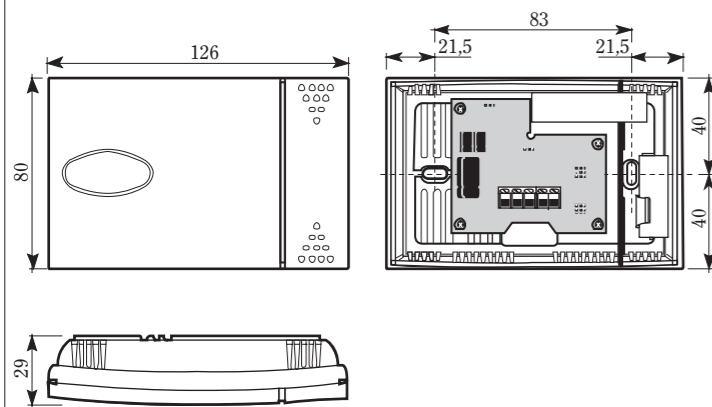
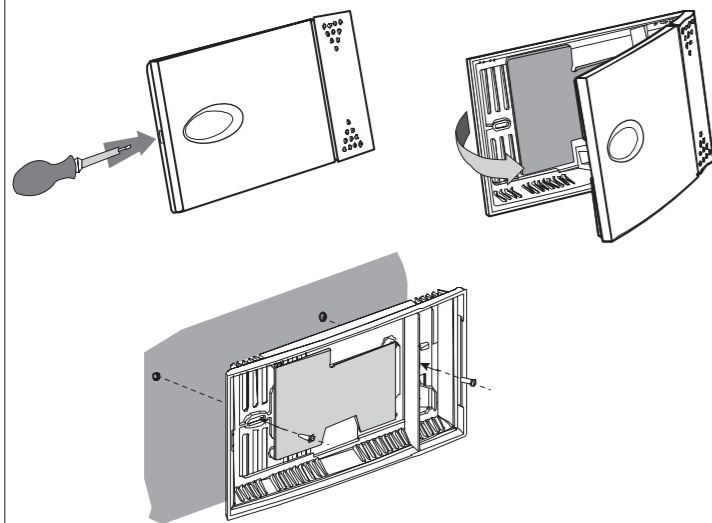


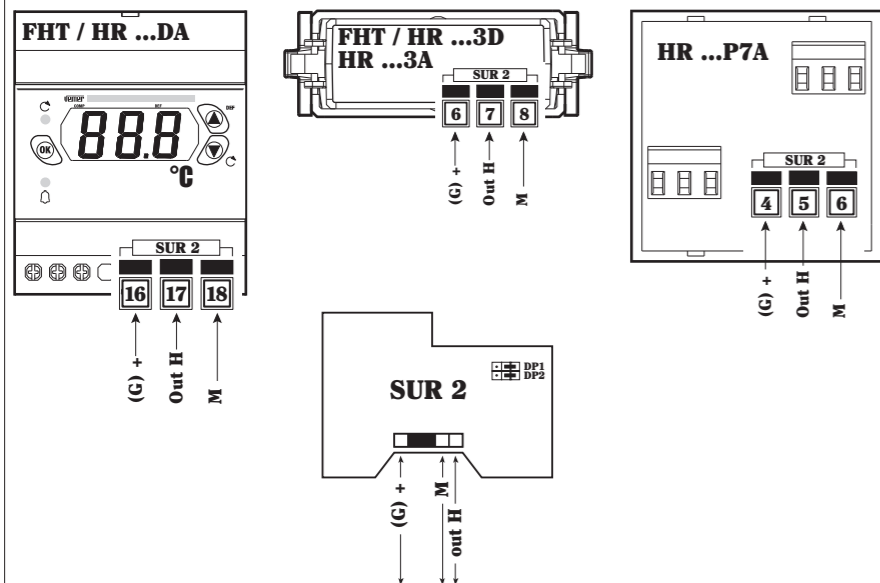
(A)



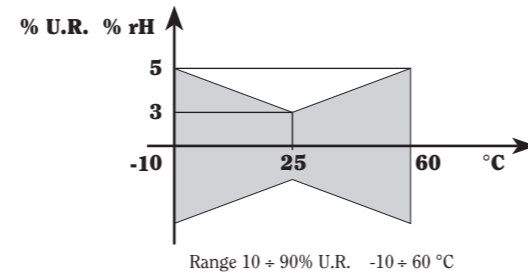
(B)



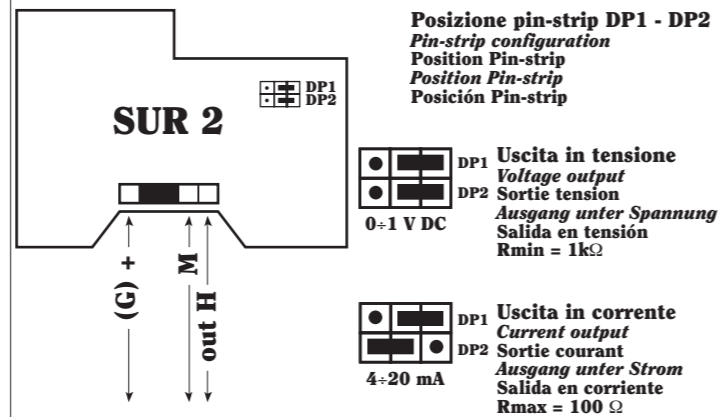
(C)



