



105 x 50 mm



## McHM4.1

**PWM SOLAR CHARGE CONTROLLER  
(WITH MULTIPLE OUTPUTS)  
MOBILE CHARGING OUTPUT (interlocked)**

**McHM4.1** is Solar Charge Controller kit with shunt regulation. It comes with built-in mobile charging output. It has a unique feature to make available supply either to lighting load or to mobile output at a time. This is done by means of a switch which will put the supply either to the mobile out terminals or to the lighting loads. Thus a smaller battery can be used with four outputs. Lighting loads and mobile charging will not work at the same time thereby reducing the instantaneous drain on battery. Its control circuitry is extremely efficient. It not only charges the battery from solar panel in the optimum way using the fullest power without loss but maintains the highest SOC of the battery under charge. Input losses are practically negligible due to high efficiency charging in shunt mode. Similarly battery loss in load circuit is less than 3% making it better than 97% efficient. Quiescent current is less than 1mA to meet stringent requirements for better life of battery. Kit comes with independent four outputs with four independent on/off switch pins. Every connection to the kit is done by relimates. Panel, battery and all loads with their switches can be connected with relimate cables provided with kit. External fuse can be connected through relimate.

Provision of presets is made for setting HVD and LVD which are set to default values but can be changed by user.

It comes with indicator leds for charging and bat low in relimate cable assembly to directly plug in. Additional input is provided on board to connect to mains charging by an optional compatible charger unit. During times when solar power is not available, charging from grid power can be implemented easily. Specially designed mains charger can be supplied as optional accessory.

The kit comes in ready to use form for OEM purpose.

### Salient Specifications:

SYSTEM: 12V  
 CAPACITY: Panel 10 Wp Max, Load 1 A Max  
 REGULATION: LOW LOSS, SHUNT TYPE  
 NLC: No Load Current/Quiescent current < 1mA  
 OVD: Output Voltage Drop < 300mV at 1 A load  
 IVD: Input Voltage Drop < 300mV at 1 A charge  
 LVD: Low Voltage Disconnect, 11.0V  
 HVD: High Voltage Disconnect, 14.4V  
 LVR: Low Voltage Reconnect, 12.5V  
 HVR: High Voltage Reconnect, 14.35V  
 (Charging by default is kept for PWM operation)  
 PROTECTIONS: Reverse polarity of Battery and Panel  
 Reverse current flow from battery to panel

MOBILE OUTPUT: smps output to charge any mobile  
 APPLICATION: Solar Home Lighting Systems by OEMs.  
 AMBIENCE: Operating Temp 0 to 50 Deg C, 90% RH  
 DIMENSIONS: 105mm x 50 mm

### Indicators and Controls:

**CHRG** : Green LED. 1. Green: When panel is connected properly and voltage is more than 12V. .

2. Green flickering: Battery voltage has reached HVD and PWM absorption started.

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

**2-Way Relimates**: 4 independent outputs, 4 independent on/off, PV input, Battery Cable with presoldered tags, Light load/Mobile selector switch, Mobile output socket with relimate cable

**AUX IN**: A two-way relimate base for giving input from compatible mains charger unit ( optional ).

*(Only specially designed mains charger from us can be connected as it is built with isolation and protection for shunt regulation purpose. No other mains charging unit is recommended as it may damage the kit.)*