obvius

Energy Information Made Obvius

A90DC Series
DC Current Monitor

DC CURRENT MONITOR A90DC SERIES

Obvius' Solar PV String monitor allows owners and integrators of PV systems to monitor the performance of each string or sub array by providing direct current readings. The A90DC can monitor twelve or ten strings using non-contact Hall Effect sensors and provides a Modbus RS-485 output. When used with the Obvius AcquiSuite, users can set alarms and receive notifications when strings deviate from their expected value. The A90DC is a cost-effective way to monitor key performance parameters, quickly identify system issues and reduce time on-site.

WHY USE THE OBVIUS SOLAR PV STRING MONITOR

- Designed specifically for DC monitoring of Photovoltaic (PV) systems
- Easily add to any Modbus RTU network
- Alarming for troubleshooting field issues
- Ability to daisy chain up to 32 devices (expandable)
- UL Recognized
- LEDs for visual verification / status
- Field upgradable firmware
- Available OEM partners offering UL 1741 "smart" combiners
- 4-20mA Input for connecting voltage transducer or environmental sensor

COMPATIBILITY

The Obvius Solar PV String Monitor is compatible with virtually any Modbus master, allowing customers the flexibility to use the A90DC in existing Modbus networks. Use with the Obvius AcquiSuite and take advantage of plug-and-play communication or use with the Obvius ModHopper for wireless communication. Ask about the Obvius Configuration Console, a free commissioning software.

PARTNERS

Obvius' outstanding integration and software partners supplement our products and services to ensure you receive the very best energy monitoring solution. Including several OEM partners offering UL 1741 "smart" combiner boxes using our A90DC. Visit our partner page: **www.obvius.com**.

APPLICATIONS

- DC current monitoring
- Operations and Maintenance tool
- String monitoring for photovoltaic (PV) systems
- Monitor key performance and production parameters
- Quickly identify panel issues
- Alarm notification to key personnel
- DC module for OEM smart combiner box manufacturers

ABOUT OBVIUS

Obvius manufactures data acquisition and wireless connectivity products specifically for energy management. We deliver cost-effective, reliable hardware designed to speed up installation. Our products are based on an open architecture allowing our customers to collect and log energy information from virtually any meter or sensor. The ability to support multiple communication options provides remote access to all your energy information. Founded in 2003, Obvius is located in Tualatin, Oregon. We serve a global clientele and continue to drive innovation by simplifying data collection.

SOLUTIONS

- Data Acquisition
- Wireless Communication
- Meters & Sensors
- Custom Packaged Solutions
- Integration & Software Partners

HEADQUARTERS

Tualatin, Oregon

CONTACT US

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A90DC Series (revision B)

The Obvius Solar PV String Monitor allows user to monitor DC generation in renewable energy applications. It is also the perfect solution for OEMs looking to add monitoring to "smart" combiner boxes. If used with our AcquiSuite, Obvius can deliver a true plug-and-play DC current monitoring solution.

Specifications

Processor	ARM 7 embedded CPU
LEDs	Alive (green), RS-485 TX, RX (yellow)

Power

Power Supply	9-30 VDC, 140-250mA. Required (not included)

Communication

Protocols	Modbus/RTU
Serial Port	RS-485 two wire, 9600 baud, 8N1. Supports up to 32 external devices (expandable)
Addressing	Modbus address may be set from 1 to 247 via Modbus register

Inputs

Current Inputs	12 DC Hall Effect sensors, non-contact (for use with insulated or uninsulated wire) CAT IV measurement device
Range/Accuracy	• +30 to -30A • +/- 5% of 15A scale (+/- 0.75A) from 0 to 15A at 25C • +/-5% of full scale (+/- 1.50A) from 15 to 30A at 25C
Aperture	0.49" x 0.35" opening for load wire
Measurements	• DC current per channel, instantaneous and average • Total DC current (sum of 12 channels), instantaneous and average • Average DC current (of 12 channels), instantaneous and average
Analog Input	4-20mA (min/max/average/instantaneous data) Accuracy +/- 0.25% of full scale at 25C
Alarming	• Low alarm may set as a percent of DC average of other channels • Alarms may be disabled below a minimum average current level • Minimum time for alarm may be set to prevent alarms on brief events • Unused channels may be disabled to exclude them from total and average calculation
Isolation	RS-485 terminals are electrically isolated to 1500V from the remainder of the A90DC-12B board

Physical

Weight	0.83lbs (0.375kg)
Size	12.85" x 2.5" x 1.75" (326mm x 64mm x 45mm)

Environment

North America	-30 to 70C, 0-95% humidity, non-condensing
Altitude	2000M max
Measurement Category IV applications (Cat IV)	• Up to 600VDC Pollution Degree 2: No Insulation Required • Up to 1500VDC Pollution Degree 3: With Basic Insulation (wire insulation must be rated to 1500V)

Codes and Standards

Emissions	FCC CFR 47 Part 15, Class A, EN 61000, EN 61326
Safety	UL61010 Recognized, EN61010

Additional Notes

For indoor and outdoor use when used in an appropriate enclosure

For use with any Modbus RTU device / server