MITSUBISHI ELECTRIC

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 (PCPY) 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 (Pr.CH) cannot be used.
3) Easy setting mode (press MODE and PU/EXT 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

□	○	○	○○○○○○
Symbol	Year	Month	Control number

SERIAL (Serial No.)

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).

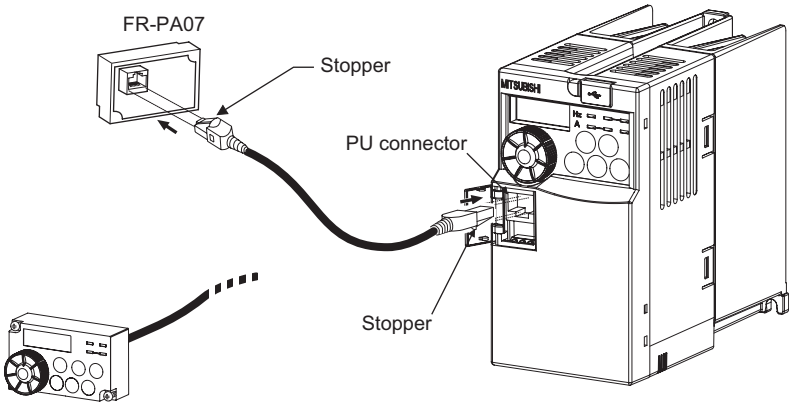
Type	SERIAL number
FR-E720-0.1K to 0.75K	J7○○○○○○○
FR-E720-1.5K to 5.5K	K7○○○○○○○
FR-E720-7.5K	L7○○○○○○○
FR-E720-11K, 15K	G7○○○○○○○

Type	SERIAL number
FR-E740-0.4K to 7.5K	D7○○○○○○○

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.



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.)

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.

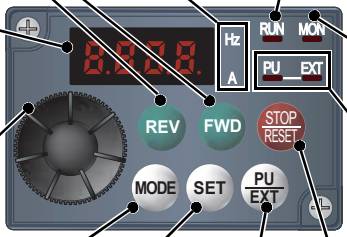
Mode switchover

Used to change each setting mode.

Determination of each setting

If pressed during operation, monitor changes as below;

Running frequency → Output current → Output voltage → Running frequency



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

Rotation direction display

On:
Indicates that forward rotation operation is being performed.
Slow flickering (1.4s cycle):
Reverse rotation operation
Fast flickering (0.2s cycle):

- When the forward/reverse rotation command is given and the frequency command is not given.
- When the MRS signal is input.

Monitor indication

Lit to indicate monitoring 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. *

