MITSUBISHI Electronic Multi-Measuring Instrument

Types
ME110SSR  ME110SSR-C
ME110SSR-4AP  ME110SSR-CH
ME110SSR-4APH  ME110SSR-MB
ME110SSR-4A2P

Safety precaution

Always read these instructions before using this equipment.

For personnel and product safety, please read the contents of these operating instructions carefully before using.

Indicates that incorrect handling may cause hazardous conditions.

Always follow the instructions because they are important to personal safety. Otherwise, it could result in electric shock, fire, erroneous operation, and damage of the instrument.

Normal service conditions

Use the instrument in an environment that meets the Normal service conditions as follows:
- Ambient temperature: 5 to 50°C, average day temperature exceeds 35°C
- Humidity: 30~85%RH, non-condensing
- Altitude: 1000m or less
- Pollution Degree: 2
- Atmosphere without corrosive gas, dust, salt, oil mist.
- A place without excessive shocks or vibration.
- Do not expose to rain and water drips.
- Do not expose to direct sunlight.
- An area in where are no pieces of metal and an inductive substance dispersive.
- Do not expose to strong electromagnetic field and ambient noises.

Installation instructions

This instrument must be operated and used only by a qualified electrician.
- The instrument must not be powered and used until its definitive assembly on the cabinet’s door.
- Verify the following points;
  - Auxiliary power supply and Measuring ratings

<table>
<thead>
<tr>
<th>Auxiliary power supply</th>
<th>Measuring ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-240V AC+10-15% (50-60Hz)</td>
<td>10VA</td>
</tr>
<tr>
<td>100V DC+40-25% 6W</td>
<td></td>
</tr>
<tr>
<td>Voltage</td>
<td>277V AC phase to neutral / 480V AC phase to phase</td>
</tr>
<tr>
<td>Current</td>
<td>5A or 1A (Via current transformer)</td>
</tr>
<tr>
<td>Frequency</td>
<td>50/60Hz</td>
</tr>
</tbody>
</table>

- Current circuits, C1, C2 and C3 are Measurement category I.
- Voltage circuits, P1, P2 and P3 are Measurement category III.
- The instrument is to be mounted on panel. All connections keep inside the cabinet.
- Tighten the terminal screws with the specified torque and use the suitable pressure connectors and suitable wire size.
- When wiring in the instrument, be sure that it is done correctly by checking the instrument’s wiring diagrams.
- Be sure there are no foreign substances such as sawdust or wiring debris inside the instrument.
- Do not drop this instrument from high places. If you drop it and the display is cracked, do not touch the liquid crystal and get it in your mouth. When touch the liquid crystal, wash it away at once.
- In order to prevent invasion of noise, do not bunch the control wires or communication cables with the main circuit or power wire, or install them close to each other. Keep the distance between communicational signal lines, input signal lines and power lines, high voltage lines are shown below, when run parallel to each other.

<table>
<thead>
<tr>
<th>Conditions</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 600V, or 600A power lines</td>
<td>30cm or more</td>
</tr>
<tr>
<td>Other power lines</td>
<td>60cm or more</td>
</tr>
</tbody>
</table>

Operation instructions

- When the external terminals are connected to the external equipments, the instrument and the external equipments must not be powered and used until its definitive assembly on the cabinet’s door.
- The rating of the terminal of the external equipment should satisfy the rating of the external terminal of this instrument. (See Specifications.)

Maintenance instructions

- Do not touch the terminals while all the circuits connected to this instrument are alive.
- Do not disassemble or modify the instrument.
- Do not contact a chemical dust cloth contact the instrument for a long time, or do not wipe it with benzene, thinner, alcohol.
- Wipe dirt on surface with a soft dry cloth.
- Check the following points, Condition of the appearance
- Condition of the Display
- Unusual sound, a smell, and generation of heat
- Condition of the wiring and the attachment

Check on your delivery

Check the following points as soon as you receive Mitsubishi Electronic Multi-Measuring Instrument:
- The package is in good condition.
- The product has not been damaged during transit.
- The product corresponds to your order specifications.
- This product had the following accessories.

