Data Sheet DS/266XSH-EN Rev. D

Model 266DSH Differential Model 266PSH Gauge Model 266VSH Absolute

### Measurement made easy

# Engineered solutions for all applications



#### Base accuracy

— from 0.06 % of calibrated span (optional 0.04 %)

# Reliable sensing system coupled with very latest digital technologies

provides large turn down ratio up to 100:1

#### Comprehensive sensor choice

optimize in-use total performance and stability

#### 10-year stability

- 0.15 % of URL

#### Flexible configuration facilities

- provided locally via local LCD keypad

#### New TTG (Through-The-Glass) keypad technology

 allows quick and easy local configuration without opening the cover, even in explosion proof environments

#### IEC 61508 certification

- version for SIL2 (1001) and SIL3 (1002) applications

Full compliance with PED Category III

### **Functional Specifications**

#### Range and span limits

Sensor Upper Range		Lower Range Limit (LRL)			Minimum span	
Code	Limit (URL)	266DSH	266PSH	266VSH	266DSH differential	266VSH
		differential	gauge	absolute	266PSH gauge	absolute
	1 kPa	-1 kPa	−1 kPa		0.05 kPa	
Α	10 mbar	-10 mbar	-10 mbar		0.5 mbar	
	4 inH2O	-4inH2O	-4inH2O		0.2 inH2O	
	4 kPa	-4 kPa	−4 kPa		0.2 kPa	
В	40 mbar	-40 mbar	-40 mbar		2 mbar	
	16 inH2O	-16 inH2O	-16 inH2O		0.8 inH2O	
	16 kPa	-16 kPa	-16 kPa	0.07 kPa abs (§)	0.54 kPa	0.54 kPa
Е	160 mbar	-160 mbar	-160 mbar	0.7 mbar abs (§)	5.4 mbar	5.4 mbar
	64 inH2O	-64 inH2O	-64 inH2O	0.5 mmHg (§)	2.16 inH2O	4 mmHg
	40 kPa	-40 kPa	-40 kPa	0.07 kPa abs (§)	0.4 kPa	0.67 kPa
F	400 mbar	-400 mbar	-400 mbar	0.7 mbar abs (§)	4 mbar	6.7 mbar
	160 inH2O	-160 inH2O	-160 inH2O	0.5 mmHg (§)	1.6 inH2O	5 mmHg
	65 kPa	-65 kPa	-65 kPa	0.07 kPa abs (§)	0.65 kPa	1.1 kPa
G	650 mbar	-650 mbar	-650 mbar	0.7 mbar abs (§)	6.5 mbar	11 mbar
	260 inH2O	-260 inH2O	-260 inH2O	0.5 mmHg (§)	2.6 inH2O	8 mmHg
	160 kPa	-160 kPa	1 kPa abs	0.07 kPa abs (§)	1.6 kPa	2.67 kPa
Н	1600 mbar	-1600 mbar	10 mbar abs	0.7 mbar abs (§)	16 mbar	26.7 mbar
	642 inH2O	-642 inH2O	0.15 psia	0.5 mmHg (§)	6.4 inH2O	20 mmHg
	600 kPa	-600 kPa	1 kPa abs	0.07 kPa abs (§)	6 kPa	10 kPa
М	6 bar	-6 bar	10 mbar abs	0.7 mbar abs (§)	0.06 bar	0.1 bar
	87 psi	-87 psi	0.15 psia	0.5 mmHg (§)	0.87 psi	1.45 psi
	2400 kPa	-2400 kPa	1 kPa abs	0.07 kPa abs (§)	24 kPa	40 kPa
Р	24 bar	-24 bar	10 mbar abs	0.7 mbar abs (§)	0.24 bar	0.4 bar
	348 psi	–348 psi	0.15 psia	0.5 mmHg (§)	3.5 psi	5.8 psi
	8000 kPa	-8000 kPa	1 kPa abs	0.07 kPa abs (§)	80 kPa	134 kPa
Q	80 bar	-80 bar	10 mbar abs	0.7 mbar abs (§)	0.8 bar	1.34 bar
	1160 psi	-1160 psi	0.15 psia	0.5 mmHg (§)	11.6 psi	19.4 psi
	16000 kPa	-16000 kPa	1 kPa abs	0.07 kPa abs (§)	160 kPa	267 kPa
S	160 bar	-160 bar	10 mbar abs	0.7 mbar abs (§)	1.6 bar	2.67 bar
	2320 psi	-2320 psi	0.15 psia	0.5 mmHg (§)	23.2 psi	38.7 psi

<sup>(§)</sup> Lower Range Limit is 0.135 kPa abs, 1.35 mbar abs, 1 mmHg for inert Galden or 0.4 kPa abs, 4 mbar abs, 3 mmHg for inert Halocarbon.

#### Span limits

Maximum span = URL (can be further adjusted up to  $\pm$  URL (TD = 0.5) for differential models, within the range limits) IT IS RECOMMENDED TO SELECT THE TRANSMITTER SENSOR CODE PROVIDING THE TURNDOWN VALUE AS LOWEST AS POSSIBLE TO OPTIMIZE PERFORMANCE CHARACTERISTICS.

#### Zero suppression and elevation

Zero and span can be adjusted to any value within the range limits detailed in the table as long as:

— calibrated span ≥ minimum span

### Recommendation for square root function

At least 10% of Upper Range Limit (URL)

#### **Damping**

Selectable time constant: between 0 and 60 s. This is in addition to sensor response time.

#### Turn on time

Operation within specification in less than 10 s with minimum damping.

#### Insulation resistance

> 100  $\mbox{M}\Omega$  at 500 V DC (terminals to earth)

### Operative limits

#### **Pressure limits:**

#### Overpressure limits

Without damage to the transmitter

Canacira	Fill fluid	Overnmenture limite
Sensors	FIII TIUIG	Overpressure limits
Sensor F to S	Silicone oil	0.07 kPa abs, 0.7 mbar abs, 0.5 mmHg
		and 21 MPa, 210 bar, 3045 psi <sup>(1)</sup> <sup>(2)</sup>
Sensor F to Q	Silicone oil	0.07 kPa abs, 0.7 mbar abs, 0.5 mmHg
266DSH High Static		and 42 MPa, 420 bar, 6090 psi
Sensor E	Silicone oil	0.07 kPa abs, 0.7 mbar abs, 0.5 mmHg
		and 16 MPa, 160 bar, 2320 psi <sup>(1)</sup>
Sensor B	Silicone oil	0.07 kPa abs, 0.7 mbar abs, 0.5 mmHg
		and 7 MPa, 70 bar, 1015 psi <sup>(1)</sup>
Sensor A	Silicone oil	0.07 kPa abs, 0.7 mbar abs, 0.5 mmHg
		and 2 MPa, 20 bar, 290 psi <sup>(1)</sup>
Sensor F to S	Inert	0.135 kPa abs, 1.35 mbar abs, 1 mmHg
	(Galden)	and 21 MPa, 210 bar, 3045 psi <sup>(1)</sup> <sup>(2)</sup>
Sensor E	Inert	0.135 kPa abs, 1.35 mbar abs, 1 mmHg
	(Galden)	and 16 MPa, 160 bar, 2320 psi <sup>(1)</sup>
Sensor F to S	Inert	0.4 kPa abs, 4 mbar abs, 3 mmHg
	(Halocarbon)	and 21 MPa, 210 bar, 3045 psi <sup>(1)</sup> <sup>(2)</sup>
Sensor F to Q	Inert	0.4 kPa abs, 4 mbar abs, 3 mmHg
266DSH High Static	(Halocarbon)	and 42 MPa, 420 bar, 6090 psi
Sensor E	Inert	0.4 kPa abs, 4 mbar abs, 3 mmHg
	(Halocarbon)	and 16 MPa, 160 bar, 2320 psi <sup>(1)</sup>

<sup>(1) 1</sup> MPa, 10 bar, 145 psi for Kynar-PVDF

#### Static pressure limits

Transmitters for differential pressure model 266DSH operates within specifications between the following limits:

Sensors	Static pressure limits	
Sensor F to S	1.3 kPa abs, 13 mbar abs, 0.2 psia	
	and 21 MPa, 210 bar, 3045 psi (1) (2)	
Sensor F to Q	1.3 kPa abs, 13 mbar abs, 0.2 psia	
266DSH High Static	and 42 MPa, 420 bar, 6090 psi	
Sensor E	1.3 kPa abs, 13 mbar abs, 0.2 psia	
	and 16 MPa, 160 bar, 2320 psi <sup>(1)</sup>	
Sensor B	1.3 kPa abs, 13 mbar abs, 0.2 psia	
	and 7 MPa, 70 bar, 1015 psi (1)	
Sensor A	1.3 kPa abs, 13 mbar abs, 0.2 psia	
	and 2 MPa, 20 bar, 290 psi (1)	

<sup>(1) 1</sup> MPa, 10 bar, 145 psi for Kynar-PVDF

#### **Proof pressure**

The transmitter can be exposed without leaking to line pressure of up to

- 48 MPa, 480 bar, 6960 psi
- 77 MPa, 770 bar, 11165 psi for 266DSH high static

Meet ANSI/ISA-S 82.03 hydrostatic test requirements.

<sup>(2) 16</sup> MPa, 160 bar, 2320 psi for AISI 316 ss NACE bolting

<sup>(2) 16</sup> MPa, 160 bar, 2320 psi for AISI 316 ss NACE bolting

# Temperature limits °C ( °F) : Ambient

is the operating temperature

3 [		
Models 266DSH - 266PSH	Ambient temperature limits	
Silicone oil for sensor F to S	-40 and 85 °C (-40 and 185 °F)	
Silicone oil for sensor A to E	-25 and 85 °C (-13 and 185 °F)	
Inert (Galden) for sensor F to S	-20 and 85 °C (-4 and 185 °F)	
Inert (Galden) for sensor E	-10 and 85 °C (14 and 185 °F)	
Inert (Halocarbon) for sensor F to S	-20 and 85 °C (-4 and 185 °F)	
Inert (Halocarbon) for sensor E	-10 and 85 °C (14 and 185 °F)	

Model 266VSH	Ambient temperature limits	
Silicone oil for sensor F to S	-40 and 85 °C (-40 and 185 °F)	
Silicone oil for sensor E	-15 and 70 °C (5 and 158 °F)	
Inert (Galden) for sensor F to S	-10 and 65 °C (14 and 150 °F)	
Inert (Halocarbon) for sensor F to S	-10 and 65 °C (14 and 150 °F)	

Models 266DSH - 266PSH - 266VSH	Ambient temperature limits
LCD integral display	–40 and 85 °C (–40 and 185 °F)

LCD display may not be clearly readable below –20 °C (–4 °F) or above +70 °C (+158 °F)

#### **IMPORTANT**

For Hazardous Atmosphere applications see the temperature range specified on the certificate/approval relevant to the aimed type of protection

#### **Process**

Models 266DSH - 266PSH	Process temperature limits	
Silicone oil for sensor F to S	-40 and 121 °C (-40 and 250 °F) (1)	
Silicone oil for sensor A to E	-25 and 121 °C (-13 and 250 °F) (1)	
Inert (Galden) for sensor F to S	-20 and 100 °C (-4 and 212 °F) (2)	
Inert (Galden) for sensor E	-10 and 100 °C (14 and 212 °F) (2)	
Inert (Halocarbon) for sensor F to S	-20 and 100 °C (-4 and 212 °F) (2)	
Inert (Halocarbon) for sensor E	-10 and 100 °C (14 and 212 °F) (2)	

Model 266VSH	Process temperature limits	
Silicone oil for sensor F to S	-40 and 121 °C (-40 and 250 °F) (1)	
Silicone oil for sensor E	-15 and 121 °C (5 and 250 °F) (1)	
	-10 and 100 °C (14 and 212 °F) (2)	
Inert (Halocarbon) for sensor F to S	-10 and 100 °C (14 and 212 °F) (2)	

(1) 100 °C (212 °F) for application below atmospheric pressure (2) 65 °C (150 °F) for application below atmospheric pressure

Models 266DSH - 266PSH - 266VSH	Process temperature limits
Viton gasket	-20 and 121 °C (-4 and 250 °F)

#### Storage

Models 266DSH - 266PSH - 266VSH	Storage temperature limits	
Storage limits	-50 and 85 °C (-58 and 185 °F)	
LCD integral display	-40 and 85 °C (-40 and 185 °F)	

#### Environmental limits

#### Electromagnetic compatibility (EMC)

Comply with EN 61326 and NAMUR NE 21 (option). Surge immunity level (with surge protector): 4 kV (according to IEC 1000-4-5 EN 61000-4-5)

#### Pressure equipment directive (PED)

Comply with 97/23/EEC Category III Module H.

#### Humidity

Relative humidity: up to 100 % Condensing, icing: admissible

#### Vibration resistance

Accelerations up to 2 g at frequency up to 1000 Hz (according to IEC 60068-2-6)

#### Shock resistance

Acceleration: 50 g Duration: 11 ms

(according to IEC 60068-2-27)

#### Wet and dust-laden atmospheres

The transmitter is dust and sand tight and protected against immersion effects as defined by EN 60529 (1989) to IP 67 (IP 68 on request) or by NEMA to 4X or by JIS to C0920. IP65 with Harting Han connector.

#### Hazardous atmospheres

With or without integral display

INTRINSIC SAFETY:

ATEX Europe (code E1) approval

II 1 G Ex ia IIC T6/T5/T4 and II 1/2 G Ex ia IIC T6/T5/T4 and II 1 D Ex iaD 20 T85 °C and II 1/2 D Ex iaD 21 T85 °C; IP67.

IECEx (code E8) approval

Ex ia IIC T6/T5/T4 and Ex iaD 20 T85 °C and Ex iaD 21 T85 °C; IP67.

NEPSI China (code EY)

Ex ia IIC T4~T6, DIP A20TA, T4~T6.

**EXPLOSION PROOF:** 

ATEX Europe (code E2) approval

II 1/2 G Ex d IIC T6 and II 1/2 D Ex tD A21 IP67 T85 °C (Ta = -50 to +75 °C).

