

# SBIM

*Intelligent Charger*

**Developed and manufactured by MicroStep-MIS, SBIM is a low-cost intelligent solar charger and power supply provider combined into one compact unit.**



**Charging 12 V or 24 V Pb batteries from PV panel with high rate**



**Power output with battery protection**



**SDI-12 communication interface**



**Operating current, voltages and coulomb counting measurements**



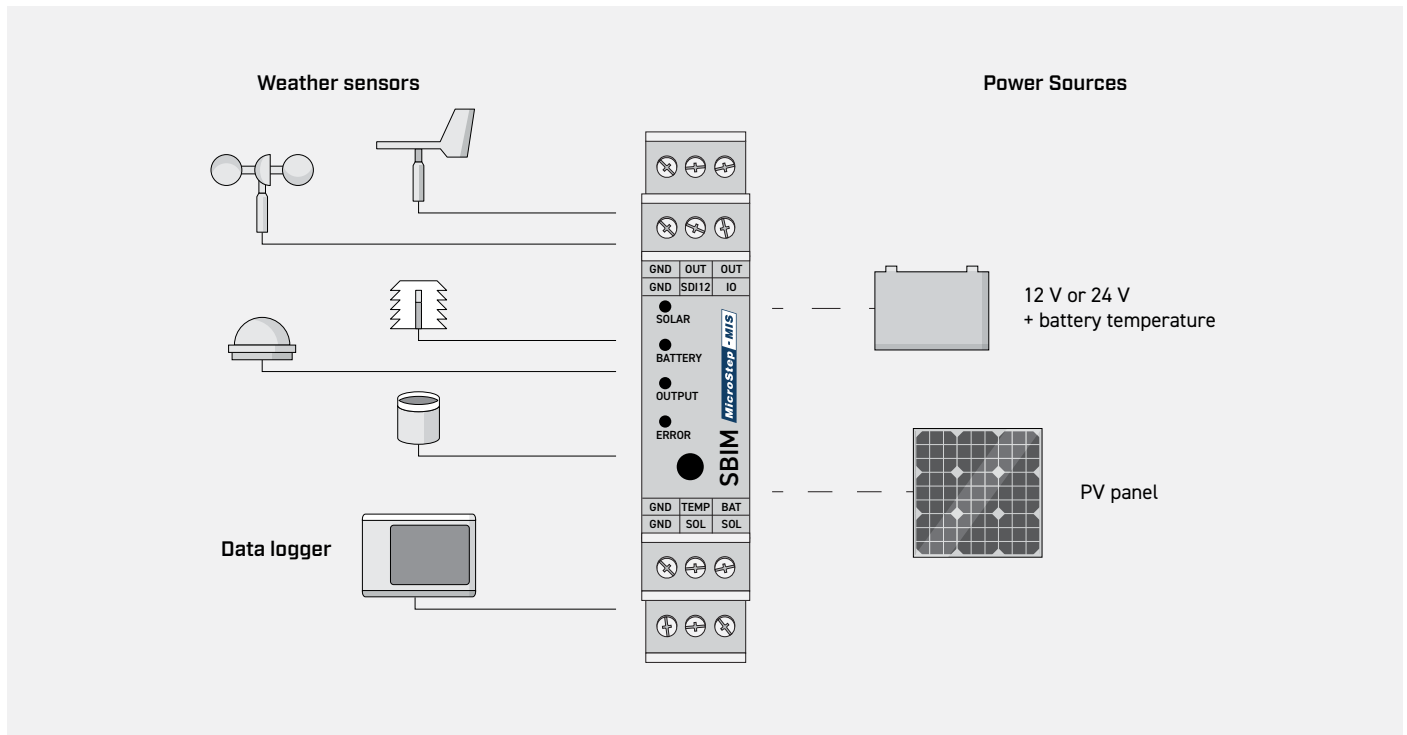
**Overload, overvoltage and reverse polarity resistant with notifications**

SBIM charges the 12V or 24V lead-acid batteries and provides power supply to the connected devices. Solar charger SBIM is suitable for majority of powering systems where battery backup is needed or precise information about power supply is required.

Charging control is performed by using powerful microcontroller and overall power consumption of charger is very low. The intelligent charger supports connection of external temperature sensor DS18S20 for measuring battery temperature. SBIM features SDI-12 interface for parameters configuration and data access. Actual status is shown by four

status LEDs and interface button brings additional features as turning off output, showing status and other. Useful multifunctional input-output terminal enlarges possibilities of SBIM with extra safety functions. Solar charger SBIM also supports PV panel stealing detection which detects manipulation with panel even at night.

Solar charger SBIM is made of durable hardware components housed in enclosure which complies with DIN 43880, thus guaranteeing problem-free operation in all common distribution boards.



### Electrical specification

Number of lead-acid cells	6 (nom. 12 V) or 12 (nom. 24 V), automatic recognition
Charging current from PV panel	up to 16 A
Output current	up to 5 A
Solar panel input voltage range	15 to 50 V
Output voltage range	10.5 to 16 V (nom. 12 V battery), 21 to 28 V (nom. 24 V battery)
Load disconnection voltage	1.75 V/CELL
End charge voltage	2.3 to 2.45 V/CELL (adjustable) regulation error < 0.5 %
Temperature compensation	-3 mV/°C/CELL
Power consumption	0.7 mA (@12 V)
Communication interface	SDI-12

### Environmental specification

Heat dissipation	passive
Operating temperature range	-50 °C to +60 °C
Storage temperature range	-60 °C to +80 °C
Humidity (non-condensing)	0 to 100 %RH

### Mechanical specification

Housing classification	IP 20
Housing material	polyamide
Type of connection	terminal block 16 A
Dimensions (h x w x d)	98 x 17.5 x 57 mm
Weight	52 g

**BIM comparison table**

	<b>SBIM</b>	<b>BIM103</b>	<b>BIM163</b>	<b>BIM205</b>
<b>12 V operation</b>	yes	yes	yes	yes
<b>24 V operation</b>	yes	no	no	yes
<b>PV panel input voltage</b>	15 to 50 V	12 to 28 V	12 to 28 V	14 to 50 V
<b>Charging from PV panel</b>	up to 16 A	up to 10 A	up to 16 A	up to 20 A
<b>Supplying from PV panel</b>	no	no	no	yes
<b>MPPT algorithm</b>	no	no	no	yes
<b>PV panel stealing detection</b>	yes	no	no	yes
<b>AC power source input voltage</b>	no	15 to 25 V AC	15 to 25 V AC	15 to 40 V AC
<b>DC power source input voltage</b>	no	±20 to ±30 V DC	±20 to ±30 V DC	±14 to ±50 V DC
<b>Charging from AC or DC power source</b>	no	up to 3 A	up to 3 A	up to 10 A
<b>Supplying from AC or DC power source</b>	no	yes	yes	yes
<b>Power output</b>	up to 5 A	up to 2 A	up to 2.5 A	up to 5 A
<b>Battery temperature compensation</b>	yes	yes	yes	yes
<b>SDI-12 communication interface</b>	yes	yes	yes	yes
<b>RS-232 communication interface</b>	no	no	no	yes (optional)
<b>Power consumption</b>	0.7 mA (@12 V)	1.1 mA (@12 V)	1.1 mA (@12 V)	1.3 mA (@12 V)