Data Sheet
SS/265DC_1

Field^{IT}

2600T Series Pressure Transmitters

Model 265DC Differential
with flanged direct mount seal

Industrial^{IT} enabled™

- **Base accuracy : ±0.04%**
- **Span limits**
  – 1 to 10000kPa; 4inH_2O to 1450psi
- **Reliable sensing system coupled with very latest digital technologies**
- **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
- **Broad selection of variants, options, fill fluids and wetted materials**
  – allows total flexibility maximizing cost-effective aspect, also providing applications with critical process media at extended temperature range
- **PED compliance to sound engineering practice (SEP)**



ABB 2600T Series
Engineered solutions
for all applications

ABB

General Description

Model 265DC detailed in this data sheet apply for those transmitters which include on high pressure measuring side, a direct mount seal which is integral to the transducer by a short capillary connection inside a protective rigid tube.

This construction forms a standalone single assembly suitable to be mounted to the process by the seal mounting facilities.

By properly selecting the high and low pressure side variant in the ordering codes model 265DC can be in the following versions :

a) one direct mount seal and one flange for process connection, 1/4in NPT direct or 1/2in NPT through adapter; this allows also to connect the other leg (wet or dry) for differential measurement.
b) one direct mount seal and one remote seal with capillary; the two seals allow again a differential measurement and must be selected of same type/size.

Refer to seal data sheet for all data and details relevant to seal element. The following table list the types of standard seal which can be mounted with 265DC transmitters.

Seal type	Size
Flanged flush diaphragm	2in / DN50 3in / DN80
Flanged extended diaphragm	2in / DN50 3in / DN80

All following specification data apply for identical characteristics of the two seals when the transmitter has the remote seal in addition to the direct mount one.

Functional Specifications

Range and span limits

Sensor Code	Upper Range Limit (URL)	Lower Range Limit (LRL)	Minimum Span			
			Direct mount seal only DN50	Direct mount seal only DN80	Direct mount and one remote seal (max.length=16m) DN50	Direct mount and one remote seal (max.length=16m) DN80
C	6kPa 60mbar 24inH_2O	–6kPa –60mbar –24inH_2O		1kPa 10mbar 4inH_2O	3kPa 30mbar 12inH_2O	1kPa 10mbar 4inH_2O
F	40kPa 400mbar 160inH_2O	–40kPa –400mbar –160inH_2O	10kPa 100mbar 40inH_2O	1.3kPa 13.3mbar 5.3inH_2O	3kPa 30mbar 12inH_2O	1.3kPa 13.3mbar 5.3inH_2O
L	250kPa 2500mbar 1000inH_2O	–250kPa –2500mbar –1000inH_2O	10kPa 100mbar 40inH_2O	8.3kPa 83mbar 34inH_2O	8.3kPa 83mbar 34inH_2O	8.3kPa 83mbar 34inH_2O
N	2000kPa 20bar 290psi	–2000kPa –20bar –290psi	67kPa 0.4bar 9.7psi	67kPa 0.67bar 9.7psi	67kPa 0.67bar 9.7psi	67kPa 0.67bar 9.7psi
R	10000kPa 100bar 1450psi	–10000kPa –100bar –1450psi	333kPa 3.3bar 49psi	333kPa 3.3bar 49psi	333kPa 3.3bar 49psi	333kPa 3.3bar 49psi

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

Turn on time

Operation within specification in less than 1s with minimum damping.

