

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
- Email reports



MultiSite Monitor Server-based Monitoring Software

Doc 4061xx.DS3 - rev6

PRODUCT DESCRIPTION

Server-based Monitoring Software

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

The software also includes web pages for viewing the data from the database. The tool support up to 3000 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**
Fire-wall friendly (SSL on port 443 is fully supported)
- **MAP VIEW**
Comprehensive sites overview
- **SITE LIST**
Grouping of sites enables a greater overview
- **SUPPORTS UP TO 3000 SITES**
- **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**

SPECIFICATIONS

AVAILABLE PACKAGES

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

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

Minimum

Recommended

CPU	Intel Dual XEON 1.8 GHz	Intel Quad 2,4 GHz
RAM	16 GB	32 GB
Free HD space	100 GB	100 GB
Operating system	MS Windows Server 2008	MS Windows Server 2012
Required software	MS IIS 7.0, .NET-framework 4.5.2	MS IIS 8.5, .NET-framework 4.5.2

Supported databases:

MSM Small (max 49 sites)	SQL Express	SQL Express
MSM Medium (max 199 sites)	SQL Standard	SQL Standard
MSM Large (max 3000 sites)	SQL Standard	SQL Standard

CLIENT REQUIREMENTS

Web browser with Silverlight (v4.0) plug-in on client computer

SITE AND CONTROLLER REQUIREMENTS

- Eltek system controller with Ethernet and JSON support: ..General requirement
- Smartpack2 Master:All versions
- Smartpack (only .242100.118):WebPower version >4.6 (not compatible with SNMP auto config.)
- Smartpack S:All versions
- Compact:Firmware version > 1.05
- Delta Orion:Firmware version v7.00 or newer

NETWORK INFRASTRUCTURE REQUIREMENTS

Bandwidth to sites (no dial-up)	Minimum 256 kB/s
Daily data usage on each site	Typically from 50kB to 3.0 MB, dependent on configuration
Transport layer/MSMJsonService: TCP Port 80 / SSL Port 443	MSMJsonService:TCP port 8082 / NetworkService
Transport layer/MSMNetworkUtilityService: UDP Port 20034	MSMSNMPService:TCP port 8083 / NetworkService
Transport layer/MSMSNMPService: UDP Port 161 / 162	MSMNetworkUtilityService:TCP port 8084 / NetworkService
Transport layer/MSMRestrictedSiteService:TCP Port 8087	MSMNorthboundService:TCP port 8085 / NetworkService
Transport layer/MSMSqlMessageProcessor:TCP Port 8088	MSMSNMPNorthboundService:TCP port 8086 / NetworkService

SECURITY

User login required, min 4 letters, upper/lower case & number

Specifications are subject to change without prior notice

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)

ENERGY TREND, SINGLE SITE

Server data update interval, typical	<ul style="list-style-type: none"> • Daily
Energy from solar, wind, generator, rectifiers, DC load (Multi Tendant) and auxiliary equipment on mains	<ul style="list-style-type: none"> • Pie chart 24h/30d/50w (%) • Line chart 30h/30d/30w (kWh)
Generator run time, fuel consumption and efficiency (hybrid sites only)	<ul style="list-style-type: none"> • Line chart 30h/30d/30w (m), (l), (kWh/l)
Battery charge and discharge	<ul style="list-style-type: none"> • Bar Diagram (Ah) total
Battery back-up time	<ul style="list-style-type: none"> • Instant elimination and target (h)
Alarm Report	<ul style="list-style-type: none"> • Hourly

RUN HOURS

Generator, Grid, Battery	<ul style="list-style-type: none"> • Table min/day, Hours/week, Hours/Month
Eltek Cooling box (ECB), Aircondition	<ul style="list-style-type: none"> • Line chart 30d/30w/30months

COMPARE (COMPARISON OF SITES)

Server data update interval, typical	<ul style="list-style-type: none"> • Daily
Energy from solar, wind & renewable in total, Renewable versus total DC system or Mains energy	<ul style="list-style-type: none"> • Site versus Site • Group versus Site • Group versus Group • Bar diagram 30h/30d/30w (kWh), (%)
Energy usage DC Load, Multi Tendant: (up to 8 channels)	<ul style="list-style-type: none"> • Site versus Site • Group versus Site • Group versus Group • Bar diagram 30h/30d/30w (kWh), (%)
Generator run time, fuel consumption and efficiency	<ul style="list-style-type: none"> • Site versus Site • Group versus Site • Group versus Group • Line chart 30h/30d/30w (m), (l), (kWh/l)
Battery temperature	<ul style="list-style-type: none"> • Site versus Site • Group versus Site • Group versus Group • Bar Diagram average (°C or °F)
Alarm Report	<ul style="list-style-type: none"> • Hourly

