

Meteo Station SM04



The meteo station SM04 is a device designed to measure the main parameters needed for the analysis of the environmental performance of a photovoltaic system. In particular, SM04 measures the following physical quantities: solar irradiance, air temperature and cell temperature.

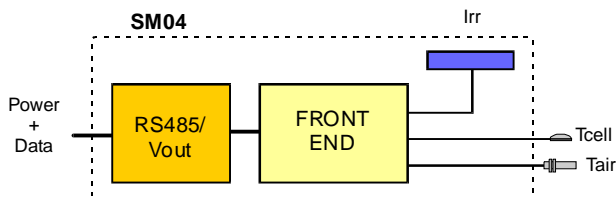
In accordance to CEI 82-25 guide, the solar irradiation is detected by a silicon solar cell. The cell is also temperature-compensated in order to allow long exposure times without compromising the precision of measurement.



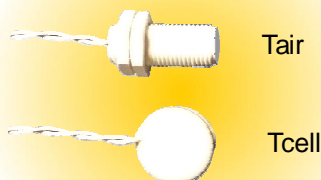
The temperatures are detected by means of high quality platinum resistance sensors; the probe for the cell temperature is provided with a plate coated with thermally conductive rubber.

The meteo station is provided with a standard RS485 communication interface and can be directly connected to any SmartDisplay device (SM04-485 version).

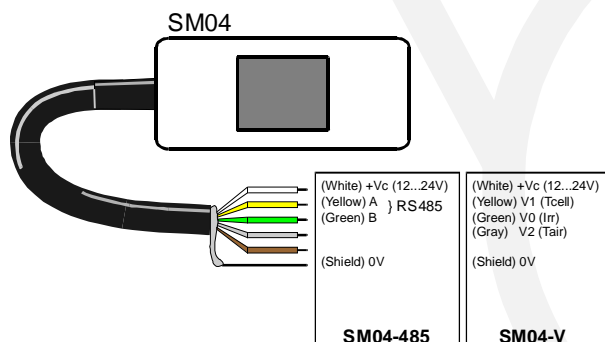
For general applications is available the SM04-V version with 0...10V analog outputs.



Code	Part	Description
8802820	SM04-485	Meteo Station with RS485 connection (sensors included)
8802821	SM04-V	Meteo Station with 0...10V outputs (sensors included)
8802404	-	Surface temperature probe (Tcell)
8802407	-	Air temperature probe (Tair)



Temperature sensors



Electrical connections

Technical specifications

SOLAR IRRADIANCE MEASUREMENT (SM04-485)

Type of sensor: Mono-Si cell, temperature compensated
 Operating range: 0...1500 W/m²
 Resolution: 0.1 W/m²
 Accuracy: ±(5% rdg + 20 dgt)

TEMPERATURE MEASUREMENT (SM04-485)

Type of sensor: RTD Pt1000, Class 1/3B (DIN/IEC751)
 Operating range: -50...150°C (Tcell)
 Operating range: -20...50°C (Tair)
 Resolution: 0.01°C
 Accuracy: ±(0.2% rdg + 15 dgt)
 Cable length: 1.4 m

DIGITAL DATA OUTPUT (SM04-485)

RS485 interface, proprietary protocol
 Cable length: 1.5 m

ANALOG DATA OUTPUTS 0...10V (SM04-V)

Irradiance: $V_{irr} = I_{irr}[W/m^2] * 0.00833$ ($I_{irr} = 0...1200 W/m^2$)
 Cell temp: $V_{tcell} = 1.67 + T_{cell}[°C] * 0.0833$ ($T_{cell} = -20°C...100°C$)
 Air temp: $V_{air} = 1.67 + T_{air}[°C] * 0.0833$ ($T_{air} = -20°C...50°C$)
 Suggested load impedance for each output: > 4.7 Kohm
 Cable length: 1.5 m

POWER SUPPLY

11.5...25 Vdc
 7 mA (typ)

TEMPERATURE RANGE

-10°...55°C working (RH max 85% at 25°C)
 -20°...60°C storage

DEGREE OF PROTECTION

IP65

DIMENSIONS

150 mm x 65 mm x 35 mm

WEIGHT

~250 g