



DATA SHEET

Accessories for autonomous Pt100 and thermocouple temperature probes



Stainless steel thermowells

|                       |                                                                                                   |
|-----------------------|---------------------------------------------------------------------------------------------------|
| Operating temperature | From -80°C to +400°C                                                                              |
| Protective duct       | 316L stainless steel, Ø9x1 mm                                                                     |
| Mounting              | Machine welded                                                                                    |
| Duct                  | 316L stainless steel                                                                              |
| Process connection    | 316L stainless steel 1/2" G male                                                                  |
| Probe connection      | 316L stainless steel 1/2" G female with 316L stainless steel fixing screw 1/2" G female or thread |

GST: Silicone grease in 200 g tube.

|                    |                                     |
|--------------------|-------------------------------------|
| Temperature of use | From -60°C to +200°C                |
| Storage            | >1 year at room temperature (<50°C) |
| Solvent            | Trichlorethane                      |

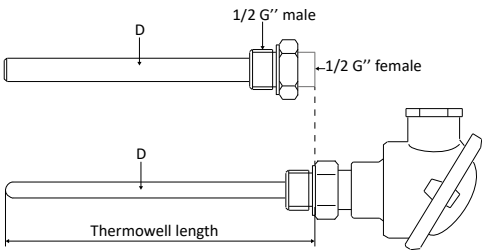


Model with thread

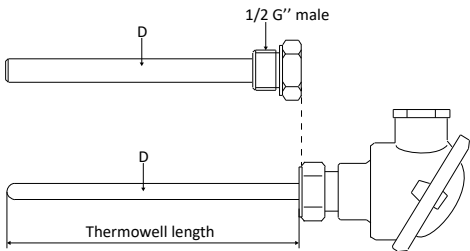


Model with fixing screw

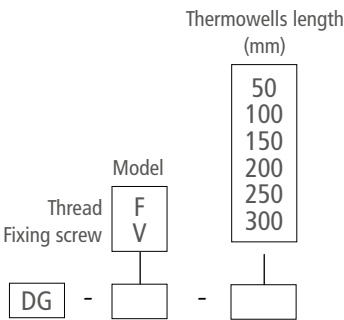
Thermowell with thread length:



Thermowell with fixing screw length:

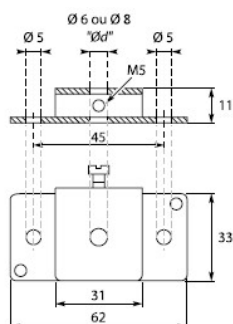
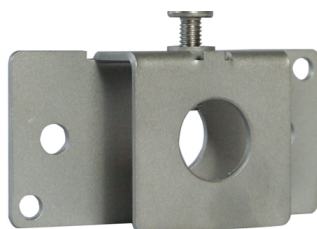


Thermowells references:



## Mounting brackets

BF-6: 316L stainless steel mounting bracket for duct fixing of Ø6 mm probes



## Regulated power supply



KI-AL-100 A: Class 2 power supply for sensors. Mounting with integrated brackets.

Input voltage: 230 Vac

Output voltage: 24 Vac

Intensity: 100 mA

## Transmitters

CO-TE: Head-mounting transmitter



|                                  |                                                                                                                                                            |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Default temperature range        | 0 to 100 °C                                                                                                                                                |
| Max temperature range            | -200 to 850 °C (to be made at the factory upon order)                                                                                                      |
| Environmental Conditions         | Operating temperature: -40 to +85 °C<br>Calibration temperature: 20 to 28 °C<br>Relative humidity: <95%HR<br>Protection degree (encl/terminal) : IP68/IP00 |
| <b>Mechanical specifications</b> |                                                                                                                                                            |
| Dimensions                       | Ø 44 x 20,2 mm                                                                                                                                             |
| Weight                           | 50 g                                                                                                                                                       |
| Number of wires                  | 3                                                                                                                                                          |
| Wire size                        | 1 x 1.5 mm <sup>2</sup> stranded wire                                                                                                                      |
| Screw terminal torque            | 0.4 Nm                                                                                                                                                     |
| Vibration                        | IEC 60068-2-6<br>from 2 to 25 Hz: ±1.6 mm<br>from 20 to 100 Hz: ±4 g                                                                                       |
| <b>Common specifications</b>     |                                                                                                                                                            |
| Supply voltage                   | from 8.0 to 35 Vcc                                                                                                                                         |
| Internal power dissipation       | from 25 mW to 0.8 W                                                                                                                                        |
| Warm-up time                     | 5 minutes                                                                                                                                                  |
| Programming                      | Loop link                                                                                                                                                  |
| Signal/noise ration              | Min. 60 dB                                                                                                                                                 |
| Accuracy                         | Better than 0.1% of sel. range                                                                                                                             |
| Signal dynamics, input           | 19 bit                                                                                                                                                     |
| Signal dynamics, output          | 16 bit                                                                                                                                                     |
| Effect of supply voltage change  | < 0.005% of EC / Vcc                                                                                                                                       |

