Data Sheet SS/265VS-EN_1

Model 265VS Absolute

Series 2600T Pressure Transmitters

Engineered solutions for all applications

Maximum overload capability up to 41 MPa, 5945 psi

Base accuracy
— ± 0.04 %

Span limits
— 2.0 ... 2000 kPa abs; 15 mmHG to 290 psia

High-performance transmitter and small measuring ranges

Reliable sensing system coupled with very latest digital technologies
— Large turndown ratio up to 20:1

Comprehensive sensor choice
— Optimized performance and stability

5-year stability

Flexible configuration facilities
— provided locally via local keys combined with LCD indicator or via hand held terminal or PC configuration platform

Multiple communications protocol availability
— Provides integration into HART®, PROFIBUS PA and FOUNDATION Fieldbus platforms
— Upgrade options through interchangeable electronics with automatic configuration

Full compliance with PED category III

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1 Functional Specifications

Measuring range and span limits

Sensor code	Upper range limit (URL)	Lower range limit (LRL)	Min. span
F	40 kPa 400 mbar 300 mmHg	0 abs	2 kPa 20 mbar 15 mmHg
L	250 kPa 2500 mbar 1875 mmHg	0 abs	12,5 kPa 125 mbar 93.76 mmHg
N	2000 kPa 20 bar 290 psi	0 abs	100 kPa 1 bar 14.5 psi

Span limits

Maximum span = URL = upper range limit

Linear / programmable characteristic Sample settings:
0 … 400 mbar abs. In order to optimize performance characteristics, it is recommended to select the transmitter sensor providing the lowest turndown ratio.

Zero suppression

Zero and span can be set to any value within the range limits listed in the table, if
the following applies:

- Calibrated span ≥ minimum span

Damping

Adjustable time constant: 0 ... 60 s
This is in addition to sensor response time.

Turn on time

Ready for operation acc. to technical data in ≤ 2.5 s after switching on the transmitter with minimal damping.

Insulation resistance

> 100 MΩ at 1000 V DC (between terminals and ground)

2 Operating limits

2.1 Temperature limits in °C (°F)

Ambient (operating temperature)

	Ambient or operating temperature range
Operating temperature	-40 … 85 °C (-40 … 185 °F)
LCD display	-20 … 70 °C (-4 … 158 °F)
Viton gasket	-20 … 85 °C (-4 … 185 °F)
PTFE gasket	-20 … 85 °C (-4 … 185 °F)

Important
For potentially explosive atmosphere applications, comply with the temperature range specified on the relevant certificate/approval.

Process

	Process temperature range
Silicone oil	-40 … 120 °C (-40 … 248 °F) For operating pressures ≥ 10 kPa abs, 100 mbar abs, 1.45 psia [1)]
Viton gaskets	-20 … 120 °C (-4 … 248 °F)
PTFE gaskets	-20 … 85 °C (-4 … 185 °F)

1) ≤ 85 °C (185 °F) for operating pressures below 10 kPa, 100 mbar abs, 1.45 psia

Storage

	Storage temperature range
Storage temperature	-50 ... 85 °C (-58 ... 185 °F)
LCD display	-40 ... 85 °C (-40 ... 185 °F)

2.2 Pressure limits

Overpressure limits / static pressure range

Upper limit:

16 MPa, 160 bar, 2320 psi or 25 MPa, 250 bar, 3625 psi or 41 MPa, 410 bar, 5945 psi for sensor code F to N

Test pressure

For pressure testing purposes, the transmitter can withstand a pressure test applied up to the nominal pressure (static pressure range).

3 Environmental limits

Electromagnetic compatibility (EMC)

Conforms to the requirements and tests for EMC Directive 89/336/EC as well as EN 61000-6-3 in reference to emitted interference and EN 61000-6-2 in reference to interference immunity.

Meets NAMUR recommendations.

Low voltage directive:

Meets 73/23/EC

Pressure equipment directive (PED)

Instruments with maximum working pressure 25 MPa, 250 bar, 3625 psi or 41 MPa, 410 bar, 5945 psi comply with 97/23/EC Category III module H.

Humidity

Relative humidity:	up to 100 %
Condensation, icing:	permissible

Vibration resistance

Acceleration up to 2 g at frequencies up to 1000 Hz (according to IEC 60068-2-6).

Shock resistance (acc. to IEC 60068-2-27)

Acceleration:	50 g
Time:	11 ms

Protection class (wet and dust-laden atmospheres)

The transmitter is dust and sand-tight and protected against immersion effects as defined by the following standards:

- IEC EN60529 (1989) with IP 67 (upon request with IP 68)
- NEMA 4X
- JIS C0920

Protection type with plugged connection: IP 65 protection class

4 Hazardous atmospheres

Transmitter of protection class "Intrinsically safe EEx ia" acc. to Directive 94/9/EC (ATEX)

Transmitter with 4 ... 20 mA output signal and HART communication:

Marking: II 1/2 GD T 50 °C EEx ia IIC T6
II 1/2 GD T 95 °C EEx ia IIC T4

Power supply and signal circuit with protection type Intrinsic Safety EEx ib IIB/IIC or EEx ia IIB/IIC for connection to supply units with maximum values:

II 1/2 GD T 50 °C EEx ia or ib IIC T6
II 1/2 GD T 95 °C EEx ia or ib IIC T4

Temperature class T4:

U_i = 30 V

I_i = 200 mA

P_i = 0.8 W for T4 where Ta = -40 ... 85 °C

P_i = 1,0 W for T4 where Ta = -40 ... 70 °C

For temperature class T6:

P_i = 0.7 W for T6 where Ta = -40 ... 40 °C

Effective internal capacitance: $C_i \leq 10$ nF

Effective internal inductance: $L_i \approx 0$

Fieldbus transmitter (PROFIBUS PA / FOUNDATION Fieldbus):

Marking: II 1/2 GD T 50 °C EEx ia IIC T6
II 1/2 GD T 95 °C EEx ia IIC T4

Power supply and signal circuit with protection type Intrinsic Safety EEx ib IIB/IIC or EEx ia IIB/IIC for connection to supply units with maximum values:

II 1/2 GD T 50 °C EEx ia or ib IIC T6	U_i = 17,5 V
II 1/2 GD T 95 °C EEx ia or ib IIC T4	I_i = 360 mA
	P_i = 2.52 W

II 1/2 GD T 50 °C EEx ia or ib IIB T6	U_i = 17,5 V
II 1/2 GD T 95 °C EEx ia or ib IIB T4	I_i = 380 mA
	P_i = 5,32 W

or connection to supply units or barriers with linear characteristics:

Maximum values:

II 1/2 GD T 50 °C EEx ia or ib IIC T6	U_i = 24 V
II 1/2 GD T 95 °C EEx ia or ib IIC T4	I_i = 250 mA
	P_i = 1,2 W

Effective internal inductance: $L_i \leq 10$ µH,

Effective internal capacitance: $C_i \approx 0$

Max. permissible ambient temperatures depending on temperature class:

Temperature class	lower limit of ambient temperature	upper limit of ambient temperature
T4	-40 °C (-40 °F)	85 °C (185 °F)
T5, T6	-40 °C (-40 °F)	40 °C (104 °F)

Transmitter of category 3 for the application in "Zone 2" according to Directive 94/9/EC (ATEX)

