

Technical Datasheet



D-Series SMART Temperature Transmitter

Models: DPT-2000

Key Features

- High accuracy $\pm 0.075\%$
- 4-20mA analogue with digital communications
- Fully HART ® compatible
- Programmable range, zero shift, characteristic and damping ratio with local panel keys
- ATEX certified (Intrinsic Safety, Flameproof)

Series Overview

The D-Series pressure, differential pressure and temperature transmitters offer customers cost-effective and accurate solutions to their individual process requirements.

Available with a wide range of process connections and easily configurable via the D-Soft software, the D-Series can be used for a variety of applications when pressure, differential pressure, temperature, level or flow measurements are needed.

Other models in this series include:

- DPR-2000G SMART Differential Pressure Transmitter for low range
- DPR-2200 SMART Differential Pressure Transmitter with 2 remote chemical seals
- DPC-2000 SMART Pressure Transmitter
- DPR-2000 SMART Differential Pressure Transmitter



Product Applications

The DPT-2000 is suitable for a wide range of applications in many industry sectors:

- Oil & Gas
- Petrochemical
- Water & Wastewater
- Power

The choice of models available ensures that the DPT-2000 is:

- Suitable for use in corrosive atmospheres
- Resistant to chemical attack

How can we help you?

Delta Controls offers fast, efficient and knowledgeable support when and where you need it. Please visit our website at www.delta-controls.com to find your local support centre or call us on:

+44 (0) 1252 729 140

Technical Data

Metrological parameters

Error (digital value)

$\pm (0.05 + 0.05\% \cdot z + 0.001 \cdot |t|)$ °C for sensor Pt100

$\pm (0.5 + 0.05\% \cdot z)$ °C for sensor K i t Δ 375 °C

$\pm (0.5 + 0.05\% \cdot z + 0.002 \cdot (t - 375))$ °C for sensor K i t > 375 °C

Additional error for analog output $\pm 0.04\% \cdot z$

where:

|t| – absolute value of the measured temperature °C

t - value of the measured temperature °C

z – transmitter setting range °C

Measuring range

Sensor type	Min set range	Nominal range
Pt100	10 °C	-200...550 °C
K	10 °C	-40...550 °C



Electrical parameters

Power supply 12...55 V DC (Ex 13.5...28 V)

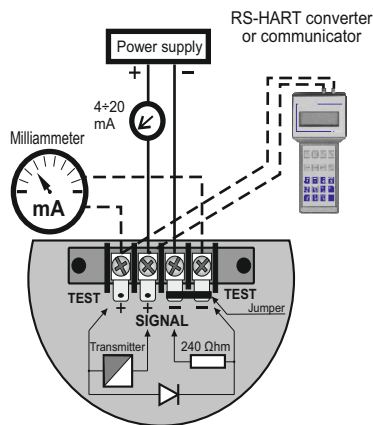
Additional voltage drop when display illumination switched on 3 V

Output signal 4...20 mA + Hart protocol

ATEX certificate

Ex ia		Coming Soon!	not available for ALE
Ex d		Ex I M2 Ex d ia I Mb (steel enclosure only) Ex II 1/2G Ex ia/d IIC T* Ga/Gb Ex II 1/2D Ex ia/t IIC T* Da/Db	

Electrical diagram



Resistance required for communication (HART) min. 240Ω.

Load resistance

$$R[\Omega] = \frac{U_{ZAS}[V] - 12V^*}{0,0225A}$$

* – 15 V when display illumination switched on

Operating conditions

Ambient temperature	-40...85 °C
for version with Ex ia	-40...80 °C
for version with Ex d	-40...75 °C

Min. immersion length L=100mm

Materials

Casing	Aluminium, 316Lss- special version
Sensor material	321ss
Thermowell	according to table page.

Communication and configuration

The communication standard for data interchange with the transmitter is the Hart protocol.

Communication with the transmitter is carried out with:

- a KAP-03, KAP-03Ex communicator,
- some other Hart type communicators,
- a PC using an Hart/RS/Bluetooth converter and Delta's D-Soft configuration software.

The data interchange with the transmitter enables the users to:

- ♦ identify the transmitter;
- ♦ configure the output parameters;
- ♦ read the currently measured temperature value of the output current and the percentage output control level;
- ♦ force an output current with a set value;
- ♦ calibrate the transmitter in relation to a model temperature.

