Data Sheet
SS/265DS_4

Field^{IT}

2600T Series Pressure Transmitters

Model 265DS Differential
selectable maximum working pressure
up to 41MPa, 5945psi

Industrial^{IT} enabled

- **Base accuracy : ±0.04%**
- **Span limits**
  – 0.05 to 10000kPa; 0.2inH_2O to 1450psi
- **True draft range and ultra performance transmitter**
- **Reliable sensing system coupled with very latest digital technologies**
  – provides large turn down ratio up to 100:1
- **Comprehensive sensor choice**
  – optimize in-use total performance and stability
- **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 protocol availability**
  – provides integration with HART®, PROFIBUS PA and FOUNDATION Fieldbus platforms offering interchangeability and transmitter upgrade capabilities
- **Full compliance with PED Category III**

ABB 2600T Series
Engineered solutions
for all applications

ABB

Functional Specifications

Range and span limits

Sensor Code	Upper Range Limit (URL)	Lower Range Limit (LRL)	Minimum Span
A	1kPa 10mbar 4inH_2O	–1kPa –10mbar –4inH_2O	0.05kPa 0.5mbar 0.2inH_2O
C	6kPa 60mbar 24inH_2O	–6kPa –60mbar –24inH_2O	0.2kPa 2mbar 0.8inH_2O
F	40kPa 400mbar 160inH_2O	–40kPa –400mbar –160inH_2O	0.4kPa 4mbar 1.6inH_2O
L	250kPa 2500mbar 1000inH_2O	–250kPa –2500mbar –1000inH_2O	2.5kPa 25mbar 10inH_2O
N	2000kPa 20bar 290psi	–2000kPa –20bar –290psi	20kPa 0.2bar 2.9psi
R	10000kPa 100bar 1450psi	–10000kPa –100bar –1450psi	100kPa 1bar 14.5psi

Span limits

Maximum span = URL
(can be further adjusted up to ± URL (TD = 0.5) for differential models, within the range limits)

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

Zero suppression and elevation

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

– calibrated span ≥ minimum span

Damping

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

Second sensor for absolute pressure measurement

Range : 41MPa, 410bar, 5945psi
(0.6MPa), 6bar, 87psi for sensor code A)

Turn on time

Operation within specification in less than 2.5s with minimum damping.

Insulation resistance

> 100MΩ at 1000VDC (terminals to earth)

Operative limits

Temperature limits °C (°F) :

Ambient (is the operating temperature)

Silicone oil filling: –40°C and +85°C (-40°F and +185°F)

Inert filling: –20°C and +85°C (-4°F and +185°F)

Lower ambient limit for Viton and PTFE gaskets: –20°C (–4°F)

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

Process

Lower limit

– refer to lower ambient limits

Upper limit

– Silicone oil: 121°C (250°F)
for working pressure above 10kPa abs, 100mbar abs, 1.45psia(1)

– Inert fluid: 121°C (250°F) (2)
for working pressure above atmospheric pressure

(1) 85°C (185°F) for application below 10kPa abs, 100mbar abs, 1.45psia down to 3.5 kPa abs, 35mbar abs, 0.5psia

(2) 85°C (185°F) for application below atmospheric pressure down to 40kPa abs, 400mbar abs, 5.8psia

Storage

Lower limit: –50°C (–58°F); –40°C (–40°F) for LCD indicators

Upper limit: +85°C (+185°F)

Pressure limits

Overpressure limits (without damage to the transmitter)

Lower limit

– 0.5kPa abs, 5mbar abs, 0.07psia for silicone oil

– 40kPa abs, 400mbar abs, 5.8psia for inert fluid

Upper limit

– 0.6MPa, 6bar, 87psi for sensor code A

– 16MPa, 160bar, 2320psi or 25MPa, 250bar, 3625psi or 41MPa, 410bar, 5945psi according to selected code variant.

Static pressure

Transmitters for differential pressure model 265DS operates within specifications between the following limits

Lower limit

– 3.5kPa abs, 35mbar abs, 0.5psia for silicone oil

– 40kPa abs, 400mbar abs, 5.8psia for inert fluid

Upper limit

– 0.6MPa, 6bar, 87psi for sensor code A

– 16MPa, 160bar, 2320psi or 25MPa, 250bar, 3625psi or 41MPa, 410bar, 5945psi according to selected code variant.

Proof pressure

The transmitter can be exposed without leaking to line pressure of up 1.5 times the nominal pressure simultaneously on both sides.

Environmental limits

Electromagnetic compatibility (EMC)

Definition	Class 3
Radio suppression (according to EN 550011)	Limit class B
Fulfills NAMUR recommendation	

Low voltage directive

Comply with 73/23/EEC

Pressure equipment directive (PED)

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

Humidity

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

Vibration resistance

Accelerations up to 2g at frequency up to 1000Hz (according to IEC 60068–2–26)

Shock resistance (according to IEC 60068–2–27)

Acceleration:	50g
Duration:	11ms

Wet and dust-laden atmospheres

The transmitter is dust and sand tight and protected against immersion effects as defined by IEC EN60529 (1989) to IP 67 (IP 68 on request) or by NEMA to 4X or by JIS to C0920.

Hazardous atmospheres

– Transmitters of the type of protection "Intrinsically safe EEx ia" according to the directions 94 / 9 / EC (ATEX)
Transmitter with 4 to 20mA output signal and HART communication
Marking (DIN EN 50 014): II 1/2 GD T50°C EEx ia IIC T6 or resp.
II 1/2 GD T95°C EEx ia IIC T4
Supply and signal circuit type of protection Intrinsic Safety EEx ib IIB/IIC resp. EEx ia IIB/IIC
for connection to supply units with maximum values:
II 1/2 GD T50°C EEx ia resp. ib IIC T6 resp.
II 1/2 GD T95°C EEx ia resp. ib IIC T4
for Temperature class T4 resp. T95°C:
Ui = 30V
Ii = 200mA
Pi = 0.8W for T4 with Ta = (–40 to +85)°C / (–40 to +185)°F
Pi = 1.0W for T4 with Ta = (–40 to +70)°C / (–40 to +158)°F
for Temperature class T6 resp. T50°C:
Pi = 0.7W for T6 with Ta = (–40 to +40)°C / (–40 to +104)°F
effective internal capacitance, Ci ≤ 10nF
effective internal inductance, negligible.
Fieldbus transmitters (PROFIBUS PA / FOUNDATION Fieldbus)
Marking (DIN EN 50 014): II 1/2 GD T50°C EEx ia IIC T6 or resp.
II 1/2 GD T95°C EEx ia IIC T4
Supply and signal circuit type of protection Intrinsic Safety EEx ib IIB/IIC resp. EEx ia IIB/IIC
for connection to FISCO supply units with rectangular or trapezoidal characteristics with maximum values:
II 1/2 G EEx ia respectively ib IIC T4/T6
Ui = 17.5V Ii = 360mA Pi = 2.52W

