

Σ-Ahr MPPT Controller

The charge controller is the beating heart of any solar energy system. The desire for perfection at TSS has resulted in the most solid and most efficient charge controller for stand-alone solar energy systems. It is designed to have exceptional performance and last longer especially in the most harsh environments.



Efficiency 97%

This reduces your overall system cost.

Ultimate reliability

The Multi Array input eliminates a single all-or-nothing connection.

Remote Monitoring

Controller is equipped with an industry standard Modbus TCP/IP interface for easy and reliable remote monitoring.

Triple Redundancy

The analogue fall back mode kicks in should the processor ever fail. More than one voltage and temperature measurement can be incorporated for maximum reliability. Two completely independent voltage measurements are monitored against high and low voltage.

Small and Large systems

A modular design allows for expansion when larger systems are required. Adapting the capacity to your requirement. No unnecessary cost for unnecessary capacity.

In-field diagnostics

With pushbuttons the main function of the controller can be tested in the field.

Σ-Ahr MPPT Controller

| Electrical specifications | Σ-Ahr MPPT Controller 24V | | Σ-Ahr MPPT Controller 48V | |
|---|---|-----------------|---------------------------|-----------------|
| Nominal system voltage | 24 Vdc | | 48 Vdc | |
| Independent solar array inputs | 2 | | 2 | |
| Max. array input current | 2 x 12 Adc | | 2 x 12 Adc | |
| Array input voltage | 120-350 Vdc | | 120-350 Vdc | |
| Max. array input power | 2400 W | | 3600 W | |
| Operating efficiency solar input | 97 % | | 97 % | |
| Max. continuous battery current | 100 Adc | | 75 Adc | |
| Max. battery input voltage | 65 Vdc | | 65 Vdc | |
| Independent load outputs | 2 | | 2 | |
| Nominal output current to load | 2 x 45 Adc | | 2 x 45 Adc | |
| Maximum output current to load | 2 x 60 Adc (1 minute) | | 2 x 60 Adc (1 minute) | |
| Peak output current to load | 2 x 90 Adc (10 seconds) | | 2 x 90 Adc (10 seconds) | |
| Operating efficiency solar input | 97 % | | 97 % | |
| Typical settings (24Vdc) | Lead Acid | Nicd (19 cells) | Lead Acid | Nicd (19 cells) |
| Load disconnect / high system voltage (alarm) | 30.5 Vdc | 31.5 Vdc | 61.0 Vdc | 63.0 Vdc |
| Load re-connect high voltage | 28.8* Vdc | 29.45 Vdc | 57.6* Vdc | 58.9 Vdc |
| Boost @ 25 °C level | 28.8* Vdc | N.A. | 57.6* Vdc | N.A. |
| Float @ 25 °C level | 28.2 Vdc | 28.5 Vdc | 56.4 Vdc | 58.9 Vdc |
| Low battery voltage (alarm, non-essential load disconnect) | 23.6 Vdc | 23.0 Vdc | 47.2 Vdc | 46.0 Vdc |
| Non-essential load re-connect voltage | 25.0 Vdc | 25.0 Vdc | 50.0 Vdc | 50.0 Vdc |
| Load disconnect low voltage (alarm, essential load disconnect) | 23.0 Vdc | 21.85 Vdc | 46.0 Vdc | 43.7 Vdc |
| Essential load re-connect voltage | 24.5 Vdc | 24.5 Vdc | 49.0 Vdc | 49.0 Vdc |
| Temperature compensation | -3mV / °C / cell | N.A. | -3mV / °C / cell | N.A. |
| * Boost and float voltage for Lead Acid are temperature dependent | | | | |
| General specifications | | | | |
| Operating temperature | -20 °C to +85 °C | | | |
| Storage temperature | -30 °C to +85 °C | | | |
| Mounting | Indoor | | | |
| Dimensions (H x W X D) | 16.0 x 8.0 x 14.6 cm | | | |
| Unit weight | 2 kg | | | |
| Communication (between Σ-Ahr units) | RS-485 | | | |
| Communication (external) | Modbus TCP/IP (slave) | | | |
| Programmable analogue input | 2x 100mV shunt | | | |
| Programmable analogue output | 1x 4-20 mAdc (passive) | | | |
| Programmable digital input/output | 5x open drain | | | |
| Approvals | CE | | | |
| Standards | IEC 61000-6-2 IEC 61000-6-4 IEC 60950-1 | | | |