

Battery Chargers - Phase Three Modular

A Battery Charging System with Redundant, Easily Replaced Charge Modules Providing High Reliability and Serviceability

Reliability

- Redundant, independent, charger modules increase reliability – a malfunction of one does not disable the charging system; remaining modules continue to operate.

Serviceability

- Module change-out takes only minutes, while the system continues to operate
- Technical personnel not required
- No need to remove the charger case from the boat or disconnect any wiring
- No inconvenience of power interruption to the boat

Features

- Three stage "smart" charging; bulk, absorption, float
- Battery type selector switch; gel-cell, lead-acid, AGM
- Temperature compensated output option
- Numerous diagnostic and system status indicators
- 12 Volt; 33-100 amps or 24 Volt; 22-67 amps
- "Universal" input of 90-264 VAC, 50-60 Hz. – can be used anywhere in the world
- Powder coated stainless steel case

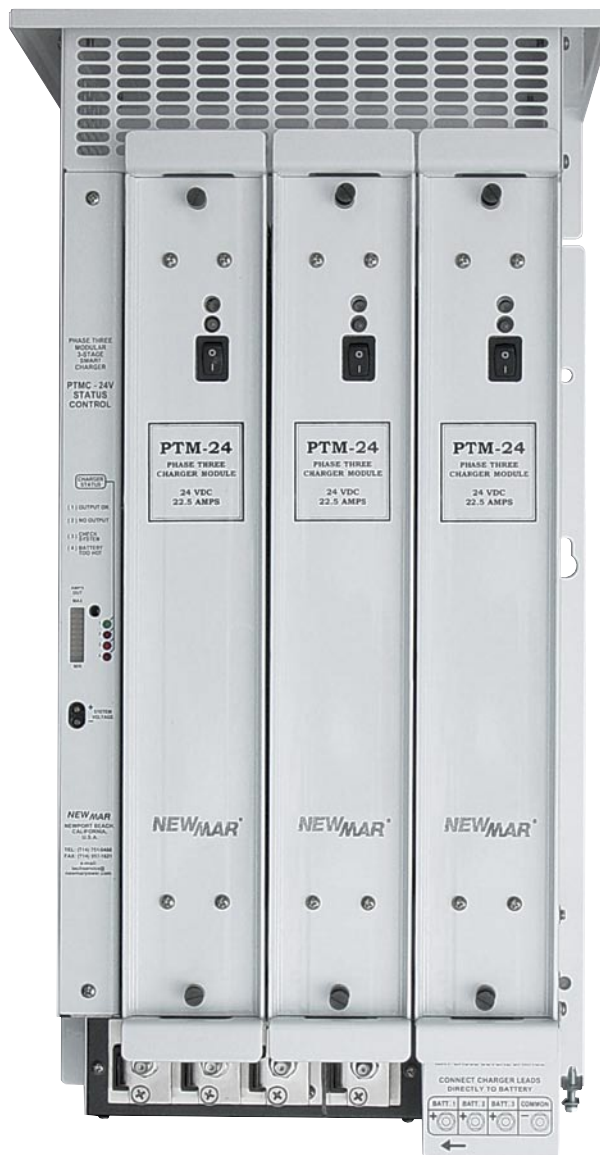
The Phase Three Modular (PTM) Concept

Super yachts and commercial vessels have complex electrical systems that support equipment essential to safe operation. These boats are frequently in transit or in remote locations where repair/service is not readily available. Down-time can be very costly and severely impact sailing schedules.

Recognizing that all equipment has a finite service life and random component failure can occur at any time, system reliability can be improved by reducing the number of single points of failure, thus diminishing the impact of a solitary fault on the overall system. The PTM series applies this "fault-tolerant" concept to battery chargers, by using multiple independent charger modules within the unit.

The PTM consists of a case which serves as connection point to AC input and battery bank output, as well as three front-facing power bays, each accommodating a 550 watt charger module which slides and locks in place. If a module fault occurs, a front panel indicator is activated and the system continues operating.

Captains and owners will appreciate this system approach to reliability. A dead charger and dead batteries can disable a vessel, but with the PTM redundant charging system a fault in one of the modules is easily identified and it can be quickly replaced with an on-hand spare or an exchange unit from the factory, while the charging system continues to operate.



