

# PT-100 | CHARGE CONTROLLER

MAXIMIZE ENERGY HARVEST AND IMPROVE BATTERY LIFE

## Introduction

The PT-100 is a Maximum Power Point Tracker (MPPT) charge controller designed to harvest the maximum available energy from the PV array and deliver it to the batteries. The PT-100's MPPT algorithm finds the maximum power point of the array and operates at this point while regulating the output current to 100 amps and battery voltage to fully charge the battery.



## Features

- High Efficiency – The PT-100 provides typical 99% conversion efficiency and uses less than four watts of power in nighttime mode.
- MPPT – Maximum Power Point Tracking technology for increased PV power output efficiency.
- Voltage Options – Compatible with 12, 24, or 48V battery systems with automatic detection of system voltage. The PT-100 will produce up to 100 amps regardless of battery voltage.
- Supports a Large PV Array – A single controller supports a large PV array up to 6600W. Larger PV arrays may be used because the PT-100 is current limited to 100 amps for maximum harvest.
- Optimal Battery Charging – Automatic battery temperature compensation using an included external temperature sensor for optimum battery charging, even during extreme temperature changes.
- Multi-stage Charging – Maximizes system performance and improves battery life.
- GFDI: Integrated PV Ground-Fault Detection and Interruption/Indication, with pre-fault leakage/diagnostic metering.
- LED Indicators and Screen – Multiple LED indicators and large digital LED screen on front panel for easy-to-read system information.
- On-site Updates – The PT-100's software can be updated on site.
- Extensive Electronic Protection – Over-temperature protection, power derating when temperature is high, PV short circuit and high PV input shutdown, output overcurrent protection and night-time back-feed (reverse current) protection.
- AFCI – An integrated PV Arc-Fault Circuit Interrupter detects, indicates, and extinguishes series arcs.
- Convenient Installation – Run all of the wiring to the unique, remain-in-place wiring box with ease prior to installing the full PT-100 unit.
- Easy MP and MMP integration – The PT-100 is designed to work with a Magnum Panel (MP) or Mini-Magnum Panel (MMP). It provides room and access to PV and battery disconnect breakers.

## Model Numbers

- PT-100

## Available For

- Renewable Energy Systems
  - Off-grid Power
  - Back-up Power

## Available Configurations

- Works as a stand-alone controller using internal settings
- Works with a Magnum Inverter/Charger and Magnum Remote. Menu settings for the PT-100 are currently only available via the ME-ARC Remote or ME-ARTR Router.

## Works With

- ME Series
- MM-AE Series
- MM-E Series
- MMS Series
- MMS-E Series
- MS Series
- MS-AEJ Series
- MS-E Series
- MSH Series
- MS-PAE Series
- MS-PE Series
- MMP Panel System
- MMP-E Panel System
- MP Panel System
- MP-E Panel System
- RD Series
- RD-E Series

## Optional Remote (Requires Magnum Inverter)

- Built-in programmable auxiliary relay for device control.
- Internal data logging functionality keeps energy harvest information and battery Ahr/W/hr data up to 255 days. Use the optional remote to display this information.



## SPECIFICATIONS

<b>PT-100</b>	
<b>ELECTRICAL SPECIFICATIONS</b>	
<b>Maximum PV input voltage (any condition)</b>	200 VDC + battery voltage or 240 VDC - whichever is lower
<b>Maximum PV operating voltage</b>	187 VDC
<b>Maximum PV array short circuit current</b>	100 ADC
<b>Nominal battery voltage range</b>	12, 24, or 48 VDC
<b>Battery charger output voltage range</b>	10 to 66 VDC
<b>Continuous charger output current</b>	100 ADC (from -20° C to +40° C) with proportional power reduction up to 60° C ambient
<b>Maximum output power</b>	6600 watts
<b>Efficiency</b>	99% typical
<b>Tare loss / nighttime power consumption</b>	<4 watts (fan off, display/LEDs off)
<b>Charger regulation method</b>	Automatic three-stage (bulk, absorption, float) charge with manual equalization
<b>GENERAL FEATURES AND CAPABILITIES</b>	
<b>Battery temperature compensation</b>	With Battery Temperature Sensor (BTS) connected (battery temperature -20° C to +55° C)
<b>Internal cooling</b>	Using dual ball-bearing fans for long life
<b>Overcurrent protection</b>	With two overlapping circuits
<b>Over-temperature protection</b>	On transformer and MOSFETS
<b>Listings</b>	ETL Listed to UL/cUL 1741, CSA C22.2 #107.1-01, CE
<b>Warranty</b>	Five years parts and labor
<b>ENVIRONMENTAL SPECIFICATIONS</b>	
<b>Operating temperature</b>	-20° C to +60° C (-4° F to 140° F)
<b>Nonoperating temperature</b>	-40° C to +70° C (-40° F to 158° F)
<b>Operating humidity</b>	0 to 95% RH non condensing
<b>PHYSICAL SPECIFICATIONS</b>	
<b>Enclosure type</b>	Indoor, ventilated, with removable powder-coated conduit box
<b>Unit dimensions (w x h x d)</b>	8.5" x 15.5" x 4.0" (21.6 cm x 39.4 cm x 10.2 cm)
<b>Shipping dimensions (w x h x d)</b>	11.5" x 19.5" x 8.125" (29.2 cm x 49.5 cm x 20.6 cm)
<b>Mounting</b>	Mounted on a vertical surface (wall) or installed on MP or MMP enclosure
<b>Weight</b>	13.6 lb (6.2 kg)
<b>Shipping weight</b>	18 lb (8.2 kg)
<b>Max operating altitude</b>	15,000' (4570 m)



## GENERAL NOTES

Testing for specifications at 25° C.  
Specifications subject to change without notice.



## AGENCY APPROVALS & CERTIFICATIONS

- ETL Listed to UL/cUL 1741, CSA C22.2 #107.1-01, CE

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