MITSUBISHI ELECTRIC

*Changes for the Better*

for a greener tomorrow

Mitsubishi Electric
Energy-saving Data Collection Server
EcoWebServer Ⅲ

# EcoWebServerⅢ

## Simple - Convenient - Compact
## Data Management Solution

*Empowering Industries*

**Visible, Energy Management**

# It Doesn't Get Any Easier…
# Simplify data management with the Eco

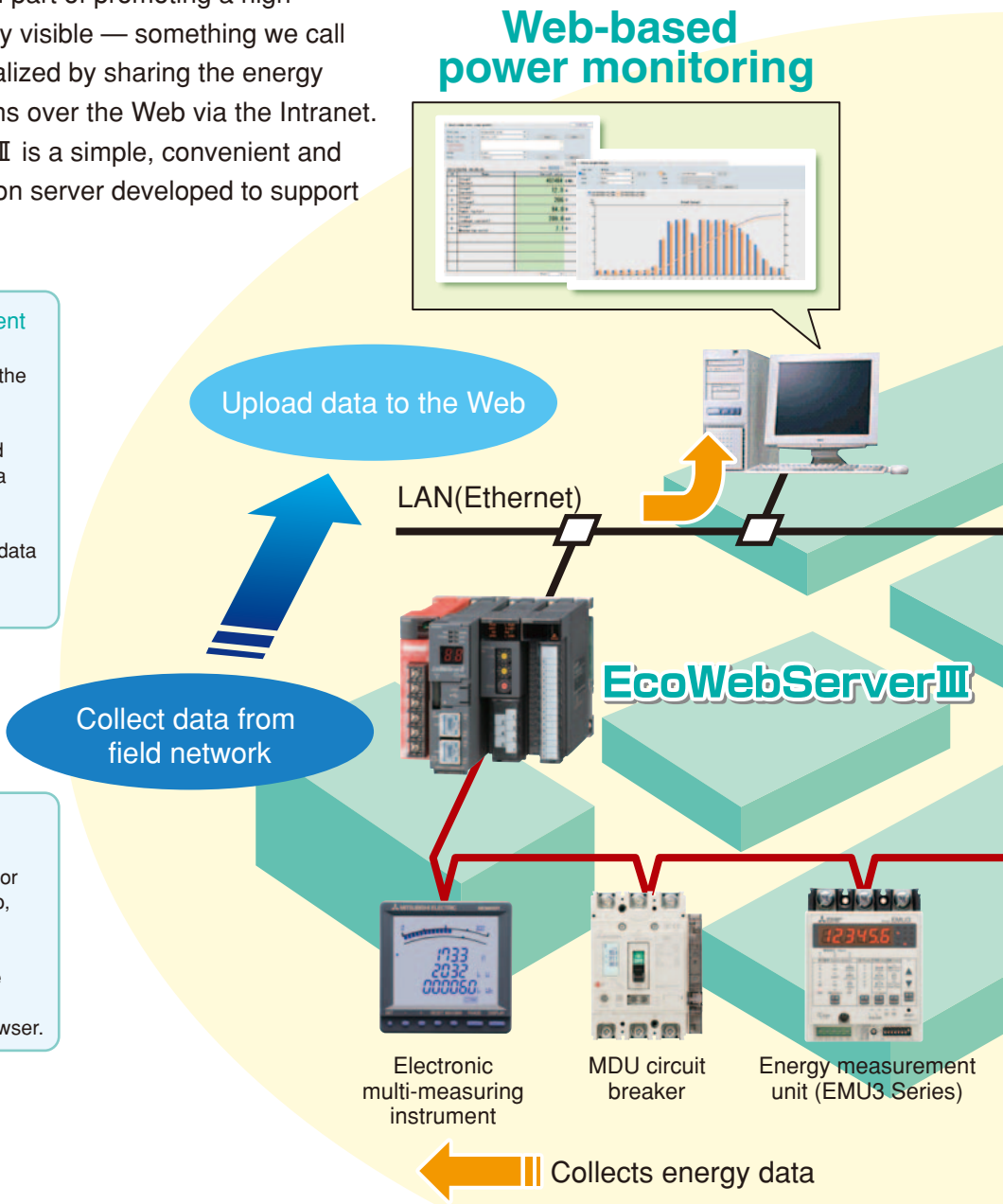
To ensure effective energy savings, it is important that every person is aware of how energy is being used and participating in conservation measures. An essential part of promoting a high awareness is making activities clearly visible — something we call "visible management" — which is realized by sharing the energy consumption data of specific divisions over the Web via the Intranet. Mitsubishi Electric's EcoWebServer Ⅲ is a simple, convenient and compact energy-saving data collection server developed to support visible management.

### Use Web Browser to Display Measurement Data in Graphs

Functions for sending and displaying data on the Web are pre-installed in the main unit of the EcoWebServer Ⅲ. In addition, a HTTP server function is incorporated, allowing the collected data to be uploaded to the Internet/Intranet via the Ethernet, and thereby realizing energy consumption data updates in real-time. Web browser is then used to display the uploaded data in list and graph form for simple viewing on computers connected to the Intranet.

### Automatic Data Transfer and E-mail Notification

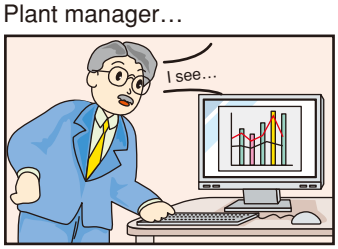
After a separate e-mail server (SMTP server) or database server (FTP server) has been set up, e-mail notifications of abnormal readings (more/less than upper/lower limits), automatic data transfers and measurement data storage (CSV format) are possible.
* CSV data can be organized on the Web browser.



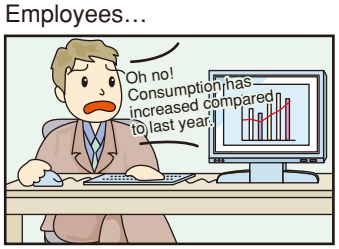

## Support for Energy-saving Activities using "Visible Management"

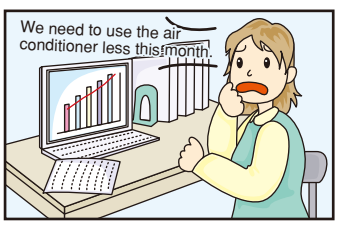
1. Monitor/Manage energy by department
2. Specific consumption-based management of energy-saving activities
3. Monthly/Annual target-based management
4. Monitoring of equipment operating status
5. Manage/Record energy data

Plant manager…



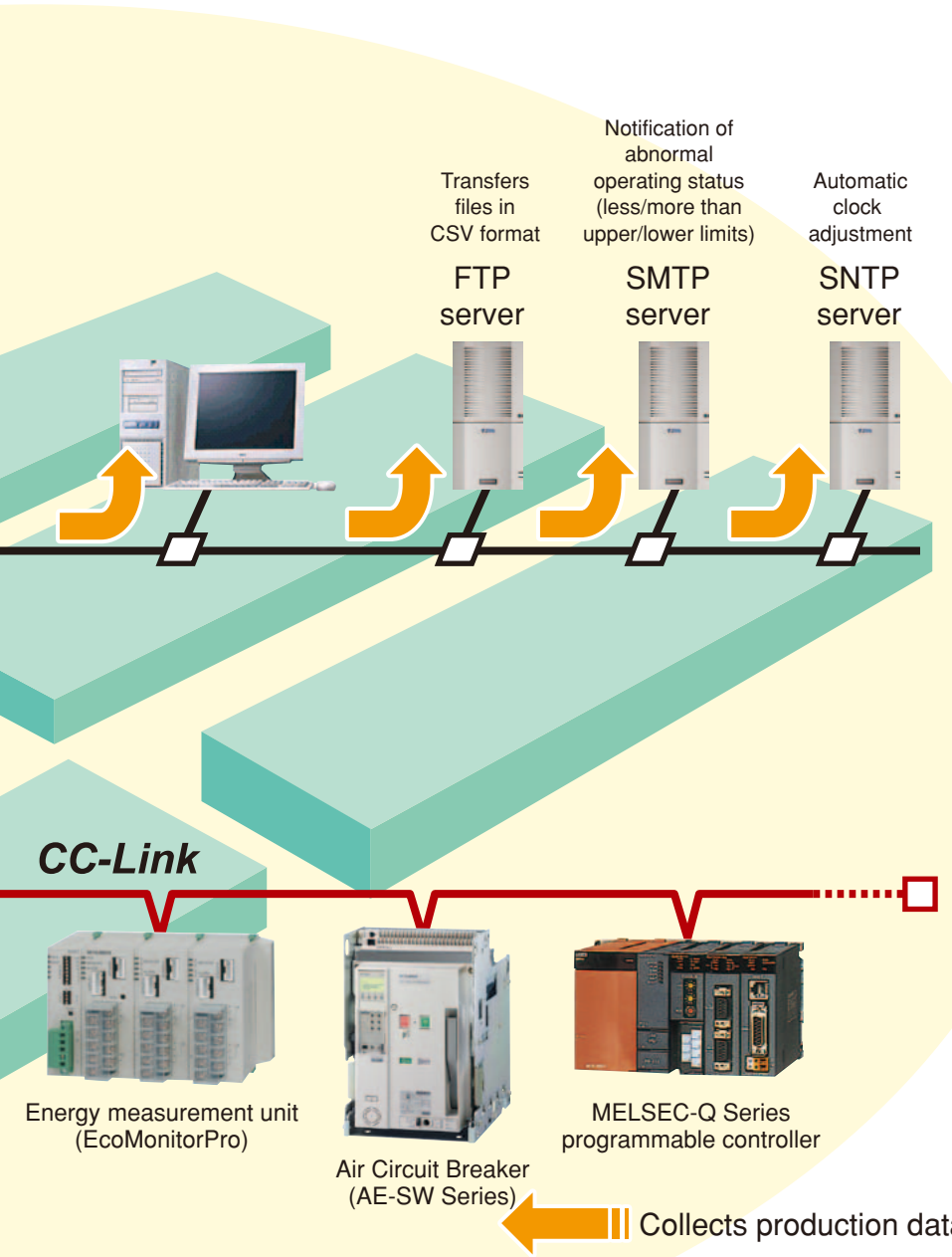

Employees…



# WebServer Ⅲ

## Example System Configuration

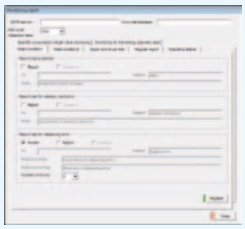



### Various Screen Display Functions for Simplified Energy-saving Data Analysis

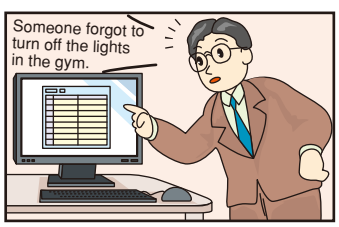
- Easily view desired data on various display screens via mouse operation.
- Planned and target values can be set on a nearby computer.
- Specific consumption conveniently displayed in graph form for energy-saving data analysis.