Transmitter with 4 ... 20 mA output signal and HART communication:

Marking: II 3 GD T 50 °C EEx nL IIC T6
II 3 GD T 95 °C EEx nL IIC T4

Operating conditions:

Supply and signal circuit (terminal signal ±):	U ≤ 45 V
	I ≤ 22,5 mA

Ambient temperature range:

Temperature class T4:	Ta = -40 ... 85 °C
Temperature class T5 and T6	Ta = -40 ... 40 °C

Transmitter of protection class "flameproof enclosure EEx d" acc. to Directive 94/9/EC (ATEX)

Transmitter with 4 … 20 mA output signal and HART communication and Fieldbus transmitter (PROFIBUS PA /FOUNDATION Fieldbus)
Marking: II 1/2 G EEx d IIC T6

Operating conditions:
Ambient temperature range: -40 ...75 °C

Transmitter of protection class "Intrinsically safe EEx ia" according to Directive 94/9/EC (ATEX), or

protection class " flameproof enclosure EEx d" acc. to Directive 94/9/EC (ATEX), or

protection class "Limited energy equipment EEx nL" acc. to Directive 94/9/EC (ATEX) (alternate certification)

Transmitter with 4 ... 20 mA output signal and HART communication:

Marking: II 1/2 GD T50 °C EEx ia IIC T6
II 1/2 GD T95 °C EEx ia IIC T4;
(refer to "EEx ia" for additional data)

or

Marking: II 1/2 GD T85 °C EEx d IIC T6
Ambient temperature range:
-40 ...75 °C

or

Marking: II 3 GD T50 °C EEx nL IIC T6
II 3 GD T95 °C EEx nL IIC T4
(refer to "EEx nL" for additional data)

Factory Mutual (FM)

Transmitter with 4 ... 20 mA output signal and HART communication:
Intrinsically Safe: Class I; Division 1; Groups A, B, C, D;
Class I; Zone 0; Group IIC; AEx ia IIC
Degree of protection: NEMA type 4X (interior or exterior)

Maximum permissible ambient temperatures depending on the temperature class:

U_{max} = 30 V, C_i = 10.5 nF, L_i = 10 µH			
Ambient temperature	**Temperature class**	**I_{max}**	**P_i**
-40 ...85 °C (-40 … 185 °F)	T4	200 mA	0.8 W
-40 ...70 °C (-40 … 158 °F)			1 W
-40 ...40 °C (-40 … 104 °F)	T5	25 mA	0.75 W
	T6		0.5 W

Fieldbus transmitter (PROFIBUS PA / FOUNDATION Fieldbus):
Intrinsically Safe: Class I, II, and III; Division 1;
Groups A, B, C, D, E, F, G;
Class I; Zone 0; AEx ia Group IIC T6, T4;
Non-incendive Class I, II, and III; Division 2;
Groups A, B, C, D, F, G

Transmitter with 4 … 20 mA output signal and HART communication and Fieldbus transmitter (PROFIBUS PA /FOUNDATION Fieldbus):
Explosion Proof: Class I, Division 1, Groups A, B, C, D;
Class II/III, Division 1, Groups E, F, G
Degree of protection: NEMA type 4X (interior or exterior)

Canadian standard (CSA)

Transmitter with 4 … 20 mA output signal and HART communication and Fieldbus transmitter (PROFIBUS PA /FOUNDATION Fieldbus)
Explosion Proof: Class I, Division 1, Groups B, C, D;
Class II, Division 1, Groups E, F, G
Degree of protection: NEMA type 4X (interior or exterior)

Standards Association of Australia (SAA)

Transmitters of protection type "Intrinsically safe Ex ia" and "Non-sparking devices" Ex n

Transmitter with 4 ... 20 mA output signal and HART communication:

Marking:
Ex ia IIC T4 ($P_i \leq 0.8$ W, Ta = 85 °C) / T6 ($P_i \leq 0.7$ W, Ta = 40 °C)
Ex n IIC T4 (Ta = 85 °C) / T6 (Ta = 40 °C)
IP 66

Intrinsically safe installation input parameters:
U_i = 30 V
I_i = 200 mA
P_i = 0.8 W for T4 where Ta = +85 °C or
P_i = 0.7 W for T6 where Ta = +40 °C

Effective internal capacitance: C_i = 52 nF
Effective internal inductance: $L_i \approx 0$ mH

Ex n installation input parameters:
U_i = 30 V

Transmitter with protection class "flameproof enclosure Ex d"

Transmitter with 4 … 20 mA output signal and HART communication and Fieldbus transmitter (PROFIBUS PA /FOUNDATION Fieldbus, Modbus):

Marking:
Zone 1: Ex d IIC T6 (Tamb +75 °C) IP66/IP67
Zone A21: Ex tD A21 T85 (Tamb +75 °C) IP66/IP67

NEPSI (China)
Intrinsically Safe

Transmitter with 4 ... 20 mA output signal and HART communication:

Marking: Ex ia II CT4/T6

Maximum permissible ambient temperatures depending on the temperature class:

Temperature class	Ambient temperature	P_i
T4	-40 … 85 ° C (-40 … 185 °F)	0.8
T4	-40 … 70 ° C (-40 … 158 °F)	1.0
T6	-40 … 40 ° C (-40 … 104 °F)	0.7

Supply and signal circuit for connection to supply units with the following maximum values:

Ui_{max} = 30 V, Ii_{max} = 200 mA			
Temperature class	Pi_{max}	Max. internal parameters	
		Ci (nF)	Li (µH)
T6	0.7	47	10
T4	0.8	47	10
T4	1.0	47	10

Fieldbus transmitter (PROFIBUS PA / FOUNDATION Fieldbus)

Marking: Ex ia II B/IIC T4 … T6

Maximum permissible ambient temperatures depending on the temperature class:

Temperature class	Ambient temperature
T4	-40 … 85 °C (-40 … 185 °F)
T5	-40 … 50 ° C (-40 … 122 °F)
T6	-40 … 40 ° C (-40 … 104 °F)

Supply and signal circuit for connection to supply units with the following maximum values:

Ex marking	Characteristics Power supply	Ui_{max} (V)	Ii_{max} (mA)	Pi_{max} (W)
Ex ia II CT4 … T6	Rectangular or trapezoidal	17.5	360	2.52
Ex ia II BT4 … T6	Rectangular or trapezoidal	17.5	380	5.32
Ex ia II CT4 … T6	linear	24	250	1.2
Ci_{max} (nF)		Li_{max} (µH)		
0		10		

Explosion proof

Transmitter with 4 … 20 mA output signal and HART communication and Fieldbus transmitter (PROFIBUS PA /FOUNDATION Fieldbus)

Marking: Ex d II CT6

Operating conditions
Ambient temperature range: -40 °C … 75 °C

5 Electrical characteristics and options

5.1 HART digital communication and 4 ... 20 mA output

Power supply

The transmitter operates from 10.5 ... 45 V DC with no load and is protected against reverse polarity connection (additional load allows operations over 45 V DC).

Minimum voltage is 14 V DC with backlit LCD display.

For EEx ia and other intrinsically safe approval power supply must not exceed 30 V DC.

Ripple

Maximum permissible voltage ripple of power supply during communication: Complies with HART FSK "Physical Layer" specification rev. 8.1.