Insulation resistance

> 100MΩ at 1000VDC (terminals to earth)

Operative limits

Temperature limits °C (°F) :

Filling Liquid	Id	Density at 20° C in Kg/m	Process temperature in° C (° F)		
			High pressure side at max. ambient temperature		Low pressure side (without remote seal)
			+40° C(+104° F)	+60° C (+140° F)	
Silicone oil	IB	924	–30 and +180 (–22 and +356)	–30 and +140 (–22 and +284)	-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
Silicone oil	IC	1055	–30 and +180 (–22 and +356)	–30 and +140 (–22 and +284)	
Carbon Fluoride	L	1880	–30 and +150 (–22 and +302)	–30 and +150 (–22 and +302)	
High-temperature Oil	IH	1070	–10 and +180 (+14 and +356)	–10 and +140 (+14 and +284)	
White Oil	WB	849	–10 and +180 (+14 and +356)	–10 and +140 (+14 and +284)	
Vacuumproof Design	IC-V	1055	–30 and +180 (–22 and +356)	–30 and +140 (–22 and +284)	

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.

Storage

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

Upper limit: +85°C (+185°F)

Filling Liquid	Id	Pressure rating in mbar abs.					
		20° C(68° F)	100° C (212° F)	150° C (302° F)	200° C (392° F)	250° C (482° F)	400° C (752° F)
Silicone oil	IB	> 500	> 500	> 500	> 750	> 1000	
Silicone oil	IC	> 500	> 500	> 500	> 750	> 1000	
Carbon Fluoride	L	> 1000	> 1000	> 1000			
High-temperature Oil	IH	> 500	> 500	> 500	> 750	> 1000	> 1000
White Oil	WB	> 500	> 1000	> 1000	> 1000	> 1000	
Vacuumproof Design	IC-V	> 5	> 25	> 38	> 50		

Pressure limits

- minimum pressure see table 'Pressure rating'

Overpressure limits (without damage to the transmitter)

– 4MPa, 40bar, 580psi for DIN PN16/PN40 flange

– 6.4MPa, 64bar, 930psi for DIN PN64 flange

– 10MPa, 100bar, 1450psi for DIN PN100 flange

– 2MPa, 20bar, 290psi for ANSI CL 150 flange

– 5MPa, 50bar, 725psi for ANSI CL 300 flange

– 10MPa, 100bar, 1450psi for ANSI CL 600 flange

Static pressure

– minimum pressure: see table 'Pressure rating'

– maximum pressure: see 'Overpressure limits'

Proof pressure

The transmitter can be exposed without leaking to line pressure of up to 40MPa, 400bar, 5900psi or two times the flange rating of seal, whichever is less (for temperature < 30°C/86°F).
Meet ANSI/ISA–S 82.03 hydrostatic test requirements and SAMA PMC 27.1.

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 265DC 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)
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.

Optional indicators

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 current or

output current in mA or

free process variable

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

Optional surge protection

Up to 4kV

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

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

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

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 Analog Input, 1 Transducer, 1 Physical

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 blocks/25ms max (each)

Additional blocks

1 custom 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 AISI 316 L ss or Hastelloy and silicone oil fill or ABB 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.

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, 32inH2O

Operating influences

Temperature effects

per 20K (36°F) ambient temperature change on transmitter sensor between the limits of –20°C to +65°C (–4 to +150°F) :

± (0.03% URL + 0.05% span)

additional effect per 20°C (36°F) ambient temperature change:

Seal type size	Error		
	kPa	mbar	inH_20
Flush 2in/DN50	0.03	0.3	0.12
Flush 3in/DN80	0.015	0.15	0.06
Extended 2in/DN50	0.06	0.6	0.24
Extended 3in/DN80	0.015	0.15	0.06

additional effect per 20°C (36°F) process temperature change on seal diaphragm:

Seal type size	Error		
	kPa	mbar	inH_20
Flush 2in/DN50	0.09	0.9	0.36
Flush 3in/DN80	0.02	0.2	0.08
Extended 2in/DN50	0.24	2.4	0.97
Extended 3in/DN80	0.02	0.2	0.08

Static pressure effect

Measuring range	Sensors C,F,L,N	Sensor R
* on zero	0.1%	0.1%
on span	0.05%	0.1%

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.

Radio frequency interference

Total effect : less than 0.05% of span from 20 to 1000MHz and for field strengths up to 10V/m when tested with shielded conduit and grounding, 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 0.35 kPa (3.5 mbar, 1.4 inH_2O) of URL which can be corrected with the zero adjustment. No span effect.