<Specific consumption graph> <Current value display>

<Software set-up screen>

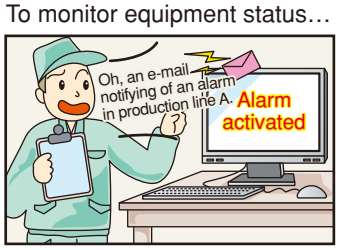


- Use the mouse or keyboard operation and accompanying set-up software to easily set data, save content and make changes.




### At production site…

To monitor equipment status…




For target management…

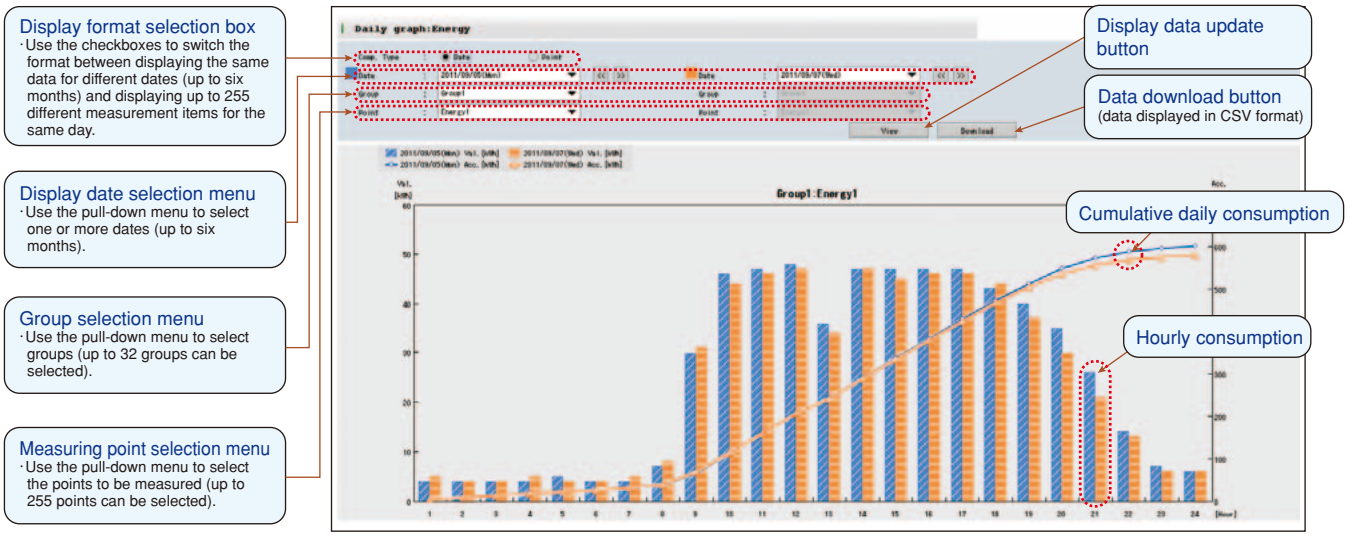

For improvement activities…

# Example Display Screens

## 1 Daily Graph: Visual Display of Measurements

- Switch between display formats to compare the same measuring point on different days or different measuring point on the same day.
- As a result, users can see changes (abnormal values) in energy consumption and confirm the effect of energy-saving measures by comparing figures before and after measures are implemented.

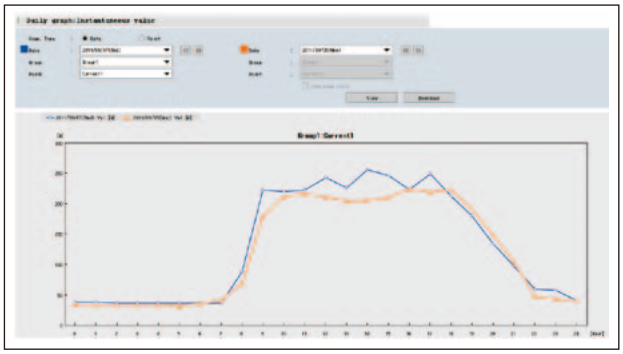
①Power consumption/No. of pulses screen




- Display data for one day per hour (or 30 minutes) (data for previous six months can be stored)
- Display data for two days (or two measuring points) simultaneously
- Combine several measuring points, display as one group, and select the level for display (up to 32 groups can be registered)
- Graph data (CSV) can be easily downloaded onto a personal computer

} Same functions included for the annual, monthly and zoom graphs

②Analog value screen

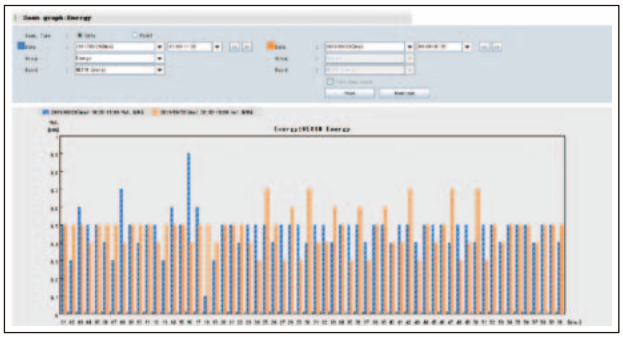


③Analog value (power factor) screen

## 2 Zoom Graph: Understand Power Consumption Conditions in Greater Detail

- Display consumption (measured values) data for every minute of one hour (data for up to 62 days can be stored)
- Allows more detailed energy analysis such as analysis of equipment operating status or for troubleshooting.

①Power consumption/No. of pulses screen



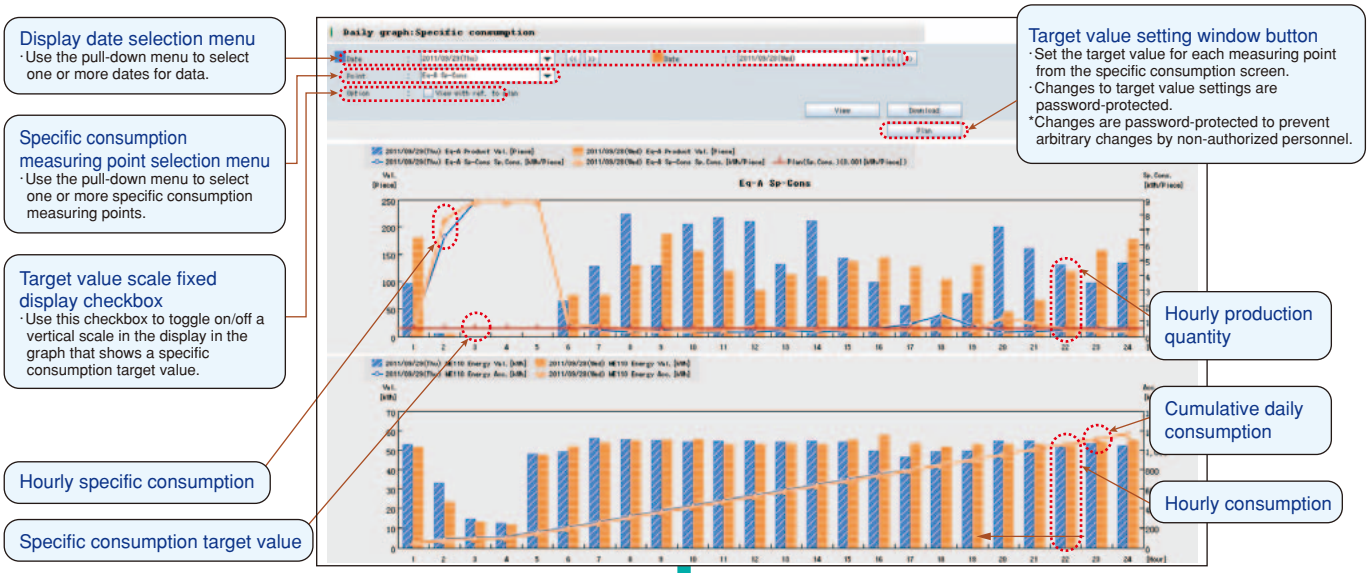
- Display consumption data for every minute of one hour
- Display two different time zones (or two measuring points) simultaneously

②Analog value screen

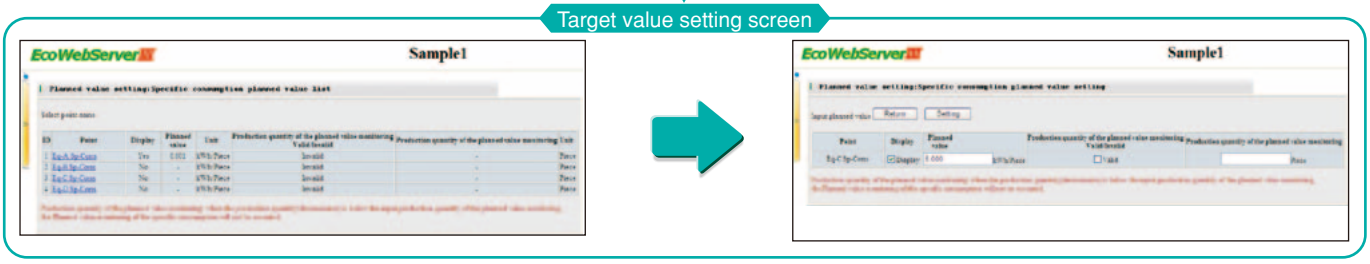
- Display the consumption data for every minute of one hour
- Display two different time zones (or two measuring points) simultaneously