<table>
<thead>
<tr>
<th>Parts name</th>
<th>Quantity</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>User’s Manual (this document)</td>
<td>1</td>
<td>A3 size</td>
</tr>
<tr>
<td>Attaching nuts</td>
<td>2</td>
<td>M5 Belleville spring nuts (contained in a bag)</td>
</tr>
</tbody>
</table>

This manual is a simple version.
Please contact our Service Network for a detailed version of User’s Manual.

ECM DIRECTIVE INSTRUCTION

This section summarizes the precautions on conformance to the EMC Directive of the cabinet constructed using this Instrument.

However, the method of conformance to the EMC Directive and the judgment on whether or not the cabinet conforms to the EMC Directive has to be determined finally by the manufacturer.

1. EMC Standards
- EN 61326-1:2006
- EN 61000-3-3:2008

2. Installation (EMC directive)
The instrument to be mounted on panel of a cabinet.

Therefore, the construction of a cabinet is important not only for safety but also for EMC.

The instrument is examined by the following conditions:
- Use a conductive cabinet.
- Six faces of a cabinet have to be ensured conductivity for each other.
- A cabinet has to be connected to earth by a thick wire of low impedance.
- Holes on faces of cabinet have to be 10 cm or less in diameter.
- The terminals for protective earth and functional earth have to be connected to earth by a thick wire of low impedance.
- (A terminal for protective earth is important not only for safety but also for EMC.)

Protective earth: Maintains the safety of the instrument and improves the noise resistance.
Functional earth: Improves the noise resistance.

- All connections should be kept inside the cabinet.
- Wires outsides the cabinet have to be used with the shielded cable.

The following diagram shows how to provide good contact of the shielded cable.

- Remove part of the outer cover.
- Remove part of the paint mask on the cabinet.
- Connect those parts with the clamp.

Shield section
Clamp fitting
Clamp fitting
Paint mask
Shielded cable

Screw
1. Dimensions of the panel
   The panel hole dimensions are as shown below. And it can be attached to a panel of thickness 1.6 - 4.5mm.

![Panel hole dimensions](image)

2. View angle
   The contrast of the display changes at view angles.
   
   ![View angle](image)

3. Attachment
   When to insert the main body into the panel hole, insert it slowly until the stopper at the bottom of the main body goes into the panel. After insertion, the effect of the stopper prevents the main body from dropping off even when you release your hand from it. Fasten the attachment nut (M5 nut with belleville spring) with torque about 1.47 - 1.96Nm.

---

**Wiring Diagram**

Three phase 4-wire type:
Example of ME110SSR-4AP (with VT)

![Wiring Diagram](image)

Three phase 3-wire(3CT) type:
Example of ME110SSR-4APH (with VT)

![Wiring Diagram](image)

Single phase 3-wire type:
Example of ME110SSR-CH

![Wiring Diagram](image)

Three phase 4-wire type:
Example of ME110SSR-4AZP (for direct input)

![Wiring Diagram](image)

Three phase 3-wire(2CT) type:
Example of ME110SSR-C (with VT)

![Wiring Diagram](image)

Single phase 2-wire type:
Example of ME110SSR-MB (with VT)

![Wiring Diagram](image)

---

**Wiring**

Wirings of the terminals have to be fastened according to the following table.

<table>
<thead>
<tr>
<th>Terminal</th>
<th>Measurements inputs auxiliary power input terminal</th>
<th>Output terminal</th>
<th>Protective erase terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>M4 screw</td>
<td>For M4 screw of external diameter below 8.5</td>
<td>0.98 - 1.47N.m</td>
<td>0.8 – 0.8N.m</td>
</tr>
<tr>
<td>M3 screw</td>
<td>For M3 screw of external diameter below 8.5</td>
<td>1.2 – 1.4N.m</td>
<td></td>
</tr>
</tbody>
</table>

---

- Do not fasten three wires or more to one terminal. Otherwise, it may generate heat or ignition.
- Fasten the attachment nut (M5 nut with belleville spring) with torque about 1.47 - 1.96Nm.