Stability

±0.10% of URL over a thirty-six-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

Low pressure side process isolating diaphragms (*)

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

A remote seal can be selected with required diaphragm (refer to high pressure side).

Low pressure side process flanges, adapters, plugs and drain/vent valves (*)

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

Bolts and nuts

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

Gaskets (*)

Viton™; PTFE; EPDM; Perbunan (NBR).

High pressure side process diaphragm (direct mount seal) (*)

AISI 316 L ss; Hastelloy C276™ , Tantalum;

AISI 316 L ss or Hastelloy C276™ with FEP coating;

Extension material

AISI 316 L ss; Hastelloy C276™; AISI 316 L ss or Hastelloy C276™ with FEP coating.

High pressure side fill fluid (direct mount seal)

Silicone oil; Inert fill (C.F.) Carbon fluoride; White oil; Silicone oil vacuum proof design; Silicone oil for high temperature.

Sensor fill fluid

Silicone oil; inert fill (Carbon Fluoride).

Sensor housing

AISI 316 L ss.

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).

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.

Optional extras

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

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

Communication connectors

Process connections

on flanges : $^{1}/_{4}$in NPT on process axis selectable with $^{7}/_{16}$in–20 UNF fixing threads or DIN 19213 connection with M12 fixing threads

on adapters : $^{1}/_{2}$in NPT on process axis

on mounting flange (seal side)

Flush and extended diaphragm flanged seal (**):
2in or 3in ANSI 150 to 600 RF;
DN50 or DN80 DIN PN16–100

Electrical connections

Two $^{1}/_{2}$ NPT or M20x1.5 threaded conduit entries, direct on housing.

Communication connector:

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

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

Terminal block

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

Fieldbus versions: two terminals for signal wiring (bus connection) 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)

12kg approx for transmitter plus 0.15Kg/m for capillary tube and approx. 3 / 5.5kg for flush diaphragm remote seal DN50 / DN80 - PN16/40 or
approx. 3.5 / 6.5kg for extended (50 mm) diaphragm remote seal DN50 / DN80 - PN16/40

Packing

Carton

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

Any or all the above configurable parameters, including Lower range–value and Upper range-value which must be the same unit of measure, can be easily changed using the HART 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 which must be the same unit of measure, 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 which must be the same unit of measure, 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.