## 3 Daily Graph (Specific Consumption Screen): Understand Power Consumption per Product

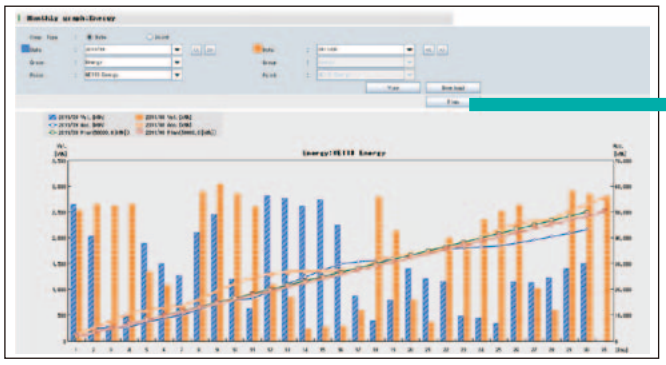
- Assists enhancing productivity by clearly displaying specific consumption for products using a line graph with numerical values.
- Confirm the effect of energy-saving measures by comparing specific consumption graphs before and after measures are implemented.




Target value setting screen

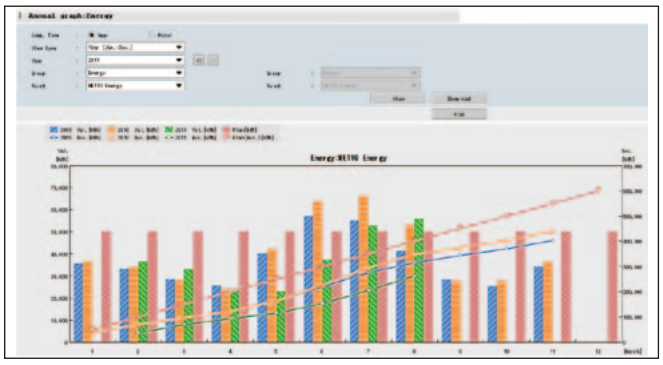



## 4 Monthly Graph (Power Consumption/No. of Pulses Screen)



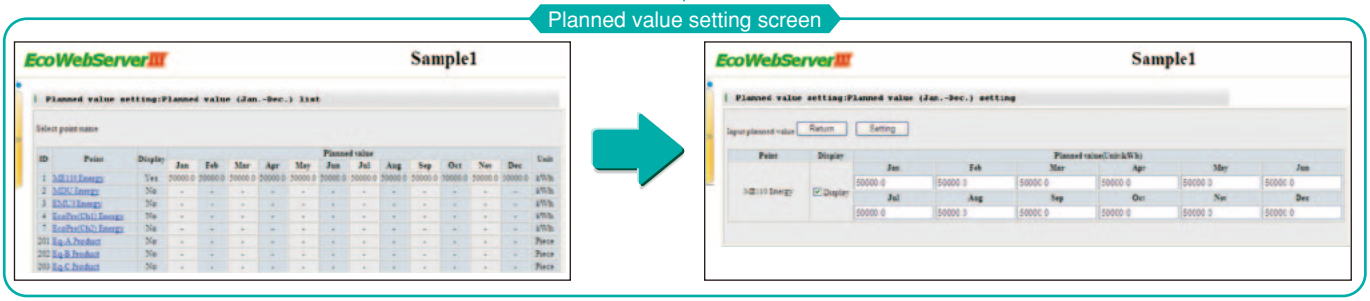
- Display daily data for one month (data for up to five years can be stored)
- Display data for two months (or two measuring points) simultaneously
- Display cumulative and planned values for the current month using a line graph

## 5 Annual Graph (Power Consumption/No. of Pulses Screen)

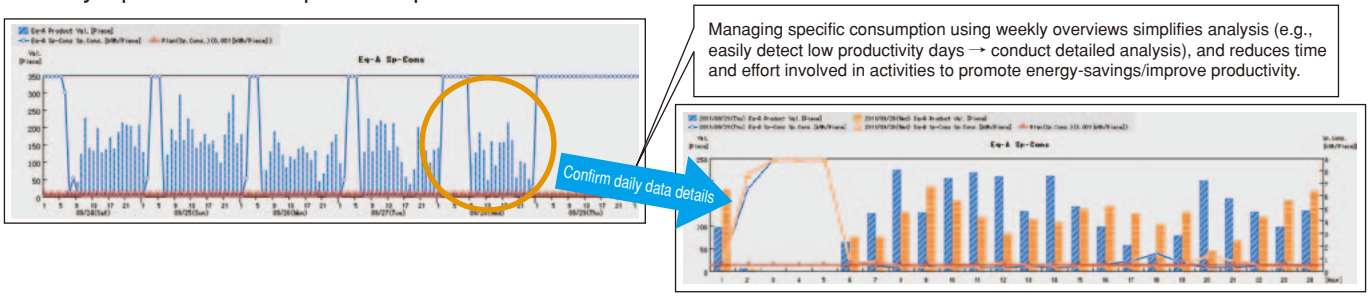


- Display monthly data for one year (data for up to five years can be stored)
- Display data for three years (or two measuring points) simultaneously
- Display cumulative and planned values for the current (or fiscal) year using a line graph
- Display months in calendar year or fiscal year format.

Planned value setting screen

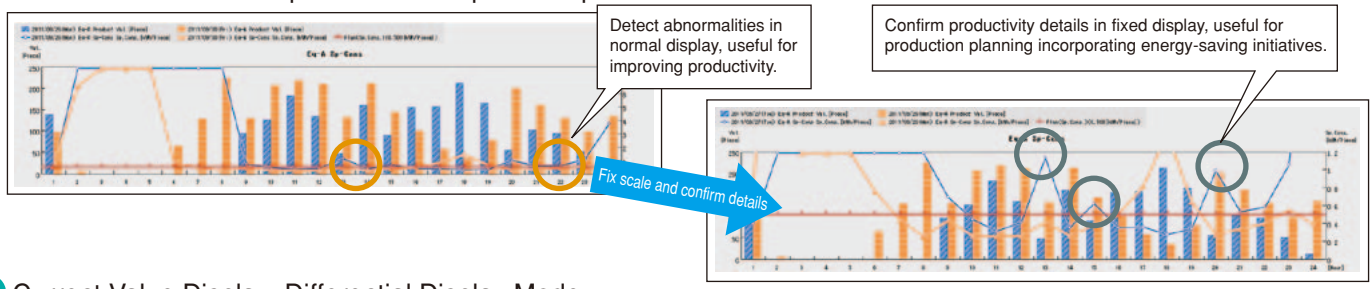


## 6 Weekly Specific Consumption Graph Screen




Managing specific consumption using weekly overviews simplifies analysis (e.g., easily detect low productivity days → conduct detailed analysis), and reduces time and effort involved in activities to promote energy-savings/improve productivity.

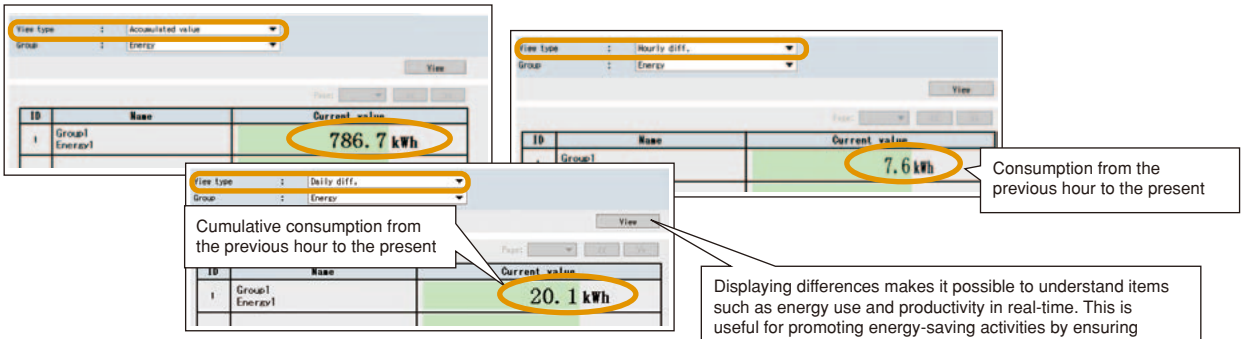
## 7 Fixed Scale Mode for Specific Consumption Graph




Detect abnormalities in normal display, useful for improving productivity.

Confirm productivity details in fixed display, useful for production planning incorporating energy-saving initiatives.

