BIM205
Intelligent Charger

Developed and manufactured by MicroStep-MIS, BIM205 is an intelligent solar charger with MPPT function and also power supply provider combined into one compact unit.

BIM205 charges the 12 V or 24 V lead-acid batteries and provides power supply to the connected devices either from attached external AC or DC power source or solar PV panel, or from the lead acid battery. Solar charger BIM205 is suitable for majority of powering systems where charging efficiency and battery backup are essential. BIM205 also provides precise information about power supply.

Charging control is performed by using a powerful microcontroller. The intelligent charger supports connection of external temperature sensor DS18S20 for measuring battery temperature. BIM205 features SDI-12 and RS-232 interface for parameters configuration and data access.

Solar charger BIM205 is a robust product made of durable hardware components housed in enclosure made of aluminium and steel.
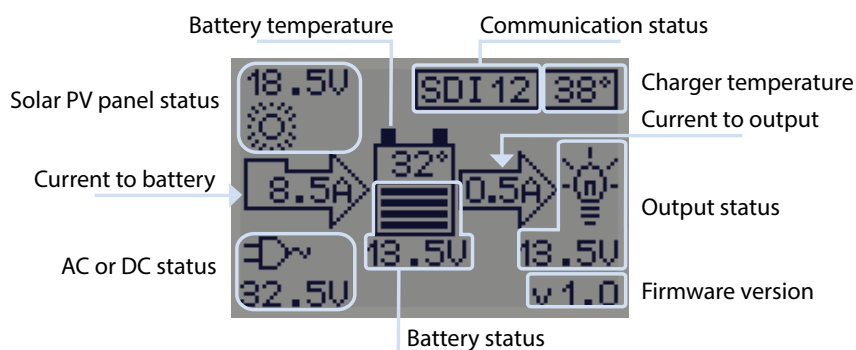
LCD Display

Operating modes and functions are switched automatically and simple menu system shows all necessary information about charging, connected power sources, status and warning messages. LCD display includes two color backlights which improves readability in bad light conditions and focus attention in case of warning.
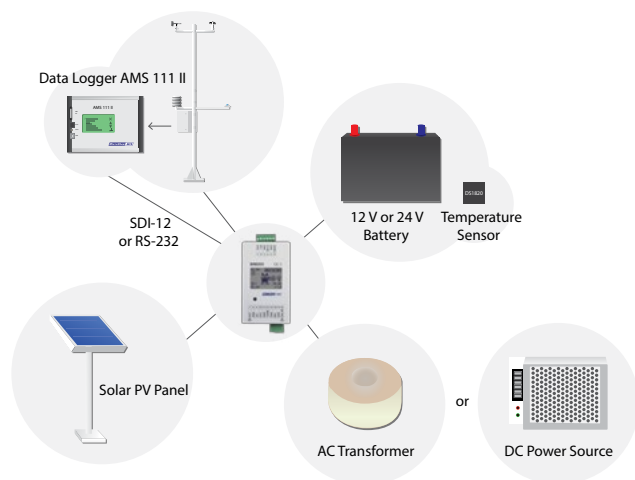
Features

- **Charging 12 V or 24 V lead-acid batteries with high rate current**
- **Charging from AC or DC external power source and solar PV panel**
- **Maximum power point tracking (MPPT)**
- **Power output with battery protection**
- **External temperature sensor for temperature compensation**
- **Actual status display with backlight**
- **SDI-12 and RS-232 communication interfaces**
- **Operating currents, voltages and coulomb counting measurements**
- **Overload, overvoltage and reverse polarity resistant with notifications**

Battery temperature · Communication status · Charger temperature · Current to output · Solar PV panel status · Current to battery · Output status · AC or DC status · Firmware version · Battery status

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Connection Diagram

Data Logger AMS 111 II

SDI-12
or RS-232

12 V or 24 V
Battery

Temperature
Sensor

Solar PV Panel

AC Transformer   or   DC Power Source

Environmental Specification

Heat dissipation	passive and active
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	IP20
Housing material	aluminium, steel
Type of connection	pluggable terminal block 20 A
Dimensions (h x w x d)	91 mm x 53 mm x 108 mm (without terminal blocks)
	109 mm x 53 mm x 108 mm (with terminal blocks)
Weight	approx. 560 g (terminals approx. 20 g)

Electrical Specification

Number of lead-acid cells	6 (nom. 12 V) or 12 (nom. 24 V), automatic recognition
Input current from solar PV panel	up to 20 A (adjustable)
Input current from AC/DC power source	up to 10 A (adjustable)
Charging current	up to 20 A (adjustable)
Output current	up to 5 A
Solar PV panel input voltage range	14 to 50 V
AC/DC power source input voltage range	±14 to ±50 VDC / 15 to 40 VAC
Output voltage range with battery	10.5 to 16 V (nom. 12 V battery) / 21 to 28 V (nom. 24 V battery)
Output voltage range without battery	11 V to 28 V (adjustable)
Load disconnection voltage	1.75 V/CELL
End charge voltage	2.3 to 2.45 V/CELL (adjustable) regulation error < 0.3 %
Temperature compensation	-3 mV/°C/CELL
Peak power conversion efficiency	96 % (PV panel) / 94 % (AC source)
MPPT efficiency	99 %
Power comsumption	15 mW
Communication interface	SDI-12, RS-232