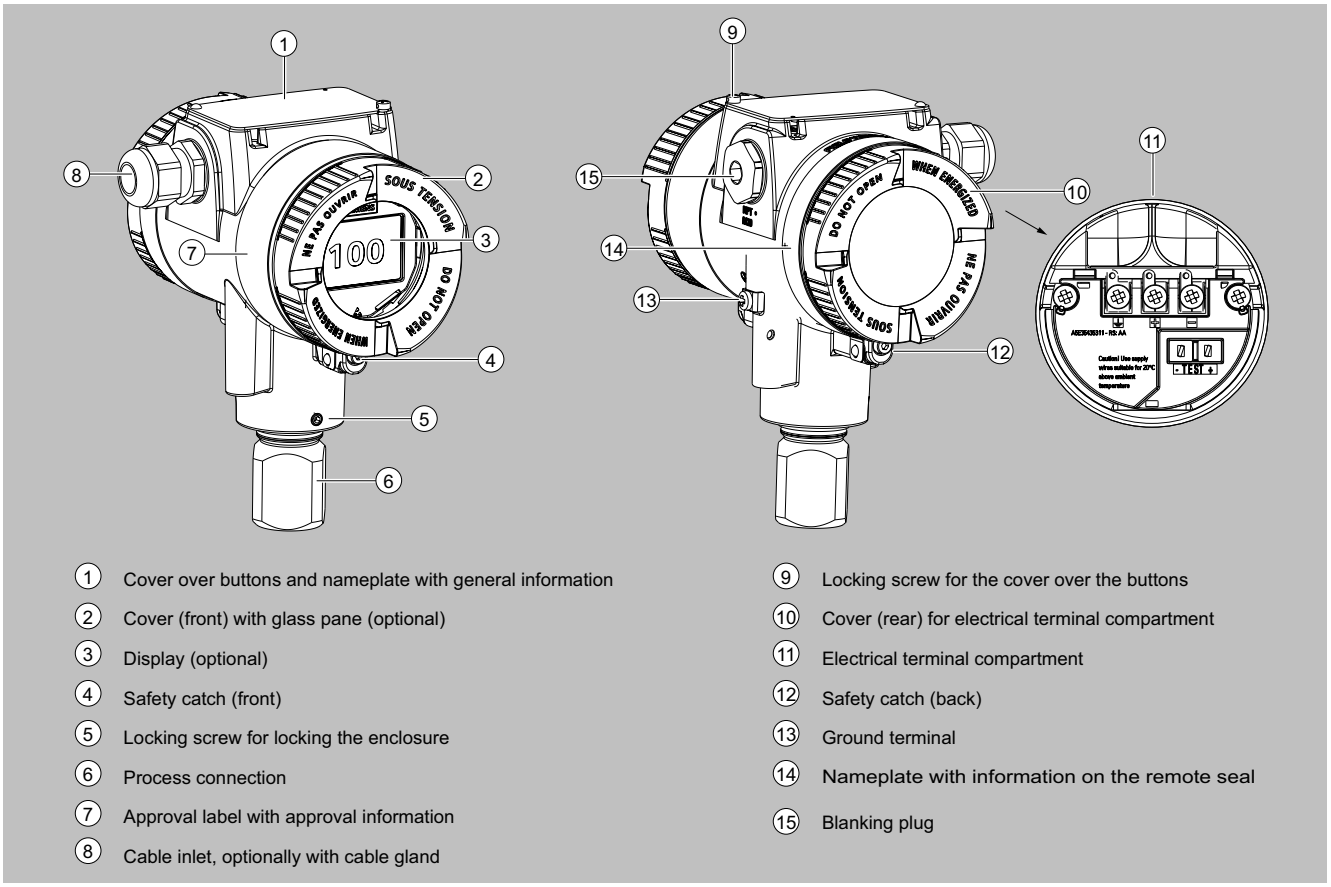
- For SITRANS P320/P420 with HART:
  25 mbar to 5 bar (0.363 to 72.5 psi)

Type of the mounting flange:

- EN 1092-1 flanges
- ASME B16.5 flanges
- J.I.S. flanges
- Diverse range of sealing surface forms available

Design

Depending on the customer-specific order, the device comprises different parts.



1. Cover over buttons and nameplate with general information
2. Cover (front) with glass pane (optional)
3. Display (optional)
4. Safety catch (front)
5. Locking screw for locking the enclosure
6. Process connection
7. Approval label with approval information
8. Cable inlet, optionally with cable gland
9. Locking screw for the cover over the buttons
10. Cover (rear) for electrical terminal compartment
11. Electrical terminal compartment
12. Safety catch (back)
13. Ground terminal
14. Nameplate with information on the remote seal
15. Blanking plug

Device front view

- The electronics enclosure is made of die cast aluminum or precision cast stainless steel.
- The enclosure has a removable cover at the front and the back.
- Depending on the device design, the front cover (2) may be designed with a glass pane.
- The cable inlet (8) to the electrical terminal compartment is at the side; either the left or right-hand one can be used. The unused opening is closed with a blanking plug (15).
- The ground terminal (13) is located on the side.
- The electrical terminal compartment (11) for the auxiliary power and shield is accessible when you remove the back cover (10).
- The measuring cell with process connection (6) is located in the bottom part of the enclosure.

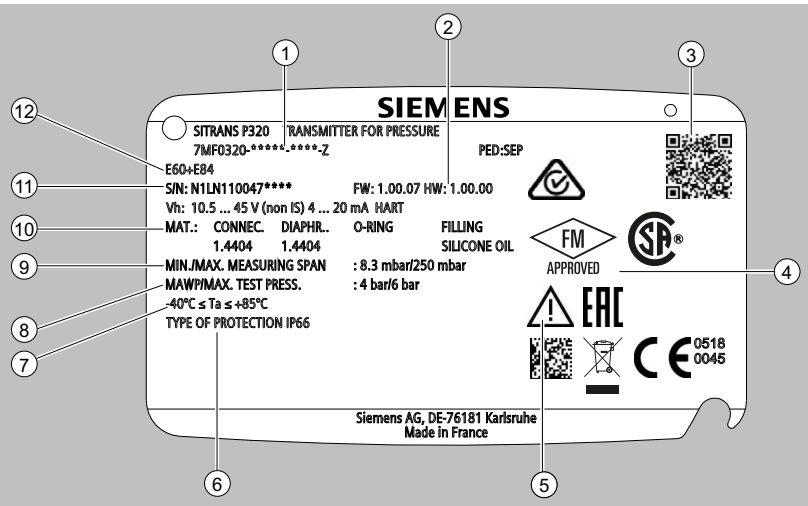
  The measuring cell is prevented from rotating by a locking screw (5).
- Thanks to the modular design of the pressure transmitter, the measuring cell and application electronics or terminal compartment can be replaced if required.
- The button cover (1) is located on the upper face of the enclosure. The nameplate with general information is located on the cover over the buttons.

Nameplates

Nameplate

The nameplate with the article no. and other important information, such as design details and technical data, is located on the cover over the buttons.

Design (continued)

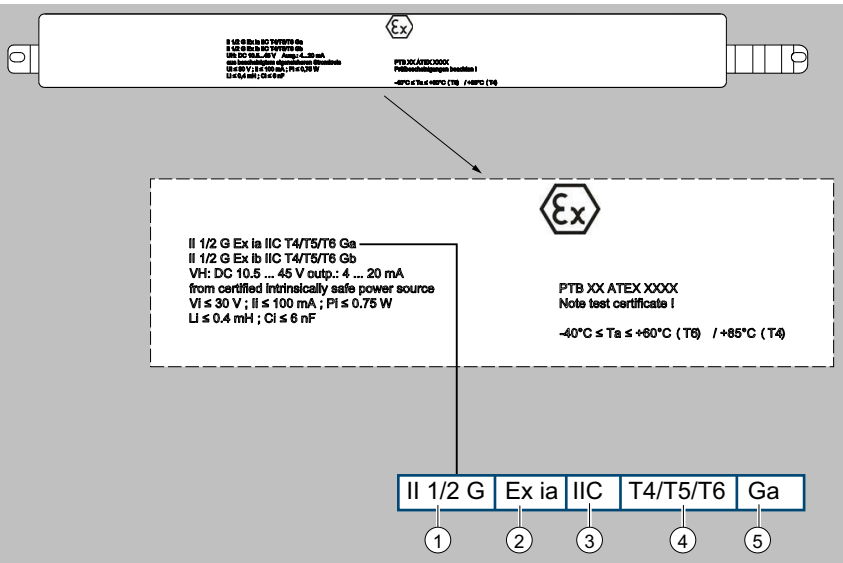


1. Article number
2. Firmware and hardware identification
3. QR code to the mobile website with device-specific information
4. Conformity with country-specific directives
5. Note operating instructions, certificates and approvals
6. Protection class
7. Permitted ambient temperature for the hazardous area of the corresponding temperature class
8. Maximum allowable operating pressure / maximum allowable test pressure
9. Minimum/maximum measuring span
10. Material: connection, diaphragm, O-ring, oil
11. Serial number
12. Order supplement (options, order code)

Certification label with approval information

The certification label with approval information is located on the front of the enclosure.

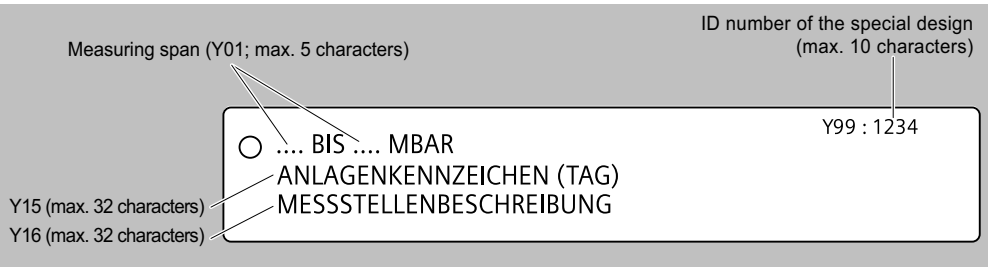
Design (continued)



1. Characteristics of the hazardous area
2. Type of protection
3. Group (gas, dust)
4. Maximum surface temperature (temperature class)
5. Device protection level

Tag plate

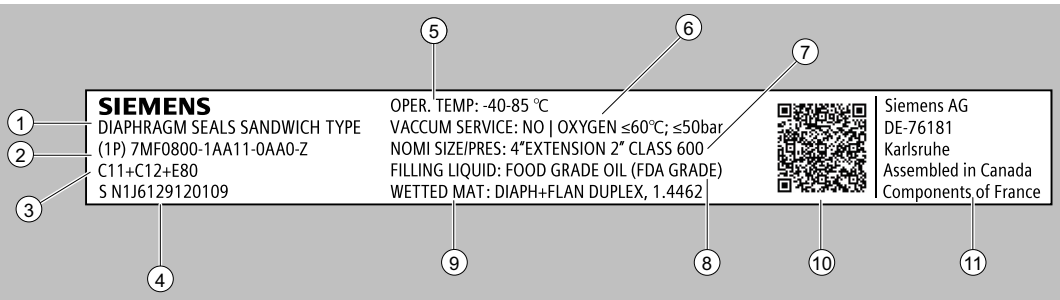
The tag plate is fastened with a wire under the front cover.



Nameplate with information on the remote seals

The nameplate with information on the remote seals is located on the back of the enclosure.