## 8 Current Value Display: Differential Display Mode




Consumption from the previous hour to the present

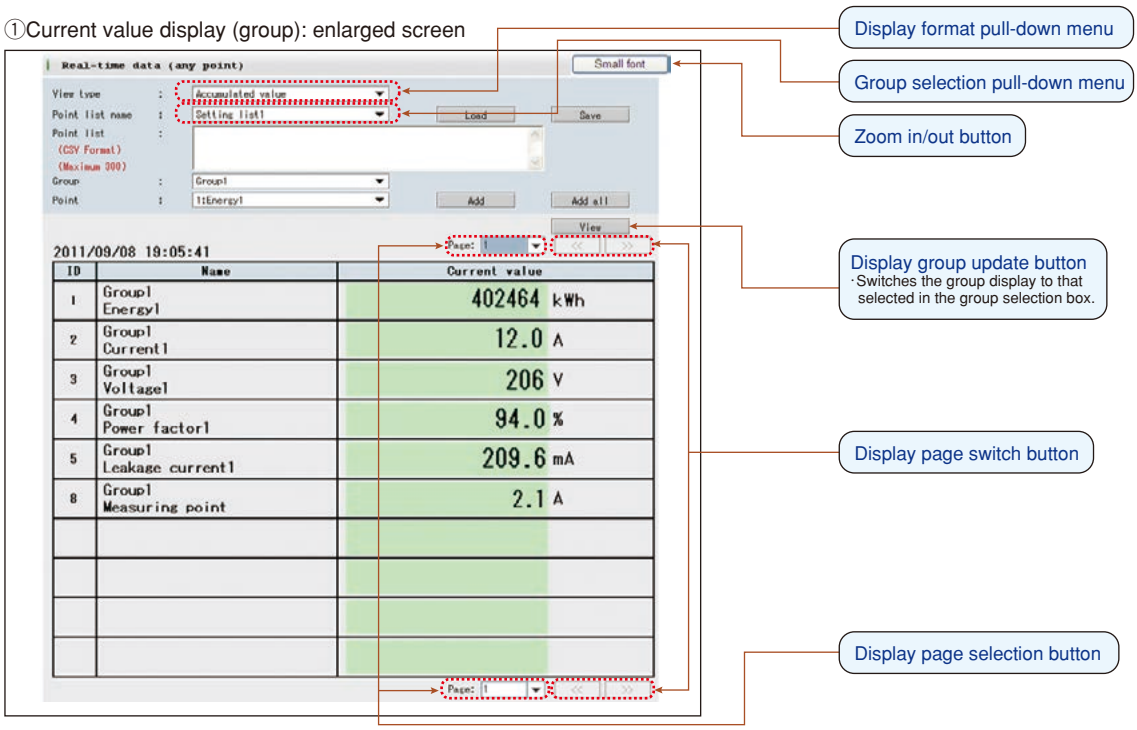
Cumulative consumption from the previous hour to the present

Displaying differences makes it possible to understand items such as energy use and productivity in real-time. This is useful for promoting energy-saving activities by ensuring constant awareness of power consumption.

## 9 Current Value Display: Convenient Remote Data Monitoring

- Confirm current measurements using a personal computer. (Selected measurement values displayed are refreshed at regular intervals.)
- Easy to monitor equipment and production line operating status using this feature.
- Measuring points can be combined freely to display measurement data. (Related data is displayed in combination as a result of prior settings for displaying each group.)
- Display cumulative values, and differential values for the previous hour, day or month.

①Current value display (group): enlarged screen




Display format pull-down menu

Group selection pull-down menu

Zoom in/out button

Display group update button
· Switches the group display to that selected in the group selection box.

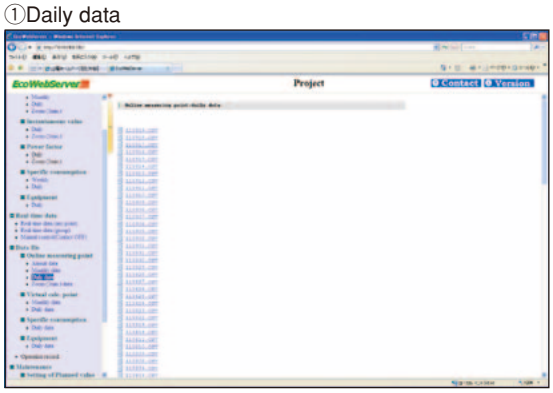
Display page switch button

Display page selection button

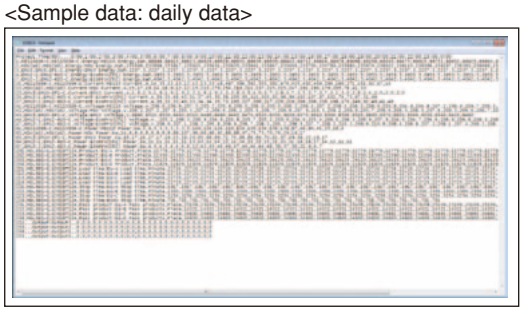
## ⑩ Data File: Easily Collect Measurement Data According to Application

- Upload desired measurement data to a personal computer using existing LAN network equipment.
- Measurement data is saved in CSV format, enabling it to be used in spreadsheet software such as Microsoft Excel.
- Easy to create documents relating to energy-saving activities using this feature.

①Daily data



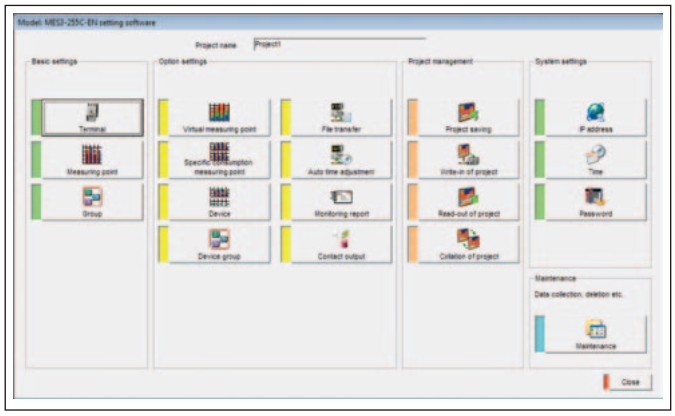
<Sample data: daily data>



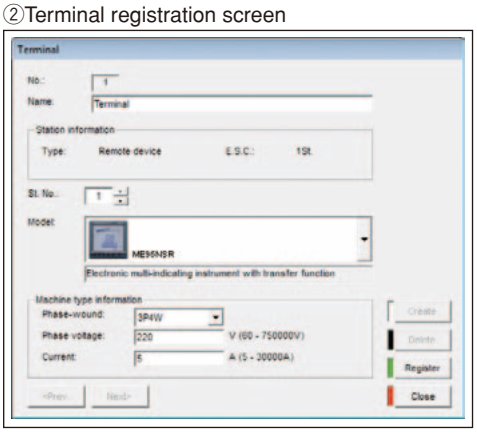
## ⑪ Data Settings: Easily Perform Settings using Mouse Operation

*For data settings, please use the set-up software supplied with the product.

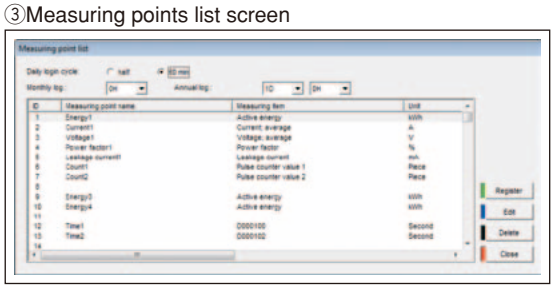
①Main menu screen



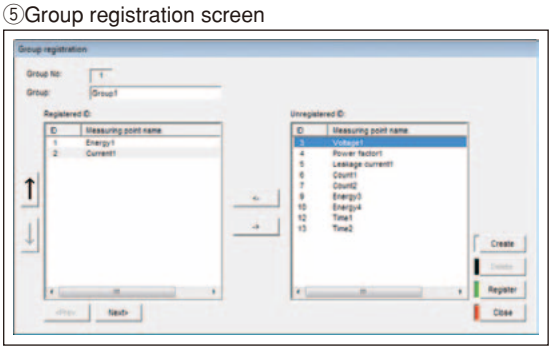
②Terminal registration screen



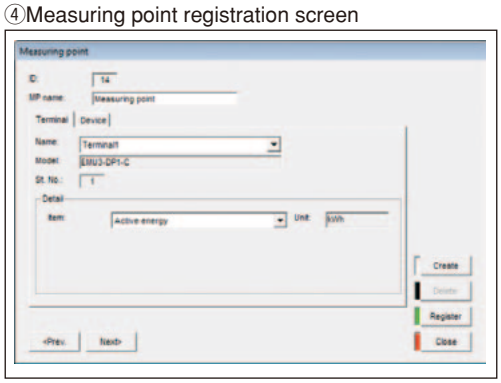
③Measuring points list screen



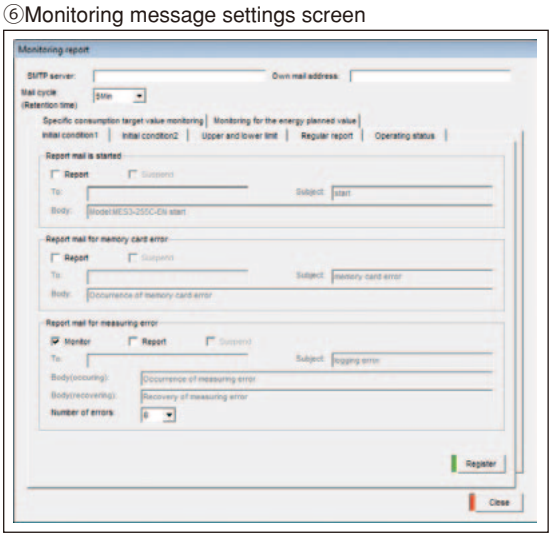
⑤Group registration screen



④Measuring point registration screen



⑥Monitoring message settings screen



# Application Examples

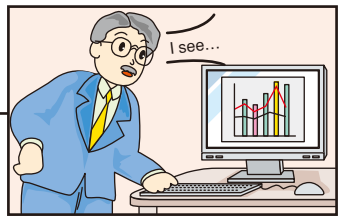
## Factories

Support Energy-saving Activities using “Visible Management”.