---

**Note:**
- Auxiliary power supply: 100-240VAC 100VDC
- Fuses (g-type/IEC269) or M type rated between 0.5 and 5A
- For low-voltage circuits, grounding of the secondary side of VT and CT is not necessary.
- Do not connect to NC terminal.
- Terminal block No. for 3P3W, 1P2W
Display and button functions

Functions of operation buttons

The operation button have various functions according to how they are pressed down.

<table>
<thead>
<tr>
<th>Operation Mode</th>
<th>Button Name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation mode</td>
<td>SET</td>
<td>Display changes.</td>
</tr>
<tr>
<td></td>
<td>+</td>
<td>Mode changes to the max/min display and the instantaneous display.</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>The item expressed with the bar graph is changed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Harmonic number changes when harmonics displayed.</td>
</tr>
<tr>
<td></td>
<td>MAX</td>
<td>Displays change cyclically.</td>
</tr>
<tr>
<td></td>
<td>MIN</td>
<td>Phase change cyclically.</td>
</tr>
<tr>
<td></td>
<td>+/DISPLAY</td>
<td>The count value of these digits of one range are displayed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>After pressing once again, the display returns.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Minimum value and maximum values on the bar graph.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Only available for maximum/minimum value screen.</td>
</tr>
<tr>
<td>Operation mode</td>
<td></td>
<td>Back light is off.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If the operation key is pressed, the back light is always lit.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If the operation button is pressed once again, the function in the above table appears.</td>
</tr>
</tbody>
</table>

Meaning of code: ○ (presses), ○ (press over 1 second), ○ (presses simultaneously) |

Setting flow

Note: The above display is an example for explanation.

<table>
<thead>
<tr>
<th>No.</th>
<th>Segment Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LEAD status</td>
<td>Show direction power factor or reactive power on bar graph.</td>
</tr>
<tr>
<td>2</td>
<td>LLG status</td>
<td>Turns on at the additional display of reactive energy.</td>
</tr>
<tr>
<td>3</td>
<td>Scale of the bar graph</td>
<td>Shows the scales at the bar graph.</td>
</tr>
<tr>
<td>4</td>
<td>Under scale input</td>
<td>Turns on when measuring values fall below the minimum scale.</td>
</tr>
<tr>
<td>5</td>
<td>Over scale input</td>
<td>Turns on when measuring values exceed the maximum scale.</td>
</tr>
<tr>
<td>6</td>
<td>Alarm indicator</td>
<td>When upper/lower limit alarm set, flicks at the limit setting value.</td>
</tr>
<tr>
<td>7</td>
<td>Index indicator</td>
<td>When set, turns on all the index indicator setting value.</td>
</tr>
<tr>
<td>9</td>
<td>Bar graph status</td>
<td>Shows the item displayed on the bar graph.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>When the item is the same as a digital displayed item indicated with □, otherwise indicated with □.</td>
</tr>
<tr>
<td>10</td>
<td>Digital display</td>
<td>Measures displayed in digital.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Press status, 1/2/3, MAX/MIN, demand etc. displayed.</td>
</tr>
<tr>
<td>11</td>
<td>Units</td>
<td>Units of measuring value displayed.</td>
</tr>
<tr>
<td>12</td>
<td>Multiplier factor</td>
<td>Indicates the multiplying factor for calculating energy.</td>
</tr>
<tr>
<td>13</td>
<td>Metering status</td>
<td>Flicks when metering active energy.</td>
</tr>
<tr>
<td>14</td>
<td>Harmonics</td>
<td>Turns on when harmonics displayed.</td>
</tr>
<tr>
<td>15</td>
<td>Setup mode status</td>
<td>Turns on at setup mode.</td>
</tr>
<tr>
<td>16</td>
<td>Flicks at setup mode</td>
<td>Flickers at setup mode confirmation.</td>
</tr>
<tr>
<td>17</td>
<td>Test mode status</td>
<td>Turns on at the test mode.</td>
</tr>
<tr>
<td>18</td>
<td>Upper/lower limit alarm</td>
<td>Flicks when upper/lower limit alarm is generated.</td>
</tr>
<tr>
<td>19</td>
<td>Status display for products</td>
<td>Turns on when instrument equipped with communication function.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Flickers at communication error condition.</td>
</tr>
</tbody>
</table>