Load limitations

Total loop resistance at 4 ... 20 mA and HART:

$$R(k\Omega) = \frac{\text{Voltage supply} - \text{Minimum operating voltage (VDC)}}{22.5\,\text{mA}}$$

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

LCD display (optional)

19-segment alphanumeric display (2-line, 6-character) with additional bar chart display, optionally with back illumination for customized display of:

- Output current in percent
- Output current in mA
- Freely-selectable process variable

Diagnostic messages, alarms, measuring range infringements and changes to the configuration are also displayed.

Output signal

Two-wire output 4 … 20 mA, linear output signal.

In addition, a horizontal cylindrical container, a spherical vessel or a freely programmable characteristic curve with 20 reference points can be selected.

HART® communication provides digital process variables (%, mA or engineering units) superimposed on the 4 ... 20 mA signal (protocol according to Bell 202 FSK standard).

Output current limits (according to NAMUR standard)

Overload condition:

- Lower limit: 3,8 mA (configurable up to 3,5 mA)
- Upper limit: 20.5 mA (configurable up to 22,5 mA)

Alarm current

Minimum alarm current:	Configurable from 3,5 … 4 mA, Default: 3,6 mA
Max. alarm current:	Configurable from 20 … 22,5 mA, Default: 21 mA
Default:	Max. alarm current

SIL: Functional safety (optional)

according to IEC 61 508/61 511

Device with certificate of conformity for use in safety-relevant applications, including SIL 2.

5.2 PROFIBUS PA output

Device

Pressure transmitter in conformance with Profile 3.0, Class A and B;
ID number 04C2 HEX

Power supply

The transmitter operates with 10.2 … 32 V DC (no polarity).

The power supply must not exceed 17.5 V DC when used in EEx ia zones.

Intrinsic safety installation according to FISCO model.

Current consumption

Operating (quiescent): 11.7 mA
Fault current limiting: max. 17.3 mA

Output signal

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

Output interface

PROFIBUS PA communication according to Profibus DP50170 Part 2 / DIN 19245 Part 1-3

Output cycle time

40 ms

Function blocks

1 standard analog input function block,
1 transducer block
1 physical block

LCD display (optional)

19-segment alphanumeric display (2-line, 6-character) with additional bar chart display, optionally with back illumination.

Customized display:

Output value in percent or OUT (analog input)

Diagnostic messages, alarms, measuring range infringements and changes to the configuration are also displayed.

Transmitter failure mode

Permanent self-diagnostic; possible errors indicated in diagnostic parameters and in the status of process values.

5.3 FOUNDATION Fieldbus output

Power supply

The transmitter operates with 10.2 … 32 V DC (no polarity).

The power supply must not exceed 17.5 V DC when used in EEx ia zones.

Intrinsic safety installation according to FISCO model.

Current consumption

Operating (quiescent): 11,7 mA
Fault current limiting: max. 17.3 mA

Output signal

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

Function blocks/execution time

1 standard analog input function block / max. 25 ms,
1 standard PID function block

Additional blocks

1 manufacturer-specific pressure with calibration transducer block
1 enhanced resource block

Number of link objects

10

Number of VCRs

16

Output interface

FOUNDATION Fieldbus digital communication protocol acc. to standard H1, compliant with specification V. 1.5.

FF registration no.: IT023600

LCD display (optional)

19-segment alphanumeric display (2-line, 6-character) with additional bar chart display, optionally with back illumination.

Customized display:

Output value in percent or OUT (analog input)

Diagnostic messages, alarms, measuring range infringements and changes to the configuration are also displayed.

Transmitter failure mode

Permanent self-diagnostic; possible errors indicated in diagnostic parameters and in the status of process values.

6 Measuring accuracy

Reference conditions acc. to IEC 60770

- Ambient temperature Tu = constant, in the range: 18 ... 30 °C (64 ... 86 °F)
- Moisture r.F = constant, in the range: 30 ... 80 %
- Atmospheric pressure Pu = constant, in the range: 860 ... 1060 mbar
- Position of measuring cell (isolating diaphragm areas): vertical ±1°
- Measuring span based on zero position
- Isolating diaphragm material: Hastelloy C276™
- Fill fluid: Silicone oil
- Supply voltage: 24 V DC
- Load with HART: 250 Ω
- Transmitter not grounded
- Characteristic setting: linear, 4 ... 20 mA

Note

Unless otherwise specified, errors are quoted as % of span.

The accuracy related to the Upper Range Limits (URL) is affected by the actual turndown (TD) as a ratio between Upper Range Limit (URL) and calibrated span (URL/span).

Select the transmitter sensor with the smallest possible turndown. This optimizes the accuracy of the measurement.

Dynamic behavior (according to IEC 61298-1)

Devices with standard configuration and turndown up to 30:1, plus linear output characteristics.

Dead time:	30 ms
Time constant (63 %)	150 ms (sensors F to N)

Accuracy rating (terminal based)

Percentage of calibrated measuring span, consisting of non-linearity, hysteresis and non-repeatability.

For Fieldbus versions SPAN refers to analog input function block outscale range.

Turndown	Measurement error
1:1 to 10:1	±0.04 %
>10:1	$\pm (0.04 + 0.005 \times \frac{URL}{Span} - 0.05)$ %

7 Operating influences

Thermal change of ambient temperature to zero signal and measuring span
(turndown to 15:1)

Range	Effect on	
-10 … 60 °C (14 … 140 °F)		0.1 % x TD + 0.1 %
-40 … -10 °C (-40 … 14 °F) and 60 … 80 °C (140 … 176 °F)	Zero position	0.05 % x TD / 10 K
	span	0.05 % / 10 K

Power supply

Within the specified limits for the voltage/load the total influence is less than 0.001% of URL per volt.

Load

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

Electromagnetic fields

Total effect: less than 0.05 % of span from 80 … 1000 MHz and for field strengths up to 10 V/m when tested with unshielded conduit, with or without meter.

Common-mode interference

No effect from 250 V_{eff} (50 Hz) or 50 V DC.

Mounting position

Rotations in the plane of the diaphragm have negligible effect.

A tilt from vertical causes a zero shift of sin a x 0.35 (3.5 mbar, 1.4 in H_2O) of URL which can be corrected with the zero adjustment. No effect on the span.

Long-term stability

± (0.05 x TD)% / year
± (0.15 x TD)% / 5 year

Vibration effect

± (0.10 x TD) % acc. to IEC 61298-3.

Total performance

In range -10 … 60 °C (14 … 140 °F):
± 0.2 % of the configured measuring span (TD 1:1)

The total performance includes the accuracy rating (non-linearity including hysteresis and non-repeatability) as well as the thermal change of ambient temperature on zero signal and measuring span.

$$E_{perf} = \sqrt{(E_{\Delta\vartheta 1} + E_{\Delta\vartheta 2})^2 + E_{lin}{}^2}$$

E_{perf} = total performance

$E_{\Delta\vartheta 1}$ = effect of the ambient temperature on the URL

$E\Delta\vartheta 2$ = effect of the ambient temperature on the measuring span

E_{lin} = accuracy rating (terminal based)

8 Technical Specification

Important
Refer to the order information sheets for the availability of different versions of the respective model.

