

ELTEK SMARTPACK2 - SNMP APPLICATION NOTE

Document Name: EltekSP2_SNMP_IO Gateway_Application
Note_2020-10

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Purpose: This application note presents a step-by-step approach to integrate an intelligent DC Power Plant controller to a FUSION and an iO Gateway.



Target Equipment: Eltek Smartpack2

Equipment Description: The Smartpack2 is an intelligent DC Power Plant controller manufactured by Eltek. The controller provides a mean to communicate via SNMP or Modbus RTU

PRODUCT DESCRIPTION	
Name	Smartpack2
Manufacturer	Eltek
System Type	System Controller
Modbus Version	
Manufacture Technical Support	1-800-435-4872
Specificities	Value from Load monitor and/or Flexi monitor are available with SNMP protocol

ELTEK SMARTPACK2 COMMUNICATION SETTINGS

1. Access the Eltek Controller using a Computer connected to the RJ-45 socket
 - a. See Eltek User’s Guide – Smartpack2 Master Controller page 11
 - b. Default user: admin Default password: admin
2. From the main menu, click on System Conf.
3. From the left menu, under Device Settings, click on SNMP Settings
4. From Configuration menu, click on Web-based configuration, save changes

General SNMP Configuration

Inhibit Traps Enable

Send Off Traps Enable

Trap Repeat Rate(minutes) Set to 0 to disable

Heartbeat Trap Repeat Rate(minutes) Set to 0 to disable

SNMP v3 Configuration

Configuration Web-based configuration SNMP-based configuration

NOTE:
 --'Web-based configuration' disables configuration through SNMP by removing write access of admin user to the SNMP MIBs.
 --'SNMP-based configuration' disables configuration through web interface, resets SNMPv3 configuration and reboots the controller.
 --'Reset SNMP v3 default configurations' disables web configuration, resets SNMPv3 configuration and reboots the controller."

Reset SNMP v3 default configurations

5. From V1/V2 Community verify that that the following community string configuration exist
 - a. Community Name: public
 - b. User Name: snmpv2c-usr
 - c. Trap Format: v2c

Community String Configuration					
#	Community Name	User Name	Trap Format	Delete	Edit
1	public	snmpv2c-usr	v2c	<input type="button" value="Delete"/>	<input type="button" value="Edit"/>
2					<input type="button" value="New"/>

6. Under Device Settings, click on Network interface, change device IP Address to be on the same network of the Multitel iO Gateway front port (Default address 192.168.1.2)
 - a. Test the new IP address in a web browser before moving to the next step.

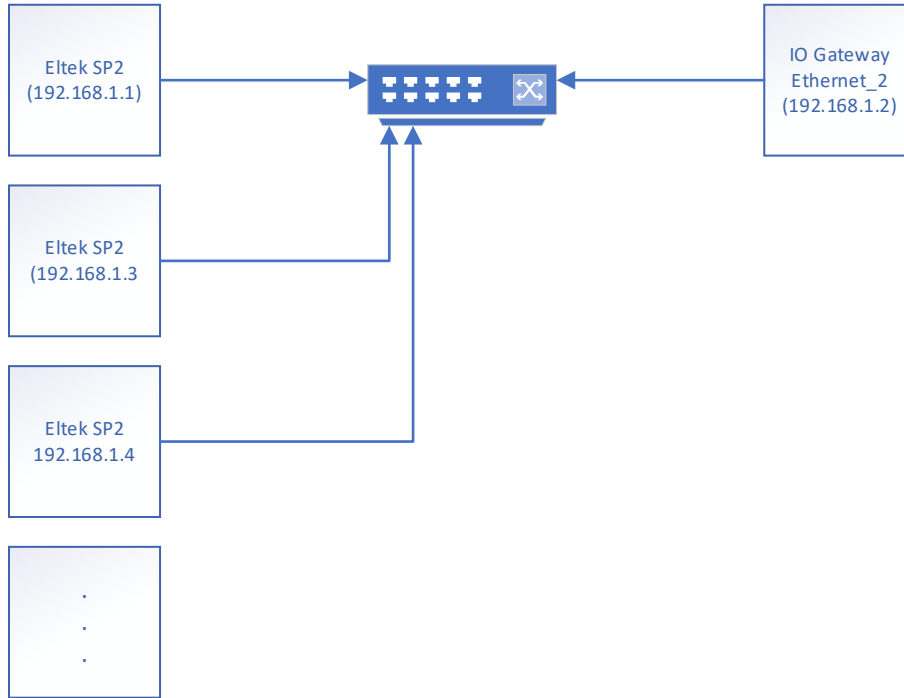
IP Address*	<input type="text" value="10.20.3.61"/>
Network Subnet Mask*	<input type="text" value="255.255.255.0"/>
Default Gateway*	<input type="text" value="10.20.3.1"/>
DNS Server*	<input type="text" value="0.0.0.0"/>