Note 1. The blinking cycle is constant regardless of the size of the measured input.

Note 2. When the item is different from the digital display item, indicated with □, otherwise indicated with □.

This manual is a simple version. Please contact our Service Network for a detailed version of User’s Manual.
Operation

Basic Operations while Executing Settings

- Select a set value
- Press (△) or (▽)
- Fast-forward when pressed over 1 sec.
- Set-up items are saved
- Press (SET)
- The set value for the setting item just before returning is still available.
- Go back to the previous setting item
- Press (△) or (▽)
- Skip removing setting items during setting
- Press and hold (SET) for 1 sec.

Setting Menu 1: Setting the Phase Wire System, Display Pattern, VT/Direct Voltage, CT Primary Current, and Time constant for Demand

In this setting menu 1, there are setting the basic contents as following for correct measurement.

In the operation mode, after pressing the (△) and (▽) simultaneously for 2 seconds or more, the following operation becomes available.

Set the setting menu number to “1”.

Set the phase wire system.

The display pattern:
The following table shows the measurement elements that can be displayed on the screen. (For more details about display patterns, refer to detailed edition.) In addition, if there is no display pattern that you want from P01 to P13 (P14 and P15), select the special display pattern P00. (Same from here.)

- Displayable at this display setting:
- Select at other additional settings.
- Select “P00” and set the display order and display position.
- For three-phase 4-wire

When setting an additional screen (supplemental)

Select yes, and then press (Δ), shift to following (1).

When direct input (without VT) select no, and then press (Δ), shift to following (2).

Note 1: If there is no primary current in the above that you want to set, select “SP.” for special primary current setting.

Set the primary current of the CT.

Note 2: Set the direct voltage.

Set the special primary current (Default setting: 5A)

Set the primary current except Three-phase 4-wire

Setting except “SP”:

To time constant for active power demand

When setting “SP”:

To following “Special Primary Current”

Time constant for active power demand

When setting the time constant for active power demand, the following screen appears. If the active power demand is not necessary, press the (△) as it is.

Note: Even when the display pattern does not display the active power demand, this screen appears.

According to the setup diagram, save the changed contents, or continue to the other set-up menu.

If the contents in the set-up menu 1 are changed, the maximum value, minimum value, demand value of related measurement items will be reset (However, active energy and reactive energy will not be reset.)
Setting Menu 6: Setting the Analog Output and Pulse Output

Output item of analog output, pulse output, pulse unit and so forth are set here.

The operation mode, press [SET] and [OFF] simultaneously for 2 seconds or more, and the following operation becomes available.

### Setting menu

Set the measurement item to be output to analog output CH1.

Select a measurement item for output from the following table.

<table>
<thead>
<tr>
<th>3-phase 4-wire</th>
<th>3-phase 3-wire</th>
<th>3-phase 2-wire</th>
<th>2-phase 2-wire</th>
</tr>
</thead>
<tbody>
<tr>
<td>non</td>
<td>non</td>
<td>non</td>
<td>non</td>
</tr>
<tr>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>demand</td>
<td>demand</td>
<td>demand</td>
<td>demand</td>
</tr>
<tr>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>harmonic</td>
<td>harmonic</td>
<td>harmonic</td>
<td>harmonic</td>
</tr>
<tr>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>harmonic</td>
<td>harmonic</td>
<td>harmonic</td>
<td>harmonic</td>
</tr>
<tr>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>harmonic</td>
<td>harmonic</td>
<td>harmonic</td>
<td>harmonic</td>
</tr>
</tbody>
</table>

Note 1: The same measurement items can be set for each analog output.

