

ABB MEASUREMENT & ANALYTICS | DATA SHEET

# 266MST

## Differential pressure transmitters



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# Measurement made easy

Engineered solutions for all applications

## **Base accuracy**

- 0.04 % of calibrated span (optional, 0.025 %)

## **Proven sensor technology together with state-of-the-art digital technology**

- Large turn down ratio of up to 100:1

## **Comprehensive sensor selection**

- Optimized overall performance and stability

## **10-year stability**

- 0.15 % of URL

## **Flexible configuration options**

- Local configuration via operating buttons on LCD indicator

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

- Enables quick and easy local configuration without the need to open the cover – even in explosion proof environments

## **IEC 61508 certification**

- For SIL2– (1oo1) and SIL3– (1oo2) applications

## **Full compliance with Pressure Equipment Directive (PED) category III**

## **Product in compliance with Directive 2011/65/UE (RoHS II)**

## **In-built advanced diagnostics**

## Specification – functional

### Range and span limits

| Sensor code | Upper range limit (URL) | Lower range limit (LRL) | Minimum measuring span |
|-------------|-------------------------|-------------------------|------------------------|
| A           | 1 kPa                   | -1 kPa                  | 0.05 kPa               |
|             | 10 mbar                 | -10 mbar                | 0.5 mbar               |
|             | 4 inH2O                 | -4 inH2O                | 0.2 inH2O              |
| C           | 6 kPa                   | -6 kPa                  | 0.2 kPa                |
|             | 60 mbar                 | -60 mbar                | 2 mbar                 |
|             | 24 inH2O                | -24 inH2O               | 0.8 inH2O              |
| F           | 40 kPa                  | -40 kPa                 | 0.4 kPa                |
|             | 400 mbar                | -400 mbar               | 4 mbar                 |
|             | 160 inH2O               | -160 inH2O              | 1.6 inH2O              |
| L           | 250 kPa                 | -250 kPa                | 2.5 kPa                |
|             | 2500 mbar               | -2500 mbar              | 25 mbar                |
|             | 1000 inH2O              | -1000 inH2O             | 10 inH2O               |
| N           | 2000 kPa                | -2000 kPa               | 20 kPa                 |
|             | 20 bar                  | -20 bar                 | 0.2 bar                |
|             | 290 psi                 | -290 psi                | 2.9 psi                |
| R           | 10000 kPa               | -10000 kPa              | 100 kPa                |
|             | 100 bar                 | -100 bar                | 1 bar                  |
|             | 1450 psi                | -1450 psi               | 14.5 psi               |

### Second sensor of the 266MST differential pressure transmitter for absolute pressure measurement

Measuring range: 41 MPa, 410 bar, 5945 psi (2 MPa, 20 bar, 290 psi for sensor code A)

### Span limit

Maximum span = URL  
(can be adjusted for differential pressure transmitters up to  $\pm$  URL (TD = 0.5) within the measuring range limits)

### NOTICE

To optimize performance characteristics, it is recommended that you select the transmitter sensor code with the lowest turn down ratio.

### Recommendation for square root function

At least 10 % of upper measuring range limit (URL)

### Zero position suppression and elevation

The zero position and span can be set to any value within the measuring range limits listed in the table if:  
– adjusted span  $\geq$  smallest span

### Damping

Configurable time constant between 0 and 60 s.  
This is in addition to the sensor response time.

### Turn on time

Ready for operation as per specifications in less than 10 s with minimum damping

### Insulation resistance

> 100 M $\Omega$  at 500 V DC (between terminals and ground)

## Specification – operative limits

### Pressure limits

#### Overpressure limits

The differential pressure transmitters, models 266MST, work without damage within the following pressure limits:

| Sensors        | Filling fluid  | Overpressure limits  |
|----------------|----------------|--|
| Sensor A       | Silicone oil   | 0.5 kPa abs., 5 mbar abs., 0.07 psia and 2 MPa, 20 bar, 290 psi  |
| Sensor A       | Inert (Galden) | 17.5 kPa abs., 175 mbar abs., 2.5 psia and 2 MPa, 20 bar, 290 psi  |
| Sensors C to R | Silicone oil   | 0.5 kPa abs., 5 mbar abs., 0.07 psia and 16 MPa, 160 bar, 2320 psi, or 25 MPa, 250 bar, 3625 psi, or 41 MPa, 410 bar, 5945 psi or 60 MPa, 600 bar, 8700 psi depending on code variant selected *   |
| Sensors C to R | Inert (Galden) | 17.5 kPa abs., 175 mbar abs., 2.5 psia and 16 MPa, 160 bar, 2320 psi, or 25 MPa, 250 bar, 3625 psi, or 41 MPa, 410 bar, 5945 psi or 60 MPa, 600 bar, 8700 psi depending on code variant selected * |

\* 1 MPa, 10 bar, 145 psi for Kynar–PVDF

#### Static pressure limits

The differential pressure transmitters, models 266MST, work within the specifications with the following limit values:

| Sensors        | Filling fluid  | Static pressure limits   |
|----------------|----------------|--|
| Sensor A       | Silicone oil   | 3.5 kPa abs., 35 mbar abs., 0.5 psia and 2 MPa, 20 bar, 290 psi  |
| Sensor A       | Inert (Galden) | 17.5 kPa abs., 175 mbar abs., 2.5 psia and 2 MPa, 20 bar, 290 psi  |
| Sensors C to R | Silicone oil   | 3.5 kPa abs., 35 mbar abs., 0.5 psia and 16 MPa, 160 bar, 2320 psi, or 25 MPa, 250 bar, 3625 psi, or 41 MPa, 410 bar, 5945 psi or 60 MPa, 600 bar, 8700 psi depending on code variant selected *   |
| Sensors C to R | Inert (Galden) | 17.5 kPa abs., 175 mbar abs., 2.5 psia and 16 MPa, 160 bar, 2320 psi, or 25 MPa, 250 bar, 3625 psi, or 41 MPa, 410 bar, 5945 psi or 60 MPa, 600 bar, 8700 psi depending on code variant selected * |

\* 1 MPa, 10 bar, 145 psi for Kynar–PVDF

#### Test pressure

The pressure transmitters can withstand a pressure test with the following line pressure without leakage:

266MST, up to 1.5 x nominal pressure (static pressure limit) simultaneously on both sides.

Meets hydrostatic test requirements of ANSI/ISA S 82.03.

## Temperature limits °C (°F)

### Environment

This is the operating temperature.

| Model 266MST  | Ambient temperature limits   |
|---|------------------------------|
| Silicone oil  | -40 to 85 °C (-40 to 185 °F) |
| Inert (Galden)  | -40 to 85 °C (-40 to 185 °F) |
| Maximum operating pressure<br>60 MPa, 600 bar, 8700 psi | -20 to 70 °C (-4 to 158 °F)  |

### NOTICE

For applications in explosive environments, the temperature range specified on the certificate / approval which depends upon the type of protection sought shall apply.

| Model 266MST         | Ambient temperature limits   |
|----------------------|------------------------------|
| Integral LCD display | -40 to 85 °C (-40 to 185 °F) |
| Viton gasket         | -20 to 85 °C (-4 to 185 °F)  |
| PTFE gaskets         | -20 to 85 °C (-4 to 185 °F)  |

LCD display may be affected in visibility below -20°C (-4°F) or above +70°C (+185°F).

Transmitters with ambient temperature limit of -50°C (-58° F) are available through special option.

### Process

| Model 266MST  | Process temperature limits       |
|---|----------------------------------|
| Silicone oil  | -40 to 121 °C (-40 to 250 °F) *  |
| Inert (Galden)  | -40 to 121 °C (-40 to 250 °F) ** |
| Viton gaskets   | -20 to 121 °C (-4 to 250 °F)     |
| PTFE gaskets  | -20 to 85 °C (-4 to 185 °F)      |
| Maximum operating pressure 60<br>MPa, 600 bar, 8700 psi | -20 to 85 °C (-4 to 185 °F)      |

\* 85 °C (185 °F) for applications under 10 kPa, 100 mbar abs., 1.45 psia up to 3.5 kPa abs., 35 mbar abs., 0.5 psia

\*\* 85 °C (185 °F) for applications under atmospheric pressure up to 17.5 kPa abs., 175 mbar abs., 2.5 psia

### Storage

| Model 266MST         | Storage temperature range    |
|----------------------|------------------------------|
| Storage temperature  | -50 to 85 °C (-58 to 185 °F) |
| Integral LCD display | -40 to 85 °C (-40 to 185 °F) |

### Humidity during storage

|                   |            |
|-------------------|------------|
| Relative humidity | Up to 75 % |
|-------------------|------------|

## ...Specification – operative limits

### Limits for environmental effects

#### Electromagnetic compatibility (EMC)

In accordance with EN 61326 and Namur NE-21 (option).  
Overvoltage strength in accordance with IEC 1000-4-5 EN 61000-4-5 (with overvoltage protection): 4 kV

#### Pressure Equipment Directive (PED)

The instruments with maximum operating pressure of 25 MPa, 250 bar, 3625 psi or 41 MPa, 410 bar, 5945 psi or 60 MPa, 600 bar, 8700 psi comply with the guideline 2014/68/EU category III module H.