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Specifications are subject to change without prior notice

FEATURES AND STATISTICS - CONTINUED

KPI VIEW [ENERGY]

Energy (Solar/Wind/Generator/Grid)	<ul style="list-style-type: none"> • Total • Last 30 days • Average run hours (generator only) • Average fuel efficiency (generator only) • Low fuel level (generator only)
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KPI VIEW [PERFORMANCE]

Energy	<ul style="list-style-type: none"> • Solar energy • Wind energy • Grid, other • Grid availability
Battery	<ul style="list-style-type: none"> • Near end of life • Backup time • Average battery temperature • Charge condition • Symmetry alarms
Generator	<ul style="list-style-type: none"> • Average run hours • Average fuel efficiency • Low fuel level
Connectivity	<ul style="list-style-type: none"> • Quality • Frequent loss of connectivity
Cooling	<ul style="list-style-type: none"> • ECB (Eltek Cooling Box) run time • Air conditioner run time

DETECTION OF UNDERPERFORMING SITES

Automatic detection of underperforming sites	<ul style="list-style-type: none"> • Use of Battery, Energy, Generator and network Connectivity, Cooling • KPI
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BATTERY STATUS

Presentation of Battery Condition	<ul style="list-style-type: none"> • Bar diagram • Battery Life Days Remaining • Battery Backup Time
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GRID STATUS

Grid Availability	<ul style="list-style-type: none"> • Run time • Bar diagram 30h/30d/30w (h), (%) • Pie chart 30h/30d/30w (h) (%)
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ALARMS

Rolling alarm view	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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 witch level
Ranking of sites "In Alarm" time (all sites ranked)	<ul style="list-style-type: none"> • Shows an overview of how long a site has been in alarm state compared to the other sites

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Specifications are subject to change without prior notice

FEATURES AND STATISTICS - CONTINUED

LOGS

Event log	<ul style="list-style-type: none"> Log of site status change and email report sent
Change log	Logs when sites are altered: <ul style="list-style-type: none"> Configuration upload Firmware upgrade SNMP configuration changed

EMAIL REPORTS

Trigger type

Alarm Report	<ul style="list-style-type: none"> Active alarm
Underperforming report	<ul style="list-style-type: none"> Underperforming
Energy report	<ul style="list-style-type: none"> <input type="checkbox"/> Hourly interval <input type="checkbox"/> Daily interval <input type="checkbox"/> Weekly interval
Site summary report	<ul style="list-style-type: none"> <input type="checkbox"/> Hourly interval <input type="checkbox"/> Daily interval <input type="checkbox"/> Weekly interval <input type="checkbox"/> Monthly interval <input type="checkbox"/> Quarterly interval <input type="checkbox"/> Early interval
Run hour report	<ul style="list-style-type: none"> Monthly interval
KPI report (global report)	<ul style="list-style-type: none"> KPI Trigger

SITE SURVEILLANCE

IP camera integration	<ul style="list-style-type: none"> <input type="checkbox"/> Visual surveillance of remote sites
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3RD PARTY APPLICATION SUPPORT

Launch 3rd party applications through Multisite Monitor

SITE INVENTORY

Serial numbers
Warranty alert
Module type
Part numbers
<input type="checkbox"/> Hardware version
Software part numbers
Software version
Warranty period
Delivery date