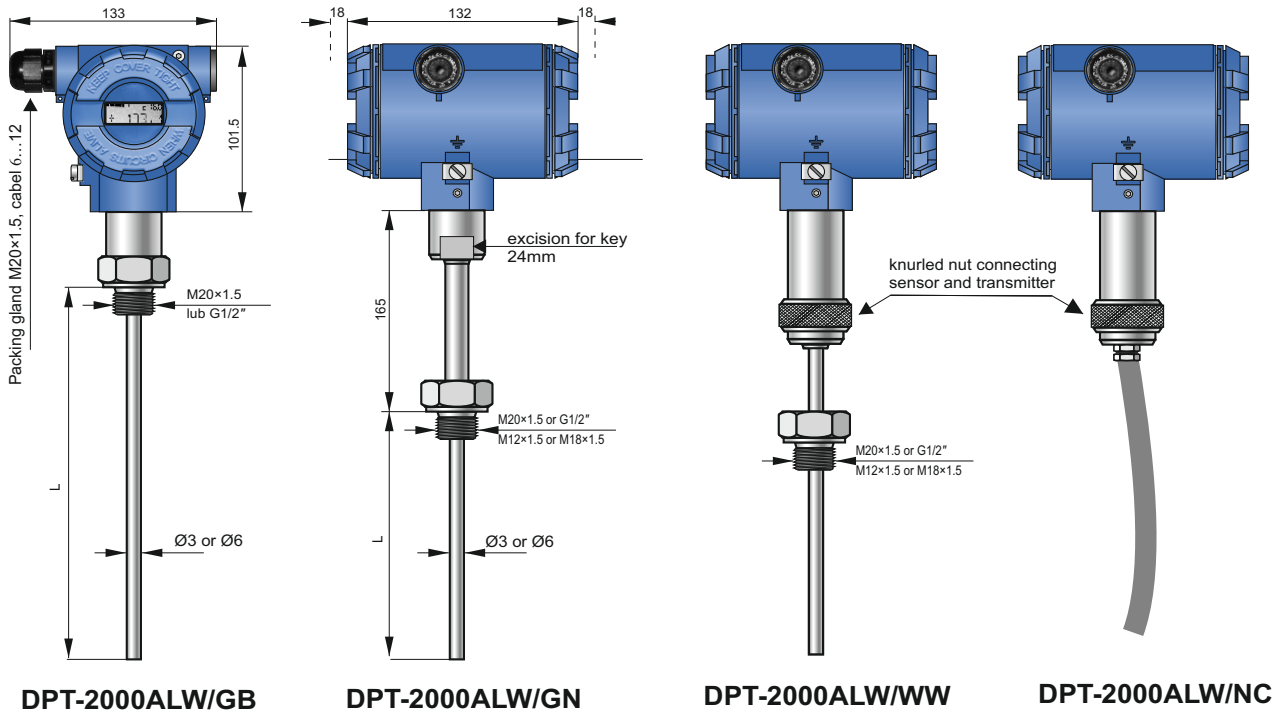
Standard Thermowell Data

Thermowell type	Standard dimensions of thermowell			Thermowell material	Available process connection
	Ø[mm]	L[mm]	l[mm]		
OG2.9	9x1	100, 160, 250, 400	-	316Lss	M20x1.5, M27x1 G½", G¾", ½"NPT
OG2.11	11x2	100, 160, 250, 400	-	316Lss	M20x1.5, M27x1 G½", G¾", ½"NPT
T1	11x2	100, 160, 250, 400	-	316Lss	Flange according to DIN and ANSI
SW1/SW2	18h7/24h7	140, 200	65, 65	15HM, 10H2M 316Lss	-
SW1T/SW2T	18h7/24h7	100, 140, 200	35, 65, 65	15HM, 10H2M 316Lss	Flange according to DIN and ANSI

D-Series

Models: DPT-2000ALW

Dimensions



DPT-2000ALW/GB

DPT-2000ALW/GN

DPT-2000ALW/WW

DPT-2000ALW/NC

Version

DPT-2000ALW/GB

version with spring loaded sensor to screwing in thermowell.

- standard version
- Exia version
- Exd version
- MID version

DPT-2000ALW/GN

version with spring loaded sensor to screwing in thermowell.