II 1/2 G EEx ia respectively ib IIB T4/T6
Ui = 17.5V Ii = 380mA Pi = 5.32W

resp. for connection to supply unit or barrier with linear characteristics with maximum values:
II 1/2 G EEx ia respectively ib IIC T4/T6
Ui = 24V Ii = 250mA Pi = 1.2W
effective internal inductance Li ≤ 10 µH,
effective internal capacitance Ci ≈ 0
Maximum permissible ambient temperatures depending on the temperature class:
T4: –40°C to +85°C (–40°F to +185°F)
T5, T6: –40°C to +40°C (–40°F to +104°F)

– Transmitters of the type of protection "flameproof enclosure EEx d" according to the directions 94 /9 / EC (ATEX)
Transmitter with 4 to 20mA output signal and HART communication and Fieldbus transmitters (PROFIBUS PA / FOUNDATION Fieldbus)
Marking (DIN EN 50 014): II 1/2 G EEx d IIC T6
Ambient temperature range: –40°C to +75°C (–40°F to +167°F)

– Transmitters of category 3 for the application in "Zone 2"
Transmitter with 4 to 20mA output signal and HART communication according to the directions 94 / 9 / EC (ATEX)
Marking (DIN EN 50 014): II 3 GD T50°C EEx nL IIC T6 or resp.
II 3 GD T95°C EEx nL IIC T4
Operating conditions:
Supply and signal circuit (terminals signal +/-): U ≤ 45V
I ≤ 22.5mA
Ambient temperature range:
Temperature class T4 Ta=–40°C to +85°C (–40°F to +185°F)
Temperature class T5, T6 Ta=–40°C to +40°C (–40°F to +104°F)

– Factory Mutual (FM)
Transmitter with 4 to 20mA 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 (indoor or outdoor)

Permissible ambient temperature depending on temperature class

U_{max} = 30V, Ci = 10.5nF, Li = 10µH			
Ambient Temperature	**Temperature class**	**I_{max}**	**Pi**
–40 to +85° C (–40 to +185° F)	T4	200mA	0.8W
–40 to +70° C (–40 to +129° F)	T4	200mA	1W
–40 to +40° C (–40 to +104° F)	T5	25mA	0.75W
–40 to +40° C (–40 to +104° F)	T6	25mA	0.5W

Fieldbus transmitters (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 to 20mA output signal and HART communication and Fieldbus transmitters (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 (indoor or outdoor)

– Canadian Standard (CSA)
Transmitter with 4 to 20mA output signal and HART communication and Fieldbus transmitters (PROFIBUS PA/FOUNDATION Fieldbus)
Explosion-Proof: Class I; Division 1; Groups B, C, D
Class II; Division 1; Groups E, F, G
Class III
Degree of protection : NEMA Type 4X (indoor or outdoor)

Overfill protection for non-inflammable and inflammable toxic liquids 265DS as a part of overfill protection on vessels for water polluting and flammable liquids.

Flammable liquids: only when combined with intrinsic safety code E1
Total pressure up to 4 MPa, 40 bar, 580 psi
Process temperature limits: –40 to +85°C (–40 to +185°F)
Fill fluid: Silicone oil
Approval: Z-65.11-271

Electrical Characteristics and Options

HART digital communication and 4 to 20mA output

Power Supply

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

Minimum power supply is 14VDC with backlit indicator.

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

Ripple

Maximum permissible voltage ripple of power supply during the communication:

7Vpp at f = 50 to 100Hz

1Vpp at f = 100 to 200Hz

0.2Vpp at f = 200 to 300Hz

Load limitations

4 to 20mA and HART total loop resistance :

$$R(k\Omega) = \frac{\text{Supply voltage} - \text{min. operating voltage (VDC)}}{22.5\ \text{mA}}$$

A minimum of 250Ω is required for HART communication.

Integral display (optional)

2-line, 6-character 19-segment alphanumeric display with additional bar chart display, optionally with back illumination. User-specific display:

percentage of the output current or

output current in mA or

free process variable

Diagnostic message, alarms, measuring range infringements and changes in the configuration are also displayed.

Output signal

Two–wire 4 to 20mA, user-selectable for linear or square root output, power of $^3/_2$ or $^5/_2$, freely programmable with 20 reference points output.

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

Output current limits (to NAMUR standard)

Overload condition

- Lower limit: 3.8mA (configurable down to 3.5mA)
- Upper limit: 20.5mA (configurable up to 22.5mA)

Alarm current

Min. alarm current:	configurable from 3.5mA to 4mA, standard setting: 3.6mA
Max. alarm current:	configurable from 20mA to 22.5mA, standard setting: 21mA
Standard setting:	max. alarm current

SIL - Functional Safety (optional)

according to IEC 61508 / 61511 Device with Declaration of SIL Conformity for use in safety related applications up to SIL2.

PROFIBUS PA output

Device type

Pressure transmitter compliant to Profile 3.0 Class A & B; ident. number 04C2 HEX.

Power supply

The transmitter operates from 10.2 to 32VDC with no polarity.

For EEx ia approval power supply must not exceed 17.5VDC. Intrinsic safety installation according to FISCO model.

Current consumption

operating (quiescent): 11.7mA

fault current limiting: 17.3mA max.

Output signal

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

Output interface

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

Output update time

40ms

Function blocks

2 standard Analog Input Function Block,

1 Transducer Block, 1 Physical Block

Integral display

2-line, 6-character 19-segment alphanumeric display with additional bar chart display, optionally with back illumination. User-specific display:

percentage of the output or

OUT (analog input function block)

Diagnostic message, alarms, measuring range infringements and changes in the configuration are also displayed.

