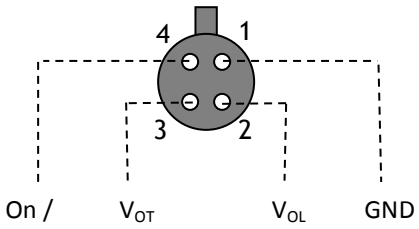
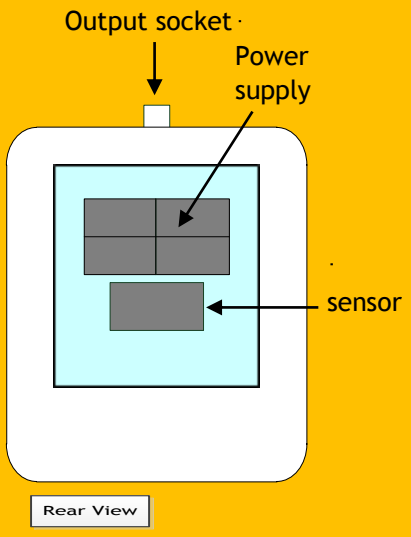
Datasheet – MacSolar Sensor

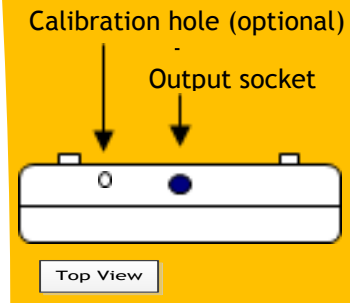
Connector pin assignment:

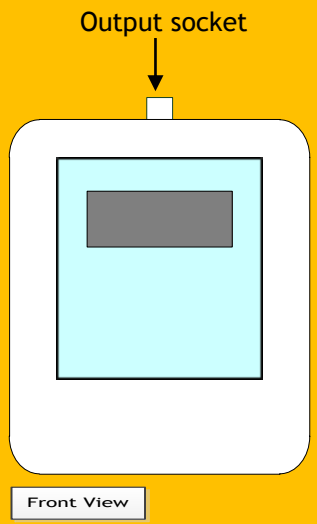
Connector (Jack on device and
Matching plug supplied):
Binder connector Series 719



GND =	Ground
V_{OI} =	Output irradiance
V_{OT} =	Ouput temperature (module temperature)
On =	Switch-on signal / external power supply (Connect to ground / supply + 9 V from external source)







Please note: We recommend the use of a sealant (e.g. silicone) for the connection (around the plug supplied) if the sensor is installed outdoors. The matching connector to the device's jack is supplied. Please use a UV-resistant cable for use outdoors. The internal power supply (passive mode, when PIN4 is connected to ground) should only be active when measuring, otherwise the internal battery will be unnecessarily strained dealing under irradiance-poor circumstances to a possible outfall.

Calibration of the sensor (analogue output):
Only by SOLARC or after consulting SOLARC respecting our given specifications.

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Technical specifications MacSolar Sensor:

Sensor build-up:	C-Si, mono crystalline sealed under acryl glass.
Housing:	ASA Plastic, UV-resistant and waterproof and sealed (IP65)
Ambient temperature T_A:	-20 ... +45 °C
Power consumption:	approx 1 mW (measuring mode)
Certification:	CE / EN 50081, 50082, 55014, 55022, 60068, 60529, IEC68

Irradiation (light intensity) sensor:

Measuring range:	0 ... 1,400 W/m^2 (Light spectrum, AM1.5), external power supply 0 ... 1,300 W/m^2 (Light spectrum, AM1.5), internal power supply
Output voltage U_{OI}:	0 ... 6.5V DC (P_{tot} =0 ... 1,300 W/m^2, internal power supply)
Output current I_{OI}:	0.1 mA max[*4]
Linearity error [*1] :	< 1 % ±8 mV
Temperature error:	< 1 % (T_A = -20 ... +45 °C)
Spectral error [*2] :	< 3 %
Cosine error:	< 4 % within incident angle range ±60°
Total error [*2] :	< 5 %
Long term drift [*3] :	< 1 % / Year

Temprature Sensor:

Measuring range:	-20 ... +85 °C
Output voltage U_{OT}:	424 mV (0°C) +6.25 mV / K
Output current I_{OT}:	0.1 mA max.
Deviation:	±3 K in the range -20 ... +85 °C

[1] As certified by FhG-ISE Freiburg 11/98
[2] Monthly average values of daily irradiation in central Europe
[3] Not guaranteed at long term outdoor usage
[4] The output signal strains the internal power supply (the internal battery is discharged)

Last updated 09/2011, subject to change without notice