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SNMP by the S5 BATTERY VALIDATION SYSTEM

Users Guide

Rev 1.3 14JUN06

M7.5-13

1.0 Description

This feature of the S5 allows a SNMP (Simple Network Management Protocol) manager to include the S5 BVS as a SNMP agent. The S5 is a server in the SNMP model with capabilities of responding to Get or GetNext requests and sending unsolicited messages called traps. Version 1 of the SNMP protocol is implemented. As an agent, the S5 listens on UDP port 161 for SNMP messages from the manager. When the S5 BVS encounters an alarm in the battery system, a SNMP trap is sent out. Configuration of who receives the SNMP trap and the resend interval is provided. Optionally up to three IP addresses can receive a SNMP trap.

A MIB file (Management Information Base) file is provided. The name of the MIB file is (BTECH Battery Monitor S5.mib). BTECH, Inc. was assigned enterprise number 26059. All objects provided and defined in the MIB file are in the enterprise subtree. The set of objects in the alarm directory describe an alarm. An alarm can be described by objects Severity, Description, Type, Year, Month, Day, Hour, Minute, Second, String, and Unit. The S5 BVS sends a SNMP trap when an alarm occurs. The trap will be bound with these objects so the SNMP manager can determine a course of action. If more than one alarm occurs at a given time, multiple traps will be sent out to the manager. Each trap will be describing one alarm. One of the objects bound to the trap is called Severity. The S5 BVS defines this object by:

1=Critical – immediate action needed, page someone even after hours
2=Major – action needed soon, if after hours, next business day will do
4=Minor – action could probably wait for next maintenance window
8=Warning – informative, sometimes require action

There is one object in the MIB tree that indicates if other applications are connected to the S5 BVS. The other applications can be BTECH's BVM 4.1, BTECH's Observer program, or a MODBUS master. The SNMP manager can still access SNMP objects but the objects or traps will not be available at this time. The S5 BVS can be configured to automatically connect to an Observer application when an alarm occurs. The Observer retrieves the alarms and can, if set, clear the alarms. In this instance, the S5 BVS will at least send out one trap before connecting to the observer.

2.0 Configuration

- The S5 BVS IP address is set using the BVM 4.1 software. The IP address can be fixed or obtained using DHCP.

- The S5 BVS listens on UDP port 161, on its Ethernet adapter, for SNMP messages. Use the community name “public” for all of the read objects. There are no write objects. Authentication protocol of “MD5” and Privacy protocol of “DES” should be used. Use only “Get” and “GetNext” requests.

- The SNMP settings can be queried and modified using the web pages the S5 BVS serves. Using Internet Explorer, type in the IP address in the address bar. The SNMP SETTINGS web page will be displayed with the present settings of trap resend interval, three trap IP addresses, and trap community name. All Zeroes in the IP address indicates a trap will not be sent out for that trap IP address. To modify these settings click the Configure SNMP Settings button. A user name of “btech” and password of “monitor” will let the Configure SNMP Settings page be displayed. After modifying the settings, by making new entries in the text boxes provided, click on the Submit button.

MIB Objects Table

The base directory of the following objects is (.1.3.6.1.4.1.26059.1.1.1) or (iso.org.dod.internet.private.enterprise.btech.battery.monitor.S5.)

Name	Address	Type	Comment
Connect	1.0	Integer	B0=Observer B1=BVM B2=MODBUS
Severity	2.1.0	Integer	1=Critical 2=Major 4=Minor 8=Warning
Description	2.2.0	String	Phrase
Type	2.3.0	Integer	See Alarm Type Table
Year	2.4.0	Integer	
Month	2.5.0	Integer	
Day	2.6.0	Integer	
Hour	2.7.0	Integer	
Minute	2.8.0	Integer	
Second	2.9.0	Integer	
String	2.10.0	Integer	Unit Causing Alarm
Unit	2.11.0	Integer	Unit Causing Alarm

Alarm Type Table

Alarm	Type	Severity
Discharge	1	8
System Voltage	2	4
Ambient Temperature	3	4
Ground Fault	4	2
Unit Voltage – Critical	5	2
Unit Voltage - Maintenance	6	4
Unit Impedance Average - Critical	7	2
Unit Impedance Average - Maintenance	8	4
Unit Impedance Initial - Critical	9	2
Unit Impedance Initial - Maintenance	10	4
Unit Temperature	11	4
Unit Temperature - Differential	12	4
String Voltage	13	4
Aux Alarm 1	14	2
Aux Alarm 2	15	2
Aux Alarm 3	16	2
Aux Alarm 4	17	2
Wrong Number of Voltage Modules	18	2
Wrong Number of Discharge Current Modules	19	2
Communication Error with Voltage Module	20	2
Communication Error with Current Module	21	2
Unknown Type of Module	22	2
Corrupted Configuration	23	2
Hardware Failure	24	2
Backup Battery	25	4
Module Initialization Failure	26	2
Modem Failure	27	2
Modem Line Failure	28	2
Invalid Communication's Configuration	29	2
Network controller is missing	30	2
Number of units found is not equal to the amount specified. (voltage modules)	31	2
Number of temperatures found is not equal to the amount specified. (voltage and temp module)	32	2
Temperature Sensor	33	2
Temperature Sensor – Differential	34	2
Module Relearn Connection Failure	35	2
Impedance measurement aborted due to high voltage on positive half string.	101	8
Impedance measurement aborted due to low voltage on positive half string.	102	8
Impedance measurement aborted due to high voltage on negative half string.	103	8
Impedance measurement aborted due to low voltage on negative half string.	104	8
Impedance measurement aborted due to high load plate temperature.	105	8
Impedance measurement aborted due to discharge	106	8