Transmitter failure mode

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

FOUNDATION Fieldbus output

Power supply

The transmitter operates from 10.2 to 32VDC polarity independent.

For EEx ia approval power supply must not exceed 24VDC (entity certification) or 17.5VDC (FISCO certification), according to FF–816.

Current consumption

operating (quiescent): 11.7mA

fault current limiting: 17.3mA max.

Output signal

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

Function blocks/execution period

2 Standard Analog Input Function Block / 25ms max

1 Standard PID Function Block

Additional blocks

1 manufacturer specified 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 to standard H1, compliant to specification V. 1.5; FF registration in progress.

Integral display

2-line, 6-character 19-segment alphanumeric display with additional bar chart display, optionally with back illumination. User-specific display:

percentage of the output or

OUT (analog input)

Diagnostic message, alarms, measuring range infringements and changes in the configuration are also displayed.

Transmitter failure mode

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

Performance specifications

Stated at reference condition to IEC 60770 ambient temperature of 20°C (68°F), relative humidity of 65%, atmospheric pressure of 1013hPa (1013mbar), mounting position with vertical diaphragm and zero based range for transmitter with isolating diaphragms in Hastelloy and silicone oil fill and HART digital trim values equal to 4–20mA span end points, in linear mode.

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

Some performance data (based to URL) are affected by the actual turndown (TD) as ratio between Upper Range Limit (URL) and calibrated span.

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

Dynamic performance (according to IEC 61298–1 definition)

Standard configuration for instruments with turndown up to 30:1 and linear output characteristics.

Dead time: 30ms

Time constant (63.2% of total step change):

– sensors F to R: 150ms

– sensor C: 400ms

– sensor A: 1000ms

Accuracy rating

% of calibrated span, including combined effects of terminal based linearity, hysteresis and repeatability.

For fieldbus versions SPAN refer to Analog Input Function Block outscale range

For differential pressure sensor
– ±0.04% for TD from 1:1 to 10:1

– $\pm(0.04 + 0.005 \times \frac{URL}{Span} - 0.05)\%$ for TD greater than 10:1

For absolute pressure sensor
– 80kPa, 800mbar, 321inH_2O
– 1.2kPa, 12mbar, 4.8inH_2O (for sensor code A using 0.6kPa, 6bar, 87psi absolute sensor).

Operating influences

Ambient temperature (for turndown up to 15:1)

per 20K (36°F) change between the limits of –20°C to +65°C (–4 to +150°F)

for differential pressure sensor

– ±(0.03% URL + 0.05% span)

per 120K (216°F) change between the limits of –40°C to +80°C (–40°F to +176°F)

Thermal change for absolute pressure sensor.

– on zero

for sensors C, F, L, N, R: 40kPa, 400mbar, 160inH_2O (absolute sensor of 41MPa, 410bar, 5945psi)

for sensor A: 0.6kPa, 6mbar, 2.4inH_2O (absolute sensor of 0.6MPa, 6bar, 87psi)

– on span

for sensors C, F, L, N, R: 0.3kPa, 3bar, 43.5psi (absolute sensor of 41MPa, 410bar, 5945psi)

for sensor A: 4.5kPa, 45mbar, 18inH_2O (absolute sensor of 0.6MPa, 6bar, 87psi)

Static pressure (zero errors can be calibrated out at line pressure)

Measuring range	Sensor A	Sensors C, F, L, N	Sensor R
on zero	up to 2bar: 0.05% URL	up to 100bar: 0.05% URL	up to 100bar: 0.1% URL
	> 2bar: 0.05% URL/bar	> 100bar: 0.05%URL/100bar	> 100bar: 0.1% URL/100bar
on span	up to 2bar: 0.05% span	up to 100bar: 0.05% span	up to 100bar: 0.1% span
	> 2bar: 0.05% span/bar	> 100bar: 0.05%span/100bar	> 100bar: 0.1% span/100bar

Supply voltage

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

Load

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

Electromagnetic field

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

Common mode interference

No effect from 250Vrms @ 50Hz, or 50VDC

Mounting position

Rotations in plane of diaphragm have negligible effect. A tilt from vertical causes a zero shift of sin α x 0.35kPa (3.5 mbar, 1.4inH_2O) of URL which can be corrected with the zero adjustment. No span effect.

Stability

±0.15% of URL over a sixty-month period

Vibration effect

±0.10% of URL (according to IEC 61298–3)

Physical Specification

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

Materials

Process isolating diaphragms (*)

AISI 316 L ss; Hastelloy C276™; Monel 400™; Tantalum.

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

AISI 316 L ss; Hastelloy C276™; Monel 400™, Kynar (PVDF)

Sensor fill fluid

Silicone oil; inert fill (Carbon Fluoride).

Mounting bracket

AISI 316 L ss.

Gaskets (*)

Viton™; Perbunan (NBR); EPDM;

PTFE (for sensors C, F, L, N, R) or FEP coated Viton™ (for sensor A)

Sensor housing

AISI 316 L ss.

Bolts and nuts

Stainless steel bolts and nuts Class A4–70 per ISO 3506, in compliance with NACE MR0175 Class II.

Electronic housing and covers

Barrel version

– Low-copper content aluminium alloy with baked epoxy finish;

– AISI 316 L ss.

DIN version

– Low-copper content aluminium alloy with baked epoxy finish.

Covers O-ring

Viton™.

Local zero and span adjustments

Glass filled polycarbonate plastic (removable).
No local zero and span adjustments with housing made of stainless steel.

Tagging

AISI 316ss or plastic data plate attached to the electronics housing.

Calibration

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

Optional: at specified range and ambient conditions.

™ Hastelloy is a Cabot Corporation trademark

™ Monel is an International Nickel Co. trademark

™ Viton is a Dupont de Nemour trademark

Optional extras

Mounting brackets

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

Integral display

plug-in rotatable LCD indicator.

Supplemental customer tag

AISI 316 ss tag fastened to the transmitter with stainless steel wire for customer's tag data up to a maximum of 30 characters and spaces.

