



## McSHS12i

### Solar Home Lighting System ( with mobile charging feature )

**McSHS12i** is a Solar Home Lighting System which by default uses new generation LED bulbs although it can be used for CFL lighting load as well. McSHSxx series comes in two versions, 12V operated and 6V operated. The system is optimised for cost and performance to cater to the remote areas where grid power is a luxury. The system comes in total package which includes long life LED bulbs for better light at less consumption, extension cable with holder and plug for bulb connection, crystalline solar panel and control box with all plug and play arrangement for connections to panel and bulbs. The system comes with mobile charging output by default.

Solar Charge Controller inside is PWM type to have the best SOC of the battery.

The bulbs are of 42 LED cluster type in attractive ABS moulding. It has built-in high efficiency smps type LED driver inside which continuously saves battery power and gives constant illumination over entire operating range of battery.

The box has independent on/off switches provided for individual lamps. Battery low and Charging are indicated by Red and Green LEDs on the front.

The charge controller is high efficiency shunt type with full protections against over charge and deep discharge of battery. Battery is SMF type needing absolutely no maintenance.

The system has optional feature of charging from mains/grid power. Optional adaptor which is specially designed for solar integration can be had if required. The electronics inside has a provision to accept grid charge as well.

#### Salient Specifications:

BATTERY: 12V/7.2Ah SMF  
PANEL: 12V/10Wp Max

CHARGE CONTROLLER: LOW LOSS, SHUNT TYPE  
NLC: No Load Current/Quiescent current <2mA  
OVD: Output Voltage Drop < 300mV at 1 A load  
IVD: Input Voltage Drop < 300mV at 1 A charge  
LVD: Low Voltage Disconnect, 11 V  
HVD: High Voltage Disconnect, 14.4 V  
LVR: Low Voltage Reconnect, 12.7 V  
HVR: High Voltage Reconnect, 14.35 V

BULBS: 2 nos. 42 LED cluster bulb in attractive ABS moulding with built-in driver. Extension cable of 4 meter with holder and plug to directly connect the bulb to the control box.

PROTECTIONS: Short circuit and overload at load  
Over current from panel  
Reverse polarity of Battery and Panel  
Reverse current flow from battery to panel  
Lightening protection in panel circuit

BACK UP FUSE : 2A

#### Indicators and Controls:

**CHRG** : Green LED. 1. Green: When panel is connected properly and voltage is more than 12V. It thus indicates positive charging.

When battery is fully charged, it starts flickering indicating onset of PWM absorption mode. Such type of charging enhances the life of battery giving the excellent State of Charge.

**BTLO** : Red LED. When battery voltage is less than LVD level, it turns on and disconnects the supply to the load including mobile output. Loads will be on only when battery is charged above LVR level.

When battery is connected for the first time, its voltage must be more than LVR to have supply at output. If BTLO is on, battery must be charged first through panel. Once in loop, battery will work between LVD and HVD as specified.

**SOCKETS**: 2Sockets to plug in the bulb cables of 4 LED lamps.

1 Socket to plug in the panel cable

1 **Socket for mobile output**: For efficient charging of mobile battery. SMPS type with controlled charging to protect any mobile battery.

**SWITCHES**: 2 On/Off switches on the box for 2 bulbs independently.

**FUSE HOLDER**: On the box for 2A glass fuse.