

Enclosed Sentry UL series UL/CSA Approved Automatic Battery Chargers



Description

The Enclosed Sentry UL range provides automatic, current limited and thyristor controlled charging of vented lead acid or NiCd batteries. The units may be used in a wide range of industrial charging applications, including standby engines, pumps and generators.

The charger is supplied in a wall mounted stainless steel enclosure, complete with DC ammeter indication. Each unit consists of a transformer, rectifier and control circuit. The control circuit ensures that the charger maintains a battery voltage at the pre-calibrated float level, whilst supplying any additional loads current up to the specified maximum.

When used as a float charger the unit is designed to give a constant current output while battery voltage is below a 'knee point' (approx. 13V on a 12V LA). Above the knee-point, as the battery approaches its float voltage, the Sentry output current ramps down. This multi-stage charge regime gives an optimum combination of fast charge rate, followed by float charge without overcharging.

Auto Boost

All Sentry UL units include an Auto boost feature. Auto boost provides a temporary increase in output voltage, equalising the charge between cells and maximising battery life and capacity.


Auto boost is triggered automatically when the battery falls below a preset voltage. On 'A' option chargers, Auto Boost can also be initiated manually by linking two 'boost' terminals, e.g. via a panel switch or momentary push button. Once the batteries have reached the boost voltage level, the charger reverts to its normal float charge mode, preventing battery over-charge and gassing.

Alarm output

'A' option chargers also include a relay output for remote alarm or signalling of a charge fail condition (no or low output current), e.g. due to AC supply or fuse failure, charger fault or high battery voltage.

Temperature compensation

The optimum charge voltage for lead acid and NiCd batteries varies with ambient temperature. All Sentry UL models are

-  Approvals
- **Float charging:**
5A @ 12V, 3 or 5A @ 24 VDC
- **Auto boost operation**
- **For vented lead acid or NiCd**
- **Temperature compensation**
- **Optional alarm relay output & boost initiate**

Product specifications

power supply:	SUL100	SUL120
supply voltage, 120 V units:	104 – 127 V ac	
240 V units:	207 – 254 V ac	
operating frequency	50 / 60 Hz	
DC charge output:		
maximum power output, W	100	120
nominal voltage, V	12 24	12 24
maximum current limit, A	5 3	10 5
float / boost voltages	see separate table	
fault output:		
charge fail alarm ('A' option only)	SPDT (volt-free/dry) relay contacts, de-energised on fault, rated 1A max. @ 30 VDC (resistive load)	
general:		
operating temperature	-10 to +55°C	
dimensions	see separate diagram/table	
weight	5.6 kg / 12.4 lb	9.4 kg / 20.8 lb
EMC emission / immunity	EN50081-2 / EN50082-2	

fitted with on-board temperature sensing and output compensation (3mV/cell decrease for each °C increase).

For even greater temperature accuracy, 'RTC' option units are supplied with a remotely connected temperature sensor and 3 metre lead assembly (other lengths available to special order).

Electronic self-resetting fuse

An electronic poly-fuse provides protection against DC output reverse polarity and short circuit faults. The fuse automatically resets on battery disconnection, allowing correct reconnection without manual replacement of fuses.

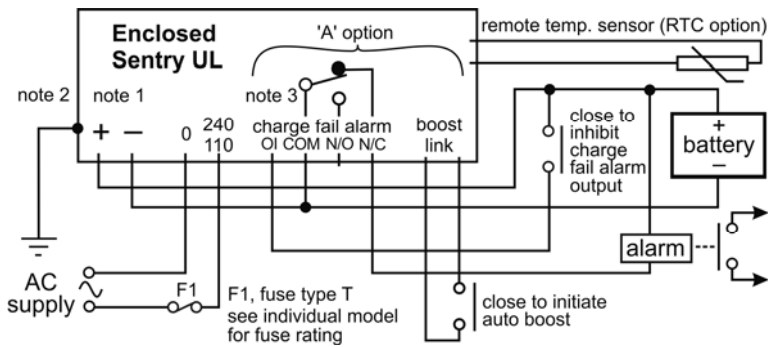
Installation and connection

Electrical connection of the AC supply, DC output, auto boost initiate link and alarm relay is via spring clamp terminals. Transformer, circuit board and terminal blocks are mounted on an open chassis baseplate/heatsink, designed for surface mounting in an enclosed control panel.

