

MERLIN DC-DC CHARGERS

The Merlin DC-DC charger was designed as an easy to install solution to Smart Regenerative Charging Systems (SRCS). The unit acts like a battery charger, however it uses DC power instead of AC power. They provide the ability to charge batteries from two input sources; either via a PV solar panel(s) when stationary or via from the engine/alternator while driving.

Smart Regenerative Charging Systems (SRCS) do not charge batteries in a conventional manner. Instead of the vehicle alternator operating continuously, it only switches on during peak load periods; Upon coasting and over-run, energy is harvested from the brakes, fly-wheel, drive-shafts and other moving parts. In order to make the system operate properly, battery state of charge and charge voltages are kept low-meaning that conventional charging systems cannot operate in all charging scenarios.

The Merlin DC-DC Charger is the perfect solution. The unit acts like a battery charger, however, it uses DC power instead of AC power. When the engine is running, the unit will switch on and deliver smooth, regulated power to the auxiliary batteries on board. The unit is smart enough to know if the engine battery is too low for charging and is not affected by stop start devices (a real problem for charging when vehicles are driven in congested areas).

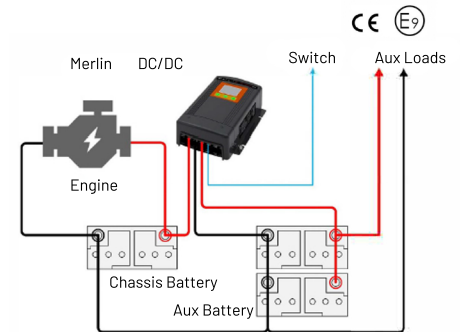
- **Multi-stage charging algorithms** (bulk, absorption, float) for gel, flooded and AGM batteries and equalisation for flooded batteries.

- **MPPT solar regulator** allows you to provide maximum power from PV solar panels to the battery.

- **Quiet mode** reduces the fan speed to quiet running for night-time use when mounted near sleeping areas.

- **Advanced protection** from reverse polarity, overcharge, overheating, and output short circuit.

- **Effortless installation** as a result of the mounting brackets and simple design.



PART #	04-6002	04-6003	04-6004
RATING	30A, 12V	50A, 12V	30A, 24V
DC OUTPUT			
OUTPUT CURRENT (MAXIMUM)	30A	50A	30A
OUTPUT VOLTAGE RANGE:			
CHARGE	13.5 - 15.5V	13.5 - 15.5V	27.0 - 31.0V
FLOAT	13.0 - 13.8V	13.0 - 13.8V	26.0 - 27.6V
EQUALISE	15.5V	15.5V	31.0V
CHARGING CONTROL	5 STAGES	5 STAGES	5 STAGES
DC OUTPUT BANK	ONE	ONE	ONE
EFFICIENCY	> 90%	> 90%	> 90%
BATTERY TYPE PROGRAMMES	GEL, AGM, FLOODED, LITHIUM	GEL, AGM, FLOODED, LITHIUM	GEL, AGM, FLOODED, LITHIUM
DC INPUT (BATTERY/ALTERNATOR)			
DC INPUT RANGE	10.5 - 32VDC	10.5 - 32VDC	10.5 - 32VDC
DC INPUT NOMINAL OPERATION	12.8V FOR 12V CHARGING SYSTEM 25.6V FOR 24V CHARGING SYSTEM	12.8V FOR 12V CHARGING SYSTEM 25.6V FOR 24V CHARGING SYSTEM	12.8V FOR 12V CHARGING SYSTEM 25.6V FOR 24V CHARGING SYSTEM
ENGINE START CONTROL: ON	DC INPUT FROM BATTERY/ALTERNATOR	DC INPUT FROM BATTERY/ALTERNATOR	DC INPUT FROM BATTERY/ALTERNATOR
ENGINE START CONTROL: OFF	DC INPUT FROM PV INPUT	DC INPUT FROM PV INPUT	DC INPUT FROM PV INPUT
MAXIMUM INPUT CURRENT	30A	30A	30A
DC INPUT (PV INPUT)			
DC INPUT RANGE	10 - 50VDC	10 - 50VDC	10 - 50VDC
DC INPUT NOMINAL OPERATION	17.5VDC FOR 12V PV PANELS CONNECTED IN PARALLEL 35.0VDC FOR DUAL 12V PV PANELS CONNECTED IN SERIES	17.5VDC FOR 12V PV PANELS CONNECTED IN PARALLEL 35.0VDC FOR DUAL 12V PV PANELS CONNECTED IN SERIES	17.5VDC FOR 12V PV PANELS CONNECTED IN PARALLEL 35.0VDC FOR DUAL 12V PV PANELS CONNECTED IN SERIES
MPPT TRACKING EFFICIENCY	> 98%	> 98%	> 98%
DC OUTPUT PROTECTION			
REVERSE POLARITY	YES (SHUTDOWN), AUTO RESET	YES (SHUTDOWN), AUTO RESET	YES (SHUTDOWN), AUTO RESET
DC OUTPUT SHORT CIRCUIT	YES (SHUTDOWN), AUTO RESET	YES (SHUTDOWN), AUTO RESET	YES (SHUTDOWN), AUTO RESET
OVER CHARGE	YES (SHUTDOWN), AUTO RESET	YES (SHUTDOWN), AUTO RESET	YES (SHUTDOWN), AUTO RESET
COOLING	FORCE AIR VENTILLATION	FORCE AIR VENTILLATION	FORCE AIR VENTILLATION
DISPLAY PANEL			
DISPLAY	LED DISPLAY WITH BACK LIGHTING	LED DISPLAY WITH BACK LIGHTING	LED DISPLAY WITH BACK LIGHTING
DIGITAL DISPLAY	VOLTAGE, CURRENT, STATUS	VOLTAGE, CURRENT, STATUS	VOLTAGE, CURRENT, STATUS
ENCLOSURE			
WEIGHT (KG)	1.85	1.85	1.85
DIMENSION (MM)	242 X 172 X 74	242 X 172 X 74	242 X 172 X 74