

## PT-20-10 | SOLAR CHARGE CONTROLLER

ADVANCED MPPT SUPPORT FOR SMALLER PV SYSTEMS

### Introduction

The Magnum Energy PT-20-10 Charge Controller by Sensata Technologies is an MPPT controller designed to work with all established module technologies and is optimized for grid-tied PV systems with module voltages higher than the battery voltage. The advanced MPP-tracking algorithm ensures maximum available power produced by the solar panels charges the batteries in any weather.



### Features

- Maximum Power Point Tracker (MPP tracker)
- Voltage and current regulation
- Automatic load reconnection
- Temperature compensation
- Positive earthing of one or negative earthing of several terminals possible
- Monthly equalization charge
- Integrated light controller

### Electronic Protection Functions

- Overcharge protection
- Deep discharge protection
- Reverse polarity protection of module, load and battery
- Reverse polarity protection by internal fuse
- Automatic electronic fuse
- Short circuit protection
- Overvoltage protection at module input
- Open circuit protection without battery
- Reverse current protection at night
- Overtemperature and overload protection
- Load disconnection on battery overvoltage

### Model Numbers

- PT-20-10

### Works With

- Works as a stand-alone controller using internal settings.

### Options

- Evening or night light function pre-set in the factory or adjustable via the optional RC100



## SPECIFICATIONS

| PT-20-10   |  |
|--|--|
| <b>OPERATING PERFORMANCE</b>   |  |
| System voltage   | 12 V (24 V)  |
| Nominal power  | 250 W (500 W)  |
| Max. DC-DC efficiency  | 98.3 % (U <sub>batt</sub> =24 V; U <sub>in</sub> =30 V; P=0.6*P <sub>nom</sub> )                                 |
| European efficiency  | 94.7 % (U <sub>batt</sub> =12 V; U <sub>in</sub> =30 V); 96.7 % (U <sub>batt</sub> =24 V; U <sub>in</sub> =30 V) |
| European efficiency (weighted across all U <sub>batt</sub> and U <sub>in</sub> ) | 95.2 %   |
| Static MPP efficiency  | 99.9 % (DIN EN 50530)  |
| Dynamic MPP efficiency   | 97.7 % (DIN EN 50530)  |
| Weighted REW (Realistic Equally Weighted efficiency)                             | 92.8 %   |
| Power consumption  | 10 mA  |
| <b>DC INPUT SIDE</b>   |  |
| MMP voltage  | 15 V (30 V) < U <sub>module</sub> << 100 V   |
| Open circuit voltage solar module (at minimum operating temperature)             | 17 V to 100 V (34 V to 100 V)  |
| <b>DC OUTPUT SIDE</b>  |  |
| Load current   | 10 A   |
| Reconnection voltage (LVR)   | 12.5 V (25 V)  |
| Deep discharge protection (LVD)  | 11.5 V (23 V)  |
| <b>BATTERY SIDE</b>  |  |
| Charge current   | 20 A   |
| End-of-charge voltage  | 13.9 V (27.8 V)  |
| Boost charge voltage   | 14.4 V (28.8 V)  |
| Equalization charge  | 14.7 V (29.4 V)  |
| Set battery type   | flooded  |
| Charge current   | 18 ADC   |
| <b>ENVIRONMENTAL SPECIFICATIONS</b>  |  |
| Ambient temperature  | -13° F to 113° F (-25° C to +45° C) derating occurs above 77° F (25° C)  |
| <b>Physical Specifications</b>   |  |
| Terminal (fine/single wire)  | AWG 6 / 4 (16 mm <sup>2</sup> / 25 mm <sup>2</sup> )   |
| Degree of protection   | IP 32  |
| Dimensions (width x height x depth)  | 7.4" x 6.0" x 2.7" (187 mm x 153 mm x 68 mm)   |
| Shipping dimensions (width x height x depth)                                     | 7.8" x 6.2" x 2.9" (200 mm x 158 mm x 75 mm)   |
| Weight   | 2 lb (900 g)   |
| Shipping weight  | 2 lb (900 g)   |
| <b>GENERAL SPECIFICATIONS</b>  |  |
| Warranty   | 5 years  |



## GENERAL NOTES

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

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