SITE MANAGEMENT

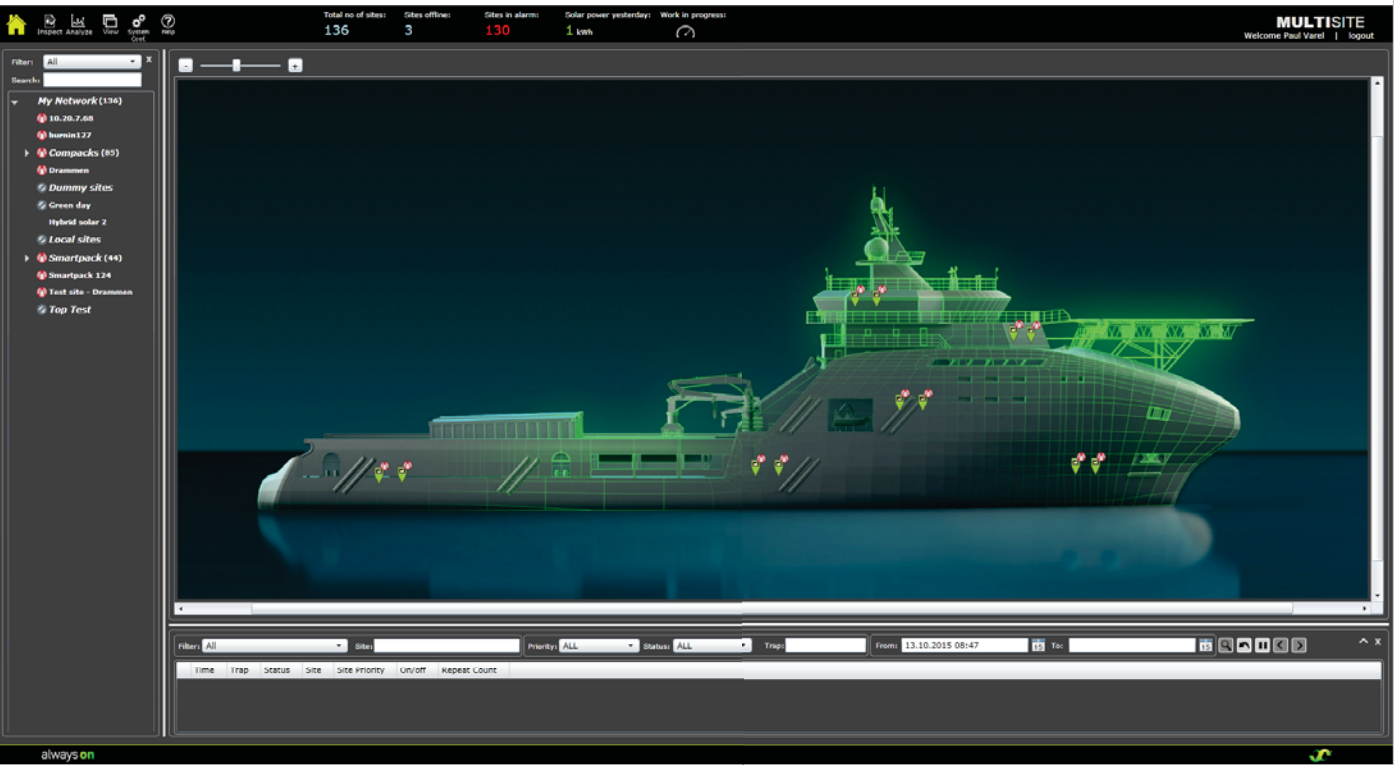
Deployment of configuration to multiple controllers	
Automatic SNMP configuration on connected controllers	(requires controller software v.2.3 or higher)
Compare controller configurations	
Show and upgrade controller firmware	
Northbound Communication	<ul style="list-style-type: none">• EDM Panama (JSON ML format)• SNMP w/MultiSite Monitor KPIs

Specifications are subject to change without prior notice

MAP VIEW / DASHBOARD (EXAMPLE)



