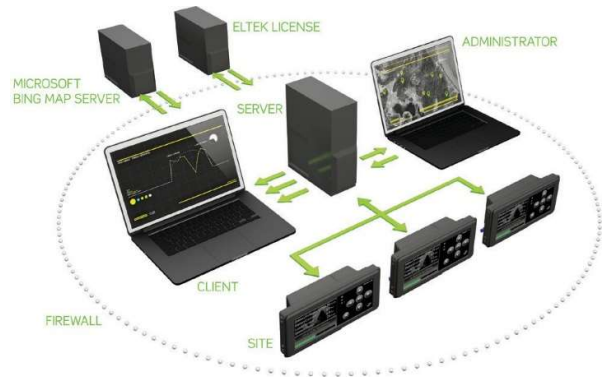


Remote Monitoring of All Sites in One Tool

Monitor energy and performance on multiple sites

- Statistics on energy produced
- Instant status overview
- KPI (Key Performance Indicators)
- Alarms
- Detect underperforming sites
- Smart Power
- Email reports



MultiSite Monitor

Server-based Monitoring Software

Doc 4061xx.DS3 – rev 4.1

v4.1

PRODUCT DESCRIPTION

Server-based Monitoring Software

The *MultiSite* software is a server-based tool that gathers statistical data from connected sites and stores it in a database.

The software also includes web pages for viewing the data from the database. The tool supports up to 25000 connected sites.

Monitor the sites energy performance

The *MultiSite* software is a tool for monitoring multiple sites' energy performance and status.

The site owner gets access to performance data that can be used to evaluate investments in hybrid DC power system and for marketing of site fleet's reduced carbon emission.

The instant status of sites makes *MultiSite* a 1st line site maintenance tool; whenever there is a site in alarm, it is easily seen in the map, the list and top bar. One click in the site's details view will open the site's web pages in a new tab for further investigation of the alarm.

KEY FEATURES

- **EASY ACCESS**
Through web browser for both clients and administrators
- **CLIENT MONITORING**
Not dependent on access to site network
- **CENTRAL DATABASE SERVER**
Holds statistical data, resulting in decreased browsing latency
- **SERVER TO SITE DATA TRANSFER THROUGH HTTP PORT 80**
Firewall friendly (TLS on port 443 is fully supported)
- **MAP VIEW**
Comprehensive sites overview
- **SITE LIST**
Grouping of sites enables a greater overview
- **SUPPORTS UP TO 25 000 SITES**
Based on multiple server installations
- **SUPPORT FQDN**

KEY FEATURES

- **AUTOMATIC DETECTION OF UNDERPERFORMING SITES**
Use of battery, energy, generator and network connectivity
- **COMPREHENSIVE ALARM VIEWS**
Rolling alarm view, alarm details view and alarm ranking of sites
- **KEY PERFORMANCE INDICATORS**
Set KPI targets and measure site energy and performance
- **EMAIL REPORTS**
- **SITE SURVEILLANCE**
Allows for site specific IP cameras to be monitored through *MultiSite Monitor*
- **BATTERY STATUS**
Remaining battery life and battery backup time
- **GRID AVAILABILITY**
- **CLOUD COMPUTING**
VMware platforms compatible

SPECIFICATIONS

AVAILABLE PACKAGES

	Small	Medium	Large	Enterprise
Included clients/user accounts	2	5	15	15
Maximum no. of clients/user accounts	5	15	30	30
Included sites/connected power system controllers	5	50	200	3000
Max. no. of sites/connected power system controllers	49	199	3000	25000

SUPPORT AGREEMENTS

	Limited	Maintenance & Service
Email support	No minimum response time	Reply within 2 business days
Telephone support (free support hours per year)	-	Small 4h
		Medium 15h
		Large 40h
Support availability	09:00-15:00 CET (not included)	09:00-15:00 CET
On-site support	-	Upon request
Free MSM software upgrade	-	Yes

SERVER REQUIREMENTS

Sites	Recommended Server Hardware	Recommended Free Disk Space after installation
0 - 100	2 CPU Cores, 8 GB RAM	100 GB
100 - 250	4 CPU Cores, 8 GB RAM	250 GB
250 - 500	8 CPU Cores, 8 GB RAM	500 GB
500 - 1000	20 CPU Cores, 16 GB RAM	1 TB
1000 - 2000	30 CPU Cores, 32 GB RAM	2 TB
More than 2000	<i>Contact MSM.support@eltek.com</i>	

CLIENT REQUIREMENTS

Modern web browser with support for HTML5 and JavaScript enabled on the client computer.

SITE AND CONTROLLER REQUIREMENTS

- Eltek system controller with Ethernet and JSON support: ..General requirement
- Smartpack R / SR: All versions
- Smartpack2 Touch: All versions
- Smartpack2 Master: Firmware version > 2.5
- Smartpack (only .242100.118): WebPower version > 4.6 (not compatible with SNMP auto config.)
- Smartpack S: Firmware version > 2.5
- Compact: Firmware version > 2.5
- Delta Orion: Firmware version v7.00 or newer
- 3rd party controllers/SNMP Devices: SNMP v1, v2c, v3.MIB compiler and trap mapping feature in MSM

NETWORK INFRASTRUCTURE REQUIREMENTS

Bandwidth to sites (no dial-up)	Minimum 256 kB/s
Daily data usage on each site	Typically from 50kB to 3.7 MB, dependent on configuration
Maximum network latency	700 ms
Transport layer / MSMJsonService: TCP Port 80 / TLS Port 443	Transport layer / MSMNetworkUtilityService: TCP Port 22 Transport layer / MSMNetworkUtilityService: TCP Port 21
Data Set/Get SNMP, Alarms SNMP Traps: UDP Port 161/162	
Transport layer / MSMNetworkUtilityService: UDP Port 20034	
Transport layer / MSMNetworkUtilityService: TCP port 990	

SECURITY

Supports local user management or Microsoft ActiveDirectory/LDAP.