Surge protection (optional)

Up to 4kV

– voltage 1.2 μs rise time / 50 μs delay-time to half value

– current 8 μs rise time / 20 μs delay-time to half value

not available with ATEX-EEx nL or PROFIBUS PA / FOUNDATION Fieldbus with Intrinsic Safety EEx i or FM-Intrinsically Safe.

Cleaning procedure for oxygen service

Hydrogen preparation

Test Certificates (test, design, calibration, material traceability)

Tag and manual language

Process connections

on flanges: 1/4 - 18NPT on process axis selectable with 7/16 –20 UNF fixing threads or DIN 19213 connection with M10 fixing threads for working pressure up to 16MPa, 160bar , 2320psi or M12 fixing threads for greater working pressure up to 41MPa, 410bar, 6000psi

on adapters: 1/2 - 14NPT on process axis

centre distance: 54mm (2.13in) on flange;
51,54 or 57mm (2.01, 2.13 or 2.24in) as per adapters fittings.

Electrical connections

Two 1/2 - 14NPT or M20x1.5 threaded conduit entries, direct on housing, or plug connector:

– HART: straight or angle Harting Han 8U connector and one plug.

– PROFIBUS PA, FOUNDATION Fieldbus : M12x1 or 7/8in (without mating female plug)

Terminal block

HART version: four terminals for signal/external meter wiring up to 2.5mm^2 (14AWG) and four connection points for test and communication purposes.

Fieldbus versions: two terminals for signal (bus connection) wiring up to 2.5mm^2 (14AWG).

Grounding

Internal and external 4mm^2 (12AWG) ground termination points are provided.

Mounting position

Transmitter can be mounted in any position.
Electronics housing may be rotated by 360°. A positive stop prevents over travel.

Mass (without options)

3.5kg approx (8lb); add 1.5kg (3.4lb) for AISI housing.
Add 650g (1.5lb) for packing.

Packing

Carton 23 x 25 x 27cm approx (9 x 10 x 11in).

(*) Wetted parts of the transmitter.

Configuration

Transmitter with HART communication and 4 to 20 mA

Standard configuration

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

4 mA	Zero
20 mA	Upper Range Limit (URL)
Output	Linear
Damping	0.125s
Transmitter failure mode	21mA
Optional LCD-indicator	0 to 100% linear

Any or all the above configurable parameters, including Lower range–value and Upper range-value can be easily changed using the HART hand–held communicator or by a PC, running the configuration software SMART VISION with DTM for 2600T.
The transmitter database is customized with specified flange type and material, o–ring and filling liquid.

Transmitter with PROFIBUS PA communication

Transmitters are factory calibrated to customer's specified range. Calibrated range and tag number are stamped on the type plate. If calibration range and tag data are not specified, the transmitter will be supplied 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
Hi-Hi Limit	Upper Range Limit (URL)
Hi Limit	Upper Range Limit (URL)
Low Limit	Lower Range Limit (LRL)
Low-Low Limit	Lower Range Limit (LRL)
Limits hysteresis	0.5% of output scale
PV filter	0.125s.
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.
The transmitter database is customized with specified flange type and material, o–ring and filling liquid.

Transmitter with FOUNDATION Fieldbus communication

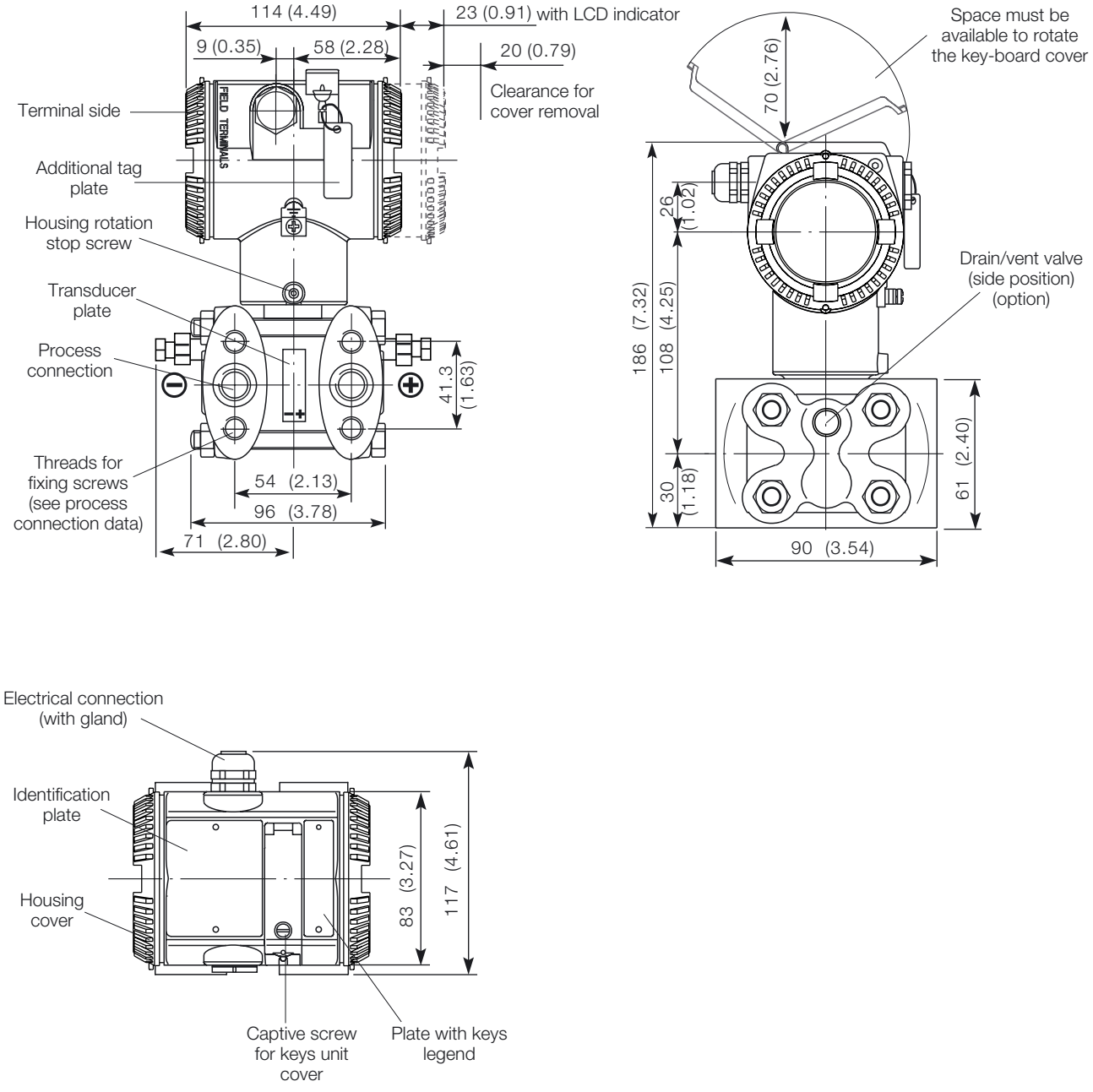
Transmitters are factory calibrated to customer's specified range. Calibrated range and tag number are stamped on the type plate. If calibration range and tag data are not specified, the transmitter will be supplied configured as follows:

Measure Profile	Pressure
Engineering Unit	mbar/bar
Output scale 0%	Lower Range Limit (LRL)
Output scale 100%	Upper Range Limit (URL)
Output	Linear
Hi-Hi Limit	Upper Range Limit (URL)
Hi Limit :	Upper Range Limit (URL)
Low Limit	Lower Range Limit (LRL)
Low-Low Limit	Lower Range Limit (LRL)
Limits hysteresis	0.5% of output scale
PV filter	0.125s
Address	Not necessary

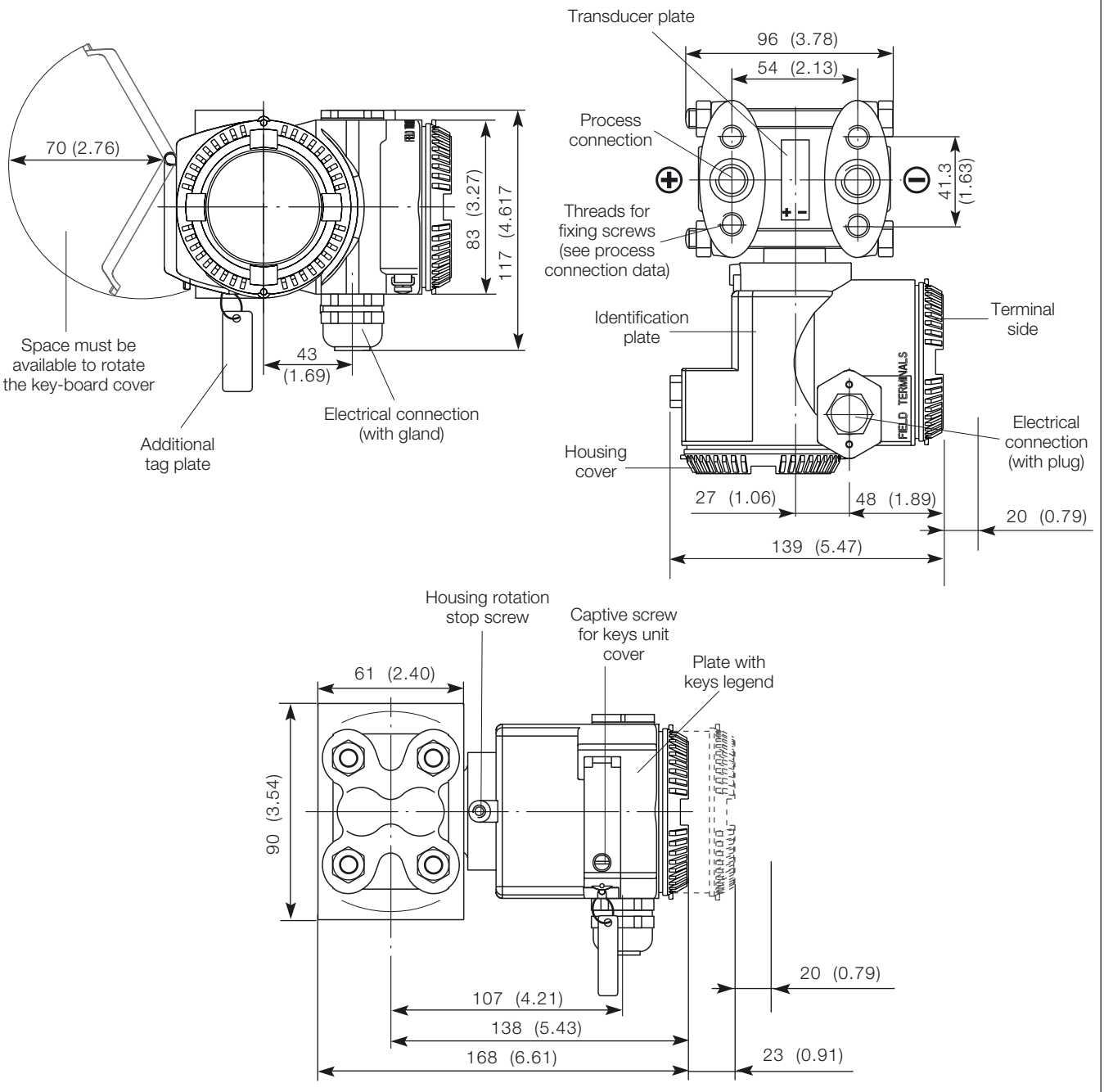
Any or all the above configurable parameters, including lower range value and upper range value can be changed by any FOUNDATION Fieldbus compatible configurator.
The transmitter database is customized with specified flange type and material, o–ring and filling liquid.

