




MACON®
McUH7

*Microcontroller based
Solar Charge Controller
12V / 6A. Triple Outputs.
Battery Type Selection. Dimming.
Normal or dusk to dawn operation.*

SALIENT FEATURES

- *McUH7 is Solar Charge Controller with 6A current capacity for load as well as for charging the battery.*
- *The same controller can be used for different type of batteries by selection of battery type on board.*
- *The controller can be used for normal and dusk to dawn operation simply by selection switch on the top.*
- *It has three independent outputs*
 1. *DC out for all types of loads*
 2. *Dimmable output to control the light intensity of LED lights connected and*
 3. *USB out for mobile charging*
- *Entire controller has electronic protections against over-load, over-voltage, under-voltage, reverse connections Lightening, reverse flow of current from battery to panel during night*
- *Battery status bar graph display for easy diagnosis*

PROTECTIONS:

- Full Electronic protection against over load or short circuits.
- Protections against deep discharge and over charge of battery.
- Protections against reverse flow of current from battery to panel during night.
- Protections against lightening.
- Epoxy coating of electronics for protections against humidity and dust.

SELF DIAGNOSTIC LED INDICATORS

- Bicolour LED for battery status
- Two different LED indicators for charge status and overload condition.

EASE OF INSTALLATION AND USE

- Industrial grade sheet metal casing.
- Easily accessible terminals and USB for connections.
- Indicators and switches on the top of the casing

BATTERY TYPE SELECTION

Select the type of battery Li Ion or LFP or Lead Acid by putting the link on the desired type of battery on board marked BAT_SEL.



CONFIRM BATTERY SELECTION IS DONE CORRECTLY BEFORE USE

LONGER BATTERY LIFE

- PWM algorithm for SMF battery charging for better SOC
- Battery specific algorithm for charging Lithium batteries
- Low voltage disconnect of load from battery.
- Over voltage disconnect of battery from panel.

SAVES ENERGY

- High efficiency series control to regulate the battery and load.
- Extremely efficient and low loss Mosfets to save battery power.
- Negligible IVD and OVD
- Negligible quiescent current

MODE OF OPERATION (SET_D2D switch)

- **NORMAL** - Load will be on day and night
- **D2D** (Dusk to Dawn) Load will be on only during night

DIMMING (At terminals marked DM+/DM-)

- 25% with every press (4 steps)
- Dimming range 0%, 25% , 50%, 75%

QUALITY CONTROL AND CERTIFICATION

- 100% pre-shipment testing of each controller
- Conforms to IEC 62092 to assure the reliability
- Conforms to IEC 62093





CHARGING: Green LED.

Turns on when panel voltage is more than battery voltage to indicate positive charging, It starts blinking when battery is charged and goes in PWM mode of absorption.

BAT STATUS

LOW: RED LED. If battery goes below LVD, it will be on and loads are disconnected. If it is blinking, battery is in lower reserve mode.

NML: GREEN LED. If battery is above LVR, it will be on. For loads to be on for the first time, this LED must be on.

HLTY: GREEN LED. When battery voltage is more than LVR.

FULL: GREEN LED. Will be on when battery is full.

FAULT CONDITIONS

OVR: RED LED. If the combined load exceeds 6A, it will be on and loads are disconnected. Controller will check after 5 sec if load is reduced. If yes, load will be on and this LED is off.

Alternates (LOW)Red and (NML)Green when battery is dangerously high. Load is disconnected. Charging is disabled.

8WAY TERMINAL & USB :

On board connector marked PV+, PV-, BT+, BT-, DM+, DM-, LD+ and LD- to make connections to respective inputs and outputs.
USB C connector for mobile charging

SYSTEM:	12V Nominal		
CAPACITY:	Input Panel 110Wp/12V, 6Amax		
	Output 6A max (combined load)		
USB	Mobile charging 5V/1Amax		
MODE SELECTION	NORMAL (loads on day and night) D2D (loads on during night only)		
DIMMING	In 4 steps 0-25-50-75 %		
REGULATION:	Low Loss, Shunt Type		
OUTPUT VOLTAGE DROP:	<250mV at 6A (OVD)		
INPUT VOLTAGE DROP:	<400mV at 6A (IVD)		
BATTERY OPERATION (Based on selection of Link) Or Customized as optional	BATTERY TYPE		
	Lead Acid 12V	Li Ion 11.1V	LFP 12.8
LOW VOLTAGE PROTECT:	9.5 V	8 V	10 V
LOW VOLTAGE DISCONNECT:	10.7 V	9.6 V	11.2 V
LOW VOLTAGE RECONNECT:	12.3 V	11.2 V	13 V
HIGH VOLTAGE DISCONNECT:	14.4 V	12.6 V	14.4 V
HIGH VOLTAGE RECONNECT:	14.3 V	12.3 V	13.8 V
HIGH VOLTAGE PROTECTION:	15 V	13.5 V	15 V
DUSK_SENSE	Panel Voltage <0.4V		
DAWN_SENSE	Panel Voltage > 1V, 10sec delay		
PROTECTIONS:	*Short Circuit / Overload *Reverse Battery *Reverse Solar Panel *Reverse flow of current from Battery to Panel during night *Lightening *No battery but panel connected. System disabled. *Lightening		
ELECTRONIC SHUTDOWN	If combined load>6A, all loads off and checks after 5 seconds automatically		
APPLICATION;	In Door Use Only		
OPERATING TEMP RANGE;	0 to 60° C		
DIMENSIONS:	135 L x 90 W x 35 H (all in mm)		



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