Pyranometers

Pyrgeometers

Pyrheliometer

Sun Trackers

Albedometers

UV Radiometers

Net Radiometers

Horticultural Sensors

Sunshine Duration Sensors

Laboratory Thermopile

Data Loggers

Solar Accessories

SMP11

SMP11 has the same housing and detector design as the passive CMP 11 model and is an ISO Secondary Standard pyranometer. Like SMP3 and SMP10, the SMP11 is equipped with a smart interface and there are two versions, One has an analogue output of 0 to 1 V, the other has 4 to 20 mA. Both have a 2-wire RS-485 interface with Modbus® (RTU) protocol.

SMP11 has all the smart interface advantages and features of the SMP3 but a significantly higher level of performance, and also has a faster response than the CMP 11. SMP series pyranometers can operate from a power supply in the range from 5 to 30 VDC and have both reverse polarity and over-voltage protection.

Through the Modbus® interface the user can access the pyranometer type and serial number, instrument settings, calibration history, status information, and more. Pyranometers can be assigned individual addresses and 'daisy-chained' together for use in site networks.

SMP11 is the best choice for site prospecting, technology research and high quality solar radiation monitoring in renewable energy applications. It is also particularly suitable for upgrading meteorological networks and for use in sun tracker based solar monitoring stations.

The included Smart Sensor Explorer software allows up to 10 smart radiometers to be connected to a Windows™ computer; for configuration, testing, read-out of settings and parameters and basic data logging functions.

Specifications	
Classification to ISO 9060:1990	Secondary Standard
Spectral range (50 % points)	285 to 2800 nm
Analogue output • V-version Analogue output range	0 to 1 V -200 to 2000 W/m²
Analogue output • A-version Analogue output range	4 to 20 mA 0 to 1600 W/m²
Serial output	RS-485 Modbus®
Serial output range	-400 to 4000 W/m²
Response time (63 %) Response time (95 %)	< 0.7 s < 2 s
Zero offsets (a) thermal radiation (at 200 W/m²) (b) temperature change (5 K/h)	 < 7 W/m² < 2 W/m²
Non-stability (change/year)	< 0.5 %
Non-linearity (100 to 1000 W/m²)	< 0.2 %
Directional response (up to 80° with 1000 W/m² beam)	< 10 W/m²
Spectral selectivity (350 to 1500 nm)	< 3 %
Temperature response	< 1 % (-20 °C to +50 °C) < 2 % (-40 °C to +70 °C)
Tilt response (0° to 90° at 1000 W/m²)	< 0.2 %
Field of view	180°
Accuracy of bubble level	< 0.1°
Supply voltage	5 to 30 VDC
Power consumption (at 12 VDC)	-V version: 55 mW -A version: 100 mW
Detector type	Thermopile
Software, Windows™	Smart Sensor Explorer Software, for configuration, test and data logging
Operating temperature range	-40 °C to +80 °C
Storage temperature range	-40 °C to +80 °C
Humidity range	0 to 100 % non-condensing
Ingress Protection (IP) rating	67

Part number	Instrument
0374910-102	SMP11-V Smart Pyranometer • 0 to 1 V version • 10 m cable
0374910-104	SMP11-V Smart Pyranometer • 0 to 1 V version • 25 m cable
0374910-105	SMP11-V Smart Pyranometer • 0 to 1 V version • 50 m cable
0374910-100	SMP11-V Smart Pyranometer • 0 to 1 V version • no plug, no cable
0374910-202	SMP11-A Smart Pyranometer • 4 to 20 mA version • 10 m cable
0374910-204	SMP11-A Smart Pyranometer • 4 to 20 mA version • 25 m cable
0374910-205	SMP11-A Smart Pyranometer • 4 to 20 mA version • 50 m cable
0374910-200	SMP11-A Smart Pyranometer • 4 to 20 mA version • no plug, no cable

SMP11 Secondary Standard Smart Albedometer
A ventilated ISO Secondary Standard Smart Albedometer can be self-assembled by ordering: 2x SMP11 Smart Pyranometer + 1x CMF4 Mounting Fixture + 2x CVF4 Ventilation Unit
An unventilated ISO Secondary Standard Smart Albedometer can be self-assembled by ordering: 2x SMP11 Smart Pyranometer + 1x CMF 1 Mounting Fixture + 1x Glare Screen Kit

Part number	Accessories
2643960	**Desiccant Refill Pack** Contains 10 sachets
See accessories	**CVF4 Ventilation Unit** Recommended to reduce offsets and frequency of dome cleaning
0362700	**CMF 1 Mounting Fixture** For 1 or 2 unventilated radiometers (1 upper / 1 lower) Diameter 88 mm. Mounting rod 350 mm long x 16 mm Ø
0362703	**CMF4 Mounting Fixture** For 1 or 2 ventilated or unventilated radiometers (1 upper / 1 lower) Length 375 mm, width 280 mm. Mounting rod 350 mm long x 20 mm Ø
0367718	**Adjustable Tilt Pyranometer Mounting Kit** For a SMP11 pyranometer to measure tilted diffuse radiation Zenith angle can be adjusted from 0° to 90° with graduated scale
0369701	**CMB 1 Mounting Bracket** In combination with mounting rod for easy attachment to a pole or a wall
0346900	**CM 121B Shadow Ring for unventilated radiometers** Manually adjusted device provides diffuse sky irradiance measurement Note: CM 121B can not be used with CVF4 Ventilation Unit
0346901	**CM 121C Shadow Ring for ventilated radiometers** Manually adjusted device provides diffuse sky irradiance measurement Mounts the radiometer at the correct height when used with a CVF4
0305722	**Glare Screen Kit** Sun protection screen for downward facing radiometers, with fixings