DATA SHEET

OptiVelox

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Meteo Station

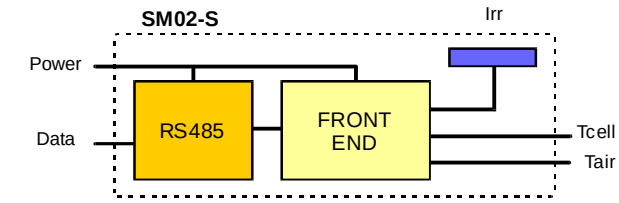
SM02

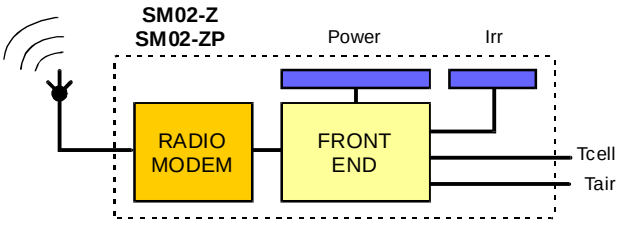
The meteo station SM02 is a device designed to measure the main parameters needed for the analysis of the environmental performance of a photovoltaic system. In particular, SM01 measures the following physical quantities: solar irradiance, air temperature and cell temperature.

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 proposed in two versions; with a serial connection or with a wireless connection.
In the first case the data can be read via RS485 serial interface, in the second case the data is transmitted via a ZigBee radio modem.
The wireless meteo station has additional solar cells in order to be self sufficient and not require any external power supply or battery. The range of the wireless link depends on the model of the RF modem used, there are two different types of modems available; standard and pro, to be specified when ordering.





Code	Part	Description
8802786	SM02-S	Meteo Station with RS485 connection
8802784	SM02-Z	Meteo Station with wireless connection (modem standard)
8802785	SM02-ZP	Meteo Station with wireless connection (modem pro)

Note for -ZP version:
When operating in some countries the radio modem must be configured to operate at a maximum transmit power output level of 10 dBm. Please specify when ordering if you want the power is limited to this value)

General specifications SM02

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

TEMPERATURE MEASUREMENT
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)

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

Model SM02-S

DATA OUTPUT
RS485 interface

POWER SUPPLY
4.5...13.2 Vdc
5 mA (typ)

Model SM02-Z

DATA OUTPUT
Modem ZigBee 2,4 GHz (banda ISM)
Pout max: 1 mW / 0 dBm (-Z)
100 mW / 20 dBm (-ZP)

OPERATING RANGE
Indoor: 25 m (-Z), 45m (-ZP)
Outdoor: 250 m (-Z), 1300 m (-ZP)

SAMPLING TIME
1...65535 s

POWER SUPPLY
Self powered for Irr > ~150 W/m2

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