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The Phase Three Modular (PTM) Series is a battery charging system consisting of a wall mount case, which serves as a connection point for AC input and battery bank output that accommodate up to three charging modules which slide and lock into front access power bays. Its redundant charger modules increase reliability, as the system remains operational in the event of a charger module fault. The system is easily and quickly restored to full output by simple module replacement.

The system features three stage charging for rapid recharge and optimal battery life. See pages 2 & 3 for a complete description of the three stage charging process.

Specifications

System Model	Modules Installed*	Max Output Amps	Max Input Amps @ 115/230 VAC
PTMS-12-100	3	100 @ 12 V	18/9
PTMS-24-67	3	67 @ 24 V	18/9

General System Specifications

Input Voltage/Frequency: 90-264 VAC, 47-63 Hz, single phase; derate linearly from 100% output @ 105 VAC to 80% output @ 90 VAC

Power Factor: .96-.99

Efficiency: 85% typical

Nominal Charge/Float Voltages: Refer to chart on page 3

Temperature Compensation (Option): - 5 mV per cell per °C (typical)

Temperature Rating: 0-60° C; derate linearly from 100% output @ 50° C to 80% output @ 60° C

Recommended Battery Type/Capacity: Gel-Cell, Flooded or Sealed Lead-Acid;

12 Volt Systems: 6 Cell, 80-400 A-H (per installed module); 240-1200 A-H (per system)

24 Volt Systems: 12 Cell, 40-200 A-H (per installed module); 120-600 A-H (per system)

Output Battery Banks: 3

Module Bays: 3*

Status Indicators: Output OK, No Output, Check System, Battery Too Hot, Total Output Bar Graph, Output Voltage Test Points, Contacts for Optional Remote Alarm

Case Material: Powder Coated Stainless Steel

Case Size: Refer to diagram at right

Weight: Empty: 16 lbs/7.3 kg. - With three modules installed: 34 lbs/15.5 kg.

* Note: Charge modules are shipped in the same carton as the PTM case and are then placed in position by the installer.

Individual Module Specifications

Models: PTM -12-33 (12 volt); PTM-24-22 (24 volt)

Input Voltage/Frequency: 90-264 VAC; 47-63 Hz; derate linearly from 100% output @ 105 VAC to 80% output @ 90 VAC

Input Current: 3 amps @ 230VAC; 6 amps @ 115 VAC

Power Factor: .96-.99

Efficiency: 85% typical

Protection Features: Input Fuse, Output Fuse, Current Limiting, Over Voltage Protection, Cooling Fan, Automatic Thermal Shutdown/Recovery

Compliances:

CE Mark, UL Recognized; E183223, Level 3

Safety: EN60950-1 USA, Canada, Europe

EMI Radiated and Conducted: FCC Part 15 Level A; EN55022 Class A

Status Indicators: Output OK/FAULT

Weight: 6 lbs.

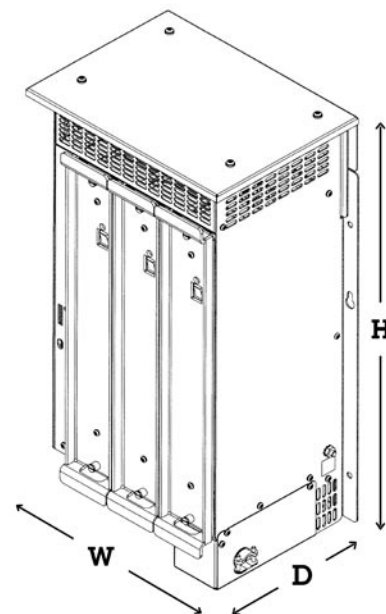
Output Current:

PTM-12-33: 33 amps max

PTM-24-22: 22.5 amps max in Bulk Phase;
20 amps max in Absorption/Float Phases

Optional

Temperature Compensation Sensor - Model TCS-12/24: See pages 2 & 3 for details



Case Size

Inches			Centimeters		
H	W	D	H	W	D
20.9	10.9	8.8	53.1	27.7	22.4



DC Power Onboard