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

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 support 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**
  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 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**
  VMware platforms compatible
**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>AVAILABLE PACKAGES</th>
<th>Small</th>
<th>Medium</th>
<th>Large</th>
<th>Enterprise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Included clients/user accounts</td>
<td>2</td>
<td>5</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Maximum no. of clients/user accounts</td>
<td>5</td>
<td>15</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Included sites/connected power system controllers</td>
<td>5</td>
<td>50</td>
<td>200</td>
<td>3000</td>
</tr>
<tr>
<td>Max. no. of sites/connected power system controllers</td>
<td>49</td>
<td>199</td>
<td>3000</td>
<td>25000</td>
</tr>
</tbody>
</table>

**SUPPORT AGREEMENTS**

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

**SERVER REQUIREMENTS**

<table>
<thead>
<tr>
<th>Sites</th>
<th>Recommended Server Hardware</th>
<th>Recommended Free Disk Space after installation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 100</td>
<td>2 CPU Cores, 3 GB RAM</td>
<td>100 GB</td>
</tr>
<tr>
<td>100 - 250</td>
<td>3 CPU Cores, 5 GB RAM</td>
<td>250 GB</td>
</tr>
<tr>
<td>250 - 500</td>
<td>5 CPU Cores, 8 GB RAM</td>
<td>500 GB</td>
</tr>
<tr>
<td>500 - 1000</td>
<td>8 CPU Cores, 16 GB RAM</td>
<td>1 TB</td>
</tr>
<tr>
<td>1000 - 2000</td>
<td>8 CPU Cores, 32 GB RAM</td>
<td>2 TB</td>
</tr>
<tr>
<td>More than 2000</td>
<td>Contact <a href="mailto:MSM.support@eltek.com">MSM.support@eltek.com</a></td>
<td></td>
</tr>
</tbody>
</table>

**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
- Compax: .......................................................... Firmware version > 1.05
- Delta Orion: .................................................. Firmware version v7.00 or newer
- 3rd party controllers/SNMP Devices: ......................... SNMP v1, v2c, v3. MIB Compiler and 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 3.0 MB, dependent on configuration
- Maximum response time 700 ms

**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 JPEG 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 30h/30d/30w (m), (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 30h/30d/30w (m), (l), (kWh/l)
- Battery temperature
  - Site versus Site
  - Group versus Site
  - Group versus Group
  - Bar Diagram average (°C or °F)
- Alarm Report
  - Hourly

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 30h/30d/30w (h), (%)
- Pie chart 30h/30d/30w (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 witch level

**Ranking of sites “In Alarm” time (all sites ranked)**
- Shows an overview of how long a site has been in alarm state compared to the other sites

**Polling alarms (other)**
- Alarm traps
## FEATURES AND STATISTICS - CONTINUED

### LOGS

<table>
<thead>
<tr>
<th>Event log</th>
<th>Log of site status change and email report sent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change log</td>
<td>Logs when sites are altered:</td>
</tr>
<tr>
<td></td>
<td>• Configuration upload</td>
</tr>
<tr>
<td></td>
<td>• Firmware upgrade</td>
</tr>
<tr>
<td></td>
<td>• SNMP configuration changed</td>
</tr>
</tbody>
</table>

### EMAIL REPORTS

<table>
<thead>
<tr>
<th>Trigger type</th>
<th>Alarm Report</th>
<th>Energy report</th>
<th>Site summary report</th>
<th>Run hour report</th>
<th>KPI report (global report)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>KPI Trigger</td>
</tr>
</tbody>
</table>

#### Trigger type

- **Alarm Report**:
  - Active alarm

- **Energy report**:
  - Hourly, Daily, Weekly interval
  - Daily Energy summary *(new)*
  - Weekly Energy summary *(new)*
  - Daily Energy usage per site for last days *(new)*

- **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 SURVEILLANCE

- IP camera integration
  - Visual surveillance of remote sites

### 3rd PARTY APPLICATION SUPPORT

- Launch 3rd party applications through MultiSite Monitor
- Ticketing system

### 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

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MAP VIEW / DASHBOARD (EXAMPLE)

CUSTOM JPG/BMP VIEW/ DASHBOARD (EXAMPLE)
ALARM RANKING (EXAMPLE)

ROLLING ALARM VIEW (EXAMPLE)
ENERGY SAVING FROM RENEWABLES (EXAMPLE)

MONITORING REMOTE SITES BY CONFIGURABLE SNMP (EXAMPLE)