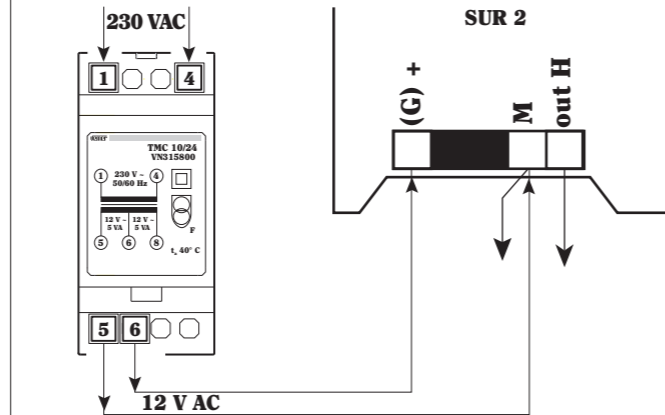
(D)



(E)



(F)



**out H = Uscita Umidità (0÷1 VDC o 4÷20 mA)**  
**Umidity output**  
**Sortie umidité**  
**Feuchtigkeitsausgang**  
**Salida humedad**

**M = Riferimento alimentazione/uscita**  
**Ground for power and output**  
**Référence alimentation/sortie**  
**Bezug Versorgung / Ausgang**  
**Referencia alimentación/salida**

**+ (G) = Alimentazione**  
**Power Supply**  
**Alimentation**  
**Versorgung**  
**Alimentación**

## User Manual

### HUMIDITY PROBES

Read all the instructions carefully

#### SAFETY WARNINGS

- 1) Read this manual carefully before installing the device
- 2) Installation and maintenance should be carried out by qualified service personnel only
- 3) Before working on the terminals, make sure the wires to be connected to the device are not live
- 4) Do not power or connect the device if any part of it is damaged

#### Wall-mounted humidity probe

Code	Model	Range
VN873600	SUR 2	10 ± 90 % U.R.

#### TECHNICAL SPECIFICATIONS

- Electronic humidity probe with active output
- Type of sensor: capacitive
- Power supply: 9 ÷ 30 V DC tolerance ± 10%  
12÷24 V AC tolerance -10%, +15%
- Operating field: 10 ± 90% R.H. (0÷50 °C)
- Output signal: reference range 0÷100% R.H., irrespective of measurement range  
Voltage 10 mV/% R.H. (load Rmin = 1 kΩ)  
Current 4÷20 mA (load Rmax = 100 Ω)  
4 mA = 0%R.H.; 20 mA = 100%R.H.
- Precision: range: 10÷90% R.H.  
± 3% at 25 °C, ± 5% from 10% R.H. to 90% R.H. in the range -10÷60 °C  
Temporary variations are possible between ± 12% R.H. and ± 2 °C, in the presence of electromagnetic fields of 10 V/m
- Absorption: Output in voltage (typical absorption with load of 10 kΩ)  
10 mA with 12 V DC power supply  
8 mA with 24 V DC power supply  
Output in current  
35 mA with 12 V DC power supply  
24 mA with 24 V DC power supply  
50 mA with 12 V AC power supply  
24 mA with 24 V AC power supply
- Time constant: in still air 60 s  
in ventilated air (3 m/s) 20 s
- Protection level: IP30
- Terminal board: screw-on for cables with a max section of 1.5 mm<sup>2</sup> – min. 0.2 mm<sup>2</sup>
- Storage conditions: -20 °C ÷ 70 °C, 90% R.H. non-condensing
- Operating conditions: -10 °C ÷ 70 °C or 0 °C ÷ 50 °C, 90% R.H. non-condensing
- Classification in line with protection: Class I and II equipment against electric shock
- Heat and fire resistance category: Category D (for base and cover)
- Over-voltage immunity category: Category 2

#### GUIDE TO INSTALLATION

- To open the probe, proceed as shown in **box B**
- The probe can be housed above a 3-module built-in box using 3.5x25 screws
- For direct wall mounting, we advise using the dowels supplied (S25 + 3.5x25 screws) or a metal panel. In this latter case, use the M3x10 screws supplied in the fixing kit.
- Take care not to damage the sensors when the tightening the right-hand fixing screw.
- Connect the device as shown in the diagram in **box C**
- To avoid measurement errors caused by the electromagnetic couplings, we advise using a multi-pole screened cable
- The cables carrying the signal should not be housed close to the power supply cables or the contact cables
- At the minimum, the main insulation should be provided against the control power supply system to which the probe is connected

#### GUIDE TO USING THE DEVICE

- As default, this device is configured with a current output for the direct connection to the universal instruments from the FHT-..., HR-... series
- When the device is configured with the output in voltage, allowance has to be made for the voltage drop on the cables: Signal 0÷1 V DC – the effect of the drop on a section of 1 mm<sup>2</sup> is a variation of 0.015 % R.H. per metre of cable (0.015% R.H. m/mm<sup>2</sup>)

Cable length	Cable section	Humidity error
30 m	0,5 mm <sup>2</sup>	0,9% U.R.
30 m	1,5 mm <sup>2</sup>	0,3% U.R.

- To avoid measurement errors due to the power supply current, a supplementary power supply from an outside transformer to be connected as shown in **box F** may be used. The transformer should not be connected to earth and should be positioned in the regulator panel.  
With the supply power supply, there is no flow of power supply current on the connection between the terminal of the probe marked "M" to the reference terminal of the instrument, and the maximum remote distance is 100 m
- If the measurement instrument so permits, we advise selecting the current output for distances greater than 30 m
- To select the voltage output, position the pin strips (jumpers) as shown in **box E**
- When the device is configured with the current output, the minimum remote distance is 200 m: Signal 4÷20 mA – with an AC power supply it is essential to use cables with a section of 1.5 mm<sup>2</sup> to reduce the noise caused by the power supply current.  
In certain cases, this noise may cause measurement instability that can be eliminated with a DC or supplementary power supply