INVERTER
Enclosure surface operation panel
FR-PA07 INSTRUCTION MANUAL

Thank you for purchasing the enclosure surface operation panel (FR-PA07). This instruction manual gives handling information and precautions for use of this equipment. Incorrect handling might cause an unexpected fault. Before using the equipment, please read this manual carefully to use the equipment to its optimum performance.

Please forward this instruction manual to the end user.

This product is an option dedicated for the FR-E700 series.
Refer to the inverter unit’s instruction manual for details on the operation panel functions, operation methods and handling methods.

Safety precautions

- Operate the keys with dry hands to prevent an electric shock.
- Do not install and operate the enclosure surface operation panel (FR-PA07) if it is damaged or has parts missing.
- Provide a safety backup device, such as an emergency brake, to protect machines and equipment from hazardous conditions if the enclosure surface operation panel (FR-PA07) becomes faulty.
- To prevent damage from static electricity, touch a piece of metal nearby before touching this product to remove any body static electricity.

1. Instructions

For the FR-E700 series inverters manufactured during or before the period shown by the following serial numbers, there are restrictions mentioned below.

1) Parameter copy (P Y) is displayed, but parameter copy (reading, writing, or verification) does not function. Display turns into the reading indication, but reading is not executed. If writing or verification is executed, an error occurs.
2) Initial value change list (P H) cannot be used.
3) Easy setting mode (press and simultaneously (0.5s)) cannot be used to change the operation mode.
4) SERIAL number check

Refer to the inverter manual for the position of the rating plate.

Rating plate example

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Year</th>
<th>Month</th>
<th>Control number</th>
<th>SERIAL (Serial No.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The SERIAL consists of 1 version symbol, 2 numeric characters or 1 numeric character and 1 alphabet letter indicating year and month, and 6 numeric characters indicating control number. Month is indicated as 1 to 9, X (October), Y (November), and Z (December).
2. Connection

2.1 Installation using a connection cable (FR-CB20)

Securely insert one end of connection cable into the PU connector of the inverter and the other end into the connection connector of the FR-PU07 along the guides until the stoppers are fixed.

![Diagram of installation](image)

**NOTE**

- Install the FR-PA07 only when the front cover is installed.

**REMARKS**

- For details of the connection cable (FR-CB20), refer to the connection cable (FR-CB20) instruction manual.

2.2 Removal when the connection cable (FR-CB20) is used

Hold down the tab (stopper) at the cable end and gently pull the plug.
3. Names and functions of the operation panel (FR-PA07)

**Unit indication**
- Hz: Lit to indicate frequency.
- A: Lit to indicate current.
  (Off to indicate voltage and flicker to indicate set frequency monitor.)

**Rotation direction display**
- On: Indicates that forward rotation operation is being performed.
- Slow flickering (1.4s cycle):
  - When the forward/reverse rotation command is given and the frequency command is not given.
- Fast flickering (0.2s cycle):
  - When the MRS signal is input.

**Start command forward rotation**

**Start command reverse rotation**

**Monitor (4-digit LED)**
- Shows the frequency, parameter number, etc.

**Setting dial**
- (Setting dial: Mitsubishi inverter dial)
- Used to change the frequency setting and parameter values.

**Mode switchover**
- Used to change each setting mode.

**Operation mode switchover**
- Used to switch between the PU and external operation mode.
- When using the external operation mode (operation using a separately connected frequency setting potentiometer and start signal), press this key to light up the EXT indication. Change Pr. 79 setting to change to combined mode.
- PU: PU operation mode
- EXT: External operation mode

**Operation mode indication**
- PU: Lit to indicate PU operation mode.
- EXT: Lit to indicate external operation mode.
- PU, EXT: Flicker to indicate network operation mode.

**Monitor indication**
- Lit to indicate monitoring mode.

**Stop operation**
- Uses to stop the operation command.
- When a fault occurs, it can be reset.

**Determination of each setting**
- If pressed during operation, monitor changes as below:
  - Running frequency
  - Output current
  - Output voltage

* Both PU and EXT are off on the inverters manufactured during or before the period shown by the serial numbers described on page 1.
4. Operation

4.1 Basic operation

Operation mode switchover

At powering on (external operation mode)

PU Jog operation mode

Parameter setting mode

Parameter clear

All parameter clear

Faults history clear

Initial value change list

Operation mode switchover

At powering on (external operation mode)

PU Jog operation mode

Parameter setting mode

Parameter clear

All parameter clear

Faults history clear

Initial value change list

* Initial value change list ($Pr.CH$) functions in the inverters manufactured during or after the period shown by the serial numbers described on page 1.

Although $Pr.PY$ is displayed, parameter copy does not function. (Refer to page 1)
4.2 Operation lock (Press [MODE] for a while (2s))

Operation using the setting dial and key of the FR-PA07 can be made invalid to prevent parameter change, and unexpected start or frequency setting.