8.1 Materials

Isolating diagram [1)]
Hastelloy C276™

Process flange, adapter, plugs and drain/vent valves [1)]
Stainless steel (1.4404)

Sensor fill fluid
Silicone oil

Mounting bracket
Stainless steel

Gaskets [1)]
Viton™ (FPM) - Color: green
Buna (NBR) - Color: black
EPDM - Color: black
PTFE - Color: white

Sensor housing
Stainless steel

Bolts and nuts
Stainless steel, class A4-70 screws and nuts acc. to ISO 3506, in compliance with NACE MR0175 Class II.

Electronics housing and cover
Barrel version
- Aluminum alloy with low copper content, baked epoxy finish
- Stainless steel (316L/1.4404)

DIN version
- Aluminum alloy with low copper content, baked epoxy finish

O-ring cover
Viton™

Local zero and span adjustments
Fiberglass-reinforced polycarbonate plastic (removable), no local control keys for stainless steel housings.

Type plate
Stainless steel (316) or plastic data plate attached to the electronics housing.

™ Hastelloy is a Cabot Corporation trademark
™ Monel is an International Nickel Co. trademark
™ Viton is a DuPont de Nemours trademark

[1)] Wetted transmitter parts

8.2 Calibration

Standard:

At max. span, zero-based range, ambient temperature and pressure.

Optional:

At specified range and ambient conditions.

8.3 Optional extras

Mounting bracket

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

LCD display

Plug-in and rotatable

Supplemental customer tag

Tag with wire (both stainless steel) attached to the transmitter, with a maximum of 30 characters including spaces.

Surge protection

Up to 4 kV:

- 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.

Not available for devices with ATEX-EEx nL or PROFIBUS PA/FOUNDATION Fieldbus in intrinsically safe design: ATEX-EEx i or NEPSI / FM / SAA intrinsically safe.

Preparation for hydrogen application

Certificates (test, model, calibration, material traceability)

8.4 Process connections

Flanges

¼-18 NPT on the process axis with 7/16-20 UNF fixing threads

Adapter

¼-14 NPT on process axis

8.5 Electrical connections

Two ½ -14 NPT or M20 x 1.5 threaded conduit entries for cable glands, direct on housing, or plug connector:

- HART: straight or angle Harting Han 8D (8U) connector and one mating plug
- FOUNDATION Fieldbus/PROFIBUS PA: plug 7/8 in / M12 x 1

Terminals

HART version:

four terminals for signal/external display, for wiring up to 2.5 mm² (14 AWG) and four connection points for test and communication purposes.

Fieldbus versions:

two signal terminals (bus connector) for wiring up to 2.5 mm² (14 AWG)

Grounding

Internal and external 4 mm² (12 AWG) ground termination points are provided.

8.6 Mounting position

The transmitter can be mounted in any position.

The electronics housing may be rotated 360°. A positive stop prevents over-travel.

8.7 Weight (without options)

Approximately 3.5 kg, add 1.5 kg for stainless steel housing

Packaging adds 650 g

8.8 Packaging

Carton approx. 230 x 250 x 270 mm

9 Configuration

9.1 Transmitter with HART communication and 4 ... 20 mA output current:

Standard configuration

Transmitters are factory calibrated to the customer's specified range. Calibrated range and tag number are stamped on the type plate. If this data has not been specified, the transmitter will be delivered configured as follows:

4 mA	Zero position
20 mA	Upper range limit (URL)
Output	linear
Damping	0.125 sec
Transmitter failure mode	21 mA
Optional LCD display	0 ... 100 % linear

Any or all the above configurable parameters, including lower range value and upper range value can be easily changed by a PC, running the configuration software SMART VISION with DTM for 2600T. Data regarding flange type and material, O-rings and filling liquid is stored in the device.

9.2 Transmitter with PROFIBUS PA communication

Transmitters are factory calibrated to the customer's specified range. Calibrated range and tag number are stamped on the type plate. If this data has not been specified, the transmitter will be delivered configured as follows:

Measure profile	Pressure
Engineering unit	mbar/bar
Output scale 0%	Lower range limit (LRL)
Output scale 100%	Upper range limit (URL)
Output	linear
Upper alarm limit	Upper range limit (URL)
Upper warning limit	Upper range limit (URL)
Lower warning limit	Lower range limit (LRL)
Lower alarm limit	Lower range limit (LRL)
Limit hysteresis	0.5% of output scale
PV filter	0.125 sec
Address	126

Any or all the above configurable parameters, including lower range value and upper range value can be easily changed by a PC, running the configuration software SMART VISION with DTM for 2600T. Data regarding flange type and material, O-rings and filling liquid is stored in the device.

9.3 Transmitter with FOUNDATION Fieldbus communication

Transmitters are factory calibrated to the customer's specified range. Calibrated range and tag number are stamped on the type plate. If this data has not been specified, the transmitter will be delivered configured as follows:

Measure profile	Pressure
Engineering unit	mbar/bar
Output scale 0%	Lower range limit (LRL)
Output scale 100%	Upper range limit (URL)
Output	linear
Upper alarm limit	Upper range limit (URL)
Upper warning limit	Upper range limit (URL)
Lower warning limit	Lower range limit (LRL)
Lower alarm limit	Lower range limit (LRL)
Limit hysteresis	0.5% of output scale
PV filter	0.125 sec
Address	not required

Any or all the above configurable parameters, including lower range value and upper range value can be changed by any FOUNDATION Fieldbus compatible configurator. Data regarding flange type and material, O-rings and filling liquid is stored in the device.