IECEx (code E9) approval

Ex d IIC T6 and Ex tD A21 IP67 T85 °C (Ta = -50 to +75 °C).

NEPSI China (code EZ)

Ex d IIC T6, DIP A21TA, T6.

TYPE "N":

ATEX Europe (code E3) type examination

II 3 G Ex nL IIC T6/T5/T4 and II 3 D Ex tD A22 IP67 T85 °C; IP67.

IECEx (code ER) type examination

Ex nL IIC T6/T5/T4: IP67.

NEPSI China (code ES) type examination

Ex nL IIC T4~T6, DIP A22TA, T6.

FM Approvals US (code E6) and FM Approvals Canada (code E4):

- Explosionproof (US): Class I, Div. 1, Groups A, B, C, D
- Explosionproof (Canada): Class I, Div. 1, Groups B, C, D
- Dust ignitionproof: Class II, Div. 1, Groups E, F, G
- Suitable for: Class II, Div. 2, Groups F, G; Class III, Div. 1, 2
- Nonincendive: Class I, Div. 2, Groups A, B, C, D
- Intrinsically safe: Class I, II, III, Div. 1, Groups A, B, C, D, E, F, G Class I, Zone 0 AEx ia IIC T6/T4, Zone 0 (FM US)

Class I, Zone 0 Ex ia IIC T6/T4, Zone 0 (FM Canada)

COMBINED ATEX (code EW = E1 + E2 + E3), (code E7 = E1 + E2)

COMBINED ATEX and FM Approvals (code EN = EW + E4 + E6)

COMBINED FM Approvals US and Canada

- Intrinsically safe (code EA)
- Explosionproof (code EB)
- Nonincendive (code EC)

COMBINED IEC (code EH = E8 + E9), (code EI = E8 + E9 + ER)

COMBINED NEPSI (code EP = EY + EZ), (code EQ = EY + EZ + ES)

GOST (Russia), GOST (Kazakhstan), GOST (Belarus), Inmetro (Brazil), Kosha (Korea).

REFER TO CERTIFICATES FOR AMBIENT TEMPERATURE RANGES (WITHIN THE LIMITS OF -50 TO 85°C) RELATED TO THE DIFFERENT TEMPERATURE CLASSES

### Electrical Characteristics and Options

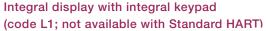
#### **Optional indicators**

#### Standard integral display

(code L9; only available with Standard HART)

Wide screen LCD, 128 x 64 pixel, 52.5 x 27.2 mm (2.06 x 1.07 in.) dot matrix. Multilanguage. Without keypad. User selectable application-specific visualizations.

Totalized and instantaneous flow indication. Display may also indicate static pressure, sensor temperature and diagnostic messages and provides configuration facilities.



Wide screen LCD, 128 x 64 pixel, 52.5 x 27.2 mm (2.06 x 1.07 in.) dot matrix. Multilanguage.

Four keys for configuration and management of device.

Easy setup for quick commissioning.

User selectable application-specific visualizations.

Totalized and instantaneous flow indication.

Display may also indicate static pressure, sensor temperature and diagnostic messages and provides configuration facilities.

# Integral display with Through-The-Glass (TTG) activated keypad (code L5; not available with Standard HART)

As above integral display but equipped with the innovative TTG keypad allowing the activation of the configuration and management menus of the device without the need of removing the transmitter housing cover.

TTG keypad is protected against accidental activations.



# Standard and Advanced HART digital communication and 4 to 20 mA output

#### Power supply

The transmitter operates from 10.5 to 42 V DC with no load and is protected against reverse polarity connection (additional load allows operations over 42 V DC). For Ex ia and other intrinsically safe approval power supply must not exceed 30 V DC. Minimum operating voltage increase to 12.3 V DC with optional surge protector

#### Ripple

20 mV max on a 250  $\Omega$  load as per HART specifications.

#### **Load limitations**

4 to 20 mA and HART total loop resistance:

 $R (k\Omega) = \frac{Supply \ voltage - min. \ operating \ voltage \ (V \ DC)}{22 \ mA}$ 

A minimum of 250  $\Omega$  is required for HART communication.

#### Optional surge protection

Up to 4kV

- voltage 1.2 μs rise time / 50 μs delay time to half value
- current 8 μs rise time / 20 μs delay time to half value

#### **Output signal**

Two-wire 4 to 20 mA, user-selectable for linear or square root output, power of  $\sqrt[3]{2}$  or  $\sqrt[5]{2}$ , square root for bidirectional flow, 22 points linearization table (i.e. for horizontal or spherical tank level measurement).

HART® communication provides digital process variable superimposed on 4 to 20 mA signal, with protocol based on Bell 202 FSK standard.

### Output current limits (to NAMUR NE 43 standard)

Overload condition

- Lower limit: 3.8 mA (configurable from 3.8 to 4 mA)
- Upper limit: 20.5 mA (configurable from 20 to 21 mA)

#### Alarm current

- Lower limit: 3.6 mA (configurable from 3.6 to 4 mA)  $\,$
- Upper limit: 21 mA (configurable from 20 to 22 mA)

Factory setting: high alarm current

#### Process diagnostics (PILD)

Plugged impulse line detection (PILD) generates a warning via HART communication. The device can also be configured to drive the analog output signal to the "Alarm current".

#### **FOUNDATION Fieldbus output**

#### Device type

LINK MASTER DEVICE

Link Active Scheduler (LAS) capability implemented.

Manufacturer code: 000320 (hex) Device type code: 0007 (hex)

#### Power supply

The transmitter operates from 9 to 32 V DC, polarity independent, with or without surge protector. For Ex ia approval power supply must not exceed 24 V DC (entity certification) or 17.5 V DC (FISCO certification), according to FF-816.

#### Current consumption

operating (quiescent): 15 mA fault current limiting: 20 mA max.

#### Output signal

Physical layer in compliance to IEC 1158-2/EN 61158-2 with transmission to Manchester II modulation, at 31.25 kbit/s.

#### Function blocks/execution period

3 enhanced Analog Input blocks/25 ms max (each)

- 1 enhanced PID block/40 ms max.
- 1 standard ARitmetic block/25 ms
- 1 standard Input Selector block/25 ms
- 1 standard Control Selector block/25 ms
- 1 standard Signal Characterization block/25 ms
- 1 standard Integrator/Totalizer block/25 ms

#### Additional blocks

- 1 enhanced Resource block,
- 1 custom Pressure with calibration transducer block
- 1 custom Advanced Diagnostics transducer block including

Plugged Input Line Detection

1 custom Local Display transducer block

### Number of link objects

#### Number of VCRs

35

#### **Output interface**

FOUNDATION fieldbus digital communication protocol to standard H1, compliant to specification V. 1.7.

#### Transmitter failure mode

The output signal is "frozen" to the last valid value on gross transmitter failure condition, detected by self-diagnostics which also indicate a BAD conditions. If electronic failure or short circuit occur the transmitter consumption is electronically limited at a defined value (20 mA approx), for safety of the network.

#### PROFIBUS PA output

#### Device type

Pressure transmitter compliant to Profiles 3.0.1 Identification number: 3450 (hex)

#### Power supply

The transmitter operates from 9 to 32 V DC , polarity independent, with or without surge protector. For Ex ia approval power supply must not exceed 17.5 V DC. Intrinsic safety installation according to FISCO model.

#### Current consumption

operating (quiescent): 15 mA fault current limiting: 20 mA max.

#### **Output signal**

Physical layer in compliance to IEC 1158–2/EN 61158–2 with transmission to Manchester II modulation, at 31.25 kbit/s.

#### Output interface

PROFIBUS PA communication according to Profibus DP50170 Part 2/DIN 19245 part 1–3.

#### Output update time

25 ms

#### Data blocks

3 analog input, 1 physical.

#### Additional blocks

- 1 Pressure with calibration transducer block
- 1 Advanced Diagnostics transducer block including Plugged Input Line Detection
- 1 Local Display transducer block

#### Transmitter failure mode

On gross transmitter failure condition, detected by selfdiagnostics, the output signal can be driven to defined conditions, selectable by the user as safe, last valid or calculated value.

If electronic failure or short circuit occur the transmitter consumption is electronically limited at a defined value (20 mA approx), for safety of the network.

### Performance specifications

Stated at reference condition to IEC 60770 ambient temperature of 20 °C (68 °F), relative humidity of 65 %, atmospheric pressure of 1013 hPa (1013 mbar), mounting position with vertical diaphragm and zero based range for transmitter with isolating diaphragms in AISI 316 L ss or Hastelloy and silicone oil fill and HART digital trim values equal to 4 mA and to 20 mA span end points, in linear mode. Unless otherwise specified, errors are quoted as % of span. Some performance referring to the Upper Range Limit are affected by the actual turndown (TD) as ratio between Upper Range Limit (URL) and calibrated span.

IT IS RECOMMENDED TO SELECT THE TRANSMITTER SENSOR CODE PROVIDING THE TURNDOWN VALUE AS LOWEST AS POSSIBLE TO OPTIMIZE PERFORMANCE CHARACTERISTICS.

#### Dynamic performance (according to IEC 61298-1 definition)

Sensors	Time constant (63.2 % of total step change)
Sensor M to S	≤ 70 ms
Sensor H	100 ms
Sensor G	130 ms
Sensor F	180 ms
Dead time for all sensors	30 ms

Response time (total) = dead time + time constant

#### Accuracy rating

% of calibrated span, including combined effects of terminal based linearity, hysteresis and repeatability. For fieldbus versions SPAN refer to analog input function block outscale range

Model	Sensor	for TD	
	F to P	from 1:1 to 10:1	± 0.06 %
	F to P	from 10:1 to 100:1	± (0.006 x TD) %
266DSH	E, Q, S	from 1:1 to 10:1	± 0.075 %
standard	Q and S	from 10:1 to 100:1	± (0.0075 x TD) %
static and	E	from 10:1 to 30:1	± (0.0075 x TD) %
266PSH	В	from 1:1 to 10:1	± 0.10 %
	В	from 10:1 to 20:1	± (0.01 x TD) %
	А	from 1:1 to 4:1	± 0.10 %
	А	from 4:1 to 20:1	± (0.025 x TD) %
266DSH	F to Q	from 1:1 to 5:1	± 0.04 %
266PSH	F to P	from 5:1 to 100:1	± (0.0105 + 0.0059 x TD) %
(option D2)	Q	from 5:1 to 100:1	± (0.003 + 0.0074 x TD) %
266DSH	F to Q	from 1:1 to 10:1	± 0.075 %
high static	F to Q	from 10:1 to 100:1	± (0.0075 x TD) %
	E to S	from 1:1 to 10:1	± 0.075 %
266VSH	F to S	from 10:1 to 60:1	± (0.0075 x TD) %
	E	from 10:1 to 30:1	± (0.0075 x TD) %

#### Ambient temperature

per 20K change between the limits of -40 °C to +85 °C (per 36 °F change between the limits of -40 to +185 °F):

Model	Sensor	for TD up to	
	F to Q	10:1	± (0.03 % URL + 0.045 % span)
266DSH	E and S	10:1	± (0.04 % URL + 0.065 % span)
266PSH	В	10:1	± (0.06 % URL + 0.10 % span)
	А	4:1	± (0.10 % URL + 0.10 % span)
266VSH	F to Q	10:1	± (0.06 % URL + 0.09 % span)
	E and S	10:1	± (0.08 % URL + 0.13 % span)

for an ambient temperature change from -10 °C to +60 °C  $(+14 \text{ to } +140 \text{ }^{\circ}\text{F})$ :

Model	Sensor	for TD up to	
	F to Q	10:1	± (0.055 % URL + 0.08 % span)
266DSH	E and S	10:1	± (0.075 % URL + 0.11 % span)
266PSH	В	10:1	± (0.11 % URL + 0.18 % span)
	А	4:1	± (0.18 % URL + 0.18 % span)
266VSH	F to Q	10:1	± (0.11 % URL + 0.16 % span)
	E and S	10:1	± (0.15 % URL + 0.22 % span)

per 10K change between the limits of -40 °C to -10 °C or +60° to +85 °C (per 18 °F change between the limits of -40 to +14 °F or +140° to +185 °F):

Model	Sensor	for TD up to				
	F to Q	10:1	± (0.03 % URL + 0.04 % span)			
266DSH	E and S	± (0.04 % URL + 0.055 % span				
266PSH	В	10:1	± (0.055 % URL + 0.09 % span)			
	А	4:1	± (0.09 % URL + 0.09 % span)			
266VSH	F to Q					
	E and S	10:1	± (0.075 % URL + 0.11 % span)			

#### Static pressure

(zero errors can be calibrated out at line pressure) per 0.5 MPa, 5 bar or 72.5 psi (sensor A) per 2 MPa, 20 bar or 290 psi (sensor B) per 3.5 MPa, 35 bar or 500 psi (sensor E) per 7 MPa, 70 bar or 1015 psi (sensor F to S) Model 266DSH standard static

- zero error: ±0.05 % of URL for sensor F to S ±0.08 % of URL for sensor A, B and E
- span error: ±0.08 % of reading. Model 266DSH high static
- zero error:±0.08 % of URL for sensor F to Q
- span error:  $\pm 0.20$  % of reading.

#### Supply voltage

Within voltage/load specified limits the total effect is less than 0.005 % of URL per volt.

#### Load

Within load/voltage specified limits the total effect is negligible.

#### Electromagnetic field

Meets all the requirements of EN 61326 and NAMUR NE-21 for surge immunity level.

#### Common mode interference

No effect from 100Vrms @ 50Hz, or 50 V DC

#### Mounting position

No effect for rotation on diaphragm plane. A tilt up to 90° from vertical causes a zero shifts up to 0.5 kPa, 5 mbar or 2 inH2O, which can be corrected with zero adjustment. No span effect.

#### Stability

 $\pm 0.15$  % of URL over a ten years period ( $\pm 0.25$  % of URL over a ten years period for sensor A and B) 0.15 % of URL over a five years period for 266DSH high static.

