

# Sentinel 300P-FP Series

## Programmable Switch Mode Battery Chargers for Diesel Fire Pumps

Sentinel 300P-FP battery chargers provide new levels of DC power control, monitoring and protection for standby diesel-driven fire pump applications.

Advanced Sentinel charging features included as standard:

- Switch mode charging technology: high power efficiency and low heat dissipation, plus wide supply voltage tolerance, in a compact and lightweight package.
  - Multistage charging: float, bulk, absorption and AutoBoost stages ensure no compromise between rapid charge recovery and long-term battery capacity and life.
  - Low output ripple: <1% ripple, beneficial for vented lead acid and NiCd cells, essential for VRLA, and configurable for use as a standalone DC power supply.
  - AutoBoost: triggered automatically on low charge levels or manually by remote switch, AutoBoost temporarily increases the charge voltage before returning to float mode. Equalizing battery cell charge without overcharge and gassing, AutoBoost maximizes cell capacity and life.
  - Temperature compensation: ensures batteries are charged at the optimal voltage, which varies significantly with ambient temperature. Sentinel can measure temperature with a battery-mounted sensor and adjusts output voltage to prevent under or over charging.
- In addition, the Sentinel 300P-FP includes:
- Flexible configuration: microprocessor programmability for automatic or manual configuration of output voltages (12 or 24V nominal), cell types/ numbers and charging applications – all in one standard model. Programming is by circuit board links or PC-based software configuration and monitoring tool.
  - Inputs and outputs: for remote charger control and signaling of charge fail, high/low battery volts and mains fail faults. Standard output functions are NFPA 110 compliant. Non-standard input/output functions available to special order.
  - Display, instrumentation and communication: options allow LCD readout, analog metering plus RS485 / CANbus control and transmission of battery and charge data.

The Sentinel 300P-FP is available either as an open-frame module (UL-recognized and conforming to FM fire-pump controller standards) for mounting in existing control panels or as a wall-mounted (UL-listed) stainless steel enclosure with LCD and analog metering options.

Electrical connection is by screw terminal blocks. On enclosed models, wiring harness access is by knock-out cable gland holes in the case side.



NFPA 110  
compliant

\* Tested and approved by UL to: UL1236 – Battery chargers for charging engine-starting batteries, and CSA22.2 No. 107.2 – Battery chargers. Open frame SNTL300P-FP models are FM specification tested for use on FM Approved controllers for Diesel Engine Driven Fire Pumps.

## Specifications

### Power supply

**Operating voltage:** 95 – 250 V AC

**Operating frequency:** 47 – 63 Hz.

### DC Charge Output

**Nominal voltage:** programmable 12 or 24 V DC

**Float/boost voltage:** programmable, see output calibration table

**Maximum current limit:** 10 A

**Voltage ripple:** <1%

**Line regulation:** <2%

**Load regulation:** <2%

### Outputs x3 (x4 for non-CAN configurations):

#### All models:

1 x SPCO (RL1), 1 x SPNC (RL2), 1 x SPNO (RL3), dry/volt-free contacts (common feed for RL1, RL2 & RL3)

#### Standard models (non-CAN configurations):

1 x SPNC (RL4), dry/volt-free contacts standard output functions (charge fail, AC fail, low battery volts, high battery volts) are NFPA 110 compliant

**Rating (all relays):** 1A max @ 30 VDC (resistive load), UL class 2

#### Inputs x2:

Closed to negative DC to activate, configurable function

### Physical

**Operating temperature:** -40° F to 140° F / -40° C to 60° C

Display viewability (LCD models): 32° F to 122° F / 0° C to 50° C

**Humidity:** 20% to 90% RH

**Electrical safety:** 2006/95/EC

### Electromagnetic compatibility:

2004/108/EC, EN 55022 class B

(EN 61000-6-1, EN 61000-6-3)

