



ENERGIA

MPPT Solar Charge Controller

Ultra-fast Maximum Power Point Tracking (MPPT)

Especially in case of a clouded sky, when light intensity is changing continuously, an ultra-fast MPPT controller will improve energy harvest by up to 30% compared to PWM charge controllers and by up to 10% compared to slower MPPT controllers.

FEATURES

- Load Short circuit protection
- Battery Reverse Protection
- 6KV Grid Surge Protection
- Grid and Solar Energy Meter data collection on Smartphone app.
- Master Load control from the Smartphone app.
- Battery Cutoff Limit can be set from the Smartphone app.



Solar Charge Controller	ENERGIA-LV10A	ENERGIA LV15A	ENERGIA MV15A
Rated charge current	10A	15A	15A
Nominal PV power, 12V (a,b)	145W	220W	220W
Nominal PV power, 24V (a,b)	290W	440W	440W
Max. PV short circuit current 2)	12A	20A	20A
Battery voltage	12/24 Auto Select	12/24 Auto Select	48V
Maximum PV open circuit voltage	75V		100V
Charge voltage 'absorption'	14,4V/28,8V(adjustable)		57.4V(adjustable)
Charge voltage 'float'	13,8V/27,6V(adjustable)		55.2V(adjustable)
Peak efficiency	98%		
Self-consumption	20mA		
Charge algorithm	multi-stage adaptive		
Automatic load disconnect	Yes, maximum load 15A		
Temperature compensation	16 mV/°C resp.-32 mV/°C		
Continuous/peak load current	15A/50A		
Low voltage load reconnect	11,1V/22,2V or 11,8V/23,6V or Battery Life algorithm		
Protection	Battery reverse polarity(fuse) Output short circuit/Over Temperature		
Operating temperature	(-30) to (+60 °C)(full rated output up to 40 °C)		
Humidity	95%, non-condensing		
Data communication port	Data communication can be monitor by ENERGIA app from google play store.		
ENCLOSURE			
Color	OFF WHITE (RAL 9002)		
Power terminals	6 mm ² /AWG10		
Protection category	IP43(electronic components),IP22(connection area)		
Weight	1kg		
Dimensions(hXwXd)	100X113X40mm		
STANDARDS			
Safety	EN/IEC 62109		
1a)If more PV power is connected, the controller will limit input power.			
1b)PV voltage must exceed Vbat +5V for the controller to start. Thereafter minimum PV voltages Vbat +1V			
2)A PV array with a higher short circuit current may damage the controller.			

Load output

Over-discharge of the battery can be prevented by connecting all loads to the load output. The load output will disconnect the load when the battery has been discharged to a pre-set voltage. Alternatively, an intelligent battery management algorithm can be chosen: see Battery Life. The load output is short circuit proof. Some loads (especially inverters) can best be connected directly to the battery, and the inverter remote control connected to the load output. A special interface cable may be needed, please see the manual.

Battery Life: Intelligent Battery Management

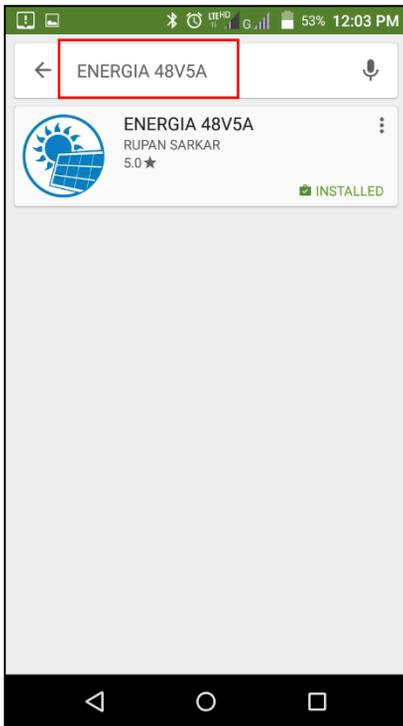
When a solar charge controller is not able to recharge the battery to its full capacity within one day, the result is often that the battery will continually be cycled between a 'partially charged' state and the 'end of discharge' state. This mode of operation (no regular full recharge) will destroy a lead-acid battery within weeks or months. The Battery Life algorithm will monitor the state of charge of the battery and, if needed, day by day slightly increase the load disconnect level (i.e. disconnect the load earlier) until the harvested solar energy is sufficient to recharge the battery to nearly the full 100%. From that point onwards the load disconnect level will be modulated so that a nearly 100% recharge is achieved about once every week.