Design (continued)



1. Diaphragm seals of sandwich type
2. Article number
3. Order supplement (options, order code)
4. Serial number
5. Operating temperature
6. Vacuum pressure service: No, oxygen ≤ 60 °C; ≤ 50 bar
7. Nominal diameter/pressure: 4 inch, 50 mm tube length, CLASS 600
8. Filling liquid: Food grade oil (FDA-compliant)
9. Wetted materials: Diaphragm duplex, 1.4462
10. QR code to mobile website with device-specific information
11. Assembly and manufacturing location

Function

Adjustable parameters and diagnostics

SITRANS P320/P420 with HART communication

Parameters	Input buttons	SITRANS P320	SITRANS P420
Application, measurement type	x	x	x
Adjusting lower range value/upper range value	x	x	x
Setting lower range value/upper range value	x	x	x
Electrical damping	x	x	x
Zero adjustment	x	x	x
Fault current	x	x	x
Saturation limits	x	x	x
Scaling of the display	x	x	x
Characteristic curve selection	x	x	x
Temperature unit	x	x	x
Button lock	x	x	x
Change user PIN	x	x	x
Functional safety	x	x	x
Loop test	x	x	x
Start view	x	x	x
Pressure reference	x	x	x
Reset	x	x	x
Diagnostics and trend log			
Min/max pointer	–	x	x
Limit monitoring	–	2	2
Event counter (overrun/undershoot)	–	2	2
Maintenance and service timer	–	x	x
Trend log	–	–	2, max. 1 500 values
Diagnostic log	–	x	x
Parameters change log	–	–	x

Available physical units of display for SITRANS P320/P420

Physical variable	Physical units
Pressure (can also be preset in the factory)	Pa, MPa, kPa, hPa, bar, mbar, psi, g/cm², kg/cm², kgf/cm², inH_2O, inH_2O (4 °C), ftH_2O, mmH_2O, mmH_2O (4 °C), mH_2O (4 °C), mmHg, inHg, atm, torr
Level (height data)	m, cm, mm, ft, in
Volumes (fill level)	m³, l, hl, in³, ft³, yd³, gal, gal (UK), bu, bbl, bbl (US), SCF, Nm³, Nl
Volume (flow)	m³/sec, m³/h, m³/d, l/sec, l/min, l/h, Ml/d, ft³/sec, ft³/h, ft³/d, SCF/min, SCF/h, Nl/h, Nm³/hgal/sec, gal/min, gal/h, gal/d, Mgal/d, gal (UK))/sec, gal (UK)/min, gal (UK)/h, gal (UK)/d, bbl/sec, bbl/min, bbl/h, bbl/d,
Mass (flow)	Kg/sec, kg/min, kg/h, kg/d, g/sec, g/min, g/h, t/min, t/h, t/d, lb/sec, lb/min, lb/h, lb/d, ton/min, ton/h, ton/d, ton (UK)/h, ton (UK)/d
Temperature	°C, °F
Other	%, mA, free text max. 12 characters

For more device information and technical specifications, refer to the individual device versions.

Selection and ordering data

Pressure transmitters for gauge pressure (pressure series)	Article No.																					
SITRANS P320	7MF030	●	-	●	●	●	●	●	-	●	●	●	●									
SITRANS P420	7MF040	●	-	●	●	●	●	●	-	●	●	●	●									
Click the article number for online configuration in the PIA Life Cycle Portal.																						
Communication																						
HART, 4 ... 20 mA		0																				
PROFIBUS PA		1																				
FOUNDATION Fieldbus (FF)		2																				
Measuring cell filling																						
Silicone oil				1																		
Inert liquid				3																		
Neobee oil				4																		
Maximum measuring span																						
250 mbar (3.6 psi)					F																	
1 000 mbar (14.5 psi)					J																	
4 000 mbar (58 psi)					N																	
16 bar (232 psi)					Q																	
63 bar (914 psi)					T																	
160 bar (2 321 psi)					V																	
400 bar (5 802 psi)					W																	
700 bar (10 153 psi)					X																	
Process connection																						
External thread M20 × 1.5						B																
External thread G½ (EN 837-1)						D																
Internal thread ½-14 NPT						E																
External thread ½-14 NPT						F																
Oval flange, fastening thread: $^{7}/_{16}$-20 UNF (IEC 61518)						G																
Oval flange, fastening thread: M10 (DIN 19213)						H																
Oval flange, fastening thread: M12 (DIN 19213)						J																
Flush-mounted diaphragm (options M-R)						K																
Version for diaphragm seal pressure						U																
Material of wetted parts: Process connection, seal diaphragm																						
Stainless steel 316L/1.4404, stainless steel 316L/1.4404							0															
Stainless steel 316L/1.4404, alloy C276/2.4819							1															
Alloy C22/2.4602, alloy C276/2.4819							2															
Stainless steel 316L/1.4404, stainless steel 316L/1.4404 gold-plated							7															
Material of non-wetted parts																						
Die-cast aluminum								1														
Stainless steel precision casting CF3M/1.4409 similar to 316L								2														
Enclosure																						
Dual chamber device													5									
Type of protection																						
Without Ex															A							
Intrinsic safety															B							
Flameproof enclosure															C							
Flameproof enclosure, intrinsic safety															D							
Dust protection by enclosure Zone 21/22 (DIP), increased safety Zone 2															L							
Intrinsic safety, dust protection by enclosure Zone 20/21/22 (DIP), increased safety Zone 2															M							
Combination of options B, C and L (Zone model)															S							
Combination of options B, C and L (Zone model, Class Division)															T							
Electrical connections/cable entries																						
Thread for cable gland: Cable gland must be ordered separately as option (Axx)																						
• 2 × M20 × 1.5																F						
• 2 × ½-14 NPT																M						
Local operation/display																						
Without local display (lid closed)																						0
With local display (lid closed)																						1
With local display (lid with glass pane)																						2

Selection and ordering data (continued)

Options Add "-Z" to article No., add order code and plain text or entry from drop-down list.	Order code
Cable glands included	
Plastic	**A00**
Metal	**A01**
Stainless steel	**A02**
Stainless steel 316L/1.4404	**A03**
CMP, for XP devices	**A10**
CAPRI ADE 4F, CuZn, cable inner diameter 7 ... 12 mm, cable outer diameter 10 ... 16 mm	**A11**
CAPRI ADE 4F, stainless steel, cable inner diameter 7 ... 12 mm, cable outer diameter 10 ... 16 mm	**A12**
Sealing plug included, plastic	**A20**
Sealing plug included, metal	**A21**
Sealing plug included, stainless steel	**A22**
Sealing plug included, stainless steel 316L/1.4404	**A23**
Device plug Han mounted left	
Device plug Han 7D (plastic, straight)	**A30**
Device plug Han 7D (plastic, angled)	**A31**
Device plug Han 7D (metal, straight)	**A32**
Device plug Han 7D (metal, angled)	**A33**
Device plug Han 8D (plastic, straight)	**A34**
Device plug Han 8D (plastic, angled)	**A35**
Device plug Han 8D (metal, straight)	**A36**
Device plug Han 8D (metal, angled)	**A37**
Cable socket included	
Plastic, for device plug Han 7D and Han 8D	**A40**
Metal, for device plug Han 7D and Han 8D	**A41**
Device plug M12 mounted left	
Stainless steel, without cable socket	**A62**
Stainless steel, with cable socket	**A63**
Cable entry/device plug mounting	
2× sealing plugs M20 × 1.5, IP66/68 installed on both sides (no explosion protection approval)	**A90**
2× sealing plugs ½-14 NPT, IP66/68 installed on both sides (no explosion protection approval)	**A91**
Cable gland mounted left	**A97**
Plug mounted right	**A98**
Cable gland mounted right	**A99**
Nameplate labeling (standard labeling: English, unit bar)	
German (bar)	**B11**
French (bar)	**B12**
Spanish (bar)	**B13**
Italian (bar)	**B14**
Chinese (bar)	**B15**
Russian (bar)	**B16**
English (psi)	**B20**
English (Pa)	**B30**
Chinese (Pa)	**B35**
Russian (Pa)	**B36**
Certificates	
Quality inspection certificate, 5-point factory calibration (IEC 62828-2)	**C11**
Inspection certificate (EN 10204-3.1) - Material of pressurized and wetted parts	**C12**
Factory certificate - NACE (MR 0103-2012 and MR 0175-2009)	**C13**
Factory certificate (EN 10204-2.2) - Wetted parts	**C14**
Inspection certificate (EN 10204-3.1) - PMI test of pressurized and wetted parts	**C15**
Certificates for functional safety	
Functional Safety (IEC 61508) - SIL2/3	**C20**
Device options	
Double layer coating (epoxy resin and polyester) 120 µm of enclosure and lid	**D20**
FVMQ enclosure sealing	**D21**
Degree of protection IP66/IP68 (not for device plug M12 and Han)	**D30**
Unlabeled TAG plate	**D40**
Without labeling of the measuring range on the TAG plate	**D41**
Stainless steel Ex plate 1.4404/316L	**D42**
Transmitter packaged in foil	**D60**
Cleaning the measuring cell, grease-free as per cleanliness level 2, DIN 25410; transmitter packaged in foil	**D61**
Cleaning the measuring cell, grease-free (for oxygen version) and transmitter packed in foil; (particles < 50 mg/m²; oil and residual grease content HC < 100 mg/m²)	**D62**
Overvoltage protection up to 6 kV (internal)	**D70**
Overvoltage protection up to 6 kV (external)	**D71**
Labels on transport packaging (provided by customer)	**D90**
General approval without Ex approval	
Worldwide (CE, UKCA, RCM) except EAC, FM, CSA, KC	**E00**
Worldwide (CE, UKCA, RCM, EAC, FM, CSA, KC)	**E01**
CSA (USA and Canada)	**E06**
EAC	**E07**
FM	**E08**
KC	**E09**
Explosion protection approvals	
ATEX (Europe)	**E20**
CSA (USA and Canada)[1)]	**E21**
FM (USA)[1)]	**E22**
IECEx (Worldwide)	**E23**
EACEx (GOST-R, -K, -B)	**E24**
INMETRO (Brazil)	**E25**
KCs (Korea)	**E26**
NEPSI (China)	**E27**
PESO (India)	**E28**
CSA (Japan)	**E29**
ECASEx (UAE)	**E32**
UKEX (United Kingdom)	**E33**
ATEX (Europe), IECEx (Worldwide) and UKEX (UK)	**E47**
CSA (Canada) and FM (USA)[1)]	**E48**
ATEX (Europe) and IECEx (Worldwide) + CSA (Canada) and FM (USA)[1)]	**E49**
Marine approvals	
DNV-GL (Det Norske Veritas/Germanischer Lloyd)	**E50**
LR (Lloyds Register)	**E51**

Selection and ordering data (continued)

Options Add "-Z" to article No., add order code and plain text or entry from drop-down list.	Order code
BV (Bureau Veritas)	**E52**
ABS (American Bureau of Shipping)	**E53**
RMR (Russian Maritime Register)	**E55**
KR (Korean Register of Shipping)	**E56**
RINA (Registro Italiano Navale)	**E57**
CCS (China Classification Society)	**E58**
Country-specific approvals	
CRN approval Canada (Canadian Registration Number)	**E60**
Special approvals	
Oxygen application (with inert liquid, max. 160 bar (2 320 psi) at 100 °C (212 °F))	**E80**
Dual Seal	**E81**
WRC/WRAS (drinking water); only with process flange O-rings made of EPDM	**E83**
NSF61 (drinking water)	**E84**
ACS (drinking water)	**E85**
EHEDG (hygiene)	**E87**
Special designs of devices	
Custom design F02	**F02**
Custom design F04	**F04**
Custom design F12	**F12**
Custom design F14	**F14**
Mounting bracket	
Zinc-plated steel	**H01**
Stainless steel 1.4301/304	**H02**
Stainless steel 1.4404/316L	**H03**
Mounting bracket, zinc-plated steel, reinforced (KTA)	**H05**
Flange connections with flange EN 1092-1	
P with flange adapter G½ form B1	
• DN 25 PN 40, stainless steel 1.4571/316Ti	**J80**
• DN 50 PN 40, stainless steel 1.4571/316Ti	**J81**
• DN 80 PN 40, stainless steel 1.4571/316Ti	**J82**
P with water trap G½ form B1	
• DN 25 PN 40, stainless steel 1.4571/316Ti	**J83**
• DN 50 PN 40, stainless steel 1.4571/316Ti	**J84**
• DN 80 PN 40, stainless steel 1.4571/316Ti	**J85**
• DN 25 PN 100, stainless steel 1.4571/316Ti	**J86**
Flange connection options	
DP/P flange connection with epoxy resin coating (can only be ordered together with Y99: 0565).	**J77**
Process flanges, process connection option	
Process connection (oval flange) NAM (ASTAVA) (MAWP 420 bar)	**K21**