#### Maximum total performance

For temperature change of 28 °C (50 °F), static pressure change of 5,1 MPa, 51 bar, 740 psi, for model 266DSH with accuracy option code D2 ( $\pm$  0.04 %)

Sensor	Span	Maximum total performance
F	35 kPa, 350 mbar, 140 inH2O	
Н	150 kPa, 1,5 bar, 600 inH2O	≤± 0.125 % of calibrated span
М	550 kPa, 5,5 bar, 80 psi	

$$\mathsf{E}_{\mathsf{Mperf}} = \sqrt{\;(\mathsf{E}_{\Delta\mathsf{Tz}} + \mathsf{E}_{\Delta\mathsf{Ts}})^2 + \mathsf{E}_{\Delta\mathsf{Ps}}^{\;\;2} + \mathsf{E}_{\mathsf{lin}}^{\;\;2}}$$

 $E_{Mperf} = Maximum total performance$ 

 $E_{ATz}$  = Effect of the ambient temperature on zero

 $E_{ATs}$  = Effect of the ambient temperature on span

 $E_{APs}$  = Effect of the static pressure on span

E<sub>lin</sub> = Accuracy rating (for terminal-based linearity 0.04 %)

#### Total performance

similar to DIN 16086

Temperature change in the range from -10 to 60 °C (14 to 140 °F), static pressure change (266DSH) 10 MPa, 100 bar, 1450 psi

Model	Sensor	TD	Total performance
266DSH std. static, D2 option	F to Q	1:1	≤± 0.16 % of calibrated span
266PSH, D2 option	F to Q	1:1	≤± 0.14 % of calibrated span
266VSH	F to Q	1:1	≤± 0.28 % of calibrated span

$$E_{port} = \sqrt{(E_{ATz} + E_{ATz})^2 + E_{ABz}^2 + E_{lip}^2}$$

 $E_{perf}$  = Total Performance

 $\dot{E_{_{\Lambda T_{7}}}}$  = Effect of the ambient temperature on zero

 $E_{ATs}$  = Effect of the ambient temperature on span

 $E_{APs}$  = Effect of the static pressure on span (266DSH only)

E<sub>lin</sub> = Accuracy rating (for terminal-based linearity 0.04 % or 0.075% as per model/sensor accuracy)

Maximum total performance and Total performance includes the measuring errors of

- non-linearity including hysteresis and non-reproducibility,
- thermal change of the ambient temperature as regards the zero signal and the calibrated span,
- effect of static pressure change on the calibrated span, with transmitter re-zeroed at line pressure

### Physical Specification

(Refer to ordering information sheets for variant availability related to specific model or versions code)

#### Materials

#### Process isolating diaphragms (\*)

AISI 316 L ss; AISI 316 L ss gold plated; Monel 400™; Tantalum; Hastelloy C-276™; Hastelloy C-276™ on AISI 316L ss gasket seat.

#### Process flanges, adapters, plugs and drain/vent valves (\*)

AISI 316 L ss; Hastelloy C-276™; Monel 400™. Kynar™ (PVDF insert in AISI 316 ss flange)

### Blind flange (reference side of 266PSH, 266VSH)

AISI 316 L ss.

#### Sensor fill fluid

Silicone oil; Inert fill (Halocarbon™ 4.2 or Galden™).

#### Mounting bracket (\*\*)

Zinc plated carbon steel with chrome passivation; AISI 316 ss; AISI 316 L ss.

#### Gaskets (\*)

Viton™; PTFE.

#### Sensor housing

AISI 316 L ss.

#### Bolts and nuts

AISI 316 ss bolts Class A4-80 and nuts Class A4-70 per UNI 7323 (ISO 3506);

AISI 316 ss bolts and nuts Class A4-50 per UNI 7323 (ISO 3506), in compliance with NACE MR0175 Class II (std. static only). Plated alloy steel bolts per ASTM-A-193-77a grade B7M and nuts per ASTM A194/A 194 M-90 grade 2HM, in compliance with NACE MR0175 Class II.

Stainless steel per ASTM-A-453 grade 660D, in compliance with NACE MR0175 Class II (high static only).

#### Electronic housing and covers

Aluminium alloy (copper content ≤ 0.3 %) with baked epoxy finish (colour RAL9002); AISI 316 L ss.

#### **Covers O-ring**

Buna N.

#### Local adjustments (zero, span and write protect)

For Standard HART version:

- Internal for zero and span (on communication board)
- External non-intrusive for zero, span and write protect in glass filled polyphenylene oxyde, removable (code R1).

For all other versions:

 External non-intrusive for zero, span and write protect in glass filled polyphenylene oxyde, removable.

#### **Plates**

Transmitter nameplate: AISI 316 ss screwed to the electronics

Certification plate and optional tag/calibration plate : selfadhesive attached to the electronics housing or AISI 316 ss fastened to the electronics housing with rivets or screws. Optional wired-on customer data plate: AISI 316 ss. Laser printing on metal or thermal printing on self-adhesive.

#### Calibration

Standard: at maximum span, zero based range, ambient temperature and pressure:

Optional: at specified range and ambient conditions.

(\*) Wetted parts of the transmitter.

(\*\*) U-bolt material: high-strength alloy steel or AISI 316 L ss; bolts/nuts material: high-strength alloy steel or AISI 316 ss.

#### Optional extras

#### Mounting brackets (code Bx)

For vertical and horizontal 60mm. (2in) pipes or wall mounting. (EXCEPT U-BOLT ASSEMBLY WHICH IS NOT SUPPLIED FOR WALL MOUNTING, PARTS ARE THE SAME FOR PIPE AND WALL BRACKET OPTIONS, AS PER RELEVANT MATERIALS).

#### Display (code Lx)

4-position (at 90°) user orientable.

#### Optional plates (code Ix)

Code I2: plate for tag (up to 31 characters) and calibration details (up to 31 characters: lower and upper range values and engineering unit) fixed onto transmitter housing. Code I1: AISI 316 ss wired-on plate with laser printed customized data (4 lines of 32 characters with 4 mm/0.16 in. height).

#### Surge protection (code S2)

Cleaning procedure for oxygen service (code P1)

Test Certificates (test, design, calibration, material traceability) (codes Cx and Hx)

Tag and manual language (codes Tx and Mx)

Communication connectors (code Ux)

#### Manifold mounting (code A1)

Factory mounting and pressure test of ABB M26 manifolds.

#### **Process connections**

on flanges :  $^{1}/_{_{4}}$  – 18 NPT on process axis on adapters: 1/2 - 14 NPT on process axis centre distance (266DSH): 54 mm (2.13 in.) on flange; 51, 54 or 57 mm (2.01, 2.13 or 2.24 in.) as per adapters fittings fixing threads: 7/16 - 20 UNF at 41.3 mm centre distance

#### **Electrical connections**

Two <sup>1</sup>/<sub>2</sub> – 14 NPT or M20x1.5 threaded conduit entries, direct on housing.

Special communication connector (on request)

- HART: straight or angle Harting Han 8D connector and one plug.
- FOUNDATION Fieldbus, PROFIBUS PA: M12x1 or 7/8 in.

#### Terminal block

HART version: three terminals for signal/external meter wiring up to 2.5 mm<sup>2</sup> (14 AWG), also connection points for test and communication purposes.

Fieldbus versions: two terminals for signal wiring (bus connection) up to 2.5 mm<sup>2</sup> (14 AWG)

#### Grounding

Internal and external 6 mm<sup>2</sup> (10 AWG) ground termination points are provided.

#### Mounting position

Transmitter can be mounted in any position.

Electronics housing may be rotated to any position. A positive stop prevents over travel.

#### Mass (without options)

4 kg approx (8.8 lb);

4.35 kg approx (9.6 lb) for 266DSH high static version; add 1.5 kg (3.3 lb) for AISI housing.

Add 650 g (1.5 lb) for packing.

#### **Packing**

Carton 27 x 24 x 20 cm approx (11 x 10 x 8 in.).

### Configuration

### Transmitter with HART communication and 4 to 20 mA Standard configuration

Transmitters are factory calibrated to customer's specified range. Calibrated range and tag number are stamped on the tag plate. If a calibration range and tag data are not specified, the transmitter will be supplied with the plate left blank and configured as follows:

**Engineering Unit** kPa 4 mA Zero

20 mA Upper Range Limit (URL)

Output Linear Damping 1 s Transmitter failure mode Upscale Software tag (8 characters max) Blank

Optional LCD display PV in kPa; output in mA and

in percentage on bargraph

Any or all the above configurable parameters, including Lower range-value and Upper range-value which must be the same unit of measure, can be easily changed using the HART handheld communicator or by a PC running the configuration software with DTM for 266 models. The transmitter database is customized with specified flange type and material, O-ring and drain/vent materials and meter code option.

#### Custom configuration (option N6)

The following data may be specified in addition to the standard configuration parameters:

16 alphanumeric characters Descriptor Message 32 alphanumeric characters

Day, month, year Date

For HART protocol available engineering units of pressure

measure are: Pa, kPa, MPa

inH2O@4 °C, mmH2O@4 °C, psi

inH2O@20 °C, ftH2O@20 °C, mmH2O@20 °C

inHg, mmHg, Torr g/cm<sup>2</sup>, kg/cm<sup>2</sup>, atm

mbar, bar

These and others are available for PROFIBUS and

FOUNDATION Fieldbus.

#### Transmitter with PROFIBUS PA communication Standard configuration

Transmitters are factory calibrated to customer's specified range. Calibrated range and tag number are stamped on the tag plate. If a calibration range and tag data are not specified, the transmitter will be supplied with the plate left blank and configured as follows:

Measure Profile Pressure **Engineering Unit** kPa

Lower Range Limit (LRL) Output scale 0 % Output scale 100 % Upper Range Limit (URL)

Output Linear

Hi-Hi Limit Upper Range Limit (URL) Hi Limit Upper Range Limit (URL) Low Limit Lower Range Limit (LRL) Low-Low Limit Lower Range Limit (LRL) Limits hysteresis 0.5 % of output scale

PV filter Address (set by local key) 126

32 alphanumeric characters PV in kPa; output in percentage Optional LCD display

on bargraph

Any or all the above configurable parameters, including the range values which must be the same unit of measure, can be easily changed by a PC running the configuration software with DTM for 266 models. The transmitter database is customized with specified flange type and material, O-ring and drain/vent materials and meter code option.

#### Custom configuration (option N6)

The following data may be specified in addition to the standard configuration parameters:

Descriptor 32 alphanumeric characters Message 32 alphanumeric characters

Date Day, month, year

#### Transmitter with FOUNDATION Fieldbus communication Standard configuration

Transmitters are factory calibrated to customer's specified range. Calibrated range and tag number are stamped on the tag plate. If a calibration range and tag data are not specified, the transmitter will be supplied with the plate left blank and the analog input function block FB1 is configured as follows:

Measure Profile Pressure kPa **Engineering Unit** 

Output scale 0 % Lower Range Limit (LRL) Output scale 100 % Upper Range Limit (URL)

Output Linear

Hi-Hi Limit Upper Range Limit (URL) Hi Limit: Upper Range Limit (URL) Low Limit Lower Range Limit (LRL) Low-Low Limit Lower Range Limit (LRL) Limits hysteresis 0.5 % of output scale

PV filter time

32 alphanumeric characters Optional LCD display PV in kPa; output in percentage

on bargraph

The analog input function block FB2 and FB3 are configured respectively for the sensor temperature measured in °C and for the static pressure measured in MPa.

Any or all the above configurable parameters, including the range values, can be changed using any host compliant to

FOUNDATION fieldbus. The transmitter database is customized with specified flange type and material, O-ring and drain/vent materials and meter code option.

#### Custom configuration (option N6)

The following data may be specified in addition to the standard configuration parameters:

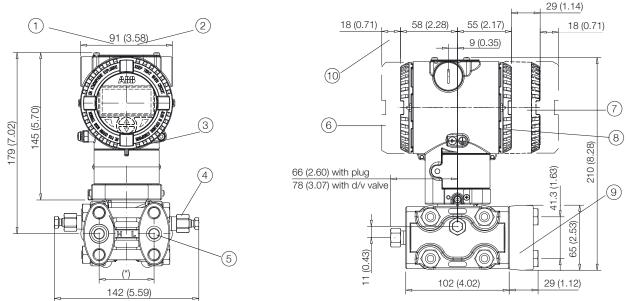
Descriptor 32 alphanumeric characters Message 32 alphanumeric characters

Date Day, month, year

### Mounting dimensions

(not for construction unless certified) - dimensions in mm (in.)

#### Standard static transmitter with barrel housing - horizontal flanges

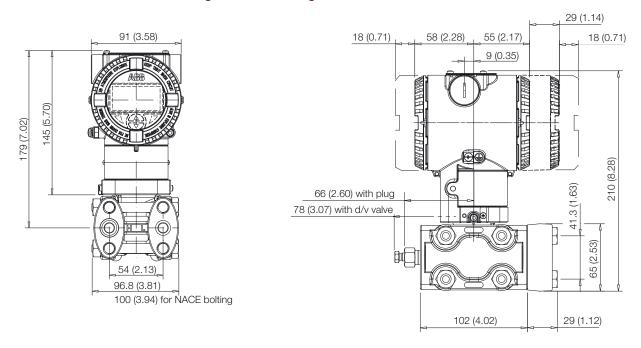


- (\*) FOR MODEL 266DSH: 54 (2.13) mm (in) on 1/4 18 NPT process flange; 51 (2.01), 54 (2.13) or 57 (2.24) mm (in) according to 1/2 14 NPT adapters fitting; FOR MODEL 266PSH: 54 (2.13) mm (in) with low pressure side flange without process connection (a filter is fitted) and drain/vent valve
- 1) Adjustments | 2) Identification plate | 3) Certification plate | 4) Drain/vent valve | 5) Process connection | 6) Terminal side |
- (7) Integral display housing | (8) Electronic side | (9) Adapter | (10) Space for cover removal

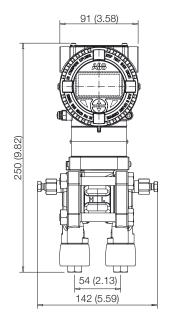
#### NOTE

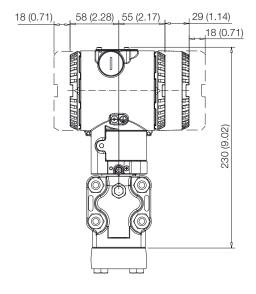
Process connection, gasket groove and gaskets are in accordance with IEC 61518. Bolting threads for fixing adapter or other devices (i.e. manifold etc.) on process flange is  $\frac{7}{16}$  – 20 UNF.