10 Mounting Dimensions (not design data)

10.1 Transmitter with barrel housing

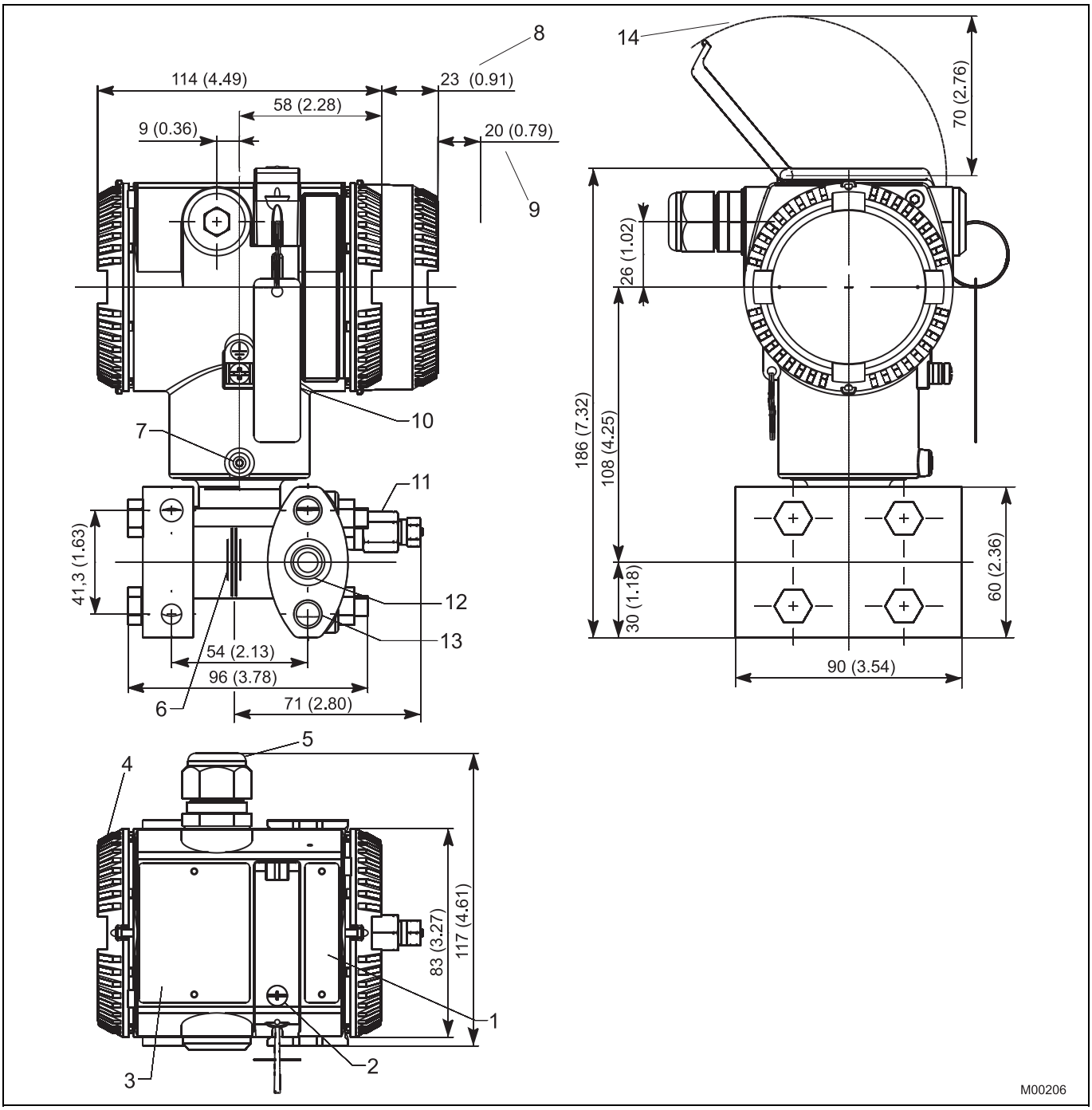

Fig. 1: Dimensions in mm (inches), deviations in the drawing are possible

1 Plate with key legend, etc.
2 Captive screw for keyboard cover
3 Type plate
4 Housing cover, terminal side
5 Electrical connection
6 Transducer plate
7 Housing stop-screw
8 With LCD display
9 Clearance for cover removal required
10 Additional tag plate, e.g., for indicating measuring points (optional)
11 Drain/vent valve (optional)
12 Process connection
13 Threads for fixing screws (see process flange data)
14 Space must be available to rotate the keyboard cover

10.2 Transmitter with DIN housing

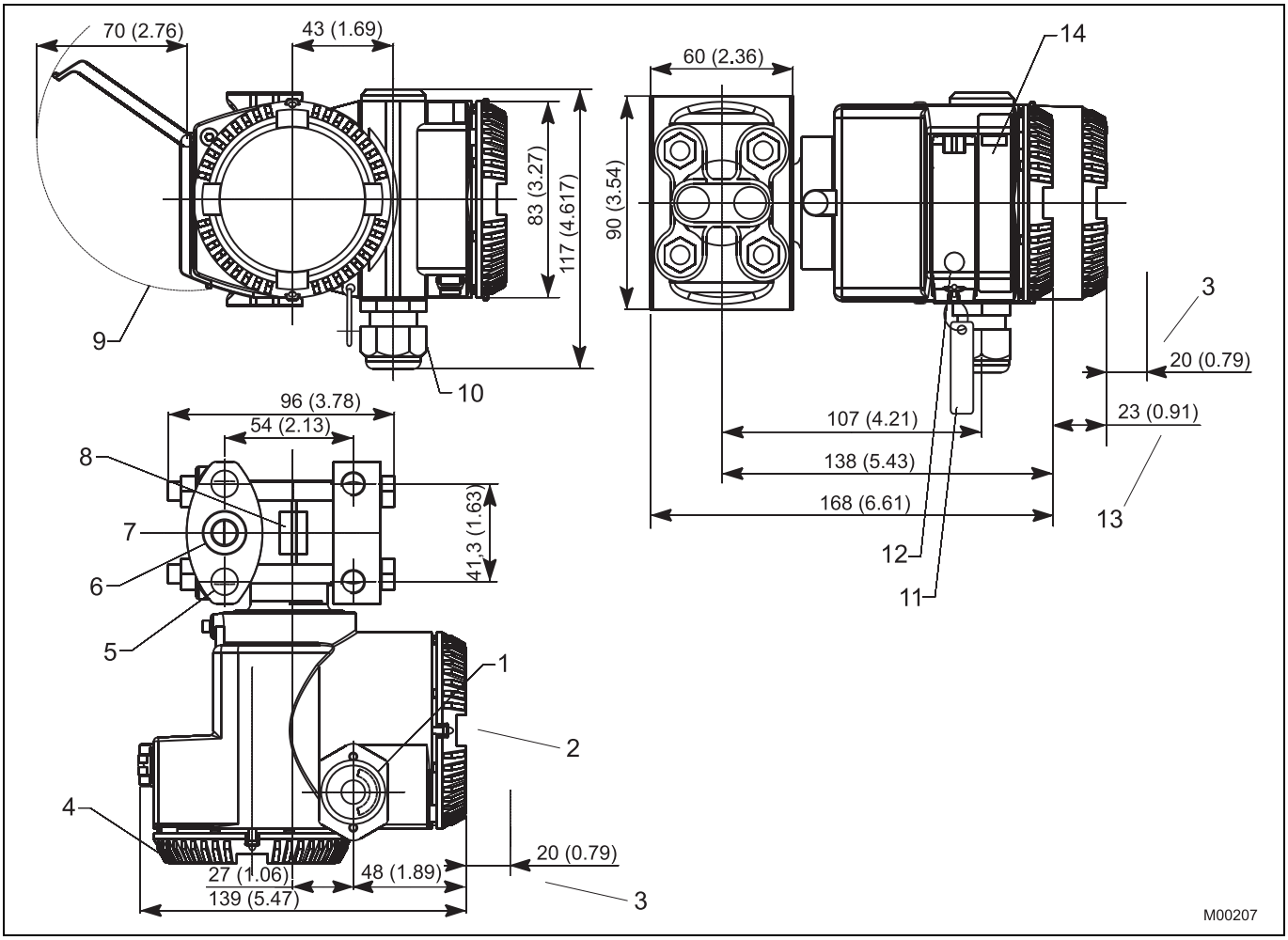

Fig. 2: Dimensions in mm (inches), deviations in the drawing are possible

1 Electrical connection (with plug)
2 Terminal side
3 Clearance for cover removal required
4 Housing cover
5 Threads for fixing screw (see process flange data)
6 Process connection
7 + side
8 Transducer plate
9 Space must be available to rotate the keyboard cover
10 Electrical connection
11 Additional tag plate, e.g., for indicating measuring points (optional)
12 Captive screw for keyboard cover
13 With LCD display
14 Plate with key legend, etc.