Note 2: It is possible to select measurement items that are not included in the set display pattern.

Note 3: Setting to "non" are minimum output. In addition, it moves to the next analog output setting.

Note 4: For the harmonic current, the total RMS value is output by a scale from 0 to 100% of the rating.

Note 5: Underlined portions are the factory default settings for measurement elements assigned to each analog output.

### Analog output CH1 measurement item

Select a measurement item for output from the following table.

<table>
<thead>
<tr>
<th>Output element</th>
<th>Setting range</th>
<th>Pulse unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>W</td>
<td>-10 to 10</td>
<td>1000</td>
</tr>
<tr>
<td>Demand W</td>
<td>-10 to 10</td>
<td>1000</td>
</tr>
<tr>
<td>harmonic W</td>
<td>-10 to 10</td>
<td>1000</td>
</tr>
<tr>
<td>harmonic</td>
<td>-10 to 10</td>
<td>1000</td>
</tr>
</tbody>
</table>

When voltage is set as an output element for 1-phase 3-wire, use Vrms (L). When current is set as an output element for 3-phase 3-wire, use Irms (L-L).

### Analog output CH2-CH4 detailed settings

1. Set the power factor value for the maximum analog output value.
2. Set the setting menu number to "6".
3. Set the setting menu number to "6".

### Analog output to pulse output

1. Set the measurement item that is output to pulse output 1.
2. Set the measurement item that is output to pulse output 2.
3. Set the setting menu number to "6".
4. Set the setting menu number to "6".

### Pulse output 1 output item

Select the pulse value for pulse output 1.

### Pulse output 2 output item

Select the pulse value for pulse output 2.

### Setting menu

Set the setting menu number to "6".

### Analog output CH1 measurement item

Set the measurement item to be output to analog output CH1.

Select a measurement item for output from the following table.

<table>
<thead>
<tr>
<th>Output element</th>
<th>Setting range</th>
<th>Pulse unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>W</td>
<td>-10 to 10</td>
<td>1000</td>
</tr>
<tr>
<td>Demand W</td>
<td>-10 to 10</td>
<td>1000</td>
</tr>
<tr>
<td>harmonic W</td>
<td>-10 to 10</td>
<td>1000</td>
</tr>
<tr>
<td>harmonic</td>
<td>-10 to 10</td>
<td>1000</td>
</tr>
</tbody>
</table>

When voltage is set as an output element for 1-phase 3-wire, use Vrms (L). When current is set as an output element for 3-phase 3-wire, use Irms (L-L).

### Analog output CH2-CH4 detailed settings

1. Set the measurement item that is output to pulse output 1.
2. Set the measurement item that is output to pulse output 2.
3. Set the setting menu number to "6".
4. Set the setting menu number to "6".

### Pulse output 1 output item

Select the pulse value for pulse output 1.

### Pulse output 2 output item

Select the pulse value for pulse output 2.

### Setting menu

Set the setting menu number to "6".
**Operation**

**Basic Operation**

The following explains basic usages during operation.

- **Switch display**
  By pressing [ ], the measurement display will switch over.
  Display items differ depending on the phase or wire system setting, display pattern settings, and additional screen.

- **Switch phase**
  By pressing [ ], the current phase and the voltage phase will switch over.
  The phase cannot be switched in the following cases:
  - Measurement items without phase (frequency)
  - Input power, reactive power, and power factor for settings other than 3-phase 4-wire
  - Measurement elements for upper, middle, and lower are the same.

- **Selection of bar graph**
  Press [ ] to select measurement elements to be displayed on the bar graph.
  As for power factor, voltage, frequency, they can be displayed on the bar graph even if they are not set to display pattern.

- **Cyclic display**
  In cyclic display, display and phases automatically change at every 5 seconds.
  When [ ] is pressed for about 2 seconds, the cyclic display appears.
  When pressed for about 2 seconds, the cyclic phase appears.