FEATURES AND STATISTICS

DASHBOARD

- Total number of sites connected
- Number of sites in alarm
- Number of offline sites
- Solar energy generated in the last 24 hours

MAP VIEW

- Server data update interval every 10 minutes
- Map data from BING or similar service
- Use of JPG or BMP image as replacement to BING maps
- Site locations
- Visible monitors (6)

LIST VIEW

- Site Name
- IP Address
- Controller Type
- Number of Major Alarms
- Number of Minor Alarms
- Connection Status
- Alarm monitors (6) (default: Mains Voltage, Battery Voltage, Rectifier Current, Battery Temperature, Solar Current)
- SNMP for 3rd party controllers

ENERGY TREND, SINGLE SITE

Server data update interval, typical	• Daily
Energy from solar, wind, generator, rectifiers, DC load (Multi Tenant) and auxiliary equipment on mains	• Pie chart 24h/30d/50w (%) • Line chart 30h/30d/30w (kWh)
Generator run time, fuel consumption and efficiency (hybrid sites only)	• Line chart 30d/30w/30months, (l),(%), (kWh/l)
Battery charge and discharge	• Bar Diagram (Ah) total
Battery back-up time	• Instant elimination and target (h)
Alarm Report	• Hourly
Solar CO2/OPEX savings trends	•

RUN HOURS

Generator, Grid, Battery	• Table min/day, Hours/week, Hours/Month
Eltek Cooling box (ECB), Aircondition	• Line chart 30d/30w/30months

COMPARE (COMPARISON OF SITES)

Server data update interval, typical	• Daily
Energy from solar, wind & renewable in total, Renewable versus total DC system or Mains energy	• Site versus Site • Group versus Site • Group versus Group • Bar diagram 30h/30d/30w (kWh), (%)
Energy usage DC Load, Multi tenant: (up to 8 channels)	• Site versus Site • Group versus Site • Group versus Group • Bar diagram 30h/30d/30w (kWh), (%)
Generator run time, fuel consumption and efficiency	• Site versus Site • Group versus Site • Group versus Group • Line chart 30d/30w/30months, (l),(%), (kWh/l)
Battery temperature	• Site versus Site • Group versus Site • Group versus Group • Bar Diagram average (°C or °F)
Alarm Report	• Hourly

Table continues on next page

Specifications are subject to change without prior notice

FEATURES AND STATISTICS - CONTINUED

KPI VIEW [ENERGY]

Energy (Solar/Wind/Generator/Grid)	• Total • Last 30 days • Average run hours (generator only) • Average fuel efficiency (generator only) • Low fuel level (generator only)
---------------------------------------	--

KPI VIEW [PERFORMANCE]

Energy	• Solar energy • Wind energy • Grid, other • Grid availability
Battery	• Near end of life • Backup time • Average battery temperature • Charge condition • Symmetry alarms
Generator	• Average run hours • Average fuel efficiency • Low fuel level
Connectivity	• Quality • Frequent loss of connectivity
Cooling	• ECB (Eltek Cooling Box) run time • Air conditioner run time

DETECTION OF UNDERPERFORMING SITES

Automatic detection of underperforming sites	• Use of Battery, Energy, Generator and network Connectivity, Cooling • KPI
--	--

BATTERY STATUS

Presentation of Battery Condition	• Bar diagram • Battery Life Days Remaining • Battery Backup Time
Smartpower & Grid Services Features	• Battery health / quality statistics • Battery testing / config • Battery detailed test overview with SoH

GRID STATUS

Grid Availability	• Run time • Bar diagram 30d/30w/30months (min.), (%) • Pie chart 30d/30w/30months (h), (%)
-------------------	---

ALARMS (SNMP, ELTEK / DELTA)

Rolling alarm view	• See all alarm traps sent from controllers connected to the MSM • Filter by status, system template, search on site/ alarm description and time interval
Alarm details view	• See all active and historical alarms on a site/group • Filter by severity and date • Statistics about how long the site has been in alarm, and on which level
Ranking of sites "In Alarm" time (all sites ranked)	• Shows an overview of how long a site has been in alarmstate compared to the other sites
Polling alarms (other)	• Alarm traps

Table continues on next page

MSM v4.1

Specifications are subject to change without prior notice

FEATURES AND STATISTICS - CONTINUED

LOGS

Event log	Log of site status change and email report sent
Change log	Logs when sites are altered: - Configuration upload - Firmware upgrade - SNMP configuration changed

EMAIL REPORTS

Trigger type

Alarm Report	Active alarm
Underperforming report	Underperforming
Energy report	- Hourly, Daily, Weekly interval - Daily Energy summary - Weekly Energy summary - Daily Energy usage per site for last days
Site summary report	- Hourly interval - Daily interval - Weekly interval - Monthly interval - Quarterly interval - Yearly interval
Run hour report	Monthly interval
KPI report (global report)	KPI Trigger

SITE INVENTORY

Serial numbers
Warranty alert
Module type
Part numbers
Hardware version
Software part numbers
Software version
Warranty period
Delivery date
Battery
Serial numbers etc. from Smart batteries