- standard version
- Exia version
- Exd version

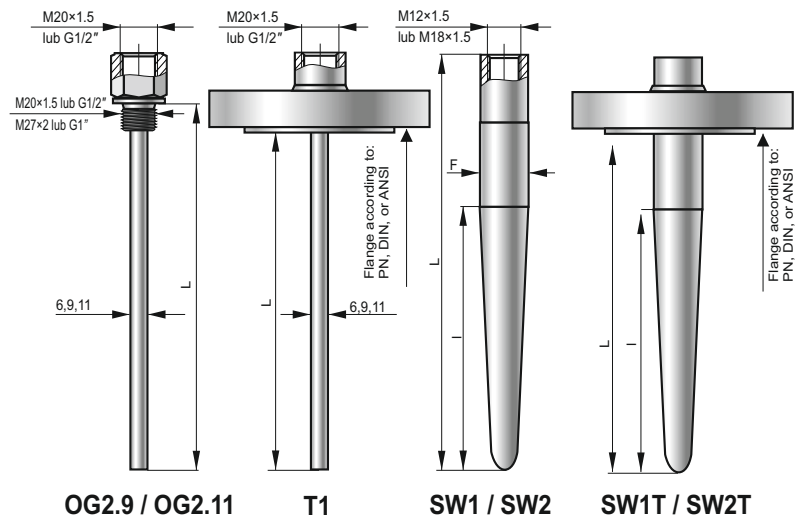
DPT-2000ALW/WW

- version with replaceable measuring sensor.

DPT-2000ALW/NC

- version suitable for mounting cable sensor.

Thermowell



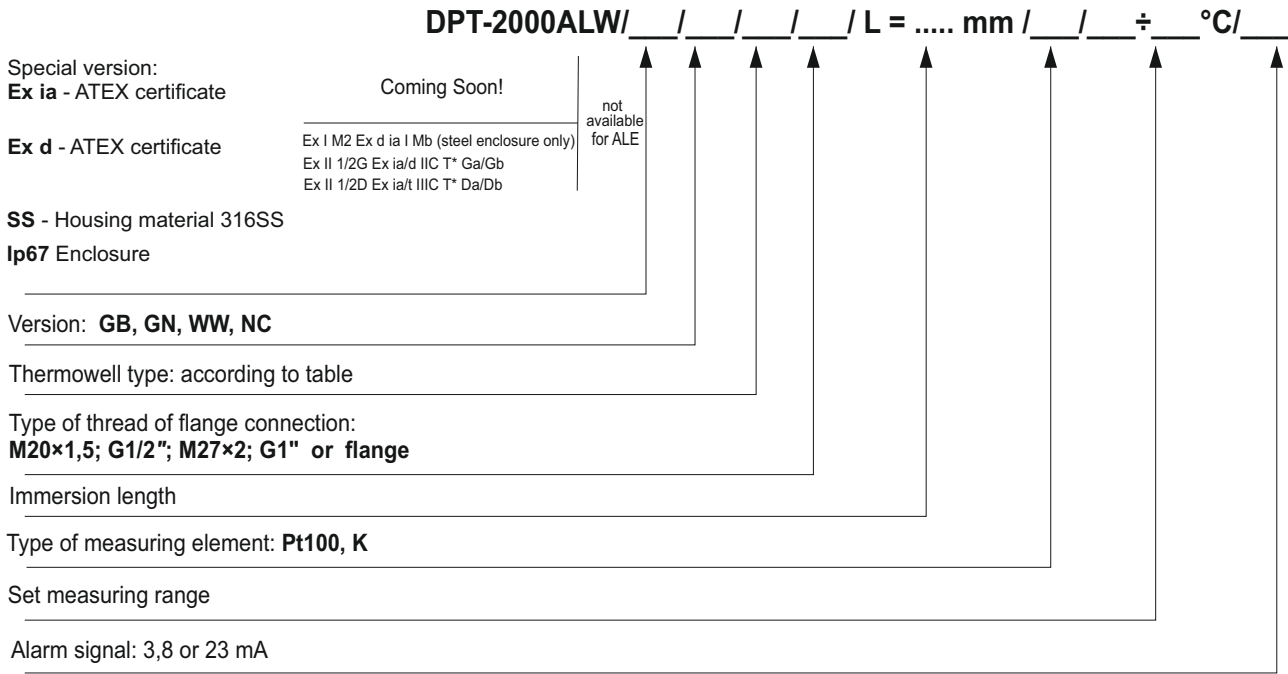
OG2.9 / OG2.11

T1

SW1 / SW2

SW1T / SW2T

How to Order



Example: Temperature transmitter DPT-2000ALW thermowell type T1, ATEX version Ex ia, immersion length 250mm, flange DN50 PN40, K type sensor, set range 0 - 300°C, alarm signal 23 mA

DPT-2000ALW/ Ex ia/GN/T1/DN50/L=250 mm / DN50 PN40 / K / 0 ÷ 300°C / 23 mA

D-Series
Models: DPT-2000ALW

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