#### Humidity

Relative humidity: up to 100 %.  
Condensation, icing: permitted.

#### Vibration resistance

Acceleration up to 2 g at frequencies of up to 1000 Hz (according to IEC 60068-2-6).  
Acceleration limited to 1 g for housing out of stainless steel.

#### Shock resistance

In accordance with IEC 60068-2-27  
Acceleration: 50 g  
Duration: 11 ms

#### IP rating

In accordance with EN 60529, JIS C0920  
The transmitter is dust and sand proof and protected against immersion effects.

- IP 67, IP 68 on request, NEMA 4X
- IP 65 (devices with Harting Han plug connector)
- IP 66 (devices with barrel housing made from aluminum or stainless steel housing)

#### Hazardous atmospheres

With or without integral display

#### INTRINSIC SAFETY Ex ia:

- ATEX Europe (code E1) approval  
II 1 G Ex ia IIC T6...T4 Ga, II 1/2 G Ex ia IIC T6...T4 Ga/Gb, II 1 D Ex ia IIIC T85 °C Da, II 1/2 D Ex ia IIIC T85 °C Da; IP66, IP67.
- IECEx (code E8) approval  
Ex ia IIC T6...T4 Ga/Gb, Ex ia IIIC T85 °C Da; IP66, IP67.
- NEPSI China (code EY)  
Ex ia IIC T4/T5/T6 Ga, Ex ia IIC T4/T5/T6 Ga/Gb, Ex iaD 20 T85/T100/T135, Ex iaD 20/21 T85/T100/T135.

#### EXPLOSION PROOF:

- ATEX Europe (code E2) approval  
II 1/2 G Ex db IIC T6 Ga/Gb Ta=-50 °C to +75 °C, II 1/2 D Ex tb IIIC T85 °C Db Ta = -50 °C to +75 °C; IP66, IP67.
- IECEx (code E9) approval  
Ex db IIC T6 Ga/Gb Ta=-50 °C to +75 °C, Ex tb IIIC T85 °C Db Ta = -50 °C to +75 °C; IP66, IP67.
- NEPSI China (code EZ)  
Ex d IIC T6 Gb, Ex tD A21 IP67 T85 °C.

#### INTRINSIC SAFETY Ex ic:

- ATEX Europe (code E3) type examination  
II 3 G Ex ic IIC T6...T4 Gc, II 3 D Ex tc IIIC T85 °C Dc; IP66, IP67.
- IECEx (code ER) type examination  
Ex ic IIC T6...T4 Gc, Ex tc IIIC T85 °C Dc; IP66, IP67.
- NEPSI China (code ES) type examination  
Ex ic IIC T4~T6 Gc, Ex tD A22 IP67 T85 °C.

#### FM Approvals US (code E6) and

#### FM Approvals Canada (code E4):

- Explosionproof (US): Class I, Division 1, Groups A, B, C, D; T5
- Explosionproof (Canada): Class I, Division 1, Groups B, C, D; T5
- Dust-ignitionproof: Class II, Division 1, Groups E, F, G, Class III, Division 1; T5
- Flameproof (US): Class I, Zone 1 AEx d IIC T4 Gb
- Flameproof (Canada): Class I, Zone 1 Ex d IIC T4 Gb
- Nonincendive: Class I, Division 2, Groups A, B, C, D T6...T4
- Energy limited (US): Class I, Zone 2 AEx nC IIC T6...T4
- Energy limited (Canada): Class I, Zone 2 Ex nC IIC T6...T4
- Intrinsically safe: Class I, II, III, Division 1, Groups A, B, C, D, E, F, G T6...T4  
Class I, Zone 0 AEx ia IIC T6...T4 (US)  
Class I, Zone 0 Ex ia IIC T6...T4 (Canada)

Type 4X, IP66, IP67 for all above markings.

#### COMBINED FM Approvals US and Canada

- Intrinsically safe (code EA)

#### COMBINED ATEX, FM and IECEx Approvals (code EN)

#### Technical Regulations Customs Union EAC (Russia, Kazakhstan, Belarus), Inmetro (Brazil)

The permissible ambient temperature ranges (within the limits of -50 to 85 °C) are specified in the type examination certificates dependent upon the temperature class.

## Specification – electrical data and options

### HART® digital communication and 4 to 20 mA output

#### Device type

1a07hex (listed at the FieldComm Group)

#### Power supply

The transmitter operates in an operating voltage range of 10.5 – 42 V DC with no load and is protected against reversed polarity (additional loads enable operation above 42 V DC).

During use in Ex ia zones and in other intrinsically safe applications, the operating voltage must not up-scale 30 V DC.

#### Minimum operating voltage

|           |  |
|-----------|--|
| 12.3 V DC | Device with the option "S2 – overvoltage protection" |
| 10.8 V DC | Devices with the option "YE – NE21 conformity"       |

#### Ripple

Maximum 20 mV over a 250 Ω load in accordance with HART specifications.

#### Load limitations

Total loop resistance at 4 to 20 mA and HART:

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

A minimum resistance of 250 Ω is required for HART communication.

#### Overvoltage protection (optional)

Up to 4 kV

- Voltage: 1.2 μs rise time / 50 μs delay time to half the value
- Voltage: 8 μs rise time / 20 μs delay time to half the value

#### Output signal

Two-wire output 4 – 20 mA, selectable by the operator: linear or square root output signal, characteristic curve with the exponents 3/2 or 5/2, square root for bidirectional flow, linearization table with 22 points (i.e. for level measurements in lateral, cylindrical containers and spherical containers).

The HART communication provides the digital process variables which are superimposed on the 4 to 20 mA signal (protocol in accordance with Bell 202 FSK standard).

#### HART protocol

HART revision 7 (standard, as default)

HART revision 5 (optional, on request)

#### Output current limits (in accordance with NAMUR standard)

##### Overload condition

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

#### Alarm current

##### Adjustment range

|  |   |
|--|---|
| Minimum alarm current (low alarm current)  | 3.6 mA<br>(configurable from 3.6 – 4 mA)                      |
| Maximum alarm current (high alarm current)   | 21 mA<br>(configurable from 20 – 23 mA)                       |
| Maximum alarm current (high alarm current) for devices with "HART SIL – functional safety" | Limited to maximum 22 mA!<br>(From electronic version 7.1.15) |

#### Standard setting: high alarm current

## ...Specification – electrical data and options

### FOUNDATION Fieldbus™ output

#### DeviceType

Link–Master  
 The Link Active Scheduler (LAS) capability is implemented.  
 Manufacturer code: 000320 (hex)  
 Device type code: 0007 (hex)

#### Power supply

The transmitter works in a operating voltage area of 9 to 32 V DC, independent of the polarity with or without overvoltage protection.  
 During use in Ex ia zones, the operating voltage must not exceed 24 V DC (object certification) or 17.5 V DC (FISCO certification) in accordance with FF–816.

#### Input Current

Operation (quiescent current): 15 mA  
 Residual current limit value 20 mA maximum

#### Output signal

Physical layer in accordance with IEC 11582 / EN 611582, transmission with Manchester II modulation with 31.25 kBit/s.

#### Function blocks / cycle time

3 extended analog input blocks / 25 ms max. (each)  
 1 extended PID block / 40 ms max.  
 1 Standard Arithmetic 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 extended Resource Block  
 1 manufacturer–specific Pressure with Calibration Transducer Block  
 1 manufacturer–specific Advanced Diagnostics Transducer Block with recognition of clogged impulse lines  
 1 manufacturer–specific local display transducer Block

#### Number of link objects

35

#### Number of VCRs

35

#### Output interface

FOUNDATION Fieldbus digital communication protocol in accordance with standard H1, fulfills the specification V 1.7

#### Operating mode during transmitter malfunction

The output signal will be “frozen” to the last value in case of severe transmitter errors, if this is recognized by the self–diagnosis, which also shows error conditions.  
 In case of electronic errors or short–circuits, the current consumption is electronically limited to a set value (approx. 20 mA) for the safety of the network.

#### Damping

Configurable time constant between 0 and 60 s.  
 This is in addition to the sensor response time, and can be adjusted via the optional LCD indicator, handheld terminal, or PC user interface.

#### Warm–up time

Ready for operation as per specifications in less than 10 s with minimum damping.

#### Insulation resistance

>100 MΩ at 500 V DC (between terminals and ground).



## PROFIBUS PA output

### DeviceType

Pressure transmitter conform with profile 3.0.1  
 Indent number: 3450 (hex)

The transmitter works in a operating voltage area of 9 to 32 V DC, independent of the polarity with or without overvoltage protection.

During use in EEx ia zones, the operating voltage must not exceed 17.5 V DC.

Intrinsically safe installation in accordance with the FISCO model.

### Input Current

Operation (quiescent current): 15 mA  
 Residual current limit value 20 mA maximum

### Output signal

Physical layer in accordance with IEC 1158–2 / EN 61158–2, transmission with Manchester II modulation with 31.25 kBit/s.