10.3 Mounting options with bracket

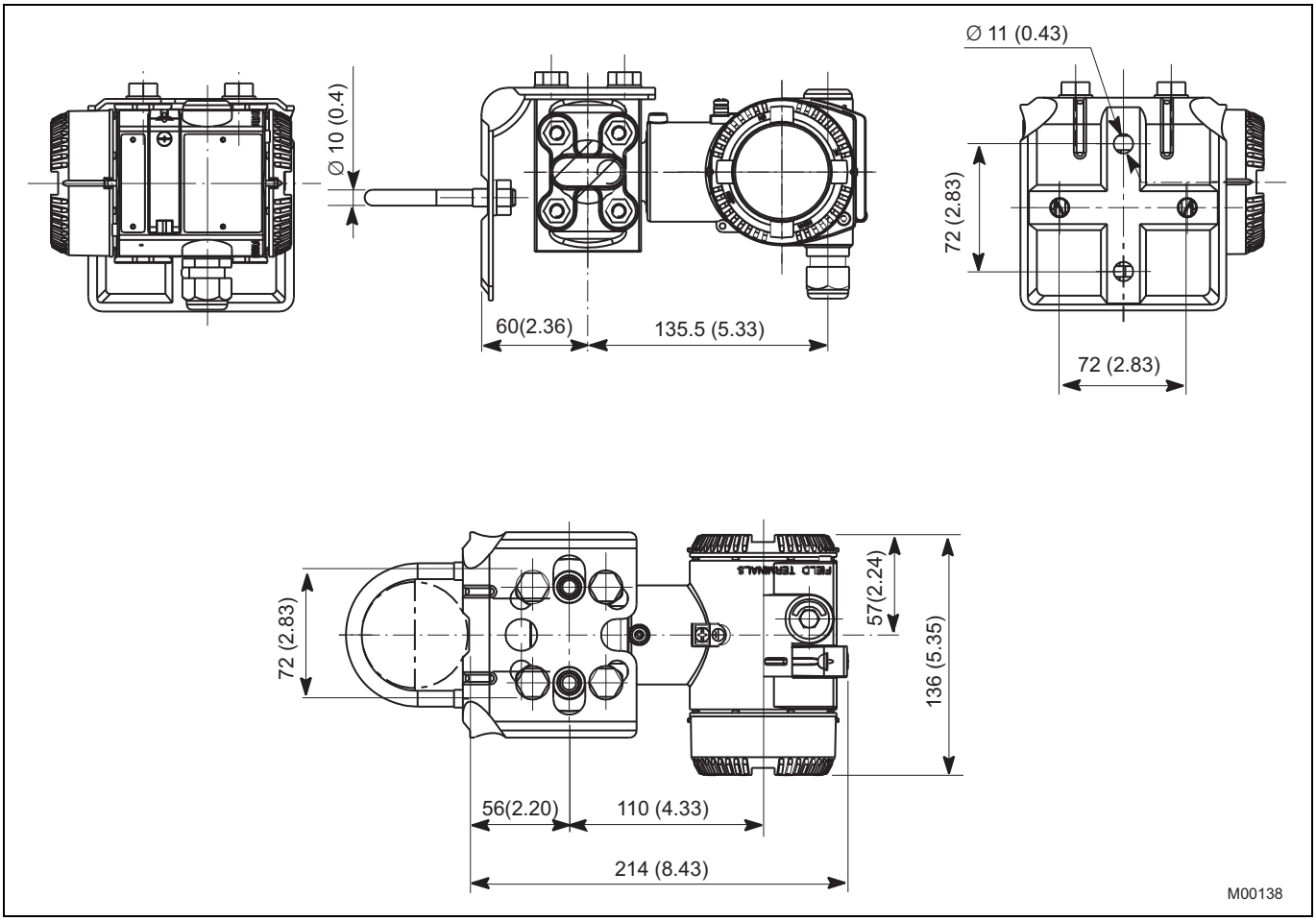

Fig. 3: Dimensions in mm (inches), deviations in the drawing are possible

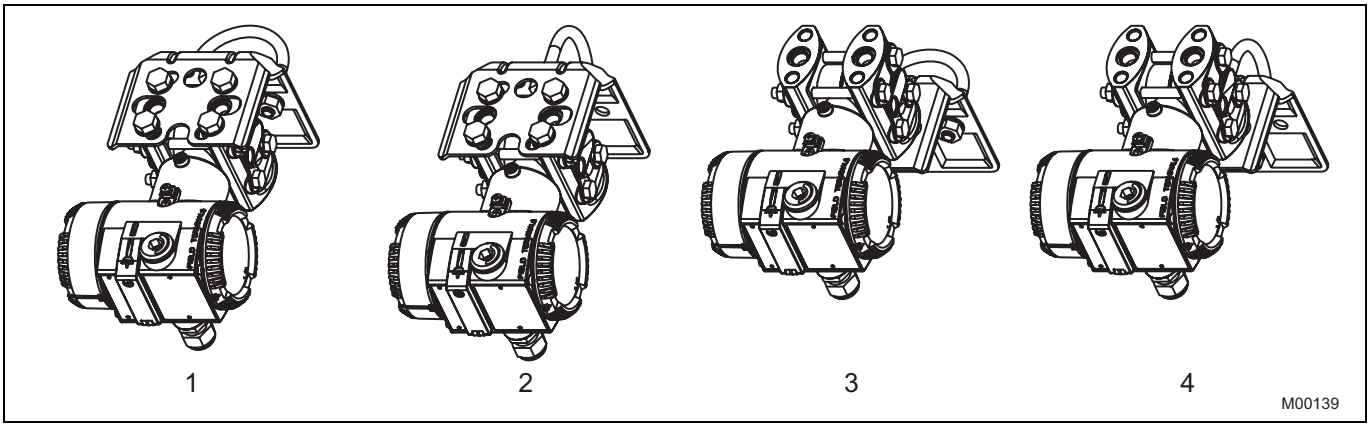

Fig. 4: Deviations in the drawing are possible

1 Vertical pipe mounting

2 Horizontal pipe mounting

3 Vertical pipe mounting and transmitter above the mounting bracket

4 Horizontal pipe mounting and transmitter above the mounting bracket

11 Electrical connections

11.1 Standard terminal strip

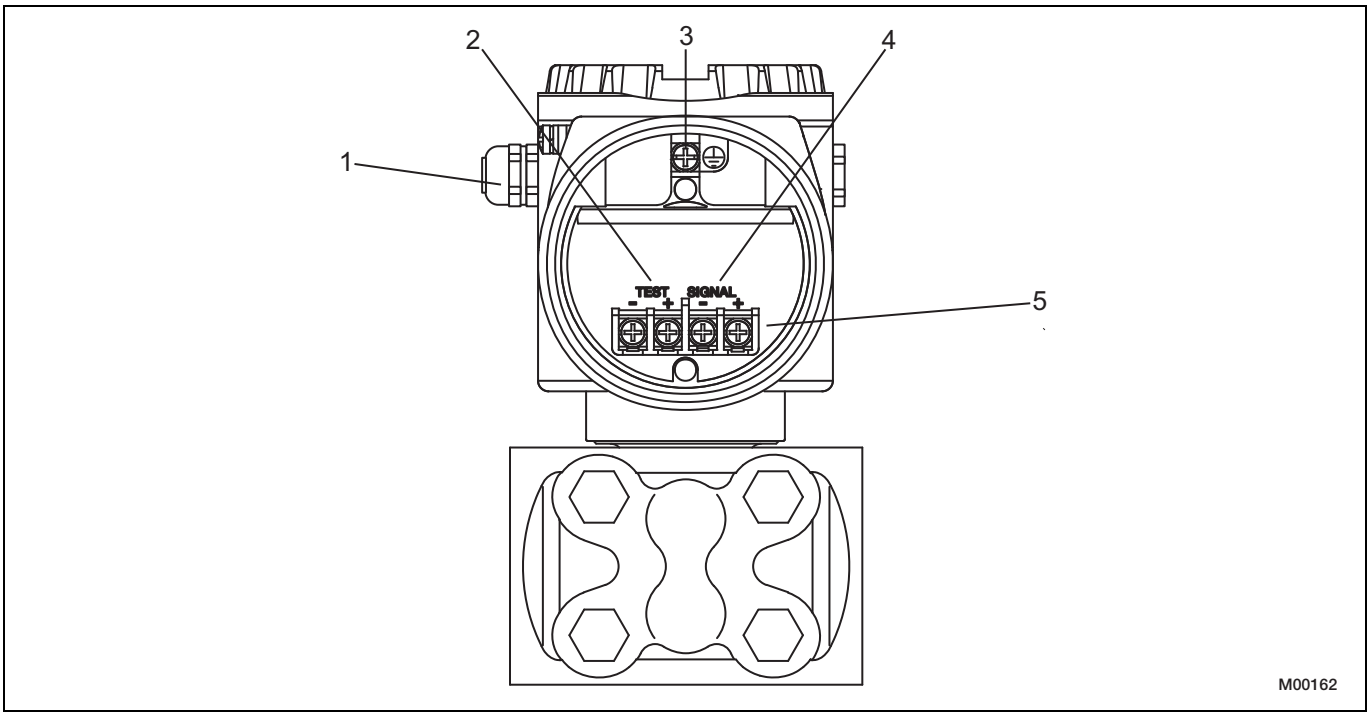

Fig. 5

1 Cable entry
2 Test terminals for 4 ... 20 mA (not with Fieldbus transmitters)
3 Ground / potential equalizing terminal
4 Output signal/power supply
5 Screw terminals for wires with 0.5 ... 2.5 mm^2 cross-section

11.2 Fieldbus plug connector

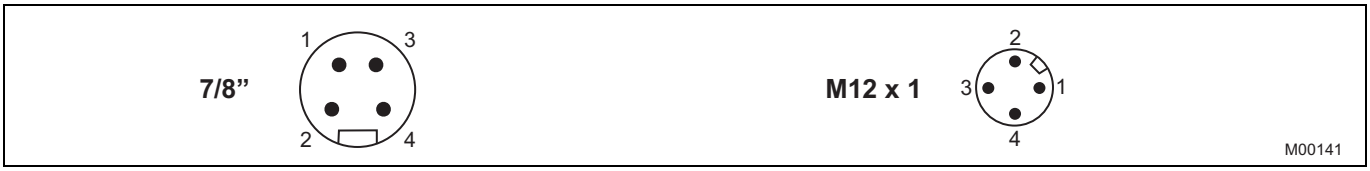

Fig. 6: 7/8 in – M12 x 1

PIN (male) identification		
Number	FOUNDATION Fieldbus	PROFIBUS PA
1	FF-	PA+
2	FF+	Ground
3	Shield	PA-
4	Ground	Shield