SITE MANAGEMENT

Deployment of configuration to multiple controllers	
Automatic SNMP configuration on connected controllers	(requires controller software v.2.3 or higher)
Compare controller configurations	
Show and upgrade controller firmware	
Northbound Communication	• EDM Panama (XML format) • SNMP w/MultiSite Monitor KPIs

SMART POWER

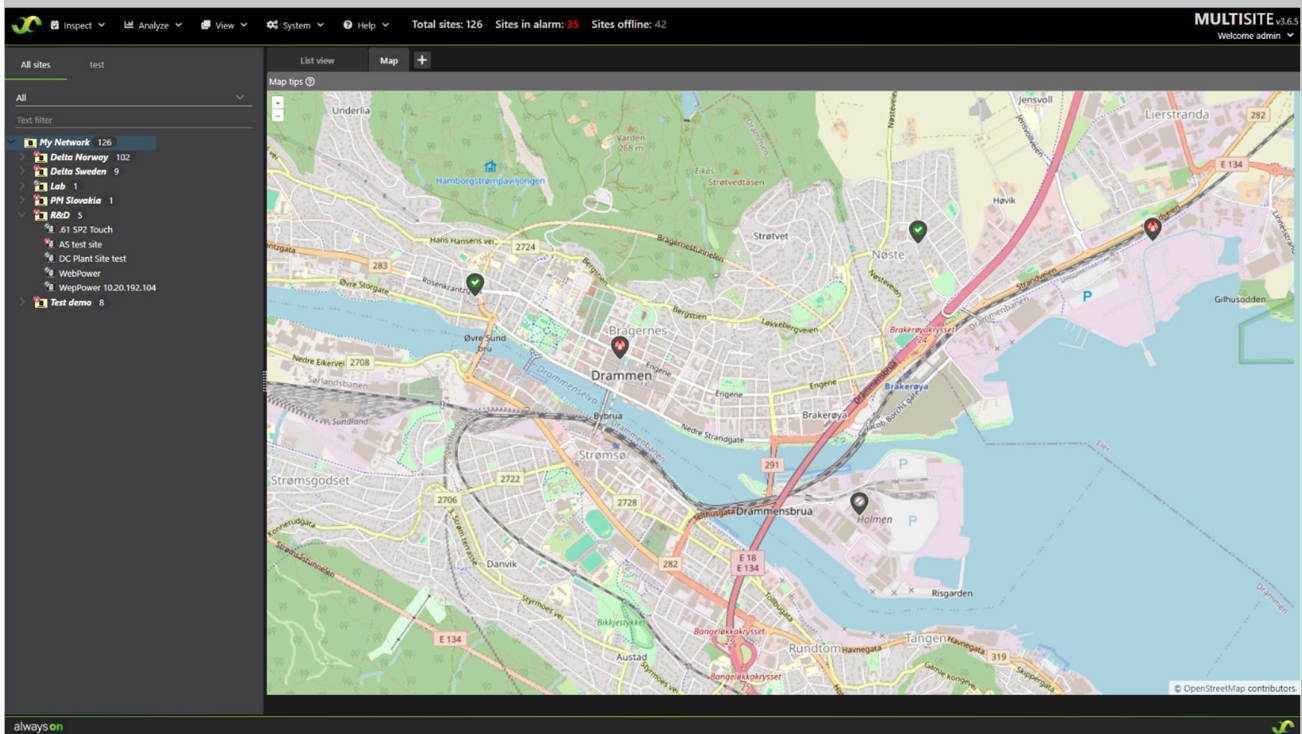
Smart Power Dashboard	- Scheduling - Battery settings - Reporting - Savings
-----------------------	--

MSM v4.1

Specifications are subject to change without prior notice

MSM v4.1

MAP VIEW / DASHBOARD (EXAMPLE)



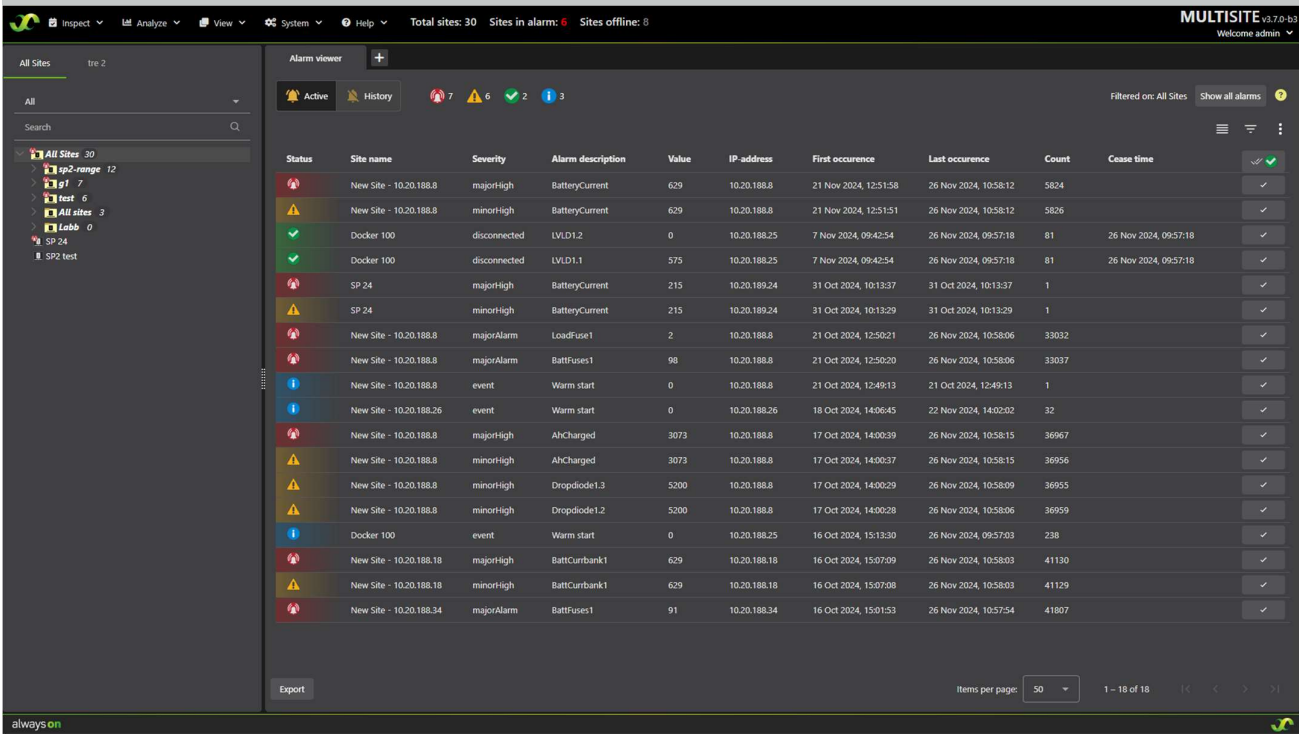
ENERGY TREND, SINGLE SITE (EXAMPLE)