ELTEK SMARTPACK2 MIB BROWSER WALK

1. Open a MIB Browser application, this procedure is built around iReasoning MIB browser
2. Click on File > UnLoad MIBs, remove Mib file not related to Eltek controller by highlighting all file name (Ctrl + click) and clicking on Ok
3. Click on File > Load MIBs, select the following Eltek MIB files
 - a. EltekEnexusPowersystem – rev69.mib
 - b. EltekEnexusPowersystem_branch10_rev69.mib
 - c. EltekEnexusPowersystem_Root.mib
4. Enter the Smartpack2 IP address in the Address bar
5. Click on Advanced
 - a. Read Community: public
 - b. SNMP Version: 2
6. From the left side menu, expand the Eltek folder and eNexus folder
7. Expand rectifiers folder
 - a. Select rectifierGroupCapacityTable
 - b. Press on Ctrl+T (Table View)
 - i. A new tab should appear next to the ResultTable tab
 - ii. Select the tab in the top menu
 - iii. Wait for the table value to appear
 - iv. Click on Export
 - v. Save result in CSV
 - c. Repeat this process for the rectifierGroupRectifierTable
8. Expand controlSystem
 - a. Expand currentMonitors folder
 - i. Double click on currentMonitorsNumberOfUnits
 1. Number of modules install should appear under the Result Table
 2. If the value is 0, skip to step (b.)
 - a. Select currentMonitorsCurrentTable
 - b. Repeat Step 7.b

- b. Expand flexiMoniors
 - i. Double click on flexiMonitorsNumberOfUnits
 - 1. Number of modules install should appear under the Result Table
 - 2. If Value the value is 0, skip to step (c.)
 - a. Select flexiMonitorCurrentInputTable
 - b. Repeat Step 7.b

ELTEK SP2 CONNECTION TO IO GATEWAY



IO GATEWAY COMMUNICATION SETTINGS:

1. Connect to the IO Gateway with a laptop using an Ethernet cable
 - a. Ethernet_2 default IP address is 192.168.1.2
 - b. Connect your laptop on the IO Gateway front port, open a web browser and type the gateway IP address in the address bar

2. Navigate to **Settings/Connections/RS-485 COM A**
 - a. Set RS-485 – COM A need to be Enable
 - b. Set Baud rate to 9600
 - c. Set Stop bits to 1
 - d. Set Protocol to Modbus RTU Slave
 - e. Set Data bits to 8
 - f. Set Parity to None

The screenshot shows a 'Port Configuration' window with a 'State' toggle switch at the top right, which is currently turned on (blue). Below the toggle, there are several configuration fields:

Field	Value
Port Name *	COMA
Protocol	MODBUS RTU SLAVE
Baudrate	9600
Data Bits	8
Stop Bits	1
Parity	NONE

At the bottom of the configuration area, there are two buttons: 'Save' (in blue) and 'Cancel' (in grey).

3. Navigate to **Settings/Protocols /Modbus Slave**
 - a. Set State to Enable
 - b. Use a Slave ID that is not currently used by another Modbus device

Modbus RTU

State

Slave ID *

80

4. Navigate to **Data Sources (Create Eltek Equipment)**

- a. Click on + Equipment
- b. Add an Equipment name (DC plant identification)
- c. Set Equipment Category to DC Plant
- d. Set Equipment Model to SP2
- e. Set Communication Protocol to SNMP Get
- f. Enter Equipment IP Address
- g. Set SNMP Version to SNMP v2c
- h. Set SNMP Device Community Name to public
- i. Select Equipment Polling Rate to 30 sec
- j. Select Equipment Time Out to 5 sec
- k. Save the equipment

Communication Protocol *
SNMP Get

Manufacturer *
Eletek

Communication Protocol - SNMP

Equipment IP Address *
10.20.3.61

Equipment Hostname

SNMP Version *
SNMP V2C

Constant Part Of OID

SNMP Device Community Name *
public

Equipment Polling Rate *
30 sec

Equipment Time Out *
5 sec

Port Number *
161

5. Navigate to the **Equipment Data Sources/Action/.../Data Points**

- a. Click on + Data point
- b. Set Datapoint Description to Plant Voltage
- c. Set Suffix to 1.3.6.1.4.1.12148.10.10.5.5.0
- d. Click on Advanced
 - i. Set Register Data Type to 16-bit integer
 - ii. Set register Type to input Register
 - iii. Set iO Modbus Register 1 (add 1 to register for each new datapoint)
 - iv. Set Polling Rate to 30 sec
 - v. Set Factor to 1
 - vi. Set Offset to 0
- e. Click on Pull Data
- f. Plant voltage should appear under Value column