#### High static transmitter with barrel housing - horizontal flanges

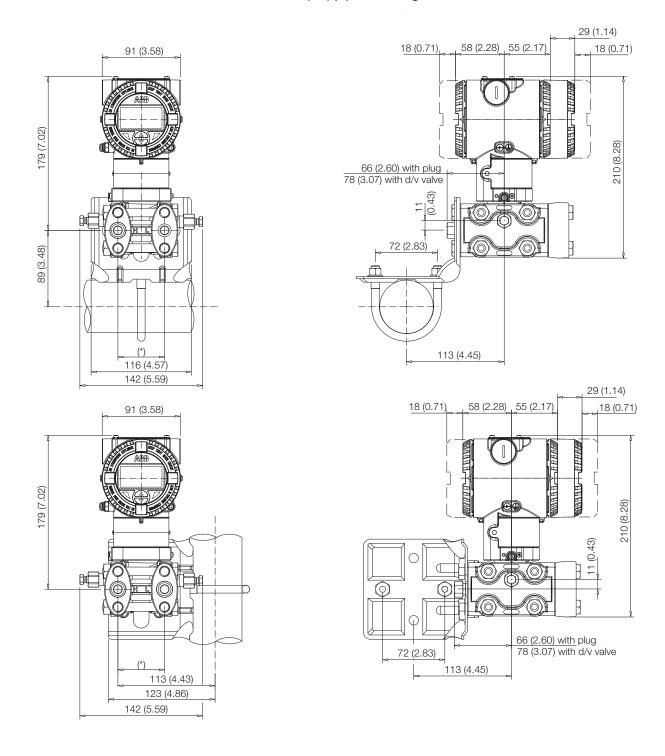


#### Standard static transmitter with barrel housing - vertical flanges

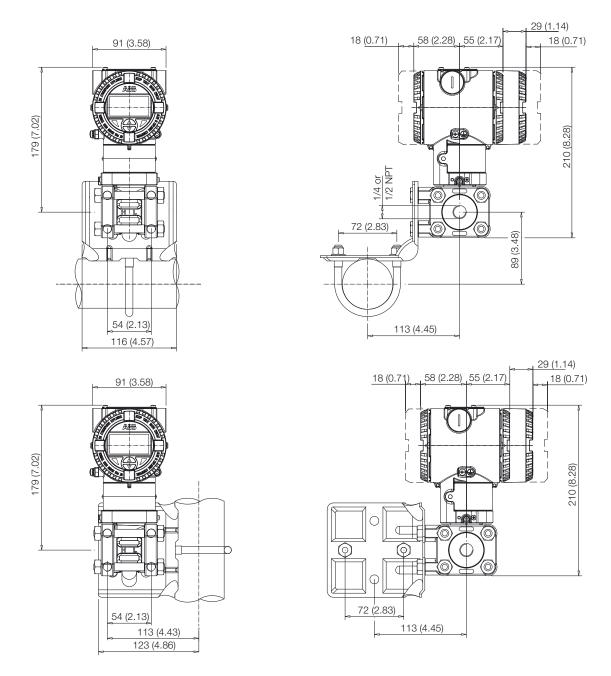




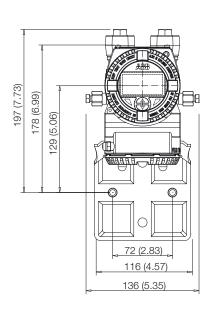
#### Transmitter on bracket for vertical or horizontal 60 mm (2in) pipe mounting

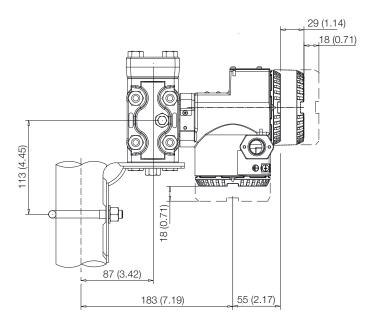


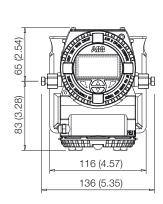
#### Transmitter with Kynar flanges on bracket for vertical or horizontal 60 mm (2in) pipe mounting

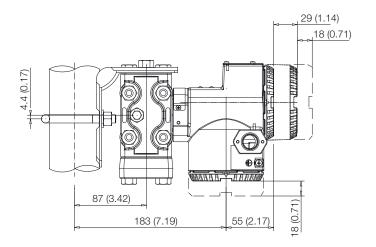


### Transmitter with DIN aluminium housing - horizontal flanges on bracket for vertical or horizontal 60 mm (2in) pipe mounting

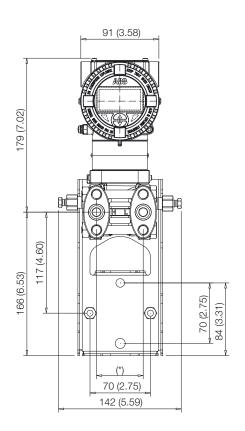


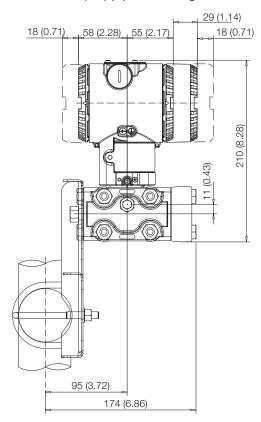




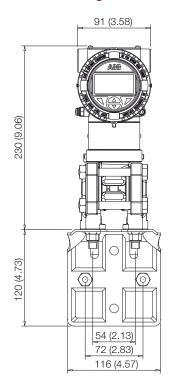


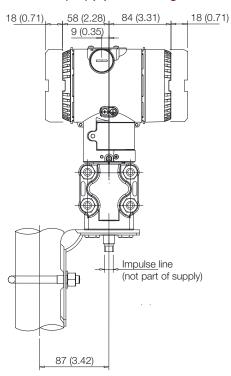
#### Transmitter with horizontal flanges on flat bracket for vertical or horizontal 60 mm (2in) pipe mounting



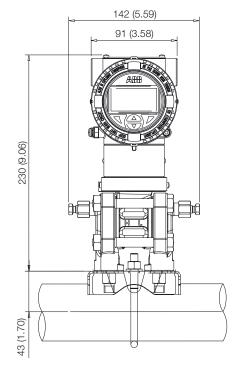


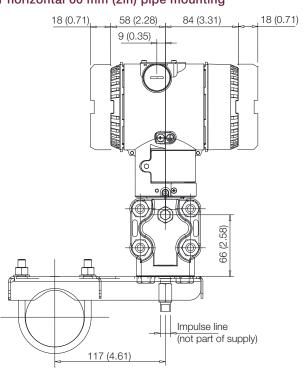
#### Transmitter with vertical flanges on flat bracket for vertical or horizontal 60 mm (2in) pipe mounting





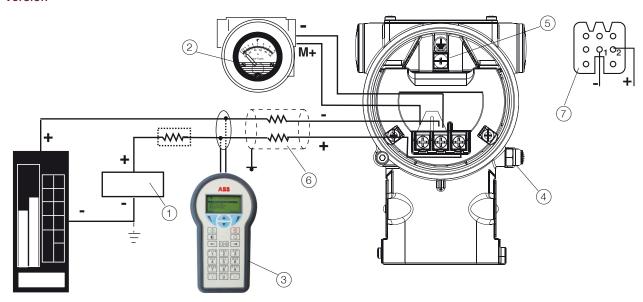
### Transmitter with vertical flanges on flat bracket for vertical or horizontal 60 mm (2in) pipe mounting





### Electrical connections

#### **HART Version**



HART hand-held communicator may be connected at any wiring termination point in the loop, providing the minimum resistance is 250 ohm. If this is less than 250 ohm, additional resistance should be added to allow communications. Maximum voltage drop on external remote indicator is 0.7 Vdc

#### **FIELDBUS Versions**

7/8 in connector

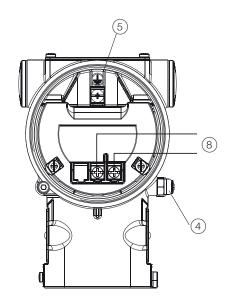


M12 x 1 connector

70 III COIIIIeCi
13
2 4

PIN (male) IDENTIFICATION						
	FOUNDATION	PROFIBUS				
	PA					
1	DATA -	DATA +				
2	DATA +	GROUND				
3	SHIELD	DATA -				
4	GROUND	SHIELD				

CONNECTOR IS SUPPLIED LOOSE WITHOUT MATING FEMALE PLUG



<sup>1)</sup> Power source | (2) Remote indicator | (3) Handheld communicator | (4) External ground termination point | (5) Internal ground termination point |

<sup>(6)</sup> Line load | (7) Harting Han 8D socket insert for mating plug (supplied loose) | (8) Fieldbus line (polarity independent)

### Ordering information

#### BASIC ORDERING INFORMATION model 266DSH Differential Pressure Transmitter

Select one character or set of characters from each category and specify complete catalog number.

Refer to additional ordering information and specify one or more codes for each transmitter if additional options are required.

BASE MODEL - 1st to	6th characters		266DSH	X	Х	Χ	Χ	X	X X	
Differential Pressure Tr	ansmitter – BASE ACCL	JRACY 0.06 %								
SENSOR - Span limits	- 7th character							continue	ed	
0.05 and 1 kPa	0.5 and 10 mbar	0.2 and 4 inH2O	(Note 21)	Α			S	ee next p	oage	
0.2 and 4 kPa	2 and 40 mbar	0.8 and 16 inH2O	(Note 21)	В						
0.54 and 16 kPa	5.4 and 160 mbar	2.16 and 64 inH2O	(Note 21)	Е						
0.4 and 40 kPa	4 and 400 mbar	1.6 and 160 inH2O		F						
0.65 and 65 kPa	6.5 and 650 mbar	2.6 and 260 inH2O		G						
1.6 and 160 kPa	16 and 1600 mbar	6.4 and 642 inH2O		Н						
6 and 600 kPa	0.06 and 6 bar	0.87 and 87 psi		М						
24 and 2400 kPa	0.24 and 24 bar	3.5 and 348 psi		Р						
80 and 8000 kPa	0.8 and 80 bar	11.6 and 1160 psi		Q						
160 and 16000 kPa	1.6 and 160 bar	23.2 and 2320 psi	(Note 21)	S						
Static pressure - 8th cl	haracter									
Standard static pressu	re				S					
High static pressure					Н					
Diaphragm material / F	Fill fluid (wetted parts)	- 9th character								
AISI 316 L ss		Silicone oil	(Note 2)	NA	CE	S				
Hastelloy C-276™ (on	AISI seat)	Silicone oil	(Note 20, 21)	NA	CE	Н				
Hastelloy C-276™		Silicone oil		NA	CE	K				
Monel 400™		Silicone oil	(Notes 2, 21)	NA	CE	М				
AISI 316 L ss gold plat	ed	Silicone oil	(Notes 2, 21)	NA	CE	8				
Tantalum		Silicone oil	(Notes 2, 21)	NA	CE	Т				
AISI 316 L ss		Inert fluid - Galden	(Notes 1, 2, 21)	NA	CE	Α				
Hastelloy C-276™		Inert fluid - Galden	(Notes 1, 2, 21)	NA	CE	F				
Monel 400™		Inert fluid - Galden	(Notes 1, 2, 21)	NA	CE	С				
AISI 316 L ss gold plat	ed	Inert fluid - Galden	(Notes 1, 2, 21)	NA	CE	9				
Tantalum		Inert fluid - Galden	(Notes 1, 2, 21)	NA	CE	D				
AISI 316 L ss		Inert fluid - Halocarbon	(Notes 1, 2)	NA	CE	L				
Hastelloy C-276™		Inert fluid - Halocarbon	(Notes 1, 2)	NA	CE	Р				
Monel 400™		Inert fluid - Halocarbon	(Notes 1, 2, 21)	NA	CE	4				
AISI 316 L ss gold plat	ed	Inert fluid - Halocarbon	(Notes 1, 2, 21)	NA	CE	- 1				
Tantalum		Inert fluid - Halocarbon	(Notes 1, 2, 21)	NA	CE	5				