™ Hastelloy is a Cabot Corporation trademark

™ Monel is an International Nickel Co. trademark

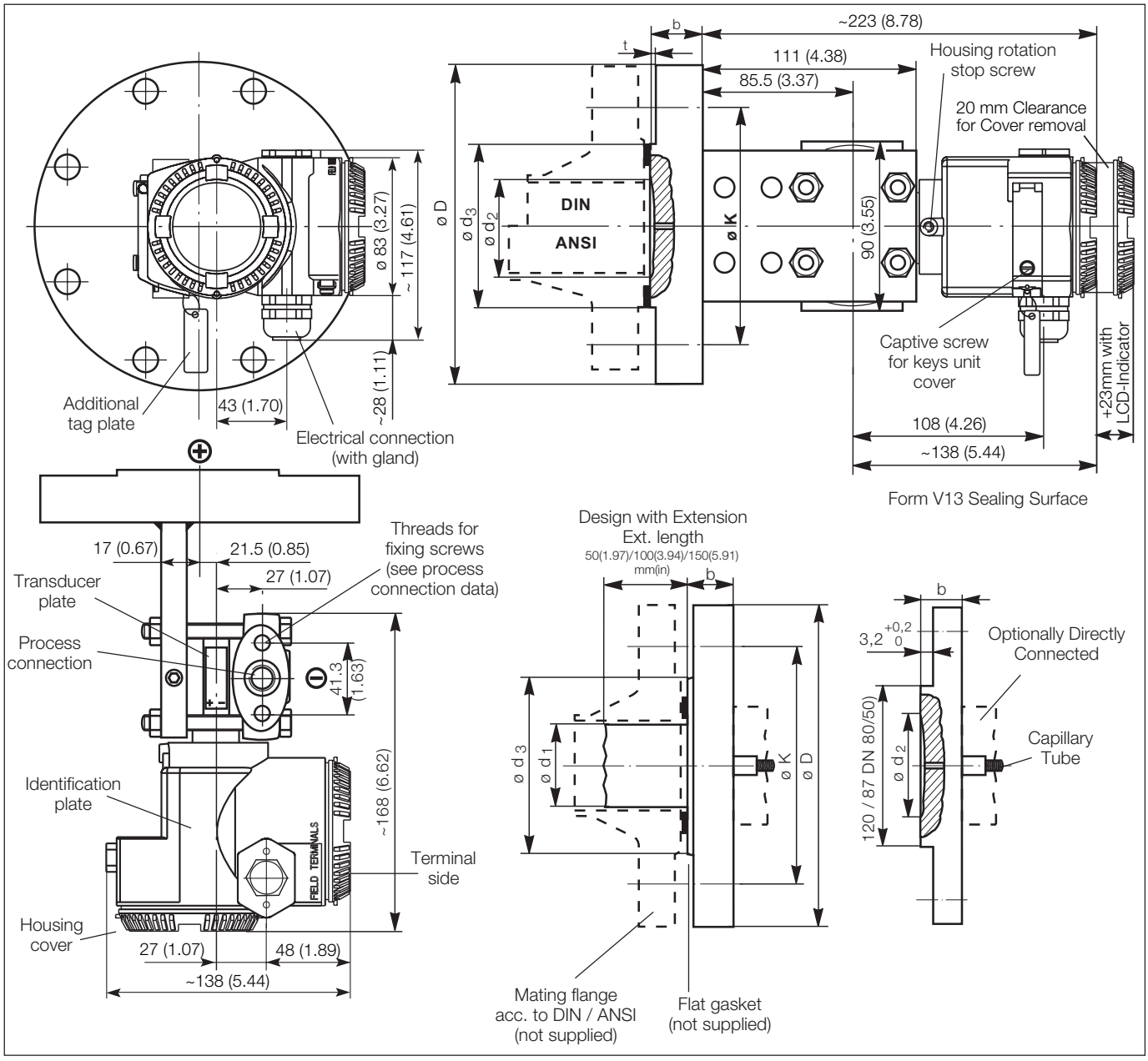
™ Viton is a Dupont de Nemour trademark

(*) Wetted parts of the transmitter.