Programming, real-time data and history display options

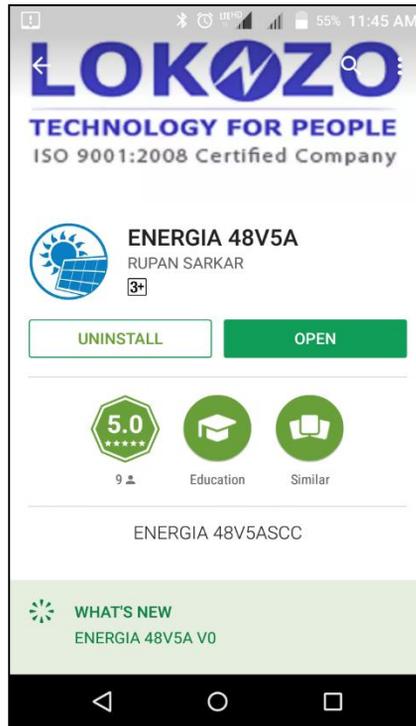
- Real Time Programming Through Modern Android Smartphones through Bluetooth communication.

APPLICATION (APP) INSTALLATION GUIDELINES:

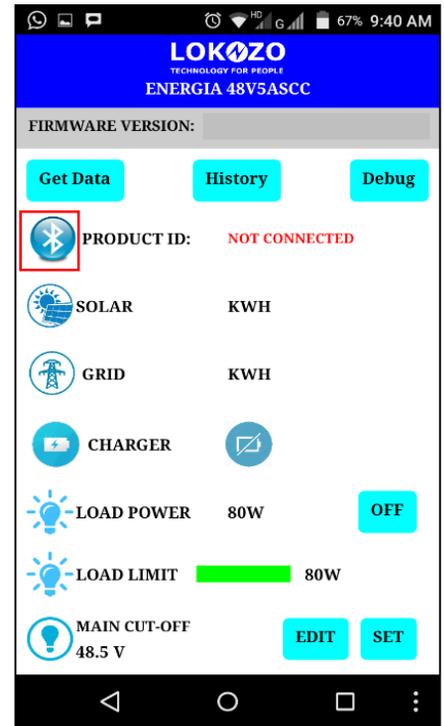
- Download the '**ENERGIA 48V5A**' App from the Play Store in Android based devices.
- Start the App and press the Bluetooth ICON on the screen.
- Pair with Charge Controller Unit.
- Following Display will appear:
 - Battery charging either through solar or Grid
 - Energy Consumed
- Battery Cut-off voltages can be set in this App.
 - Go to EDIT and set the cut off voltages.
- Load can be controlled by pressing ON or OFF on LOAD display.
- Load Wattage can be seen on Display.
- Detailed screen shots are shown in below pictures.



SEARCH ENRGIA 48V5A



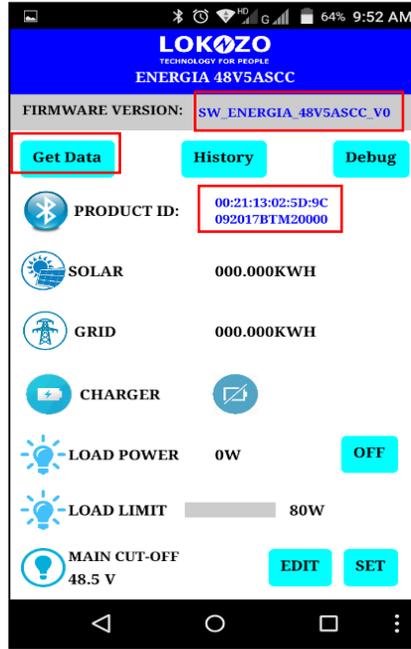
INSTALL APP



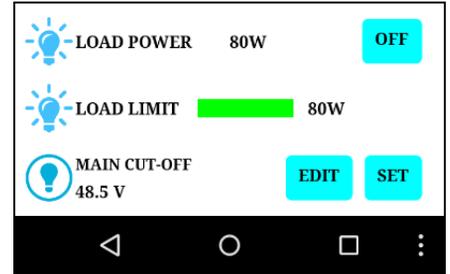
CLICK ON BLEETOOTH ICON



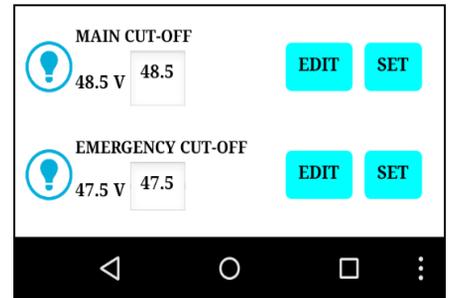
SELECT DEVICE



PRESS GET DATA BUTTON



LOAD POWER & LOAD LIMIT ALSO CHANGES ACCORDING TO OUTPUT LOAD POWER



HERE YOU CAN EDIT CUT-OFF VOLTAGES. AFTER EDITING PRESS SET BUTTON



CHARGING WITH GRID



CHARGING WITH SOLAR



FUTURE EXPANSION