- **Maximum / Minimum Value Display**
  For the maximum / minimum value display, the maximum value, current value, and minimum value for each measurement item are displayed on one screen.
  **Note:** Only the following maximum values are displayed for harmonics:
  - Harmonic Current Total: 1st, 3rd, 5th, 7th, 9th, 11th, and 13th RMS values for where the phase was targeted for each phase
  - Harmonic Voltage: Total distortion ratio, 1st RMS value, 3rd, 5th, 7th, 9th, 11th, and 13th distortion ratio for where the phase was targeted for each phase.

- **Example Screen Display**
  The bar graph only shows DH between the maximum value and minimum value.

- **Display of Maximum/Minimum Value**
  When [ ] is pressed, the display is changed into the maximum value and minimum value display.
  When [ ] is pressed, the display changes back to the present value display.

- **Example of Display change current value display screen and maximum/minimum value display screen**

  - Present value display
  - Maximum value and minimum value display

  As with the present value display, it is possible to change the following display from the Maximum value and minimum value display.

  - Key Operation
  - Function
  - Press [ ]
  - Measurement items are changed as following. However, measurement items that are not included in the phase wire system display pattern setting and additional screens are not displayed.
  - Press [ ]
  - Phase 4-wire Setting: A and DA are changed as following.
    - Phase 4-wire Setting: Phase A, Phase B, Phase C, and Phase D are changed.
      - Press [ ]
        - The harmonic degree is changed. (Only for harmonics display)
  - Press [ ] for 2 seconds
  - Display changes cyclically
  - Press [ ] for 2 seconds
  - Phase changes cyclically

- **Reset the Maximum/Minimum Value**
  When [ ] is pressed for 2 seconds or more, the displayed maximum value and minimum value can be reset.
  ('Reset' means that maximum/minimum value turns into the same value as the present value.)
  When [ ] and [ ] are pressed simultaneously for 2 seconds or more, all the maximum values and minimum values are reset.

- **Enhanced 3 digital figures**
  When [ ] and [ ] are pressed simultaneously for 2 seconds, values of active energy and reactive energy are enlarged by 3 figures.
  Use this for confirming the active energy measurement.
  It will automatically return to normal display if no button is pressed for 5 minutes or if it is switched to cyclic display.
  (Note 1: This function is made only on active energy and reactive energy displayed.)
  (Note 2: There is no effect on the instantaneous value display.)

- **WH and varh reset**
  When [ ], [ ], and [ ] are pressed simultaneously for 2 seconds, the measured values of active energy (WH) and reactive energy (varh) are reset.
  (This is effective only in the instantaneous value display.)
  (Note 1: All of active energy (WH) and reactive energy (varh) not displayed are reset too.)

