

### **Technical Data Sheet**

Pressure / Temperature / Humidity / Air Velocity / Airflow / Sound level

CE



### DIN rail Pt100 temperature transmitter **CORD-P**

### **DESCRIPTION**

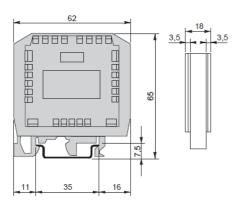
CORD-P transmitter is a Pt100 temperature transmitter into a 4-20 mA (or 20-4 mA) electrical signal at adjustable microprocessor.

It allows to convert variations of temperature reported by a standard Pt100 sensor (100  $\Omega$  at 0 °C) for a measuring range going from -200 to +850 °C into an electrical linear signal at 2 wires in the 4-20 mA range.

Configuration of the transmitter is simply made through a configuration button. It is also possible to use the **LCC101** configuration software to configure the transmitter. A led warms when an alarm situation appears (out of range or short-circuit).

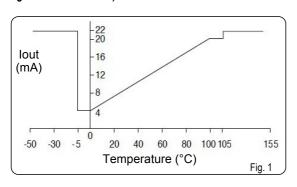
The transmitter is protected against inversions of polarity.

### DIMENSIONS (mm)



### OUTPUT CURRENT WITH RELATION TO TEMPERATURE

### (on range from 0 to +100 °C)



### TECHNICAL FEATURES OF THE TRANSMITTER

(at 20 °C and for a power supply voltage of 24 Vdc)

### Input

Sensor	Pt100 (100Ω at 0 °C)
Mounting of the element	2 or 3 wires
Linearisation	EN60751, IEC 751
Current in the sensor	<1 mA
Measuring range	From -200 to +850 °C
Range by default	From 0 to +100 °C
Minimum measuring range	25 °C
Influence of connection wires	Negligible with coupled wires
Speed conversion	2 measurements per second
Accuracy	From -100 to +500 °C: ±0.1 °C ±0.1% of reading. Beyond: ±0.2 °C ±0.2% of reading
Sensitivity to variations of ambient temperature	0.01 °C / °C
temperature	
Sensitivity to variations of voltage supply	0.005% FC / Vdc (FS: full scale)
Sensitivity to variations of voltage	0.005% FC / Vdc (FS: full scale) From -40 to +80 °C

### Output

Output	4-20 mA (or 20-4 mA), 22 mA in case of programming error or temperature out of range* (fig1)
Resolution	2 μA
Power supply voltage	7-30 VDC (protection against inversions of polarity)
Load resistance	$R_{Lmax} = \frac{Vdc - 7}{0,022}$ =>R <sub>Lmax</sub> = 770 Ω @ Vdc = 24 Vdc
Red led	Lights up during the programming phase and when the measured temperature is outside the set range.

<sup>\*</sup> If the measured temperature T is outside the set range T1...T2 (T1<T2), the transmitter maintains 4 mA for T<T1 and 20 mA for T>T2 for a dead band of 5 °C before going into error status at 22 mA.

**Figure 2** shows the wiring diagram of the transmitter in the current loop. To get a better accuracy, use 3 wires with the same section to plug to the Pt100, this allows to guarantee the same impedance to each branch. A device can be introduced in the current loop such as a display, a controller or a data logger.

# Connection WW 02+17 A POINT CORD KIMO Figure 2

### **ADJUSMENT**

It is possible to set different measuring ranges using the following accessories:

- 1 Continuous power source 7-30 Vdc
- (2) Precision ammeter with minimum range of 0 to 25 mA
- 3 Pt100 calibrator

### Procedure:

• Connect the converter to set to the power supply, to the ammeter and to the Pt100 calibrator (see figure 2). then make a long press on the configuration button. The led blinks twice during the push. When the blinks become faster, release the button: programming mode is active.

### a - Configuration of T1 point

- Led blinks one time at regular intevals: set the required temperature for the 4 mA output.
- Validate instructions with a brief press on the programming key. Led stays on then blinks 4 times guickly: temperature for 4 mA output is recorded.

### b - Configuration of T2 point

- Led blinks 2 times faster at regular intervals: set the required temperature for 20 mA output.
- Validate instructions with a brief press on the programming key.
   Led stays on then blinks 4 times quickly: temperature for 20 mA output is recorded.

In case of error whilst programming, if temperature is out of range or in alarm situation, led blinks 6 times quickly.



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Programming the temperature range can be carried out by using the precise resistances with constant values which simulate the Pt100 sensor values (see table of Pt100 values below).

## Programming scheme Launching of T1 point recording Recording of T1 point recording Recording of T1 point Recording of T2 point recording Recording of T2 point Recording of T2 point Turned-off Measurement and recording Time Turned-off A and Time A and Time A and Time T

### PT100 VALUES IN OHMS COMPARED TO THE MEASURED TEMPERATURE

Temp °C	PT100 value
-200	18.52
-150	39.72
-100	60.26
-50	80.31
0	100.00
50	119.40
100	138.51
150	175.86

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