CE

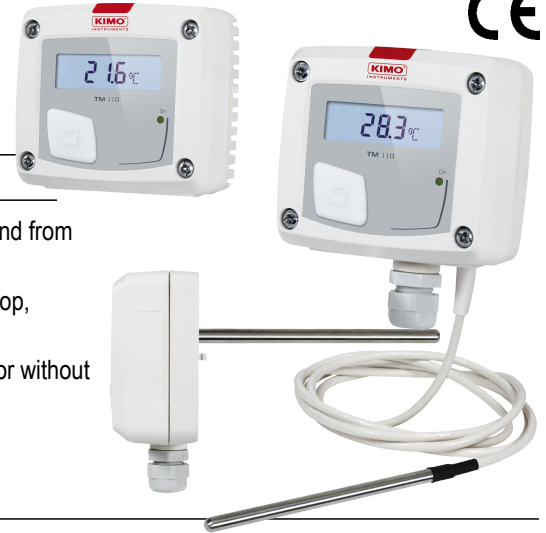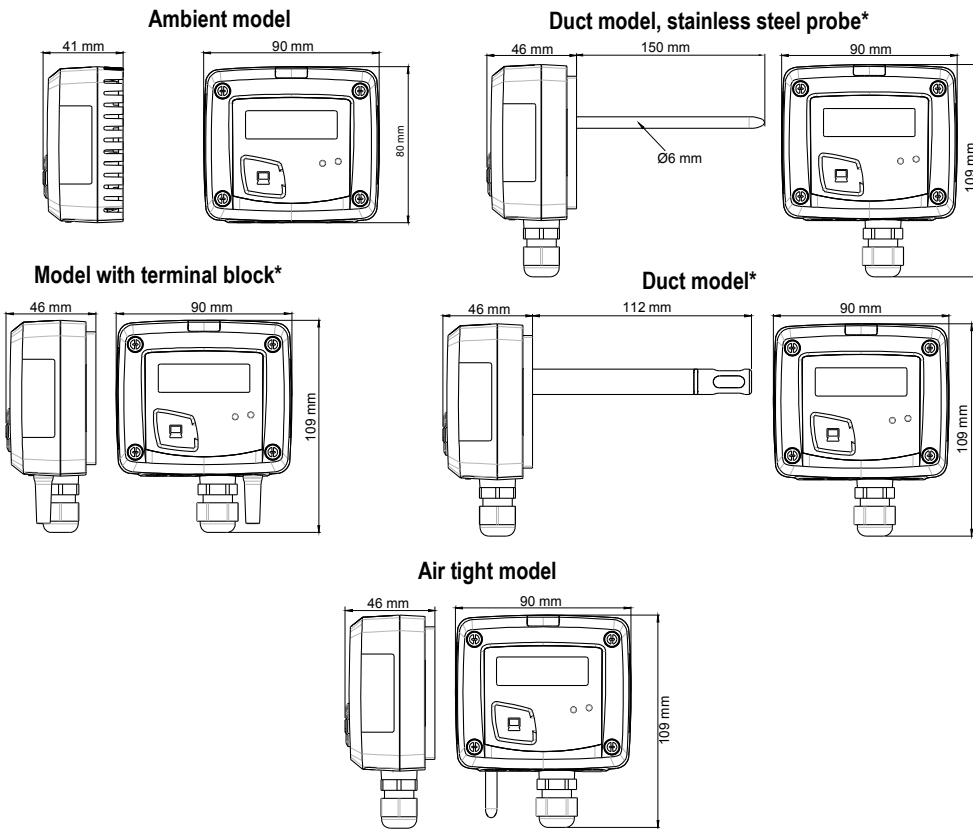# Temperature transmitter
TM 110

KEY POINTS

- Range from 0 to 50 °C (ambient model), from -20 to +80 °C (duct and air tight models) and from -100 to 400 °C (model with Pt100 terminal block)

- 0-10 V output, active, power supply 24 Vac/Vdc (3-4 wires) or 4-20 mA output, passive loop, power supply from 16 to 30 Vdc (2 wires)

- ABS V0 housing, IP65 (remote, air tight and duct models) or IP20 (ambient model), with or without display