SFM-6 : Wall fixing support for probes Ø 6 mm



RCI-6-12: Stainless steel bicone connector, with stainless steel olive, for probes Ø 6 mm, 1/2 cylindrical gas thread.



RCT-6-12: Stainless steel bicone connector, with PTFE olive, for probes Ø 6 mm, 1/2 cylindrical gas thread.



KI-AL-100 C: Class 2 power supply for sensors

Input voltage: 230 Vac

Output voltage : 24 Vdc

Intensity: 250 mA

|                                            |                            |
|--------------------------------------------|----------------------------|
| EMC immunity influence                     | < ±0.5% of EC              |
| <b>Input specifications</b>                |                            |
| Max. offset                                | 50% of selected max. value |
| RTD type                                   | Pt100                      |
| Cable resistance per wire                  | 10 Ω (max.)                |
| Sensor current                             | > 0,2 mA, < 0,4 mA         |
| Effect of sensor cable resistance (3-wire) | < 0,002 Ω / Ω              |
| Sensor error detection                     | Yes                        |
| Linear resistance min.... max.             | 0 Ω...10000 Ω              |

## Output specifications

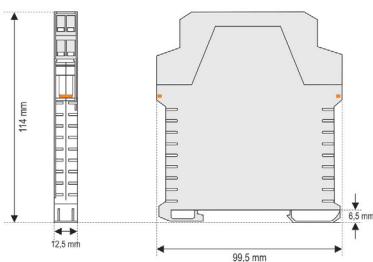
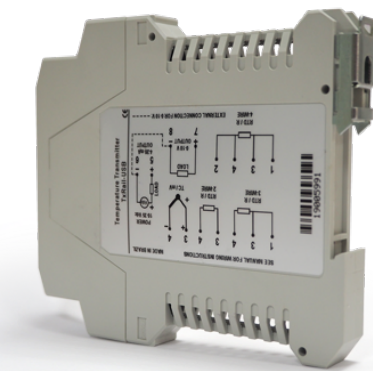
|                              |                                                 |
|------------------------------|-------------------------------------------------|
| Signal range                 | 4...20 mA                                       |
| Min. signal range            | 16 mA                                           |
| Load (@ current output)      | $\leq (V_{\text{supply}} - 8) / 0.023 [\Omega]$ |
| Load stability               | $\leq 0.01\%$ of span / 100 $\Omega$            |
| Sensor error indication      | Programmable 3.5...23 mA                        |
| NAMUR NE43 Upscale/Downscale | 23 mA / 3.5 mA                                  |
| Updating time                | 135 ms                                          |
| of span                      | = of the presently selected range               |

We recommend to use a stabilized power supply to supply the transmitter.

## Observed authority requirements

|                 |                             |
|-----------------|-----------------------------|
| EMC             | 2014/30/EU                  |
| EAC             | TR-CU 020/2011              |
| Approvals       |                             |
| ATEX 2014/34/UE | KEMA 10ATEX0003 X           |
| IECEX           | DEK 13.0036X                |
| INMETRO         | DEKRA 16.0014 X             |
| CCOE            | P337392/3                   |
| DNV-GL Marine   | Stand. f. Certific. No. 2.4 |

## Rail-Din transmitter



## Measuring range

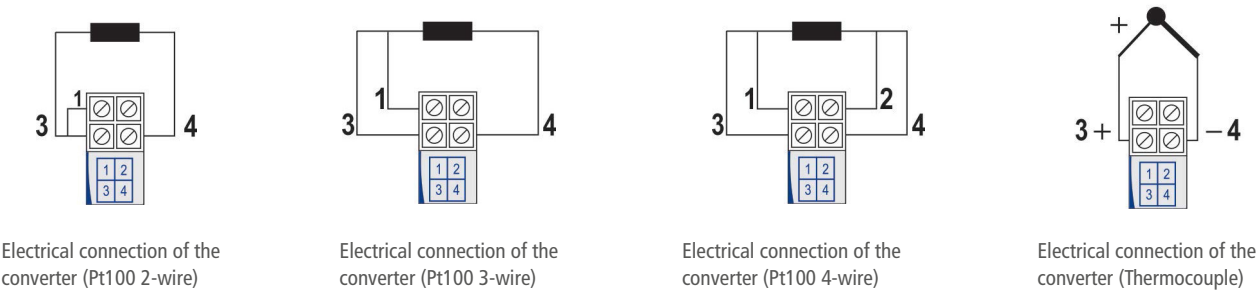
Pt100: from -200 to +650 °C  
K thermocouple: from -150 to +1370 °C

