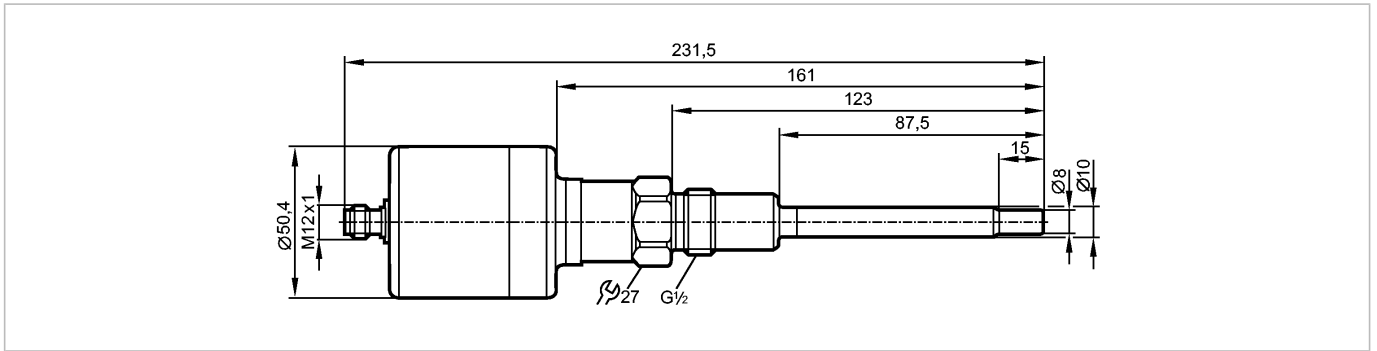


TAD191

TAD088KLER12-A-DKG/US

Temperature sensors



IO-Link

Including free 5-point calibration certificate.

Product characteristics

| |
|--|
| Temperature transmitter with diagnostic output |
| Process connection: G 1/2 A |
| Installation length EL: 87.5 mm |
| Redundant sensor elements with backup function |
| Analog output 4...20 mA (NAMUR NE43, NE89) |
| Diagnostic output for drift and fault monitoring |
| Measuring range: -25...160 °C / -13...320 °F |
| Measuring element: 1 x Pt 1000 + 1 x NTC, thermally coupled, with backup function (temperature measuring even if one of the two sensor elements fails) |
| Factory setting: 0...150 °C / 32...302 °F |

Application

| | |
|---------------------------------|-------------------|
| Application | liquids and gases |
| Pressure rating [bar] | 50 |
| Minimum installation depth [mm] | 25 |

Electrical data

| | |
|-----------------------------|------------|
| Electrical design | DC PNP/NPN |
| Operating voltage [V] | 18...32 |
| Current consumption [mA] | 6 (24 V) |
| Protection class | III |
| Reverse polarity protection | yes |

Outputs

| | |
|--------------------------|--|
| Output | Analog output 4...20 mA (NAMUR NE43, NE89) Diagnostic output for drift and fault monitoring |
| Output function | normally open / normally closed / heartbeat programmable, 4...20 mA analog |
| Current rating [mA] | 250 |
| Voltage drop [V] | < 2 |
| Short-circuit protection | yes (non-latching) |
| Overload protection | yes |
| Analog output | 4...20 mA; Rmax [Ω]: (Ub - 15 V) x 50 |

Measuring / setting range



TAD191

TAD088KLER12-A-DKG/US

Temperature sensors

| | | |
|-----------------------------|--------------------------|--------------|
| Measuring range, (scalable) | -25...160 °C | -13...320 °F |
| Factory setting | 0...150 °C / 32...302 °F | |
| Drift warning °C / °F | 0.20...5.00 / 0.4...9.0 | |
| Drift alarm °C / °F | 0.20...5.00 / 0.4...9.0 | |
| Setting range in steps of | 0.05 °C | 0.1 °F |
| Resolution | | |
| Analog output [K] | 0.05 | |