### Output interface

PROFIBUS PA communication in accordance with PROFIBUS DP 50170 part 2 / DIN 19245 part 1–3

### Output cycle time

25 ms

### Data blocks

266MST:

- 1 “Physical Block”
- 3 “Analog Input” blocks
- 1 “Pressure Transducer Block” with calibration
- 1 “Transducer Block Advanced Diagnostics” with recognition of clogged impulse lines
- 1 “Transducer Block” local display

### Operating mode during transmitter malfunction

In case of heavy transmitter errors, which are recognized by self–diagnosis, the output signal can be put into defined states, which can be chosen by the operator: safe, most recent or calculated value.

In case of electronic errors or short–circuits, the current consumption is electronically limited to a set value (approx. 20 mA) for the safety of the network.

## LCD display



M10142

Figure 1 LCD display (example)

### Integral LCD display (code L1)

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

Four buttons for device configuration and management.

Easy setup for quick commissioning.

Customized visualizations which the user can select.

Total value and actual value flow indication.

The display can also be used to show static pressure, sensor temperature, and diagnosis notice, as well as make configuration settings.

### Integral LCD display with TTG–(Through–The–Glass) operation (code L5)

As with the integral LCD display above, but featuring an innovative TTG (Through–The–Glass) button technology which can be used to activate the device's configuration and management menus without having to remove the transmitter housing cover.

The TTG (Through–The–Glass) buttons are protected against accidental activation.

## Specification - measuring accuracy

Reference conditions in accordance with IEC 60770. Ambient temperature 20 °C (68 °F), rel. humidity 65 %, atmospheric pressure 1,013 hPa (1,013 mbar), position of measuring cell (separating diaphragm areas) vertical, measuring span based on zero point, separating diaphragms made from stainless steel AISI 316 L or Hastelloy, silicone oil filling fluid, HART digital trim values equal to 4 and 20 mA span end points, linear characteristic curve.

Unless otherwise stated, errors are specified as a % of the span value.

Some measuring accuracy levels relating to the upper measuring range limit (URL) are affected by the current turn down (TD); i.e., the ratio of the upper measuring range limit to the already set span.

FOR OPTIMUM MEASURING ACCURACY, IT IS RECOMMENDED THAT YOU SELECT THE SENSOR CODE WHICH WILL PROVIDE THE LOWEST TD VALUE.

### Dynamic response (in accordance with IEC 61298-1)

| Sensors                       | Time constant (63.2 % of total step response) |
|-------------------------------|---|
| Sensors F to R                | 150 ms  |
| Sensor C                      | 400 ms  |
| Sensor A                      | 1000 ms                                       |
| Reaction time for all sensors | 40 ms   |

Response time (total) = delay time + time constant

### Measuring error (Elin)

In % of calibrated span, consisting of terminal-based non-linearity, hysteresis, and non repeatability.

In the case of fieldbus devices, SPAN refers to the analog input function block output scaling.

| Model  | Sensor | For TD range       |                                |
|--------|--------|--------------------|--------------------------------|
| 266MST | A to R | From 1:1 to 10:1   | ± 0.04 %                       |
|        | A      | From 10:1 to 20:1  | ± (0.04 + 0.005 x TD - 0.05) % |
|        | C      | From 10:1 to 30:1  | ± (0.04 + 0.005 x TD - 0.05) % |
|        | F to R | From 10:1 to 100:1 | ± (0.04 + 0.005 x TD - 0.05) % |
|        | F to N | From 1:1 to 10:1   | ±0.025 % (optional)            |

| Model  | Pabs sensor (second sensor for 266MST)<br>Range: 41 MPa, 410 bar, 5945 psi (2 MPa, 20 bar, 290 psi for dp Sensor Code A) |                             |
|--------|--|-----------------------------|
| 266MST | C to R   | 80 kPa, 800 mbar, 321 inH2O |
|        | A  | 1.2 kPa, 12 mbar, 4.8 inH2O |

### Ambient temperature (EΔTz + EΔTs)

per 20 K change within the limits of -40° – 85 °C (per 36 °F change within the limits of 40° – 185 °F):

| Model  | Sensor | For TD range |                              |
|--------|--------|--------------|------------------------------|
| 266MST | A      | 10:1         | ±(0.06 % URL + 0.045 % span) |
|        | C to R | 10:1         | ±(0.03 % URL + 0.045 % span) |

In the case of an ambient temperature change between -10 °C – 60 °C (14 to 140 °F):

| Model  | Sensor | For TD range |                             |
|--------|--------|--------------|-----------------------------|
| 266MST | A      | 10:1         | ±(0.12 % URL + 0.05 % span) |
|        | C to R | 10:1         | ±(0.06 % URL + 0.05 % span) |

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

| Model  | Sensor | For TD range |                               |
|--------|--------|--------------|-------------------------------|
| 266MST | A      | 10:1         | ± (0.05 % URL + 0.03 % span)  |
|        | C to R | 10:1         | ± (0.025 % URL + 0.03 % span) |

### Model 266MST / absolute pressure sensor

For the entire temperature range of 125 K within the limits of -40 °C to 85 °C:

– zero signal:

For sensors C to R:  
40 kPa, 400 mbar, 160 inH2O  
(absolute pressure sensor 41 MPa, 410 bar, 5945 psi)

For sensor A:  
2 kPa, 20 mbar, 8 inH2O  
(absolute pressure sensor 2 MPa, 20 bar, 290 psi)

– measuring span:

For sensors C to R:  
0.3 MPa, 3 bar, 43.5 psi  
(absolute pressure sensor 41 MPa, 410 bar, 5945 psi)

For sensor A:  
15 kPa, 150 mbar, 60 inH2O  
(absolute pressure sensor 2 MPa, 20 bar, 290 psi)

### Static pressure (E $\Delta$ Ps)

(zero signal errors can be calibrated under operating pressure) for operating pressure up to 60 MPa, 600 bar, 8700 psi

| Measuring range   | Sensor A                    | Sensors C, F, L, N                | Sensor R                         |
|-------------------|-----------------------------|-----------------------------------|----------------------------------|
| Zero signal error | Up to 2 bar:<br>0.05 % URL  | Up to 100 bar:<br>0.05 % URL      | Up to 100 bar:<br>0.1 % URL      |
|                   | > 2 bar: 0.05 %             | > 100 bar: 0.05 %<br>URL/100 bar  | > 100 bar: 0.1 %<br>URL/100 bar  |
| Span error        | Up to 2 bar:<br>0.05 % span | Up to 100 bar:<br>0.05 % span     | Up to 100 bar:<br>0.1 % span     |
|                   | > 2 bar: 0.05 %<br>Span/bar | > 100 bar: 0.05 %<br>Span/100 bar | > 100 bar: 0.1 %<br>Span/100 bar |

### Power supply

Within the limit values for the voltage / load, the total influence is less than 0.005 % of the upper measuring range limit values per volt.

### Load

Within the load / voltage limits, the total influence is negligible.

### Electromagnetic field

Meets all requirements of EN 61326 and NAMUR NE-21 (optional).

### Common-mode interference

No influence from 100 V rms @ 50 Hz, or 50 V DC

### Mounting position

Rotations in the plane of the diaphragm have a negligible effect. A tilt from the vertical of up to 90° causes a zero point shift of up to 0.35 kPa (3.5 mbar, 1.4 inH<sub>2</sub>O), which can be corrected by making an appropriate zero position adjustment. There is no effect on the measuring span. In applications where a dynamic inclined installation is required (e.g. naval applications with maximum vessel inclination of +/-22.5°), the maximum error can be up to 2,5 mbar.

Such error might be resulting in a deviation from the standard accuracy with percentual magnitude depending on the range of the selected device.

In case of non-dynamic inclined installations, this effect can be eliminated by performing a zero calibration in the field.

Please contact ABB to assess more in details on the installation effects

### Long-term stability

#### Sensors C to R:

± 0.15 % of URL over a period of 10 years (± 0.05 % URL/year)

#### Sensor A:

± 0.3 % of URL over a period of 10 years (± 0.2 % URL/year)

#### Total performance

Temperature change of 28 °C (50 °F), only 266MST: up to 10 MPa, 100 bar, 1450 psi static pressure with base accuracy option D1 (0.025%)

| Model  | Sensor | For TD range | Total performance<br>(for measuring error 0.04%) |
|--------|--------|--------------|--|
| 266MST | F to N | 1:1          | ± 0.119 % of calibrated span                     |

In the area of -10 to 60 °C (14 to 140 °F), temperature changes (DIN 16086), only 266MST: up to 10 MPa, 100 bar, 1450 psi static pressure with base accuracy option D1 (0.025 %)

| Model  | Sensor | For TD range | Total performance<br>(for measuring error 0.04%) |
|--------|--------|--------------|--|
| 266MST | F to N | 1:1          | ± 0.121 % of calibrated span                     |

The specification of total performance includes:

- the measuring error (non linearity including hysteresis and non repeatability),
- the thermal change of the ambient temperature to zero signal and measuring span
- the influence of the static pressure on the measuring span, influence on zero signal corrected after commissioning.

$$E_{Mperf} = \sqrt{(E_{\Delta Tz} + E_{\Delta Ts})^2 + E_{\Delta Ps}^2 + E_{lin}^2}$$

$E_{Mperf}$  = Total Performance

$E_{\Delta Tz}$  = Effect of the ambient temperature on zero

$E_{\Delta Ts}$  = Effect of the ambient temperature on span

$E_{\Delta Ps}$  = Effect of the static pressure on the span

$E_{lin}$  = Measuring error

## Specification – physical

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

### Materials

#### Process separating diaphragms (1)

Stainless steel 1.4435 (AISI 316L)  
Hastelloy C276, Monel 400; Monel 400, gold plated;  
tantalum

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

Stainless steel 316 (1.4408) and 316L (CF3M ; 1.4404)  
Hastelloy C276; Monel 400; Kynar  
(flange made of stainless steel AISI 316L with PVDF insert)

#### Sensor filling fluid

Silicone oil, inert fill (Galden)

#### Mounting bracket \*\*

Galvanized C steel with chromium passivation; stainless steel AISI 316L.