COMPARE (COMPARISON OF SITES) (EXAMPLE)



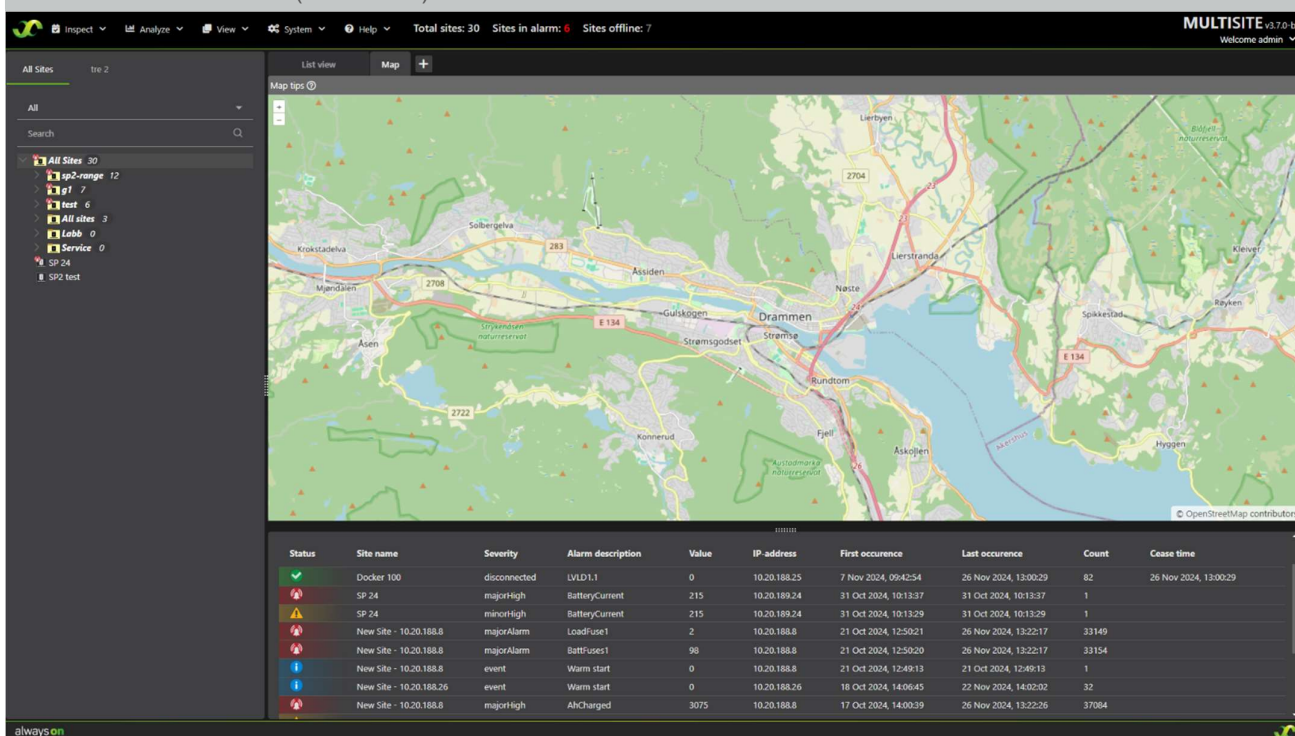
ALARM DETAILS VIEW (EXAMPLE)



