



## CORD-T DIN rail thermocouple temperature transmitter

### DESCRIPTION

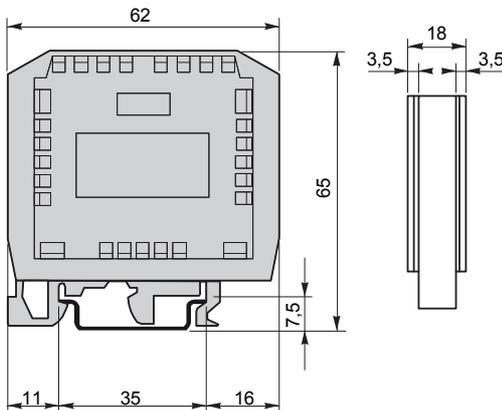
CORD-T transmitter is a **thermocouple** temperature transmitter into a **4-20 mA (or 20-4 mA)** electrical signal at adjustable microprocessor for thermocouple temperature transmitter.

It allows to convert variations of temperature reported by a thermocouple sensor for a measuring range going from **-200 to +1300 °C** into an electrical linear signal at 2 wires in the **4-20 mA** range.

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

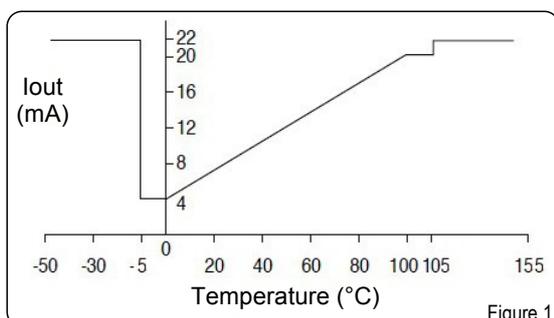
The transmitter is protected against inversions of polarity.

### DIMENSIONS (mm)



### OUTPUT CURRENT WITH RELATION TO TEMPERATURE

(on the range from 0 to +100 °C)



### TECHNICAL FEATURES OF THE TRANSMITTER

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

#### • Input

<b>Sensor</b>	K, J, T and N thermocouple
<b>Linearisation</b>	EN 60584-1
<b>Measuring range</b>	From -200 to +1300 °C
<b>Default range</b>	From 0 to +1000 °C
<b>Minimum measuring range</b>	25 °C
<b>Speed conversion</b>	2 measurements per second
<b>Accuracy</b>	±0,5 °C or 0,04 % FS + 0,04 % of reading
<b>Sensitivity to variations of ambient temperature</b>	0,025 °C / °C
<b>Sensitivity to variations of voltage supply</b>	2 µA / V
<b>Storage temperature</b>	From -40 to +80 °C
<b>Operating temperature</b>	From -30 to +70 °C

#### • Output

<b>Output</b>	4-20 mA (or 20-4 mA), 22 mA in case of programming error or temperature out of range* (fig1)
<b>Resolution</b>	2 µA
<b>Power supply voltage</b>	9-30 VDC (protection against inversions of polarity)
<b>Load resistance</b>	$R_{Lmax} = \frac{Vdc - 9}{0,022}$ => $R_{Lmax} = 680 \Omega$ @ Vdc = 24 Vdc
<b>Red led</b>	Lights up during the programming phase and when the measured temperature is outside the set range

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

## CONNECTION

Figure 2 shows the wiring diagram of the transmitter in the current loop. A device can be introduced in the current loop such as a display, a controller or a data logger.

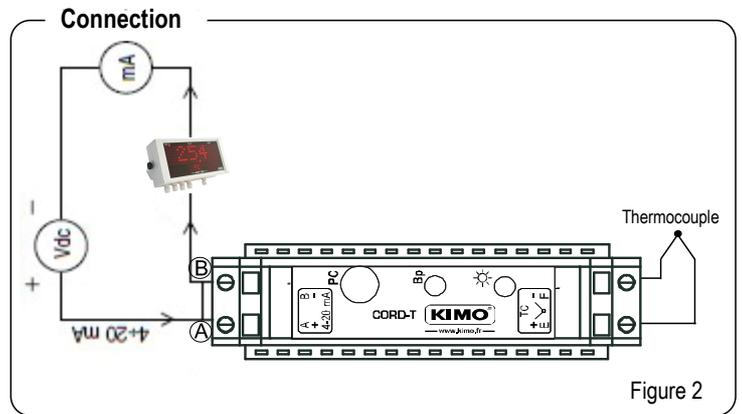


Figure 2

## CONFIGURATION

- Select the thermocouple type: this action is only possible with **LCC101** software.  
→ Default configuration is the following: K thermocouple with a temperature range from 0 to 1000 °C.

