Technical Datasheet

D-Series
SMART Temperature Transmitter
Models: DPT-2000

Key Features
- High accuracy ±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?
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Metrological parameters
Error (digital value)
± (0.05 + 0.05% z + 0.001 |t|)°C for sensor Pt100
± (0.5 + 0.05% z)°C for sensor K t ≤ 375°C
± (0.5 + 0.05% z + 0.002 (t-375))°C for sensor K t > 375°C
Additional error for analog output ±0.04% z
where:
|t| – absolute value of the measured temperature °C
t – value of the measured temperature °C
z – transmitter setting range °C

Measuring range

<table>
<thead>
<tr>
<th>Sensor type</th>
<th>Min set range</th>
<th>Nominal range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pt100</td>
<td>10°C</td>
<td>-200…550°C</td>
</tr>
<tr>
<td>K</td>
<td>10°C</td>
<td>-40…550°C</td>
</tr>
</tbody>
</table>

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
Ex d
Ex ia/d

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

<table>
<thead>
<tr>
<th>Thermowell type</th>
<th>Standard dimensions of thermowell</th>
<th>Thermowell material</th>
<th>Available process connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø[mm]</td>
<td>L[mm]</td>
<td>I[mm]</td>
<td></td>
</tr>
<tr>
<td>OG2.9</td>
<td>9x1</td>
<td>100, 160, 250, 400</td>
<td>-</td>
</tr>
<tr>
<td>OG2.11</td>
<td>11x2</td>
<td>100, 160, 250, 400</td>
<td>-</td>
</tr>
<tr>
<td>T1</td>
<td>11x2</td>
<td>100, 160, 250, 400</td>
<td>-</td>
</tr>
<tr>
<td>SW1/SW2</td>
<td>18h7/24h7</td>
<td>140, 200</td>
<td>65, 65</td>
</tr>
<tr>
<td>SW1T/SW2T</td>
<td>18h7/24h7</td>
<td>100, 140, 200</td>
<td>35, 65, 65</td>
</tr>
</tbody>
</table>
Dimensions

Version

DPT-2000ALW/GB
version with spring loaded sensor to screwing in thermowell.
- standard version
- Exia 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/WW
- version suitable for mounting cable sensor.

Thermowell

OG2.9 / OG2.11 T1 SW1 / SW2 SW1T / SW2T

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### How to Order

<table>
<thead>
<tr>
<th>Special version: Ex ia - ATEX certificate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ex d - ATEX certificate</td>
</tr>
<tr>
<td>SS - Housing material 316SS</td>
</tr>
<tr>
<td>Ip67 Enclosure</td>
</tr>
</tbody>
</table>

#### Version: GB, GN, WW, NC

- Thermowell type: according to table
- Type of thread of flange connection: M20×1,5; G1/2"; M27×2; G1" or flange
- Immersion length
- Type of measuring element: Pt100, K
- Set measuring range
- Alarm signal: 3.8 or 23 mA

**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

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