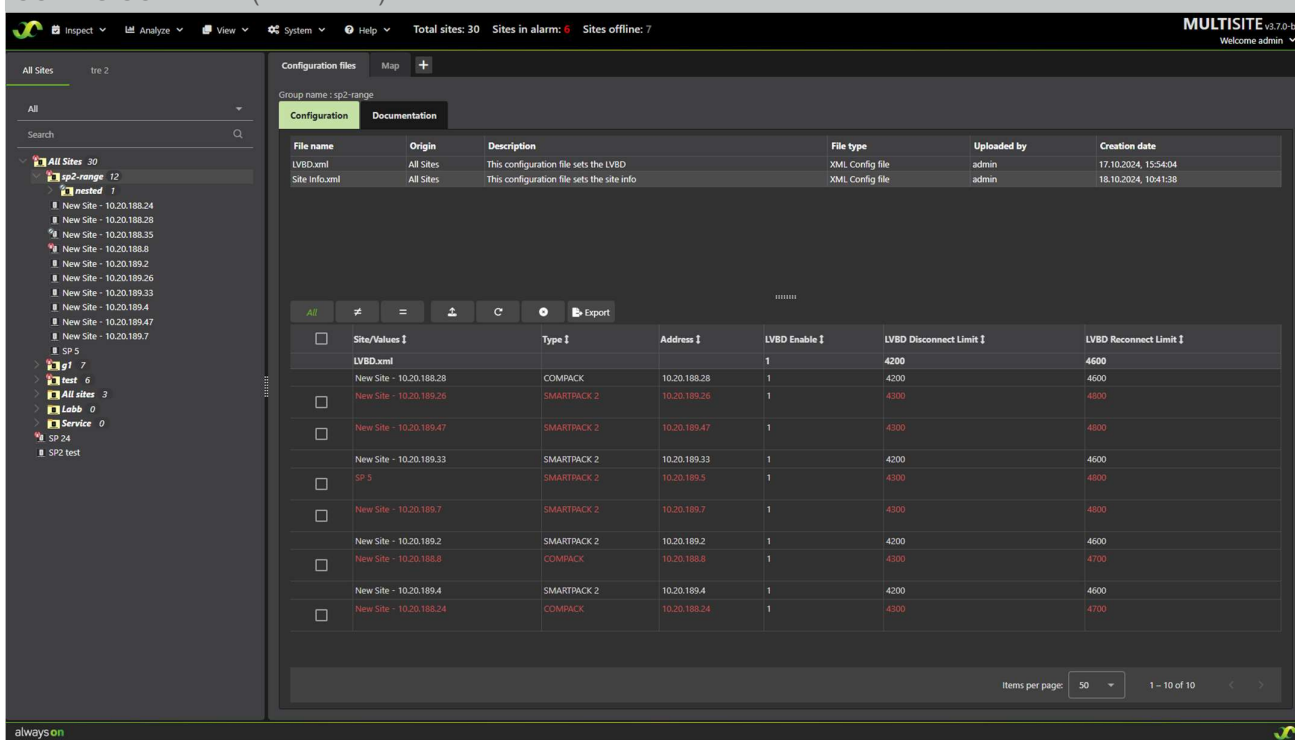
The screenshot displays the 'ALARM DETAILS VIEW' in the MultiSite Monitor application. The top status bar shows 'Total sites: 30', 'Sites in alarm: 6', and 'Sites offline: 8'. The left sidebar contains a tree view of sites, including 'All Sites', 'sp2-range', 'g1', 'test', 'Lab', 'SP 24', and 'SP2 test'. The main area features a table of alarms with columns: Status, Site name, Severity, Alarm description, Value, IP-address, First occurrence, Last occurrence, Count, and Cease time. The right-hand panel includes a 'Filtered on: All Sites' section and a 'Show all alarms' button. The bottom status bar shows 'always on'.

