RightHand

## Engineering, LLC   *WinVerter™ Site Monitor MX*

WinVerter^{TM} Site Monitor is a professional software tool used to monitor electrical energy systems at multiple remote sites. The MX version of *WinVerter Site Monitor* is specifically designed to monitor OutBack Power Systems MX60 Solar Charge Controllers via the OutBack Mate.
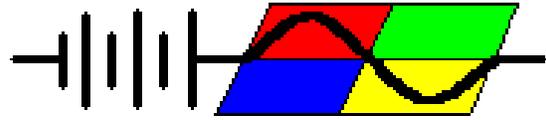
Designed for the OutBack MX60 Charge Controller

OutBack Power Systems

WinVerter Site Monitor resides on a Microsoft Windows-based host PC and communicates with remote sites via a dedicated serial com port for each site (up to 32 sites maximum). The serial com port may be actual RS-232 ports made available via multi-port PC card residing on the host PC, or it may be via virtual serial com ports made available via Ethernet-to-serial adapters located at the remote sites and connected by IP to the host PC's Ethernet port.

WinVerter Site Monitor [1] - RightHand Engineering, LLC

File   View   Options   Help

Site # >	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Site ID	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten	Eleven	Twelve	Thirteen		
Site Name	Si	Adams	Pilchuc	Olympu	Blyn	Constitu	Baker	Striped	North P	Index	Snoqua	Steven:	Walker		
Com Port	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Com State	OK	Fail	Disable	Connect	OK	OK	Disable	OK	OK	OK	OK	OK	Disable	Disable	Disable
# of Polls	2378	2374	0	2372	2370	2369	0	2366	2366	2366	2365	2364	6	0	0
% Success	100%	67%		100%	100%	100%		100%	100%	100%	100%	100%	33%		
Last Poll Age	4 sec	17.0 hr		58 sec	55 sec	52 sec		49 sec	45 sec	43 sec	40 sec	37 sec	15.7 da		
Charger Mode	Bulk	Bulk		Bulk	Bulk	Bulk		Bulk	Bulk	Bulk	Bulk	Bulk	Silent		
PV Current	1 A	1 A		1 A	1 A	1 A		1 A	1 A	1 A	1 A	1 A	0 A		
PV Voltage	32 V	32 V		32 V	32 V	32 V		32 V	32 V	32 V	32 V	32 V	0 V		
Chrg Current	1 A	1 A		1 A	1 A	1 A		1 A	1 A	1 A	1 A	1 A	0 A		
Bat Voltage	25.0 V	25.0 V		25.0 V	25.0 V	25.0 V		25.0 V	25.0 V	25.0 V	25.0 V	25.0 V	27.8 V		
Daily KWhr	1.2 Kwl	1.2 Kwl		1.2 Kwl	1.2 Kwl	1.2 Kwl		1.2 Kwl	1.2 Kwl	1.2 Kwl	1.2 Kwl	1.2 Kwl	1.1 Kwl		
Total KWhr	2.3 Kwl	1.1 Kwl	0.0 Kwl	1.1 Kwl	1.1 Kwl	1.1 Kwl	0.0 Kwl	1.1 Kwl	1.1 Kwl	1.1 Kwl	1.1 Kwl	1.1 Kwl	0.0 Kwl	0.0 Kwl	0.0 Kwl

Next cycle 53 sec	10.8 KWhrs Today All Sites	12.2 KWhrs Total All Sites	1 Samples Collected

Renewable Energy Equipment — PC Interface

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Renewable Energy Equipment — PC Interface

