

Sentinel UL series Automatic switch mode battery chargers



- **CE** **UL** Approvals
- **High rate float charging:**
5 or 10A @ 12 VDC, 5A @ 24VDC
- **Automatic charge regulation**
- **Light, compact design**
- **Short circuit and reverse polarity protection**
- **Temperature compensation**
- **Auto boost models**

Description

The Sentinel UL is a highly efficient, high performance charger, designed for continuous float charging and standby battery applications. Switch mode technology provides major advances in power supply and battery charger design, giving a compact and lightweight construction, improved efficiency and low heat dissipation, wide supply voltage tolerance and low output ripple.

Sentinel chargers are configured for fast, accurate charging, to give optimum battery life and reliability. The very smooth output (< 1% ripple) allows charging of sealed or vented batteries – e.g. Nickel Cadmium (NiCd), Lead Acid sealed (VRLA), vented and Plante cells – or use as a stand-alone power supply.

Sentinel features an intelligent, multi-stage charge regime: during charge recovery mode, the charger gives a constant (maximum) current output; as the battery approaches peak charge, the output reverts to float charge mode, maintaining an optimum cell voltage and supplying additional standing load current up to the specified maximum.

The Sentinel range is available in two variants: SNSUL models provide basic charging; SNLUL models provide higher specification features and options.

Auto Boost

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

Auto boost is triggered automatically when the battery falls below a preset voltage. On 'MB' option chargers, autoboot can 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, Sentinel reverts to its normal float charge mode, preventing battery over-charge and gassing.

Temperature compensation

The optimum charge voltage for lead acid and NiCd batteries varies with ambient temperature. All models are fitted with on-board temperature sensing and output compensation (3mV/cell decrease for each °C increase). For even greater temperature accuracy, 'TC' option units

Product specifications

	SNSUL70 SNLUL70 (12V)	SNSUL140 SNLUL140 (24V)	SNLUL140 (12V)
power supply:			
supply voltage, 120 V units:		85 – 135 V ac	
240 V units:		185 – 250 V ac	
operating frequency		47 – 63 Hz	
DC charge output:			
maximum current	5	5	10
nominal voltage	12	24	12
line regulation		+/- 1%	
load regulation		+/- 1%	
output ripple		< 1%	
float / boost voltages		see table overleaf	
fault outputs:			
charge fail (CF option) / alarm (A option) output		negative DC during fault (switched SPNC contact, relay de-energising on fault), rated 1A max. @ 30 VDC (resistive load)	
general:			
operating temperature		-20 to +60°C	
humidity		20% to 90% RH	
dimensions		see table overleaf	
weight: SNS, SNL		0.55 Kg / 1.2lb, 0.6 Kg / 1.3lb	
EMC emission / immunity		EN50081-2 / EN50082-2	

are supplied with a remotely connected temperature sensor and 3 metre lead assembly.

Alarm output

All models are available with an optional 'CF' charge fail relay output. For more comprehensive fault warning, the SNLUL 'A' (alarm) option provides an output for signalling of DC fuse failure, high or low battery voltage, or AC supply/fuse failure.

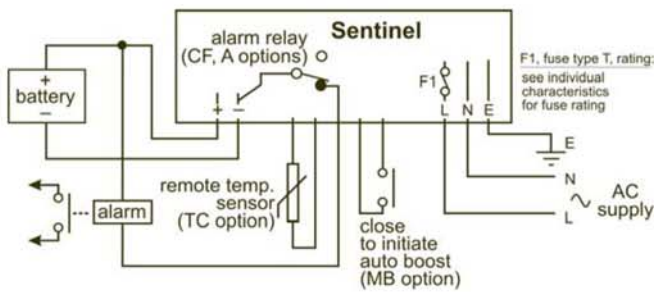
Installation and connection

Circuit board connection is via screw terminal blocks. The circuit board and protective cover are mounted on a baseplate/heatsink, designed for surface mounting in an enclosed control panel.

Warranty

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

Electrical connection



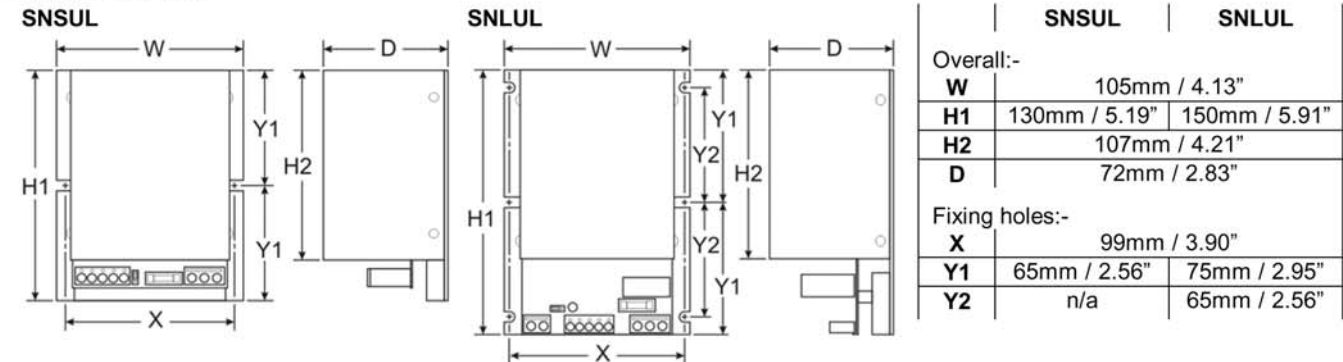
Note: battery output is isolated from chassis.

Output calibration

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

Battery type		float volts (V DC)	boost volts (V DC)
12V	Lead acid (6 cells)	13.6	14.1
	NiCd (10 cells)	14.1	16.0
24V	Lead acid (12 cells)	27.2	28.2
	NiCd (18 cells)	25.38	28.8
	NiCd (20 cells)	28.2	32.0

Dimensions



How to order

When ordering, please specify:-

Product	Nominal Output Voltage, V DC		Nominal Output Current, A DC	
	12	24	5	10
SNSUL70125	●		●	
SNSUL140245		●	●	
SNLUL70125	●		●	
SNLUL1401210	●			●
SNLUL140245		●	●	

Code	Nominal input voltage	
	120 VAC	240 VAC
E	●	
F		●

Code	Battery type			
	Lead acid	10 cell NiCd	18 cell NiCd	20 cell NiCd
LA	●			
10		●		
18			●	
20				●

Options			
SNS/SNL options			
Code	Charge Fail output	Remote Temp. Compensation	DIN rail mount
CF	●		
TC		●	
DIN			●

SNL options		
Code	Manual Boost	Alarm output
MB	●	
A		●

	Nominal output VDC	
	12	24
under volts alarm	12.5	25
over volts alarm	15.5	31
under/over volts delay	120 secs	

product	input volts	battery type
SNSUL70125	F	LA

option	option
CF	TC

The above 3 part number codes must be used

e.g. **SNSUL70125 F LA**

The above example shows the order code for a 12V/5A SNSUL charger, with 240VAC input and output calibration for lead acid batteries, plus options for charge fail output and remote temperature sensor.

Note: Stainless steel, wall-mounted enclosure versions of the Sentinel are also available: see datasheet cd0014

Insert option codes as required, or leave empty for no options



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