(**) Bolts and nuts, gasket and mating flange supplied by customer

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

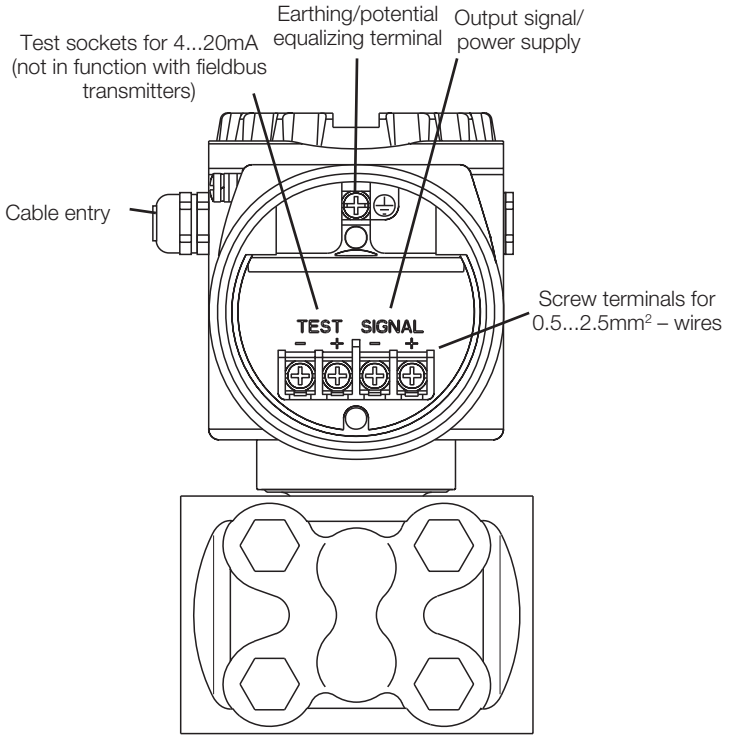
265DC with DIN-type amplifier housing

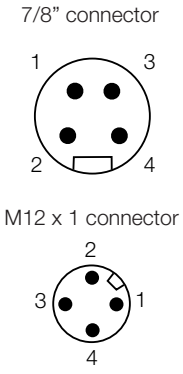


Nominal diameter Maximum Working Pressure	Dimensions mm (in)								
	D (dia)	K (dia)	Extension d1 (dia)	d2 (dia)	d3 (dia)	t	b	required screws	
								Number	Thread
DN50 PN16/40	185 (6.5)	125 (4.92)	51 (2)	57 (2.24)	102 (4.02)	3 (0.12) +0.5	20 (0.79)	4	M16
DN50 PN64	180 (7.09)	135 (5.31)	51 (2)	57 (2.24)	102 (4.02)	3 (0.12) +0.5	26 (1.02)	4	M20
DN50 PN100	195 (7.68)	145 (5.71)	51 (2)	57 (2.24)	102 (4.02)	3 (0.12) +0.5	28 (1.10)	4	M20
DN80 PN16/40	200 (7.88)	160 (6.3)	76 (3)	75 (2.95)	138 (5.43)	3 (0.12) +0.5	24 (0.94)	8	M18
DN80 PN64	215 (8.47)	170 (6.7)	76 (3)	75 (2.95)	138 (5.43)	3 (0.12) +0.5	28 (1.10)	8	M20
DN80 PN100	230 (9.06)	180 (7.09)	76 (3)	75 (2.95)	138 (5.43)	3 (0.12) +0.5	32 (1.26)	8	M24
2in ANSI Class 150	152.4 (6)	120.6 (4.75)	51 (2)	57 (2.24)	92.1 (3.63)	3 (0.12) +0.5	17.4 (0.69)	4	M18
2in ANSI Class 300	165.1 (6.5)	127.0 (5)	51 (2)	57 (2.24)	92.1 (3.63)	3 (0.12) +0.5	20.6 (0.81)	8	M18
2in ANSI Class 600	165.1 (6.5)	127.0 (5)	51 (2)	57 (2.24)	92.1 (3.63)	6.35 (0.25)	31.75 (1.25)	8	M18
3in ANSI Class 150	190.5 (7.5)	152.4 (6)	76 (3)	75 (2.95)	138 (5.43)	3 (0.12) +0.5	22.2 (0.87)	4	M16
3in ANSI Class 300	209.5 (8.25)	168.3 (6.63)	76 (3)	75 (2.95)	138 (5.43)	3 (0.12) +0.5	27.0 (1.06)	8	M20
3in ANSI Class 600	209.5 (8.25)	168.3 (6.63)	76 (3)	75 (2.95)	138 (5.43)	6.35 (0.25)	38.05 (1.5)	8	M20