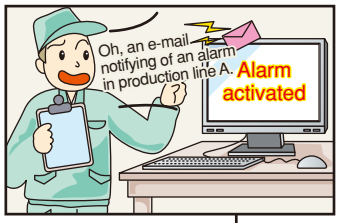
1. Monitor/Manage energy by department
2. Specific consumption-based management of energy-saving activities
3. Monthly/Annual target-based management
4. Monitoring of equipment operating status
5. Manage/Record energy data

In the office…

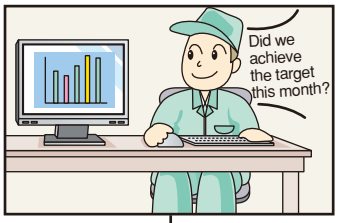
Plant manager…



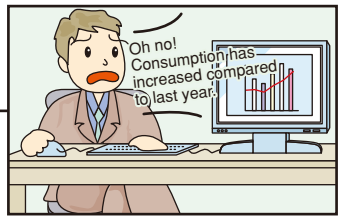

To monitor equipment status…




For target management…




Employees…




LAN(Ethernet)

At production site…

Factory No. 1

CC-Link ← Measurement data

MDU circuit breaker

EcoMonitor Pro

Production Department
- Power/Power consumption
- Power factor
- Consumption of water/steam/air/gas/other
- Specific consumption data
- Production quantity, other

Office

Administration Department
- Air conditioning
- Lighting
- Office automation equipment
- Electrical outlets
- Water/Gas usage

Factory No. 2

CC-Link

Electronic multi-measuring instrument

MDU circuit breaker

Energy measurement unit (EMU3 Series)

EcoMonitor Pro

MELSEC-Q Series programmable controller

Operating status (contact signal)

Production quantity (pulse signal)

Production equipment

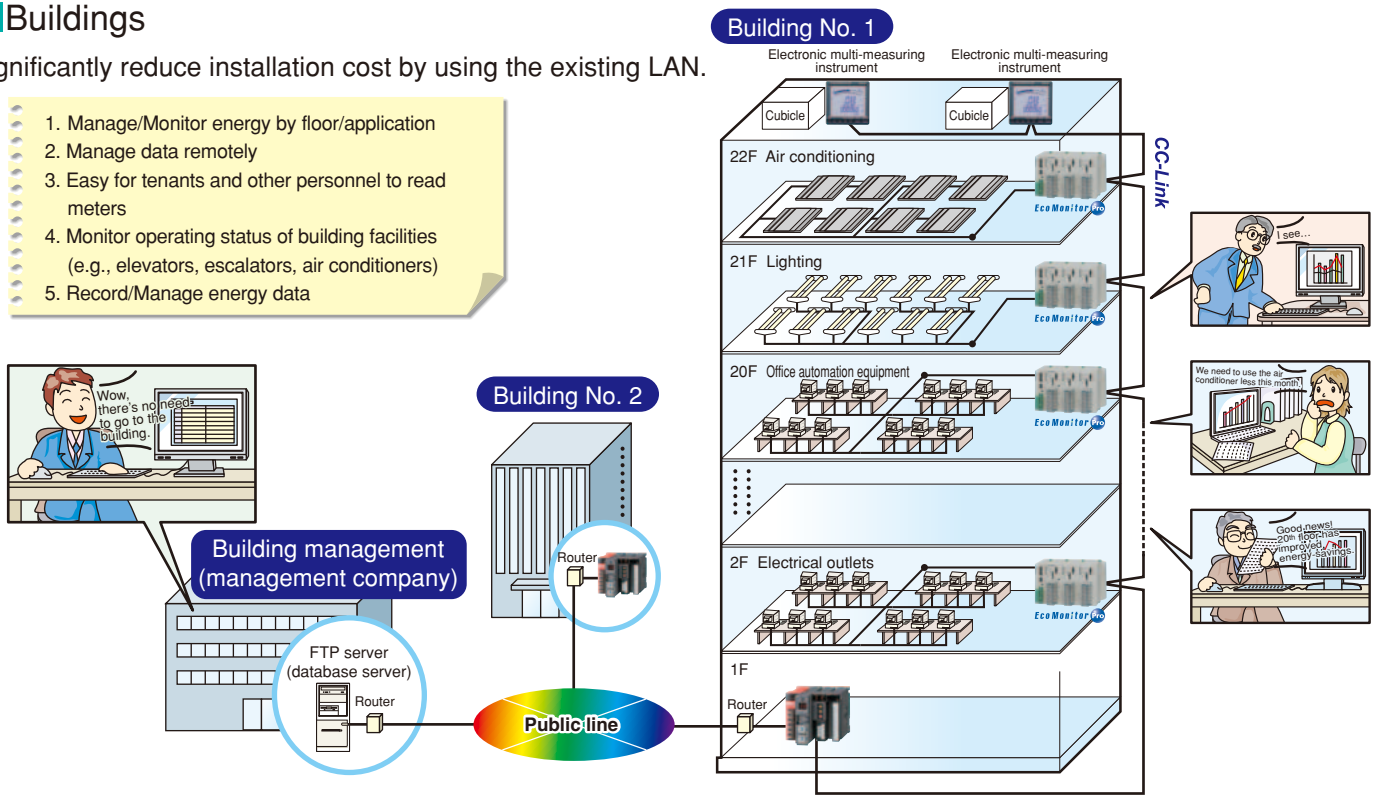
For improvement activities…

# Application Examples

## Buildings

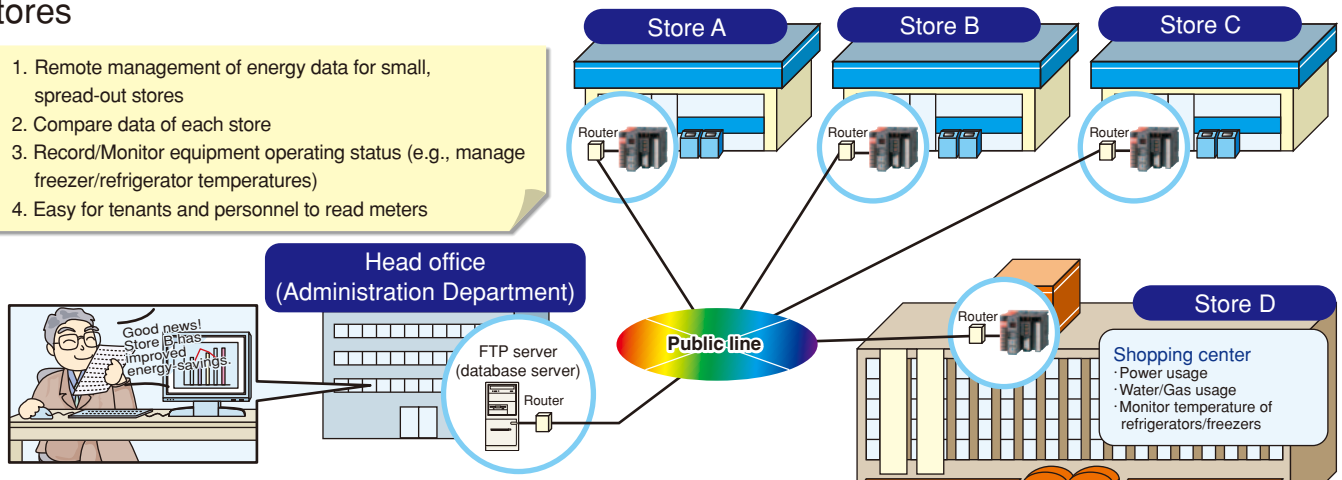
Significantly reduce installation cost by using the existing LAN.

1. Manage/Monitor energy by floor/application
2. Manage data remotely
3. Easy for tenants and other personnel to read meters
4. Monitor operating status of building facilities (e.g., elevators, escalators, air conditioners)
5. Record/Manage energy data




## Stores

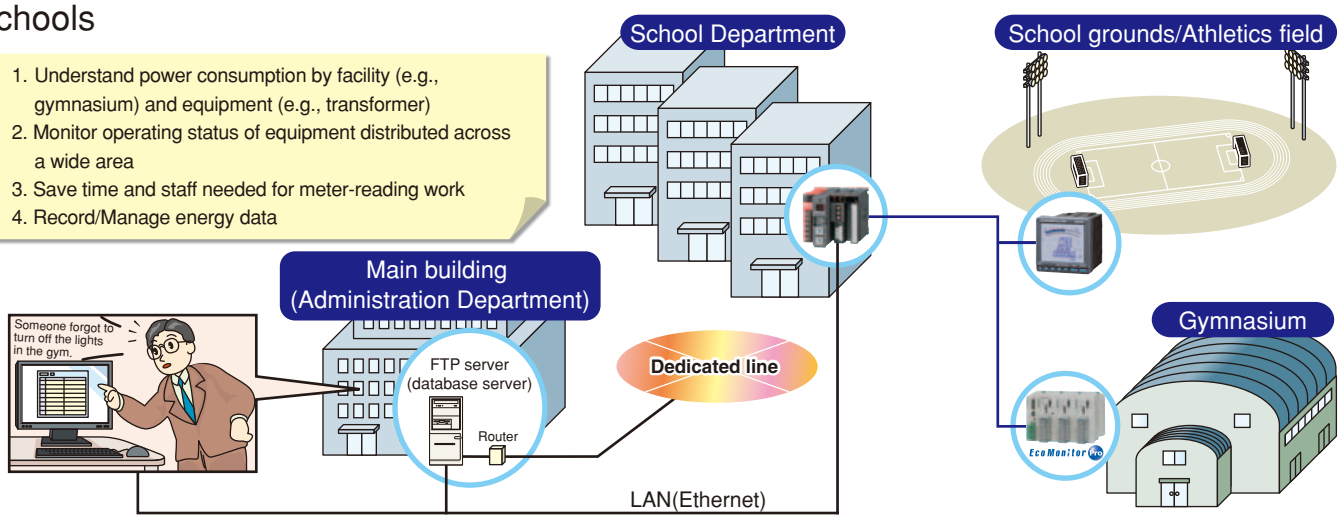
1. Remote management of energy data for small, spread-out stores
2. Compare data of each store
3. Record/Monitor equipment operating status (e.g., manage freezer/refrigerator temperatures)
4. Easy for tenants and personnel to read meters




* When using a public line, a dial-up router is required.
* For use via the Internet, a separate contract with an Internet service provider is required.