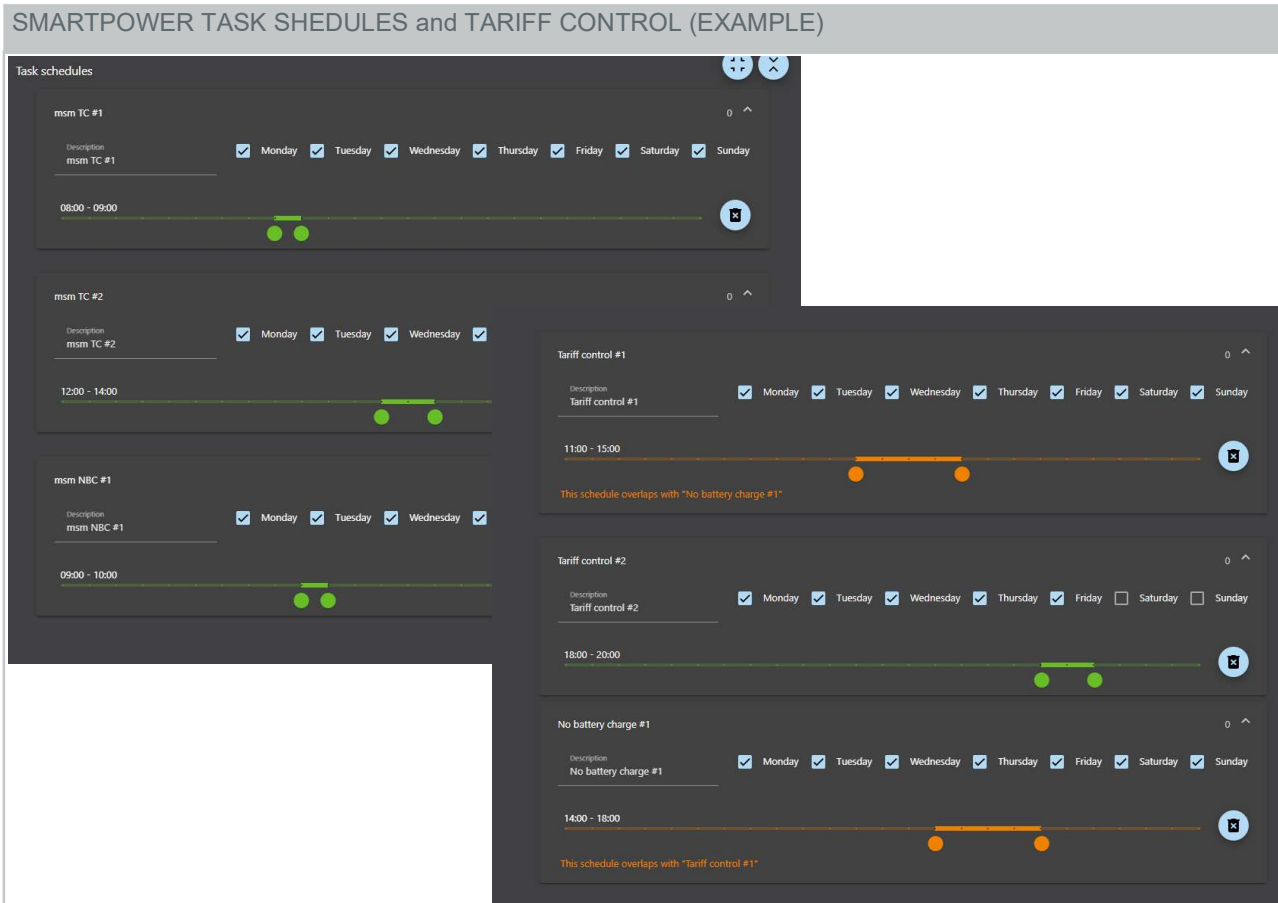
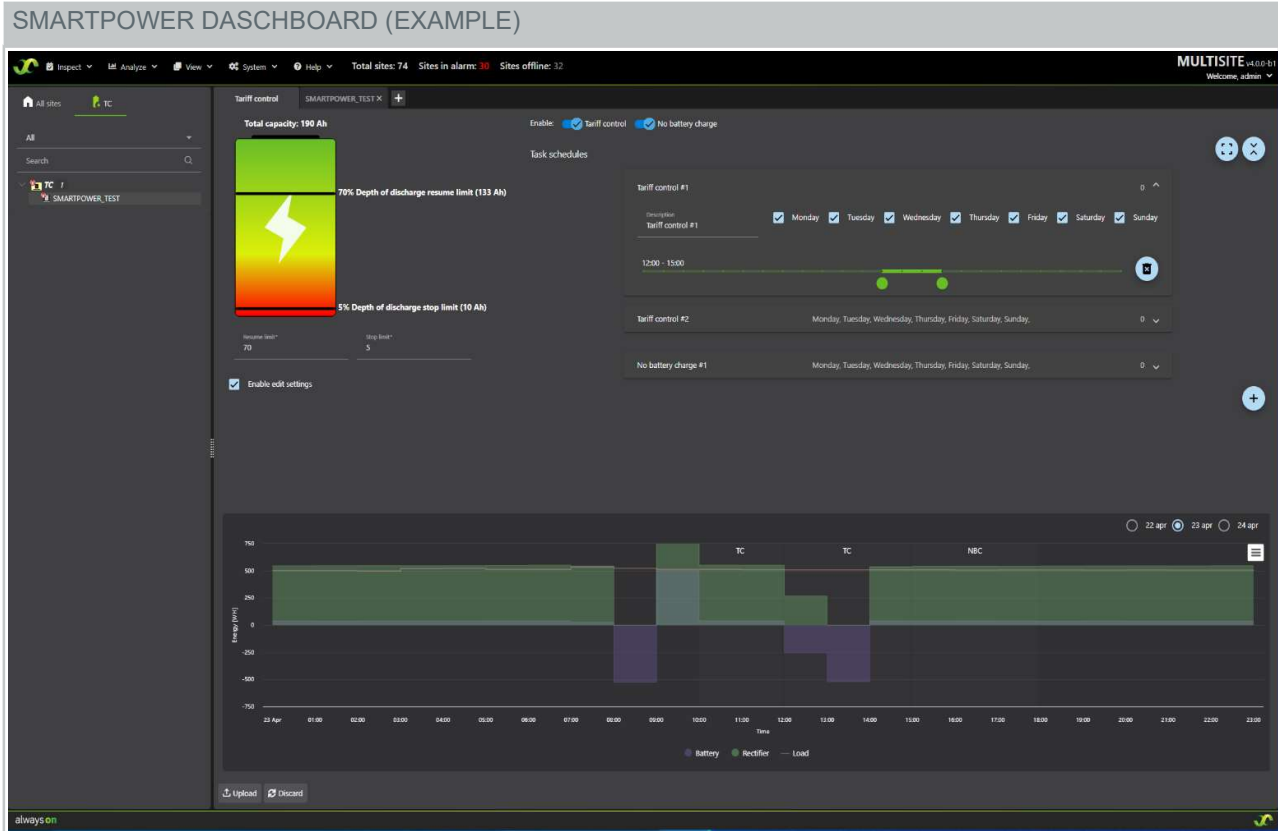
Status	Site name	Severity	Alarm description	Value	IP-address	First occurrence	Last occurrence	Count	Cease time
Active	New Site - 10.20.188.8	majorHigh	BatteryCurrent	629	10.20.188.8	21 Nov 2024, 12:51:58	26 Nov 2024, 10:58:12	5824	
Active	New Site - 10.20.188.8	minorHigh	BatteryCurrent	629	10.20.188.8	21 Nov 2024, 12:51:51	26 Nov 2024, 10:58:12	5826	
Active	Docker 100	disconnected	LVD1.2	0	10.20.188.25	7 Nov 2024, 09:42:54	26 Nov 2024, 09:57:18	81	26 Nov 2024, 09:57:18
Active	Docker 100	disconnected	LVD1.1	575	10.20.188.25	7 Nov 2024, 09:42:54	26 Nov 2024, 09:57:18	81	26 Nov 2024, 09:57:18
Active	SP 24	majorHigh	BatteryCurrent	215	10.20.189.24	31 Oct 2024, 10:13:37	31 Oct 2024, 10:13:37	1	
Active	SP 24	minorHigh	BatteryCurrent	215	10.20.189.24	31 Oct 2024, 10:13:29	31 Oct 2024, 10:13:29	1	
Active	New Site - 10.20.188.8	majorAlarm	LoadFuse1	2	10.20.188.8	21 Oct 2024, 12:50:21	26 Nov 2024, 10:58:06	33032	
Active	New Site - 10.20.188.8	majorAlarm	BattFuses1	98	10.20.188.8	21 Oct 2024, 12:50:20	26 Nov 2024, 10:58:06	33037	
Active	New Site - 10.20.188.8	event	Warm start	0	10.20.188.8	21 Oct 2024, 12:49:13	21 Oct 2024, 12:49:13	1	
Active	New Site - 10.20.188.26	event	Warm start	0	10.20.188.26	18 Oct 2024, 14:06:45	22 Nov 2024, 14:02:02	32	
Active	New Site - 10.20.188.8	majorHigh	AhCharged	3073	10.20.188.8	17 Oct 2024, 14:00:39	26 Nov 2024, 10:58:15	36967	
Active	New Site - 10.20.188.8	minorHigh	AhCharged	3073	10.20.188.8	17 Oct 2024, 14:00:37	26 Nov 2024, 10:58:15	36956	
Active	New Site - 10.20.188.8	minorHigh	Dropdiode1.3	5200	10.20.188.8	17 Oct 2024, 14:00:29	26 Nov 2024, 10:58:09	36955	
Active	New Site - 10.20.188.8	minorHigh	Dropdiode1.2	5200	10.20.188.8	17 Oct 2024, 14:00:28	26 Nov 2024, 10:58:06	36959	
Active	Docker 100	event	Warm start	0	10.20.188.25	16 Oct 2024, 15:13:30	26 Nov 2024, 09:57:03	238	
Active	New Site - 10.20.188.18	majorHigh	BattCurbank1	629	10.20.188.18	16 Oct 2024, 15:07:09	26 Nov 2024, 10:58:03	41130	
Active	New Site - 10.20.188.18	minorHigh	BattCurbank1	629	10.20.188.18	16 Oct 2024, 15:07:08	26 Nov 2024, 10:58:03	41129	
Active	New Site - 10.20.188.34	majorAlarm	BattFuses1	91	10.20.188.34	16 Oct 2024, 15:01:53	26 Nov 2024, 10:57:54	41807	