MOUNTING DIMENSIONS (not for construction unless certified) - dimensions in mm (in)

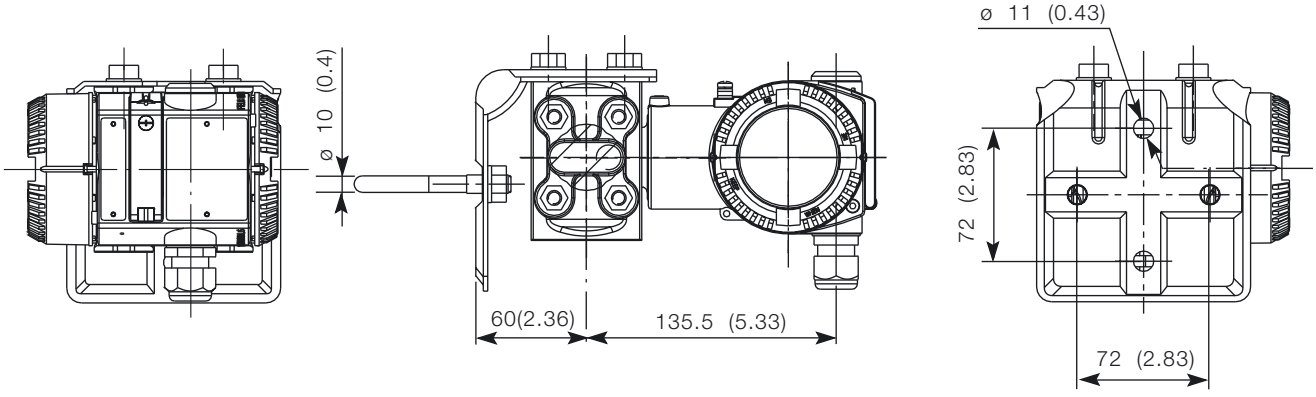
Transmitter with barrel housing

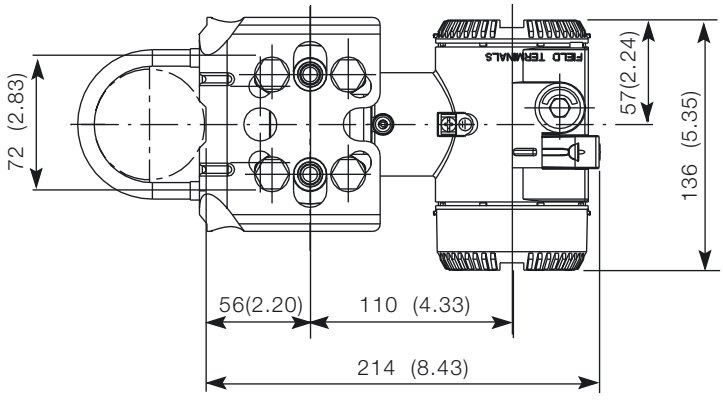


Transmitter with DIN housing

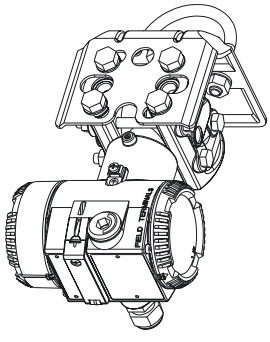


Possible mounting with bracket

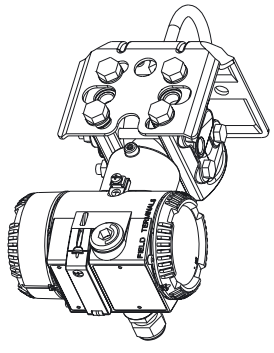




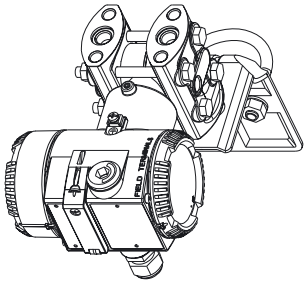
Vertical pipe mounting



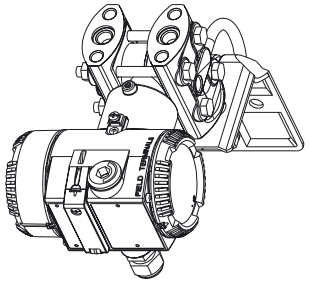
Horizontal pipe mounting



Vertical pipe mounting and transmitter above the mounting bracket

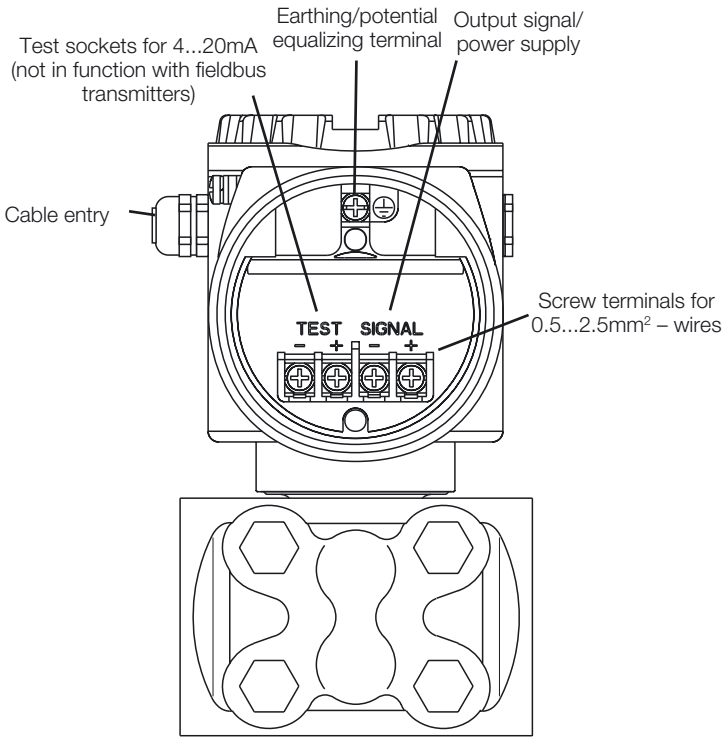


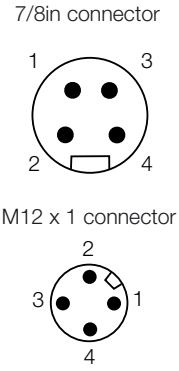
Horizontal pipe mounting and transmitter above the mounting bracket