## Schools

1. Understand power consumption by facility (e.g., gymnasium) and equipment (e.g., transformer)
2. Monitor operating status of equipment distributed across a wide area
3. Save time and staff needed for meter-reading work
4. Record/Manage energy data



# Specifications

## Hardware Specifications

<table>
<tr><th colspan="3">Item</th><th>Specification</th></tr>
<tr><td rowspan="14">Common</td><td colspan="2">Input power source</td><td>100 to 240VAC (+10%, -15%)</td></tr>
<tr><td colspan="2">Input frequency</td><td>50/60Hz (±5%)</td></tr>
<tr><td colspan="2">Input voltage distortion-factor</td><td>Within 5%</td></tr>
<tr><td colspan="2">Consumption VA</td><td>19VA (110VAC), 25VA (220VAC)</td></tr>
<tr><td colspan="2">Tolerated short interruption time</td><td>Within 20ms (more than 100VAC)</td></tr>
<tr><td colspan="2">Operating ambient temperature</td><td>0 to 55°C</td></tr>
<tr><td colspan="2">Storage ambient temperature</td><td>-25 to +75°C</td></tr>
<tr><td colspan="2">Operating ambient humidity</td><td>5 to 95%RH</td></tr>
<tr><td colspan="2">Storage ambient humidity</td><td>5 to 95%RH</td></tr>
<tr><td colspan="2">Operating environment</td><td>No corrosive gases</td></tr>
<tr><td colspan="2">Operating altitude</td><td>2,000m or lower</td></tr>
<tr><td colspan="2">Installation location</td><td>Inside panel</td></tr>
<tr><td colspan="2">Weight</td><td>0.9kg</td></tr>
<tr><td rowspan="5">Power source section</td><td colspan="2">Fuse</td><td>Built-in (cannot be replaced)</td></tr>
<tr><td rowspan="4">$\overline{\text{ERR}}$ terminal</td><td>Application</td><td>Turns off when the power supply is not input or reset, or when the fuse is disconnected</td></tr>
<tr><td>Rated switching voltage and current</td><td>24VDC, 0.5A</td></tr>
<tr><td>Minimum switching load</td><td>5VDC, 1mA</td></tr>
<tr><td>Service life</td><td>Mechanical: More than 20,000,000 times; Electrical: More than 100,000 times (at rated switching voltage/current)</td></tr>
<tr><td rowspan="9">Server section</td><td rowspan="3">LAN (Ethernet)</td><td>Interface</td><td>10BASE-T/100BASE-TX</td></tr>
<tr><td>Compatible connector</td><td>RJ45</td></tr>
<tr><td>Support functions</td><td>Auto-negotiation function (automatically identifies 10BASE-T/100BASE-TX)<br>Automatic MDIX function (automatically identifies straight/cross cables)</td></tr>
<tr><td rowspan="2">Clock accuracy</td><td>0 to 55°C</td><td>Daily error: -10.89 to +8.64s</td><td rowspan="2">During a blackout, an additional ±0.5s of error may be added.</td></tr>
<tr><td>25°C</td><td>Daily error: -4.32 to +5.25s</td></tr>
<tr><td>Blackout compensation</td><td>Compensation data</td><td colspan="2">Back-up using battery<br>· Clock<br>· Measurement data for the last hour<br>Backs up in non-volatile memory (CompactFlash memory card)<br>· Setting value<br>· Measurement data (except measurement data for the last hour)</td></tr>
<tr><td rowspan="3">Battery</td><td>Storage service life</td><td colspan="2">5 years (raw power, at normal temperature)</td></tr>
<tr><td>Service life in use</td><td colspan="2">
<table>
<tr><th>Current application ratio</th><th>Guaranteed values</th><th>Guaranteed time after a battery error occurs</th></tr>
<tr><td>0%</td><td>13,700hr 1.57yr</td><td rowspan="5">600hr 25d</td></tr>
<tr><td>30%</td><td>19,100hr 2.18yr</td></tr>
<tr><td>50%</td><td>25,800hr 2.96yr</td></tr>
<tr><td>70%</td><td>40,000hr 4.57yr</td></tr>
<tr><td>100%</td><td>43,800hr 5yr</td></tr>
</table>
</td></tr>
<tr><td>Replacement battery model/name</td><td colspan="2">Q6BAT (optional)</td></tr>
<tr><td rowspan="4">CC-Link section</td><td colspan="2">Transmission rate</td><td>156kbps/625kbps/2.5kbps/5Mbps/10Mbps</td></tr>
<tr><td colspan="2">Maximum cable extension<br>(max. transmission distance)</td><td>
<table>
<tr><th>Transmission rate</th><th>Interoffice cable length</th><th>Max. cable extension</th></tr>
<tr><td>156kbps</td><td rowspan="5">20cm or more</td><td>1200m</td></tr>
<tr><td>625kbps</td><td>900m</td></tr>
<tr><td>2.5Mbps</td><td>400m</td></tr>
<tr><td>5Mbps</td><td>160m</td></tr>
<tr><td>10Mbps</td><td>100m</td></tr>
</table>
</td></tr>
<tr><td colspan="2">Maximum no. of units connected</td><td>64 provided that the following conditions are met<br>1.Total no. of offices<br>a+b×2+c×3+d<br>a: 1 office occupied units, b: 2 offices occupied units, c: 3 offices occupied units, d: 4 offices occupied units<br>2.No. of units connected<br>16×(A+D)+54×B+88×C≤2304<br>A: Remote I/O office units ···Up to 64<br>B: Remote device office units ···Up to 42<br>C: Local office and intelligent device office units ···Up to 26<br>D: Reserved office units*<br>*Unregistered office numbers from Office No. 1 to highest office number are included in the unit count reserved offices.</td></tr>
<tr><td colspan="2">Connection cable</td><td>CC-Link Ver1.10-compliant cable</td></tr>
<tr><td rowspan="5">Contact output section</td><td colspan="2">Output points</td><td>16</td></tr>
<tr><td colspan="2">Insulation system</td><td>Relay insulation</td></tr>
<tr><td colspan="2">Rated switching voltage/current</td><td>24VDC 2A (resistance load)<br>240VAC 2A (COSϕ = 1) for 1 point, 8A for 1 common</td></tr>
<tr><td colspan="2">Minimum switching load</td><td>5VDC 1mA</td></tr>
<tr><td colspan="2">Maximum switching load</td><td>264VAC 2A, 125VDC 2A</td></tr>
<tr><td colspan="2">Service life</td><td>Mechanical: More than 20,000,000 times; Electrical: More than 100,000 times (at rated switching voltage/current)</td></tr>
</table>

# Software Specifications

| Item | | | Specification | |
|---|---|---|---|---|
| Recommended operating environment | OS | | Microsoft Windows® 7 | |
| | Browser | | Internet Explorer® 8, 9 | |
| | JavaVM | | Oracle JRE (JDK) Ver. 6 | |
| No. of measuring points | Total measuring points | | 255 (including a max. of 32 operation monitoring points) | |
| | Virtual measuring points | | 128 | |
| | Specific consumption measuring points | | 64 | |
| | Equipment points | | 42 | |
| Logging functions | Zoom/Daily/Monthly/Annual | | Collect data for: every minute, every hour or 30 minutes, a specified hour once a day, a specified hour on a specified day every month | |
| Computation functions | Daily | Virtual measuring points | Basic arithmetic operations for up to 16 operands with parentheses | Computes the data collected for every hour or 30 minutes |
| | | Specific consumption measuring points | Divides the energy consumed by production quantity (specify measuring points or virtual measuring points) | |
| | Monthly | Virtual measuring points | Basic arithmetic operations for up to 16 operands with parentheses | Computes the data collected for the specified hour once a day |
| Storage functions | Zoom/Daily/Monthly/Annual | | Data for 62d/186d/60mo/5yr | Stores data on a CompactFlash memory card |
| | Specific consumption measuring points | | Data for 186d (daily only) | |
| | Virtual measuring points | | Data for 186d (daily)/60mo (monthly) | |
| | Operation history | | Records the operation monitoring input on/off switching data for each operation monitoring point (64KB × 4 × No. of operation monitoring points) | |
| Forwarding function | Zoom/Daily/Monthly | | Forwards hourly/daily data once every hour, and monthly data at the specified time once every day | Automatically forwards data to the specified FTP server |
| Display functions | Zoom | Power/No. of pulses | Bar graph: Consumption for every minute | Displays the data for the hour before and after each minute<br>Simultaneously displays data for two days or two measuring points |
| | | Analog value | Line graph: Measurement value | |
| | | Analog value (power factor) | Line graph: Measurement value | Simultaneously displays the data for two days for the hour before and after each minute |
| | Daily | Virtual measuring points for power/no. of pulses | Bar graph: Consumption for every minute<br>Line graph: Cumulative value for the specific consumption and energy use for every hour or 30 minutes. | Displays the daily data for every hour or 30 minutes<br>Simultaneously displays the data for two days or for two measuring points |
| | | Analog value | Line graph: Measurement value | |
| | | Analog value (power factor) | Line graph: Measurement value | Simultaneously displays the data for two days for every hour or 30 minutes |
| | | Equipment | Bar graph: Consumption for every hour or 30 minutes | Displays the data for every hour or 30 minutes for the specified day |
| | | Specific consumption | Bar graph: Production quantity and energy consumed for every hour or 30 minutes<br>Line graph: Cumulative value for the specific consumption and energy consumed for every hour or 30 minutes | Simultaneously displays the data for two days for every hour or 30 minutes |
| | Weekly | Specific consumption | | Simultaneously displays the data for seven days for every hour or 30 minutes |
| | Monthly | Virtual measuring points for power/no. of pulses | Bar graph: Consumption for every day<br>Line graph: Cumulative value for consumption, and daily cumulative planned value | Displays the data for every day for one month, and simultaneously displays the data for two months or two measuring points |
| | Annual | Power/No. of pulses | Bar graph: Consumption and planned values for every month<br>Line graph: Cumulative consumption and planned values | Displays data for every month for one year<br>Simultaneously displays data for five years or two measuring points |
| | Present values (group) | | Displays the present values for measuring points registered in a group (up to 32 groups and up to 255 points per group) as a cumulative value or the difference from the previous hour, day or month<br>Displays up to 10 measuring points per screen | |
| | Present values (optional) | | Displays the present values for measuring points added to up to 10 display list files as a cumulative value or the difference from the previous hour, day, or month.<br>Displays up to 10 measuring points per screen | |
| Monitoring functions | Email notification | Errors | Server start-up (reset), CompactFlash memory card read/write errors, measurement errors, file transfer errors, automatic time adjustment errors, and battery errors | |
| | | Upper/Lower limits | Issues alarm for values more/less than upper/lower limits at up to 32 measuring points (analog values) | |
| | | Planned energy values | Monitors actual daily values and compares them to up to 255 preset planned energy values (monthly) | |
| | | Specific consumption target values | Monitors actual hourly values for up to 64 preset specific consumption target values | |
| | | Operation | Monitors status changes at up to 32 operation monitoring points | |
| | | Periodic notification | Sends up to eight kinds of messages once every day, week or month; each message can be set to be sent at a specified time or to a specific address | |
| | Contact output | Errors | Server startup (reset), CompactFlash memory card read/write errors, measurement errors, file transfer errors, automatic time adjustment errors, and battery errors | |
| | | Upper/Lower limits | Issues alarm for values more/less upper/lower limits at up to 32 measuring points (analog values) | |
| | | Planned energy values | Monitors actual daily values for up to 255 preset planned energy values (monthly) | |
| | | Specific consumption target values | Monitors actual hourly values for up to 64 preset specific consumption target values | |
| | | Operation | Linked to the status of up to 32 operation monitoring points | |
| Maintenance functions | Planned/Target value setting | | Sets the monthly planned energy values and specific consumption target values for the calendar or fiscal year | |
| | Time setting | | Reads and sets the current data and time | |
| | IP address setting | | Sets the IP address, subnet mask, gateway address, and DNS address (up to three) | |