Accuracy / deviations

| | | |
|--|--|--|
| Analog output [K] | ± 0.2 (-10...100°C); ± 0.3 (-25...-10/100...150°C); ± 0.5 (150...160°C) *) | |
| Temperature coefficients (in % of the span per 10 K) | < ± 0.01 **) | |
| Drift monitoring [K] | ± 0.2 (-10...100°C); ± 0.3 (-25...-10/100...150°C); ± 0.5 (150...160°C) *) | |

Reaction times

| | | |
|--------------------------------|-------|--|
| Power-on delay time [s] | 8 | |
| Dynamic response T05 / T09 [s] | 3 / 6 | |
| Integrated watchdog | yes | |

Software / programming

| | | |
|---------------------|--|--|
| Programming options | Drift warning / drift alarm threshold; Fail-Safe; display unit; scaling of the analog output; redundancy switching; behaviour of the diagnostic output; output polarity; normally open / normally closed | |
|---------------------|--|--|

Interfaces

| | | |
|------------------------------|-----------------------|--|
| IO-Link Device | | |
| Transfer type | COM1 (4.8 kBaud) | |
| IO-Link revision | 1.1 | |
| SDCI standard | IEC 61131-9 CDV | |
| IO-Link Device ID | 323 d / 00 01 43 h | |
| Profiles | Smart Sensor | |
| Function class | Device Identification | |
| Function class | Device Diagnosis | |
| SIO mode | yes | |
| Required master port class | A | |
| Process data analogue | 1 | |
| Process data binary | 1 | |
| Min. process cycle time [ms] | 18.8 | |

Environment

| | | |
|--------------------------|----------------|--|
| Ambient temperature [°C] | -25...70 | |
| Storage temperature [°C] | -40...85 | |
| Protection | IP 68 / IP 69K | |

Tests / approvals

| | | |
|----------------------|------------------------------|---------------------|
| EMC | EN 61000-6-2 EN 61000-6-3 | |
| Shock resistance | DIN EN 68000-2-27: | 50 g (11 ms) |
| Vibration resistance | DIN EN 60068-2-6 | 20 g (10...2000 Hz) |
| MTTF [Years] | 213 | |

Mechanical data

TAD191

TAD088KLER12-A-DKG/US

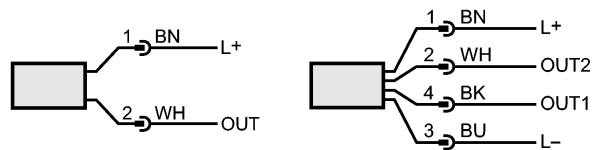
Temperature sensors

| | | |
|-----------------------------|--|--|
| Process connection | G ½ A | |
| Materials (wetted parts) | stainless steel 316L / 1.4404; surface characteristics Ra: < 0.6 | |
| Probe length L [mm] | 87.5 | |
| Installation length EL [mm] | 87.5 | |
| Housing materials | stainless steel 316L / 1.4404; PEI; FPM | |
| Tightening torque [Nm] | 30...50 | |
| Weight [kg] | 0.374 | |

Electrical connection

| | |
|------------|-------------------------------------|
| Connection | M12 connector; gold-plated contacts |
|------------|-------------------------------------|

Wiring



connection for 2-wire operation
 OUT: Analog output

 connection for 3-wire operation
 OUT2: Analog output
 OUT1: Diagnosis / IO-Link

Remarks

| | |
|---------|---|
| Remarks | cULus - Class 2 source required *) probe completely inserted into the measured medium up to the sealing chamfer **) In case of deviation from the reference condition 25 ± 5 °C |
|---------|---|

| | |
|-----------------------|---|
| Pack quantity [piece] | 1 |
|-----------------------|---|

Other data

| | |
|----------------|------------------------|
| Function class | Process Data Variables |
|----------------|------------------------|