Mating plug (socket) not supplied

11.3 Harting Han 8D (8U) connector

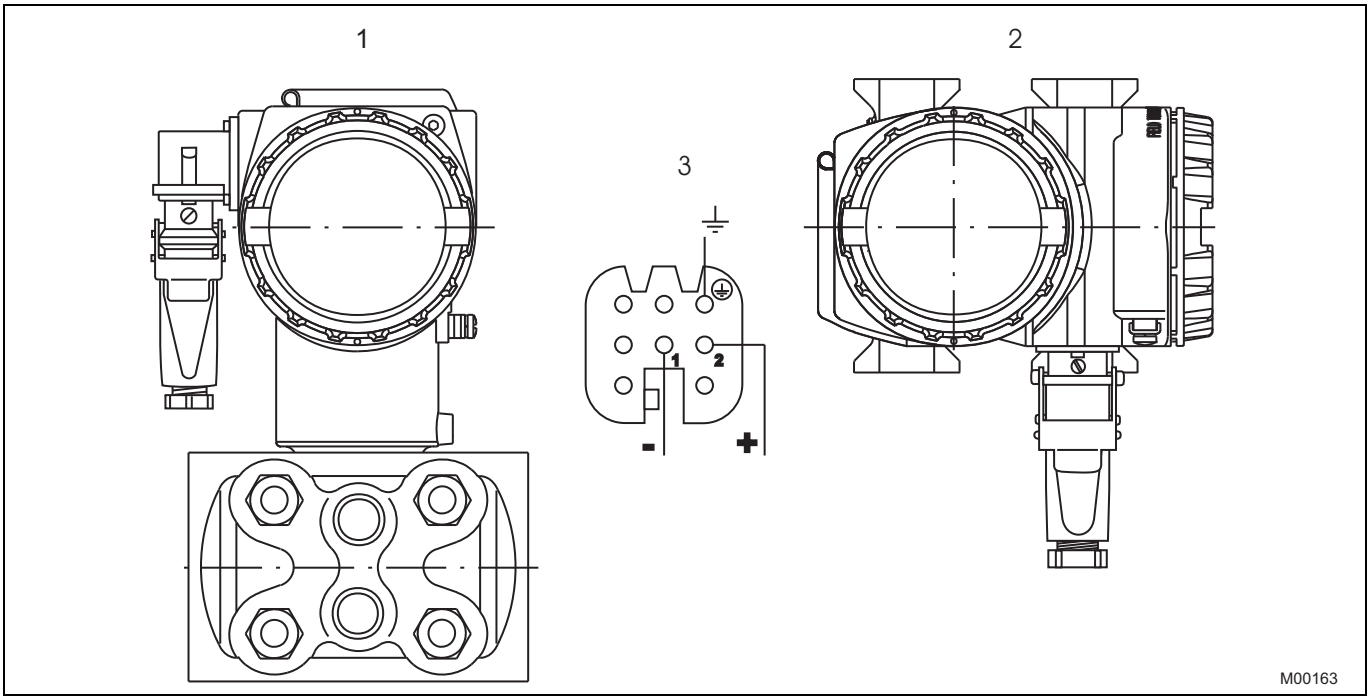

Fig. 7

1 Barrel housing
2 DIN housing
3 Harting Han 8D (8U) pin identification (socket view)

12 Ordering information

12.1 Ordering information for model 265VS

Absolute Pressure Transmitter			Variant digit No.	1 - 6	7	8	9	10	11	12	13	Code			
265VS	**Base accuracy: 0.04 %**		Catalog No.	**265VS-**											
Sensor - Span limits															
2 ... 40 kPa	20 ... 400 mbar	15 ... 300 mmHg			F										
12.5 ... 250 kPa	125 ... 2500 mbar	95 ... 1875 mmHg			L										
100 ... 2000 kPa	1 ... 20 bar	15 ... 290 psi			N										
Static pressure															
16 MPa	160 bar	2320 psi				C									
25 MPa	250 bar	3625 psi				Z									
41 MPa	410 bar	5945 psi				T									
Diaphragm material / Fill fluid		**(wetted parts)**													
Hastelloy C276	Silicone oil	NACE					K								
Process connection material / Process connection			**(wetted)**												
AISI 316L ss / 1.4404 / 1.4408	(horizontal)	1/4-18 NPT-f direct (7/16-20 UNF U.S. thread)	NACE					A							
AISI 316L ss / 1.4404 / 1.4408	(horizontal)	1/2-14 NPT-f through adapter (7/16-20 UNF U.S. thread)	NACE					B							
AISI 316L ss / 1.4404 / 1.4408	(vertical)	1/4-18 NPT-f direct (7/16-20 UNF U.S. thread)	NACE					Q							
Bolts / Gaskets		**(wetted)**													
AISI 316L ss	Viton		NACE				1)		3						
AISI 316L ss	PTFE	(max. 25 MPa)	NACE						4						
AISI 316L ss	EPDM		NACE						5						
AISI 316L ss	Perbunan								6						
Electronic housing material		**Electrical connection**													
Aluminium alloy	(Barrel version)	1/2-14 NPT								A					
Aluminium alloy	(Barrel version)	M20 x 1.5	(N/A: FM, CSA)							B					
Aluminium alloy	(Barrel version)	Harting Han connector	(N/A: EExnL, EExd, FM, CSA)					2)		E					
Aluminium alloy	(Barrel version)	Fieldbus connector					2)	8)		G					
AISI 316L ss	(Barrel version)	1/2-14 NPT								S					
AISI 316L ss	(Barrel version)	M20 x 1.5	(N/A: FM, CSA)							T					
Aluminium alloy	(DIN version)	M20 x 1.5	(N/A: FM, CSA)							J					
Aluminium alloy	(DIN version)	Harting Han connector	(N/A: EExnL, EExd, FM, CSA)					2)		K					
Aluminium alloy	(DIN version)	Fieldbus connector					2)	8)		W					
Output		**Additional options**													
HART digital communication and 4 ... 20 mA		No additional options						3)	4)		H				
HART digital communication and 4 ... 20 mA		Options requested (to be ordered by Additional ordering code)						3)			1				
PROFIBUS PA		No additional options						3)	4)		P				
PROFIBUS PA		Options requested (to be ordered by Additional ordering code)						4)			2				
FOUNDATION Fieldbus		No additional options						3)	4)		F				
FOUNDATION Fieldbus		Options requested (to be ordered by Additional ordering code)						4)			3				

N/A - Not available with

1) Suitable for oxygen applications
2) Select connector type with additional ordering code
3) Not available with Electronic housing material / Electrical connection code G, W
4) Not available with Electronic housing material / Electrical connection code E, K
8) Not available with EEx nL, EEx d, FM- / CSA- / NEPSI-Explosion Proof

12.2 Additional ordering information for model 265VS

265VS			Code			
Vent valve material / Position	**(wetted parts)**					
AISI 316L ss / 1.4404	On process axis	NACE	V1			
AISI 316L ss / 1.4404	On flanges side top	NACE	V2			
AISI 316L ss / 1.4404	On flanges side bottom	NACE	V3			
Explosion protection						
ATEX Group II Category 1/2 GD - Intrinsic Safety EEx ia			E1			
ATEX Group II Category 1/2 G - Flameproof EEx d			E2			
ATEX Group II Category 3 GD - Type of protection N EEx nL energy limited			E3			
ATEX II 1/2 GD EEx ia + ATEX II 1/2 GD EEx d + ATEX EEx nL			EW			
Factory Mutual (FM) - Intrinsically Safe			EA			
