

Sentinel 150P Series

Automatic Switch Mode Battery Charger

The Sentinel 150P is a range of highly efficient, high performance battery chargers designed for continuous float charge and standby power applications. Switch Mode technology improves efficiency and low heat dissipation, wide supply voltage tolerance and low output ripple all within a compact and lightweight construction design.

The chargers are configured for fast, accurate charging to give optimum battery life and reliability. Each charger's output can be OEM-configured for optimal charging of different cell types: vented/wet lead acid, Calcium-Calcium, sealed VRLA (AGM or Gel), NiCd or custom requirements. The very smooth output (< 1% ripple) allows charging of sealed or vented batteries or use as a standalone power supply.

All models feature an intelligent, multi-stage charge regime: during charge recovery mode, the Sentinel 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 rated maximum. Output current is always limited to the rated maximum, even during high load (e.g. engine cranking), short-circuit or reverse polarity connection.

AutoBoost: AutoBoost provides a temporary increase in output voltage, equalizing the charge between cells and maximizing battery life and capacity. AutoBoost is triggered automatically when the battery falls below a preset voltage and reverts to float mode automatically at the end of the boost cycle, preventing battery over-charge and gassing.

Alarm output and control input (A option): A option models include a control input and alarm output, both with configurable functions. The input can be configured for use with panel relay circuits or operator switches, giving additional control over the output, e.g. AutoBoost initiation and termination. The alarm relay output can be configured to operate during a one or more (up to 7) fault conditions: mains fail, DC connection error, battery missing, temp sensor short, low battery volts, high battery volts and charge fail.

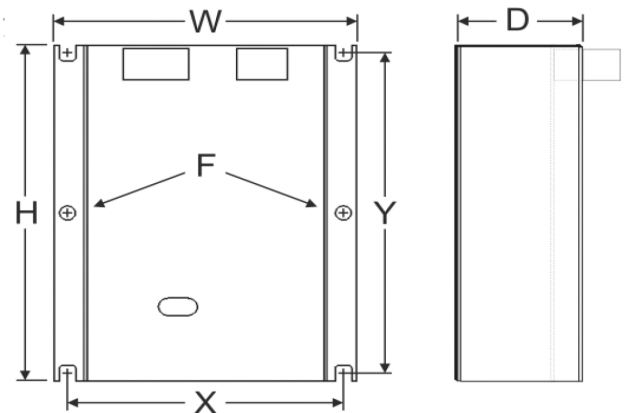
Temperature compensation: The optimum charge voltage for lead acid and NiCd batteries varies with ambient temperature. Sentinel can be configured to sense battery temperature from a remote sensor and automatically compensate the output charge voltage.

Versatile: Sentinel 150P can be configured and monitored using a PC-based software tool, model SNTL150P-PCSUITE. The tool offers a number of standard profiles for different battery types but also allows OEM-customization of all parameters for fine control in any application. The tool also enables real-time monitoring and metrics for both charger and battery.

Installation and connection: The Sentinel 150P uses an open circuit board construction with an aluminum protective cover for surface mounting in an existing control panel. Electrical connection is by quick-connect, two-part type terminal blocks.



Dimensions



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 1.5 in. (40 mm) above and below and 1.0 in. (25 mm) at each side.

	12 Volt Model	24 V Model
Overall:		
W	108.6 mm / 4.28 in.	
H	135 mm / 5.31 in.	
D	45 mm / 1.77 in.	55 mm / 2.17 in.
Fixing Holes:		
X	99 mm / 3.90 in.	
Y	130mm / 5.12 in.	
F	Ø 5.65 mm / 0.22 in.	
Weight:		
	1.45 lb. (0.65 kg)	1.65 lb. (0.75 kg)

Specifications

Power Supply

Operating Voltage: 95 to 265 V AC

Operating Frequency: 47 - 63 Hz.

DC Charge Output

Nominal voltage: 12 or 24 VDC

Float/boost voltage: See Output Calibration table

Maximum current limit: 5 A

Voltage ripple: <1%

Line regulation: <2%

Load regulation: <2%

Input/Output

Control input:

Digital (switch) input, close to -DC to activate, programmable function

Alarm output:

Relay switched +DC, 1A max @ 30 VDC, programmable function

Physical

Protective cover: 1050 aluminum, 1.2 mm

Operating temperature: -22° F to 140° F (-30° C to 60° C)

Storage temperature: -40° F to 140° F (-40° C to 60° C)

Humidity: 20% to 90% RH

Dimensions: See Dimensions section

Weights: See Dimensions section

Electrical safety:

2014/35/EU, UK SI 2016/1101 (EN IEC 61204-7:2018))