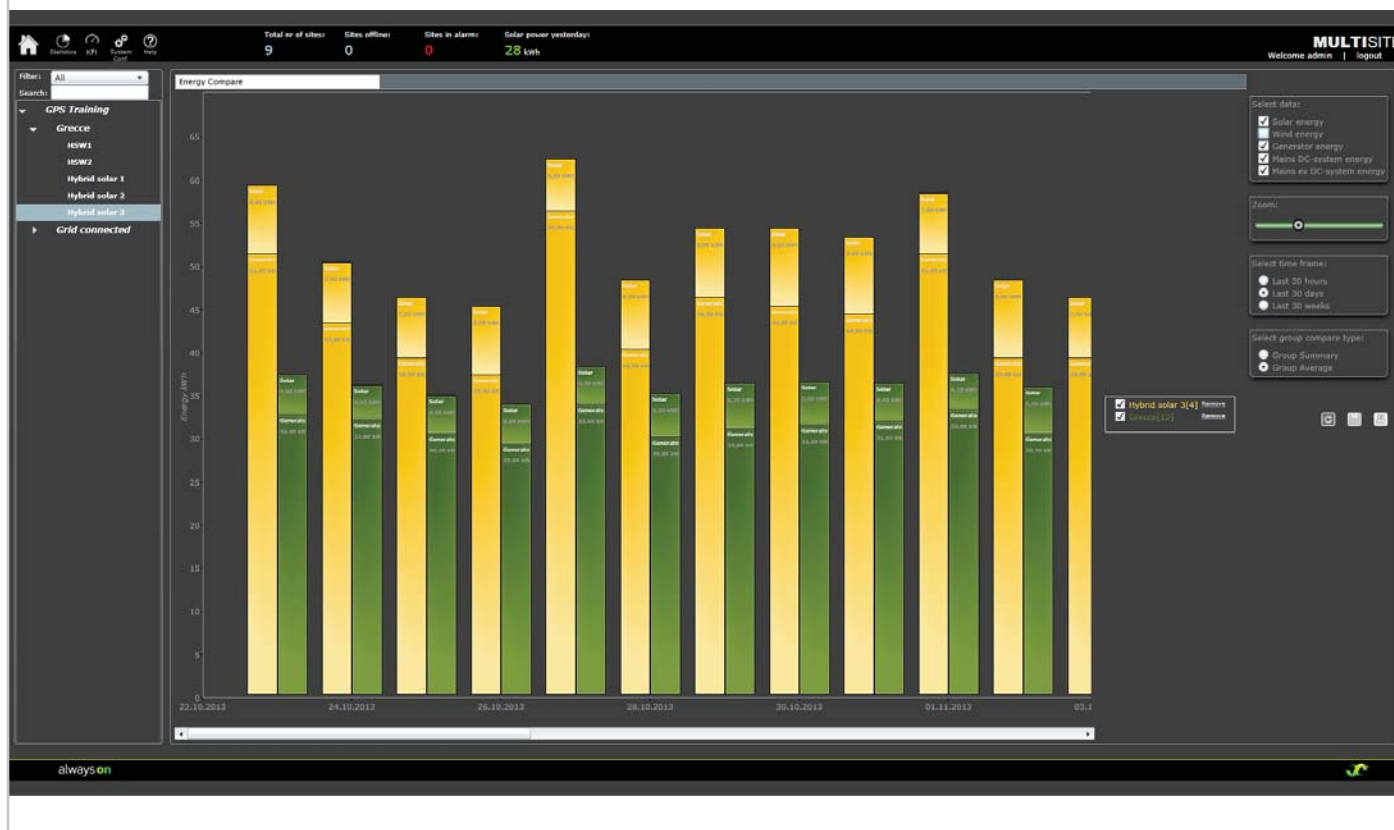
CUSTOM PG/BMP VIEW/ DASHBOARD (EXAMPLE)



ENERGY TREND, SINGLE SITE (EXAMPLE)



