



# PT-100 CHARGE CONTROLLER Maximize Energy Harvest and Improve Battery Life

### **Model Numbers**

PT-100

#### Available For

 Renewable Energy Systems Off-grid Power Back-up Power

## 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

# **Available Configurations**

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

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 higher than 99% conversion efficiency and uses less than two 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. The AFCI is designed to meet the new National Electric Code (NEC) Article 690.11 requirements.
- Convenient Installation: Run all of the wiring to the unique, remain-inplace 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.

# Even More Functionality with the Optional Remote

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

# PT-100 CHARGE CONTROLLER SPECIFICATIONS

Maximum PV input voltage (any condition)  Maximum PV operating voltage  187 VDC  Maximum PV operating voltage  187 VDC  Mominal battery voltage range  112, 24, or 48 VDC  Battery charger output voltage range  112, 24, or 48 VDC  Battery charger output voltage range  110 to 66 VDC  Continuous charger output current  100 ADC (from -20 °C to +40 °C) with proportional power reduction up to 60 °C ambient  Maximum output power  6600 watts  Peak (and full power) efficiency  399% (98% typical)  Tare loss / nighttime power consumption  Charger regulation method  Automatic three-stage (bulk, absorption, float) charge with manual equalization  ENERAL FEATURES AND CAPABILITIES  Battery temperature compensation  With Battery Temperature Sensor (BTS) connected (battery temperature -20 °C to +55 °C)  Internal cooling  Using dual ball-bearing frans for long life  Over-temperature protection  With two overlapping circuits  Over-temperature protection  Unransformer and MOSFETS  Listings  ETL Listed to UL/cUL 1741, CSA C22.2 #107.1-01, CE  Five years parts and labor  NVIRONMENTAL SPECIFICATIONS  Operating temperature  -20° C to +60° C (-4° F to 150° F)  Operating temperature  -40° C to +70° C (-40° F to 158° F)  Operating temperature  -40° C to +70° C (-40° F to 158° F)  Operating temperature  -40° C to +70° C (-40° F to 158° F)  Operating temperature  -40° C to +70° C (-40° F to 158° F)  Operating temperature  -40° C to +70° C (-40° F to 158° F)  Operating temperature  -40° C to +70° C (-40° F to 158° F)  Operating temperature  -40° C to +70° C (-40° F to 158° F)  Operating temperature  -40° C to +70° C (-40° F to 158° F)  Operating temperature  -40° C to +70° C (-40° F to 158° F)  Operating temperature  -40° C to +70° C (-40° F to 158° F)  Operating temperature  -40° C to +70° C (-40° F to 158° F)  Operating temperature  -40° C to +70° C (-40° F to 158° F)  Operating temperature  -40° C to +70° C (-40° F to 158° F)  Operating temperature  -40° C to +70° C (-40° F to 158° F)  Operating temperature  -40° C to +70° C (-40° F to 15	1-100 CHANGE CONTROLLEN	
Maximum PV input voltage (any condition)  Maximum PV operating voltage  187 VDC  Maximum PV array short circuit current  100 ADC  Mominal battery voltage range  112, 24, or 48 VDC  Battery charger output voltage range  110 to 66 VDC  Continuous charger output voltage range  100 ADC (from -20 °C to +40 °C) with proportional power reduction up to 60 °C ambient  Maximum output power  6600 watts  Peak (and full power) efficiency  399% (98% typical)  Tare loss / nighttime power consumption  Cay watts (fan off, display/LEDs off)  Charger regulation method  Automatic three-stage (bulk, absorption, float) charge with manual equalization  **ENERAL FEATURES AND CAPABILITIES**  Battery temperature compensation  With Battery Temperature Sensor (BTS) connected (battery temperature -20 °C to +55 °C)  Internal cooling  Using dual ball-bearing fans for long life  Over-temperature protection  With two overlapping circuits  Over-temperature protection  On transformer and MOSFETS  Listings  ETL Listed to UL/cUL 1741, CSA C222 #107.1-01, CE  Five years parts and labor  NVIRONMENTAL SPECIFICATIONS  Operating temperature  -20° C to +60° C (-40° F to 158° F)  Operating temperature  -40° C to +70° C (-40° F to 158° F)  Operating humidity  0 to 95% RH non condensing  HYYSICAL SPECIFICATIONS  Enclosure type  Indoor, ventilated, with removable powder-coated conduit box  Unit dimensions (w x h x d)  8.5" x 15.5" x 4.0" (21.6 cm x 39.4 cm x 10.2 cm)  Shipping dimensions (w x h x d)  Mounting  Mounted on a vertical surface (wall) or installed on MP or MMP enclosure  Weight  15 lb (6.8 kg)		PT-100
