Smart temperature transmitter
LI-24ALW

- Output signal 4…20mA with Hart protocol
- Galvanic insulation (In, Out)
- Programmable sensor type
- Programmable measuring range
- Resistant thermoresistance line compensation
- Compensation of thermocouple cold junction
- Autodiagnostic system
- Intrinsic safety certificate (ATEX, IECEx)
- Explosion proof certificate (ATEX, IECEx)

Application and function

The temperature transmitter LI-24ALW is applicable to converting resistance of temperature or voltage of thermocouple sensor to standard current signal 4-20mA. The transmitter has two separate channels enabling measurement of difference temperature, average, average with redundancy, max. or min. temperature. Transmitter has compensation of ambient temperature influence and compensation of thermocouple cold junction using internal/external (Pt100) sensor or constant temperature. Most of parameters such as: sensor type, measuring range, current alarm signal when electric circuit is broken, output characteristic correction, user characteristic (60 points) are programmed using PC with Hart/USB/Bluetooth converter and Aplisens RAPORT 2 configuration software or KAP-03 communicator. For request Aplisens can set temperature transmitter parameters like measuring range, type of sensor. Their values are printed on label. Transmitter LI-24/ALW is designed for field use. LI-24ALW can be used with temperature sensors mounted directly in transmitter’s casing or with external sensors connected with cable.

Ordering code

LI-24ALW / ___ / ___ / + / °C/

Special version:
Exia – Intrinsic safety certificate (ATEX, IECEx)
Exd – Explosion proof certificate (ATEX, IECEx)
IP67 – protection class IP67
SS – housing material SS316
US – electrical connection 1/2”NPT F
Technical data

<table>
<thead>
<tr>
<th>Input type</th>
<th>Range</th>
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<th>Range</th>
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<tbody>
<tr>
<td>Pt10</td>
<td>-200÷850°C</td>
<td>B</td>
<td>250 +1820°C</td>
</tr>
<tr>
<td>Pt50</td>
<td>-200÷850°C</td>
<td>E</td>
<td>-200 + 1000°C</td>
</tr>
<tr>
<td>Pt100</td>
<td>-200÷850°C</td>
<td>J</td>
<td>-210 + 1200°C</td>
</tr>
<tr>
<td>Pt200</td>
<td>-200÷850°C</td>
<td>K</td>
<td>-200 + 1372°C</td>
</tr>
<tr>
<td>Pt500</td>
<td>-200÷850°C</td>
<td>N</td>
<td>-200 + 1300°C</td>
</tr>
<tr>
<td>Pt1000</td>
<td>-200÷266°C</td>
<td>R</td>
<td>-20 + 1768,1°C</td>
</tr>
<tr>
<td>Pt 98</td>
<td>-200÷650°C</td>
<td>S</td>
<td>-30 + 1768,1°C</td>
</tr>
<tr>
<td>Ni100</td>
<td>-60 + 180°C</td>
<td>T</td>
<td>-200 + 400°C</td>
</tr>
<tr>
<td>Cu100</td>
<td>-50 + 180°C</td>
<td>L</td>
<td>-200 + 800°C</td>
</tr>
</tbody>
</table>

Resistance 1 0...400 Ω Voltage 1 -10...100mV
Resistance 2 0...2000 Ω Voltage 2 -100...1000mV

Electrical diagrams

Input signal
- K, J, S, B, N, T, R, E, voltage
- Pt100, Ni100 resistance
- -10mV < E < 100mV
- or -100mV < E < 1000mV
- 0Ω < R < 400Ω or 0Ω < R < 2000Ω

Min. measuring range
- 10mV or 10Ω or 10K

Output signal
- 4 - 20 mA + Hart

Power supply
- 13,5…55 VDC (Ex 13,5…30 VDC)
- when display illumination switched on 16,5…55 VDC (Ex 16,5…30 VDC)

Max. wires resistance
- 500Ω

Alarm signal
- 3,75mA / 21,5mA (NORMAL) or 3,6 mA / 21 mA (NAMUR NE89) or setting by user

Sensor current
- 0,42mA

Galvanic insulation
- Optoelectrical

Accuracy
- ± 0,1%

Time constant
- 0,3s

Additional electronic damping
- 0…30s

Ambient temperature
- -40…+80°C (Ex -40…+75°C)

Power supply
- 4 ÷ 20 mA

R ≥ 240 Ω

Load resistance
\[ R_{\text{load}} = \frac{U_{\text{SUP}} - 13.5\text{V}}{0.025\text{A}} \]

- 16,5 V when display illumination switched on