

# Battery Chargers - Phase Three Series

Phase Three "Smart" battery charging technology provides significant benefits over traditional float chargers whose output voltage droops under heavy loads, and fails to attain absorption voltage levels recommended by battery manufacturers as part of a proper charge cycle. These issues are particular significant in Emergency Vehicle applications where rapid recharge is required while powering DC loads, and reliable service life of a battery is critical. Smart Chargers interact with batteries and deliver a three stage charge process which provides for fastest recovery and ideal battery condition, maximizing performance and life.

Adaptability to different battery types and charge conditions is another important feature. A selector switch adjusts output voltage to adapt for proper charging of gel-cell, lead acid and AGM battery types. An optional temperature compensation sensor adjusts output for ideal voltage based on changes in ambient temperatures. This improves performance and extends battery life.



## Features

- "Smart" circuitry provides three stage charging—bulk, absorption, float
- Gel-Cell/Flooded Lead-acid/AGM battery type switch selects optimum charge/float voltages
- Multiple isolated outputs - charge independent battery banks\*
- Optional sensor adjusts output voltage based on battery temperature\*
- Current limiting - charges dead batteries without overload
- Use as a power supply; can power Radios/MDT's without a battery in line
- Built to last—rugged stainless steel case with circuitry hardened for hostile environments

\*Except PT-7

## Models

12 Volt	24 Volt
PT-7	PT-24-8
PT-14	PT-24-13
PT-25	PT-24-20
PT-40	PT-24-40
PT-70A	PT-24-45F
	PT-24-60F
	PT-24-95F

See next page for detailed specifications.

## Optional Accessories



**Battery Preserver,**  
See page 5



**Temperature Compensation Sensor Model: TCS-12/24**  
shown - see next page for applicable sensor depending on charger model.



**Kwik-Eject™**  
See page 7



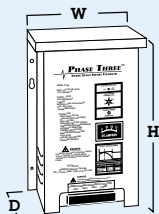
**Battery Monitor,**  
See page 18

# Battery Chargers - Phase Three Series

## Specifications

	12 Volt Models					24 Volt Models						
	PT-7	PT-14	PT-25	PT-40	PT-70A	PT-24-8	PT-24-13	PT-24-20	PT-24-40	PT-24-45F	PT-24-60F	PT-24-95F
<b>Input VAC (50-60 Hz.)</b>	88-132 or 176-264	85-264	90-132 or 180-264	85-135 or 170-270	90-264	85-264	90-132 or 180-264	85-135 or 170-270	90-264	207-253	207-253	90-130
<b>Input Amps @ Full Load @ 115 VAC</b>	2	2.8	6.5	8.5	12	2.8	6.5	8.5	12	N/A	NA	N/A
<b>Input Amps @ 230 VAC</b>	1	1.4	4	4.3	6	1.4	4	4.3	6	8	13	17
<b>P.F. Rating</b>	>.65	.95@230V .98@115V	.7	.7	.95@230V .98@115V	.95@230V .98@115V	.7	.7	.95@230V .98@115V	.7	.7	.7
<b>Max Output Amps @ 115 VAC Input</b>	7	14	25	40	64	8	13	20	37	N/A	NA	N/A
<b>Max Output Amps @ 230 VAC Input</b>	7	14	25	40	70	8	13	20	40	45	60	95
<b>Output Banks</b>	2	3	3	3	3	3	3	3	3	3	3	3
<b>Battery Capacity (Amp-Hours)</b>	14-70	28-140	50-250	80-400	140-700	16-80	26-130	40-200	80-400	90-450	150-600	180-950
<b>Operating Temp. Rating Reference</b>	T-2	T-2	T-2	T-1	T-2	T-2	T-2	T-1	T-2	T-3	T-3	T-3
<b>Case Size Ref.</b>	A-1	A-2	A-2	A-3	A-5	A-2	A-2	A-3	A-5	A-4	A-6	A-6
<b>Weight; Lbs./Kg.</b>	3.2/1.5	8/4	8.2/4	12/6	15.2/7	8/4	8.2/4	12/6	15.2/7	12.2/6	34.0/15	34.0/15
<b>Optional Temp. Sensor Model</b>	N/A	TCS-12/24	TCS-12/24	TCS-12/24	TCS-12/24	TCS-12/24	TCS-12/24	TCS-12/24	TCS-12/24	TP	TP	TP

### Case Size:



Ref	Inches			Centimeters		
	H	W	D	H	W	D
A-1	10.5	5.0	2.8	26.7	12.7	7.1
A-2	12.5	7.7	4.3	31.8	19.6	10.9
A-3	14.1	9.5	4.0	35.8	24.1	10.2
A-4	15.5	9.7	5.0	39.4	24.6	12.7
A-5	16.7	9.8	6.7	42.4	24.9	17.0
A-6	19.5	12.2	8.2	49.5	40.0	20.8

### Temperature Rating References:

**T-1** -25°C to +60°C; Derate linearly from 100% @ 50°C to 75% @ 60°C  
**T-2** -10°C to +60°C; Derate linearly from 100% @ 50°C to 80% @ 60°C  
**T-3** -20°C to +60°C; Derate linearly from 100% @ 45°C to 70% @ 60°C

### Nominal Output Voltages at Gel/Flooded Switch Settings

(Without Temperature Compensation option installed or at 22.2°C (72°F) with Temperature Compensation option installed.)

Setting	12 Volt Models		24 Volt Models		32 Volt Model	
	Charge @ 50 % load	Float @ .5 amp load	Charge @ 50 % load	Float @ .5 amp load	Charge @ 50 % load	Float @ .5 amp load
Gel-Cell	14.0 VDC	13.6 VDC	28.0 VDC	27.2 VDC	37.3 VDC	36.2 VDC
Flooded/AGM	14.2 VDC	13.4 VDC	28.4 VDC	26.8 VDC	37.8 VDC	35.7 VDC

### Temperature Compensation:

- 5 mV per cell per ° C. Sensor supplied with 25' cable and plug-in connector

### Protection (all models):

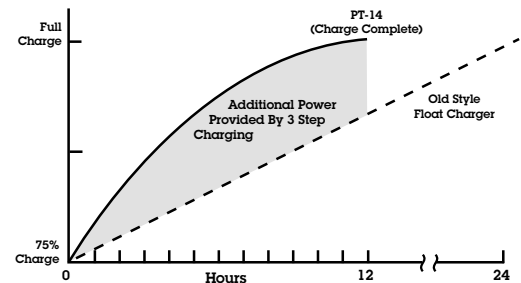
Input/Output Fuses, Current Limiting, Thermal Protection, Forced Air Cooling, Drip Shield

### Remote Panel, Model RP:

LED's indicate charger output stage. Button allows manual reinitialization of three stage charge cycle. Supplied with 25' cable and plug-in connector. Panel dimensions: 3" H x 4.75" W

### Power Returned to Battery by 14 Amp 3-Step Charger vs 15 Amp Float Charger

Conditions: 200 AH Battery, 75% Charged, 4 Amp Constant Load



The graph depicts the incremental power returned to batteries using a three step process which controls voltage depending on battery and load conditions, in comparison to float type chargers that regulates to a single end of charge voltage set point.



DC Power Onboard - Emergency & Specialty Vehicles