Electrical connections

Standard Terminal block and fieldbus connector versions

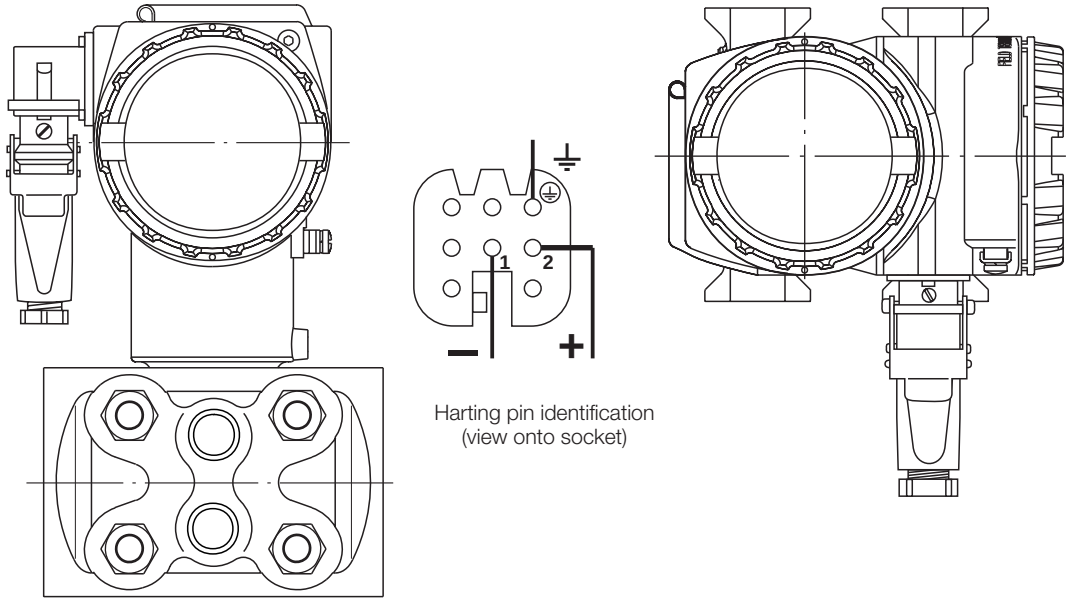




PIN (male) IDENTIFICATION		
	FOUNDATION Fieldbus	**PROFIBUS PA**
1	FF-	PA+
2	FF+	GROUND
3	SHIELD	PA–
4	GROUND	SHIELD

Mating female plug NOT SUPPLIED

Harting Han 8U connector



Harting pin identification
(view onto socket)

BASIC ORDERING INFORMATION model 265DC Differential /Gauge Pressure Transmitter with direct mount seal

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**	**C**	**X**	**X**	**X**	**X**	**X**	**X**	**Continued**
Differentia/Gauge Pressure Transmitter with direct mount seal – BASE ACCURACY 0.04%														
SENSOR - Range/max Span – 6th character (Refer to Table Pag. 2)														
6kPa	60mbar	24inH_2O						C						
40kPa	400mbar	160inH_2O						F						
250kPa	2500mbar	1000inH_2O						L						
2000kPa	20bar	290psi						N						
1000kPa	100bar	1450psi						R						
HIGH PRESSURE SIDE - Size/Mounting flange rating – 7th character														
2in	ANSI CL 150								A					
2in	ANSI CL 300								D					
2in	ANSI CL 600								G					
3in	ANSI CL 150								B					
3in	ANSI CL 300								E					
3in	ANSI CL 600								H					
DN50	DIN PN 16/40								M					
DN50	DIN PN 64								P					
DN50	DIN PN 100								R					
DN80	DIN PN 40								L					
DN80	DIN PN 64								Q					
DN80	DIN PN 100								S					
HIGH PRESSURE SIDE – Mounting flange material/Seat form (seal) – 8th character														
AISI 316 ss	Form RF (raised face)	(Note 1)								E				
AISI 316 ss	EN 1092 B2 (DIN 2526 – Form E)	(Note 2)								S				
AISI 316 ss	EN 1092 - E (DIN 2513 – V13)	(Note 3)								M				
AISI 316 ss	EN 1092 - D (DIN 2512 - N)	(Note 3)								N				
HIGH PRESSURE SIDE – Extension length and material (wetted parts) – 9th character														
Flush (see next for diaphragm material)								NACE			F			
50mm (2in)	AISI 316 L ss							NACE			1			
50mm (2in)	Hastelloy C276™							NACE			2			
100mm (4in)	AISI 316 L ss							NACE			3			
100mm (4in)	Hastelloy C276™							NACE			4			
150mm (6in)	AISI 316 L ss							NACE			5			
150mm (6in)	Hastelloy C276™							NACE			6			
HIGH PRESSURE SIDE – Diaphragm material (wetted parts) (seal) – 10th character														
AISI 316 L ss		(Note 4)						NACE				S		
Hastelloy C276™		(Note 5)						NACE				H		
Tantalum		(Notes 6, 7)						NACE				T		
AISI 316 L ss with Teflon anti-stick coating		(Notes 6, 7)						NACE				1		
Hastelloy C276™ with Teflon anti-stick coating		(Notes 6, 7)						NACE				2		
HIGH PRESSURE SIDE – Fill fluid – 11th character														
Silicone oil													S	
Inert fluid		(Note 8)											N	
Silicone oil for high temperature													H	
White oil (FDA approved)		(Note 9)											W	
Silicone oil vacuum proof design													L	