- "¼ turn" system mounting with wall-mount plate

- Housing with simplified mounting system

FEATURES OF THE HOUSING

Ambient model
41 mm | 90 mm | 80 mm

Duct model, stainless steel probe*
46 mm | 150 mm | Ø6 mm | 90 mm | 109 mm

Model with terminal block*
46 mm | 90 mm | 109 mm

Duct model*
46 mm | 112 mm | 90 mm | 109 mm

Air tight model
46 mm | 90 mm | 109 mm

*different probes are available as option

Material : ABS V0 as per UL94

Protection :
- duct and air tight models and model with terminal block : IP65
- ambient model : IP20

Display : LCD 10 digits. Size : 50 x 17 mm

Height of digits : Values : 10 mm ; Units : 5 mm

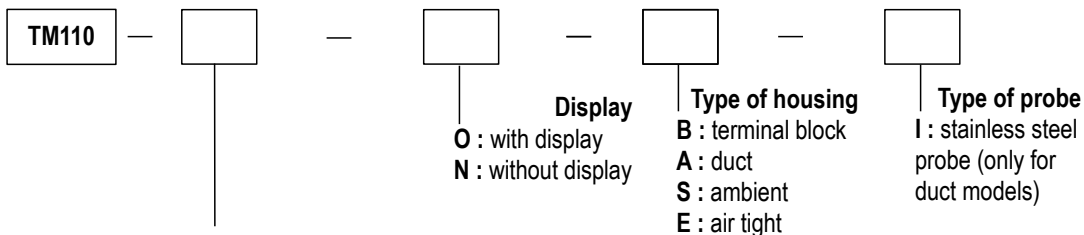**Cable gland (duct model and model with terminal block) :**
For cables Ø 8 mm maximum

Weight : 162 g

Cable of remote probes : length 2 m and Ø 4.8 mm in PVC

PART NUMBER

To order, just add the codes to complete the part number :

TM110 — ☐ — ☐ — ☐ — ☐

Power supply / Output
A : Active – 24 Vac/Vdc – 0-10 V
P : Passive – 16/30 Vdc – 4-20 mA

Display
O : with display
N : without display

Type of housing
B : terminal block
A : duct
S : ambient
E : air tight

Type of probe
I : stainless steel probe (only for duct models)

Example : TM110-POB
Temperature transmitter, passive 4-20 mA output, with display and with terminal block.

TECHNICAL FEATURES

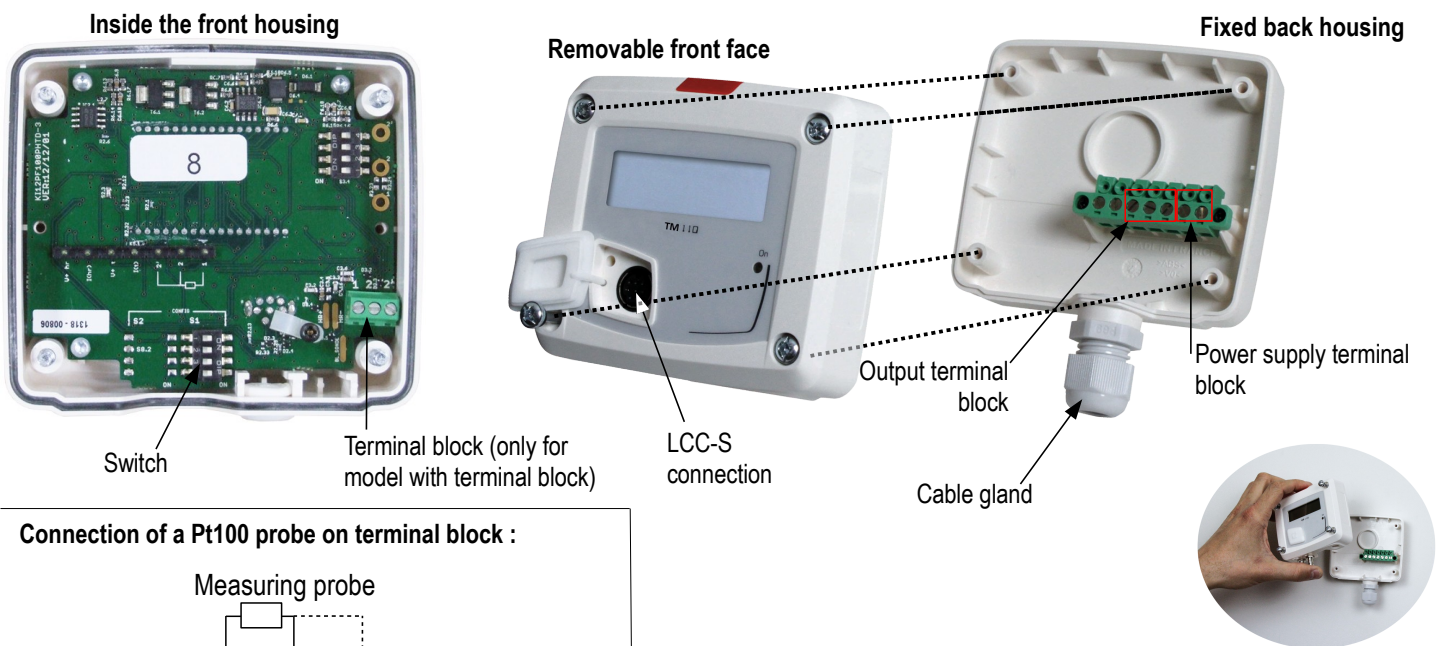|	
Unit of measurement	°C, °F
Measuring range	From 0 to 50 °C (ambient model), form -20 to +80 °C (duct and air tight models) and from -100 to +400 °C (model with terminal block)
Accuracy*	Pt100 : ±0.5 % of reading ±0.5 °C NTC : ±0.3°C (from -40°C to 70°C) ; ±0.5°C (outside the -40 to +70°C temperature range)
Type of sensor	Pt100 (model with terminal block and stainless steel duct and air tight models) NTC (ambient model and duct model)
Response time	1/e (63%) 5 sec. (ambient) 1/e (63%) 20 sec. (airtight)
Resolution	0.1 °C
Type of fluid	Air and neutral gases
Operating temperature	From 0 to +50 °C
Storage temperature	From -10 to +70 °C