BASIC ORDERING INFORMATION model 2	66DSH Differential	Pressure Tran	nsmitter		266DSHX	ххх	Х	Х	Γ
Process flanges/adapters material and cor									
AISI 316 L ss (Horizontal connection)	1/4 – 1	8 NPT-f direct			NACE	А			
AISI 316 L ss (Horizontal connection)	1/2 – 1	4 NPT-f throug	h adapter		NACE	В			
Hastelloy C-276™ (Horizontal connection)	1/4 – 1	8 NPT-f direct		(Notes 3, 21)	NACE	D			
Hastelloy C-276™ (Horizontal connection)	1/2 – 1	4 NPT-f throug	h adapter	(Notes 3, 21)	NACE	Е			
Monel 400™ (Horizontal connection)	1/4 – 1	8 NPT-f direct		(Notes 3, 4, 21)	NACE	G			
Monel 400™ (Horizontal connection)	1/2 – 1	4 NPT-f throug	h adapter	(Notes 3, 4, 21)	NACE	Н			
AISI 316 L ss (Vertical connection)	1/4 – 1	8 NPT-f direct		(Note 21)	NACE	Q			
AISI 316 L ss (Vertical connection)	1/2 – 1	4 NPT-f throug	h adapter	(Note 21)	NACE	Т			
Hastelloy C-276™ (Vertical connection)	1/4 – 1	8 NPT-f direct		(Notes 3, 21)	NACE	М			
Hastelloy C-276™ (Vertical connection)	1/2 – 1	4 NPT-f throug	h adapter	(Notes 3, 21)	NACE	S			
Monel 400™ (Vertical connection)	1/4 – 1	8 NPT-f direct		(Notes 3, 4, 21)	NACE	U			
Monel 400™ (Vertical connection)	1/2 – 1	4 NPT-f throug	h adapter	(Notes 3, 4, 21)	NACE	V			
PVDF Kynar™ insert on AISI 316 ss flange s	ide 1/4 – 1	8 NPT-f direct		(Notes 5, 6, 21)		Р			
PVDF Kynar™ insert on AISI 316 ss flange s	ide 1/2 – 1	4 NPT-f direct		(Notes 5, 6, 21)		Z			
Bolts/Gasket (wetted parts) - 11th character									
For standard static	AISI 316 ss		Viton™	(Notes 4, 7)			1		
and high static versions	AISI 316 ss		PTFE	(Notes 1, 4, 7)			2		
For standard static version	AISI 316 ss - MW	/P = 16 MPa	Viton™	(Note 7)	NACE		3		
Tor standard static version	AISI 316 ss - MW	/P = 16 MPa	PTFE	(Notes 1, 7)	NACE		4		
For high static version	Stainless steel - N	MWP = 42 MPa	a Viton™	(Note 7)	NACE		3		
1 Of High Static Version	Stainless steel - N	MWP = 42 MPa	a PTFE	(Notes 1, 7)	NACE		4		
For standard static	Alloy steel		Viton™	(Notes 4, 7)	NACE		8		
and high static versions	Alloy steel		PTFE	(Notes 1, 4, 7)	NACE		9		
For PVDF Kynar process connection	AISI 316 ss spring	g loaded - MW	P = 1 MPa	(Note 8)			Ν		

BASIC ORDERING INFORMATION model 266DSH Dif	ferential Pressure Transmi	tter	266DSHXXXXX	Χ	>
Housing material and electrical connection - 12th cha	racter				
Aluminium alloy (barrel version)	1/2 – 14 NPT			Α	
Aluminium alloy (barrel version)	M20 x 1.5 (CM 20)			В	
Aluminium alloy (barrel version)	Harting Han 8D connector	(general purpose only)	(Note 9)	Ε	
Aluminium alloy (barrel version)	Fieldbus connector	(general purpose only)	(Note 9)	G	
AISI 316 L ss (barrel version)	1/2 – 14 NPT			S	
AISI 316 L ss (barrel version)	M20 x 1.5 (CM20)			Т	
AISI 316 L ss (barrel version)	Fieldbus connector	(general purpose only)	(Note 9)	Z	
Aluminium alloy (DIN version)	M20 x 1.5 (CM20)	(not Ex d or XP)		J	
Aluminium alloy (DIN version)	Harting Han 8D connector	(general purpose only)	(Note 9)	K	
Aluminium alloy (DIN version)	Fieldbus connector	(general purpose only)	(Note 9)	W	
Output/Additional options - 13th character					
Standard HART and 4 to 20 mA	No addition	onal options	(Notes 10, 11)		l
Standard HART and 4 to 20 mA	Options r	equested by "Additional orde	ring code" (Note 10)		-
Advanced HART and 4 to 20 mA (includes option R1)	No addition	onal options	(Notes 10, 11)		H
Advanced HART and 4 to 20 mA (includes option R1)	Options r	equested by "Additional orde	ring code" (Note 10)		
PROFIBUS PA (includes option R1)	No addition	onal options	(Notes 10, 11)		F
PROFIBUS PA (includes option R1)	Options r	equested by "Additional orde	ring code" (Note 11)		2
FOUNDATION Fieldbus (includes option R1)	No addition	onal options	(Notes 10, 11)		1
FOUNDATION Fieldbus (includes option R1)	Options r	equested by "Additional orde	ring code" (Note 11)		(
HART and 4 to 20 mA Safety, certified to IEC 61508 (in	cludes option R1) No addition	onal options	(Notes 10, 11)		
HART and 4 to 20 mA Safety, certified to IEC 61508 (in	cludes option R1) Options r	equested by "Additional orde	ring code" (Note 10)		8

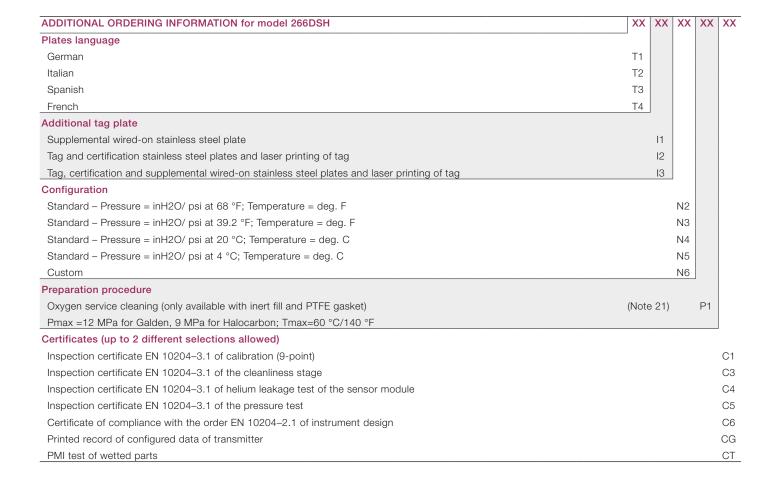
NOTE - Option R1 represents the external pushbuttons

#### ADDITIONAL ORDERING INFORMATION for model 266DSH

Add one or more 2-digit code(s) after the basic ordering information to select all required options

					XX	XX
Accuracy						
0.04 % accuracy for	r applicable ranges			(Notes 7, 21, 22)	D2	
Drain/vent valve (ma	aterial and position) (wetted p	parts)				
AISI 316 L ss	on process axis	(Notes 7, 12)	NACE			V1
AISI 316 L ss	on flange side top	(Notes 7, 13, 21)	NACE			V2
AISI 316 L ss	on flange side bottom	(Notes 7, 13, 21)	NACE			V3
Hastelloy C-276™	on process axis	(Notes 7, 14)	NACE			V4
Hastelloy C-276™	on flange side top	(Notes 7, 15, 21)	NACE			V5
Hastelloy C-276™	on flange side bottom	(Notes 7, 15, 21)	NACE			V6
Monel 400™	on process axix	(Notes 7, 16, 21)	NACE			V7
Monel 400™	on flange side top	(Notes 7, 17, 21)	NACE			V8
Monel 400™	on flange side bottom	(Notes 7, 17, 21)	NACE			V9
lazardous area cer	tifications					
ATEX Intrinsic Safety	y II 1 G and II 1/2 G Ex ia IIC T6	:/T5/T4; II 1 D Ex iaD 20 T85	°C and II 1/2D Ex iaD 21 T85 °C	(Notes 10, 11)		
ATEX Explosion Pro-	of Group II Category 1/2 G Ex	d IIC T6 and Group II Categor	ry 1/2 D Ex tD A21 IP67 T85 °C	(Notes 10, 11, 18)		
ATEX Type "N" Grou	ip II Category 3 G Ex nL IIC T6	T5/T4 and Group II Category	3 D Ex tD A22 IP67 T85 °C	(Notes 10, 11)		
Combined ATEX - Ir	ntrinsic Safety, Explosion Proof	and Type "N"		(Notes 10, 11, 18)		
Combined ATEX - Ir	ntrinsic Safety and Explosion Pr	oof		(Notes 10, 11, 18)		
Combined ATEX, FN	Approvals (USA) and FM App	rovals (Canada)		(Notes 10, 11, 18)		
FM Approvals (Cana	ada) approval			(Notes 10, 11, 18)		
FM Approvals (USA)	approval			(Notes 10, 11, 18)		
FM Approvals (USA	and Canada) Intrinsic Safety			(Notes 10, 11)		
FM Approvals (USA	and Canada) Explosion Proof			(Notes 10, 11, 18)		
FM Approvals (USA	and Canada) Nonincendive			(Notes 10, 11)		
IECEx Intrinsic Safet	ty Ex ia IIC T6/T5/T4; Ex iaD 20	T85 °C and Ex iaD 21 T85 °	C;	(Notes 10, 11)		
IECEx Explosion Pro	oof Ex d IIC T6 and Ex tD A21 I	P67 T85 °C (Ta= -50 to +75 °	°C)	(Notes 10, 11, 18)		
IECEx Type "N" Ex r	nL IIC T6/T5/T4			(Notes 10, 11)		
Combined IECEx - I	ntrinsic Safety, Explosion Proof	and Type "N"		(Notes 10, 11, 18)		
Combined IECEx - I	ntrinsic Safety and Explosion P	roof		(Notes 10, 11, 18)		
NEPSI Intrinsic Safe	ty Ex ia IIC T4~T6, DIP A20TA,	T4~T6		(Notes 10, 11)		
NEPSI Explosion Pro	oof Ex d IIC T6, DIP A21TA, T6			(Notes 10, 11, 18)		
NEPSI Type "N" Ex i	nL IIC T4~T6, DIP A22Ta, T6			(Notes 10, 11)		
Combined NEPSI -	Intrinsic Safety, Explosion Proo	f and Type "N"		(Notes 10, 11, 18)		
Combined NEPSI - I	Intrinsic Safety and Explosion F	Proof		(Notes 10, 11, 18)		

ADDITIONAL ORDERING INFORMATION for m			XX	XX	XX	XX	XX	ХХ
Other hazardous area certifications (ONLY AS	ALTERNATIVE TO BASIC CERTIFICATI	•						
GOST (Russia) Ex ia		(Notes 10, 11)	W1					
GOST (Russia) Ex d		(Notes 10, 11, 18)	W2					
GOST (Kazakhstan) Ex ia		(Notes 10, 11)	W3					
GOST (Kazakhstan) Ex d		(Notes 10, 11, 18)	W4					
Inmetro (Brazil) Ex ia		(Notes 10, 11, 23)	W5					
Inmetro (Brazil) Ex d		(Notes 10, 11, 18, 23)	W6					
Inmetro (Brazil) Ex nL		(Notes 10, 11, 23)	W7					
Combined Inmetro (Brazil) - Intrinsic Safety, Exp	losion Proof and Type "N"	(Notes 10, 11, 18, 23)	W8					
GOST (Belarus) Ex ia		(Notes 10, 11)	WF					
GOST (Belarus) Ex d		(Notes 10, 11, 18)	WG					
Combined GOST (Belarus) - Intrinsic Safety and	Explosion Proof	(Notes 10, 11, 18)	WH					
Kosha (Korea) Intrinsic Safety Ex ia IIC T6, IP67		(Notes 10, 11, 23)	WM					
Kosha (Korea) Explosion Proof Ex d IIC T6, IP67		(Notes 10, 11, 18, 23)	WN					
Combined Kosha (Korea) - Intrinsic Safety and E	Explosion Proof	(Notes 10, 11, 18, 23)	WP					
Integral LCD								
Digital LCD integral display with integrated keyp	ad	(Note 23)		L1				
Digital LCD integral display with TTG (Through-T	he-Glass) activated keypad	(Note 23)		L5				
Standard Digital LCD integral display (ONLY SEL	ECTABLE WITH OUTPUT CODE 7)			L9				
External non intrusive Z, S and WP pushbutto	ns							
Transmitters with external pushbutton (ONLY SE	LECTABLE WITH OUTPUT CODE 7)				R1			
Mounting bracket (shape and material)								
For pipe mounting - Carbon steel	(Not suitable for AISI housing)					B1		
For pipe mounting - AISI 316 L ss						B2		
For wall mounting - Carbon steel	(Not suitable for AISI housing)					ВЗ		
For wall mounting - AISI 316 L ss						В4		
Flat type for box - AISI 316 ss						B5		
Surge								
Surge/Transient Protector							S2	
Operating manual (up to 2 different selections	allowed)							
German (ONLY FOR HART and PROFIBUS VER	SIONS)							M
Italian (ONLY FOR HART VERSION)								M2
Spanish (ONLY FOR HART VERSION)								M
French (ONLY FOR HART VERSION)								M
English								M5
Chinese (ONLY FOR HART VERSION)								M
Swedish (ONLY FOR HART VERSION)								M7
Polish (ONLY FOR HART VERSION)								MS
Portuguese (ONLY FOR HART VERSION)								MA



ADDITIONAL ORDERING INFORMA	TION FOR MODEL 266DSH		XX	XX	XX	XX
Approvals						
GOST (Russia) without Ex	(NOT APPLICABLE WITH ANY HAZARDOUS AREA CERTIFICATION)		Y1			
GOST (Kazakhstan) without Ex	(NOT APPLICABLE WITH ANY HAZARDOUS AREA CERTIFICATION)		Y2			
GOST (Belarus) without Ex	(NOT APPLICABLE WITH ANY HAZARDOUS AREA CERTIFICATION)		Y4			
Chinese pattern without Ex	(NOT APPLICABLE WITH ANY HAZARDOUS AREA CERTIFICATION)		Y5			
DNV approval		(Note 23)		YΑ		
Lloyd approval (PENDING)		(Note 23)		YΒ		
Approval for Custody transfer (PEND	DING)	(Note 23)		YC		
Material traceability						
Certificate of compliance with the or	der EN 10204-2.1 of process wetted parts				H1	
Inspection certificate EN 10204-3.1	of process wetted parts				НЗ	
Test report EN 10204-2.2 of pressur	re bearing and process wetted parts				H4	
Connector						
Fieldbus 7/8 in. (Recommended for	FOUNDATION Fieldbus) - (supplied loose without mating female plug)	(No	otes 11	, 19)		U1
Fieldbus M12x1 (Recommended for	PROFIBUS PA) - (supplied loose without mating female plug)	(No	otes 11	, 19)		U2
Harting Han 8D - straight entry - (su	applied loose)	(No	otes 10	, 19)		U3
Harting Han 8D - angle entry - (supp	olied loose)	(No	otes 10	, 19)		U4

#### Accessory

Manifold mounting and pressure test (NOT AVAILABLE WITH OXYGEN SERVICE CLEANING - PREPARATION PROCEDURE CODE P1)