Factory Mutual (FM) - Explosion Proof			EB			
(only with electrical connection 1/2-14 NPT and Stainless steel Tag plate)						
Canadian Standard Association - Intrinsically Safe			ED			
Canadian Standard Association - Explosion Proof			EE			
Canadian Standard Association - Explosion Proof (Canada & USA)			EM			
NEPSI Ex ia II C T4/T6						
NEPSI Ex d II C T6						
SAA Ex d IIC T6 and Ex td A21 IP66 T85°C			X1			
SAA Ex ia IIC T4/T6 and Ex n IIC T4/T6	(only with output HART / 4 ... 20 mA, not with SIL2)		X2			
Integrated digital display (LCD)						
With integrated LCD display			L1			
With integrated LCD display (backlit)			L2			
Mounting bracket shape / Material						
For pipe mounting	AISI 304 ss / 1.4301		B2			
For wall mounting	AISI 304 ss / 1.4301		B4			
Surge protector						
Surge / Transient protector 5)			S1			
Operating manual						
German			M1			
Spanish			M3			
Swedish			M7			
Russian			MB			

5) Not available with ATEX-EEx nL (code E3),
not available with PROFIBUS PA/FOUNDATION Fieldbus (code 2, 3) and Intrinsic Safety EEx ia (Code E1, EY),
not available with FM Intrinsically Safe (code EA) and SAA (code X2)

12.3 Additional ordering information for model 265VS (cont.)

265VS			Code			
Label and Tag Language						
German (stainless steel)	(not with DIN Electronic Housing code J, K, W)		T1			
German and English (plastic)	(not with Factory Mutual - Explosion Proof)		TA			
Additional tag plate						
Stainless steel			I1			
Applications						
Hydrogen application (H_2) (fluid film)			P2			
Certificates						
Inspection certificate EN 10204-3.1 of calibration			C1			
Inspection certificate EN 10204-3.1 of the cleanliness stage			C3			
Inspection certificate EN 10204-3.1 of helium leakage test of the sensor module			C4			
Inspection certificate EN 10204-3.1 of the pressure test			C5			
Certificate EN 10204-2.1 of compliance with the order of instrument design			C6			
SIL2 - Declaration of conformity			CL			
Material traceability						
Confirmation of compliance with the order EN 10204-2.1 of process wetted parts			H1			
Inspection certificate EN 10204-3.1 for pressure-bearing process wetted parts			H3			
with analysis certificates as material verification						
(minor parts with Factory Certificate acc. to EN 10204)						
Test report EN 10204-2.2 of the pressure bearing and process wetted parts			H4			
Connectors						
Fieldbus 7/8 in	(without mating plug, recommended for FOUNDATION Fieldbus)	4) 6)	U1			
Fieldbus M12 x 1	(without mating plug, recommended for PROFIBUS PA)	4) 6)	U2			
Harting Han 8D (8U) - straight entry		3) 6)	U3			
Harting Han 8D (8U) - angle entry		3) 7)	U4			

3) Not available with Electronic housing material / Electrical connection code G, W
4) Not available with Electronic housing material / Electrical connection code E, K
6) Not available with Electronic housing material / Electrical connection code T, S, A, B, J, E
7) Not available with Electronic housing material / Electrical connection code T, S, A, B, J, K

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

- Adapters supplied singly
- Plugs for process axis (no drain/vent valves)
- General purpose (no Ex application)
- No meter / display, no mounting bracket, no surge protection
- English-language operating manual and labels
- Type plate material: barrel electronics housing code A, B, E, G, S, T – stainless steel
  DIN electronics housing code J, K, W – plastic
- Configuration with kPa and °C units
- No test, inspection or material certificates

If not otherwise specified prior to manufacture, the customer shall be responsible for the selection of suitable wetted parts and appropriate fill fluid to assure compatibility with the relevant process medium.

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