Options Add "-Z" to article No., add order code and plain text or entry from drop-down list.	Order code
Process flanges, gaskets (instead of standard gaskets FKM (FPM))	
Gasket (EN 837-1) material Fe (soft iron)	**K60**
Gasket (EN 837-1) material 1.4571	**K61**
Gasket (EN 837-1) material Cu	**K62**
Process flange options	
Process connection external thread G½, bore hole 11 mm	**K80**
Oval flange included, PTFE gasket + fixing screws	**K86**
Shut-off valves, valve manifolds	
With mounted valve manifold 7MF9011-4EA, process connection at transmitter G½ shank, PTFE sealing ring and pressure test certified in factory certificate (EN 10204-2.2)	**T02**
With mounted valve manifold 7MF9011-4FA, process connection at transmitter internal thread ½-14 NPT, sealing tape. With PTFE sealing ring and pressure test certified in factory certificate (EN 10204-2.2)	**T03**
With mounted valve manifold 7MF9411-5AA, process connection at transmitter oval flange with PTFE sealing ring, steel fixing screws, pressure test certified in factory certificate (EN 10204-2.2)	**T05**
With mounted valve manifold 7MF9411-5AA, process connection at transmitter oval flange with PTFE sealing ring, stainless steel fixing screws, pressure test certified in factory certificate (EN 10204-2.2)	**T06**
Device settings	
Measuring span: Lower range value (max. 5 characters), upper range value (max. 5 characters), unit [mbar, bar, kPa, MPa, psi, ...], example: -0.5 ... 10.5 psi	**Y01**
TAG (on stainless steel plate and device parameters, max. 32 characters)	**Y15**
Measuring point description (on stainless steel plate and device parameters, max. 32 characters)	**Y16**
TAG short (device parameters, max. 8 characters)	**Y17**
Local display: [Pressure, Percent], reference [None, Absolute, Gauge], example: Pressure gauge	**Y21**
Local display: Scaling with standard units [m^3/s, l/s, m, inch, ...;, example 1 ... 5 m]	**Y22**
Local display: Scaling with user-specific units (max. 12 characters), example 1 ... 5 m	**Y23**
Set PROFIBUS PA device address (1 ... 126)	**Y25**
Saturation limits instead of 3.8 ... 20.5 mA, example: 3.8 ... 22.0 mA	**Y30**
Fault current instead of 3.6 mA [22.5 mA, 22.8 mA]	**Y31**
Damping in seconds instead of 2 s (0.0 ... 100.0 s)	**Y32**
ID number of special design	**Y99**

[1] Explosion protection acc. to FM/CSA: suitable for installation according to NEC 500/505.

Technical specifications

SITRANS P320/SITRANS P420 for gauge pressure (pressure series)			
Input			
Measured variable	Gauge pressure		
Measuring span (continuously adjustable) or measuring range, max. permissible operating pressure (in accordance with Pressure Equipment Directive 2014/68/EU) and max. permissible test pressure (pursuant to DIN 16086) (for oxygen measurement, max. 100 bar/10 MPa/1450 psi and 60 °C (140 °F) ambient temperature/medium temperature)	Measuring span	Max. permissible operating pressure MAWP (PS)	Maximum permissible test pressure
	8.3 ... 250 mbar 0.83 ... 25 kPa 0.12 ... 3.6 psi	4 bar 0.4 MPa 58 psi	6 bar 0.6 MPa 87 psi
	0.01 ... 1 bar 1 ... 100 kPa 0.15 ... 14.5 psi	6 bar 0.6 MPa 87 psi	9 bar 0.9 MPa 130 psi
	0.04 ... 4 bar 4 ... 400 kPa 0.58 ... 58 psi	20 bar 2 MPa 290 psi	30 bar 3 MPa 435 psi
	0.16 ... 16 bar 0.016 ... 1.6 MPa 2.3 ... 232 psi	45 bar 4.5 MPa 652 psi	70 bar 7 MPa 1015 psi
	0.63 ... 63 bar 0.063 ... 6.3 MPa 9.1 ... 914 psi	80 bar 8 MPa 1160 psi	120 bar 12 MPa 1740 psi
	1.6 ... 160 bar 0.16 ... 16 MPa 23 ... 2321 psi	240 bar 24 MPa 3481 psi	360 bar 36 MPa 5221 psi
	4 ... 400 bar 0.4 ... 40 MPa 58 ... 5802 psi	400 bar 40 MPa 5802 psi	600 bar 60 MPa 8702 psi
	7 ... 700 bar 0.7 ... 70 MPa 102 ... 10153 psi	800 bar 80 MPa 11603 psi	800 bar 80 MPa 11603 psi
Measuring limits			
• Lower measuring limit	For 250 mbar/25 kPa/3.6 psi measuring cells, the lower measuring limit is 750 mbar a/75 kPa a/10.8 psi a. The measuring cell is vacuum-resistant up to 30 mbar a/3 kPa a/0.44 psi a.		
- Measuring cell with silicone oil filling	30 mbar a/3 kPa a/0.44 psi a		
- Measuring cell with inert fill oil	30 mbar a/3 kPa a/0.44 psi a		
- Measuring cell with FDA compliant fill oil	100 mbar a/10 kPa a/1.45 psi a		
• Upper measuring limit	100% of the max. measuring span (for oxygen measurement max. 100 bar/10 MPa/1450 psi and 60 °C (140 °F) ambient temperature/medium temperature)		
• Lower range value	Between the measuring limits (continuously adjustable)		
Output	**HART**		
Output signal	4 ... 20 mA		
• Lower saturation limit (continuously adjustable)	3.55 mA, factory set to 3.8 mA		
• Upper saturation limit (continuously adjustable)	22.8 mA, factory-set to 20.5 mA or optionally 22.0 mA		
• Ripple (without HART communication)	$I_{pp} \leq 0.5\%$ of max. output current		
Adjustable damping	0 ... 100 s, continuously adjustable over remote operation 0 ... 100 s, in increments of 0.1 s, adjustable over local display		
Current simulator	3.55 ... 22.8 mA		
Failure signal	3.55 ... 22.8 mA (factory set to 3.55 mA)		
Load	Resistance R [Ω]		
• Without HART communication	$R_{max} = (U_H - 10.5\ V) / 22.8\ mA$, U_H: Auxiliary power in V		
• With HART communication	R = 230 ... 1100 Ω		
Characteristic curve	• Linearly increasing or linearly decreasing		
Physical bus	-		
Polarity-independent	-		

Technical specifications (continued)

SITRANS P320/SITRANS P420 for gauge pressure (pressure series)		
Measuring accuracy		
Reference conditions	• According to IEC 62828-1 • Rising characteristic curve • Lower range value 0 bar/kPa/psi • Seal diaphragm stainless steel • Measuring cell with silicone oil filling • Room temperature 25 °C (77 °F)	
Characteristic curve deviation at limit point setting, including hysteresis and repeatability		
Measuring span ratio r (spread, turn-down)	r = max. measuring span/set measuring span and nominal measuring range	
• Linear characteristic curve		
- 250 mbar/25 kPa/3.6 psi	r ≤ 1.25: 1.25 < r ≤ 30:	≤ 0.075% (SITRANS P320) ≤ 0.065% (SITRANS P420) ≤ (0.008 · r +0.065)%
- 1 bar/100 kPa/14.5 psi 4 bar/400 kPa/58 psi 16 bar/1.6 MPa/232 psi 63 bar/6.3 MPa/914 psi 160 bar/16 MPa/2321 psi	r ≤ 5: 5 < r ≤ 100:	≤ 0.065% (SITRANS P320) ≤ 0.04% (SITRANS P420) ≤ (0.004 · r +0.045)%
- 400 bar/40 MPa/5802 psi 700 bar/70 MPa/10152 psi	r ≤ 5: 5 < r ≤ 100: r ≤ 5: 5 < r ≤ 100:	≤ 0.075% (SITRANS P320) ≤ (0.005 · r + 0.05)% (SITRANS P320) ≤ 0.075% (SITRANS P420) ≤ (0.005 · r + 0.05)% (SITRANS P420)
Influence of ambient temperature in % per 28 °C (50 °F))		
• 250 mbar/25 kPa/3.6 psi	≤ (0.16 · r +0.1)%	
• 1 bar/100 kPa/14.5 psi	≤ (0.05 · r +0.1)%	
• 4 bar/400 kPa/58 psi 16 bar/1.6 MPa/232 psi 63 bar/6.3 MPa/914 psi 160 bar/16 MPa/2321 psi 400 bar/40 MPa/5802 psi	≤ (0.025 · r +0.125)%	
• 700 bar/70 MPa/10152 psi	≤ (0.08 · r +0.16)%	
Long-term stability at ±30 °C (± 54 °F)		
• 250 mbar/25 kPa/3.6 psi	≤ (0.25 · r)% per year	
• 1 bar/100 kPa/14.5 psi	In 5 years ≤ (0.25 · r)% In 10 years ≤ (0.35 · r)%	
• 4 bar/400 kPa/58 psi 16 bar/1.6 MPa/232 psi 63 bar/6.3 MPa/914 psi 160 bar/16 MPa/2321 psi 400 bar/40 MPa/5802 psi	In 5 years ≤ (0.125 · r)% In 10 years ≤ (0.15 · r)%	
• 700 bar/70 MPa/10152 psi	In 5 years ≤ (0.25 · r)% In 10 years ≤ (0.35 · r)%	
Step response time T_{63} (without electrical damping)	≤ 0.105 s	
Effect of mounting position (in pressure per change of angle)	≤ 0.05 mbar/0.005 kPa/0.000725 psi per 10° incline (zero offset is possible with position error compensation)	
Effect of auxiliary power (in % per voltage change)	0.005% per 1 V	
Operating conditions		
Medium temperature		
• Measuring cell with silicone oil filling	-40 ... +100 °C (-40 ... +212 °F)	
• Measuring cell with inert fill oil		
- 1 bar/100 kPa/14.5 psi 4 bar/400 kPa/58 psi 16 bar/1.6 MPa/232 psi 63 bar/6.3 MPa/914 psi	-40 ... +100 °C (-40 ... +212 °F)	
- 160 bar/16 MPa/2321 psi 400 bar/40 MPa/5802 psi 700 bar/70 MPa/10152 psi	-20 ... +100 °C (-4 ... +212 °F)	
• Measuring cell with FDA compliant fill oil	-10 ... +100 °C (14 ... +212 °F)	

Technical specifications (continued)

SITRANS P320/SITRANS P420 for gauge pressure (pressure series)	
Ambient conditions	
Ambient temperature/enclosure	Observe the temperature class in hazardous areas.
• Measuring cell with silicone oil filling	-40 ... +85 °C (-40 ... +185 °F)
• Measuring cell with inert fill oil	
- 1 bar/100 kPa/14.5 psi 4 bar/400 kPa/58 psi 16 bar/1.6 MPa/232 psi 63 bar/6.3 MPa/914 psi 160 bar/16 MPa/2321 psi 400 bar/40 MPa/5802 psi 700 bar/70 MPa/10152 psi	-40 ... +85 °C (-40 ... +185 °F)
- Measuring cell with FDA compliant fill oil	-10 ... +85 °C (14 ... +185 °F)
- Local display	-20 ... +80 °C (-4 ... +176 °F)
• Storage temperature	-50 ... +85 °C (-58 ... +185 °F) (with FDA compliant fill oil: -20 ... +85 °C (-4 ... +185 °F))
• Climatic class in accordance with IEC 60721-3-4	4K4H
• Degree of protection	
- According to IEC 60529	IP66, IP68
- According to NEMA 250	Type 4X
• Electromagnetic compatibility	
- Emitted interference and interference immunity	According to IEC 61326 and NAMUR NE 21
Structural design	
Weight	• Aluminum enclosure: Approx. 1.8 kg (3.9 lb) • Stainless steel enclosure: Approx. 3.8 kg (8.3 lb)
Material	
• Material of wetted parts	
- Process connection	Stainless steel, mat. no. 1.4404/316L or Alloy C22, mat. no. 2.4602
- Oval flange	Stainless steel, mat. no. 1.4404/316L
- Seal diaphragm	Stainless steel, mat. no. 1.4404/316L or alloy C276, mat. no. 2.4819, or stainless steel, mat. no. 1.4404/316L gold-plated
• Material of non-wetted parts	
- Electronics enclosure	• Low-copper die-cast aluminum GD-AlSi 12 or stainless steel precision casting, mat. no. 1.4409/ CF-3M • Standard: Powder coating with polyester Option: 2 coats: Coat 1: Epoxy-based; coat 2: Polyester • Coating: The layer structure and thickness correspond to EN ISO 12944 Corrosion Class C3-M (for standard transmitter) and C5-H (for transmitter with double layer coating) • Stainless steel nameplate (1.4404/316L)
- Mounting bracket	Zinc-plated steel or stainless steel
Process connection	• Connection shank G1/2A according to EN 837-1 • Internal thread ½-14 NPT • Oval flange (PN 160 (MWP 2320 psi g)) with fastening thread: - 7/16-20 UNF according to EN 61518 - M10 according to DIN 19213 • Oval flange (PN 420 (MWP 2320 psi g)) with fastening thread: - 7/16-20 UNF according to EN 61518 - M12 according to DIN 19213 • External thread M20 × 1.5 and ½-14 NPT
Electrical connection	Cable entry via the following screw glands: • M20 × 1.5 • ½-14 NPT • Device plug Han 7D/Han 8D[1)] • Device plug M12
Displays and controls	
Buttons	4 buttons for operation directly on the device
Local display	• With or without integrated local display (optional) • Lid with inspection window (optional)