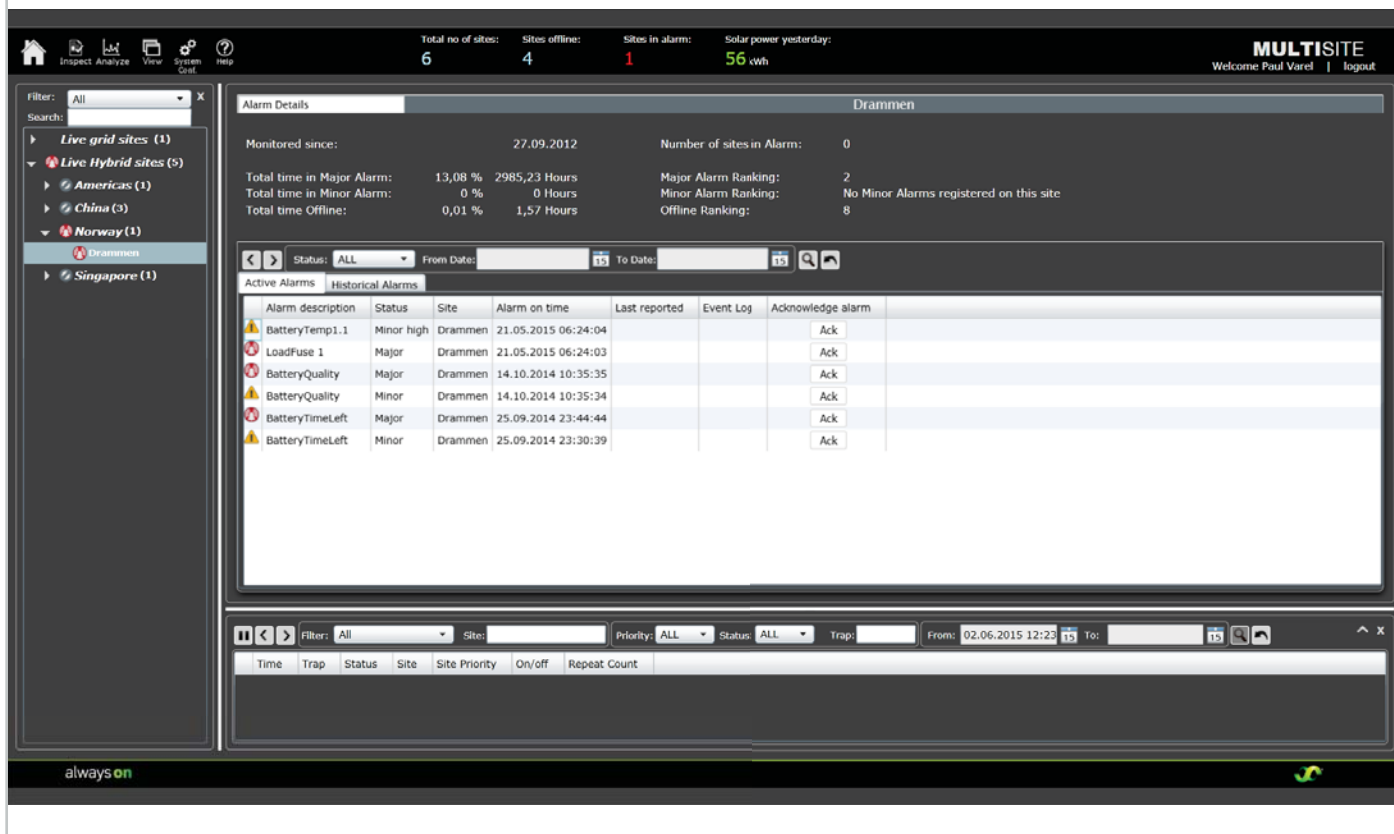
COMPARE (COMPARISON OF SITES) (EXAMPLE)



KPI VIEW ENERGY PERFORMANCE (EXAMPLE)



ALARM DETAILS VIEW (EXAMPLE)



ALARM RANKING (EXAMPLE)

Home Inspect Analyze View System Conf Help

Total no of sites: 6 Sites offline: 4 Sites in alarm: 1 Solar power yesterday: 56 kWh

MULTISITE
Welcome Paul Varel | Logout

Filter: All Search:

- Live grid sites (1)
- Live Hybrid sites (5)
 - Americas (1)
 - China (3)
 - Norway (1)
 - Drammen
 - Singapore (1)

Site Ranking

Major Alarm Minor Alarm Offline

Active:

#	Site	Hours in major alarm	Detected major alarm
1	Drammen	793,99	30.04.2015 12:20:09
2	Eltek demo site	684,45	05.05.2015 01:52:37

Historical:

#	Site	Total % in major alarm	Total hours in major alarm	Monitored since
2	Drammen	13.08	2985.23	27.09.2012 08:46:51
4	Eltek demo site	9.74	489.533	08.10.2014 13:49:44
5	Rooftop Singapore	9.66	1462.2	13.08.2013 15:11:51
6	Top roof	6.05	1086.38	17.04.2013 09:58:33
7	Top roof	1.59	286.183	17.04.2013 09:57:36
8	SJC	0	0.666666	10.09.2013 15:18:15

always on

ROLLING ALARM VIEW (EXAMPLE)

Home Inspect Analyze View System Conf Help

Total no of sites: 6 Sites offline: 4 Sites in alarm: 1 Solar power yesterday: 50 kWh

MULTISITE
Welcome admin | Logout

Filter: All Search:

- Live grid sites (1)
- Live Hybrid sites (5)
 - Americas (1)
 - China (3)
 - Norway (1)
 - Drammen
 - Singapore (1)

Road Aerial Labels

Drammen

- BatteryVoltage: 54.9 Volt DC
- LoadCurrent: 9.6 Amp
- RectifierCurrent: 4.2 Amp
- SolarCurrent: 7.5 Amp
- BatteryTemp: 15 Celsius
- Fuel Remaining: 0