BASIC ORDERING INFORMATION model 265DC					**X**	**X**	**X**	**X**	**X**
Low pressure side diaphragm material / Fill fluid (wetted parts) – 12th 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 8)		NACE	A				
Hastelloy C276™	Inert fluid	(Note 8)		NACE	F				
Monel 400™	Inert fluid	(Note 8)		NACE	C				
Monel 400™ Gold Plated	Inert fluid	(Note 8)		NACE	Y				
Tantalum	Inert fluid	(Note 8)		NACE	D				
AISI 316 L ss (not wetted)	Silicone oil	(one remote seal to be quoted separately)			R				
AISI 316 L ss (not wetted)	Inert fluid	(one remote seal to be quoted separately)			2				
Low side process flanges/adapters material and connection (wetted parts) – 13th character									
AISI 316 L ss (Horizontal connection)	1/4in NPT-f direct (7/16in UNF U.S. drilling)		(Note 10)	NACE		A			
AISI 316 L ss (Horizontal connection)	1/4in NPT-f direct (DIN 19213)		(Note 10)	NACE		C			
AISI 316 L ss (Horizontal connection)	1/2in NPT-f through adapter (7/16in UNF U.S. drilling)		(Note 10)	NACE		B			
Hastelloy C276™ (Horizontal connection)	1/4in NPT-f direct (7/16in UNF U.S. drilling)		(Note 10)	NACE		D			
Hastelloy C276™ (Horizontal connection)	1/4in NPT-f direct (DIN 19213)		(Note 10)	NACE		F			
Hastelloy C276™ (Horizontal connection)	1/2in NPT-f through adapter (7/16in UNF U.S. drilling)		(Note 10)	NACE		E			
Monel 400™ (Horizontal connection)	1/4in NPT-f direct (7/16in UNF U.S. drilling)		(Note 10)	NACE		G			
Monel 400™ (Horizontal connection)	1/4in NPT-f direct (DIN 19213)		(Note 10)	NACE		L			
Monel 400™ (Horizontal connection)	1/2in NPT-f through adapter (7/16in UNF U.S. drilling)		(Note 10)	NACE		H			
AISI 316 closing flange for two seals construction			(Note 11)	NACE		R			
Bolts/Low side gasket (wetted parts) – 14th character									
Stainless steel (NACE)	Viton™			NACE			3		
Stainless steel (NACE)	PTFE (MWP 25 MPa)			NACE			4		
Stainless steel (NACE)	EPDM			NACE			5		
Stainless steel	Perbunan						6		
Stainless steel (without gasket for 2 seals construction)				NACE			R		
Housing material and electrical connection – 15th character									
Aluminium alloy (Barrel version)	1/2in NPT							A	
Aluminium alloy (Barrel version)	M20 x 1.5 (CM 20)	(Not available FM, CSA)						B	
Aluminium alloy (Barrel version)	Harting Han8U connector	(Not available ATEX EExd, FM, CSA)		(Note 12)				E	
Aluminium alloy (Barrel version)	Fieldbus connector	(Not available ATEX EExd, FM, CSA)		(Note 12)				G	
AISI 316 L ss (Barrel version)	1/2in NPT							S	
AISI 316 L ss (Barrel version)	M20 x 1.5 (CM 20)	(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 12)				K	
Aluminium alloy (DIN version)	Fieldbus connector	(Not available ATEX EExd, FM, CSA)		(Note 12)				W	
Output/Additional options – 16th character									
HART digital communication and 4 to 20mA	No additional options			(Notes 13, 14)					H
HART digital communication and 4 to 20mA	Options requested (to be ordered by "Additional ordering code")			(Note 13)					1
PROFIBUS PA	No additional options			(Notes 13, 14)					P
PROFIBUS PA	Options requested (to be ordered by "Additional ordering code")			(Note 14)					2
FOUNDATION Fieldbus	No additional options			(Notes 13, 14)					F
FOUNDATION Fieldbus	Options requested (to be ordered by "Additional ordering code")			(Note 14)					3

