Sunshine duration meter



- Rotation band sunshine duration sensor
- Measures direct solar radiation and then gives the sunshine status according to WMO definition
- Internal anti-condensation and defrosting heaters
- Two annual tilt adjustments requirement
- Good correlation to DNI sensor mounted on a sun tracker

The sensor measures sunshine duration and direct radiation from the sun. Measurement is made in the visible range and near infrared, to second class WMO pyrometric specifications. Once set up for the latitude and location, the sensor does not require seasonal positioning unless greater precision is needed, accomplished by two annual adjustments. For each rotation, the instrument determines the two radiation levels of the beam, with and without the direct action of the sun disc, and calculates the difference, which gives a good approximation to the direct radiation level. The instrument also supplies the sunshine duration, defined by World Meteorological Organization (WMO, 1981) as the time during which the direct solar radiation exceeds the level of 120 W/m², and is normally measured in hours. The sensor has two actionable heaters: a continuous anti-condensation heater and a thermostatic one for defrosting. In conditions of darkness, the band is stopped and the sunshine status is set to "NO".

Technical Specifications

PN	DPD504.1	
Direct radiation	Output	Direct radiation/Sunshine status
	Principle	Non-tracking sensor
	Sensitive element	Photodiode
	Spectral range	300...1100 nm
	Accuracy	15% (daily totals)
	Measuring range	0...1500 W/m^2
	Output	4...20 mA
Sunshine duration	Threshold	120 W/m^2 of direct radiation
	Output	ON / OFF TTL 0...5 V
	Accuracy	<0.1 h (in clear sky)
	Power supply	10...14 V DC
General Information	Power consumption	Sensor: 0.7 W Anti-condensation heater: 1 W Defrosting heater: 20 W
	Mast-mounting	For Ø 45...65 mm pole using TYA050 arm and TYA200 support
	Recalibration	Every 2 years

	Protection rate	IP66
	EMC	EN 61326-1:2013
	Data logger compatibility	E-Log, Alpha-Log

Accessories

	**TYA050**	Tubular rod Ø22 sp. 15/10 L 500 mm
	**TYA200**	Sliding sensor support
	**DWA505A**	Cable L=5 m
	DWA510A	Cable L=10 m
	DWA525A	Cable L=25 m
	DWA526A	Cable L=50 m
	DWA527A	Cable L=100 m



On each rotation of the band across the photovoltaic sensitive element, the instrument determines the maximum and minimum values equivalent of the two radiation levels of the beam (global and diffuse irradiances), when the two levels difference (called Direct radiation) is more than 120 W/m², the sensor gives a status "ON" for the sunshine.

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