Technical specifications (continued)

SITRANS P320/SITRANS P420 for gauge pressure (pressure series)	
Auxiliary power U_H	
Terminal voltage on pressure transmitter	10.5 ... 45 V DC 10.5 ... 30 V DC in intrinsically safe mode
Ripple	$U_{SS} \leq 0.2$ V (47 ... 125 Hz)
Noise	$U_{eff} \leq 1.2$ mV (0.5 ... 10 kHz)
Auxiliary power	–
Separate supply voltage	–
Certificates and approvals	
Classification according to pressure equipment directive (PED 2014/68/EU)	For gases of fluid group 1 and liquids of fluid group 1; complies with requirements of article 4, paragraph 3 (sound engineering practice)
Drinking water	
• WRAS (England)	No.: 1903094 (option E83)
• ACS (France)	No.: 24 ACC NY 265 (option E85)
• NSF (USA)	No.: 20180920-MH61350 (option E84)
• CRN (Canada)	No.: 0F9863.5C (option E60)
Explosion protection acc. to NEPSI (China)	No.: GYJ24.1046X (option E27)
Explosion protection acc. to INMETRO (Brazil)	No.: BRA 22.GE0004X (option E25)
Explosion protection as per ATEX	No.: BVS 18 ATEX E 049X
• Intrinsic safety "i"	
- Marking	II 1/2 G Ex ia/ib IIC T4/T6 Ga/Gb
- Permissible ambient temperature	-40 ... +80 °C (-40 ... +176 °F) temperature class T4 -40 ... +55 °C (-40 ... +131 °F) temperature class T6
- Permissible medium temperature	-40 ... +100 °C (-40 ... +212 °F) temperature class T4 -40 ... +70 °C (-40 ... +158 °F) temperature class T6
- Connection	To certified intrinsically safe circuits with peak values: U_i = 30 V, I_i = 101 mA, P_i = 760 mW U_i = 29 V, I_i = 110 mA, P_i = 800 mW
- Effective internal inductance/capacitance	L_i = 0.24 µH/C_i = 3.29 nF
• Flameproof enclosure "d"	
- Marking	Ex II 1/2 G Ex ia/db IIC T4/T6 Ga/Gb
- Permissible ambient temperature	-40 ... +80 °C (-40 ... +176 °F) temperature class T4 -40 ... +70 °C (-40 ... +158 °F) temperature class T6
- Permissible medium temperature	-40 ... +100 °C (-40 ... +212 °F) temperature class T4 -40 ... +70 °C (-40 ... +158 °F) temperature class T6
- Connection	To a circuit with the operating values: U_n = 10.5 ... 45 V, 4 ... 20 mA
• Dust explosion protection for Zones 21, 22	
- Marking	Ex II 2D Ex tb IIIC T120 °C Db Ex II 3D Ex tc IIIC T120 °C Dc
- Permissible ambient temperature	-40 ... +80 °C (-40 ... +176 °F)
- Permissible medium temperature	-40 ... +100 °C (-40 ... +212 °F)
- Max. surface temperature	120 °C (248 °F)
- Connection	To a circuit with the operating values: U_n = 10.5 ... 45 V, 4 ... 20 mA
• Dust explosion protection for Zones 20, 21, 22	
- Marking	Ex II 1D Ex ia IIIC T120 °C Da Ex II 2D Ex ib IIIC T120 °C Db
- Permissible ambient temperature	-40 ... +80 °C (-40 ... +176 °F)
- Permissible medium temperature	-40 ... +100 °C (-40 ... +212 °F)
- Connection	To certified intrinsically safe circuits with peak values: U_i = 30 V, I_i = 101 mA, P_i = 760 mW U_i = 29 V, I_i = 110 mA, P_i = 800 mW
- Effective internal inductance/capacitance	L_i = 0.24 µH/C_i = 3.29 nF
• Type of protection for Zone 2	
- Marking	Ex II 3G Ex ec IIC T4/T6 Gc
- Permissible ambient temperature "ec"	-40 ... +80 °C (-40 ... +176 °F) temperature class T4 -40 ... +40 °C (-40 ... +104 °F) temperature class T6

Technical specifications (continued)

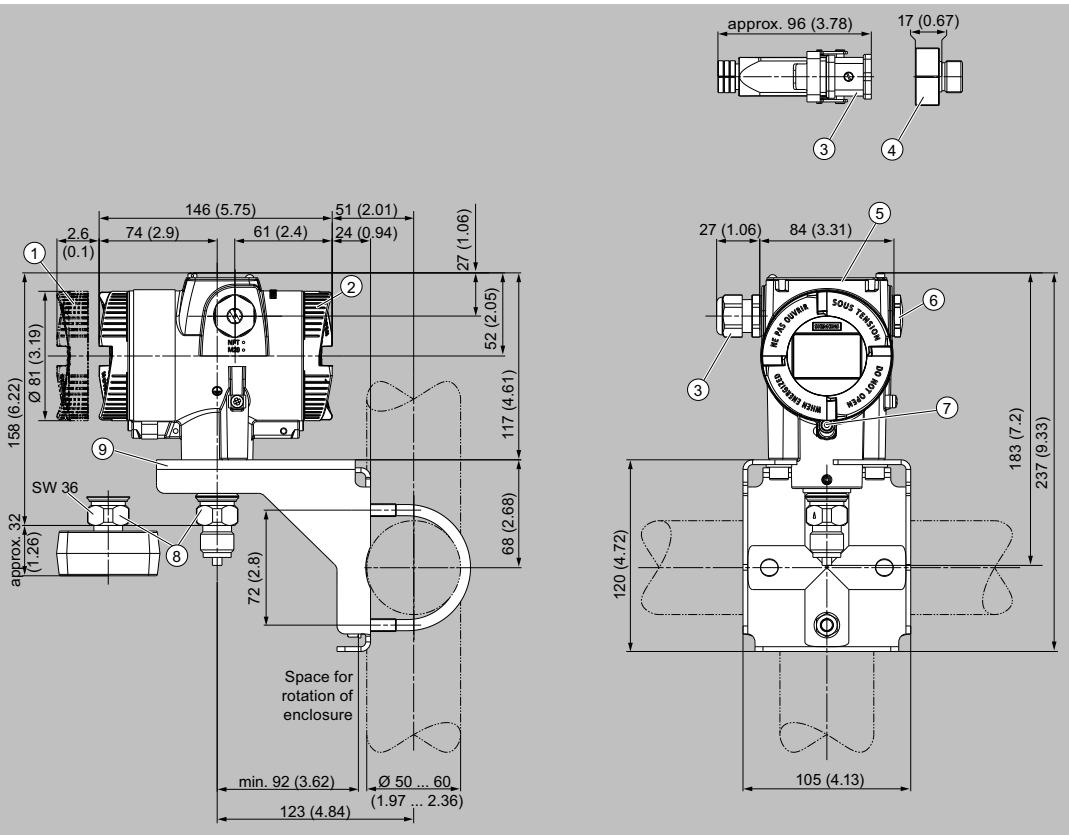
SITRANS P320/SITRANS P420 for gauge pressure (pressure series)	
- Permissible medium temperature	-40 ... +100 °C (-40 ... +212 °F) temperature class T4 -40 ... +70 °C (-40 ... +158 °F) temperature class T6
- "ec" connection	To a circuit with the operating values: U_n = 10.5 ... 30 V, 4 ... 20 mA
• Explosion protection acc. to FM	No.: FM19US0155X
• Explosion protection according to CSA	No.: CSA18CA70163103
NAMUR recommendations	
• NE 06	Standardized Electrical Signals and Questions Relating to Engineering Technology
• NE 21	Electromagnetic Compatibility (EMC) of Industrial Process and Laboratory Control Equipment
• NE 23	Extra Low Voltage Circuits with Safe Separation
• NE 43	Standardization of the Signal Level for the Failure Information of Digital Transmitters with Analog Output Signal
• NE 53	Software and Hardware of Field Devices and Signal Processing Devices with Digital Electronics
• NE 80	The Application of the Pressure Equipment Directive to Process Control Devices
• NE 105	Specifications for Integrating Fieldbus Devices in Engineering Tools for Field Devices
• NE 107	Self-Monitoring and Diagnosis of Field Devices
• NE 131	NAMUR Standard Device - Field Devices for Standard Applications

1) Han 8D is identical to Han 8U.

Communication	
HART	
HART	230 ... 1 100 Ω
Protocol	HART 7
Software for computer	SIMATIC PDM
PROFIBUS PA	
Simultaneous communication with master class 2 (max.)	4
The address can be set using	Configuration tool or local operation (default setting address 126)
Cyclic data usage	
• Output byte	≤ 35 (7 measured values)
• Input byte	0, 1, or 2 (register operation mode and reset function for dosing)
Internal preprocessing	
Device profile	PROFIBUS PA Profile Version 4.01 Class B. Cyclic data usage compatible with version 3.XX
Number of function blocks	7
• Analog input	
- Adaptation to user-specific process variable	Yes, linearly rising or falling characteristic curve
- Electrical damping adjustable	0 ... 100 s
- Simulation function	Output/input
- Limit monitoring	Yes, one upper and lower warning limit and one alarm limit respectively
• Register (totalizer)	Can be reset, preset, optional direction of counting, simulation function of register output
• Limit monitoring	One upper and lower warning limit and one alarm limit respectively
• Physical block	1
Transducer blocks	1
• Pressure transducer block	
- Can be calibrated by applying two pressures	Yes
- Monitoring of sensor limits	Yes

Communication	
- Specification of a vessel characteristic curve with	Max. 30 nodes
- Square-rooted characteristic curve for flow measurement	Yes
- Tank characteristic curve for volume measurement	Yes
- Low flow cut-off and implementation point of square-root extraction	Parameterizable
- Simulation function for measured pressure value and sensor temperature	Constant value or by means of parameterizable ramp function
FOUNDATION Fieldbus	
Device profile	FF ITK 6
Function blocks	3 function blocks analog input, 1 function block PID
• Analog input	
- Adaptation to user-specific process variable	Yes, linearly rising or falling characteristic curve
- Electrical damping adjustable	0 ... 100 s
- Simulation function	Output/input (can be locked within the device with a bridge)
- Failure behavior	Parameterizable (last good value, substitute value, incorrect value)
- Limit monitoring	Yes, one upper and lower warning limit and one alarm limit respectively
- Square-rooted characteristic curve for flow measurement	Yes
• PID	Standard FOUNDATION Fieldbus function block
• Physical block	1 resource block
Transducer blocks	1 transducer block Pressure with calibration, 1 transducer block LCD
• Pressure transducer block	
- Can be calibrated by applying two pressures	Yes
- Monitoring of sensor limits	Yes
- Simulation function: pressure measurement, sensor temperature and electronics temperature	Constant value or by means of parameterizable ramp function

Dimensional drawings



1. Electronics side, local display (longer overall length for cover with glass pane)[1]
2. Connection side
3. Electrical connection:
   - M20 x 1.5[3] screw gland
   - ½-14 NPT screw gland
   - Han 7D/Han 8D[2][3] device plug
   - M12 device plug[2][3]
4. Harting adapter
5. Cover over buttons and nameplate with general information
6. Blanking plug
7. Safety catch (only for "flameproof enclosure" type of protection)
8. Process connection: G½B connection pin or oval flange
9. Mounting bracket (optional)

[1] In addition, allow approx. 22 mm (0.87 inch) for the thread length when removing the covers
[2] Not with "flameproof enclosure" type of protection
[3] Not with type of protection "FM + CSA" [is + XP]"

SITRANS P320/P420 pressure transmitter for gauge pressure (pressure series), dimensions in mm (inch)