ROLLING ALARM VIEW (EXAMPLE)



CONFIG COMPARE (EXAMPLE)





MIB COMPILER & SNMP DATA MAPPING (EXAMPLE)

All Sites

tree 2

All

Search

All Sites 30

sp2-range 12

g1 7

test 6

All sites 3

Labb 0

Service 0

SP 24

SP2 test

iso.org.dod.internet.private.enterprises

eltek

eltekTraps

powerSystem

powerSystemStatus Add

powerSystemType Add

powerSystemMode Add

powerSystemCompany Add

powerSystemSite Add

powerSystemModel Add

powerSystemSerialNumber Add

powerSystemInstallDate Add

powerSystemNominalVoltage Add

powerSystemLongitude Add

Name

powerSystemMode

OID

1.3.6.1.4.1.12148.10.2.3

MIB

SP2-MIB

Syntax

INTEGER (0 (off), 1 (test), 2 (boost), 3 (float), 4 (emergency), 5 (startupdelay), 6 (equalize))

Access

read-only

Status

current

Index

Description

A summary status showing if the system is in test, boost, float, equalize, emergency or start-up delay mode

☐

Name

OID

Mapped to

Scheduler

Formatting

☐

batteryVoltageValue

1.3.6.1.4.1.12148.10.10.5.5

Battery Voltage

10 seconds

None

☐

loadCurrentValue

1.3.6.1.4.1.12148.10.9.2.5

Load Current

10 seconds

None

☐

rectifiersCurrentValue

1.3.6.1.4.1.12148.10.5.2.5

Rectifier Current

10 seconds

None

☐

batteryTemperaturesValue

1.3.6.1.4.1.12148.10.10.7.5

Battery Temperature

10 seconds

None

☐

Solar Current

1.3.6.1.4.1.12148.10.7.2.5

Solar Charger Current

10 seconds

None

☐

powerSystemStatus

1.3.6.1.4.1.12148.10.2.1

Power System Status

10 seconds

☐

Main Phase 1 Voltage

1.3.6.1.4.1.12148.10.3.4.1.6.1

Mains Voltage 1

10 seconds

None

☐

batteryTimeLeftValue

1.3.6.1.4.1.12148.10.10.8.5

Battery Time Left

10 seconds

None

☐

Battery installed capacity

1.3.6.1.4.1.12148.10.10.11.5

Battery Total Capacity

10 seconds

None

☐

powerSystemSite

1.3.6.1.4.1.12148.10.2.5

Power System Site

10 seconds

None

☐

powerSystemSite

1.3.6.1.4.1.12148.10.2.3

Battery Charge State

10 seconds

☐

BatteryTestCommand

1.3.6.1.4.1.12148.10.10.16.2

Battery Test Command

Real time

None

☐

powerSystemSite

1.3.6.1.4.1.12148.10.2.3

Battery Charge State

Real time

☐

batteryVoltageValue

1.3.6.1.4.1.12148.10.10.5.5

Battery Voltage

Real time

None

☐

endVoltagePerCell

1.3.6.1.4.1.12148.10.10.16.1

End Voltage Per Cell

Real time

None

☐

BatteryStateOfHealth

1.3.6.1.4.1.12148.10.10.12.5

Battery Quality

Real time

None

Name *

Eltek SP2 SNMP Data Setup

MIB Package *

Eltek / Smartpack2

Delete selected

Cancel

Save

FIRMWARE REPOSITORY (EXAMPLE)