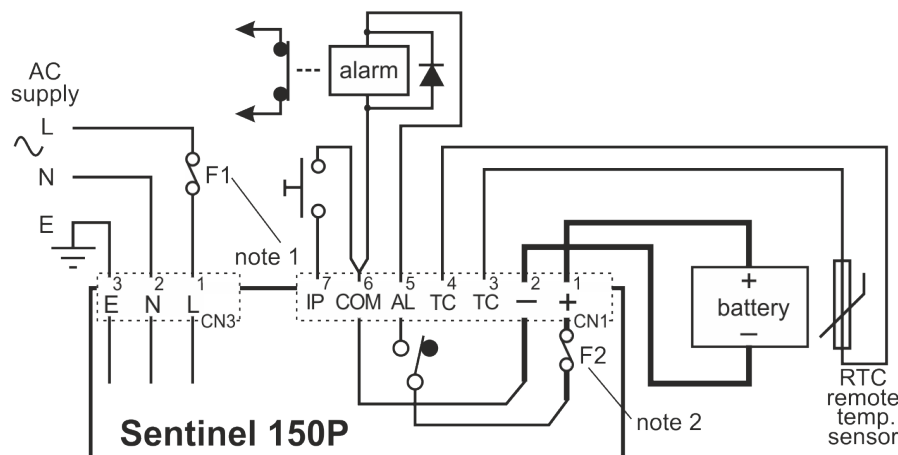
Electromagnetic compatibility:

2014/30/EU, UK SI 2016/1091

(EN 55032:2015, EN 61000-6-3:2007 + A1:2011, EN 61000-6-2:2019)

RoHS: 2011/65/EU, UK SI 2012/3032 (EN IEC 63000:2018))

Electrical Connections



Notes:

- 1) External AC fuse (F1) required: see AC Input (power supply) section
- 2) Internal, self-resetting DC fuse (F2): see DC Output section
- 3) Battery output is isolated from chassis.
- 4) Alarm output (pin 5) relay shown in de-energized state. Output function is software configurable.
- 5) Control input (pin 7) shown with momentary-action operator panel switch. Input function is software configurable.

Output Calibration

Standard and custom output calibrations are selected using the SNTL150P-PCSUITE software tool. Calibration figures shown below are at 20° C. If temperature compensation is enabled and remote SNTL-RTC temperature sensor connected, output voltage automatically varies by 3 mV per cell per 1° C deviation from 20° C, within the range -10° C to 50° C. Increasing temperatures give decreasing outputs; decreasing temperatures give increasing outputs.

Standard Calibrations (Battery Type)		Float Volts (V DC)	Boost Volts (V DC)
12 V	Vented lead acid (6 cells)	13.5	14.1
	Calcium-Calcium (6 cells)	13.8	15.6
	Lead acid antimony (6 cells)	13.5	14.7
	VRLA, AGM (6 cells)	13.5	14.4
	VRLA, Gel (6 cells)	13.5	13.8
	NiCd (10 cells)	14.1	14.5
	Power supply	12.0	n/a
Standard Calibrations (Battery Type)		Float Volts (V DC)	Boost Volts (V DC)
24 V	Vented Lead acid (12 cells)	27.0	28.2
	Calcium-Calcium (12 cells)	27.6	31.2
	Lead acid antimony (12 cells)	27.0	29.4
	VRLA, AGM (12 cells)	27.0	28.8
	VRLA, Gel (12 cells)	27.0	27.6
	NiCd (18 cells)	25.6	26.1
	NiCd (20 cells)	28.2	29.0
	Power supply	24.0	n/a

How to Order

Part Number	Model	Description
42703810	SNTL150P1205CDLA	Sentinel 150P, 12 V / 5 A nominal output
42703811	SNTL150P2405CDLA	Sentinel 150P, 24 V / 5 A nominal output
42703820	SNTL150P1205CDALA	As 42703810, plus alarm output and control input (programmable functions)
42703821	SNTL150P2405CDALA	As 42703811, plus alarm output and control input (programmable functions)

NOTE: All part numbers above are supplied with output calibrated for vented lead-acid cells. Output calibration can be optimized for different battery types by using the SNTL150P-PCSUITE software tool.

Accessories for Sentential 150P Series	
Part Number	Description
42703900	42703900 SNTL-RTC sensor for remote temperature compensation feature, complete with 3 m / 9.8 ft lead assembly. Non standard lengths available to special order.
42703825	SNTL150P-PCCONN programming kit. Includes SNTL150P-PCSUITE software tool (PC compatible), USB-TTL interface and power/data connection leads.

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