Selection and ordering data

Pressure transmitters for gauge pressure (differential pressure series)	Article No.																					
SITRANS P320	7MF031							●	-	●	●	●	●	●	-	●	●	●	●			
SITRANS P420	7MF041							●	-	●	●	●	●	●	-	●	●	●	●			
Click the article number for online configuration in the PIA Life Cycle Portal.																						
Communication																						
HART, 4 ... 20 mA								0														
PROFIBUS PA								1														
FOUNDATION Fieldbus (FF)								2														
Measuring cell filling																						
Silicone oil										1												
Inert filling liquid										3												
Maximum measuring span																						
20 mbar (8.037 inH_2O)											B											
60 mbar (24.11 inH_2O)											D											
250 mbar (1005 inH_2O)											G											
600 mbar (241.1 inH_2O)											H											
1 600 mbar (643 inH_2O)											M											
5 000 mbar (2009 inH_2O)											P											
30 bar (435 psi)											R											
160 bar (2 320 psi)											Y											
Process connection																						
Oval flange, fastening thread: $^7/_{16}$-20 UNF (IEC 61518)												L										
Oval flange, fastening thread: M10 (PN 160), (DIN 19213)												M										
Oval flange, fastening thread: $^7/_{16}$-20 UNF (IEC 61518) with lateral ventilation												N										
Oval flange, fastening thread: M10 (PN 160) (DIN 19213) with lateral ventilation												P										
Material of wetted parts: Sensor body, seal diaphragm, process flange																						
Stainless steel 316L/1.4404, stainless steel 316L/1.4404, process flange stainless steel 316/1.4408													0									
Stainless steel 316L/1.4404, alloy C276/2.4819, process flange stainless steel 316/1.4408													1									
Alloy C22/2.4602, alloy C276/2.4819, process flange stainless steel 316/1.4408													2									
Tantalum/tantalum, process flange stainless steel 316/1.4408 (not in combination with maximum measuring span 20 mbar (0.29 psi) and 60 mbar (0.87 psi))													4									
Monel 400/2.4360, Monel 400/2.4360, process flange stainless steel 316/1.4408 (not in combination with maximum measuring span 20 mbar (0.29 psi) and 60 mbar (0.87 psi))													6									
Stainless steel 316L/1.4404 gold-plated, process flange stainless steel 316/1.4408 (not in combination with maximum measuring span 20 mbar (0.29 psi) and 60 mbar (0.87 psi))													8									
Material of non-wetted parts																						
Die-cast aluminum														1								
Stainless steel precision casting CF3M/1.4409 similar to 316L														2								
Enclosure																						
Dual chamber device																5						
Type of protection																						
Without Ex																	A					
Intrinsic safety																	B					
Flameproof enclosure																	C					
Flameproof enclosure, intrinsic safety																	D					
Dust protection by enclosure Zone 21/22 (DIP), increased safety Zone 2																	L					
Intrinsic safety, dust protection by enclosure Zone 20/21/22 (DIP), increased safety Zone 2																	M					
Combination of options B, C and L (Zone model)																	S					
Combination of options B, C and L (Zone model, Class Division)																	T					
Electrical connections/cable entries																						
Thread for cable gland: Cable gland must be ordered separately as option (Axx)																						
• 2 × M20 × 1.5																		F				
• 2 × ½-14 NPT																		M				
Local operation/display																						
Without local display (lid closed)																						0
With local display (lid closed)																						1
With local display (lid with glass pane)																						2

Selection and ordering data (continued)

Options Add "-Z" to article No., add order code and plain text or entry from drop-down list.	Order code
Cable glands included	
Plastic	**A00**
Metal	**A01**
Stainless steel	**A02**
Stainless steel 316L/1.4404	**A03**
CMP, for XP devices	**A10**
CAPRI ADE 4F, CuZn, cable inner diameter 7 ... 12 mm, cable outer diameter 10 ... 16 mm	**A11**
CAPRI ADE 4F, stainless steel, cable inner diameter 7 ... 12 mm, cable outer diameter 10 ... 16 mm	**A12**
Sealing plug included, plastic	**A20**
Sealing plug included, metal	**A21**
Sealing plug included, stainless steel	**A22**
Sealing plug included, stainless steel 316L/1.4404	**A23**
Device plug Han mounted left	
Device plug Han 7D (plastic, straight)	**A30**
Device plug Han 7D (plastic, angled)	**A31**
Device plug Han 7D (metal, straight)	**A32**
Device plug Han 7D (metal, angled)	**A33**
Device plug Han 8D (plastic, straight)	**A34**
Device plug Han 8D (plastic, angled)	**A35**
Device plug Han 8D (metal, straight)	**A36**
Device plug Han 8D (metal, angled)	**A37**
Cable socket included	
Plastic, for device plug Han 7D and Han 8D	**A40**
Metal, for device plug Han 7D and Han 8D	**A41**
Device plug M12 mounted left	
Stainless steel, without cable socket	**A62**
Stainless steel, with cable socket	**A63**
Cable entry/device plug mounting	
2× sealing plugs M20 × 1.5, IP66/68 installed on both sides (no explosion protection approval)	**A90**
2× sealing plugs ½-14 NPT, IP66/68 installed on both sides (no explosion protection approval)	**A91**
Cable gland/device plug mounted left	**A97**
Plug mounted right	**A98**
Cable gland/device plug mounted right	**A99**
Nameplate labeling (standard labeling: English, unit bar)	
German (bar)	**B11**
French (bar)	**B12**
Spanish (bar)	**B13**
Italian (bar)	**B14**
Chinese (bar)	**B15**
Russian (bar)	**B16**
English (psi)	**B20**
English (Pa)	**B30**
Chinese (Pa)	**B35**
Certificates	
Quality inspection certificate - 5-point factory calibration (IEC 62828-2)	**C11**
Inspection certificate (EN 10204-3.1) - Material of pressurized and wetted parts	**C12**
Factory certificate - NACE (MR 0103-2012 and MR 0175-2009)	**C13**
Factory certificate (EN 10204-2.2) - Wetted parts	**C14**
Inspection certificate (EN 10204-3.1) - PMI test of pressurized and wetted parts	**C15**
Certificates for functional safety	
Functional Safety (IEC 61508) - SIL2/3	**C20**
Device options	
Double layer coating (epoxy resin and polyester) 120 µm of enclosure and lid	**D20**
FVMQ enclosure sealing	**D21**
Degree of protection IP66/IP68 (not for device plug M12 and Han)	**D30**
Unlabeled TAG plate	**D40**
Without labeling of the measuring range on the TAG plate	**D41**
Stainless steel Ex plate 1.4404/316L	**D42**
Extension of the medium temperature to -40 °C for measuring cell filling with inert filling liquid Please note step response time T63: 5.5 s (20 and 60 mbar); 1.4 s (250 and 600 mbar); 0.3 s (1.6 and 5 bar)	**D52**
Transmitter packaged in foil	**D60**
Cleaning the measuring cell, grease-free as per cleanliness level 2, DIN 25410; transmitter packaged in foil	**D61**
Cleaning the measuring cell, grease-free (for oxygen version) and transmitter packaged in foil; (particles < 50 mg/m²; oil and residual grease content HC < 100 mg/m²)	**D62**
Overvoltage protection up to 6 kV (internal)	**D70**
Overvoltage protection up to 6 kV (external)	**D71**
Labels on transport packaging (provided by customer)	**D90**
General approval without Ex approval	
Worldwide (CE, UKCA, RCM) except EAC, FM, CSA, KC	**E00**
Worldwide (CE, UKCA, RCM, EAC, FM, CSA, KC)	**E01**
CSA (USA and Canada)	**E06**
EAC	**E07**
FM	**E08**
KC	**E09**
Explosion protection approvals	
ATEX (Europe)	**E20**
CSA (USA and Canada)[1)]	**E21**
FM (USA and Canada)[1)]	**E22**
IECEx (Worldwide)	**E23**
EACEx (GOST-R, -K, -B)	**E24**
INMETRO (Brazil)	**E25**
KCs (Korea)	**E26**
NEPSI (China)	**E27**
PESO (India)	**E28**
CSA (Japan)	**E29**
ECASEx (UAE)	**E32**
UKEX (United Kingdom)	**E33**
ATEX (Europe), IECEx (Worldwide) and UKEX (UK)	**E47**
CSA (Canada) and FM (USA)[1)]	**E48**
ATEX (Europe) and IECEx (Worldwide) + CSA (Canada) and FM (USA)[1)]	**E49**

Selection and ordering data (continued)

Options Add "-Z" to article No., add order code and plain text or entry from drop-down list.	Order code
Marine approvals	
DNV-GL (Det Norske Veritas/Germanischer Lloyd)	**E50**
LR (Lloyds Register)	**E51**
BV (Bureau Veritas)	**E52**
ABS (American Bureau of Shipping)	**E53**
RMR (Russian Maritime Register)	**E55**
KR (Korean Register of Shipping)	**E56**
RINA (Registro Italiano Navale)	**E57**
CCS (China Classification Society)	**E58**
Country-specific approvals	
CRN approval Canada (Canadian Registration Number)	**E60**
Special approvals	
Oxygen application (with inert liquid, max. 160 bar (2 320 psi) at 100 °C (212 °F))	**E80**
Dual Seal	**E81**
WRC/WRAS (drinking water); only with process flange O-rings made of EPDM	**E83**
NSF61 (drinking water)	**E84**
ACS (drinking water)	**E85**
Mounting bracket	
Zinc-plated steel	**H01**
Stainless steel 1.4301/304	**H02**
Stainless steel 1.4404/316L	**H03**
Mounting bracket, zinc-plated steel, reinforced (KTA)	**H05**
Process flanges; screw plug with vent valve	
Welded in on right	**J08**
Welded in on left	**J09**
Glued in on right	**J10**
Glued in on left	**J11**
Flange connections with flange EN 1092-1	
Form B1	
• DN 25 PN 40, stainless steel 1.4571/316Ti	**J70**
• DN 50 PN 40, stainless steel 1.4571/316Ti	**J71**
• DN 80 PN 40, stainless steel 1.4571/316Ti	**J72**
• DN 15 PN 40, stainless steel 1.4571/316Ti	**J78**
Form C	
• DN 25 PN 40, stainless steel 1.4571/316Ti	**J73**
• DN 50 PN 40, stainless steel 1.4571/316Ti	**J74**
• DN 80 PN 40, stainless steel 1.4571/316Ti	**J75**
Flange connection options	
Flange connection and temperature extension	**J76**
Flange connection with epoxy resin coating	**J77**
Process flanges; special materials	
Reserved for 7MF7: without process flanges, without screws, without gaskets	**K00**
Process flange material alloy C22/2.4602	**K01**
Process flange material Monel 400/2.4360	**K02**
Process connection material PVDF, on the side ½-14 NPT	**K05**
Process flanges chambered with gaskets	
1 × chambered, graphite	**K40**
1 × chambered, PTFE (FDA compliant), recommended for gas measurements	**K41**

Options Add "-Z" to article No., add order code and plain text or entry from drop-down list.	Order code
Process flanges, gaskets (instead of standard gaskets FKM (FPM))	
O-ring, process flanges, PTFE (Not permitted with remote seal attachment on both sides)	**K50**
O-ring, process flanges, FEP (with silicone core, approved for food, FDA compliant) (Not permitted with remote seal attachment on both sides)	**K51**
O-ring, process flanges, FFKM (FFPM) (Not permitted with remote seal attachment on both sides)	**K52**
O-ring, process flanges, NBR (Not permitted with remote seal attachment on both sides)	**K53**
O-ring, process flanges, EPDM (Not permitted with remote seal attachment on both sides)	**K54**
Process flange options	
Process flanges for vertical differential pressure lines (half process flange)	**K81**
Process flanges (+) - side front	**K82**
Process flange screws, process flange nuts, material Monel 400/2.4360	**K83**
Valve ¼-18 NPT, material same as process flanges	**K84**
Valve mounted on the side, measuring medium: Gas	**K85**
Oval flange attached, PTFE seal + fixing screws	**K86**
Valve manifolds	
With mounted valve manifold (3-way) 7MF9411-5BA, PTFE sealing rings, chrome-plated steel screws and pressure test certified in factory certificate (EN 10204-2.2)	**U01**
With mounted valve manifold (3-way) 7MF9411-5BA, PTFE sealing rings, stainless steel screws and pressure test certified in factory certificate (EN 10204-2.2)	**U02**
With mounted valve manifold (5-way) 7MF9411-5CA, PTFE sealing rings, chrome-plated steel screws and pressure test certified in factory certificate (EN 10204-2.2)	**U03**
With mounted valve manifold (5-way) 7MF9411-5CA, PTFE sealing rings, stainless steel screws and pressure test certified in factory certificate (EN 10204-2.2)	**U04**
Device settings	
Measuring span: Lower range value (max. 5 characters), upper range value (max. 5 characters), unit [mbar, bar, kPa, MPa, psi, ...], example: -0.5 ... 10.5 psi	**Y01**
TAG (on stainless steel plate and device parameters, max. 32 characters)	**Y15**
Measuring point description (on stainless steel plate and device parameters, max. 32 characters)	**Y16**
TAG short (device parameters, max. 8 characters)	**Y17**
Local display: [Pressure, Percent], reference [None, Absolute, Gauge], example: Pressure gauge	**Y21**
Local display: Scaling with standard units [m^3/s, l/s, m, inch, ...]; example 1 ... 5 m	**Y22**
Local display: Scaling with user-specific units (max. 12 characters), example 1 ... 5 m	**Y23**
Set PROFIBUS PA device address (1 ... 126)	**Y25**
Saturation limits instead of 3.8 ... 20.5 mA, example: 3.8 ... 22.0 mA	**Y30**
Fault current instead of 3.6 mA [22.5 mA, 22.8 mA]	**Y31**
Damping in seconds instead of 2 s (0.0 ... 100.0 s)	**Y32**
ID number of special design	**Y99**

[1] Explosion protection acc. to FM/CSA: suitable for installation according to NEC 500/505.