Host PC

PC Interface — Renewable Energy Equipment

PC Interface — Renewable Energy Equipment

PC Interface — Renewable Energy Equipment

Remote Sites   Remote Sites
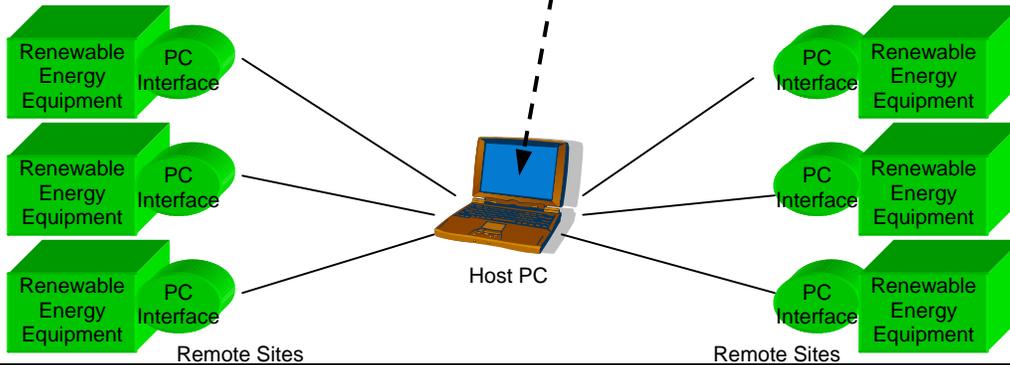
Feature	Benefit
• Polls sites on a programmable interval.	• You manage the average site data communications bandwidth.
• Displays communications status of all sites	• You see the reliability of each sites data communications channel.
• Displays latest data readings of all sites on one screen.	• You see the present condition of your systems at a glance.
• Displays daily and long term Kilowatt hours of each site, plus summations of all sites.	• You see the productivity of each site and the total system.
• Logs the data of each poll cycle to a daily log file.	• You retain historical data with the ability to import into a spread-sheet for analysis.

Communications

Com Port	0
Com State	OK
# of Polls	2384
% Success	100%
Last Poll Age	5 sec

WinVerter Site Monitor polls the sites on a programmable interval ranging from 1 minute to 24 hours. Data communications between each site and the host PC may be carried on most bearers that support serial RS-232 data at 19.2K baud.

The software displays the communications status of each site, including the number of polls, percentage of success and age of last good poll data.

Site Snapshot

Charger Mode	Bulk
PV Current	1 A
PV Voltage	32 V
Chrg Current	1 A
Bat Voltage	25.0 V

WinVerter Site Monitor displays all of the equipment data received during the last successful poll, including charger mode, PV voltage and amperage, charger current and battery voltage.

Site Power Generation

Daily KWhr	1.2 Kwh
Total KWhr	2.3 Kwh

The software also obtains and displays the Kilowatt hours of power generation for each site, and provides a running long-term total for each site as well as a total for all of the sites together.

10.8 KWhrs Today All Sites	12.2 KWhrs Total All Sites

Evaluation Mode

WinVerter Site Monitor can be run in an evaluation mode allowing you to try the software before purchasing. The evaluation software can be turned into fully functional software by on-line payment and an emailed Upgrade ID (see web site at bottom of page for details). Evaluation mode allows basic monitoring features for a single site, as well as full featured simulation.

Simulation Mode

The software allows you to simulate operation just as if it were connected to live systems. You are able to simulate equipment data changes. This allows for even more detailed evaluation and greatly assists in demonstrations.

Data Logging
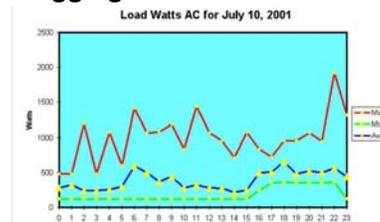
As long as *WinVerter Site Monitor* is running it is able to accumulate and record readings from the systems. The software continually updates a daily log file at the end of each poll cycle. The comma-delimited textual log files may be imported into spread-sheets for analysis and graphing.

PC System Requirements

- Intel Pentium (or equivalent) or better processor
- 600 MHz or faster processor speed
- Microsoft Windows® 2000 Professional or XP Professional operating system
- 256 MB RAM or as required by the operating system, whichever is higher
- 10 MB of free hard disk space for the program plus 40 KB per site per day for data logs.
- Multi-read CDROM drive for installing software
- VGA (640 x 480) screen resolution to view up to 11 sites at once. 800 x 600 to view up to 15 sites. 1024 x 768 to view up to 20 sites. 1280 x 1024 to view up to 26 sites. Color recommended
- Pointing device, such as mouse or track-ball
- One 9 or 25 pin RS-232 serial port (or "virtual" com port) with RTS/DTR support for each site.
- The data path to each site must be capable of sustaining 19.2K baud or higher for the duration of the poll

Equipment Requirements

- OutBack Power Systems MX-60 series with firmware revision 7.2.3 or later date.
- OutBack Power Systems Mate with firmware revision 2.3 or later.
- Use of the OutBack HUB4 or HUB10 is optional, but only one MX60 per hub is supported.

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