#### Seals \*

Viton (FPM); Buna (NBR); EPDM; PTFE or FEP-coated Viton (only for PVDF Kynar process connection); graphite

#### Pressure sensor housing

Stainless steel 1.4404 (AISI 316L)

#### Screws and nuts

Screws and nuts made from stainless steel AISI 316, class A4 70 or class A2-70 as per UNI 7323 (ISO 3506) in compliance with NACE MR0175 Class II

#### Electronics housing and cover

Aluminum alloy (copper content  $\leq 0.3\%$ ) with baked epoxy finish (color RAL 9002); stainless steel AISI 316L.

#### Cover O-ring

Buna N (Perbunan)

#### Operating element for local zero point, measuring span, and write protection settings

Non-intrusive design (removable) made of glass fiber reinforced polypropylene oxide.

### Plates

Transmitter nameplate: AISI 316 ss screwed to the electronics housing.

Certification plate and optional tag/calibration plate: self-adhesive 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.

For AISI 316 L ss housing it is mandatory to select option I2 or I3 for plates in AISI 316 ss.

Optional wired-on customer data plate can be populated with customized data (4 lines of 32 characters 4 mm/0.16 in high).

Customized data have to be provided separately; in case of no data, the wired-on plate will be delivered blank.

### Calibration

Standard: 0 to measuring range upper limit, for ambient temperature and atmospheric pressure

Optional: To specified measuring span

\* Wetted parts of the transmitter.

\*\* U-bolt material: Stainless steel AISI 400.

Screw material: high-strength alloy steel or stainless steel AISI 316.

## Optional extras

### Mounting bracket

For vertical and horizontal 60 mm (2 in) pipes or wall mounting

### LCD display

Rotatable in 4 positions in 90° steps

### Additional tag plates

Code I2: For for tag and/or calibration details (up to 20 characters), in stainless steel, fastened to the transmitter housing.

Code I1: For customer data (4 lines of 30 characters each), in stainless steel, wired to the transmitter housing

### Overvoltage protection

- Code S2

### Cleaning stage for oxygen application (O2)

Code P1

### Certificates (inspection, implementation, characteristics, material certificate)

Code Cx and Hx

### Name plate and operating instruction language

Code Tx and Mx

### Communication plug connector

Code Ux

### Valve manifold installation

Code A1: Factory installation and pressure test of the ABB M26 valve manifold.

## Process connections

Flanges: 1/4–18 NPT on the process axis

Adapters: 1/2–14 NPT on the process axis

Center distance (266MST):

54 mm (2.13 in) between flanges; 51 mm, 54 mm, or

57 mm (2.01 in, 2.13 in, or 2.24 in) between adapters

Fastening screw threads:

7/16–20 UNF with 41.3 mm center distance;

only for process flange code C:

M10 with operating pressures of up to 16 MPa, 160 bar, 2320 psi or

M12 with higher operating pressures of up to 41 MPa, 410 bar, 6000 psi

## Electrical connections

Two 1/2–14 NPT or M20 x 1.5 tap holes for cable glands, directly on the housing.

Special communication connector (on request)

- HART: Straight or angled Harting Han 8D plug with a mating plug.
- FOUNDATION Fieldbus, PROFIBUS PA: plug M12 x 1 or 7/8 in.

### Terminals

HART-Version: Three connections for signal / external display, for wire cross-sections up to 2.5 mm<sup>2</sup> (14 AWG) and connection points for inspection and communication purposes

Fieldbus versions: Two signal connections (bus connection) for wire cross-sections up to 2.5 mm<sup>2</sup> (14 AWG)

### Grounding

There are internal and external ground terminals available for 6 mm<sup>2</sup> (10 AWG) wire cross-sections.

### Mounting position

The transmitters can be installed in any position.

The electronic housing can be rotated into any position.

A stop is provided to prevent overturning.

### Weight

(without options)

Approximately 3.7 kg (8.2 lb); add 1.5 kg (3.3 lb) for stainless steel housing.

Add 650 g (1.5 lb) for packaging

### Packaging

Carton with dimensions of approx. 28 x 23 x 24 cm (11 x 9 x 9 in)

## Specification – configuration

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

#### Standard configuration

The transmitters are calibrated in the factory to the measuring range specified by the customer. The calibrated area and the tag number are written on the name plate. If this data was not specified, the transmitter is delivered with unlabeled plate and the following configuration:

| Configuration                                 |  |
|---|--|
| Physical unit                                 | kPa  |
| 4 mA  | Zero   |
| 20 mA   | Upper measuring range limit (URL)                  |
| Output  | Linear   |
| Damping                                       | 1 s  |
| Operating mode during transmitter malfunction | High alarm   |
| Software tag (max. 8 characters)              | Free   |
| Optional LCD display                          | PV in kPa; output in mA and in percent as bargraph |

Individual or all of the above mentioned configurable parameters, including lower range value and upper range value (in the same unit of measurement), can easily be changed with a portable HART Handheld terminal or with the PC configuration software with the DTM for 266 models.

The specifications for flange type and materials, materials of the O-rings and the vent / drain valves as well as other device options are saved in the transmitter database.

#### Tag and Calibration

Tag and/or specific calibrated span can be requested when configuring the device.

Two tag types are available: Short Tag and Long Tag.

See below table for details about tag type applicability / presence:

| Type      | Max Length | On Display | On Certification | On Device Label |
|-----------|------------|------------|------------------|-----------------|
| Short Tag | 8 digits   | YES        | YES              | NO              |
| Long Tag  | 32 digits  | NO         | YES              | YES             |

In case no specific indication will be given about the tag type, data will be considered as Long Tag by default.

In case tag is required on the optional wired-on customer data plate (optional digits I1, I3) specific indication needs to be given.

#### Customer specific configurations (option N6)

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

Description: 16 alphanumeric characters  
 Supplementary information: 32 alphanumeric characters  
 Date: Day, month, year

Pa, kPa, MPa  
 inH<sub>2</sub>O @ 4 °C, mmH<sub>2</sub>O @ 4 °C, psi  
 inH<sub>2</sub>O @ 20 °C, ftH<sub>2</sub>O @ 20 °C, mmH<sub>2</sub>O @ 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 PA and FOUNDATION Fieldbus.

## Transmitter with PROFIBUS PA communication

### Standard configuration

The transmitters are calibrated in the factory to the measuring range specified by the customer. The calibrated area and the tag number are written on the name plate. If this data was not specified, the transmitter is delivered with unlabeled plate and the following configuration:

| Configuration                             |  |
|---|--|
| Measuring profile                         | Designation of gas connections           |
| Physical unit                             | kPa                                      |
| Output scaling 0 %                        | Measuring range lower limit (LRL)        |
| Output scaling 100 %                      | Upper measuring range limit (URL)        |
| Output                                    | Linear                                   |
| Upper alarm limit                         | Upper measuring range limit (URL)        |
| Upper warning limit                       | Upper measuring range limit (URL)        |
| Lower warning limit                       | Measuring range lower limit (LRL)        |
| Lower alarm limit                         | Measuring range lower limit (LRL)        |
| Hysteresis limit value                    | 0.5% of output scaling                   |
| PV filter time                            | 0 s                                      |
| Address (set via local operating buttons) | 126                                      |
| Long Tags                                 | 30 alphanumeric characters               |
| Optional LCD display                      | PV in kPa; output in percent as bargraph |

Individual or all of the above mentioned configurable parameters, including the measuring range values (in the same unit of measurement), can easily be changed with the PC configuration software with the DTM for 266 models.

The specifications for flange type and materials, materials of the O-rings and the vent / drain valves as well as other device options are saved in the transmitter data bank.

### Customer specific configurations (option N6)

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

|                            |                            |
|----------------------------|----------------------------|
| Description:               | 32 alphanumeric characters |
| Supplementary information: | 32 alphanumeric characters |
| Date:                      | Day, month, year           |

## Transmitter with FOUNDATION Fieldbus communication

### Standard configuration

The transmitters are calibrated in the factory to the measuring range specified by the customer. The calibrated area and the tag number are written on the name plate. If this data was not specified, the transmitter is delivered with unlabeled plate and the analog input function block FB1 is configured as follows:

| Configuration          |  |
|------------------------|--|
| Measuring profile      | Designation of gas connections           |
| Physical unit          | kPa                                      |
| Output scaling 0 %     | Measuring range lower limit (LRL)        |
| Output scaling 100 %   | Upper measuring range limit (URL)        |
| Output                 | Linear                                   |
| Upper alarm limit      | Upper measuring range limit (URL)        |
| Upper warning limit    | Upper measuring range limit (URL)        |
| Lower warning limit    | Measuring range lower limit (LRL)        |
| Lower alarm limit      | Measuring range lower limit (LRL)        |
| Hysteresis limit value | 0.5% of output scaling                   |
| PV filter time         | 0 s                                      |
| Long Tags              | 30 alphanumeric characters               |
| Optional LCD display   | PV in kPa; output in percent as bargraph |

The analog input function blocks FB2 and FB3 are each configured for the sensor temperature measured in °C and the static pressure measured in MPa. Individual or all of the above mentioned configurable parameters, including the measuring range values, can be changed with every FOUNDATION Fieldbus compatible configurator.

The specifications for flange type and materials, materials of the O-rings and the vent / drain valves as well as other device options are saved in the transmitter data bank.

### Customer specific configurations (option N6)

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

|                            |                            |
|----------------------------|----------------------------|
| Description:               | 32 alphanumeric characters |
| Supplementary information: | 32 alphanumeric characters |
| Date:                      | Day, month, year           |

## Dimensions

(not design data) – dimensions in mm (inch)

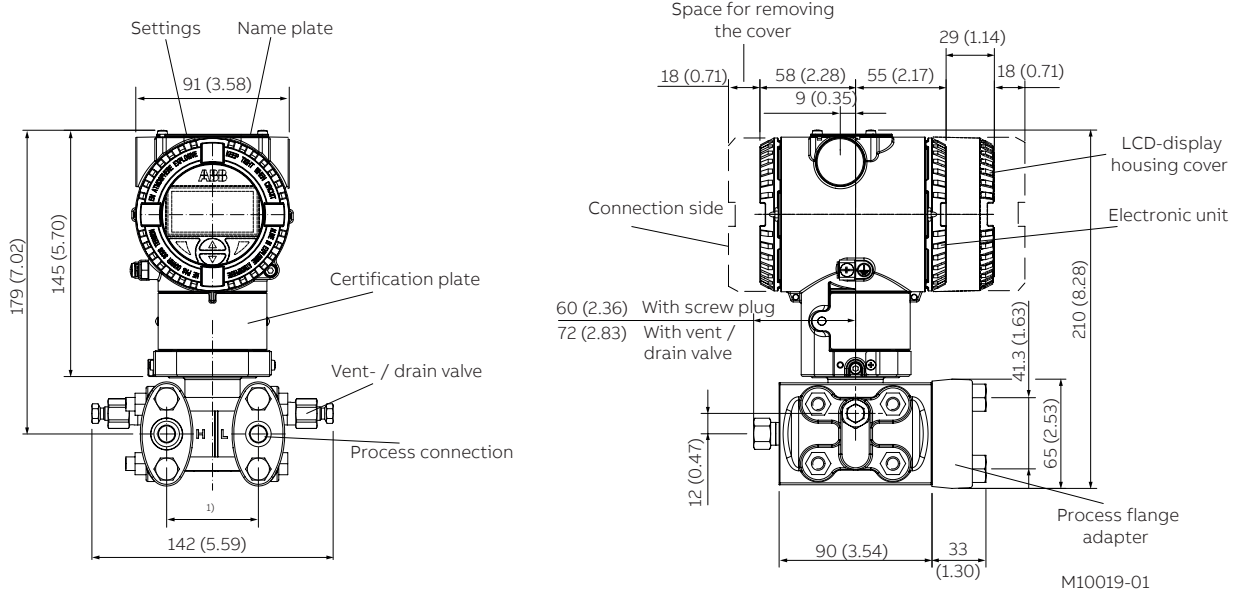


Figure 2: Transmitter with barrel housing - horizontal flanges

(\*) 54 (2.13) mm (inch) over 1/4 – 18 NPT process flange

51 (2.01), 54 (2.13) or 57 (2.24) mm (inch) over 1/2 – 14 NPT adapter flange;

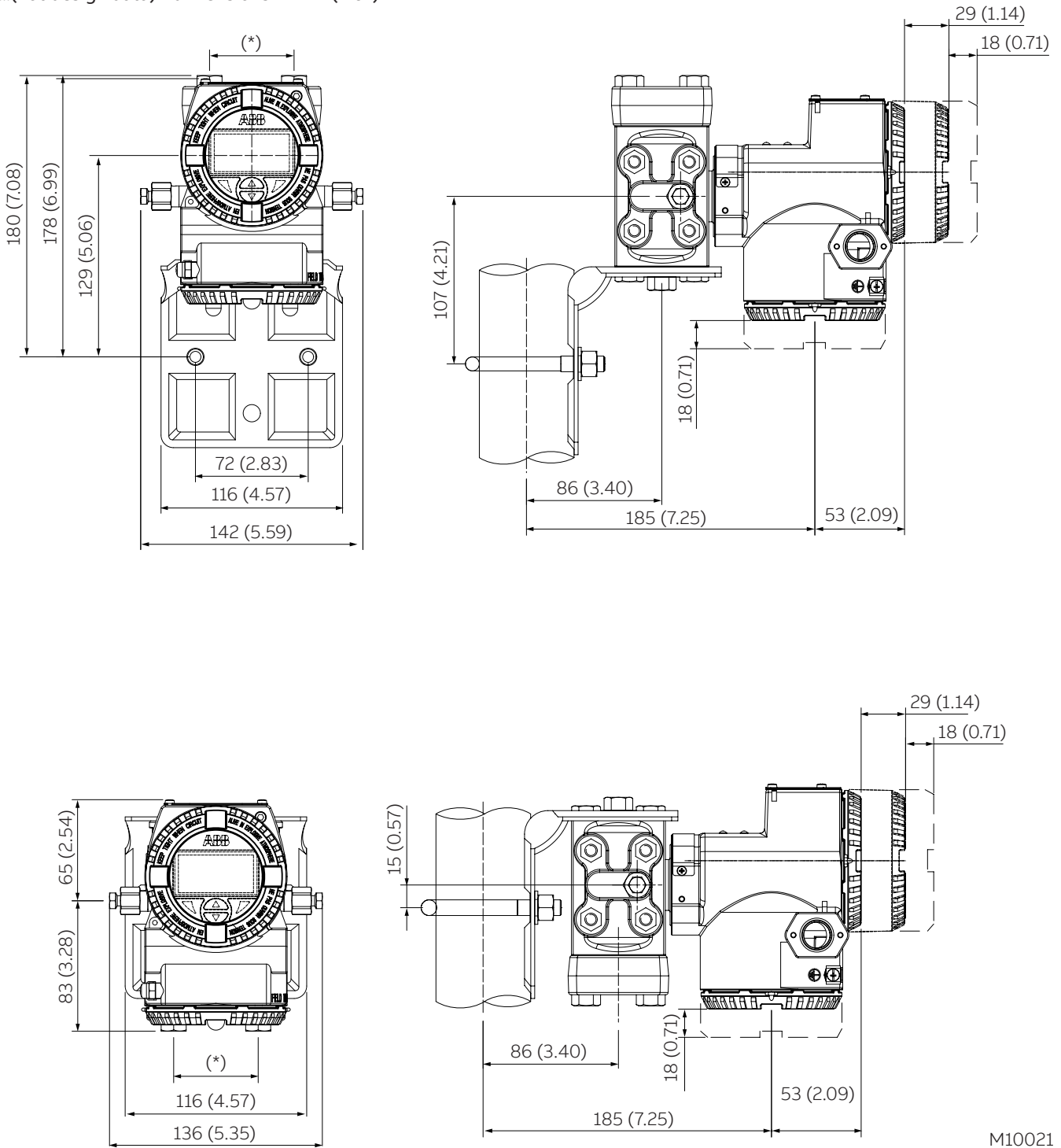
Note: process connection and gasket groove comply with IEC 61518 screw threads for adapter flange or other components (e.g. valve manifold etc.) on the process flange 7/16 – 20 UNF





## ...Dimensions

...(not design data) – dimensions in mm (inch)