Note 1: Suitable for oxygen service

Note 2: Not available with sensor code A and B

Note 3: Not available with AISI 316L ss or Hastelloy C-276 (on AISI seat) diaphragms code S, H, A, L

Note 4: Not available with sensor code A

Note 5: Not available with Diaphragm material/Fill fluid code S, H, K, M, A, F, C, L, P, 4

Note 6: Not available with sensor code A, Q, S

Note 7: Not available with Process Flanges/Adapters material/connection code P, Z

Note 8: Not available with Process Flanges/Adapters material/connection code A, B, D, E, G, H, Q, T, M, S, U, V

Note 9: Select type in additional ordering code

Note 10: Not available with Housing code G, Z, W

Note 11: Not available with Housing code E, K

Note 12: Not available with Process flanges/adapters material/connection code D, E, G, H, Q, T, M, S, U, V

Note 13: Not available with Process flanges/adapters material/connection code D, E, G, H, M, S, U, V

Note 14: Not available with Process flanges/adapters material/connection code A, B, G, H, Q, T, M, S, U, V Note 15: Not available with Process flanges/adapters material/connection code A, B, G, H, Q, T, U, V

Note 15: Not available with Process flanges/adapters material/connection code A, B, D, E, Q, T, M, S, U, V

Note 17: Not available with Process flanges/adapters material/connection code A, B, D, E, Q, T, M, S

Note 18: Not available with Housing code J, K, W

Note 19: Not available with Housing code A, B, S, T, J

Note 20: Not available with sensor code E, F, G, H, M, P, Q, and S

Note 21: Not available with high static pressure code H

Note 22: Not available with sensor code A, B, E, S

Note 23: Not available with Output code 7

#### Standard delivery items (can be differently specified by additional ordering code)

- Adapters supplied loose
- Plug on axis of horizontal connection flange; nothing for horizontal (MWP 16 MPa), PVDF Kynar insert or for vertical connection flange (no drain/vent valves)
- General purpose (no electrical certification)
- No display, no mounting bracket, no surge protection
- Multilanguage short-form operating instruction manual and labels in english (metal nameplate; self-adhesive certification and tag)
- Configuration with kPa and deg. C units
- No test, inspection or material traceability certificates

#### BASIC ORDERING INFORMATION model 266PSH Gauge Pressure Transmitter

Select one character or set of characters from each category and specify complete catalog number. Refer to additional ordering information and specify one or more codes for each transmitter if additional options are required.

BASE MODEL - 1st to 6	6 <sup>th</sup> characters	•	266PSH	X 8	3	Х	Х	Х	X	Х
Gauge Pressure Trans	mitter – BASE ACCURA	CY 0.06 %								
SENSOR - Span limits	- 7 <sup>th</sup> character							con	tinued	
0.05 and 1 kPa	0.5 and 10 mbar	0.2 and 4 inH2O		А			S	ee ne	ext pag	је
0.2 and 4 kPa	2 and 40 mbar	0.8 and 16 inH2O		В						
0.54 and 16 kPa	5.4 and 160 mbar	2.16 and 64 inH2O		E						
0.4 and 40 kPa	4 and 400 mbar	1.6 and 160 inH2O		F						
0.65 and 65 kPa	6.5 and 650 mbar	2.6 and 260 inH2O		G						
1.6 and 160 kPa	16 and 1600 mbar	6.4 and 642 inH2O		Н						
6 and 600 kPa	0.06 and 6 bar	0.87 and 87 psi		M						
24 and 2400 kPa	0.24 and 24 bar	3.5 and 348 psi		Р						
80 and 8000 kPa	0.8 and 80 bar	11.6 and 1160 psi		Q						
160 and 16000 kPa	1.6 and 160 bar	23.2 and 2320 psi		S						
Use code - 8th characte	er				3					
Diaphragm material /	Fill fluid (wetted parts)	- 9th character								
AISI 316 L ss		Silicone oil	(Note 2)	NACE		S				
Hastelloy C-276™ (on	AISI seat)	Silicone oil	(Note 20)	NACE		Н				
Hastelloy C-276™		Silicone oil		NACE		K				
Monel 400™		Silicone oil	(Note 2)	NACE		М				
AISI 316 L ss gold pla	ted	Silicone oil	(Note 2)	NACE		8				
Tantalum		Silicone oil	(Note 2)	NACE		Т				
AISI 316 L ss		Inert fluid - Galden	(Notes 1, 2)	NACE		Α				
Hastelloy C-276™		Inert fluid - Galden	(Notes 1, 2)	NACE		F				
Monel 400™		Inert fluid - Galden	(Notes 1, 2)	NACE		С				
AISI 316 L ss gold pla	ted	Inert fluid - Galden	(Notes 1, 2)	NACE		9				
Tantalum		Inert fluid - Galden	(Notes 1, 2)	NACE		D				
AISI 316 L ss		Inert fluid - Halocarbon	(Notes 1, 2)	NACE		L				
Hastelloy C-276™		Inert fluid - Halocarbon	(Notes 1, 2)	NACE		Р				
Monel 400™		Inert fluid - Halocarbon	(Notes 1, 2)	NACE		4				
AISI 316 L ss gold pla	ted	Inert fluid - Halocarbon	(Notes 1, 2)	NACE		1				
Tantalum		Inert fluid - Halocarbon	(Notes 1, 2)	NACE		5				

BASIC ORDERING INFORMATION model 266PSH D	ifferential Pressure Transmitter	2	66PSHXSX	X	Х	
Process flanges/adapters material and connection	(wetted parts) - 10th character					
AISI 316 L ss (Horizontal connection)	1/4 - 18 NPT-f direct		NACE	Α		
AISI 316 L ss (Horizontal connection)	1/2 - 14 NPT-f through adapter		NACE	В		
Hastelloy C-276™ (Horizontal connection)	1/4 - 18 NPT-f direct	(Note 3)	NACE	D		
Hastelloy C-276™ (Horizontal connection)	1/2 - 14 NPT-f through adapter	(Note 3)	NACE	Ε		l
Monel 400™ (Horizontal connection)	1/4 – 18 NPT-f direct	(Notes 3, 4)	NACE	G		
Monel 400™ (Horizontal connection)	1/2 - 14 NPT-f through adapter	(Notes 3, 4)	NACE	Н		l
AISI 316 L ss (Vertical connection)	1/4 - 18 NPT-f direct		NACE	Q		
AISI 316 L ss (Vertical connection)	1/2 - 14 NPT-f through adapter		NACE	Т		
Hastelloy C-276™ (Vertical connection)	1/4 - 18 NPT-f direct	(Note 3)	NACE	Μ		
Hastelloy C-276™ (Vertical connection)	1/2 - 14 NPT-f through adapter	(Note 3)	NACE	S		
Monel 400™ (Vertical connection)	1/4 - 18 NPT-f direct	(Notes 3, 4)	NACE	U		
Monel 400™ (Vertical connection)	1/2 - 14 NPT-f through adapter	(Notes 3, 4)	NACE	V		
PVDF Kynar™ insert on AISI 316 ss flange side	1/4 - 18 NPT-f direct	(Notes 5, 6)		Р		
PVDF Kynar™ insert on AISI 316 ss flange side	1/2 - 14 NPT-f direct	(Notes 5, 6)		Z		
Bolts/Gasket (wetted parts) - 11th character						
AISI 316 ss	Viton™	(Notes 4, 7)			1	
AISI 316 ss	PTFE	(Notes 1, 4, 7	)		2	
AISI 316 ss (NACE) - (MWP = 16 MPa)	Viton™	(Note 7)	NACE		3	
AISI 316 ss (NACE) - (MWP = 16 MPa)	PTFE	(Notes 1, 7)	NACE		4	
Alloy steel (NACE)	Viton™	(Notes 4, 7)	NACE		8	
Alloy steel (NACE)	PTFE	(Notes 1, 4, 7	) NACE		9	
AISI 316 ss spring loaded for PVDF Kynar process co	nnection	(Note 8)			Ν	I

BASIC ORDERING INFORMATION model 266PSH Dif	ferential Pressure Transmit	ter	2 6 6 P S H X S X X X	Х	X
Housing material and electrical connection - 12th cha	racter				
Aluminium alloy (barrel version)	1/2 – 14 NPT			Α	
Aluminium alloy (barrel version)	M20 x 1.5 (CM 20)			В	
Aluminium alloy (barrel version)	Harting Han 8D connector	(general purpose only)	(Note 9)	Ε	
Aluminium alloy (barrel version)	Fieldbus connector	(general purpose only)	(Note 9)	G	
AISI 316 L ss (barrel version)	1/2 – 14 NPT			S	
AISI 316 L ss (barrel version)	M20 x 1.5 (CM20)			Т	
AISI 316 L ss (barrel version)	Fieldbus connector	(general purpose only)	(Note 9)	Z	
Aluminium alloy (DIN version)	M20 x 1.5 (CM20)	(not Ex d or XP)		J	
Aluminium alloy (DIN version)	Harting Han 8D connector	(general purpose only)	(Note 9)	K	
Aluminium alloy (DIN version)	Fieldbus connector	(general purpose only)	(Note 9)	W	
Output/Additional options - 13th character					_
Standard HART and 4 to 20 mA	No addition	onal options	(Notes 10, 11)		L
Standard HART and 4 to 20 mA	Options re	equested by "Additional orderi	ng code" (Note 10)		7
Advanced HART and 4 to 20 mA (includes option R1)	No addition	onal options	(Notes 10, 11)		Н
Advanced HART and 4 to 20 mA (includes option R1)	Options re	equested by "Additional orderi	ng code" (Note 10)		1
PROFIBUS PA (includes option R1)	No addition	onal options	(Notes 10, 11)		Р
PROFIBUS PA (includes option R1)	Options re	equested by "Additional orderi	ng code" (Note 11)		2
FOUNDATION Fieldbus (includes option R1)	No addition	onal options	(Notes 10, 11)		F
FOUNDATION Fieldbus (includes option R1)	Options re	equested by "Additional orderi	ng code" (Note 11)		3
HART and 4 to 20 mA Safety, certified to IEC 61508 (in	cludes option R1) No addition	onal options	(Notes 10, 11)		Т
HART and 4 to 20 mA Safety, certified to IEC 61508 (in	cludes option R1) Options re	equested by "Additional orderi	ng code" (Note 10)		8

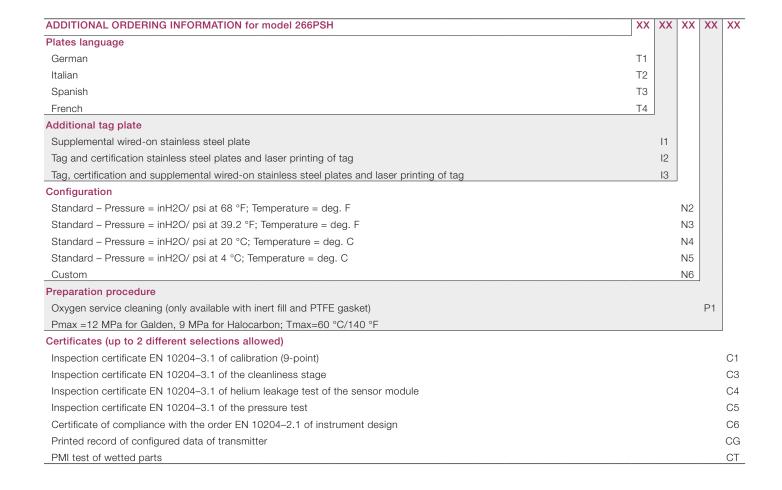
NOTE - Option R1 represents the external pushbuttons

#### ADDITIONAL ORDERING INFORMATION for model 266PSH

Add one or more 2-digit code(s) after the basic ordering information to select all required options

Accuracy					_		
0.04 % accuracy for	r applicable ranges			(Notes 7, 21)	D2		
Drain/vent valve (ma	aterial and position) (wetted p	parts)					
AISI 316 L ss	on process axis	(Notes 7, 12)	NACE			V1	
AISI 316 L ss	on flange side top	(Notes 7, 13)	NACE			V2	
AISI 316 L ss	on flange side bottom	(Notes 7, 13)	NACE			V3	
Hastelloy C-276™	on process axis	(Notes 7, 14)	NACE			V4	
Hastelloy C-276™	on flange side top	(Notes 7, 15)	NACE			V5	
Hastelloy C-276™	on flange side bottom	(Notes 7, 15)	NACE			V6	
Monel 400™	on process axix	(Notes 7, 16)	NACE			V7	
Monel 400™	on flange side top	(Notes 7, 17)	NACE			V8	
Monel 400™	on flange side bottom	(Notes 7, 17)	NACE			V9	
Hazardous area cer	tifications						
ATEX Intrinsic Safety	/ II 1 G and II 1/2 G Ex ia IIC To	/T5/T4; II 1 D Ex iaD 20 T8	5 °C and II 1/2D Ex iaD 21 T85 °C	(Notes 10, 11)			
ATEX Explosion Pro	of Group II Category 1/2 G Ex	d IIC T6 and Group II Cated	gory 1/2 D Ex tD A21 IP67 T85 °C	(Notes 10, 11, 18)			
ATEX Type "N" Grou	p II Category 3 G Ex nL IIC T6	T5/T4 and Group II Catego	ory 3 D Ex tD A22 IP67 T85 °C	(Notes 10, 11)			
Combined ATEX - In	ntrinsic Safety, Explosion Proof	and Type "N"		(Notes 10, 11, 18)			-
Combined ATEX - Ir	ntrinsic Safety and Explosion Pr	oof		(Notes 10, 11, 18)			
Combined ATEX, FN	Approvals (USA) and FM App	rovals (Canada)		(Notes 10, 11, 18)			
FM Approvals (Cana	ada) approval			(Notes 10, 11, 18)			
FM Approvals (USA)	approval			(Notes 10, 11, 18)			
FM Approvals (USA	and Canada) Intrinsic Safety			(Notes 10, 11)			
FM Approvals (USA	and Canada) Explosion Proof			(Notes 10, 11, 18)			
FM Approvals (USA	and Canada) Nonincendive			(Notes 10, 11)			-
IECEx Intrinsic Safe	ty Ex ia IIC T6/T5/T4; Ex iaD 20	T85 °C and Ex iaD 21 T85	5 °C;	(Notes 10, 11)			
IECEx Explosion Pro	oof Ex d IIC T6 and Ex tD A21 I	P67 T85 °C (Ta= -50 to +7	5 °C)	(Notes 10, 11, 18)			
IECEx Type "N" Ex r	nL IIC T6/T5/T4			(Notes 10, 11)			
Combined IECEx - I	ntrinsic Safety, Explosion Proof	and Type "N"		(Notes 10, 11, 18)			
Combined IECEx - I	ntrinsic Safety and Explosion P	roof		(Notes 10, 11, 18)			
NEPSI Intrinsic Safe	ty Ex ia IIC T4~T6, DIP A20TA,	T4~T6		(Notes 10, 11)			
NEPSI Explosion Pro	oof Ex d IIC T6, DIP A21TA, T6			(Notes 10, 11, 18)			
NEPSI Type "N" Ex	nL IIC T4~T6, DIP A22TA, T6			(Notes 10, 11)			
Combined NEPSI -	Intrinsic Safety, Explosion Proo	f and Type "N"		(Notes 10, 11, 18)			ı
Combined NEPSI -	Intrinsic Safety and Explosion F	Proof		(Notes 10, 11, 18)			

