



Guardian Battery Chargers



Tested and approved by UL to:
UL1236 – Battery chargers for charging engine-starting batteries, and
CSA22.2 No. 107.2 – Battery Charger

Features

-  and  compliant
- Heavy duty float charging:
10A @ 12/24 VDC or 20A @ 24 VDC
- Auto boost operation
- Temperature compensation
- NFPA 110 alarm outputs:
charge fail, under volts & over volts
- High quality stainless steel case,
suitable for wall mounting

The Guardian is a highly efficient, high performance battery charger. The output is configured for accurate fast charging, optimum battery life and reliability. High impedance transformer technology gives a low ripple output (<1%) for optimal charging of vented or sealed lead acid or NiCd batteries. The enclosed Guardian range can be used in a wide range of industrial charging applications, including standby engines, pumps and generators.

Each charger consists of a transformer, rectifier and control circuit in a metal wall-mounted enclosure with DC ammeter and voltmeter. The control circuit ensures that the charger maintains the battery voltage at the pre-calibrated float level, while supplying any additional load current up to the specified maximum.

Auto Boost (equalising) operation

Auto boost operation provides a temporary increase in output voltage, equalizing the battery charge between cells and maximizing battery life and capacity. Auto boost is triggered automatically when the battery falls below a preset voltage, and can also be triggered manually by linking two 'boost' terminals, e.g. using a panel switch or push-button. Once the batteries have reached the boost voltage level, Guardian reverts to its normal float charge mode, preventing battery over-charge and gassing.

Temperature compensation

Guardian chargers can be configured (using circuit board links) to give automatic compensation of output voltage with varying temperature, ensuring optimal charging and cell life. Temperature is measured by a circuit board mounted sensor, or RTC option remote sensor complete with 9.5 ft (3m) lead assembly. When temperature compensation is enabled, output voltage decreases as ambient temperature increases at a rate of 1.66mV per °F per cell (3mV per °C per cell) – see Output Calibration section.

Alarm outputs

The Guardian provides 3 x NFPA110 compliant alarm relay outputs: battery low volts and battery high volts (both with 120 sec delay) and charge fail.

Installation and connection

Wall or surface-mounting is via slots/holes in the stainless steel case. Connection to the wiring harness is by spring clamp terminals, through access holes in the case side. AC supply input and DC charge output are protected with circuit-board mounted fusing. Please see installation and operation instructions for full details.

Specifications

Power supply

Operating voltage: 110 to 120 V AC, $\pm 6\%$

Operating frequency:

50 and/or 60 Hz, model specific - see 'how to order' section

DC Charge Output

Nominal current: 10 or 20 A DC

Nominal voltage: 12 or 24V (see 'calibration' table for float voltages)

Float/boost voltage: see separate 'calibration' table

Voltage ripple: <1%

Alarm outputs

High volts, low volts and charge fail relays:

SPDT dry/volt-free contacts, rated 1A @ 30 V DC, resistive load

Physical

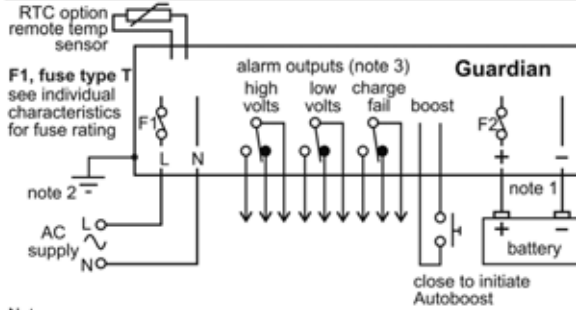
Operating temperature: +14 to +131 °F / -10 to +55°C

Dimensions: see separate table below

Weight: see separate table below

Electromagnetic compatibility: EN61000-6-4 / EN61000-6-2

Electrical connection



Notes:

- 1) DC charge (battery) output is isolated from the Guardian chassis.
- 2) Chassis must be connected to AC supply ground.
- 3) Alarm relay outputs shown in de-energized (powered down) state.
High (battery) volts relay energizes 120 secs after fault condition.
Low (battery) volts relay de-energizes 120 secs after fault condition.
Charge fail relay de-energizes immediately on fault condition.

Output calibration

Calibration figures at 68°F / 20°C. Temperature compensation, if enabled, causes output voltage to automatically fall (or rise) with increasing (or decreasing) temperature, at a rate of approx 1.66mV per °F per cell (3mV per °C per cell).

Battery type		float volts (V DC)	boost volts (V DC)
12V	Vented lead acid (6 cells)	13.5	14.1
24V	Vented Lead acid (12 cells)	27.0	28.2

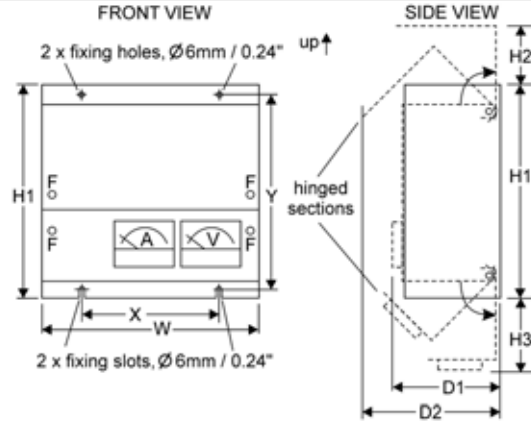
For NiCd and sealed lead acid batteries, please consult your Murphy representative.

How to order

Stock code	Model	Description
42.70.1600	EG1501210C5LA	Enclosed Guardian UL, 12V vented lead acid/10A output, 120VAC (50Hz) input
42.70.1601	EG1501210C6LA	Enclosed Guardian UL, 12V vented lead acid/10A output, 120VAC (60Hz) input
42.70.1606	EG3002410C5LA	Enclosed Guardian UL, 24V vented lead acid/10A output, 120VAC (50Hz) input
42.70.1607	EG3002410C6LA	Enclosed Guardian UL, 24V vented lead acid/10A output, 120VAC (60Hz) input
42.70.1610	EG6002420C56LA	Enclosed Guardian UL, 24V vented lead acid/20A output, 120VAC (50/60Hz) input

For NiCd and sealed lead acid batteries, please consult your Murphy representative.

Dimensions & weights



	EG150, EG300 series	EG600 series
Overall:-		
W	10.83" / 275 mm	13.19" / 335mm
H1	11.02" / 280mm	12.20" / 310mm
H2	2.95" / 75mm	3.35" / 85mm
H3	3.54" / 90mm	3.94" / 100mm
D1	4.92" / 125mm	5.71" / 145mm
D2	7.48" / 190mm	8.27" / 210mm
Fixing holes:-		
X	6.77" / 172mm	8.78" / 223mm
Y	10.04" / 255mm	11.22" / 285mm
Weight	22.0 lb / 10.0 Kg	38.5 lb / 17.5 Kg

Dimensions for reference only. Use actual product for mounting template.
For safe heat dissipation, mount product in orientation shown, with minimum air-gap clearance of 40mm above/below and 25mm at side.

Warranty - A limited warranty on materials and workmanship is given with this FW Murphy product.
A copy of the warranty may be viewed or printed by going to <http://www.fwmurphy.com/warranty>