Electrical connections

Standard Terminal block and fieldbus connector versions

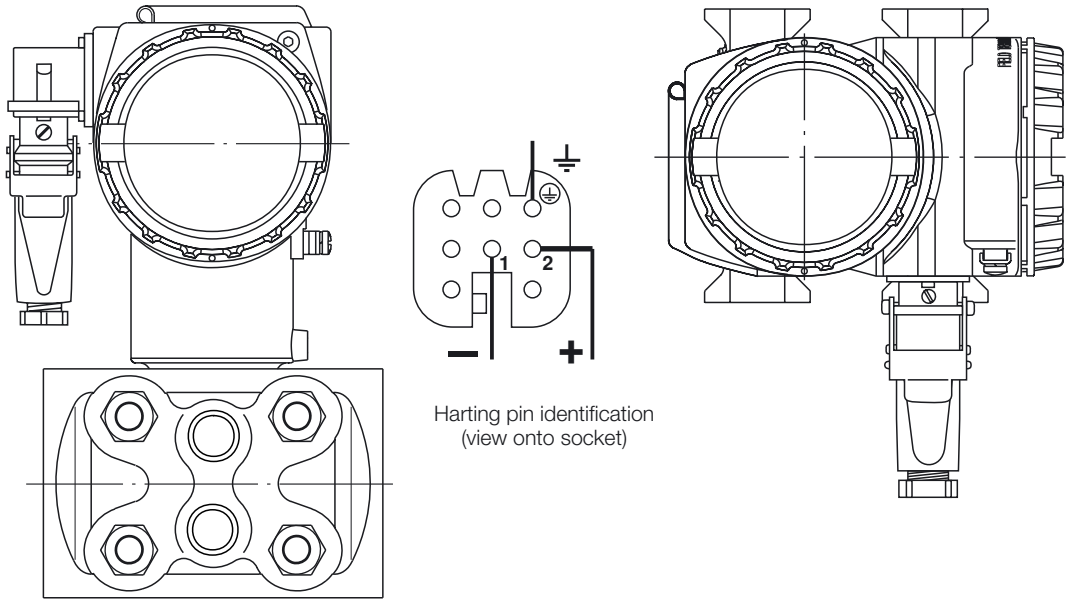




PIN (male) IDENTIFICATION		
	FOUNDATION Fieldbus	**PROFIBUS PA**
1	FF-	PA+
2	FF+	GROUND
3	SHIELD	PA–
4	GROUND	SHIELD

Mating female plug NOT SUPPLIED

Harting Han 8U connector



Harting pin identification
(view onto socket)

BASIC ORDERING INFORMATION model 265DS Differential Pressure Transmitter

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

BASE MODEL – 1st to 5th characters						**2**	**6**	**5**	**D**	**S**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Differential Pressure Transmitter – BASE ACCURACY 0.04%																	
SENSOR - Span limits – 6th character																	
0.05 and 1kPa	0.5 and 10mbar	0.2 and 4inH_2O									A						
0.2 and 6 kPa	2 and 60mbar	0.8 and 24inH_2O									C						
0.4 and 40kPa	4 and 400mbar	1.6 and 160inH_2O									F						
2.5 and 250kPa	25 and 2500mbar	10 and 1000inH_2O									L						
20 and 2000kPa	0.2 and 20bar	2.9 and 290psi									N						
100 and 10000kPa	1 and 100bar	14.5 and 1450psi									R						
Static pressure value – 7th character																	
0.6MPa	6bar	87psi	(Note 1)									M					
1MPa	10bar	145psi	(Note 2, 3)									Y					
16MPa	160bar	2320psi	(Note 2)									C					
25MPa	250bar	3625psi	(Note 2)									Z					
41MPa	410bar	5945psi	(Note 2)									T					
Diaphragm material / Fill fluid (wetted parts) – 8th character																	
AISI 316 L ss		Silicone oil									NACE	S					
Hastelloy C276™		Silicone oil									NACE	K					
Monel 400™		Silicone oil									NACE	M					
Monel 400™ gold plated		Silicone oil									NACE	V					
Tantalum		Silicone oil									NACE	T					
AISI 316 L ss		Inert fluid	(Note 4)								NACE	A					
Hastelloy C276™		Inert fluid	(Note 4)								NACE	F					
Monel 400™		Inert fluid	(Note 4)								NACE	C					
Monel 400™ gold plated		Inert fluid	(Note 4)								NACE	Y					
Tantalum		Inert fluid	(Note 4)								NACE	D					
Process flanges/adapters material and connection (wetted parts) – 9th character																	
AISI 316 L ss (Horizontal connection)		1/4 – 18 NPT-f direct (7/16 – 20 UNF U.S. drilling)									NACE		A				
AISI 316 L ss (Horizontal connection)		1/4 – 18 NPT-f direct (DIN 19213)									NACE		C				
AISI 316 L ss (Horizontal connection)		1/2 – 14 NPT-f through adapter (7/16 – 20 UNF U.S. drilling)									NACE		B				
Hastelloy C276™ (Horizontal connection)		1/4 – 18 NPT-f direct (7/16 – 20 UNF U.S. drilling)									NACE		D				
Hastelloy C276™ (Horizontal connection)		1/4 – 18 NPT-f direct (DIN 19213)									NACE		F				
Hastelloy C276™ (Horizontal connection)		1/2 – 14 NPT-f through adapter (7/16 – 20 UNF U.S. drilling)									NACE		E				
Monel 400™ (Horizontal connection)		1/4 – 18 NPT-f direct (7/16 – 20 UNF U.S. drilling)									NACE		G				
Monel 400™ (Horizontal connection)		1/4 – 18 NPT-f direct (DIN 19213)									NACE		L				
Monel 400™ (Horizontal connection)		1/2 – 14 NPT-f through adapter (7/16 – 20 UNF U.S. drilling)									NACE		H				
Kynar (PVDF) (Horizontal connection) MWP=1MPa,10bar		1/4 – 18 NPT-f direct (7/16 – 20 UNF U.S. drilling)											P				
Bolts/Gasket (wetted parts) – 10th character																	
Stainless steel (NACE)		Viton™	(Note 4)								NACE			3			
Stainless steel (NACE)		PTFE (MWP 25 MPa)									NACE			4			
Stainless steel (NACE)		EPDM									NACE			5			
Stainless steel		Perbunan												6			
Housing material and electrical connection – 11th character																	
Aluminium alloy (Barrel version)		1/2 – 14 NPT													A		
Aluminium alloy (Barrel version)		M20 x 1.5 (CM 20)		(Not available FM, CSA)											B		
Aluminium alloy (Barrel version)		Harting Han 8U connector		(Not available ATEX EExd, FM, CSA)								(Note 5)			E		
Aluminium alloy (Barrel version)		Fieldbus connector		(Not available ATEX EExd, FM, CSA)								(Note 5)			G		
AISI 316 L ss (Barrel version)		1/2 – 14 NPT													S		
AISI 316 L ss (Barrel version)		M20 x 1.5 (CM20)		(Not available FM, CSA)											T		
Aluminium alloy (DIN version)		M20 x 1.5 (CM 20)		(Not available FM, CSA)											J		
Aluminium alloy (DIN version)		Harting Han 8U connector		(Not available ATEX EExd, FM, CSA)								(Note 5)			K		
Aluminium alloy (DIN version)		Fieldbus connector		(Not available ATEX EExd, FM, CSA)								(Note 5)			W		
Output/Additional options – 12th character																	
HART digital communication and 4 to 20mA		No additional options			(Notes 6, 7)												H
HART digital communication and 4 to 20mA		Options requested (to be ordered by "Additional ordering code")			(Note 6)												1
PROFIBUS PA		No additional options			(Notes 6, 7)												P
PROFIBUS PA		Options requested (to be ordered by "Additional ordering code")			(Note 7)												2
FOUNDATION Fieldbus		No additional options			(Notes 6, 7)												F
FOUNDATION Fieldbus		Options requested (to be ordered by "Additional ordering code")			(Note 7)												3

