Smart temperature transmitter
APT-2000ALW

- 4...20 mA output signal + HART protocol
- Programmable range, zero shift, characteristic and damping ratio with local panel keys
- ATEX Intrinsic safety, ATEX Explosion proof
- Resistant or thermocouple measuring element

APT-2000ALW/GB

APT-2000ALW/GN

Thermowell

M20×1.5, G1/2”

M12×1.5; M18×1.5; M20×1.5, G1/2”
Technical data

Metrological parameters

Error (digital value)

± (0.2 + 0.002·|t|)°C for Pt100 sensor
± 1.5°C for TC type K sensor and t ≤ 375°C
± (0.004·t)°C for TC type K sensor and t > 375°C

Additional error for analog output ±0.04%·z

where:

| | – 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>

* for GB version -50...150°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

Resistance required for communication (HART) min. 240Ω

Load resistance $R(\Omega) = \frac{U_{2mA}[V] - 12[V]}{0.0225[A]}$

* – 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/USB converter and Raport 2 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>Ø[mm]</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</td>
<td>SW2</td>
<td>18h7, 24h7</td>
<td>100, 140, 200</td>
</tr>
<tr>
<td>SW1T</td>
<td>SW2T</td>
<td>18h7, 24h7</td>
<td>100, 140, 200</td>
</tr>
<tr>
<td>SW1G</td>
<td>SW2G</td>
<td>18h7, 24h7</td>
<td>100, 140, 200</td>
</tr>
</tbody>
</table>
SMART TEMPERATURE TRANSMITTER APT-2000ALW with MID

Application

Smart temperature transmitters APT-2000ALW MID is applicable to the measurement of the temperature in application designed according to directive 2004/22/CE (MID), harmonized standard PN-EN12405-1:2005 + A2:2010 and recommendation OIML R140:2007. Device subcomponent suitable for custody transfer measurement of gas with MID approval. Mechanical construction and installation of the transmitter enclosure shall comply with the transmitter APT-2000ALW are described on page IX/2, IX/3 of catalogue. Transmitter due to factory blockade of transmitter’s configuration cannot be configurable by user. Electrical connection of the transmitter is according to drawing on page IX/3. Available are only terminals SIGNAL + and SIGNAL -.

Metrological parameters

Max. permissible error according to EN12405-1 (calculated in relation to the measured value)

- in reference conditions
  20±3°C(±1 during the measurement) ≤ 0,1%
- nominal operating conditions
  ≤ 0,2%
- special version
  ≤ 0,1%

Long-term stability

≤ 0,2% / 5 years

Operating temperature range

-25...55°C

Immersion length

150...290mm

Power supply

Exia: 13,5...28VDC
Exd: 13,5...45VDC

MID Parts Certificate No. 28/12
Exia: @ I 1/2G Ex ia IIC T4/T5/T6 Ga/Gb
Exd: @ I 1/2G Ex ia’d IIC T* Ga

Measuring range

-20...60°C

Ordering procedure

APT-2000ALW/MID/___/___/___ / L = ..... mm

Special version:
Exia - Intrinsic safety version (ATEX)
Exd - Explodion proof version (ATEX)
SS - Housing material 316SS

Process connection type: M20x1,5, G1/2"
Immersion length