Maximum PV operating voltage 187 VDC  Maximum PV array short circuit current 100 ADC  Nominal battery voltage range 12, 24, or 48 VDC  Battery charger output voltage range 10 to 66 VDC  Continuous charger output current 100 ADC (from -20 °C to +40 °C) with proportional power reduction up to 60 °C ambient Maximum output power 6600 watts  Peak (and full power) efficiency >99% (98% typical)  Tare loss / nighttime power consumption <2 watts (fan off, display/LEDs off)  Charger regulation method Automatic three-stage (bulk, absorption, float) charge with manual equalization  IENERAL FEATURES AND CAPABILITIES  Battery temperature compensation With Battery Temperature Sensor (BTS) connected (battery temperature -20 °C to +55 °C)  Internal cooling Using dual ball-bearing fans for long life  Over-temperature protection With two overlapping circuits  Over-temperature protection On transformer and MOSFETS  Listings ETL Listed to UI/cUL 1741, CSA C22.2 ≠107.1-01, CE  Warranty Five years parts and labor  NVIRONMENTAL SPECIFICATIONS  Operating temperature -20° C to +60° C (-4° F to 140° F)  Nonoperating temperature -40° C to +70° C (-40° F to 158° F)  Operating humidity 0 to 95% RH non condensing  HYYSICAL SPECIFICATIONS  Enclosure type Indoor, ventilated, with removable powder-coated conduit box  Unit dimensions (w x h x d) 8.5" x 15.5" x 4.0" (21.6 cm x 39.4 cm x 10.2 cm)  Shipping dimensions (w x h x d) Mounted on a vertical surface (wall) or installed on MP or MMP enclosure  Weight 12.5 lb (5.7 kg)  Shipping weight	ELECTRICAL SPECIFICATIONS	
Maximum PV array short circuit current  Nominal battery voltage range  10 to 66 VDC  Continuous charger output voltage range  600 watts  Maximum output power  600 watts  Peak (and full power) efficiency  299% (98% typical)  Tare loss / nighttime power consumption  Charger regulation method  Automatic three-stage (bulk, absorption, float) charge with manual equalization  ENERAL FEATURES AND CAPABILITIES  Battery temperature compensation  With Battery Temperature Sensor (BTS) connected (battery temperature -20 °C to +55 °C)  Internal cooling  Using dual ball-bearing fans for long life  Overcurrent protection  With two overlapping circuits  Over-temperature protection  On transformer and MOSFETS  Listings  ETL Listed to UU/cUL 1741, CSA C22.2 #107.1-01, CE  Five years parts and labor  NVIRONMENTAL SPECIFICATIONS  Operating temperature  -20° C to +60° C (-4° F to 140° F)  Nonoperating temperature  -40° C to +70° C (-40° F to 158° F)  Operating humidity  0 to 95% RH non condensing  HYSICAL SPECIFICATIONS  Enclosure type  Indoor, ventilated, with removable powder-coated conduit box  Unit dimensions (w x h x d)  11.5" x 19.5" x 8.125" (29.2 cm x 49.5 cm x 20.6 cm)  Mounting  Mounted on a vertical surface (wall) or installed on MP or MMP enclosure  Weight  15 lb (6.8 kg)	Maximum PV input voltage (any condition)	200 VDC + battery voltage or 240 VDC - whichever is lower
Nominal battery voltage range Battery charger output voltage range 10 to 66 VDC Continuous charger output current 100 ADC (from -20 °C to +40 °C) with proportional power reduction up to 60 °C ambient Maximum output power 6600 watts Peak (and full power) efficiency >99% (98% typical) Tare loss / nighttime power consumption Charger regulation method Automatic three-stage (bulk, absorption, float) charge with manual equalization Battery temperature compensation With Battery Temperature Sensor (BTS) connected (battery temperature -20 °C to +55 °C) Internal cooling Using dual ball-bearing fans for long life Overcurrent protection With two overlapping circuits Over-temperature protection Over-temperature protection Over-temperature protection Five years parts and labor  NVIRONMENTAL SPECIFICATIONS Operating temperature -20° C to +60° C (-4° F to 140° F) Nonoperating temperature -40° C to +70° C (-40° F to 158° F) Operating humidity 0 to 95% RH non condensing HYSICAL SPECIFICATIONS  Enclosure type Indoor, ventilated, with removable powder-coated conduit box Unit dimensions (w x h x d) Shipping weight 15 lb (6.8 kg)	Maximum PV operating voltage	187 VDC