M10021

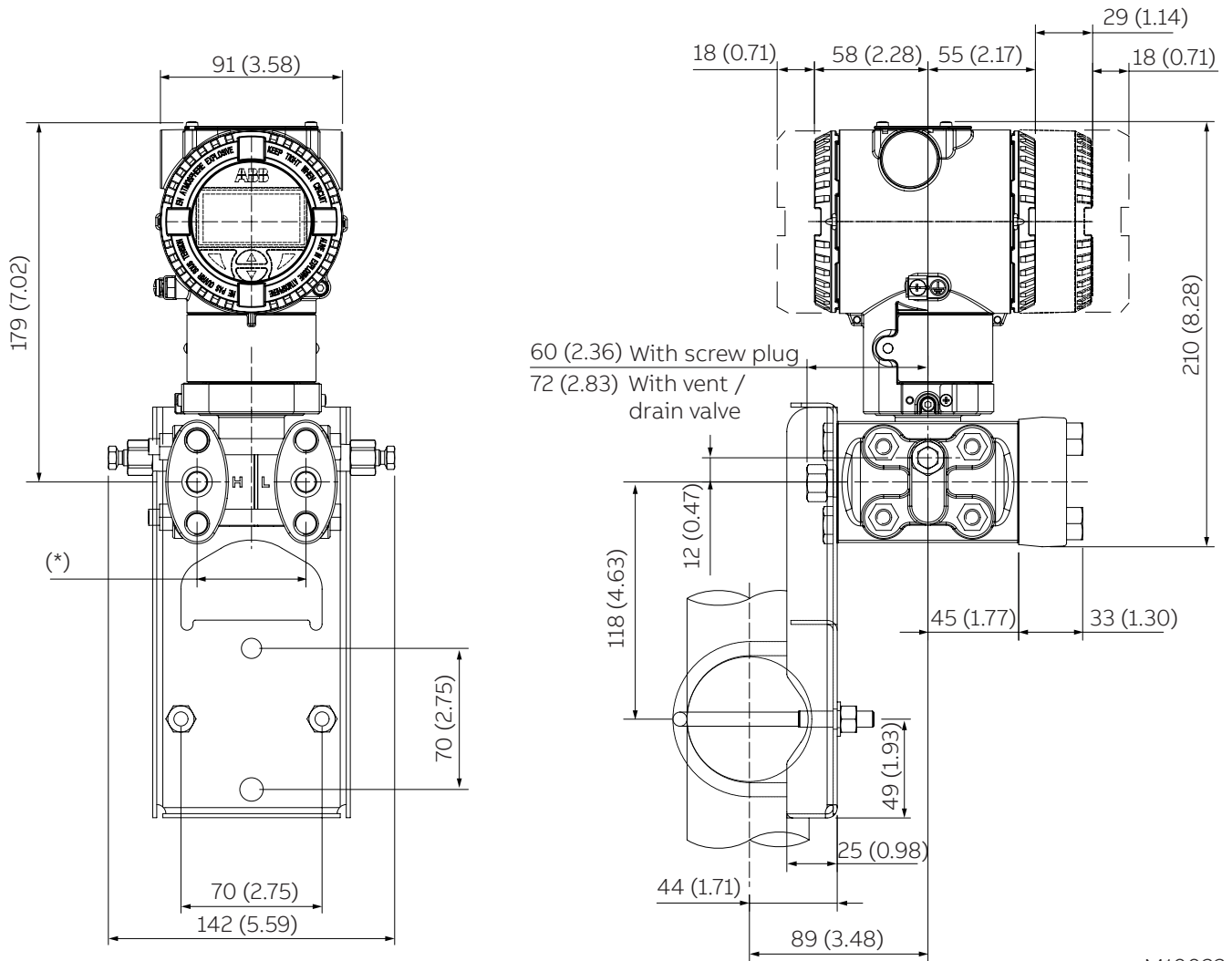
Figure 4: Transmitter with DIN aluminum housing - horizontal flanges with mounting bracket for vertical or horizontal mounting on 60 mm (2 in) pipe

(\*)54 (2.13) mm (in) via 1/4 – 18 NPT process flanges

51 (2.01), 54 (2.13), or 57 (2.24) mm (in) via 1/2 – 14 NPT adapter flanges.

Note: Process connection and gasket groove comply with IEC 61518. Thread for attaching adapter flanges or other components (e.g., manifold) to process flange: 7/16 – 20 UNF.

Optional plug connectors



M10022

Figure 5: Transmitter with flat bracket, for vertical or horizontal mounting on 60 mm (2 in) pipe

## Electrical connections

### HART version

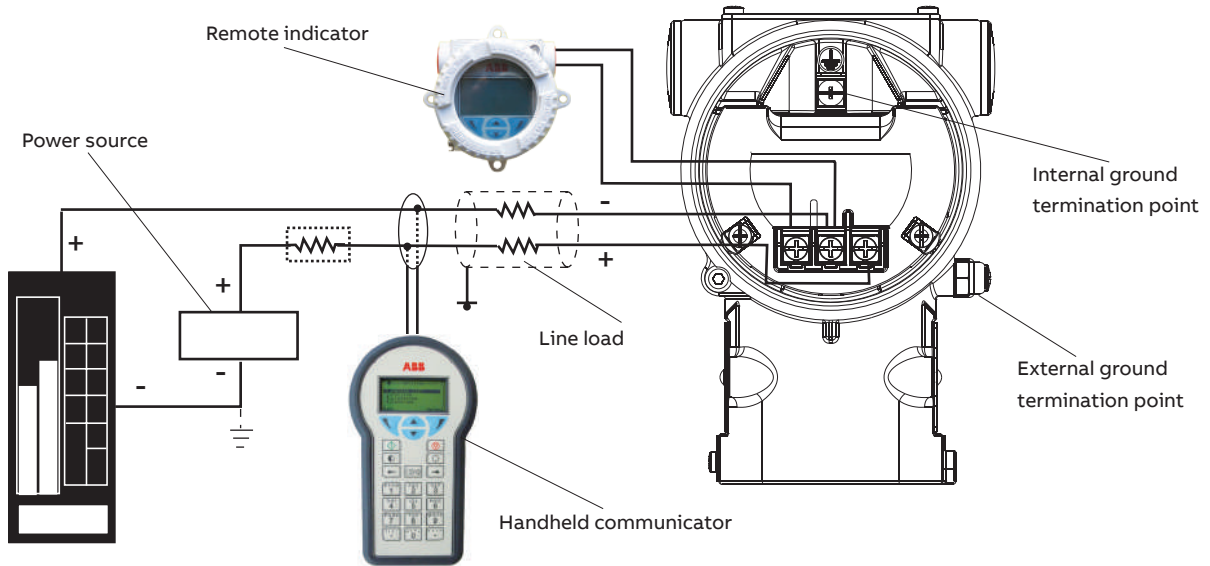


Figure 6: Electrical connection – HART Version

The HART handheld terminal can be connected to any wiring termination point in the loop as long as a minimum resistance of  $250 \Omega$  is present between handheld terminal and transmitter power supply. If it is less than  $250 \Omega$ , additional resistance wires must be installed to enable a communication.

**Fieldbus version**

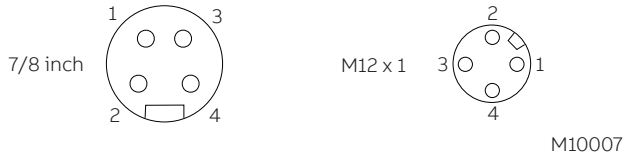


Figure 7: Plug connectors – fieldbus versions

| Pin assignment (plug) |                     |             |
|-----------------------|---------------------|-------------|
| Pin number            | FOUNDATION Fieldbus | PROFIBUS PA |
| 1                     | DATA -              | DATA +      |
| 2                     | DATA +              | GROUND      |
| 3                     | SHIELD              | DATA -      |
| 4                     | GROUND              | SHIELD      |

Delivery scope: plug connector without mating plug (female connector) supplied loose.