# Main Unit Specifications

**7-segment LED display**
Displays an error code when an error is detected. In addition, in IP address display mode, the set IP address is displayed at start-up.

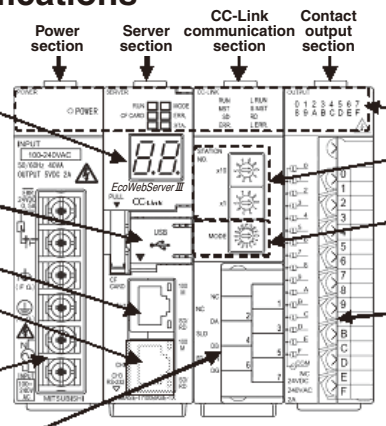
**USB interface**
Not used.

**LAN interface CH1**

**LAN interface CH2**
Not used. Leave the cap on.

**Power terminal block**
Connect power source*2

**CC-Link terminal block**
Connect CC-Link communication cable



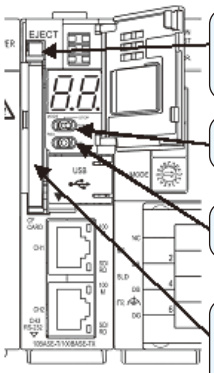

**LED display**

**CC-Link transmission speed setting switch**

**CC-Link station number setting switch**

**Contact output terminal block**
Closed when the conditions of the monitoring function are met. Connect external equipment such as buzzers and lamps.

(The illustration shows the unit with the server section cover open)




**CompactFlash memory card eject button**
Press this button to eject the CompactFlash memory card.

**Mode/Stop/Run switch**
Usually used in Run status.

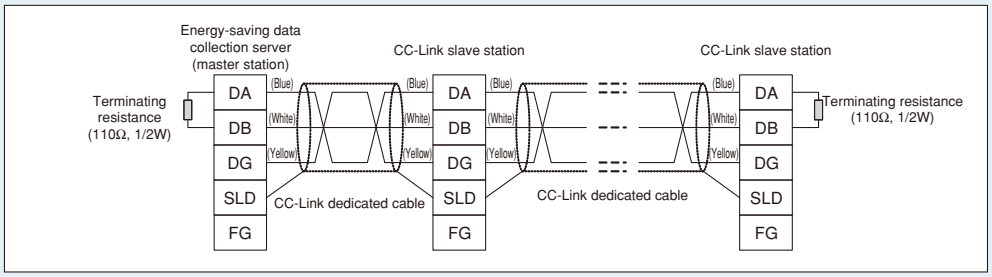
**Reset/Select switch**
Used to reset the main unit.

**CompactFlash memory card**
Contains program to collect and display data. Stores collected data.*1

Notes *1 Ensure that the CompactFlash memory card is inserted when using the unit. Removing the memory card when turning on the power or accessing it may cause abnormal operation. Before removing the card from the memory card slot, ensure that the Reset/Select switch is set to Select, and that it is performed after the CF Card LED turns off and after the power is turned off.
*2 Only connect power sources of 100 to 240VAC (+10%, -15%), 50 to 60Hz. Using other power sources may cause a failure.

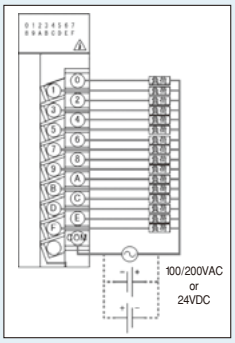
# Connection Diagram

## CC-Link communication section (when this product is a terminal)



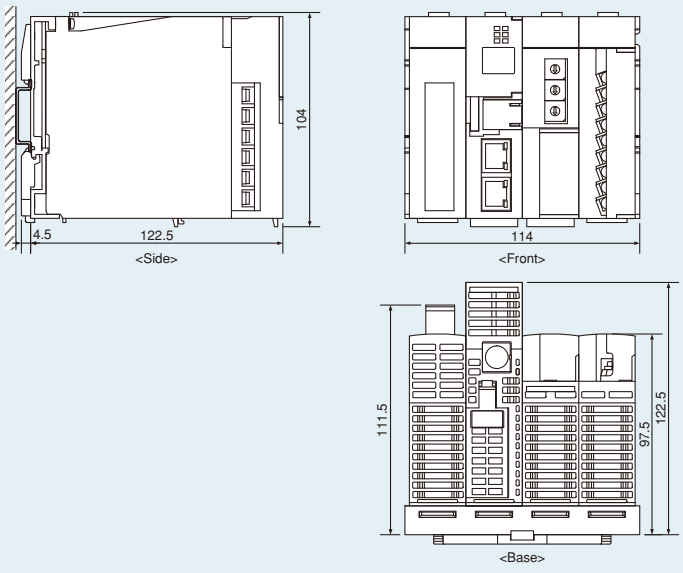

* When this unit is not a terminal in a CC-Link communication line, connect terminating resistances (110Ω) at the terminals at both ends. When it is a terminal, terminating resistance is not required.

## Contact output section




# External Dimensions

### Energy-saving data collection server (MES3-255C-EN) main unit



# Safety Precautions

## 1. Safety Precautions to be Followed at all Times

### Operating Environment/Conditions

Using this product in any of the following environments may cause a malfunction or reduce service life. Do not use in environments where:

- Ambient temperature is outside the range of 0 to 55°C.
- Daily average daily temperature exceeds 35°C.
- Relative humidity is outside the range of 5 to 95%, or where condensation occurs.
- The altitude is higher than 2,000m above sea level.
- There is excessive dust, corrosive gas, salt-saturated air or oily smoke.
- The unit is subject to excessive vibration or physical shock.
- The unit is exposed to rain or drops of water.
- The unit is exposed to direct sunlight.
- There are pieces of metal or inductive substances nearby.
- There is a strong electromagnetic field or excessive external electrical noise interference.

### Installation/Mounting

Be sure to read the user's manual before installing/mounting the unit.

**⚠CAUTION**

- For safety, the unit installation and all wiring connections should be performed by a qualified electrician.
- Be careful of the sharp, metal edges; they may cause injury.
- When tightening screws or connecting wiring, be sure that small particles or cut pieces of electrical wiring do not get inside the unit.
- Check the wiring diagram carefully before making connections. Incorrect connections may cause a malfunction, fire or electric shock.
- Do not perform wiring work using live circuits. Doing so may cause a malfunction, fire or electric shock.
- Use electrical wires of appropriate size. Not doing so may cause a fire due to the heat generated.
- Use a solderless terminal that matches the size of the electrical wire. Not doing so may result in disconnected wires or improper electrical contact, thereby causing a malfunction, failure, burnout or fire.

| Location | Wire size | Compatible solderless terminal |
|---|---|---|
| Power source terminal block | 0.75 to 2mm$^2$ | RAV1.25 to 3.5<br>RAV2 to 3.5 |
| CC-Link communication terminal block | Ver. 1.10-compatible CC-Link dedicated cable | R1.25 to 3 |
| Contact output terminal block | 0.3 to 0.75mm$^2$ | R1.25 to 3<br>(cannot use solderless terminal with sleeve) |

- Be sure to check that all screws have been tightened. Not doing so may cause a malfunction, failure, burnout or fire.
- Tighten screws to the specified torque. Excessive tightening may cause damage to the terminal and/or screws. Lack of tightening may cause a malfunction, fire or electric shock.

| Location | | Tightening torque |
|---|---|---|
| Terminal screws for the power source terminal block | (M3.5 screw) | 0.8 to 1.0N·m |
| Terminal screws for the CC-Link communication terminal block | (M3 screw) | 0.42 to 0.58N·m |
| Mounting screws for the CC-Link communication terminal block | (M3.5 screw) | 0.66 to 0.89N·m |
| Terminal screws for the contact output terminal block | (M3 screw) | 0.42 to 0.58N·m |
| Mounting screws for the contact output terminal block | (M3.5 screw) | 0.66 to 0.89N·m |
| Unit attachment screws | (M3 × 12 screw) | 0.36 to 0.48N·m |

- Be sure to check that the terminal cover has been attached. Not doing so may cause an electric shock.
- To prevent induction noise, control wires/communication cables should not be installed close to power lines (cables should be separated by a distance of at least 100mm).
  Avoid installation inside a panel where high-voltage equipment is used.
  Use a surge protector for equipment that tends to generate electrical noise.
- Connect both ends of the shielding wire for the CC-Link communication cable to the "SLD" terminal of each unit.
  The "SLD" and "FG" terminals of each unit are connected inside the unit.
  In addition, be sure to insulate the shield with vinyl tape or other means.
- During actual use conditions, for "FG" use Class-D grounding (dedicated grounding).
- Do not connect the FG terminal to a box (ground) when conducting the withstand voltage test or insulation resistance test.

