

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	
OPERATING PERFORMANCE	
System voltage	12 V (24 V)
Nominal power	250 W (500 W)
Max. DC-DC efficiency	98.3 % (U _{batt} =24 V; U _{in} =30 V; P=0.6*P _{nom})
European efficiency	94.7 % (U _{batt} =12 V; U _{in} =30 V); 96.7 % (U _{batt} =24 V; U _{in} =30 V)
European efficiency (weighted across all U _{batt} and U _{in})	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
DC INPUT SIDE	
MMP voltage	15 V (30 V) < U _{module} << 100 V
Open circuit voltage solar module (at minimum operating temperature)	17 V to 100 V (34 V to 100 V)
DC OUTPUT SIDE	
Load current	10 A
Reconnection voltage (LVR)	12.5 V (25 V)
Deep discharge protection (LVD)	11.5 V (23 V)
BATTERY SIDE	
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
ENVIRONMENTAL SPECIFICATIONS	
Ambient temperature	-13° F to 113° F (-25° C to +45° C) derating occurs above 77° F (25° C)
Physical Specifications	
Terminal (fine/single wire)	AWG 6 / 4 (16 mm ² / 25 mm ²)
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)
GENERAL SPECIFICATIONS	
Warranty	5 years



GENERAL NOTES

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

Sensata Technologies, Inc. ("Sensata") data sheets are solely intended to assist designers ("Buyers") who are developing systems that incorporate Sensata products (also referred to herein as "components"). Buyer understands and agrees that Buyer remains responsible for using its independent analysis, evaluation and judgment in designing Buyer's systems and products. Sensata data sheets have been created using standard laboratory conditions and engineering practices. Sensata has not conducted any testing other than that specifically described in the published documentation for a particular data sheet. Sensata may make corrections, enhancements, improvements and other changes to its data sheets or components without notice.

Buyers are authorized to use Sensata data sheets with the Sensata component(s) identified in each particular data sheet. HOWEVER, NO OTHER LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE TO ANY OTHER SENSATA INTELLECTUAL PROPERTY RIGHT, AND NO LICENSE TO ANY THIRD PARTY TECHNOLOGY OR INTELLECTUAL PROPERTY RIGHT, IS GRANTED HEREIN. SENSATA DATA SHEETS ARE PROVIDED "AS IS". SENSATA MAKES NO WARRANTIES OR REPRESENTATIONS WITH REGARD TO THE DATA SHEETS OR USE OF THE DATA SHEETS, EXPRESS, IMPLIED OR STATUTORY, INCLUDING ACCURACY OR COMPLETENESS. SENSATA DISCLAIMS ANY WARRANTY OF TITLE AND ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, QUIET ENJOYMENT, QUIET POSSESSION, AND NON-INFRINGEMENT OF ANY THIRD PARTY INTELLECTUAL PROPERTY RIGHTS WITH REGARD TO SENSATA DATA SHEETS OR USE THEREOF.

All products are sold subject to Sensata's terms and conditions of sale supplied at www.sensata.com SENSATA ASSUMES NO LIABILITY FOR APPLICATIONS ASSISTANCE OR THE DESIGN OF BUYERS' PRODUCTS. BUYER ACKNOWLEDGES AND AGREES THAT IT IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH ALL LEGAL, REGULATORY AND SAFETY-RELATED REQUIREMENTS CONCERNING ITS PRODUCTS, AND ANY USE OF SENSATA COMPONENTS IN ITS APPLICATIONS, NOTWITHSTANDING ANY APPLICATIONS-RELATED INFORMATION OR SUPPORT THAT MAY BE PROVIDED BY SENSATA.

Mailing Address: Sensata Technologies, Inc., 529 Pleasant Street, Attleboro, MA 02703, USA.

CONTACT US

Americas

Everett, WA
425-353-8833
MagnumSales@sensata.com

International

MagnumInternationalSales@sensata.com

Power Conversion

www.SensataPower.com