### UL approvals

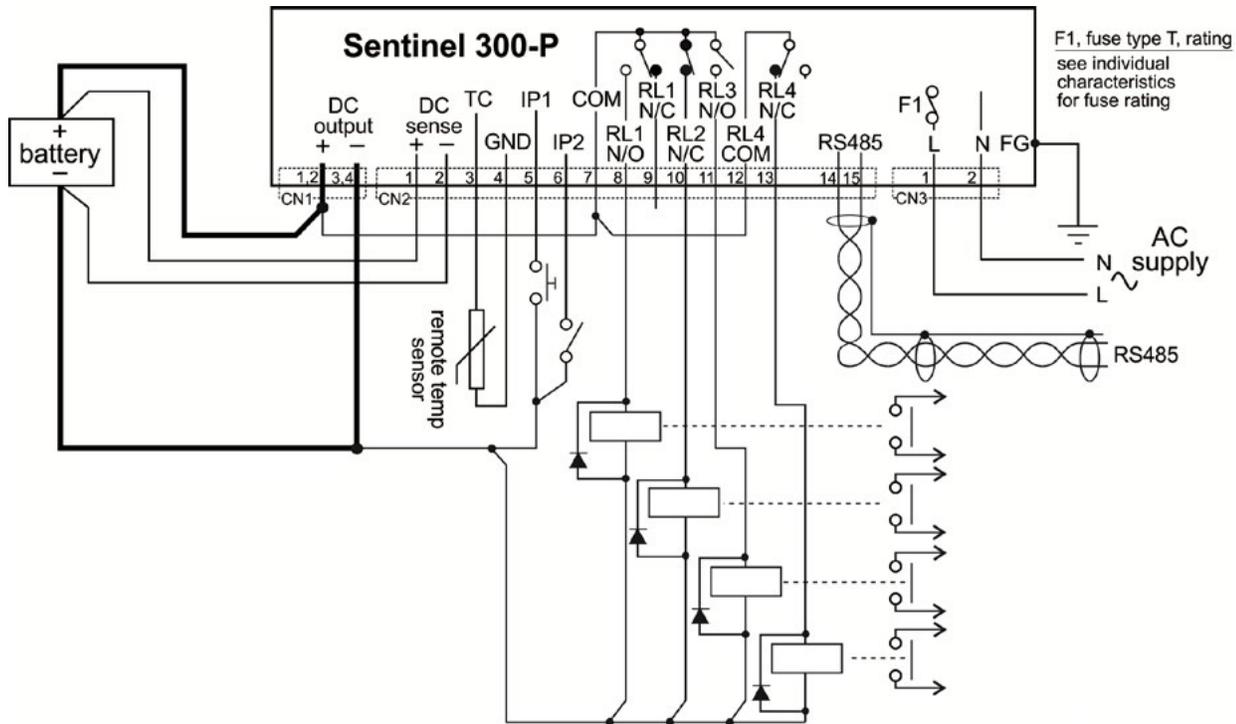
#### All standard (E)SNTL300P-FP models:

UL listed (enclosed models) or recognized (open frame)  
BBGQ: UL1236, CSA22.2 no. 107.2, BBHH: UL1236 SE  
QWIR: UL1236 SC (vented lead acid only)

#### Open Frame SNTL300P-FP models only:

FM specification tested for use on FM Approved controllers for Diesel Engine Driven Fire Pumps.

# Electrical Connection



- Notes:
- 1) AC input fusing (F1): replaceable, circuit board mounted fuse, rating as shown on the product label.
  - 2) DC output fusing: all models include a self-resetting electronic output fuse.
  - 3) DC output is isolated from chassis.
  - 4) connection shown for standard configurations with output RL4. (RL4 is not available on units configured for CAN communication.)

# Output Calibration

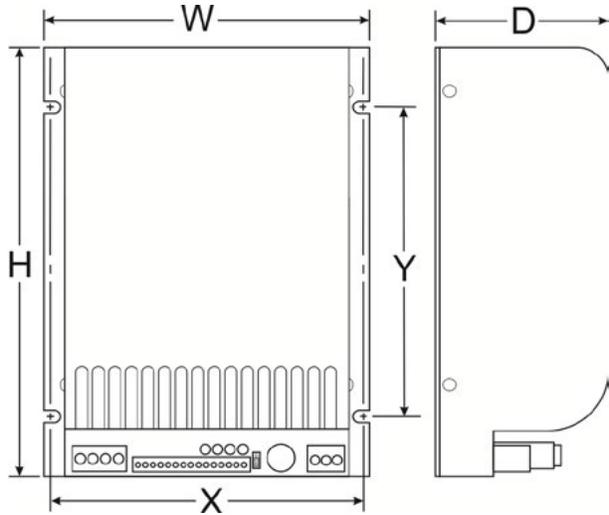
(E)SNTL300P-FP models are intended for fire pump applications only. Battery type is selected by circuit board DIL switches or SNTL-PCSUITE configuration software.