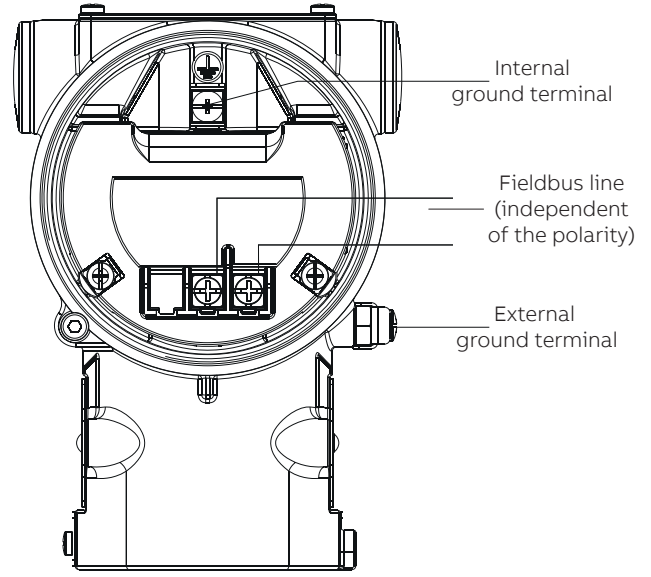


Figure 8: Standard terminal block

M10024-01

## ...Electrical connections

### HART version

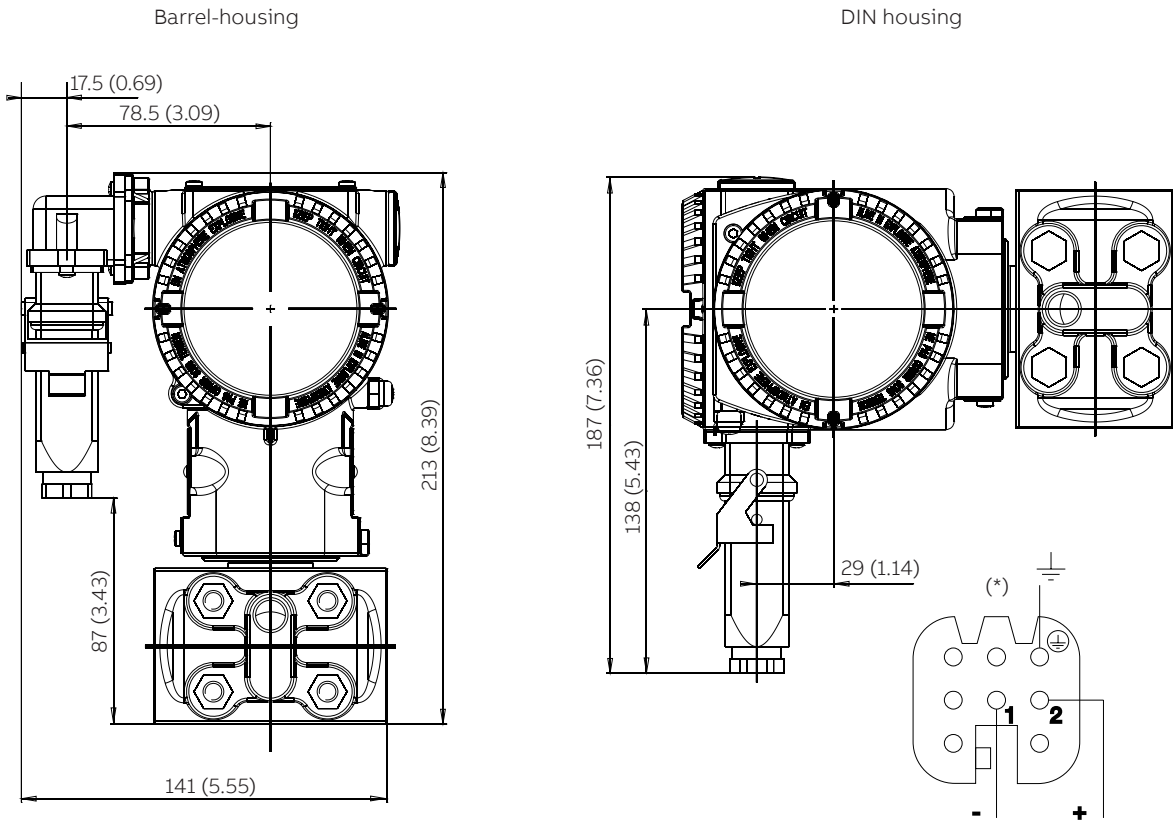


Figure 9: Harting Han connection – HART version

M10008-01



## ...Ordering information

### ...Basic ordering information model 266MST Differential Pressure Transmitter

|  | X        | X | X |
|--|----------|---|---|
| <b>Bolts Material / Gaskets Material – 11th character</b>  |          |   |   |
| AISI 316 SST (NACE – not exposed to H2S) / Viton (Suitable for oxygen applications) (Max. 41 MPa / 410 bar / 5945 psi) | 3        |   |   |
| AISI 316 SST (NACE – not exposed to H2S) / PTFE (Max. 25 MPa / 250 bar / 3625 psi)                                     | 4        |   |   |
| AISI 316 SST (NACE – not exposed to H2S) / EPDM (Max. 41 MPa / 410 bar / 5945 psi)                                     | 5        |   |   |
| AISI 316 SST (NACE – not exposed to H2S) / Perbunan  | 6        |   |   |
| AISI 316 SST (NACE – not exposed to H2S) / Graphite (Max. 41 MPa / 410 bar / 5945 psi)                                 | 7        |   |   |
| AISI 316 SST / FEP (Only available with Kynar [PVDF] process connection)   | T        |   |   |
| <b>Housing Material / Electrical Connection – 12th character</b>   |          |   |   |
| Aluminum alloy (Barrel type) / 1/2–14 NPT  |          | A |   |
| Aluminum alloy (Barrel type) / M20 x 1.5   |          | B |   |
| Aluminum alloy (Barrel type) / Harting Han connector (General purpose only)  | (Note 2) | E |   |
| Aluminum alloy (Barrel type) / Fieldbus connector (General purpose only)   | (Note 2) | G |   |
| AISI 316L SST (Barrel type) / 1/2–14 NPT (I2 or I3 required)   |          | S |   |
| AISI 316L SST (Barrel type) / M20 x 1.5 (I2 or I3 required)  |          | T |   |
| Aluminum alloy (DIN type) / M20 x 1.5  |          | J |   |
| Aluminum alloy (DIN type) / Harting Han connector (General purpose only)   | (Note 2) | K |   |
| Aluminum alloy (DIN type) / Fieldbus connector (General purpose only)  | (Note 2) | W |   |
| AISI 316L SST (Barrel type) / Fieldbus connector (General purpose only)  | (Note 2) | Z |   |
| <b>Output – 13th character</b>   |          |   |   |
| HART digital communication and 4 to 20 mA  |          |   | 1 |
| PROFIBUS PA  |          |   | 2 |
| FOUNDATION Fieldbus  |          |   | 3 |
| HART digital communication and 4 to 20 mA, SIL2 and SIL3 certified to IEC 61508  |          |   | 8 |



**Additional ordering information model 266MST Differential Pressure Transmitter**

|  | XX       | XX | XX |
|--|----------|----|----|
| <b>Accuracy</b>  |          |    |    |
| Base accuracy 0.025 %                                  | (Note 3) | D1 |    |
| <b>Vent and Drain Valve Material / Position</b>        |          |    |    |
| AISI 316L SST (1.4404) / On process axis (NACE)        |          |    | V1 |
| AISI 316L SST (1.4404) / On flanges side top (NACE)    |          |    | V2 |
| AISI 316L SST (1.4404) / On flanges side bottom (NACE) |          |    | V3 |
| Hastelloy® C-276 / On process axis (NACE)              |          |    | V4 |
| Hastelloy® C-276 / On flanges side top (NACE)          |          |    | V5 |
| Hastelloy® C-276 / On flanges side bottom (NACE)       |          |    | V6 |
| Monel 400 / On process axis (NACE)                     |          |    | V7 |
| Monel 400 / On flanges side top (NACE)                 |          |    | V8 |
| Monel 400 / On flanges side bottom (NACE)              |          |    | V9 |
| <b>Explosion Protection Certification</b>              |          |    |    |
| ATEX Intrinsic Safety Ex ia                            |          |    | E1 |
| ATEX Explosion Proof Ex db_tb                          |          |    | E2 |
| ATEX Intrinsic Safety Ex ic_tc                         |          |    | E3 |
| FM approval (Canada) approval (XP, DIP, IS, NI)        |          |    | E4 |
| FM approval (USA) approval (XP, DIP, IS, NI)           |          |    | E6 |
| FM approvals (USA and Canada) Intrinsically safe       |          |    | EA |
| FM approvals (USA and Canada) Explosionproof           |          |    | EB |
| FM approvals (USA and Canada) Nonincendive             |          |    | EC |
| Combined ATEX, IECEx and FM Approvals (USA and Canada) |          |    | EN |
| Combined ATEX Ex ia, Ex db_tc and Ex ic_tc             |          |    | EW |
| IECEX Intrinsic Safety Ex ia                           |          |    | E8 |
| IECEX Explosion Proof Ex db_tb                         |          |    | E9 |
| IECEX Intrinsic Safety Ex ic_tc                        |          |    | ER |
| Combined IEC Approval Ex ia and Ex db_tb               |          |    | EH |
| Combined IEC Approval Ex ia, Ex db_tb and Ex ic_tc     |          |    | EI |
| NEPSI Intrinsic Safety Ex ia_iaD                       |          |    | EY |
| NEPSI Explosion Proof Ex d_tD                          |          |    | EZ |
| NEPSI Intrinsic Safety Ex ic_nA_tD                     |          |    | ES |
| Combined NEPSI Ex ia_iaD and Ex d_tD                   |          |    | EP |
| Combined NEPSI Ex ia_iaD, Ex d_tD and Ex ic_nA_tD      |          |    | EQ |