Technical specifications

SITRANS P320 / SITRANS P420 for gauge pressure (differential pressure series)			
Input			
Measured variable	Gauge pressure		
Measuring span (continuously adjustable) or measuring range and max. permissible operating pressure (pursuant to Pressure Equipment Directive 2014/68/EU)	Measuring span	Max. permissible operating pressure MAWP (PS)	Maximum permissible test pressure
	1 ... 20 mbar 0.1 ... 2 kPa 0.4019 ... 8.037 inH_2O	160 bar 16 MPa 2 320 psi	240 bar 24 MPa 3 481 psi
	1 ... 60 mbar 0.1 ... 6 kPa 0.4019 ... 24.11 inH_2O	160 bar 16 MPa 2 320 psi	240 bar 24 MPa 3 481 psi
	2.5 ... 250 mbar 0.2 ... 25 kPa 1.005 ... 100.5 inH_2O	160 bar 16 MPa 2 320 psi	240 bar 24 MPa 3 481 psi
	6 ... 600 mbar 0.6 ... 60 kPa 2.41 ... 241.1 inH_2O	160 bar 16 MPa 2 320 psi	240 bar 24 MPa 3 481 psi
	16 ... 1 600 mbar 1.6 ... 160 kPa 6.43 ... 643 inH_2O	160 bar 16 MPa 2 320 psi	240 bar 24 MPa 3 481 psi
	50 ... 5 000 mbar 5 ... 500 kPa 20.09 ... 2 009 inH_2O	160 bar 16 MPa 2 320 psi	240 bar 24 MPa 3 481 psi
	0.3 ... 30 bar 0.03 ... 3 MPa 4.35 ... 435 psi	160 bar 16 MPa 2 320 psi	240 bar 24 MPa 3 481 psi
	8 ... 160 bar 0.8 ... 16 MPa 116 ... 2 320 psi	160 bar 16 MPa 2 320 psi	240 bar 24 MPa 3 481 psi
Measuring limits			
• Lower measuring limit			
- Measuring cell with silicone oil filling	30 mbar a/3 kPa a/0.44 psi a		
- Measuring cell with inert fill oil	30 mbar a/3 kPa a/0.44 psi a		
• Upper measuring limit	100% of the max. measuring span (for oxygen measurement max. 100 bar/10 MPa/1450 psi and 60 °C (140 °F) ambient temperature/medium temperature)		
• Lower range value	Between the measuring limits (continuously adjustable)		
Output	**HART**		
Output signal	4 ... 20 mA		
• Lower saturation limit (continuously adjustable)	3.55 mA, factory set to 3.8 mA		
• Upper saturation limit (continuously adjustable)	22.8 mA, factory-set to 20.5 mA or optionally 22.0 mA		
• Ripple (without HART communication)	$I_{pp} \leq 0.5\%$ of max. output current		
Adjustable damping	0 ... 100 s, continuously adjustable over remote operation 0 ... 100 s, in increments of 0.1 s, adjustable over local display		
• Current simulator	3.55 ... 22.8 mA		
• Failure signal	3.55 ... 22.8 mA		
Load	Resistance R [Ω]		
• Without HART communication	R = (U_H - 10.5 V) /22.8 mA, U_H: Auxiliary power in V		
• With HART communication	R = 230 ... 1100 Ω		
Characteristic curve	• Linearly increasing or linearly decreasing		
Physical bus	-		
Polarity-independent	-		

Technical specifications (continued)

SITRANS P320 / SITRANS P420 for gauge pressure (differential pressure series)		
Measuring accuracy		
Reference conditions	• According to IEC 62828-1 • Rising characteristic curve • Lower range value 0 bar/kPa/psi • Seal diaphragm stainless steel • Measuring cell with silicone oil filling • Room temperature 25 °C (77 °F)	
Characteristic curve deviation at limit point setting, including hysteresis and repeatability		
Measuring span ratio r (spread, turn-down)	r = max. measuring span/set measuring span and nominal measuring range	
• Linear characteristic curve		
- 20 mbar/2 kPa/8.031 inH_2O	r ≤ 5:	≤ 0.075%
	5 < r ≤ 20:	≤ (0.005 · r +0.05)%
- 60 mbar/6 kPa/24.09 inH_2O	r ≤ 5:	≤ 0.075%
	5 < r ≤ 60:	≤ (0.005 · r +0.05)%
- 250 mbar/25 kPa/3.6 psi 600 mbar/60 kPa/240.9 inH_2O 1 600 mbar/160 kPa/642.4 inH_2O 5 000 mbar/500 kPa/2008 inH_2O 30 bar/3 MPa/435 psi	r ≤ 5:	≤ 0.065% (SITRANS P320) ≤ 0.04% (SITRANS P420)
	5 < r ≤ 100:	≤ (0.004 · r +0.045)%
- 160 bar/16 MPa/2 320 psi	r ≤ 5:	≤ 0.065% (SITRANS P320) ≤ 0.04% (SITRANS P420)
	5 < r ≤ 20:	≤ (0.004 · r +0.045)%
Influence of ambient temperature in % per 28 °C (50 °F)		
• 20 mbar/2 kPa/8.031 inH_2O	≤ (0.15 · r +0.1)%	
• 60 mbar/6 kPa/24.09 inH_2O	≤ (0.075 · r +0.1)%	
• 250 mbar/25 kPa/3.6 psi 600 mbar/60 kPa/240.9 inH_2O 1 600 mbar/160 kPa/642.4 inH_2O 5 000 mbar/500 kPa/2008 inH_2O 30 bar/3 MPa/435 psi 160 bar/16 MPa/2 320 psi	≤ (0.025 · r + 0.125)% (SITRANS P320)	
• 250 mbar/25 kPa/3.6 psi 5 000 mbar/500 kPa/2008 inH_2O	≤ (0.025 · r + 0.0625)% (SITRANS P420)	
• 600 mbar/60 kPa/240.9 inH_2O 1 600 mbar/160 kPa/642.4 inH_2O 30 bar/3 MPa/435 psi 160 bar/16 MPa/2 320 psi	≤ (0.0125 · r + 0.0625)% (SITRANS P420)	
Long-term stability at ±30 °C (± 54 °F)		
• 20 mbar/2 kPa/8.031 inH_2O	≤ (0.2 · r)% per year	
• 60 mbar/6 kPa/24.09 inH_2O	In 5 years ≤ (0.25 · r)%	
• 250 mbar/25 kPa/3.6 psi 600 mbar/60 kPa/240.9 inH_2O 1 600 mbar/160 kPa/642.4 inH_2O 5 000 mbar/500 kPa/2008 inH_2O 30 bar/3 MPa/435 psi 160 bar/16 MPa/2 320 psi	In 5 years ≤ (0.125 · r)% In 10 years ≤ (0.15 · r)%	
Step response time T_{63} (without electrical damping)		
• 20 mbar/2 kPa/8.031 inH_2O	Approx. 0.160 s	
• 60 mbar/6 kPa/24.09 inH_2O	Approx. 0.150 s	
• 250 mbar/25 kPa/3.6 psi 600 mbar/60 kPa/240.9 inH_2O 1 600 mbar/160 kPa/642.4 inH_2O 5 000 mbar/500 kPa/2008 inH_2O 30 bar/3 MPa/435 psi 160 bar/16 MPa/2 320 psi	Approx. 0.135 s	
Effect of mounting position (in pressure per change of angle)	≤ 0.7 mbar/0.07 kPa/0.010 psi per 10° incline (zero offset is possible with position error compensation)	
Effect of auxiliary power (in % per voltage change)	0.005% per 1 V	

Technical specifications (continued)

SITRANS P320 / SITRANS P420 for gauge pressure (differential pressure series)	
Operating conditions	
Medium temperature	
• Measuring cell with silicone oil filling	-40 ... +100 °C (-40 ... +212 °F)
- Measuring cell 30 bar (435 psi)	-20 ... +100 °C (-4 ... +212 °F)
- Measuring cell 160 bar (2 320 psi)	-20 ... +100 °C (-4 ... +212 °F)
• Measuring cell with inert fill oil	-20 ... +100 °C (-4 ... +212 °F)
Ambient conditions	
• Ambient temperature/enclosure	Observe the temperature class in hazardous areas.
- Measuring cell with silicone oil filling	-40 ... +85 °C (-40 ... +185 °F)
- Measuring cell with inert fill oil	-40 ... +85 °C (-40 ... +185 °F)
- Local display	-20 ... +80 °C (-4 ... +176 °F)
• Storage temperature	-50 ... +85 °C (-58 ... +185 °F)
• Climatic class in accordance with IEC 60721-3-4	4K4H
• Degree of protection	
- According to IEC 60529	IP66, IP68
- According to NEMA 250	Type 4X
• Electromagnetic compatibility	
- Emitted interference and interference immunity	According to IEC 61326 and NAMUR NE 21
Structural design	
Weight	• Aluminum enclosure: Approx. 3.9 kg (8.5 lb) • Stainless steel enclosure: Approx. 5.9 kg (13 lb)
Material	
• Material of wetted parts	
- Seal diaphragm	Stainless steel, mat. no. 1.4404/316L, Alloy C276, mat. no. 2.4819, Monel, mat. no. 2.4360, tantalum or gold
- Process flanges	Stainless steel, mat. no. 1.4408 to PN 160, mat. no. 1.4571/316Ti for PN 420, Alloy C22, 2.4602 or Monel, mat. no. 2.4360
- Sealing plug	1.4404 or as option alloy C22; 2.4602 or Monel mat. no. 2.4360
- O-ring	FPM (Viton) or optionally: PTFE, FEP, FEPM and NBR
• Material of non-wetted parts	
- Electronics enclosure	• Low-copper die-cast aluminum GD-AlSi 12 or stainless steel precision casting, mat. no. 1.4409/ CF-3M • Standard: Powder coating with polyester Option: 2 coats: Coat 1: epoxy-based; coat 2: Polyester • Stainless steel nameplate (1.4404/316L)
- Process flange screws	Stainless steel ISO 3506-1 A4-70
- Mounting bracket	Steel, zinc-plated steel, or stainless steel
Process connection	¼-18 NPT internal thread and flange connection with 7/16-20 UNF fastening thread according to EN 61518 or M10 according to DIN 19213 (M12 for PN 420 (MWP 6092 psi))
Electrical connection	Screw terminals Cable entry via the following screw glands: • M20 × 1.5 • ½-14 NPT • Device plug Han 7D/Han 8D[1)] • Device plug M12
Displays and controls	
Buttons	4 buttons for operation directly on the device
Local display	• With or without integrated local display (optional) • Lid with inspection window (optional)
Auxiliary power U_H	
Terminal voltage on pressure transmitter	10.5 ... 45 V DC 10.5 ... 30 V DC in intrinsically safe mode
Ripple	$U_{SS} \leq 0.2$ V (47 ... 125 Hz)

Technical specifications (continued)