All Sites

tree 2

All

Search

All Sites 30

sp2-range 12

g1 7

test 6

All sites 3

Labb 0

Service 0

SP 24

SP2 test

Firmware update

Map

Devices

Firmware Repository

Upload

Device Type

SW Version

SW Date

Preferred

Filename

SMARTPACK_R - 405035.009

2.11

2021-11-11

405035.009_UPDATE-FULL_2.11_20211111.CRY

2.12

2022-09-21

405035.009_UPDATE-FULL_2.12_20220921.CRY

2.13.1

2023-11-09

405035.009_UPDATE-FULL_2.13.1_20231109.CRY

2.14.1

2024-04-25

405035.009_UPDATE-FULL_2.14.1_20240425.CRY

2.14.2

2024-06-27

405035.009_UPDATE-FULL_2.14.2_20240627.CRY

2.14

2024-03-07

405035.009_UPDATE-FULL_2.14_20240307.CRY

2.15a

2024-11-06

405035.009_UPDATE-FULL_2.15a_202411062352.CRY

SMARTPACK2 - 405006.009

2.13.2

2024-10-18

405006.009_UPDATE_2.13.2_APP.CRY

Inspect
 Analyze
 View
 System
 Help

MULTISITE v3.7.0-b3
 Welcome admin

All Sites tre 2

All

Search

- All Sites 30
- SP2-range 12
- test 7
- test 6
- All sites 3
- Lobb 0
- Service 0
- SP 24
- SP2 test

Firmware update												
	Map											
Devices		Firmware Repository										
	Name	Status	Mode	Type	IP Address	Mac Address	Device Name	SW	SW Date	Last Date ↓	Last Result	Last Message
☐	SP2 3			SMARTPACK2	10.20.189.3	[00-0A-19-C2-A6-84]	Test controller	2.13.2	2024-10-18			
☐	SP2 6		FLOAT	SMARTPACK2	10.20.189.6	[00-0A-19-C2-A6-CB]		2.13.2	2024-10-18	07.11.2024, 08:43		OK
☐	SP2 8		FLOAT	SMARTPACK2	10.20.189.8	[00-0A-19-C2-A7-81]		2.13.2	2024-10-18	07.11.2024, 08:43		OK
☐	New Site - 10.20.188.35			COMPACT	10.20.188.35	[00-0A-19-C1-6C-30]	MSG TEST site 3	2.11.a_2111012 326	2021-11-01	07.11.2024, 08:41		Firmware for this device is not found in the SW Repository - COMPACT
☐	SP2 test		FLOAT	SMARTPACK2	10.20.189.31	[00-0A-19-C2-A6-37]		2.13.2	2024-10-18	06.11.2024, 13:24		OK
☐	New Site - 10.20.188.8			COMPACT	10.20.188.8	[00-0A-19-C1-6C-36]	MSG TEST site 6	2.11	2021-11-11			
☐	New Site - 10.20.188.28		FLOAT	COMPACT	10.20.188.28	[00-0A-19-C1-68-1C]		2.11	2021-11-11			
☐	New Site - 10.20.188.24		FLOAT	COMPACT	10.20.188.24	[00-0A-19-C1-6E-20]		2.11	2021-11-11			
☐	New Site - 10.20.188.81			COMPACT	10.20.188.81	[00-0A-19-C1-68-02]		2.10	2021-03-10			
☐	New Site - 10.20.188.45		FLOAT	COMPACT	10.20.188.45	[00-0A-19-C1-6E-1C]		2.13.a_2208120 958	2022-08-12			
☐	New Site - 10.20.188.29			COMPACT	10.20.188.29	[00-0A-19-C1-65-3F]		2.11.a_2111012 326	2021-11-01			
☐	New Site - 10.20.188.78			COMPACT	10.20.188.78	[00-0A-19-C1-6E-0D]		2.11.a_2111012 326	2021-11-01			
☐	New Site - 10.20.188.80		FLOAT	COMPACT	10.20.188.80	[00-0A-19-C1-84-14]		2.11	2021-11-11			
☐	New Site - 10.20.188.51			COMPACT	10.20.188.51	[00-0A-19-C1-84-26]		2.11	2021-11-11			
☐	ConfCompTest		FLOAT	SMARTPACK2	10.20.189.40	[00-0A-19-C2-A7-34]		2.13	2023-09-12			
☐	New Site - 10.20.188.23		FLOAT	COMPACT	10.20.188.23	[00-0A-19-C1-68-16]	kristoffer-sin	2.14.a_2306122 242	2023-06-12			
☐	New Site - 10.20.188.21			COMPACT	10.20.188.21	[00-0A-19-C1-68-1E]		2.11	2021-11-11			

Export

Items per page: 20 | 1 - 20 of 30

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This product is CE marked and complies with all current requirements for relevant standards and directives.



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