ADDITIONAL ORDERING INFORMATION for r		ON CODE E-/	XX X	( XX	XX	XX
Other hazardous area certifications (ONLY AS	S ALTERNATIVE TO BASIC CERTIFICATION	•	14/4			
GOST (Russia) Ex ia		(Notes 10, 11)	W1			
GOST (Russia) Ex d		(Notes 10, 11, 18)	W2			
GOST (Kazakhstan) Ex ia		(Notes 10, 11)	W3			
GOST (Kazakhstan) Ex d		(Notes 10, 11, 18)	W4			
Inmetro (Brazil) Ex ia		(Notes 10, 11, 22)	W5			
Inmetro (Brazil) Ex d		(Notes 10, 11, 18, 22)	W6			
Inmetro (Brazil) Ex nL		(Notes 10, 11, 22)	W7			
Combined Inmetro (Brazil) - Intrinsic Safety, Ex	plosion Proof and Type "N"	(Notes 10, 11, 18, 22)	W8			
GOST (Belarus) Ex ia		(Notes 10, 11)	WF			
GOST (Belarus) Ex d		(Notes 10, 11, 18)	WG			
Combined GOST (Belarus) - Intrinsic Safety an	d Explosion Proof	(Notes 10, 11, 18)	WH			
Kosha (Korea) Intrinsic Safety Ex ia IIC T6, IP6	7	(Notes 10, 11, 22)	WM			
Kosha (Korea) Explosion Proof Ex d IIC T6, IP6	7	(Notes 10, 11, 18, 22)	WN			
Combined Kosha (Korea) - Intrinsic Safety and	Explosion Proof	(Notes 10, 11, 18, 22)	WP			
Integral LCD						
Digital LCD integral display with integrated key	pad	(Note 22)	L			
Digital LCD integral display with TTG (Through-	The-Glass) activated keypad	(Note 22)	L;	5		
Standard Digital LCD integral display (ONLY SE	ELECTABLE WITH OUTPUT CODE 7)		L	)		
External non intrusive Z, S and WP pushbutte	ons					
Transmitters with external pushbutton (ONLY S	ELECTABLE WITH OUTPUT CODE 7)			R1		
Mounting bracket (shape and material)						
For pipe mounting - Carbon steel	(Not suitable for AISI housing)				B1	
For pipe mounting - AISI 316 L ss					B2	
For wall mounting - Carbon steel	(Not suitable for AISI housing)				ВЗ	
For wall mounting - AISI 316 L ss					B4	
Flat type for box - AISI 316 ss					B5	
Surge						
Surge/Transient Protector						S2
Operating manual (up to 2 different selection	s allowed)					
German (ONLY FOR HART and PROFIBUS VER	RSIONS)					
Italian (ONLY FOR HART VERSION)						
Spanish (ONLY FOR HART VERSION)						
French (ONLY FOR HART VERSION)						
English						
Chinese (ONLY FOR HART VERSION)						
Swedish (ONLY FOR HART VERSION)						
Polish (ONLY FOR HART VERSION)						
Portuguese (ONLY FOR HART VERSION)						



ADDITIONAL ORDERING INFORMA	TION FOR MODEL 266PSH		XX	XX	XX	XX
Approvals						
GOST (Russia) without Ex	(NOT APPLICABLE WITH ANY HAZARDOUS AREA CERTIFICATION)		Y1			
GOST (Kazakhstan) without Ex	(NOT APPLICABLE WITH ANY HAZARDOUS AREA CERTIFICATION)		Y2			
GOST (Belarus) without Ex	(NOT APPLICABLE WITH ANY HAZARDOUS AREA CERTIFICATION)		Y4			
Chinese pattern without Ex	(NOT APPLICABLE WITH ANY HAZARDOUS AREA CERTIFICATION)		Y5			
DNV approval		(Note 22)		YΑ		
Lloyd approval (PENDING)		(Note 22)		YΒ		
Approval for Custody transfer (PENI	DING)	(Note 22)		YC		
Material traceability						
Certificate of compliance with the or	rder EN 10204-2.1 of process wetted parts				H1	
Inspection certificate EN 10204-3.1	of process wetted parts				НЗ	
Test report EN 10204-2.2 of pressu	re bearing and process wetted parts				H4	
Connector						
Fieldbus 7/8 in. (Recommended for	FOUNDATION Fieldbus) - (supplied loose without mating female plug)	(No	otes 11	, 19)		U1
Fieldbus M12x1 (Recommended for	PROFIBUS PA) - (supplied loose without mating female plug)	(No	otes 11	, 19)		U2
Harting Han 8D - straight entry - (su	applied loose)	(No	otes 10	, 19)		U3
Harting Han 8D - angle entry - (supp	nlied Innea)	(NI	otes 10	10)		U4

Manifold mounting and pressure test (NOT AVAILABLE WITH OXYGEN SERVICE CLEANING - PREPARATION PROCEDURE CODE P1)

- Note 1: Suitable for oxygen service
- Note 2: Not available with sensor code A and B
- Note 3: Not available with AISI 316L ss or Hastelloy C-276 (on AISI seat) diaphragms code S, H, A, L
- Note 4: Not available with sensor code A
- Note 5: Not available with Diaphragm material/Fill fluid code S, H, K, M, A, F, C, L, P, 4
- Note 6: Not available with sensor code A, Q, S
- Note 7: Not available with Process Flanges/Adapters material/connection code P, Z
- Note 8: Not available with Process Flanges/Adapters material/connection code A. B. D. E. G. H. Q. T. M. S. U. V
- Note 9: Select type in additional ordering code
- Note 10: Not available with Housing code G, Z, W
- Note 11: Not available with Housing code E, K
- Note 12: Not available with Process flanges/adapters material/connection code D, E, G, H, Q, T, M, S, U, V
- Note 13: Not available with Process flanges/adapters material/connection code D, E, G, H, M, S, U, V
- Note 14: Not available with Process flanges/adapters material/connection code A, B, G, H, Q, T, M, S, U, V
- Note 15: Not available with Process flanges/adapters material/connection code A, B, G, H, Q, T, U, V
- Note 16: Not available with Process flanges/adapters material/connection code A, B, D, E, Q, T, M, S, U, V Note 17: Not available with Process flanges/adapters material/connection code A, B, D, E, Q, T, M, S
- Note 18: Not available with Housing code J, K, W
- Note 19: Not available with Housing code A, B, S, T, J
- Note 20: Not available with sensor code E, F, G, H, M, P, Q, and S
- Note 21: Not available with sensor code A, B, E, S
- Note 22: Not available with Output code 7

#### Standard delivery items (can be differently specified by additional ordering code)

- Adapters supplied loose
- Plug on axis of horizontal connection flange; nothing for horizontal (MWP 16 MPa), PVDF Kynar insert or for vertical connection flange (no drain/vent valves)
- General purpose (no electrical certification)
- No display, no mounting bracket, no surge protection
- Multilanguage short-form operating instruction manual and labels in english (metal nameplate; self-adhesive certification and tag)
- Configuration with kPa and deg. C units
- No test, inspection or material traceability certificates

#### BASIC ORDERING INFORMATION model 266VSH Absolute Pressure Transmitter

Select one character or set of characters from each category and specify complete catalog number.

Refer to additional ordering information and specify one or more codes for each transmitter if additional options are required.

BASE MODEL - 1st to 6	6 <sup>th</sup> characters		266VSH	X	s	Х	Х	Х	Х	Х
Absolute Pressure Tra	nsmitter – BASE ACCURA	ACY 0.075 %								
SENSOR - Span limits	- 7 <sup>th</sup> character							conti	nued	
0.54 and 16 kPa	5.4 and 160 mbar	4 and 120 mmHg		Е			s	ee ne	xt pag	je
0.67 and 40 kPa	6.7 and 400 mbar	5 and 300 mmHg		F						
1.1 and 65 kPa	11 and 650 mbar	8 and 480 mmHg		G						
2.67 and 160 kPa	26.7 and 1600 mbar	20 and 1200 mmHg		Н						
10 and 600 kPa	0.1 and 6 bar	1.45 and 87 psi		М						
40 and 2400 kPa	0.4 and 24 bar	5.8 and 348 psi		Р						
134 and 8000 kPa	1.34 and 80 bar	19.4 and 1160 psi		Q						
267 and 16000 kPa	2.67 and 160 bar	38.7 and 2320 psi		S						
Use code - 8th characte	er				S					
Diaphragm material /	Fill fluid (wetted parts) -	9 <sup>th</sup> character								
AISI 316 L ss		Silicone oil		NA	CE	S				
Hastelloy C-276™		Silicone oil		NA	CE	K				
AISI 316 L ss		Inert fluid - Galden	(Notes 1, 2)	NA	CE	Α				
Hastelloy C-276™		Inert fluid - Galden	(Notes 1, 2)	NA	CE	F				
AISI 316 L ss		Inert fluid - Halocarbon	(Notes 1, 2)	NA	CE	L				
Hastelloy C-276™		Inert fluid - Halocarbon	(Notes 1, 2)	NA	CE	Р				

BASIC ORDERING INFORMATION model 266VS	H Absolute Pressure Tra	nsmitter	2	66VSHXS	X X 2	X	2
Process flanges/adapters material and connect	ion (wetted parts) - 10th o	character					
AISI 316 L ss (Horizontal connection)	1/4 – 18 NPT-f dire	ect		NACE	Α		
AISI 316 L ss (Horizontal connection)	1/2 – 14 NPT-f thro	ough adapter		NACE	В		
Hastelloy C-276™ (Horizontal connection)	1/4 – 18 NPT-f dire	ect	(Note 3)	NACE	D		
Hastelloy C-276™ (Horizontal connection)	1/2 - 14 NPT-f thro	ough adapter	(Note 3)	NACE	E		
Monel 400™ (Horizontal connection)	1/4 – 18 NPT-f dire	ect	(Note 3)	NACE	G		
Monel 400™ (Horizontal connection)	1/2 - 14 NPT-f thro	ough adapter	(Note 3)	NACE	Н		
AISI 316 L ss (Vertical connection)	1/4 – 18 NPT-f dire	ect		NACE	Q		
AISI 316 L ss (Vertical connection)	1/2 - 14 NPT-f thro	ough adapter		NACE	Т		
Hastelloy C-276™ (Vertical connection)	1/4 – 18 NPT-f dire	ect	(Note 3)	NACE	М		
Hastelloy C-276™ (Vertical connection)	1/2 - 14 NPT-f thro	ough adapter	(Note 3)	NACE	S		
Monel 400™ (Vertical connection)	1/4 - 18 NPT-f dire	ect	(Note 3)	NACE	U		
Monel 400™ (Vertical connection)	1/2 - 14 NPT-f thro	ough adapter	(Note 3)	NACE	V		
Bolts/Gasket (wetted parts) - 11th character							
AISI 316 ss	Viton™					1	
AISI 316 ss	PTFE		(Note 1)		:	2	
AISI 316 ss (NACE) - (MWP = 16 MPa)	Viton™			NACE	;	3	
AISI 316 ss (NACE) - (MWP = 16 MPa)	PTFE		(Note 1)	NACE		4	
Alloy steel (NACE)	Viton™			NACE		3	
Alloy steel (NACE)	PTFE		(Note 1)	NACE	!	9	
lousing material and electrical connection - 12	th character						
Aluminium alloy (barrel version)	1/2 - 14 NPT					Α	
Aluminium alloy (barrel version)	M20 x 1.5 (CM 20)	)				В	
Aluminium alloy (barrel version)	Harting Han 8D co	nnector	(general pur	pose only)	(Note 4)	Ε	
Aluminium alloy (barrel version)	Fieldbus connecto	r	(general pur	pose only)	(Note 4)	G	
AISI 316 L ss (barrel version)	1/2 - 14 NPT					S	
AISI 316 L ss (barrel version)	M20 x 1.5 (CM20)					Т	
AISI 316 L ss (barrel version)	Fieldbus connecto	r	(general pur	pose only)	(Note 4)	Ζ	
Aluminium alloy (DIN version)	M20 x 1.5 (CM20)		(not Ex d or	XP)		J	
Aluminium alloy (DIN version)	Harting Han 8D co	nnector	(general pur	pose only)	(Note 4)	K	
Aluminium alloy (DIN version)	Fieldbus connecto	r	(general pur	pose only)	(Note 4)	W	
Output/Additional options - 13th character							
Standard HART and 4 to 20 mA		No additional o	ptions		(Notes 5	5, 6)	
Standard HART and 4 to 20 mA		Options reques	ted by "Additiona	I ordering code	" (Note 5)		
Advanced HART and 4 to 20 mA (includes option	R1)	No additional o	ptions		(Notes 5	6, 6)	
Advanced HART and 4 to 20 mA (includes option	R1)	Options reques	ted by "Additiona	I ordering code	" (Note 5)		
PROFIBUS PA (includes option R1)		No additional o	ptions		(Notes 5	5, 6)	
PROFIBUS PA (includes option R1)		Options reques	ted by "Additiona	I ordering code	" (Note 6)		
FOUNDATION Fieldbus (includes option R1)		No additional o	ptions		(Notes 5	5, 6)	
FOUNDATION Fieldbus (includes option R1)		Options reques	ted by "Additiona	I ordering code	" (Note 6)		
HART and 4 to 20 mA Safety, certified to IEC 615	08 (includes option R1)	No additional o	ptions	_	(Notes 5	5, 6)	
HART and 4 to 20 mA Safety, certified to IEC 615	08 (includes option R1)	Options reques	ted by "Additiona	l orderina code			