[Eltek Smartpack 2 SNMP] - Data Point

+ Data point

■	ID	Datapoint Description	Equipment SNMP OID		Value	Advanced	Connect
			Constant Prefix	Suffix			
<input type="checkbox"/>	S1AI1	Plant Voltage		1.3.6.1.4.1.12148.10.10.5.5.0	5377	V v Decim v	Pull data
<div style="display: flex; justify-content: space-between;"> <div style="width: 15%;"> Register Data Type <input type="text" value="16 bit integer"/> </div> <div style="width: 15%;"> Register Type <input type="text" value="Input Register"/> </div> <div style="width: 15%;"> iO Modbus Register <input type="text" value="1"/> </div> <div style="width: 15%;"> Polling Rate <input type="text" value="30 sec"/> </div> <div style="width: 15%;"> Factor <input type="text" value="1"/> </div> <div style="width: 15%;"> Offset <input type="text" value="0"/> </div> </div>							

IO GATEWAY MODBUS RTU CONNECTION:

Refer to you detailed engineering or the layout of your MODBUS network, respect the MODBUS best practises at all times by preventing star shape network, thus terminate to the last equipment of the current MODBUS daisy chain trunk or if this is you first equipment on the network device, then terminate directly at the FUSION back panel. The FUSION offers (2) RS-485 ports, one

called MLINK and the other one RS-485. Use the connector available from Multitel to convert the RJ-12 connector to a screw type connector. (Part# is C-7000-MOD).

If no other Modbus device are connected to the Fusion

1. Connect Fusion MLINK or RS485 + (C-7000-MOD) to IO Gateway RS-485 COM A Rx/Tx +
2. Connect Fusion MLINK or RS485 – (C-7000-MOD) to IO Gateway RS-485 COM A Rx/Tx -

FUSION COMMUNICATION SETTINGS:

Once you have logged into the FUSION using the “supervisor” username and no password, click on **CONFIG** menu and select “**Communication Ports**” from the left menu. Select the **MLINK** or **RS-485** port and config operating parameters as follow:

Communication Ports	
COMRS485	Value
Enter protocol (0: Terminal, 1: Mlink, 2: ISNMS, 3: MODBUS, 4: NONE, 5: Port forwarding, 6: Card reader)	MODBUS <input type="text"/>
Enter baudrate (0=300, 1=1200, 2=2400, 3=4800, 4=9600, 5=19200, 6=38400, 7=57600 or 8=115200)	9600 <input type="text"/>
Enter character parameters (number of bit, parity, stop bit) 1: 8N1, 2: 8E1, 3: 8O1, 4: 7N1, 5: 7E1, 6: 7O1)	8N1 <input type="text"/>
Enter configuration (1-RS485(2 wires), 2-RS422(4 wires))	RS485(2 wires) <input type="text"/>
Enter the number of IDLE char to wait (1 to 255)	5 <input type="text"/>
Enter device (0=None, 1=Modem)	None <input type="text"/>

FUSION “MODULE” SETTINGS:

Once the FUSION communication port is setup, associate the equipment to a specific Module number. Select “**Modules**” from the left menu and choose the pre-assigned module or click on a module available (State = None).

Modules	
Modules	Value
M11	Enabled
The module state is	Enabled
The name is	Eltek SP2 (SNMP w/ iO)
The slave ID is	80
The port is	RS485 Back Port
The number of retry is	4
The module type is	GEN
The time out is	10
The register order is	Most significant register = higher address
The register base address is	use given address
The silent (in 0.01 sec) before sending request is	50

*Configure the name of the Module using the reference name of the DC Plant, such as
“Transport #1”*

FUSION “TEST CHANNEL” SETTINGS:

Once the Equipment is associated to a module, a list of channels will appear and be available for Multitel to configure. However, in order to test the MODBUS RTU wiring and Eltek controller communication settings, it is highly recommended to configure a test channel as per the following to validate. Click on MxA1 and configure the operating parameters as follows:

Modules		Edit <<back
Modules		
M11A1	Value	
The channel state is	Enabled	
The name is	Plant Voltage	
The measure unit is	V	
The number of decimal digits is (4 = auto)	2	
The bits for the mask used to extract value is	None	
The strings associated to each code is	Not Programmed	
The register address is	1	
The reading function code is	4	
The sign is	Normal	
The data type is	16-Bit Integer	
The sign is	Signed Integer	
The multiplication factor is	0.01	
The channel offset is	0	