Site Controller
PBT-PA-BMS-SC4

PBT
A SENS® COMPANY

- Linux Operating System
- IPv4 and OPv6
- SNMP v1, 2c, 3, DNP3, Modbus
- SCP for firmware updates and log file access
- SSH with encryption and authentication
- Supports up to 240 battery sensors
- Supports up to 8 RIMs, 8 ROMs, 6 FCSs, and 6 UGMs
- Web server with encryption
- Optional Thermal Runaway monitoring
- Configurable logging: Event, Error, and Debug message logging
- SNMP configuration via SSH

Front and review view of LED's and available ports.

4th Generation Battery Monitoring System

The PBT SC4 site controller is a 4th generation design based on a secure and powerful Linux computer foundation. The unit has no moving parts, and can be powered from DC (battery or fuse panel) or from a local AC utility outlet. The unit has six physical (string) inputs, with a maximum of 40 battery sensors in any input (240 total battery sensors per controller).

The SC4's Virtual Strings feature allows users to configure how their strings appear in the Site Viewer web page. The SC4 has extensive, user-definable set-up capabilities, including labels for every monitored element, and user-defined alarm thresholds. The SC4 also monitors float charging current on each string, as well as ripple and discharge current, using current monitoring sensors made or sold by PBT. Additionally, the SC4 also has 2 proprietary P-BUS ports that are used to interface with and power PBT devices such as Remote Input Modules (RIMs), Remote Output Modules (ROMs), Current Monitor Interfaces (CMIs) and more.

A USB interface is provided for low-level configuration of the unit. Four form-A relay outputs are provided for local alarm indications or for remote control of other equipment. The SC4 has several interface mechanisms built-in, including an extensive configurable web server that displays information based on the devices connected to it. A full SNMP implementation allows any SNMP compliant management software to provision the system, collect data, process alarms and perform tests. DNP3 and Modbus protocols are also supported in the SC4.

Other hardware features include a 10/100 Ethernet interface, a +12VDC output for powering auxiliary interface devices, a plug-in flash memory drive for data logging and a set of LED indicators. The SC4 is also equipped with an extensive logging system. Many years of logged data are maintained for periodic string/battery parameter measurements, discharge performance and system events such as alarms, errors, and user login attempts. All log entries are in CSV file format and all entries are date/time stamped. Log files can be downloaded remotely from the SC4 over the network, or locally by removing and reading the USB flash drive.

Mechanical Specifications

Size	8.1"W x 4.3"D x 1.65"H
Weight	1lb
Housing Material	Black ABS plastic (ABS 94 VO); UL file 56070

Evironmental Specifications

Operating Temperature Range	-30 deg C to +65 deg C
Relative Humidity	0 to 90%, non-condensing

Contact Information

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720-000021-00_2.0

General Specifications

Specification	
Monitored battery string inputs	6 maximum; up to 32 strings with virtualization
Monitored batteries, each string	40 maximum per input, up to 240 with virtualization
Monitored batteries, all strings	240 batteries total, 40 jars per string.
Parameters monitored (each string) float and discharge current will require optional sensor	String voltage, float current, ripple current, battery voltage delta, discharge status, discharge/load current with third party sensor (provided by Phoenix)
Parameters monitored (each battery)	Terminal post DC voltage, terminal post temperature, battery and cell admittance
Data logging	Stores event, periodic performance, discharge and recharge performance log files User defined interval for logging of all measured parameters
Programmable alarm thresholds	4 user-defined thresholds for each analog parameter: "High-High", "Low-High", "High-Low", "Low-Low"
Communications data interfaces	Internal SNMP proxy agent, internal web server, internal SSH client, internal email client, proprietary 2x RJ-45 (P-Bus) USB local programming and configuration serial interface, GP serial port, six proprietary optically isolated serial sensor communications interfaces
Communications protocols	TCP/IP, UDP, SNMP v1, 2c, and 3, DNP3, HTTP, SSH, SMTP, NTP, FTP, MODBUS
Packaging	Black ABS plastic 94VO
Options	Rack bracket; "wall-wart" power pack, cable kits. RIM, ROM, current sensors, temperature sensors, UGM

Electrical Specifications

Specification	
Battery string interfaces (6 ea)	Proprietary bi-directional current loop signaling; Optically-isolated (1200V); short circuit protected
Battery sensor interconnection wiring	CAT-5e or CAT-6; 200 feet per 40 jar/ battery string; 350 feet per 24 jar/battery string
Local programming/configuration interface	USB
Ethernet interface	Magnetically coupled and isolated per industry standards
Input power	18 VDC to 59V; 5W nominal; up to 15W max depending on load of auxiliary power output; ground isolated; fused
Auxiliary power output	12.5vdc nominal, .5amp max, short circuit protected
Analog Outputs	Four programmable Form A outputs which can be mapped to alarm thresholds or forced to change states manually (via SNMP or web page) 50mA 60V typical contact rating.

Indicators & Connectors

Specification	
Ethernet status indicators	2 front panel LEDs; 2 rear panel LEDs; link speed (10/100); network activity
Battery string activity/status indicators	1 bi-color LED per string interface; communications activity & status
Other indicators	1 bi-color LED per USB, 1 input power LED, 1 output power LED, 1 bicolor LED per P-Bus port
Ethernet connector	Industry standard
Battery string connectors (6 ea)	RJ-45
Local programming connector (1ea)	Type B USB
Logging memory connector (1 ea)	Type A USB
General purpose USB (1ea)	Type A USB (Not Used)
Power input connector	3-pin plug-in screw terminal block; supplied mating connector
Power output connector	2-terminal barrier block
P-Bus interface (2ea)	RJ-45 (For interfacing with RIM, ROM & current sensor modules)
Aux interface	RJ-45