Calibration figures 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.

Battery Type		float volts (V DC)	boost volts (V DC)
12V	Wet (vented) lead acid, 6 cells	13.7	15.6
	Calcium-Calcium, 6 cells	13.8	15.6
	Lead acid hybrid Sb-Ca, 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
24V	Wet (vented) lead acid, 12 cells	27.4	31.2
	Calcium-Calcium, 12 cells	27.6	31.2
	Lead acid hybrid Sb-Ca, 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

# Dimensions

## Open-frame SNTL300P



Optional clip for DIN rail mounting  
(2 required for each charger)  
part number 045-0001

### Overall

W	6.22 in. / 158 mm
H	8.19 in. / 208 mm
D	3.31 in. / 84 mm

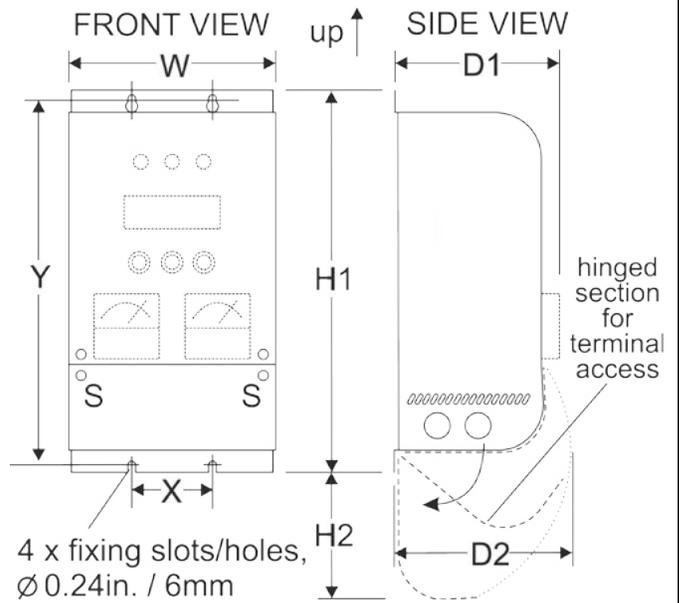
### Fixing holes

X	5.91 in. / 150 mm
Y	5.91 in. / 150 mm

### Weight

	2.5 lb. / 1.1 kg
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## Enclosed ESNTL300P



4 x fixing slots/holes,  
Ø0.24in. / 6mm

### Overall

W	6.50 in. / 165mm
H1	11.81 in. / 300 mm
H2	3.15 in. / 80 mm
D1	4.92 in. / 125 mm
D2	5.12 in. / 130 mm

### Fixing holes:

X	2.50 in. / 63.5 mm
Y	11.25 in. / 285.5 mm

### Weight:

	4.4 – 4.6 lb. / 2.0 – 2.1 kg
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*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/below and 1.0 in. / 25 mm at each side.*

# How to Order

Part Number	Model and Description	Notes
42703851	SNTL300PFP: Open-frame (protective cover) Sentinel 300P-FP Input supply 110/120/220/240 VAC (50 Hz / 60 Hz) Output 10 A @ 12/24 V (fire pump applications)	 cUL US NFPA 110 CE
42703853	SNTL300PCFP: As above, plus CAN/J1939 communication	
42703880	ESNTL300PMFP: Enclosed Sentinel 300P-FP Input supply 110/120/220/240 VAC (50 Hz / 60 Hz) Output 10 A @ 12/24 V (fire pump applications) Analog ammeter and voltmeter	 cUL NFPA 110 CE
42703876	ESNTL300PCLMFP: As above, plus analog ammeter and voltmeter	 cUL NFPA 110 CE
42703619	42703619 SNTL-RTC: Remote temperature sensor with 9.8 feet / 3.0 meter lead assembly, for automatic charge output temperature compensation	
42703898	SNTL300P-PCSUITE: Windows®-based software suite for all (E)SNTL300P models. Request by email with company name, details and valid email address	
42703899	SNTL300P-PCCONN: PC connection suite for all (E)SNTL300P models. Includes SNTL-PCSUITE software on CD-ROM, charger RS485 lead (6.5 feet / 2 meter), RS485/USB converter and USB lead (3.2 feet / 1 meter)	

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