Warranty

A two year limited warranty on materials and workmanship is given with this product. Details are available on request.

Electrical connection



Notes:

- 1) battery output is isolated from chassis.
- 2) chassis earth stud must be connected AC supply earth.
- 3) charge fail alarm relay shown in fault state (de-energised).

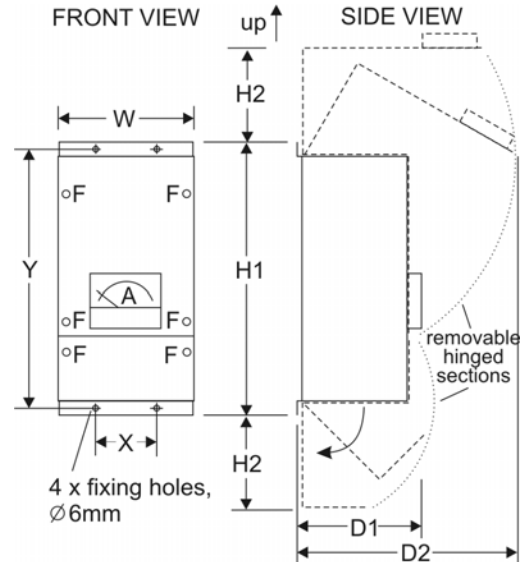
Output calibration

Calibration figures at 20 deg C. Temperature compensation causes output voltage to automatically decrease (or increase) at a rate of 3mV per cell, per °C increase (or decrease) in temperature.

Battery type		float volts (V DC)	boost volts (V DC)
12V	Vented lead acid (6 cells)	13.5	14.1
	Calcium-Calcium (6 cells)	13.8	15.6
	NiCd (10 cells)	14.1	14.5
24V	Vented Lead acid (12 cells)	27.0	28.2
	Calcium-Calcium (12 cells)	27.6	31.2
	NiCd (18 cells)	25.6	26.1
	NiCd (20 cells)	28.2	29.0

Note: Sentry chargers are designed for vented batteries only, and are NOT suitable for VRLA or sealed batteries. If in doubt, contact our technical department

Dimensions



Overall:-	
W	142mm / 5.59"
H1	268mm / 10.55"
H2	85mm / 3.35"
D1	130mm / 5.12"
D2	222mm / 8.74"
Fixing holes:-	
X	64mm / 2.52"
Y	274mm / 10.79"

Approximate dimensions for reference only. Use actual product as a mounting template.

For safe heat dissipation, mount product in the orientation shown, with minimum air-gap clearance of 40mm above/below and 25mm at sides.

How to order

When ordering, please specify:-

Product	Nominal Output Voltage, V DC		Max. Output Current, A DC		
	12	24	3	5	10
ESUL1001205	●			●	
ESUL1002403		●	●		
ESUL1201210	●				●
ESUL1202405		●		●	

Code	Input voltage	
	120 VAC	240 VAC
C	●	
D		●

Code	Battery type				
	Vented L/Acid	Vented L/Acid (Ca/Ca)	10 cell NiCd	18 cell NiCd	20 cell NiCd
LA	●				
CA		●			
10NC			●		
18NC				●	
20NC					●

product/output input volts battery type

The above 4 part number codes must be used

e.g. **ESUL1201210 C LA**

The above example shows the order code for an Enclosed Sentry UL 12V/10A charger, 120VAC input, with output calibrated for vented lead acid batteries, plus alarm output/boost initiate and remote temperature compensation options

Code	Options	
	Alarm output & autobost initiate	Remote temp. compensation (incl. sensor + 3 metre lead)
A	●	
RTC		●

options

Insert option code if required

A RTC