- Set "10 or 11" in Pr. 161, then press [MODE] for 2s to make the setting dial and key operation invalid.
- When the setting dial and key operation is made invalid, HOLD appears on the operation panel.
  When the setting dial and key operation is invalid, HOLD appears if the setting dial or key operation is performed. (When the setting dial or key operation is not performed for 2s, the monitor display appears.)
- To make the setting dial and key operation valid again, press [MODE] for 2s.

**POINT** Set "10 or 11" (key lock mode valid) in Pr. 161 Frequency setting/key lock operation selection.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Screen at powering on&lt;br&gt;The monitor display appears.</td>
<td><img src="MonitorDisplay.png" alt="Monitor Display" /></td>
</tr>
<tr>
<td>2. Press [PU] to choose the PU operation mode. PU indication is lit.</td>
<td><img src="PUIndicator.png" alt="PU Indicator" /></td>
</tr>
<tr>
<td>3. Press [MODE] to choose the parameter setting mode.</td>
<td><img src="ModeIndicator.png" alt="Mode Indicator" /> (The parameter number read previously appears.)</td>
</tr>
<tr>
<td>4. Turn [ ] until Pr. 161 (Pr. 161) appears.</td>
<td><img src="ParameterSelection.png" alt="Parameter Selection" /></td>
</tr>
<tr>
<td>5. Press [SET] to read the currently set value.</td>
<td><img src="ParameterReading.png" alt="Parameter Reading" /></td>
</tr>
<tr>
<td>&quot;0&quot; (initial value) appears.</td>
<td><img src="InitialValue.png" alt="Initial Value" /></td>
</tr>
<tr>
<td>6. Turn [ ] to change it to the set value &quot;10&quot;.</td>
<td><img src="ParameterChange.png" alt="Parameter Change" /></td>
</tr>
<tr>
<td>7. Press [SET] to set.</td>
<td><img src="ParameterSetting.png" alt="Parameter Setting" /> Flicker ... Parameter setting complete!!</td>
</tr>
<tr>
<td>8. Press [MODE] for 2s to show the monitor mode.</td>
<td><img src="MonitorMode.png" alt="Monitor Mode" /> Press for 2s.</td>
</tr>
</tbody>
</table>

**Functions valid even in the operation lock status**

Stop and reset with [STOP].

**Note**

- Release the operation lock to release the PU stop by key operation.
4.3 Use the setting dial like a potentiometer to perform operation

**POINT**
Set "1" (setting dial potentiometer mode) in Pr. 161 Frequency setting/key lock operation selection.

**Changing example** Changing the frequency from 0Hz to 60Hz during operation

<table>
<thead>
<tr>
<th>Operation</th>
<th>Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Screen at powering on The monitor display appears.</td>
<td><img src="image1" alt="PU indication is lit." /></td>
</tr>
<tr>
<td>2. Press PU to choose the PU operation mode. PU indicator is lit.</td>
<td><img src="image2" alt="PU indicator is lit." /></td>
</tr>
<tr>
<td>3. Change the Pr. 161 setting to &quot;1&quot;. (Refer to page 5 for change of the setting.) Press MODE twice to return the monitor to frequency monitor.</td>
<td><img src="image3" alt="PU indicator is lit." /></td>
</tr>
<tr>
<td>4. Press FWD/REV to start the inverter.</td>
<td><img src="image4" alt="PU indicator is lit." /></td>
</tr>
<tr>
<td>5. Turn until &quot;60.00&quot; (60.00Hz) appears. The flickering frequency is the set frequency. You need not press .</td>
<td><img src="image5" alt="PU indicator is lit." /></td>
</tr>
<tr>
<td></td>
<td>The frequency flickers for about 5s.</td>
</tr>
</tbody>
</table>

**REMARKS**
- If flickering "60.00" turns to "0.00", the Pr. 161 Frequency setting/key lock operation selection setting may not be "1".
- Independently of whether the inverter is running or at a stop, the frequency can be set by merely turning the . (Use Pr. 295 Magnitude of frequency change setting to change the frequency setting increments of .)
5. Specifications

5.1 Standard specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient temperature</td>
<td>-10°C to +50°C (non-freezing)</td>
</tr>
<tr>
<td>Ambient humidity</td>
<td>90%RH or less (non-condensing)</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-20°C to +60°C</td>
</tr>
<tr>
<td>Ambience</td>
<td>Indoors (free from corrosive gas, flammable gas, oil mist, dust and dirt)</td>
</tr>
<tr>
<td>Altitude, vibration</td>
<td>Maximum 1000m above sea level for standard operation. 5.9m/s² or less</td>
</tr>
<tr>
<td>Power supply</td>
<td>Power is supplied from the inverter.</td>
</tr>
<tr>
<td>Connection method</td>
<td>Connection using the parameter unit connection cable (FR-CB20)</td>
</tr>
</tbody>
</table>

5.2 Outline drawing and panel cutting drawing

![Outline drawing](image1)

![Panel cutting drawing](image2)