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Continuous charger output current  Maximum output power  6600 watts  Peak (and full power) efficiency  59% (98% typical)  Tare loss / nighttime power consumption  2 watts (fan off, display/LEDs off)  Charger regulation method  Automatic three-stage (bulk, absorption, float) charge with manual equalization  ENERAL FEATURES AND CAPABILITIES  Battery temperature compensation  With Battery Temperature Sensor (BTS) connected (battery temperature -20 °C to +55 °C)  Internal cooling  Using dual ball-bearing fans for long life  Overcurrent protection  With two overlapping circuits  Over-temperature protection  On transformer and MOSFETS  Listings  ETL Listed to UL/cUL 1741, CSA C22.2 #107.1-01, CE  Warranty  Five years parts and labor  NVIRONMENTAL SPECIFICATIONS  Operating temperature  -20° C to +60° C (-4° F to 158° F)  Operating temperature  -40° C to +70° C (-40° F to 158° F)  Operating humidity  0 to 95% RH non condensing  HYSICAL SPECIFICATIONS  Enclosure type  Indoor, ventilated, with removable powder-coated conduit box  Unit dimensions (w x h x d)  8.5" x 15.5" x 4.0" (21.6 cm x 39.4 cm x 10.2 cm)  Shipping dimensions (w x h x d)  Mounting  Mounted on a vertical surface (wall) or installed on MP or MMP enclosure  Weight  12.5 lb (5.7 kg)  Shipping weight  15 lb (6.8 kg)	Nominal battery voltage range	12, 24, or 48 VDC
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HYSICAL SPECIFICATIONS  Enclosure type Indoor, ventilated, with removable powder-coated conduit box  Unit dimensions (w x h x d) 8.5" x 15.5" x 4.0" (21.6 cm x 39.4 cm x 10.2 cm)  Shipping dimensions (w x h x d) 11.5" x 19.5" x 8.125" (29.2 cm x 49.5 cm x 20.6 cm)  Mounting Mounted on a vertical surface (wall) or installed on MP or MMP enclosure  Weight 12.5 lb (5.7 kg)  Shipping weight 15 lb (6.8 kg)	Nonoperating temperature	-40° C to +70° C (-40° F to 158° F)
Enclosure type Indoor, ventilated, with removable powder-coated conduit box  Unit dimensions (w x h x d) 8.5" x 15.5" x 4.0" (21.6 cm x 39.4 cm x 10.2 cm)  Shipping dimensions (w x h x d) 11.5" x 19.5" x 8.125" (29.2 cm x 49.5 cm x 20.6 cm)  Mounting Mounted on a vertical surface (wall) or installed on MP or MMP enclosure  Weight 12.5 lb (5.7 kg)  Shipping weight 15 lb (6.8 kg)	Operating humidity	0 to 95% RH non condensing
Unit dimensions (w x h x d)       8.5" x 15.5" x 4.0" (21.6 cm x 39.4 cm x 10.2 cm)         Shipping dimensions (w x h x d)       11.5" x 19.5" x 8.125" (29.2 cm x 49.5 cm x 20.6 cm)         Mounting       Mounted on a vertical surface (wall) or installed on MP or MMP enclosure         Weight       12.5 lb (5.7 kg)         Shipping weight       15 lb (6.8 kg)	PHYSICAL SPECIFICATIONS	
Shipping dimensions (w x h x d)  11.5" x 19.5" x 8.125" (29.2 cm x 49.5 cm x 20.6 cm)  Mounting  Mounted on a vertical surface (wall) or installed on MP or MMP enclosure  Weight  12.5 lb (5.7 kg)  Shipping weight  15 lb (6.8 kg)	Enclosure type	Indoor, ventilated, with removable powder-coated conduit box
Mounting Mounted on a vertical surface (wall) or installed on MP or MMP enclosure Weight 12.5 lb (5.7 kg) Shipping weight 15 lb (6.8 kg)	Unit dimensions (w x h x d)	8.5" x 15.5" x 4.0" (21.6 cm x 39.4 cm x 10.2 cm)
Weight         12.5 lb (5.7 kg)           Shipping weight         15 lb (6.8 kg)	Shipping dimensions (w x h x d)	11.5" x 19.5" x 8.125" (29.2 cm x 49.5 cm x 20.6 cm)
Shipping weight 15 lb (6.8 kg)	Mounting	Mounted on a vertical surface (wall) or installed on MP or MMP enclosure
	Weight	12.5 lb (5.7 kg)
Max operating altitude 15,000' (4570 m)	Shipping weight	15 lb (6.8 kg)
	Max operating altitude	15,000' (4570 m)



# MAGNUM-DIMENSIONS

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