*All the accuracies indicated in this technical datasheet were stated in laboratory conditions, and can be guaranteed for measurements carried out in the same conditions, or carried out with calibration compensation.
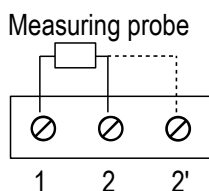
TECHNICAL SPECIFICATIONS

Output / Power supply	- active sensor 0-10 V (power supply 24 Vac/Vdc ± 10%), 3-4 wires - passive loop sensor 4-20 mA (power supply 16/30 Vdc), 2 wires - maximum load : 500 Ohms (4-20 mA) - minimum load : 1 K Ohms (0-10 V)
Consumption	2 VA (0-10 V) or max. 22 mA (4-20 mA)
Electromagnetical compatibility	EN61326
Electrical connection	Screw terminal block for cables from 0.05 to 2.5 mm^2 or from 30 to 14 AWG
PC communication	USB-mini DIN cable
Environment	Air and neutral gases

CONNECTIONS

Inside the front housing

Removable front face

Fixed back housing

Switch

Terminal block (only for model with terminal block)

LCC-S connection

Output terminal block

Cable gland

Power supply terminal block

Connection of a Pt100 probe on terminal block :

Measuring probe

1   2   2'

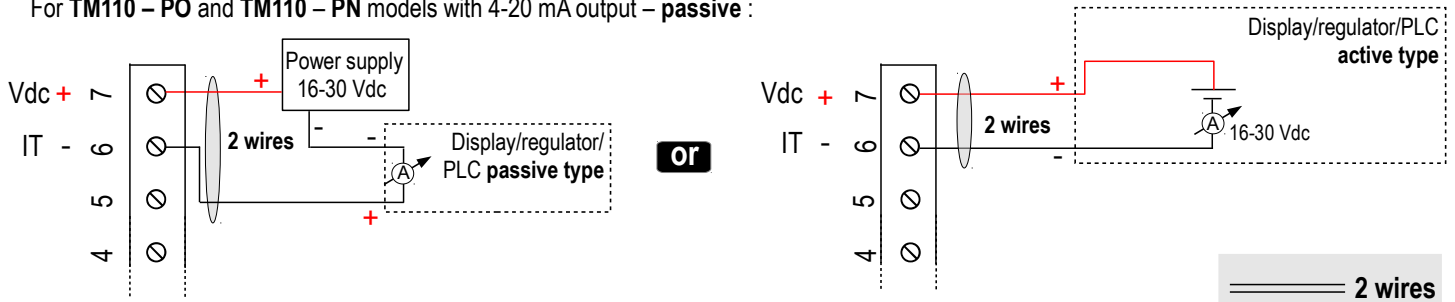## ELECTRICAL CONNECTIONS – as per *NFC15-100 standard*

⚠️ This connection must be made by a qualified technician. **To make the connection, the transmitter must not be energized.**

For **TM110 – AO** and **TM110 – AN** models with 0-10 V output – **active, 4 wires** :

⚠️ **To make a 3-wire connection, before powering up the transmitter, please connect the output ground to the input ground. See drawing below.**
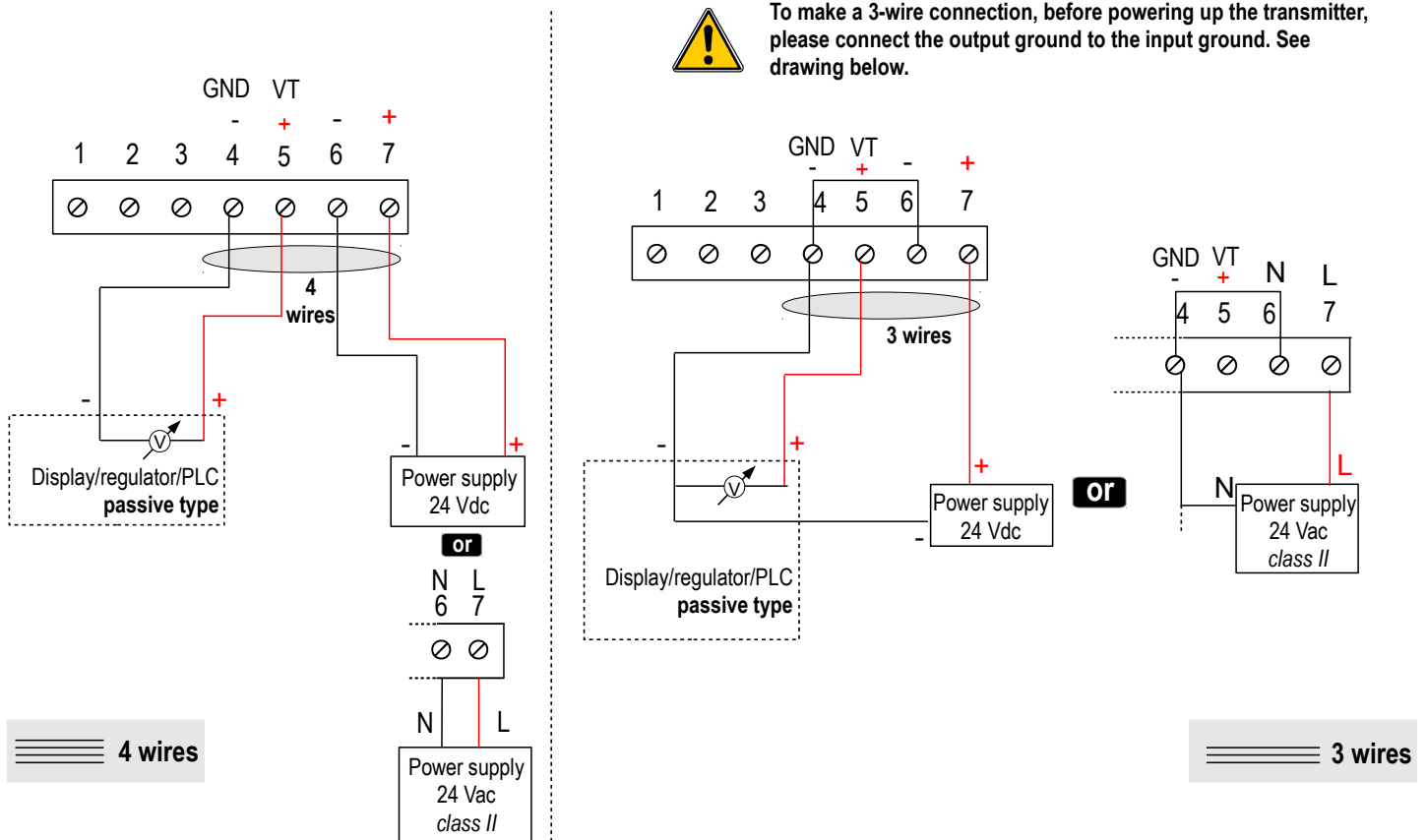
For **TM110 – PO** and **TM110 – PN** models with 4-20 mA output – **passive** :

