1. Features

- This unit is a device to control equipment load by contact output and analog output.
- Control status information can be transmitted to external monitoring systems through MODBUS RTU communication.
- MODBUS is a trademark of Schneider Electric USA Inc.
- If it is necessary to do so via other communication standards, prepare the option unit.
- Energy saving control can be easily realized by combining a measuring function and control function.
- This unit does not have the measuring function. To combine with the measuring function, use the extension unit.
- Writing settings in this unit from Knowledge Engineering Tool (Model: EMU4-KNET) enables the control.
- The Knowledge Engineering Tool can be downloaded for free from the Mitsubishi Electric Global Site.

The unit can be updated to the latest version by using Knowledge Engineering Tool (Model: EMU4-KNET).

2. Checking package contents

- The following items are included in the package of the product. When unpacking your package, check all the contents:
  (1) Energy Measuring Unit x1
  (2) User's Manual (Digest) x 1
  (3) Lithium battery (Model:EMU4-BT) x 1 (Stored in the battery cover)

3. Safety Precautions

For personal and product safety, be sure to read and observe the precautions in this manual.

3.1 Precautions for Operating Environment and Conditions

- Do not use the product in the environments listed below. Failure to follow the instruction may cause a malfunction or life reduction of the product.
  - The ambient temperature exceeds the range -5 to +55°C.
  - Exposed to strong magnetic fields or large excess noise
  - Exposed to excessive static or impact
  - Metal fragments or conductive substances are scattered.
  - Exposed to rain or water droplets.
  - The relative humidity exceeds the range 30 to 85% RH, or Condensing
  - The Ambient temperature exceeds +30°C.

3.2 Precautions for preparation before use

- Observe the use environment and conditions for installation place.
- This unit has a built-in lithium battery. If you connect it to a product when shipped from the factory, Connect the battery before use.
- To set up the unit, Knowledge Engineering Tool (Model: EMU4-KNET) is necessary. For the setting method, refer to the User’s Manual (Details).

3.3 Installation and wiring Precautions

- This unit is a device to control equipment load by contact output and analog output.
- The lithium battery is disposed of according to the local regulation.
- The ambient temperature exceeds the range -5 to +55°C. The average daily temperature exceeds +35°C.
- When you turn off the power supply while the BAT LED is on, present time data is deleted. If the BAT LED lights up, replace the battery. For the replacement method, refer to the User’s Manual (Details).

4. Name and function of each part

5. 4.1 Name of each part

5. 4.2 Indication functions of LEDs

6. Optional products connectable to this unit

7. Conclusion

8. About packaging materials and this manual

- Used only for the supply of power. When the BAT LED is lighted, the battery is not connected to the product.
- The FG terminal must be grounded with D-type grounding. (The ground resistance is less than 100 Ω.)
- ADVANCED can be connected to the product to increase the communication function of this unit.
- Optional products connectable to this unit are as follows.
- The symbols in this manual are as follows.
- [Note] This symbol mark is for EU countries only.
6. Attaching and removing the unit

7. Connect the lithium battery

Caution
- When connecting the lithium battery, work under the electric outage condition. Failure to follow the instruction may cause an electric shock, a failure of the unit, or a fire.

1. Slide the battery cover downward to open it.
2. Lift the bottom of the unit attachment plate into the attachment plate.
3. Push into the IEC rail stopper upward.

7.2 Wiring

Follow the wiring diagram for external connections of the unit.

7.3 How to connect wires

- Auxiliary power supply terminals, MODBUS RTU communication terminal
- Use applicable crimp-type terminals. The applicable crimp-type terminals are shown in the table below.
- Use applicable electric wires and tighten the terminal screws with a specified torque as listed below.

<table>
<thead>
<tr>
<th>Auxiliary wire</th>
<th>Applicable crimp-type terminals</th>
</tr>
</thead>
<tbody>
<tr>
<td>AWG22 to 16</td>
<td>M9506-06-2F</td>
</tr>
<tr>
<td>AWG14 to 10</td>
<td>M9506-08-2F</td>
</tr>
<tr>
<td>AWG12 to 8</td>
<td>M9506-10-2F</td>
</tr>
</tbody>
</table>

4. The figure below is an example using EMU4-CNT-MB.

Wire with crimp type terminals.

• Insert the wires as deep as possible into the terminal block. The conductive part should not be outside the terminal block.

6. Attaching and removing the unit

- When attaching and detaching wires to/from the terminal block, use the push button. After inserting the wires, check that the wires are securely inserted.

- Use applicable electric wires as shown below.

<table>
<thead>
<tr>
<th>Auxiliary wire</th>
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</tr>
</tbody>
</table>

8. Dimensions

EMU4-CNT-MB

EMU4-BT (Optional consumables)

Unit [mm]

9. Specification

9.1 Control Unit

- Auxiliary power supply specification
- Consumption VA
- Input/output component
- Input/output component

9.2 Knowledge Engineering Tool

- Knowledge Engineering Tool is software to install on a PC for use. The following table shows the required environment for use:

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

9.3 Control Unit

- AUXILIARY POWER SUPPLY TERMINALS
- MODBUS RTU COMMUNICATION TERMINAL

10. Combined harmful substances

- The warranty period is for 1 year after the date of your purchase or 18 months after manufacturing, whichever is earlier. However, even during the warranty period, repair shall be charged in the case that failures occur due to customer's intent or operation.
- Check that ALM A1 LED and ALM A2 LED lighting is off. If ALM A1 LED and ALM A2 LED lighting show that errors occur
- If the unit is used in a manner not specified by the manufacturer, the protection provided by the unit may be impaired.
- Our company shall not be liable to compensate for any loss arising from events not attributable to our company, opportunity loss or loss of earning of the customer due to failure of the product, loss, secondary loss, or accident caused by a special reason regardless of our company's predictability. Damage to other products besides our products, or other operations not caused by the products, not attributable to our company, opportunity loss or loss of earning of the customer due to failure of the product, loss, secondary loss, or accident caused by a special reason regardless of our company's predictability. Damage to other products besides our products, or other operations not caused by the products, not attributable to our company, opportunity loss or loss of earning of the customer due to failure of the product, loss, secondary loss, or accident caused by a special reason regardless of our company's predictability.