## ...Ordering information

### ...Additional ordering information for model 266MST Differential Pressure Transmitter

|   | XX             | XX | XX | XX | XX | XX |
|---|----------------|----|----|----|----|----|
| <b>Other Explosion Protection Certifications</b>                          |                |    |    |    |    |    |
| For TR CU EAC Ex ia for Russia (incl. GOST Metrologic Approval)           | (Note 7)       | W1 |    |    |    |    |
| For TR CU EAC Ex d for Russia (incl. GOST Metrologic Approval)            | (Note 8)       | W2 |    |    |    |    |
| For TR CU EAC Ex ia for Kazakhstan (incl. GOST Metrologic Approval)       | (Note 7)       | W3 |    |    |    |    |
| For TR CU EAC Ex d for Kazakhstan (incl. GOST Metrologic Approval)        | (Note 8)       | W4 |    |    |    |    |
| For TR CU EAC Ex ia for Belarus (incl. GOST Metrologic Approval)          | (Note 7)       | WF |    |    |    |    |
| For TR CU EAC Ex d for Belarus (incl. GOST Metrologic Approval)           | (Note 8)       | WG |    |    |    |    |
| Inmetro (Brazil) Ex ia  | (Notes 10, 11) | W5 |    |    |    |    |
| Inmetro (Brazil) Ex d   | (Notes 10, 11) | W6 |    |    |    |    |
| Inmetro (Brazil) Ex nL  | (Notes 10, 11) | W7 |    |    |    |    |
| <b>Integral LCD</b>   |                |    |    |    |    |    |
| With integral LCD display   |                |    |    |    | L1 |    |
| TTG (Through The Glass) integral digital LCD display                      |                |    |    |    | L5 |    |
| <b>Mounting Bracket Shape / Material</b>                                  |                |    |    |    |    |    |
| For pipe mounting / Carbon steel (Not suitable for AISI housing)          |                |    |    |    | B1 |    |
| For pipe mounting / AISI 316 SST (1.4401) (Not suitable for AISI housing) |                |    |    |    | B2 |    |
| Flat type bracket / AISI 316 SST (1.4401) (Suitable for AISI housing)     |                |    |    |    | B5 |    |
| <b>Surge / Transient Protector</b>  |                |    |    |    |    |    |
| With integral surge / transient protector                                 |                |    |    |    | S2 |    |
| <b>Operating Instruction Language</b>                                     |                |    |    |    |    |    |
| German (FOR HART and PROFIBUS VERSIONS)                                   |                |    |    |    |    | M1 |
| Italian (ONLY FOR HART VERSIONS)  |                |    |    |    |    | M2 |
| Spanish (FOR HART and FOUNDATION Fieldbus VERSIONS)                       |                |    |    |    |    | M3 |
| French (ONLY FOR HART VERSIONS)   |                |    |    |    |    | M4 |
| English   |                |    |    |    |    | M5 |
| Portuguese (ONLY FOR HART VERSIONS)                                       |                |    |    |    |    | MA |
| Russian (ONLY FOR HART VERSIONS)  |                |    |    |    |    | MB |
| <b>Label and Tag Language</b>   |                |    |    |    |    |    |
| German  |                |    |    |    |    | T1 |
| Italian   |                |    |    |    |    | T2 |
| Spanish   |                |    |    |    |    | T3 |
| French  |                |    |    |    |    | T4 |

|   | XX | XX              | XX | XX | XX |
|---|----|-----------------|----|----|----|
| <b>Additional tag plate</b>   |    |                 |    |    |    |
| Supplemental wired-on stainless steel plate   | I1 |                 |    |    |    |
| Tag and certification stainless steel plates (laser printed)  | I2 |                 |    |    |    |
| Tag, certification and supplemental wired-on stainless steel plates (laser printed)   | I3 |                 |    |    |    |
| <b>Configuration (units visible on type label)</b>  |    |                 |    |    |    |
| Standard pressure = inH2O / psi at 68 °F  |    | N2              |    |    |    |
| Standard pressure = inH2O / psi at 39.2 °F  |    | N3              |    |    |    |
| Standard pressure = inH2O / psi at 20 °C  |    | N4              |    |    |    |
| Standard pressure = inH2O / psi at 4 °C   |    | N5              |    |    |    |
| Custom  |    | N6              |    |    |    |
| Configured for HART revision 5 (Note 4)   |    | NH              |    |    |    |
| <b>Preparation Procedure</b>  |    |                 |    |    |    |
| Oxygen service cleaning, Pmax = 12 MPa (120 bar, 1740 psi) or maximum working pressure (lower value), Tmax = 60 °C / 140 °F (Only available with inert fill / viton gasket) |    |                 |    |    | P1 |
| <b>Certificates</b>   |    |                 |    |    |    |
| Inspection certificate 3.1 acc. EN 10204 of calibration   |    |                 |    |    | C1 |
| Inspection certificate 3.1 acc. EN 10204 of cleanliness stage   |    |                 |    |    | C3 |
| Inspection certificate 3.1 acc. EN 10204 of helium leakage test of the sensor module  |    |                 |    |    | C4 |
| Inspection certificate 3.1 acc. EN 10204 of pressure test   |    |                 |    |    | C5 |
| Declaration of compliance with the order 2.1 acc. EN 10204 for instrument design  |    |                 |    |    | C6 |
| PMI test on wetted parts  |    |                 |    |    | CT |
| <b>Approvals</b>  |    |                 |    |    |    |
| Metrologic Pattern for Russia (NOT APPLICABLE WITH ANY HAZARDOUS AREA CERTIFICATION)  |    |                 |    |    | Y1 |
| Metrologic Pattern for Kazakhstan (NOT APPLICABLE WITH ANY HAZARDOUS AREA CERTIFICATION)  |    |                 |    |    | Y2 |
| Metrologic Pattern for Ukraine (NOT APPLICABLE WITH ANY HAZARDOUS AREA CERTIFICATION)   |    |                 |    |    | Y3 |
| Metrologic Pattern for Belarus (NOT APPLICABLE WITH ANY HAZARDOUS AREA CERTIFICATION)   |    |                 |    |    | Y4 |
| CRN (Canadian Registration Number OF14838.5C)   |    |                 |    |    | YR |
| DNV GL  |    | (Notes 4, 6, 9) |    |    | YA |
| Conformity to NAMUR NE 021 (2004)   |    |                 |    |    | YE |
| American Bureau of Shipping (ABS)   |    | (Notes 4, 6, 9) |    |    | YS |
| Lloyd's Register Group Ltd. (LR)  |    | (Notes 4, 6, 9) |    |    | YB |
| Combined Naval (DNV / ABS / LLR)  |    | (Notes 4, 6, 9) |    |    | YM |

## ...Ordering information

### ...Additional ordering information for model 266MST Differential Pressure Transmitter

|   | XX | XX | XX |
|---|----|----|----|
| <b>Material Traceability</b>  |    |    |    |
| Inspection certificate 3.1 acc. EN 10204 of process wetted parts with analysis certificates as material verification (Note 5) | H3 |    |    |
| Material certificate 2.2 acc. EN 10204 for the pressure bearing and process wetted parts                                      | H4 |    |    |
| <b>Plug connector</b>   |    |    |    |
| Fieldbus 7/8 in (Recommended for FOUNDATION Fieldbus, supplied loose, without female plug) (Note 11)                          |    | U1 |    |
| Fieldbus M12 x 1 (Recommended for PROFIBUS PA, supplied loose, without female plug) (Note 11)                                 |    | U2 |    |
| Harting Han 8D (8U), straight entry (supplied loose) (Note 11)  |    | U3 |    |
| Harting Han 8D (8U), angle entry (supplied loose) (Note 11)   |    | U4 |    |
| Harting Han 7D (supplied loose) (Note 11)   |    | U5 |    |
| With cable gland M20 x 1.5 (Plastic, black, supplied loose) (Note 11)   |    | U8 |    |
| <b>Housing Accessories</b>  |    |    |    |
| FM26–manifold mounting, top mounted (with DIN–housings) incl. pressure test and inspection certificate 3.1                    |    |    | A1 |

Note 1: Not available with Diaphragm Material code M, V, T, C, Y, D

Note 2: Select connector with additional ordering code

Note 3: Only available with Sensor Span Limits code F, L, N

Note 4: Not available with output code 2, 3

Note 5: Minor parts with factory certificate acc. EN 10204

Note 6: Not available with Approvals code YE

Note 7: The ambient temperature lower limit is -55 degrees C

Note 8: The ambient temperature lower limit is -52 degrees C

Note 9: Not available with Accuracy digit D1

Note 10: Not available with Housing codes E,G,J,K,W,Z

Note 11: Not available with any Hazardous area certification codes Ex or Wx

### Standard delivery scope (changes possible with additional ordering code)

- Adapters supplied loose
- Sealing plugs for horizontal connection flanges on the process axis; not for PVDF Kynar insert or for vertical connection flanges (no vent / drain valves)
- For standard applications (without explosion protection)
- No display, no mounting bracket, no surge protection
- Multilanguage short–form operating instruction and English labeling
- Configuration with kPa and °C units
- No test, inspection, or material certificates

**Important notice**

If nothing else was determined before the manufacturing, then the customer is responsible for ensuring the compatibility of the materials of the wetted part and the filling fluid with the measuring medium by suited selection.

**Coordination with NACE directives**

- The labeled materials comply with the directive NACE MR0175/ISO 15156 for the application in sulfurous environments during the oil and gas production. As different application boundaries apply for different materials, please observe the version of the directive that is current. The materials AISI 316 / AISI 316L, Hastelloy C 276, Monel 400 also comply with the directive NACE MR0103 for the application in sulfurous environments in oil and gas processing.
- According to NACE MR0175, materials for pressurized screws are differentiated by application:
  - in contact with sulfurous environments: screws, that can come in direct contact with sulfurous environments, e.g. by underfloor installation or installation in dense protective enclosures
  - not in contact with sulfurous environments: screws, which are only in contact with standard, non-sulfurous environments

The cap screw of the pressure transmitter 266MST, comply with the requirements according to NACE MR0175 for screws that are not in contact with sulfurous environments.

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## Notes



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