**Initializing All Setting Contents**

When the following operations are executed, all setting contents return to the factory default settings.
Only the setting contents return to the default settings.
- Adjusted values (Test Mode Menu 2) and electric energy measured values are not changed.
- To return all setting contents to the default settings, execute the following operation from the Settings Mode CANCEL screen.
  For more information about how to get to the CANCEL screen, refer to Setting Menu (page 3).
### Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>ME110SSR, ME110SSR-4AP, ME110SSR-4APH, ME110SSR-4AP2, ME110SSR-C, ME110SSR-CH, ME110SSR-MB</td>
</tr>
<tr>
<td><strong>Phase wire system</strong></td>
<td>Three phase 4-wire(3P4W), Three phase 3-wire(3P3W), Single phase 3-wire(1P3W), Single phase 2-wire(1P2W)</td>
</tr>
<tr>
<td><strong>Current</strong></td>
<td>3P4W: max277/480VAC 3P3W: 110VAC/220VAC 1P3W: 110VAC/220VAC</td>
</tr>
<tr>
<td><strong>Frequency</strong></td>
<td>50-60Hz</td>
</tr>
<tr>
<td><strong>Display</strong></td>
<td>Instantaneous Value: A,V: RMS calculation, W,var; VA: Power ratio calculation Demand Value: Hz; Zero-cross, HV,H1; FTT Bar graph: 21 Segment-Bar graph, 22 Segment-Indicator Display updating time interval: 0.5s / 1s</td>
</tr>
<tr>
<td><strong>Analog output</strong></td>
<td>(ME110SSR-4AP-4AP2) Range: 4~20mA DC Load resistance: 600Ω max</td>
</tr>
<tr>
<td><strong>Alarms output</strong></td>
<td>(ME110SSR-4AP-4AP2) No-voltage 'a' contact 35VDC, 0.1A</td>
</tr>
<tr>
<td><strong>Pulse output</strong></td>
<td>(ME110SSR-4AP-4AP2) No-voltage 'a' contact 35VDC, 0.2A</td>
</tr>
<tr>
<td><strong>Digital input</strong></td>
<td>(ME110SSR-4AP-4AP2) Rated 24VDC (19 to 30VDC)</td>
</tr>
<tr>
<td><strong>Power Failure Compensation</strong></td>
<td>Non volatile memory (Items: setting value, max/min value, active/reactive energy)</td>
</tr>
<tr>
<td><strong>VA Consumption</strong></td>
<td>VT: 0.1VA/phase, 0.2VA/phase (at direct input) CT: 0.1VA/phase Auxiliary power: 8VA at 110VAC, 9VA at 220VAC, 6W at 100VDC Digital input: DC19-30V, under 7mA</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>0.5kg</td>
</tr>
<tr>
<td><strong>Dimension</strong></td>
<td>110x110x90(WxDxH)</td>
</tr>
<tr>
<td><strong>Enclosure</strong></td>
<td>Thermoplastic self-extinguish (UL94V0)</td>
</tr>
<tr>
<td><strong>Operating temperature</strong></td>
<td>-5~50°C (average operating temperature ; 35°C or less per day)</td>
</tr>
<tr>
<td><strong>Operating humidity</strong></td>
<td>85%RH max, non condensing</td>
</tr>
<tr>
<td><strong>Storage temperature</strong></td>
<td>20~60°C</td>
</tr>
<tr>
<td><strong>Standard</strong></td>
<td>EMC-EN61326-1-2006 LVD-EN61010-1-2001</td>
</tr>
</tbody>
</table>

---

**Note1:** Accuracy is specified according to the maximum scales value of rated value.

**Note2:** Measurement of harmonics which its distortion ratio is exceeded 100% may exceed the accuracy

**Note3:** Harmonics cannot be measured without voltage input.
Specifications

**Communication Specifications**

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC-Link station type</td>
<td>Remote device station (ver. 1 remote device station or ver. 2 remote device station)</td>
</tr>
<tr>
<td>Number of occupied stations</td>
<td>Ver. 1 remote device station (ver. 1 compatible slave station) setting: 1 station Ver. 2 remote device station (ver. 2 compatible slave station) setting: 1 station (Expanded cyclic setting: Octuple)</td>
</tr>
<tr>
<td>CC-Link version</td>
<td>CC-Link Ver 1.10 / 2.00</td>
</tr>
<tr>
<td>Transmission speed</td>
<td>Can select from 156 kbps / 625 kbps / 2.5 Mbps / 5 Mbps / 10 Mbps</td>
</tr>
<tr>
<td>Maximum number of connected stations</td>
<td>If the system is configured by only this instrument, up to 42 units can be connected. (note 1)</td>
</tr>
</tbody>
</table>

**note1:** As for details, refer to the following manuals.

<table>
<thead>
<tr>
<th>Manual Name</th>
<th>Manual Number (Model Code)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC-Link System Master/Local Module User’s Manual type QJ61BT11N</td>
<td>SH-080394E (13JR64)</td>
</tr>
</tbody>
</table>

**CC-Link Dedicated Cable**

Use the CC-Link dedicated cables for the CC-Link system. If a cable other than the CC-Link dedicated cable is used, the performance of the CC-Link system cannot be guaranteed.

For the specifications of the CC-Link dedicated cables or any other inquiries, visit the following website:

CC-Link Partner Association: http://www.CC-Link.org/

**REMARK**

For details, refer to the CC-Link cable wiring manual issued by CC-Link Partner Association

**Handling precautions**

<table>
<thead>
<tr>
<th>Country/Region</th>
<th>Company</th>
<th>Address</th>
<th>Telephone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Mitsubishi Electric Australia Pty. Ltd.</td>
<td>348 Victoria Road, Rydalmere, N.S.W. 2116, Australia</td>
<td>+61-2-9684-7777</td>
</tr>
<tr>
<td>China</td>
<td>Mitsubishi Electric Automation (CHINA) Ltd.</td>
<td>17/F., ChuangXing Financial Center, No.288 West Nanjing Road, Shanghai, 200003</td>
<td>+86-21-2322-3030</td>
</tr>
<tr>
<td>China</td>
<td>Mitsubishi Electric Automation (HongKong)Ltd.</td>
<td>10/F., Manulife Tower, 169 Electric Road, North Point, Hong Kong</td>
<td>+852-2887-8810</td>
</tr>
<tr>
<td>Europe</td>
<td>Mitsubishi Electric Europe B.V.</td>
<td>Golfiaer Strasse 8, D-40880 Ratingen, Germany</td>
<td>+49-(0)2102-486-0</td>
</tr>
<tr>
<td>Indonesia</td>
<td>P. T. Sahabat Indonesia</td>
<td>P.O.Box 5045 Kawasan Industri Pergadungan, Jakarta, Indonesia</td>
<td>+62-(0)21-610651-9</td>
</tr>
<tr>
<td>Korea</td>
<td>Mitsubishi Electric Automation Korea Co., Ltd</td>
<td>1480-6, Gayang-Dong, Gangseo-Gu, Seoul, Korea</td>
<td>+82-2-3660-9572</td>
</tr>
<tr>
<td>Lebanon</td>
<td>Comptor d’Electrique Generale-Liban</td>
<td>P.O. Box 11-2597 Beirut - Lebanon</td>
<td>+961-1-240445</td>
</tr>
<tr>
<td>Philippines</td>
<td>Edison Electric Integrated, Inc.</td>
<td>24th Fl. Galleria Corporate Center, Edsa Cr. Ortigas Ave., Quezon City Metro Manila, Philippines</td>
<td>+63-(0)2-634-8691</td>
</tr>
<tr>
<td>Singapore</td>
<td>Mitsubishi Electric Asia Pte. Ltd.</td>
<td>307, Alexandra Road, #05-01/02 Mitsubishi Electric Building, Singapore 159943</td>
<td>+65-6473-2308</td>
</tr>
<tr>
<td>South Africa</td>
<td>CBI-electric: low voltage</td>
<td>Private Bag 2016, Isando, 1600, South Africa</td>
<td>+27-(0)11-928000</td>
</tr>
<tr>
<td>Taiwan</td>
<td>Setsuyo Enterprise Co., Ltd</td>
<td>6th Fl., No.105, Wu Kung 3rd, Wu-Ku Hsiang, Taipei, Taiwan, R.O.C.</td>
<td>+886-(0)22-998-8809</td>
</tr>
<tr>
<td>Thailand</td>
<td>United Trading &amp; Import Co., Ltd.</td>
<td>77/12 Bamrungmuang Road, Klong Mahanak, Pomprab Bangkok Thailand</td>
<td>+66-223-4220-3</td>
</tr>
<tr>
<td>Vietnam</td>
<td>CTY TNHH-TM SA GIANG</td>
<td>10th Floor, Room 1006-1007, 255 Tran Hung Dao St., Co Giang Ward, Dist 1, Ho Chi Minh City, Vietnam</td>
<td>+84-8-8386727/28/29</td>
</tr>
</tbody>
</table>