SITRANS P320 / SITRANS P420 for gauge pressure (differential pressure series)	
Noise	$U_{eff} \leq 1.2$ mV (0.5 ... 10 kHz)
Auxiliary power	–
Separate supply voltage	–
Certificates and approvals	
Classification according to pressure equipment directive (PED 2014/68/EU)	For gases of fluid group 1 and liquids of fluid group 1; complies with requirements of article 4, paragraph 3 (sound engineering practice)
Drinking water	
• WRAS (England)	No.: 1903094 (option E83)
• ACS (France)	No.: 24 ACC NY 265 (option E85)
• NSF (USA)	No.: 20180920-MH61350 (option E84)
• CRN (Canada)	No.: 0F9863.5C (option E60)
Explosion protection acc. to NEPSI (China)	No.: GYJ24.1046X (option E27)
Explosion protection acc. to INMETRO (Brazil)	No.: BRA 22.GE0004X (option E25)
Explosion protection as per ATEX	No.: BVS 18 ATEX E 049X
• Intrinsic safety "i"	
- Marking	II 1/2 G Ex ia/ib IIC T4/T6 Ga/Gb
- Permissible ambient temperature	-40 ... +80 °C (-40 ... +176 °F) temperature class T4 -40 ... +55 °C (-40 ... +131 °F) temperature class T6
- Permissible medium temperature	-40 ... +100 °C (-40 ... +212 °F) temperature class T4 -40 ... +70 °C (-40 ... +158 °F) temperature class T6
- Connection	To certified intrinsically safe circuits with peak values: U_i = 30 V, I_i = 101 mA, P_i = 760 mW U_i = 29 V, I_i = 110 mA, P_i = 800 mW
- Effective internal inductance/capacitance	L_i = 0.24 µH/C_i = 3.29 nF
• Flameproof enclosure "d"	
- Marking	Ex II 1/2 G Ex ia/db IIC T4/T6 Ga/Gb
- Permissible ambient temperature	-40 ... +80 °C (-40 ... +176 °F) temperature class T4 -40 ... +70 °C (-40 ... +158 °F) temperature class T6
- Permissible medium temperature	-40 ... +100 °C (-40 ... +212 °F) temperature class T4 -40 ... +70 °C (-40 ... +158 °F) temperature class T6
- Connection	To a circuit with the operating values: U_n = 10.5 ... 45 V, 4 ... 20 mA
• Dust explosion protection for Zones 21, 22	
- Marking	Ex II 2D Ex tb IIIC T120 °C Db Ex II 3D Ex tc IIIC T120 °C Dc
- Permissible ambient temperature	-40 ... +80 °C (-40 ... +176 °F)
- Permissible medium temperature	-40 ... +100 °C (-40 ... +212 °F)
- Max. surface temperature	120 °C (248 °F)
- Connection	To a circuit with the operating values: U_n = 10.5 ... 45 V, 4 ... 20 mA
• Dust explosion protection for Zones 20, 21, 22	
- Marking	Ex II 1D Ex ia IIIC T120 °C Da Ex II 2D Ex ib IIIC T120 °C Db
- Permissible ambient temperature	-40 ... +80 °C (-40 ... +176 °F)
- Permissible medium temperature	-40 ... +100 °C (-40 ... +212 °F)
- Connection	To certified intrinsically safe circuits with peak values: U_i = 30 V, I_i = 101 mA, P_i = 760 mW U_i = 29 V, I_i = 110 mA, P_i = 800 mW
- Effective internal inductance/capacitance	L_i = 0.24 µH/C_i = 3.29 nF
• Type of protection for Zone 2	
- Marking	Ex II 3G Ex ec IIC T4/T6 Gc
- Permissible ambient temperature "ec"	-40 ... +80 °C (-40 ... +176 °F) temperature class T4 -40 ... +40 °C (-40 ... +104 °F) temperature class T6
- Permissible medium temperature	-40 ... +100 °C (-40 ... +212 °F) temperature class T4 -40 ... +70 °C (-40 ... +158 °F) temperature class T6
- "ec" connection	To a circuit with the operating values: U_n = 10.5 ... 30 V, 4 ... 20 mA
• Explosion protection acc. to FM	No.: FM19US0155X

Technical specifications (continued)

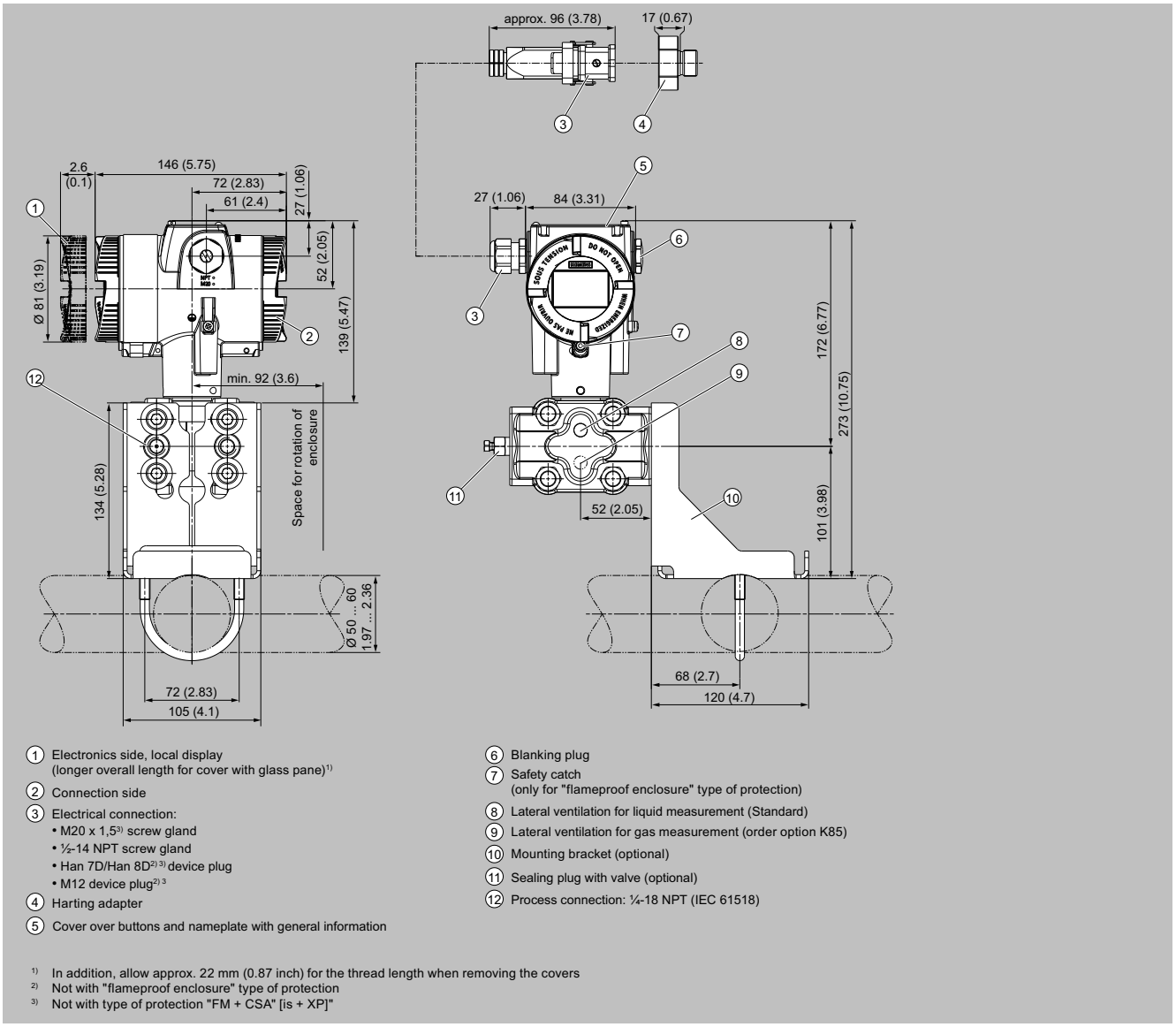
SITRANS P320 / SITRANS P420 for gauge pressure (differential pressure series)	
• Explosion protection according to CSA	No.: CSA18CA70163103
NAMUR recommendations	
• NE 06	Standardized Electrical Signals and Questions Relating to Engineering Technology
• NE 21	Electromagnetic Compatibility (EMC) of Industrial Process and Laboratory Control Equipment
• NE 23	Extra Low Voltage Circuits with Safe Separation
• NE 43	Standardization of the Signal Level for the Failure Information of Digital Transmitters with Analog Output Signal
• NE 53	Software and Hardware of Field Devices and Signal Processing Devices with Digital Electronics
• NE 80	The Application of the Pressure Equipment Directive to Process Control Devices
• NE 105	Specifications for Integrating Fieldbus Devices in Engineering Tools for Field Devices
• NE 107	Self-Monitoring and Diagnosis of Field Devices
• NE 131	NAMUR Standard Device - Field Devices for Standard Applications

1) Han 8D is identical to Han 8U.

Communication	
HART	
HART	230 ... 1 100 Ω
Protocol	HART 7
Software for computer	SIMATIC PDM
PROFIBUS PA	
Simultaneous communication with master class 2 (max.)	4
The address can be set using	Configuration tool or local operation (default setting address 126)
Cyclic data usage	
• Output byte	≤ 35 (7 measured values)
• Input byte	0, 1, or 2 (register operation mode and reset function for dosing)
Internal preprocessing	
Device profile	PROFIBUS PA Profile Version 4.01 Class B. Cyclic data usage compatible with version 3.XX
Number of function blocks	7
• Analog input	
- Adaptation to user-specific process variable	Yes, linearly rising or falling characteristic curve
- Electrical damping adjustable	0 ... 100 s
- Simulation function	Output/input
- Limit monitoring	Yes, one upper and lower warning limit and one alarm limit respectively
• Register (totalizer)	Can be reset, preset, optional direction of counting, simulation function of register output
- Limit monitoring	One upper and lower warning limit and one alarm limit respectively
• Physical block	1
Transducer blocks	1
• Pressure transducer block	
- Can be calibrated by applying two pressures	Yes
- Monitoring of sensor limits	Yes

Communication	
- Specification of a vessel characteristic curve with	Max. 30 nodes
- Square-rooted characteristic curve for flow measurement	Yes
- Tank characteristic curve for volume measurement	Yes
- Low flow cut-off and implementation point of square-root extraction	Parameterizable
- Simulation function for measured pressure value and sensor temperature	Constant value or by means of parameterizable ramp function
FOUNDATION Fieldbus	
Device profile	FF ITK 6
Function blocks	3 function blocks analog input, 1 function block PID
• Analog input	
- Adaptation to user-specific process variable	Yes, linearly rising or falling characteristic curve
- Electrical damping adjustable	0 ... 100 s
- Simulation function	Output/input (can be locked within the device with a bridge)
- Failure behavior	Parameterizable (last good value, substitute value, incorrect value)
- Limit monitoring	Yes, one upper and lower warning limit and one alarm limit respectively
- Square-rooted characteristic curve for flow measurement	Yes
• PID	Standard FOUNDATION Fieldbus function block
• Physical block	1 resource block
Transducer blocks	1 transducer block Pressure with calibration, 1 transducer block LCD
• Pressure transducer block	
- Can be calibrated by applying two pressures	Yes
- Monitoring of sensor limits	Yes
- Simulation function: pressure measurement, sensor temperature and electronics temperature	Constant value or by means of parameterizable ramp function

Dimensional drawings



1. Electronics side, local display (longer overall length for cover with glass pane)[1]
2. Connection side
3. Electrical connection:
   - M20 x 1,5[2] screw gland
   - ½-14 NPT screw gland
   - Han 7D/Han 8D[2][3] device plug
   - M12 device plug[2][3]
4. Harting adapter
5. Cover over buttons and nameplate with general information
6. Blanking plug
7. Safety catch (only for "flameproof enclosure" type of protection)
8. Lateral ventilation for liquid measurement (Standard)
9. Lateral ventilation for gas measurement (order option K85)
10. Mounting bracket (optional)
11. Sealing plug with valve (optional)
12. Process connection: ¼-18 NPT (IEC 61518)

[1] In addition, allow approx. 22 mm (0.87 inch) for the thread length when removing the covers
[2] Not with "flameproof enclosure" type of protection
[3] Not with type of protection "FM + CSA" [is + XP]"

SITRANS P320/P420 pressure transmitter for gauge pressure (differential pressure series), dimensions in mm (inch)