|                                                                     |                                                                                           |
|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| Temperature dependency                                              | < 0.16 % / 25 °C                                                                          |
| Response time                                                       | 1.6 s                                                                                     |
| Maximum permissible voltage at the input terminals of the converter | 3 V                                                                                       |
| RTD current                                                         | 800 $\mu$ A                                                                               |
| Resistance effect of RTD cables                                     | 0.005 °C / $\Omega$                                                                       |
| RTD cable max resistance                                            | 25 $\Omega$                                                                               |
| Influence of power supply                                           | Typical 0.06 % / V (percentage of maximum range).                                         |
| Output (4-20 mA)                                                    | Current of 4-20 mA or 20-4 mA, type 2 fil; linear compared to the measured temperature    |
| Output resolution (4-20 mA)                                         | 2 $\mu$ A                                                                                 |
| Output (0-10 Vcc):                                                  | Electric voltage of 0-10 Vdc or 10-0 Vdc, linear compared to the measured temperature     |
| Output resolution (0-10 Vcc)                                        | 0.0025 V (12 bits)                                                                        |
| Power supply                                                        | 10 to 35 Vdc (4-20 mA output) and 12 to 35 Vdc (0-10 Vc output).                          |
| Maximum load                                                        | $RL (max.) = (V_{dc} - 10) / 0.02 [\Omega]$<br>where : Vdc= power supply voltage in Volts |
| Operating temperature                                               | from -20 to +50°C                                                                         |
| Humidity                                                            | from 0 to 90%RH                                                                           |
| Connection wire cross section                                       | 0.14 to 1.5 mm <sup>2</sup>                                                               |
| Electromagnetical compatibility                                     | EN 61326-1:2006                                                                           |
| Housing                                                             | ABS UL94-HB                                                                               |
| Certification                                                       | CE                                                                                        |

Electrical connections

|                               |                             |
|-------------------------------|-----------------------------|
| Material                      | Polyamide                   |
| Connection wire cross section | 0.14 to 1.5 mm <sup>2</sup> |
| Screw tightening torque       | 0.8 Nm                      |

It is important to follow the recommendations below:  
Signal wires should be installed in grounded conduits and away from power or contactor wires  
The instrument should have its own power supply wires, which should not be shared with electrical motors, coils, contactors, etc.  
Installing RC filters is strongly recommended at contactor coils or any other inductors  
System failure should always be taken into account when designing a control panel to avoid irreversible damage to equipment or people



Use and configuration  
Click here or flash the following code to use and set the Rail-Din converter



Connectors (only for thermocouple probes)

Compensated standard connector

Round pin miniature connectors for thermocouple sensors and extension or compensating cable connection. Connector is marked for pin polarity.

|                       |                                        |
|-----------------------|----------------------------------------|
| Material              | Thermoplastic shielded with glass silk |
| Operating temperature | From -50 to +210°C                     |
| Colour code           | IEC 584-3                              |

Reference:

Connector type

Female Male

CSF CSM

Thermocouple type

K

Compensated miniature connector

Flat pin miniature connectors for thermocouple sensors and extension or compensating cable connection. Connector is marked for pin polarity.

Material

Thermoplastic shielded with glass silk

|                       |                    |
|-----------------------|--------------------|
| Operating temperature | From -50 to +210°C |
| Colour code           | IEC 584-3          |

Reference:

Connector type

Female Male

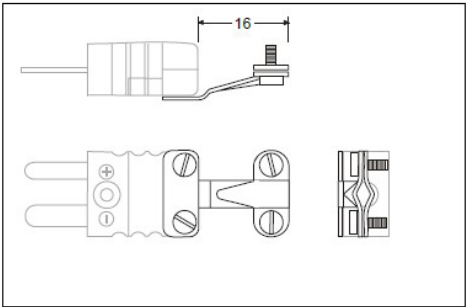
CMF CMM

Thermocouple type

K

Wire clamp bracket (only for thermocouple probes)

Stainless steel wire clamp bracket for miniature or standard connectors.



Reference:

