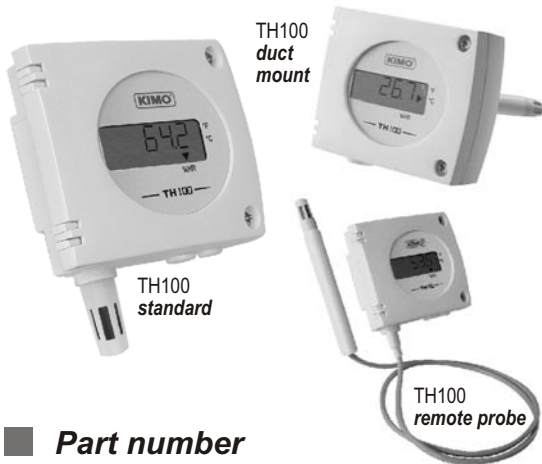


**TECHNICAL DATASHEET**

**New**

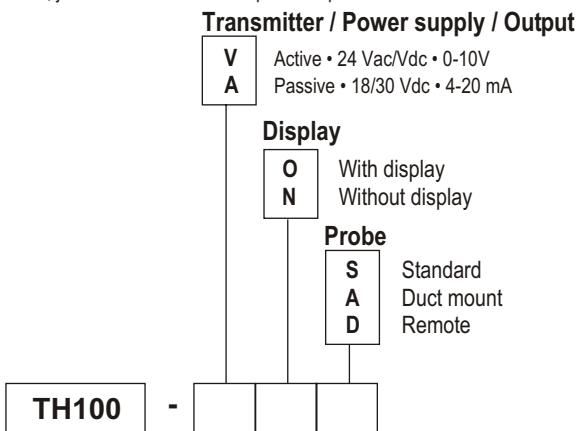
**Temperature and humidity transmitter  
TH 100**



- Humidity and temperature transmitter type TH100.
- Measuring ranges 0-100%RH and -50 to +50°C, -20 to +80°C, 0 to +50°C, 0 to +100°C (see "Configuration")
- 0-10 V output, active sensor, power supply 24 Vac/Vdc (3-4wires) or 4-20 mA output, passive loop, power supply 18 to 30 Vdc (2 wires).
- Housing ABS IP 65 with or without display.
- Alternating display of humidity and temperature
- Quick and easy mounting "1/4 turn" system on wall-mount plate.

**Part number**

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

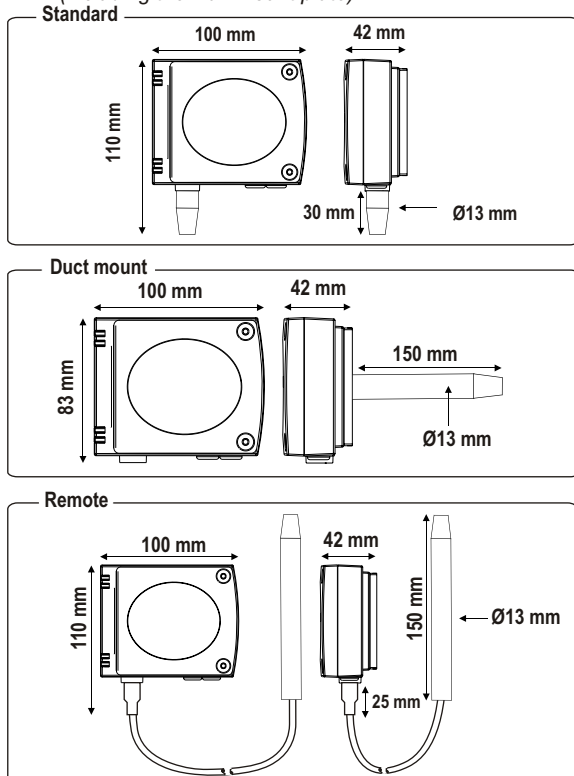


**Example : TH100-VOD**

Model : temperature and humidity transmitter TH 100, active sensor, 0-10 V output, with display and remote probe.

**Dimensions of the housing**

(including the wall-mount plate)



**Features of the transmitter**

**Humidity**

Working principle : the measurement of temperature and humidity is made by only one digital component CMOS (complementary metal-oxide semiconductor), including a capacitive element and a thermistor. This technology guarantees an excellent stability in the long term, along with a great accuracy of the measurement.

- Measuring range .....0 to 100 % RH
- Unit of measurement .....% RH
- Response time .....1/e (63%) 4 s
- Resolution .....0,1% RH
- Type of fluid .....air and neutral gases

**HYGROMETRY PROBE :**

Guaranteed Accuracy Limits\* (GAL) = ±2,95 % RH between 18 and 28°C (normal measurement range)  
Measuring range : 0 to 100%RH  
Short-term drift : 1% RH / year

\* GAL= Et + Ehl + k (uet<sup>2</sup>+ur<sup>2</sup>+ud<sup>2</sup>+us<sup>2</sup>)/2

As per the Charter 2000/2001 Hygrometers with :  
uet : uncertainty of calibration = ± 0,55% RH  
ur : uncertainty of resolution = ± 0,003% RH  
ud : manufacturing dispersion = ± 0,2% RH  
us : comparison repeatability = 0,13% RH  
Et : temperature coefficient error = ± 0,42%RH  
Ehl : linearity and hysteresis errors = ± 1,33% RH  
k : coverage factor value = 2

\* As per norm NFX 15-113 and the Charter "2000-2001 HYGROMETERS.

**Temperature**

- Measuring range .....0 to +50°C, -20 to +80°C, -50 to +50°C, 0 to +100°C
- Unit of measurement .....°C, °F
- Accuracy \* .....±1% of reading ±0,4°C in the range 5 to 80°C  
±2% of reading ±0,6°C in the range -20 to 5°C
- Response time .....1/e (63%) 15 s
- Resolution .....0,1°C
- Type of fluid .....air and neutral gases

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

**Features of the housing**

WITH or WITHOUT display



- Housing .....ABS
- Fire-proof classification .....HB as per UL94
- Dimensions .....see drawing beside
- Protection .....IP65
- Display .....5-digit LCD. Dimensions 50 x 15 mm  
Alternating display of humidity and temperature.
- Height of the digits .....10 mm
- Cable grip .....for cable Ø 7 mm maxi.
- Weight .....145 g (with display) - 110g (without display)

## Technical Specifications

**Output / Power supply** .....active 0-10 V (power supply 24 Vac/Vdc  $\pm 10\%$ ), 3-4 wires  
 passive loop 4-20 mA (power supply 18/30 Vdc), 2 wires  
 maximum load : 500 Ohms (4-20 mA)  
 minimum load : 1 K Ohms (0-10 V)

**Consumption** .....2 VA (0-10V) or max. 22 mA (4-20 mA)

**Electro-magnetical compatibility** ...EN 61326

**Electrical connection** .....screw terminal block for cable  $\varnothing 1.5 \text{ mm}^2$  max.

**Communication to PC** ..... Kimo RS 232 cable

**Working temperature (housing)** ....0 to +50°C

**Working temperature (probe)** .....0 to +50°C (standard)  
 -20 to +80°C (remote and duct mount)

**Storage temperature** .....-10 to +70°C

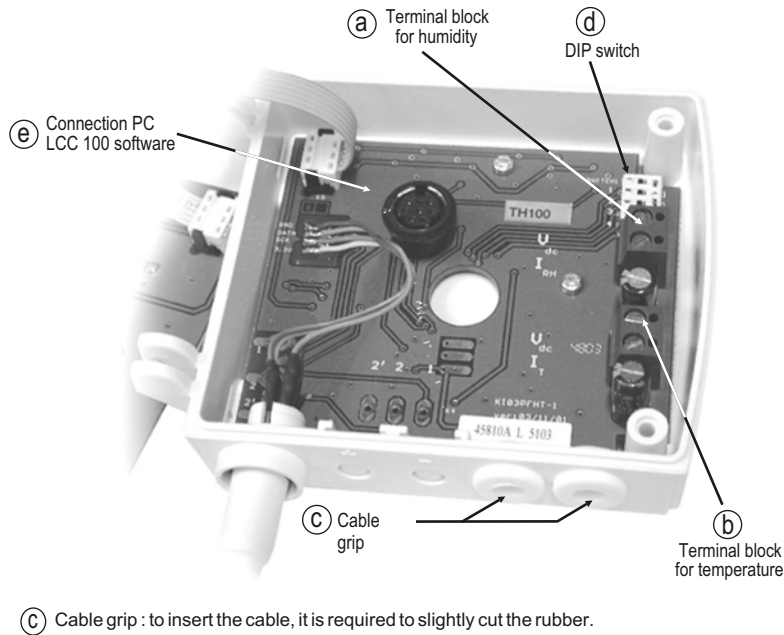
**Environment** .....air and neutral gases

## Connection



For the models

**TH 100 - AOS, TH100 - ANS, TH 100 - AOD, TH 100 - AND, TH 100 - AOA, TH 100 - ANA** • Output 4-20 mA - **passive loop**



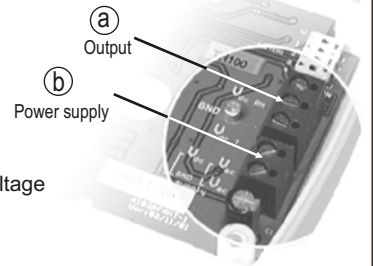
(c) Cable grip : to insert the cable, it is required to slightly cut the rubber.

- (a)  $\begin{matrix} \text{Vdc} & \dots\dots & \text{direct voltage} \\ \text{IRH} & \dots\dots & \text{direct current (humidity)} \end{matrix}$
- (b)  $\begin{matrix} \text{Vdc} & \dots\dots & \text{direct voltage} \\ \text{IT} & \dots\dots & \text{direct current (temperature)} \end{matrix}$

For the models

**TH 100 - VOS, TH100 - VNS, TH 100 - VOD, TH 100 - VND, TH 100 - VOA, TH 100 - VNA** • Output 0-10 V - **active**

- (a)  $\begin{matrix} \text{Vdc RH} & \dots\dots & \text{direct voltage (humidity)} \\ \text{GND} & \dots\dots & \text{ground} \\ \text{Vdc T} & \dots\dots & \text{direct voltage (temperature)} \end{matrix}$



- Power supply**
- (b)  $\begin{matrix} \text{Vdc} & \dots\dots & \text{direct voltage} \\ \text{GND} & \dots\dots & \text{ground} \end{matrix}$

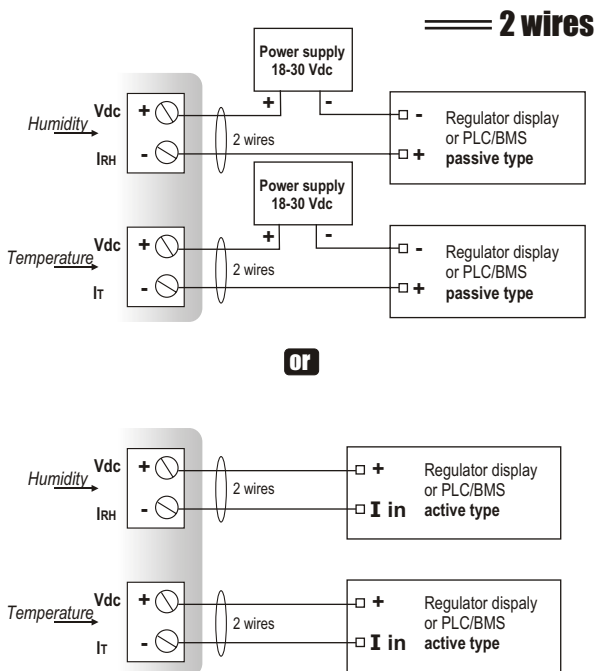
- OR**
- (b)  $\begin{matrix} \text{Vac} & \dots\dots & \text{alternative voltage (phase)} \\ \text{Vac} & \dots\dots & \text{alternative voltage (neutral)} \end{matrix}$

## Electrical connection - as per norm NFC15-100

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

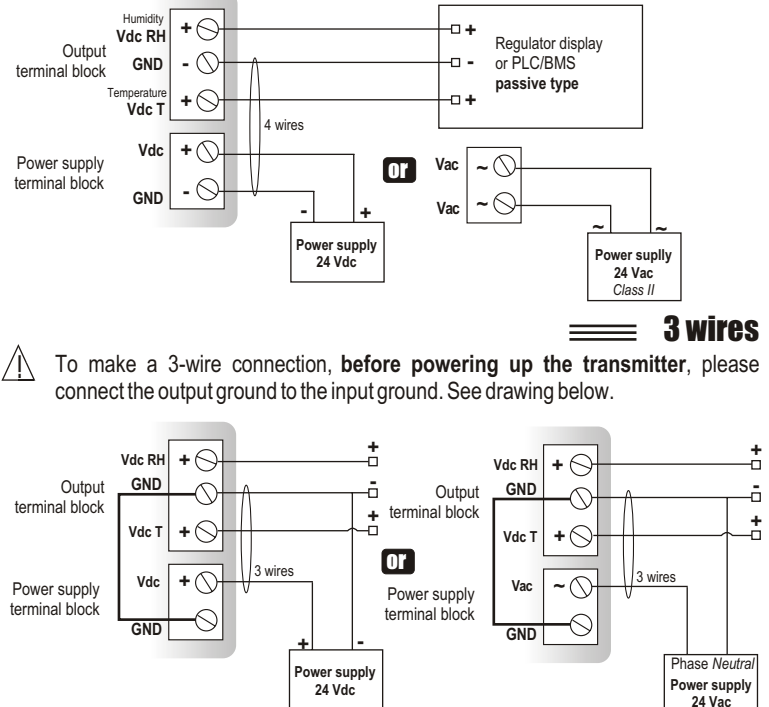
For the models

**TH 100 - AOS, TH100 - ANS, TH 100 - AOD, TH 100 - AND, TH 100 - AOA, TH 100 - ANA** • Output 4-20 mA - **passive**



For the models

**TH 100 - VOS, TH100 - VNS, TH 100 - VOD, TH 100 - VND, TH 100 - VOA, TH 100 - VNA** • Output 0-10 V - **active**

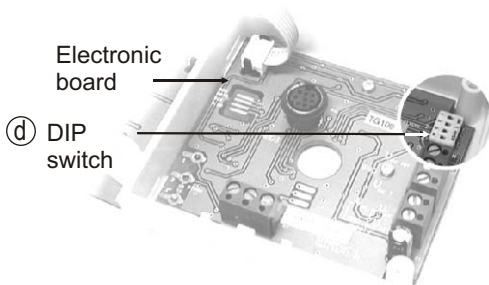


## Configuration

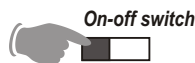
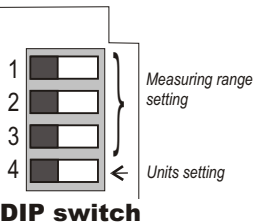
It is possible to configure the measuring ranges, the units, the output of the transmitter (according to the model) either by **DIP switch** and/or via **software** (connections ③ and ④ on drawing "connection").

### Configuration by DIP switch

To configure the instrument, please unscrew the 2 screws from the housing, and then open it .



Identification of the DIP switches on the electronic card



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 beside). When the transmitter is configured, you can power it up.



#### Caution !

Please follow carefully the combinations beside with the DIP switch.

If the combination are wrongly done, the following message will appear on the display of the transmitter "CONFERROR". In that case, you will have to unplug the transmitter, replace the DIP switches correctly, and then power the transmitter up.

#### Units setting

To set the measuring unit, put the on-off switch 4 of units as shown beside.

Configurations	°C	°F
Combinations	1	1
	2	2
	3	3
	4	4

#### Measuring range setting

To set the measuring range, put the on-off switches 1, 2 and 3 of the measuring range as shown beside.

Configurations	0 to 50 °C	-20 to 80 °C	-50 to 50 °C	0 to 100 °C
Combinations	1	1	1	1
	2	2	2	2
	3	3	3	3
	4	4	4	4

### Initialization the transmitter

When the transmitter is powered up, it initializes and displays the digits  $\overline{00.0000}$ , and then its configuration including :  
 - the measuring range  
 - the analog output.

#### 1- The measuring range

The following message is displayed :  $\overline{Lo}$ . This is the low value of the measuring range, and its digit value : **ex** :  $\overline{0}$ .

The following message is displayed :  $\overline{Hi}$ . This is the high value of the measuring range and its digit value : **ex** :  $\overline{100}$ .

The arrow displayed (at the bottom or on the right of the screen) is relative to the unit of measurement : **ex** : from 0 to 100 %RH.

#### 2- The analog output

If the analog output is in 4-20mA, then the following message will appear  $\overline{4-20A}$ .

If the analog output is 0-10 V, then the following message will appear  $\overline{0-10V}$ .

The transmitter can measure several parameters (TH 100 => humidity + temperature). The transmitter will first display the configuration of humidity parameters, and secondly the configuration of temperature parameters.

After the display of the configurations, the transmitter displays  $\overline{- - - -}$ , which confirms that the initialization is finished and you can start the measurements.