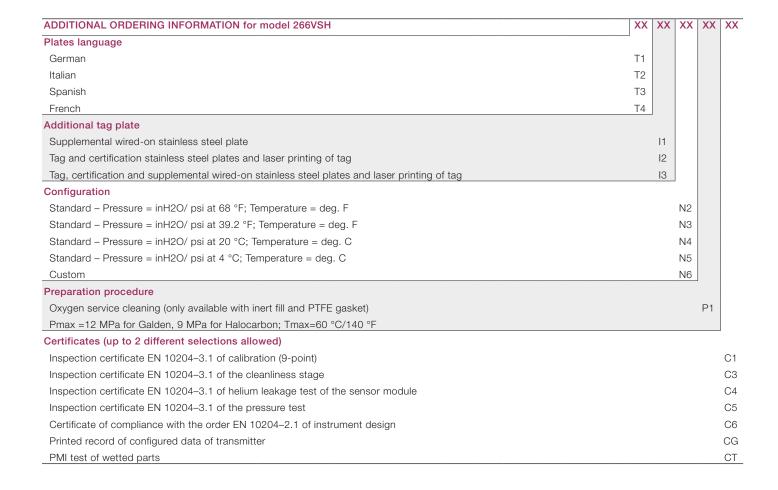
NOTE - Option R1 represents the external pushbuttons

#### ADDITIONAL ORDERING INFORMATION for model 266VSH

Add one or more 2-digit code(s) after the basic ordering information to select all required options

					XX	XX
Drain/vent valve (ma	aterial and position) (wetted p	parts)				
AISI 316 L ss	on process axis	(Note 7)	NACE		V1	
AISI 316 L ss	on flange side top	(Note 8)	NACE		V2	
AISI 316 L ss	on flange side bottom	(Note 8)	NACE		V3	
Hastelloy C-276™	on process axis	(Note 9)	NACE		V4	
Hastelloy C-276™	on flange side top	(Note 10)	NACE		V5	
Hastelloy C-276™	on flange side bottom	(Note 10)	NACE		V6	
Monel 400™	on process axix	(Note 11)	NACE		V7	
Monel 400™	on flange side top	(Note 12)	NACE		V8	
Monel 400™	on flange side bottom	(Note 12)	NACE		V9	
Hazardous area cer	tifications					
ATEX Intrinsic Safety	/ II 1 G and II 1/2 G Ex ia IIC To	/T5/T4; II 1 D Ex iaD 20	T85 °C and II 1/2D Ex iaD 21 T85 °C	(Notes 5, 6)		E.
ATEX Explosion Pro-	of Group II Category 1/2 G Ex	d IIC T6 and Group II Cat	tegory 1/2 D Ex tD A21 IP67 T85 °C	(Notes 5, 6, 13)		Εź
ATEX Type "N" Grou	ip II Category 3 G Ex nL IIC T6	T5/T4 and Group II Cate	egory 3 D Ex tD A22 IP67 T85 °C	(Notes 5, 6)		E
Combined ATEX - In	ntrinsic Safety, Explosion Proof	and Type "N"		(Notes 5, 6, 13)		ΕV
Combined ATEX - In	ntrinsic Safety and Explosion Pr	oof		(Notes 5, 6, 13)		Εī
Combined ATEX, FN	Approvals (USA) and FM App	rovals (Canada)		(Notes 5, 6, 13)		ΕN
FM Approvals (Cana	ada) approval			(Notes 5, 6, 13)		ΕZ
FM Approvals (USA)	approval			(Notes 5, 6, 13)		Εē
FM Approvals (USA	and Canada) Intrinsic Safety			(Notes 5, 6)		EA
FM Approvals (USA	and Canada) Explosion Proof			(Notes 5, 6, 13)		E
FM Approvals (USA	and Canada) Nonincendive			(Notes 5, 6)		EC
IECEx Intrinsic Safet	ty Ex ia IIC T6/T5/T4; Ex iaD 20	T85 °C and Ex iaD 21 T	<sup>-</sup> 85 °C;	(Notes 5, 6)		E8
IECEx Explosion Pro	oof Ex d IIC T6 and Ex tD A21 I	P67 T85 °C (Ta= -50 to -	+75 °C)	(Notes 5, 6, 13)		ES
IECEx Type "N" Ex r	nL IIC T6/T5/T4			(Notes 5, 6)		EF
Combined IECEx - I	ntrinsic Safety, Explosion Proof	and Type "N"		(Notes 5, 6, 13)		E
Combined IECEx - I	ntrinsic Safety and Explosion P	roof		(Notes 5, 6, 13)		EH
NEPSI Intrinsic Safe	ty Ex ia IIC T4~T6, DIP A20TA,	T4~T6		(Notes 5, 6)		ΕY
NEPSI Explosion Pro	oof Ex d IIC T6, DIP A21TA, T6			(Notes 5, 6, 13)		ΕZ
NEPSI Type "N" Ex i	nL IIC T4~T6, DIP A22TA, TT6			(Notes 5, 6)		ES
Combined NEPSI - I	Intrinsic Safety, Explosion Proo	f and Type "N"		(Notes 5, 6, 13)		EC
Combined NEPSI - I	Intrinsic Safety and Explosion F	Proof		(Notes 5, 6, 13)		EF

ADDITIONAL ORDERING INFORMATION for	model 266VSH		XX	XX	XX	XX	XX	X
Other hazardous area certifications (ONLY A	S ALTERNATIVE TO BASIC CERTIFICATION	CODE Ex)						
GOST (Russia) Ex ia		(Notes 5, 6)	W1					
GOST (Russia) Ex d		(Notes 5, 6, 13)	W2					
GOST (Kazakhstan) Ex ia		(Notes 5, 6)	W3					
GOST (Kazakhstan) Ex d		(Notes 5, 6, 13)	W4					
Inmetro (Brazil) Ex ia		(Notes 5, 6, 15)	W5					
Inmetro (Brazil) Ex d		(Notes 5, 6, 13, 15)	W6					
Inmetro (Brazil) Ex nL		(Notes 5, 6, 15)	W7					
Combined Inmetro (Brazil) - Intrinsic Safety, E.	xplosion Proof and Type "N"	(Notes 5, 6, 13, 15)	W8					
GOST (Belarus) Ex ia		(Notes 5, 6)	WF					
GOST (Belarus) Ex d		(Notes 5, 6, 13)	WG					
Combined GOST (Belarus) - Intrinsic Safety and	nd Explosion Proof	(Notes 5, 6, 13)	WH					
Kosha (Korea) Intrinsic Safety Ex ia IIC T6, IP	67	(Notes 5, 6, 15)	WM					
Kosha (Korea) Explosion Proof Ex d IIC T6, IP	67	(Notes 5, 6, 13, 15)	WN					
Combined Kosha (Korea) - Intrinsic Safety and	d Explosion Proof	(Notes 5, 6, 13, 15)	WP					
ntegral LCD								
Digital LCD integral display with integrated ke	ypad	(Note 15)		L1				
Digital LCD integral display with TTG (Through	n-The-Glass) activated keypad	(Note 15)		L5				
Standard Digital LCD integral display (ONLY S	ELECTABLE WITH OUTPUT CODE 7)			L9				
External non intrusive Z, S and WP pushbut	tons							
Transmitters with external pushbutton (ONLY	SELECTABLE WITH OUTPUT CODE 7)				R1			
Mounting bracket (shape and material)								
For pipe mounting - Carbon steel	(Not suitable for AISI housing)					В1		
For pipe mounting - AISI 316 L ss						B2		
For wall mounting - Carbon steel	(Not suitable for AISI housing)					ВЗ		
For wall mounting - AISI 316 L ss						В4		
Flat type for box - AISI 316 ss						B5		
Gurge								
Surge/Transient Protector							S2	
Operating manual (up to 2 different selection	ns allowed)							
German (ONLY FOR HART and PROFIBUS VE	RSIONS)							Μ
Italian (ONLY FOR HART VERSION)								Ν
Spanish (ONLY FOR HART VERSION)								Ν
French (ONLY FOR HART VERSION)								Ν
English								Ν
Chinese (ONLY FOR HART VERSION)								N
Swedish (ONLY FOR HART VERSION)								Ν
Polish (ONLY FOR HART VERSION)								N
Portuguese (ONLY FOR HART VERSION)								М
Turkish (ONLY FOR HART VERSION)								M



ADDITIONAL ORDERING INFORMA	TION FOR MODEL 266VSH		XX	XX	XX	XX
Approvals						
GOST (Russia) without Ex	(NOT APPLICABLE WITH ANY HAZARDOUS AREA CERTIFICATIO	N)	Y1			
GOST (Kazakhstan) without Ex	(NOT APPLICABLE WITH ANY HAZARDOUS AREA CERTIFICATIO	N)	Y2			
GOST (Belarus) without Ex	(NOT APPLICABLE WITH ANY HAZARDOUS AREA CERTIFICATIO	N)	Y4			
Chinese pattern without Ex	(NOT APPLICABLE WITH ANY HAZARDOUS AREA CERTIFICATIO	N)	Y5			
DNV approval		(Note 15)		YA		
Lloyd approval (PENDING)		(Note 15)		YΒ		
Approval for Custody transfer (PEND	DING)	(Note 15)		YC		
Material traceability						
Certificate of compliance with the or	der EN 10204-2.1 of process wetted parts				H1	
Inspection certificate EN 10204-3.1	of process wetted parts				НЗ	
Test report EN 10204-2.2 of pressur	re bearing and process wetted parts				H4	
Connector						
Fieldbus 7/8 in. (Recommended for	FOUNDATION Fieldbus) - (supplied loose without mating female plug)	(No	tes 6,	14)		U1
Fieldbus M12x1 (Recommended for	PROFIBUS PA) - (supplied loose without mating female plug)	(No	tes 6,	14)		U2
Harting Han 8D - straight entry - (su	pplied loose)	(No	tes 5,	14)		U3
Harting Han 8D - angle entry - (supp	olied loose)	(No	tes 5,	14)		U4

#### Accessory

Manifold mounting and pressure test (NOT AVAILABLE WITH OXYGEN SERVICE CLEANING - PREPARATION PROCEDURE CODE P1)

anion mounting and pressure test (NOT AVAILABLE WITH OAT GET TICE GLEANING THE FAIR MONTHOGEDONE GODE TT)

Note 1: Suitable for oxygen service

Note 2: Not available with sensor code E

Note 3: Not available with AISI 316L ss diaphragms code S, A, L

Note 4: Select type in additional ordering code

Note 5: Not available with Housing code G, Z, W

Note 6: Not available with Housing code E, K

Note 7: Not available with Process flanges/adapters material/connection code D, E, G, H, Q, T, M, S, U, V

Note 8: Not available with Process flanges/adapters material/connection code D, E, G, H, M, S, U, V

Note 9: Not available with Process flanges/adapters material/connection code A, B, G, H, Q, T, M, S, U, V

Note 10: Not available with Process flanges/adapters material/connection code A, B, G, H, Q, T, U, V Note 11: Not available with Process flanges/adapters material/connection code A, B, D, E, Q, T, M, S, U, V

Note 12: Not available with Process flanges/adapters material/connection code A, B, D, E, Q, T, M, S

Note 13: Not available with Housing code J, K, W

Note 14: Not available with Housing code A, B, S, T, J

Note 15: Not available with Output code 7

#### Standard delivery items (can be differently specified by additional ordering code)

- Adapters supplied loose
- Plug on axis of horizontal connection flange; nothing for horizontal (MWP 16 MPa) or vertical connection flange (no drain/vent valves)
- General purpose (no electrical certification)
- No display, no mounting bracket, no surge protection
- Multilanguage short-form operating instruction manual and labels in english (metal nameplate; self-adhesive certification and tag)
- Configuration with kPa and deg. C units
- No test, inspection or material traceability certificates

#### IMPORTANT REMARK FOR ALL MODELS

THE SELECTION OF SUITABLE WETTED PARTS AND FILLING FLUID FOR COMPATIBILITY WITH THE PROCESS MEDIA IS A CUSTOMER'S RESPONSIBILITY, IF NOT OTHERWISE NOTIFIED BEFORE MANUFACTURING.

#### NACE COMPLIANCE INFORMATION

- (1) The materials of constructions comply with metallurgical recommendations of NACE MR0175/ISO 15156 for sour oil field production environments. As specific environmental limits may apply to certain materials, please consult latest standard for further details. AISI 316/316 L, Hastelloy C-276, Monel 400 also conform to NACE MR0103 for sour refining environments.
- (2) NACE MR-01-75 addresses bolting requirements in two classes:
  - Exposed bolts: bolts directly exposed to the sour environment or buried, incapsulated or anyway not exposed to atmosphere
  - Non exposed bolts: the bolting must not be directly exposed to sour environments and must be directly exposed to the atmosphere at all times.

266DSH, 266PSH, 266VSH bolting identified by "NACE" are in compliance with requirements of NACE MR0175 when considered "exposed bolting".

<sup>™</sup> Hastelloy C-276 is a Cabot Corporation trademark

 $<sup>^{\</sup>text{TM}}$  Monel is an International Nickel Co. trademark

<sup>™</sup> Viton is a Dupont de Nemour trademark

<sup>™</sup> Galden is a Montefluos trademark

<sup>™</sup> Halocarbon is a Halocarbon Products Co. trademark

 $<sup>^{\</sup>text{\tiny{TM}}}$  Kynar is an Elf Atochem North America Inc trademark

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Service



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