Selection and ordering data

Pressure transmitters for gauge and absolute pressure, with flush mounted diaphragm	Article No.																			
SITRANS P320 for gauge pressure	7MF030	●	-	●	●	●	●	●	-	●	●	●	●							
SITRANS P420 for gauge pressure	7MF040	●	-	●	●	●	●	●	-	●	●	●	●							
SITRANS P320 for absolute pressure	7MF032	●	-	●	●	●	●	●	-	●	●	●	●							
SITRANS P420 for absolute pressure	7MF042	●	-	●	●	●	●	●	-	●	●	●	●							
Click the article number for online configuration in the PIA Life Cycle Portal.																				
Communication																				
HART, 4 ... 20 mA		0																		
PROFIBUS PA		1																		
FOUNDATION Fieldbus (FF)		2																		
Measuring cell filling																				
Silicone oil				1																
Inert filling liquid				3																
Neobee oil				4																
Maximum measuring span																				
1 000 mbar (14.5 psi)					J															
4 000 mbar (58 psi)					N															
16 bar (232 psi)					Q															
63 bar (914 psi)					T															
1 300 mbar a (18.9 psi a)					L															
5 000 mbar a (72.5 psi a)					P															
30 bar a (435 psi a)					R															
Process connection																				
Flush-mounted diaphragm						K														
Material of wetted parts: Process connection, seal diaphragm																				
Stainless steel 316L/1.4404, stainless steel 316L/1.4404							0													
Stainless steel 316L/1.4404, alloy C276/2.4819							1													
Alloy C22/2.4602, alloy C276/2.4819							2													
Material of non-wetted parts																				
Die-cast aluminum								1												
Stainless steel precision casting CF3M/1.4409 similar to 316L								2												
Enclosure																				
Dual chamber device													5							
Type of protection																				
Without Ex														A						
Intrinsic safety														B						
Flameproof enclosure														C						
Flameproof enclosure, intrinsic safety														D						
Dust protection by enclosure Zone 21/22 (DIP), increased safety Zone 2														L						
Intrinsic safety, dust protection by enclosure Zone 20/21/22 (DIP), increased safety Zone 2														M						
Combination of options B, C and L (Zone model)														S						
Combination of options B, C and L (Zone model, Class Division)														T						
Electrical connections/cable entries																				
Thread for cable gland: Cable gland must be ordered separately as option (Axx)																				
• 2 × M20 × 1.5																	F			
• 2 × ½-14 NPT																	M			
Local operation/display																				
Without local display (lid closed)																			0	
With local display (lid closed)																			1	
With local display (lid with glass pane)																			2	

Options Add "-Z" to article No., add order code and plain text or entry from drop-down list.	Order code
Cable glands included	
Plastic	**A00**
Metal	**A01**

Options Add "-Z" to article No., add order code and plain text or entry from drop-down list.	Order code
Stainless steel	**A02**
Stainless steel 316L/1.4404	**A03**
CMP, for XP devices	**A10**

Selection and ordering data (continued)

Options Add "-Z" to article No., add order code and plain text or entry from drop-down list.	Order code
CAPRI ADE 4F, CuZn, cable inner diameter 7 ... 12 mm, cable outer diameter 10 ... 16 mm	A11
CAPRI ADE 4F, stainless steel, cable inner diameter 7 ... 12 mm, cable outer diameter 10 ... 16 mm	A12
Sealing plug included, plastic	A20
Sealing plug included, metal	A21
Sealing plug included, stainless steel	A22
Sealing plug included, stainless steel 316L/1.4404	A23
Device plug Han mounted left	
Device plug Han 7D (plastic, straight)	A30
Device plug Han 7D (plastic, angled)	A31
Device plug Han 7D (metal, straight)	A32
Device plug Han 7D (metal, angled)	A33
Device plug Han 8D (plastic, straight)	A34
Device plug Han 8D (plastic, angled)	A35
Device plug Han 8D (metal, straight)	A36
Device plug Han 8D (metal, angled)	A37
Cable socket included	
Plastic, for device plug Han 7D and Han 8D	A40
Metal, for device plug Han 7D and Han 8D	A41
Device plug M12 mounted left	
Stainless steel, without cable socket	A62
Stainless steel, with cable socket	A63
Cable entry/device plug mounting	
2× sealing plugs M20 × 1.5, IP66/68 installed on both sides (no explosion protection approval)	A90
2× sealing plugs ½-14 NPT, IP66/68 installed on both sides (no explosion protection approval)	A91
Cable gland/device plug mounted left	A97
Plug mounted right	A98
Cable gland/device plug mounted right	A99
Nameplate labeling (standard labeling: English, unit bar)	
German (bar)	B11
French (bar)	B12
Spanish (bar)	B13
Italian (bar)	B14
Chinese (bar)	B15
Russian (bar)	B16
English (psi)	B20
English (Pa)	B30
Chinese (Pa)	B35
Certificates	
Quality inspection certificate, 5-point factory calibration (IEC 62828-2)	C11
Inspection certificate (EN 10204-3.1) - Material of pressurized and wetted parts	C12
Factory certificate - NACE (MR 0103-2012 and MR 0175-2009)	C13
Factory certificate (EN 10204-2.2) - Wetted parts	C14
Inspection certificate (EN 10204-3.1) - PMI test of pressurized and wetted parts	C15
Certificates for functional safety	
Functional Safety (IEC 61508) - SIL2/3	C20

Options Add "-Z" to article No., add order code and plain text or entry from drop-down list.	Order code
Device options	
Double layer coating (epoxy resin and polyester) 120 µm of enclosure and lid	D20
FVMQ enclosure sealing	D21
Degree of protection IP66/IP68 (not for device plug M12 and Han)	D30
Unlabeled TAG plate	D40
Without labeling of the measuring range on the TAG plate	D41
Stainless steel Ex plate 1.4404/316L	D42
Transmitter packaged in foil	D60
Cleaning the measuring cell, grease-free as per cleanliness level 2, DIN 25410; transmitter packaged in foil	D61
Cleaning the measuring cell, grease-free (for oxygen version) and transmitter packaged in foil; (particles < 50 mg/m²; oil and residual grease content HC < 100 mg/m²)	D62
Overvoltage protection up to 6 kV (internal)	D70
Overvoltage protection up to 6 kV (external)	D71
Labels on transport packaging (provided by customer)	D90
General approval without Ex approval	
Worldwide (CE, UKCA, RCM) except EAC, FM, CSA, KC	E00
Worldwide (CE, UKCA, RCM, EAC, FM, CSA, KC)	E01
CSA (USA and Canada)	E06
EAC	E07
FM	E08
KC	E09
Explosion protection approvals	
ATEX (Europe)	E20
CSA (USA and Canada)[1)]	E21
FM (USA and Canada)[1)]	E22
IECEx (Worldwide)	E23
EACEx (GOST-R, -K, -B)	E24
INMETRO (Brazil)	E25
KCs (Korea)	E26
NEPSI (China)	E27
PESO (India)	E28
CSA (Japan)	E29
ECASEx (UAE)	E32
UKEX (United Kingdom)	E33
ATEX (Europe), IECEx (Worldwide) and UKEX (UK)	E47
CSA (Canada) and FM (USA)[1)]	E48
ATEX (Europe) and IECEx (Worldwide) + CSA (Canada) and FM (USA)[1)]	E49
Marine approvals	
DNV-GL (Det Norske Veritas/Germanischer Lloyd)	E50
LR (Lloyds Register)	E51
BV (Bureau Veritas)	E52
ABS (American Bureau of Shipping)	E53
RMR (Russian Maritime Register)	E55
KR (Korean Register of Shipping)	E56
RINA (Registro Italiano Navale)	E57
CCS (China Classification Society)	E58
Country-specific approvals	
CRN approval Canada (Canadian Registration Number)	E60

Selection and ordering data (continued)

Options Add "-Z" to article No., add order code and plain text or entry from drop-down list.	Order code
Special approvals	
Dual Seal	**E81**
WRC/WRAS (drinking water); only with process flange O-rings made of EPDM	**E83**
NSF61 (drinking water)	**E84**
ACS (drinking water)	**E85**
3A (hygiene)	**E86**
EHEDG (hygiene)	**E87**
Flanges according to EN 1092-1 form B1 and ASME standard B16.5	
EN 1092-1 form B1	
• DN 50 PN 16	**M03**
• DN 80 PN 16	**M05**
• DN 25 PN 40	**M10**
• DN 40 PN 40	**M12**
• DN 50 PN 40	**M13**
• DN 80 PN 40	**M15**
• DN 40 PN 100	**M22**
ASME B16.5	
• 1" Class 150 RF	**M30**
• 1 ½" Class 150 RF	**M31**
• 2" Class 150 RF	**M32**
• 3" Class 150 RF	**M33**
• 4" Class 150 RF	**M34**
• 1 ½" Class 300 RF	**M36**
• 2" Class 300 RF	**M37**
• 3" Class 300 RF	**M38**
• 4" Class 300 RF	**M39**
Sanitary connections in accordance with the standard	
Sanitary flange DIN 11851	
• With slotted union nut DN 50 PN 25	**N03**
• With slotted union nut DN 80 PN 25	**N05**
Tri-Clamp	
• DIN 32676 DN 50 PN 16	**N14**
• DIN 32676 DN 65 PN 10	**N15**
• ISO 2852 2" PN 40	**N22**
• ISO 2852 3" PN 40	**N23**
Aseptic screwed connector	
• DIN 11864-1 form A DN 50 PN 25	**N33**
• DIN 11864-1 form A DN 65 PN 25	**N34**
• DIN 11864-1 form A DN 80 PN 25	**N35**
• DIN 11864-1 form A DN100 PN 25	**N36**
Aseptic flange with notch	
• DIN 11864-2 form A DN 50 PN 16	**N43**
• DIN 11864-2 form A DN 65 PN 16	**N44**
• DIN 11864-2 form A DN 80 PN 16	**N45**
• DIN 11864-2 form A DN100 PN 16	**N46**
Aseptic clamp with groove	
• DIN 11864-3 form A DN 50 PN 25	**N53**
• DIN 11864-3 form A DN 65 PN 25	**N54**
• DIN 11864-3 form A DN 80 PN 16	**N55**
• DIN 11864-3 form A DN100 PN 16	**N56**
Sanitary connections manufacturer-specific	
Varivent type N for pipes DN 40 ... DN 125 PN 40	**P06**
Sanitary connections special design	
Tank connection	
• TG 52/50 PN 40 with gasket	**Q00**
• TG 52/150 PN 40 with gasket	**Q01**
DRD flange D = 65 mm DN 50 PN 40	**Q15**
SMS socket	
• With thread 2" PN 25	**Q28**
• With thread 2 ½" PN 25	**Q29**
• With thread 3" PN 25	**Q30**
Weldable sockets for tank connection	
Weldable piece for TG52/50	**Q90**
Weldable piece for TG52/150	**Q91**
Connections for the paper industry	
Process connection PMC style standard	**R00**
Process connection PMC style minibolt	**R01**
Weldable sockets for PMC style standard	**R02**
Weldable sockets for PMC style minibolt	**R03**
Threaded connection	
External thread G¾-A DIN 3852-2 form A	**R11**
External thread G1-A DIN 3852-2 form A	**R12**
External thread G2-A DIN 3852-2 form A	**R14**
Special options flush mounted	
Temperature decoupler (media temperature up to 200 °C)	**R85**
Mating connector including gasket	**R90**
Device settings	
Measuring span: Lower range value (max. 5 characters), upper range value (max. 5 characters), unit [mbar, bar, kPa, MPa, psi, ...], example: -0.5 ... 10.5 psi	**Y01**
TAG (on stainless steel plate and device parameters, max. 32 characters)	**Y15**
Measuring point description (on stainless steel plate and device parameters, max. 32 characters)	**Y16**
TAG short (device parameters, max. 8 characters)	**Y17**
Local display: [Pressure, Percent], reference [None, Absolute, Gauge], example: Pressure gauge	**Y21**
Local display: Scaling with standard units [m^3/s, l/s, m, inch, ...]; example 1 ... 5 m	**Y22**
Local display: Scaling with user-specific units (max. 12 characters), example 1 ... 5 m	**Y23**
Set PROFIBUS PA device address (1 ... 126)	**Y25**
Saturation limits instead of 3.8 ... 20.5 mA, example: 3.8 ... 22.0 mA	**Y30**
Fault current instead of 3.6 mA [22.5 mA, 22.8 mA]	**Y31**
Damping in seconds instead of 2 s (0.0 ... 100.0 s)	**Y32**
ID number of special design	**Y99**