ADDITIONAL ORDERING INFORMATION for model 265DS

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

					XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
Drain/vent valve (material and position) (wetted parts)															
AISI 316 L ss	on process axis	(Note 8)	NACE	V1											
AISI 316 L ss	on flange side top	(Note 8)	NACE	V2											
AISI 316 L ss	on flange side bottom	(Note 8)	NACE	V3											
Hastelloy C276™	on process axis	(Note 9)	NACE	V4											
Hastelloy C276™	on flange side top	(Note 9)	NACE	V5											
Hastelloy C276™	on flange side bottom	(Note 9)	NACE	V6											
Monel 400™	on process axis	Note 10)	NACE	V7											
Monel 400™	on flange side top	Note 10)	NACE	V8											
Monel 400™	on flange side bottom	Note 10)	NACE	V9											
Electrical certification															
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										
Factory Mutual (FM) – Intrinsically Safe					EA										
Factory Mutual (FM) – Explosion Proof (only with 1/2 – 14NPT electrical connection and stainless steel label)					EB										
Canadian Standard Association – Intrinsically Safe (pending)					ED										
Canadian Standard Association – Explosion Proof					EE										
Integral LCD															
Digital LCD integral display						L1									
Backlit digital LCD integral display						L2									
Mounting bracket (shape and material)															
For pipe mounting	AISI 316 L ss						B2								
For wall mounting	AISI 316 L ss						B4								
Surge															
Surge/Transient Protector	(Note 11)								S1						
Operating manual															
German										M1					
Labels & tag language															
German in stainless steel (not available with DIN Electronic Housing code J, K, W)											T1				
German and English plastic (not suitable for Factory Mutual - Explosion Proof)											TA				
Additional tag plate															
In stainless steel												I1			
Preparation procedure															
Oxygen service cleaning (only available with inert fill and Viton gasket – P_{max}=12MPa/120bar/1740psi; T_{max}=60° C/140° F)													P1		
Hydrogen service preparation (fluid film)													P2		
Certificates															
Inspection certificate EN 10204–3.1.B of calibration														C1	
Inspection certificate EN 10204–3.1.B of the cleanliness stage according to DIN 25410														C3	
Inspection certificate EN 10204–3.1.B of helium leakage test of the sensor module														C4	
Inspection certificate EN 10204–3.1.B of the pressure test														C5	
Certificate of compliance with the order EN 10204–2.1 of instrument design														C6	
Germanischer Lloyd approval														C8	
Overfill protection			(Note 12)											C9	
SIL2 - classification														CL	
Material traceability															
Certificate of compliance with the order EN 10204–2.1 of process wetted parts															H1
Inspection certificate EN 10204–3.1.B of process wetted parts (small parts with certificate of compliance EN 10204)															H3
Test report EN 10204-2.2 of the pressure bearing and process wetted parts															H4
Connector															
Fieldbus 7/8in (without mating female plug)		Recommended for FOUNDATION Fieldbus		(Notes 7, 13)											U1
Fieldbus M12x1 (without mating female plug)		Recommended for PROFIBUS PA		(Notes 7, 13)											U2
Harting Han 8U – straight entry				(Notes 6, 13)											U3
Harting Han 8U – angle entry				(Notes 6, 14)											U4

Note 1: Not available with sensor code C, F, L, N, R

Note 2: Not available with sensor code A

Note 3: MUST BE USED FOR KYNAR FLANGE ONLY CODE P

Note 4: Suitable for oxygen service

Note 5: Select type in additional ordering code

Note 6: Not available with Electronic Housing code G, W

Note 7: Not available with Electronic Housing code E, K

Note 8: Not available with Process flanges/adapters code D, E, F, G, H, L, P

Note 9: Not available with Process flanges/adapters code A, B, C, G, H, L, P

Note 10: Not available with Process flanges/adapters code A, B, C, D, E, F, P

Note 11: Not available with ATEX-EEx nL (code E3) or PROFIBUS PA / FOUNDATION Fieldbus (code 2 or 3) with Intrinsic Safety EEx ia (code E1) or FM-Intrinsically Safe (code EA).

Note 12: Not available with sensor code A, N, R

Note 13: Not available with Electronic housing code T, S, A, B, J, E

Note 14: Not available with Electronic housing code T, S, A, B, J, K

™ Hastelloy is a Cabot Corporation trademark

™ Monel is an International Nickel Co. trademark

™ Viton is a Dupont de Nemour trademark

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

– Adapters supplied loose
– Plug on axis (no drain/vent valves)
– General purpose (no Ex design)
– No meter/display, no mounting bracket, no surge protection
– English manual and labels (stainless steel nameplate for Barrel housing code A, B, E, G, S, T; plastic nameplate for DIN housing code J, K, W)
– Configuration with kPa and deg. C units
– No test, inspection or material traceability certificates

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

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