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

- ① Continuous power source 9-30 Vdc
- ② Precision ammeter with minimum range from 0 to 20 mA.
- ③ Voltage generator from 0 to 50 mV

### Procedure:

- Connect the transmitter to configure to the power supply, to the ammeter and to the voltage generator then make a long press on the configuration button. The led blinks twice during the push. When the blink becomes faster, release the button: programming mode is active.

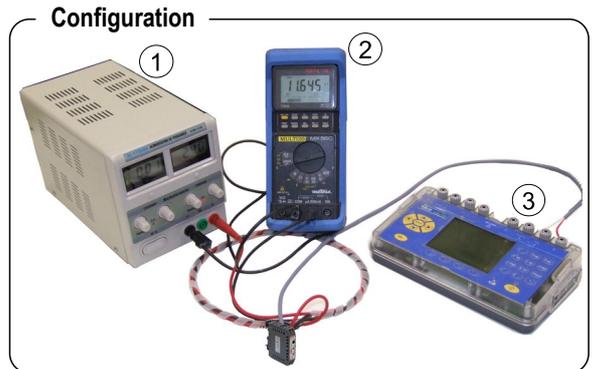
#### a – Configuration of T1 point

- Led blinks one time at regular intervals: set the equivalent voltage to the required temperature for 4 mA output.
- Validate the instruction with a brief press on the programming button. Led stays on then blinks 4 times quickly: temperature for 4 mA output is recorded.

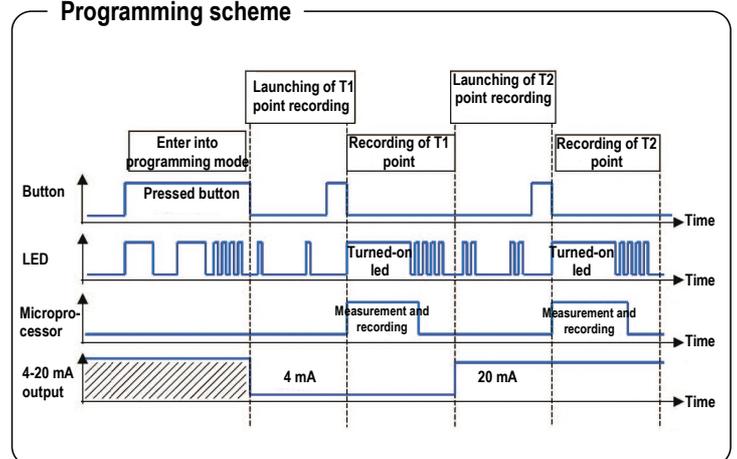
#### b – Configuration T2 point

- Led blinks two times faster at regular interval: set the equivalent voltage to the required temperature for 20 mA output.
- Validate the instruction with a brief press on the programming button. 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.



### Programming scheme



## TEMPERATURE / VOLTAGE CORRESPONDANCES FOR K AND J THERMOCOUPLES AS PER NF EN 60584-1 STANDARD

°C	mV
-200	-5.891
-150	-4.913
-100	-3.554
-50	-1.889
0	0.000
50	2.023
100	4.096
150	6.138

°C	mV
200	8.138
250	10.153
300	12.209
350	14.293
400	16.397
450	18.516
500	20.644
550	22.776

°C	mV
600	24.905
650	27.025
700	29.129
750	31.213
800	33.275
850	35.313
900	37.326
950	39.314

°C	mV
1000	41.276
1050	43.211
1100	45.119
1150	46.995
1200	48.838
1250	50.644
1300	52.410

} Only for K thermocouple

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