SETTINGS AND USE OF THE TRANSMITTER

➢ **Configuration**

⚠️ To configure the transmitter, it must not be energized. Then, you can make the settings required, with the DIP switches (as shown on the drawing below). When the transmitter is configured, you can power it up.
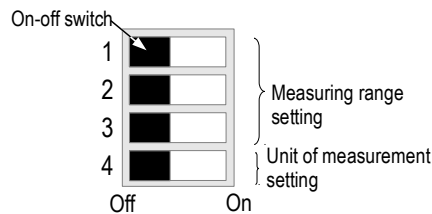
➢ **Measuring range setting**

To set a measuring range, put the on-switches 1, 2 and 3 of the measuring ranges as shown below.

Configurations	From 0 to 50 °C	From -20 to +80 °C	From -50 to +50 °C	From 0 to 100 °C	From 0 to 200 °C	From 0 to 400 °C
Combinations						

➢ **Unit of measurement setting**

To set the unit of measurement, put the on-off switch 4 as show beside.

Configurations		°C	°F
Combinations		1 ▢▨ 2 ▨▢ 3 ▨▢ 4 ▢■	1 ▨▢ 2 ▢▨ 3 ▢▨ 4 ■▢

CONFIGURATION VIA LCC-S SOFTWARE (option)

An easy and friendly configuration with the software !
It is possible to configure intermediate ranges.

⚠️ *Caution : the minimum difference between the high range and the low range is 20.*

Example : for a 0-100°C transmitter, the minimum delta of the range is 20°C. It is then possible to configure the transmitter from 0 to +100°C, or from 0 to +20°C...
• To access the configuration via software :
    - Set the DIP switches as shown beside.
    - Connect the cable of the LCC-S to the connection of the transmitter.
• Please refer to the user manual of the LCC 100 to make the configuration.

Configuration via PC

1 ▢■
2 ▢■
3 ▢■
4 ▢■
Switch

⚠️ *The configuration of the parameters can be done either with the DIP switch or via software (you can not combine both solutions).*


MOUNTING

To install the transmitter, mount the ABS plate on the wall (drilling : Ø6 mm, screws and pins are supplied).
Insert the transmitter on the fixing plate (see A on the drawing beside). Rotate the housing in clockwise direction until you hear a "click" which confirms that the transmitter is correctly installed.

⚠️ **Ambient model does not have any mounting plate.**
4 fixing holes are present inside the back housing. Use them to install the transmitter on the required location.
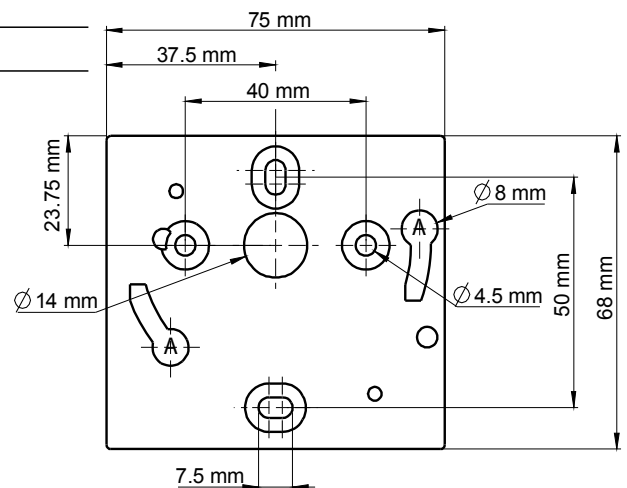
MAINTENANCE

Please avoid any aggressive solvent. Please protect the transmitter and its probes from any cleaning product containing formalin, that may be used for cleaning rooms or ducts.

OPTIONS AND ACCESSORIES

• **KIAL-100A :** Power supply class 2, 230 Vac input, 24 Vac output
• **KIAL-100C :** Power supply class 2, 230 Vac input, 24 Vdc output
• **LCC-S :** configuration software with USB cable
• Pt100 2 or 3 wires or NTC stainless steel probe for duct and remote models

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