Eltek demo site

- BatteryVoltage: 54.55 Volt DC
- LoadCurrent: 0.0 Amp
- RectifierCurrent: 0.0 Amp
- BatteryTemp: Celsius

5000 Kilometers

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Time Filter: All Sites Priority: ALL Status: ALL Trap: From: 01.04.2015 08:18 To: 03.06.2015 08:18

Time	Trap	Status	Site	Site Priority	On/off	Repeat Count
22.05.2015 10:07:05	Heart beat trap		Drammen	3	On/off	
22.05.2015 10:06:32	BatteryTemp1.1	Minor high	Drammen	3	On	13244
22.05.2015 10:06:31	LoadFuse 1	Major	Drammen	3	On	13244
22.05.2015 10:06:02	Heart beat trap		Drammen	3	On	
22.05.2015 10:05:30	BatteryTemp1.1	Minor high	Drammen	3	On	13243
22.05.2015 10:05:29	LoadFuse 1	Major	Drammen	3	On	13243
22.05.2015 10:04:59	Heart beat trap		Drammen	3	On	
22.05.2015 10:04:27	BatteryTemp1.1	Minor high	Drammen	3	On	13242
22.05.2015 10:04:26	LoadFuse 1	Major	Drammen	3	On	13242

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COMPARE CONFIG

Home

Project Analysis

View

System Config

Help

Filters: All

Search

My Network (136)

burnin127

Compacks (85)

Drammen

Dummy sites

Green day

Hybrid solar 2

Local sites

Smartpack (44)

Smartpack 124

Test site - Drammen

Top Test

Total no of sites: 136

Sites offline: 2

Sites in alarms: 131

Solar power yesterday: 1 kWh

Work in progress:

MULTISITE
Welcome Paul Varel | Logout

New Comparison

Recent Comparison

settings_data.xml

Select File

Description	Value
1 Company	
2 Model	FlatPack2 System
3 Message 1	
4 Message 2	
5 Smartpack Globals - Number of battery cells	24
6 Smartpack Globals - System capacity scale	0
7 Smartpack Globals - Temperature Scale	0
8 Smartpack Globals - System Polarity	0
9 System config cfpDesiAmpere	0
10 Low Float Voltage(Batt Test Standby voltage)	4440
11 Battery Disconnect Voltage	4300
12 Battery Reconnect Voltage	4700
13 Control system Number of control units	1
14 Control unit Com error alarm Enable(1)/Disable (0)	1
15 Control unit Com error alarm Major High	1
16 Control unit Com error Alarm group Major High	1
17 Control unit Com error alarm Minor High	1
18 Control unit Com error Alarm group Minor High	2
19 Control unit Com error delay	0
20 Control unit Com error Description	CtrlUnitError
21 Control unit Com error Manual reset Major High Only (2)/All Levels(1)/Disable (0)	0
22 SmartNode Com error alarm Enable(1)/Disable (0)	1
23 SmartNode Com error alarm Major High	1
24 SmartNode Com error Alarm group Major High	1
25 SmartNode Com error alarm Minor High	1
26 SmartNode Com error Alarm group Minor High	2
27 SmartNode Com error delay	0

Description	Device	SW	Remove All
10.20.7.68	SMARTPACK_5	2.4.1	Remove
burnin127	SMARTPACK2	2.4	Remove

Comparison Description: settings_data.xml Compare Cancel

Filters: All

Site:

Priority: ALL

Status: ALL

Trap:

From: 12.10.2015 14:57

To:

Time	Trap	Status	Site	Site Priority	On/Off	Repeat Count
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ELTEK COOLING BOX (ECB)

Home

Project Analysis

View

System Config

Help

Filters: All

Search

My Network (136)

burnin127

Compacks (85)

Drammen

Dummy sites

Green day

Hybrid solar 2

Local sites

Smartpack (44)

Smartpack 124

Test site - Drammen

Top Test

Total no of sites: 141

Sites offline: 6

Sites in alarms: 132

Solar power yesterday: 1 kWh

Work in progress:

MULTISITE
Welcome Paul Varel | Logout

ECB Run time

1020.7.68

Last 30 days

Red. capacity: 0%

Zoom:

Select time frame:

Log

Target

Select group compare type:

AirCan Run time

1020.7.68

Last 30 days

Log

Target

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



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