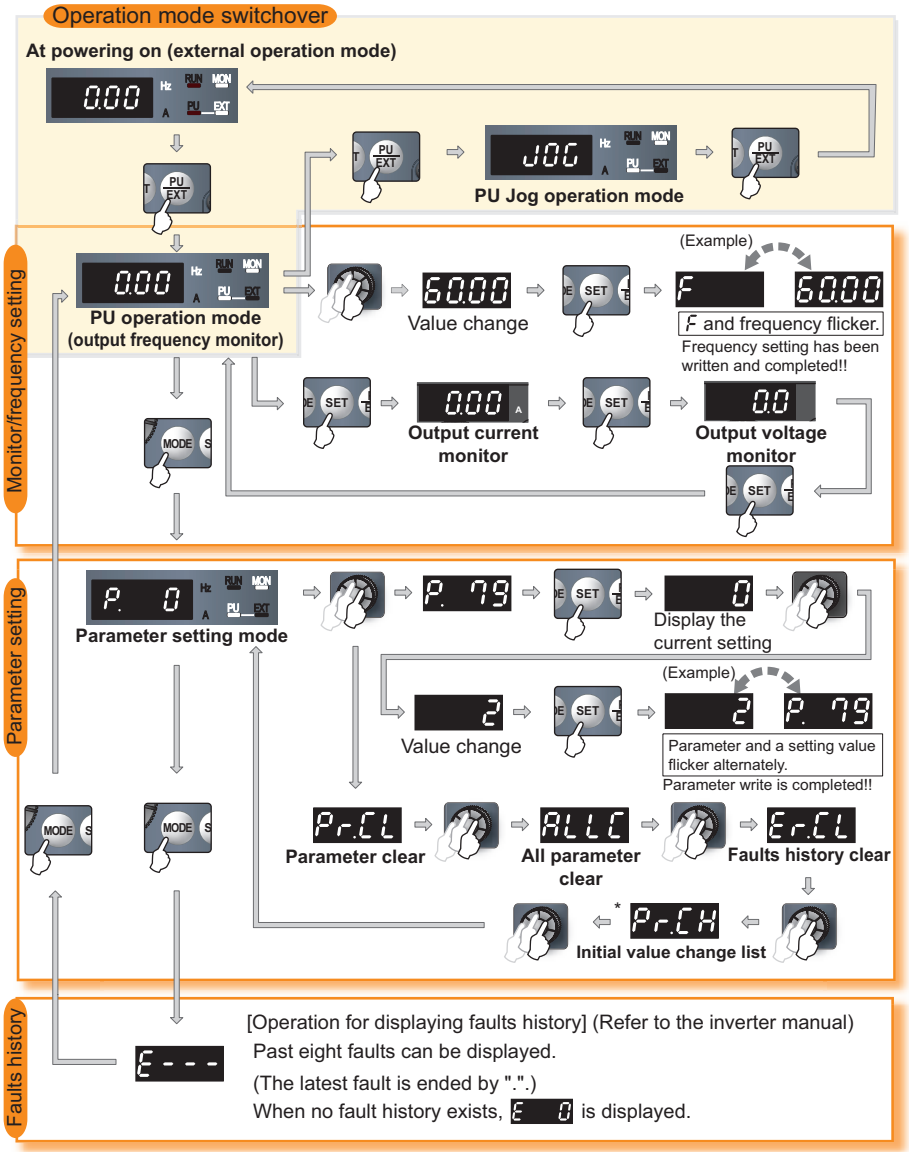
Stop operation

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

* 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



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

Although 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*.

Operation	Display
1. Screen at powering on The monitor display appears.	 PU indication is lit.
2. Press (PU/EXT) to choose the PU operation mode.	(PU/EXT) ⇨ 
3. Press (MODE) to choose the parameter setting mode.	(MODE) ⇨  (The parameter number read previously appears.)
4. Turn dial until P.161 *(Pr. 161)* appears.	⇨ 
5. Press (SET) to read the currently set value. "0" (initial value) appears.	(SET) ⇨ 
6. Turn dial to change it to the set value "10".	⇨ 
7. Press (SET) to set.	(SET) ⇨  **Flicker ... Parameter setting complete!!**
8. Press (MODE) for 2s to show the monitor mode.	(MODE) ⇨  Press for 2s.

Functions valid even in the operation lock status

Stop and reset with (STOP/RESET).

Note

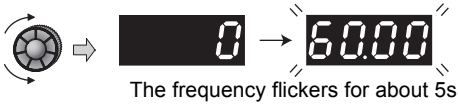
- **Release the operation lock to release the PU stop by key operation.**

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

Operation	Display
1. Screen at powering on The monitor display appears.	
2. Press PU/EXT to choose the PU operation mode.	PU indication is lit. 
3. Change the *Pr. 161* setting to "1". (Refer to *page 5* for change of the setting.) Press MODE twice to return the monitor to frequency monitor.	
4. Press FWD / REV to start the inverter.	
5. Turn the setting dial until "60.00" (60.00Hz) appears. The flickering frequency is the set frequency. You need not press SET.	 The frequency flickers for about 5s.

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 setting dial. (Use *Pr. 295 Magnitude of frequency change setting* to change the frequency setting increments of the setting dial.)

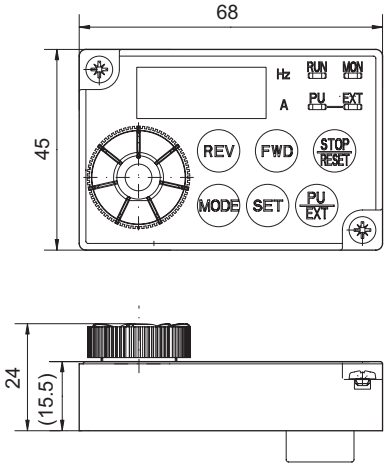
5. Specifications

5.1 Standard specifications

Item	Specifications
Ambient temperature	-10°C to +50°C (non-freezing)
Ambient humidity	90%RH or less (non-condensing)
Storage temperature	-20°C to +60°C
Ambience	Indoors (free from corrosive gas, flammable gas, oil mist, dust and dirt)
Altitude, vibration	Maximum 1000m above sea level for standard operation. 5.9m/s^{2}or less
Power supply	Power is supplied from the inverter.
Connection method	Connection using the parameter unit connection cable (FR-CB20☐)

5.2 Outline drawing and panel cutting drawing

<Outline drawing>



<Panel cutting drawing>