ADDITIONAL ORDERING INFORMATION for model 265DC

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
Drain/vent valve (material and position) (wetted parts)														
AISI 316 L ss	on process axis	(Note 15)	NACE	V1										
AISI 316 L ss	on flange side top	(Note 15)	NACE	V2										
AISI 316 L ss	on flange side bottom	(Note 15)	NACE	V3										
Hastelloy C276™	on process axis	(Note 16)	NACE	V4										
Hastelloy C276™	on flange side top	(Note 16)	NACE	V5										
Hastelloy C276™	on flange side bottom	(Note 16)	NACE	V6										
Monel 400™	on process axis	(Note 17)	NACE	V7										
Monel 400™	on flange side top	(Note 17)	NACE	V8										
Monel 400™	on flange side bottom	(Note 17)	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 1/2in NPT 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							
Surge														
Surge/Transient Protector		(Note 18)						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			
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		
Overfill protection		(Note 19)										C9		
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 7/8 (without mating female plug)		(Notes 14, 20)												U1
Fieldbus M12x1 (without mating female plug)		(Notes 14, 20)												U2
Harting Han 8U – straight entry		(Notes 13, 21)												U3
Harting Han 8U – angle entry		(Notes 13, 21)												U4

Note 1: Not available with DIN mounting flange code M, P, R, L, Q, S, T, U

Note 2: Not available with ANSI mounting flange code A, C, D, F, G, B, E, H

Note 3: Not available with ANSI mounting flange code A, C, D, F, G, B, E, H, T, U

Note 4: Not available with Hastelloy C276 extension code 2, 4, 6

Note 5: Not available with AISI 316 extension code 1, 3, 5

Note 6: Not available with extension code 1, 2, 3, 4, 5, 6

Note 7: Not available with mounting flange code N

Note 8: Suitable for oxygen service

Note 9: Suitable for food application

Note 10: Not available with low side diaphragm code R, 2

Note 11: Not available with low side diaphragm code S, K, M, V, T, A, F, C, Y, D

Note 12: Select type in additional ordering code

Note 13: Not available with Electronic Housing code G, W

Note 14: Not available with Electronic Housing code P, E, K

Note 15: Not available with Process flanges/adapters code D, E, F, G, H, L, R

Note 16: Not available with Process flanges/adapters code A, B, C, G, H, L, R

Note 17: Not available with Process flanges/adapters code A, B, C, D, E, F, R

Note 18: Not available with ATEX-EEx nL (code E3) or PROFIBUS PA / FOUNDATION Fieldbus (code 2 or 3) with Intrinsic Safety EEx i (code E1) or FM-Intrinsically Safe (code EA).

Note 19: Not available with sensor code N, R.

Note 20: Not available with Electronic housing code T, S, A, B, J.

Note 21: Not available with Electronic housing code T, S, A, B, J, K.

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™ 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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SS/265DC_1

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