### Preparations Before Use

- Be sure that the installation location complies with the operating environment/conditions.
- This product must be configured correctly before use. Not doing so may cause a malfunction.
- Confirm the power source rating of the product.
- Remove the dust-resistant seal after completing installation and wiring.
  Not doing so may cause a malfunction due to the heat generated.
- This product is equipped with a lithium battery. As the battery is not connected at the time of shipping, please connect it before use.

### Regarding Usage

- Use only within rating range specified in this document. Not doing so may cause a malfunction, failure, fire or burnout.
- An IP address and other settings are required to connect this product to a network (Ethernet). Before use, use the accompanying set-up software to perform these settings.
- The factory default settings are:

IP address = 192.168.3.3, subnet mask = 255.255.255.0, gateway = none

No setting changes are required for a one-on-one connection to a personal computer.

- Product has a built-in clock. Before use, use the accompanying set-up software to set the present date and time.
- Before use, be sure to check that there are no live circuits or bare wires in the vicinity of the product.
  If a live circuit or bare wire is found during use, stop operation immediately and take appropriate measures, such as providing insulation protection.
- Please consult with a Mitsubishi Electric representative when considering the application of this product with machinery or systems designed for specialized use such as nuclear power, aerospace/outer space, medical, or passenger transportation vehicles (refer to the end of this document for details).

**⚠CAUTION** ● Do not disassemble or modify product for use. Doing so may cause a failure, electrical shock or fire.

### Maintenance/Inspections

- Use a soft, dry cloth to wipe dust/dirt from the surface.
- Do not use pre-treated wipes to clean the surface, and do not use benzene, thinner or alcohol.
- Conduct inspections as follows to ensure correct use of the product and a long service life.
  In particular, check ① to ③ at least once or twice every six months as part of the daily inspection.
  Check ④ once a year.
  Check for: ①Product damage, ②LED display abnormalities, ③Abnormal noises, odors or heat generation,
  ④Loose connectors, mounting or terminal block connections (be sure to turn off the power before performing inspections).

**⚠CAUTION** ● Be sure to turn off the power before checking for loose connectors, mounting or terminal block connections.

### Storage

- When storing this product, turn off the power, disconnect the wiring, and place it in a plastic bag.
- When turning the power off for long periods of time, remove the connector for the battery.
  (The cumulative power outage compensation time of the battery is up to 13,700 hours [1.57 years].)
- Storage of the product in one of the environments described below may cause a malfunction or reduce service life. Do not store units for long periods of time in environments where:

| | |
|---|---|
| ● Ambient temperature is outside the range of -25 to +75°C.<br>● Average daily temperature exceeds 35°C.<br>● Relative humidity is outside the range of 5 to 95%, or where condensation occurs.<br>● There is excessive dust, corrosive gas, salt-saturated air or oily smoke.<br>● The unit is subjected to excessive vibration or physical shock. | ● The unit is exposed to rain or drops of water.<br>● The unit is exposed to direct sunlight.<br>● There are pieces of metal or inductive substances nearby.<br>● There is a strong electromagnetic field or excessive external electrical noise interference. |

### Disposal

- Dispose of this product following relevant laws and/or guidelines.
- This product is equipped with a lithium battery. Please dispose of it according to relevant laws and/or guidelines.

**⚠CAUTION** ● The lithium battery may still have electrical capacity after it is removed. Store it separately from other metals, as contact with other metals may cause the generation of heat, rupture or fire.

## 2. Precautions Regarding Software Use

- Mitsubishi Electric does not guarantee or provide support for FTP or SMTP server operations.
  Additionally, Mitsubishi Electric does not provide technical support for individual servers.
- Please be aware that Mitsubishi Electric does not provide network support. Please contact the network administrator.
- Please be aware that Mitsubishi Electric does not provide support regarding personal computer hardware, operating systems or operations.
  Please contact the manufacturer or administrator.
- After using the set-up software to modify display settings (e.g., a measuring point name), be sure to close and restart the web browser.
  Not doing so may cause the changes not to take effect due to the web browser's caching function.

**⚠CAUTION** ● For monitoring of operating status, do not use measures such as inputting alarms that require an emergency response. Doing so may lead to an accident.

## 3. Trademarks

- Windows®, Windows® 7 and Internet Explorer® are trademarks or registered product trademarks of Microsoft Corporation in the U.S.A. and other countries.
- Java and all Java related trademarks and logos are registered trademarks of the Oracle Corporation and its subsidiaries and affiliates in the U.S.A. and other countries.
- CompactFlash™ and CF are trademarks of SanDisk Corporation.
- Ethernet is a registered trademark of Fuji Xerox Co., Ltd.
- EcoWebServer is a registered trademark of Mitsubishi Electric Corporation.
- Other company names and product names are registered trademarks or trademarks of their respective companies.

# Mitsubishi Electric Energy-saving Data Collection Server

## Service Network

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|---|---|---|---|
| Australia | Mitsubishi Electric Australia Pty. Ltd. | 348 Victoria Road, Rydalmere, N.S.W. 2116, Australia | +61-2-9684-7777 |
| USA | Mitsubishi Electric Automation Inc. | 500 Corporate Woods Parkway Vernon Hills, IL 60061, USA | +1-847-478-2100 |
| Brazil | MELCO-TEC Rep. Com. e Assessoria Tecnica Ltda. | Av. Paulista, 1439-Cj.72, Cerqueira Cesar CEP 01311-200, Sao Paulo, SP, CEP:01311-200, Brazil | +55-11-3146-2200 |
| Chile | Rhona S.A. | Agua Santa 4211 P.O. Box 30-D Vina del Mar, Chile | +56-32-2-320-600 |
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| Colombia | Proelectrico Representaciones S.A. | Carrera 53 No 29C-73 - Medellin, Colombia | +57-4-235-30-38 |
| Egypt | Cairo Electrical Group | 9, Rostoum St. Garden City P.O. Box 165-11516 Maglis El-Shaab, Cairo - Egypt | +20-2-27961337 |
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| India | Mitlite Electric Company Pvt Ltd | Plot No-32, Sector-6, IMT Maneser, | +91-124-4695300 |
| Indonesia | P. T. Sahabat Indonesia | P.O.Box 5045 Kawasan Industri Pergudangan, Jakarta, Indonesia | +62-(0)21-6610651-9 |
| Korea | Mitsubishi Electric Automation Korea Co., Ltd | 1480-6, Gayang-Dong, Gangseo-Gu, Seoul, Korea | +82-2-3660-9572 |
| Laos | Societe Lao Import Co., Ltd. | 43-47 Lane Xang Road P.O. BOX 2789 VT Vientiane Laos | +856-21-215043 |
| Lebanon | Comptoir d'Electricite Generale-Liban | Cebaco Center - Block A Autostrade Dora, P.O. Box 11-2597 Beirut - Lebanon | +961-1-240445 |
| Malaysia | Mittric Sdn Bhd | 5 Jalan Pemberita U1/49, Temasya Industrial Park, Glenmarie 40150 Shah Alam, Selangor, Malaysia | +603-5569-3748 |
| Myanmar | Peace Myanmar Electric Co.,Ltd. | NO137/139 Botataung Pagoda Road, Botataung Town Ship 11161, Yangon, Myanmar | +95-(0)1-202589 |
| Nepal | Watt & Volt House | KHA 2-65, Volt House Dillibazar Post Box: 2108, Kathmandu, Nepal | +977-1-4411330 |
| Middle East Arab Countries & Cyprus | Comptoir d'Electricite Generale-International-S.A.L. | Cebaco Center - Block A Autostrade Dora P.O. Box 11-1314 Beirut - Lebanon | +961-1-240430 |
| Pakistan | Prince Electric Co. | 1&16 Brandreth Road, Lahore-54000, Pakistan | +92-(0)42-7654342 |
| Philippines | Edison Electric Integrated, Inc. | 24th Fl. Galleria Corporate Center, Edsa Cr. Ortigas Ave., Quezon City Metro Manila, Philippines | +63-(0)2-634-8691 |
| Saudi Arabia | Center of Electrical Goods | Al-Shuwayer St. Side way of Salahuddin Al-Ayoubi St. P.O. Box 15955 Riyadh 11454 - Saudi Arabia | +966-1-4770149 |
| Singapore | Mitsubishi Electric Asia Pte. Ltd. | 307, Alexandra Road, #05-01/02 Mitsubishi Electric Building, Singapore 159943 | +65-6473-2308 |
| South Africa | CBI-electric: low voltage | Private Bag 2016, Isando, 1600, South Africa | +27-(0)11-9282000 |
| Taiwan | Setsuyo Enterprise Co., Ltd | 6th Fl., No.105, Wu Kung 3rd, Wu-Ku Hsiang, Taipei, Taiwan, R.O.C. | +886-(0)2-2298-8889 |
| Thailand | United Trading & Import Co., Ltd. | 77/12 Bamrungmuang Road, Klong Mahanak, Pomprab Bangkok Thailand | +66-223-4220-3 |
| Uruguay | Fierro Vignoli S.A. | Avda. Uruguay 1274, Montevideo, Uruguay | +598-2-902-0808 |
| Venezuela | Adesco S.A. | Calle 7 La Urbina Edificio Los Robles Locales C y D Planta Baja, Caracas - Venezuela | +58-212-241-9952 |
| Vietnam | CTY TNHH-TM SA GIANG | 10th Floor, Room 1006-1007, 255 Tran Hung Dao St., Co Giang Ward, Dist 1, Ho Chi Minh City, Vietnam | +84-8-8386727/28/29 |

**For Safety :** Please read the instruction manual carefully before using the products in this catalog. Wiring and connection must be done by the person have a specialized knowledge of electric construction and wiring.

eco Changes **for a greener tomorrow**

Eco Changes is the Mitsubishi Electric Group's environmental statement, and expresses the Group's stance on environmental management. Through a wide range of businesses, we are helping contribute to the realization of a sustainable society.

**MITSUBISHI ELECTRIC CORPORATION**
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