

E800-SCE

INVERTER SAFETY GUIDELINE

FR-E820-0008(0.1K) to 0900(22K)SCE

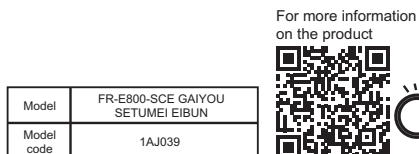
FR-E840-0016(0.4K) to 0440(22K)SCE

FR-E820S-0008(0.1K) to 0110(2.2K)SCE

FR-E810W-0008(0.1K) to 0050(0.75K)SCE

Thank you for choosing Mitsubishi Electric inverter. This Inverter Safety Guideline provides handling information and precautions for use of this product. Do not use this product until you have full knowledge of the product mechanism, safety information and instructions.

Please forward this Safety Guideline to the end user.



IB-0600921ENG-J(2508)MEE
Specifications subject to change without notice.

MITSUBISHI ELECTRIC CORPORATION
HEAD OFFICE: TOKYO BUILDING 2-7-3, MARUNOUCHI, CHYODAIKU, TOKYO 100-8510, JAPAN

◆ Related manuals

Manual name	Manual number	Model code	Details
FR-E800 Instruction Manual (Connection)	IB-0600865ENG	1AJ048	Manuals describing installation, wiring, specifications, outline dimensions, standards, and how to connect options.
FR-E800 Instruction Manual (Function)	IB-0600868ENG	1AJ045	Manual describing details of the functions.
FR-E800 Instruction Manual (Communication)	IB-0600871ENG	1AJ051	Manual describing details of the communications.
FR-E800 Instruction Manual (Maintenance)	IB-0600874ENG	1AJ054	Manual describing how to identify causes of faults and warnings.
FR-E800-SCE Instruction Manual (Functional Safety)	BCN-A23488-004	1AJ036	Manual describing details of the safety communication parameters.
FR Configurator2 Instruction Manual	IB-0600516ENG	—	Manual describing details of the software used to set inverter parameters using a personal computer.
PLC Function Programming Manual	IB-0600492ENG	—	Manual describing details of the PLC function.

Safety Information

Do not attempt to install, operate, maintain or inspect this product until you have read through this Safety Guideline and supplementary documents carefully to use the equipment correctly. Do not use the product until you have full knowledge of the product mechanism, safety information and instructions.

Installation, operation, maintenance and inspection must be performed by qualified personnel. Here, qualified personnel means a person who meets all the following conditions:

- A person who possesses a certification in regard with electric appliance handling, or person took a proper engineering training. Such training may be available at your local Mitsubishi Electric office. Contact your local sales office for schedules and locations.
- A person who can access operating manuals for the protective devices (for example, light curtain) connected to the safety control system, or a person who has read these manuals thoroughly and familiarized themselves with the protective devices.

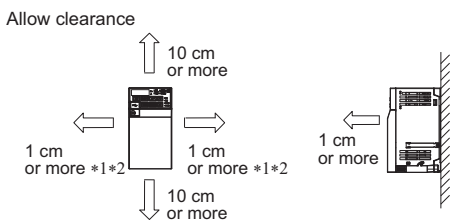
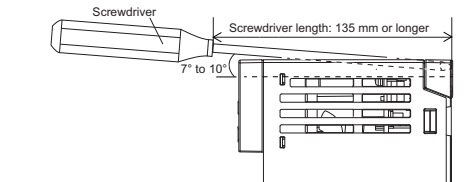
Read this Guideline before use. In addition, scan the 2D code below to download the FR-E800 Instruction Manual (Connection) and read "Safety Instructions". The PDF manual can also be downloaded from the Mitsubishi Electric FA Global Website.



1 INVERTER INSTALLATION AND PRECAUTIONS

When installing the inverter on the enclosure surface, remove the front cover and wiring cover to fix the inverter.

- Install the inverter on a strong surface securely with screws.
- Leave enough clearances and take cooling measures.
- Avoid places where the inverter is subjected to direct sunlight, high temperature and high humidity.
- Install the inverter on a nonflammable wall surface.
- When tightening screws into the upper mounting holes, tilt the screwdriver seven to ten degrees (FR-E820-0050(0.75K) or lower, FR-E820S-0030(0.4K) or lower, FR-E810W-0030(0.4K) or lower).

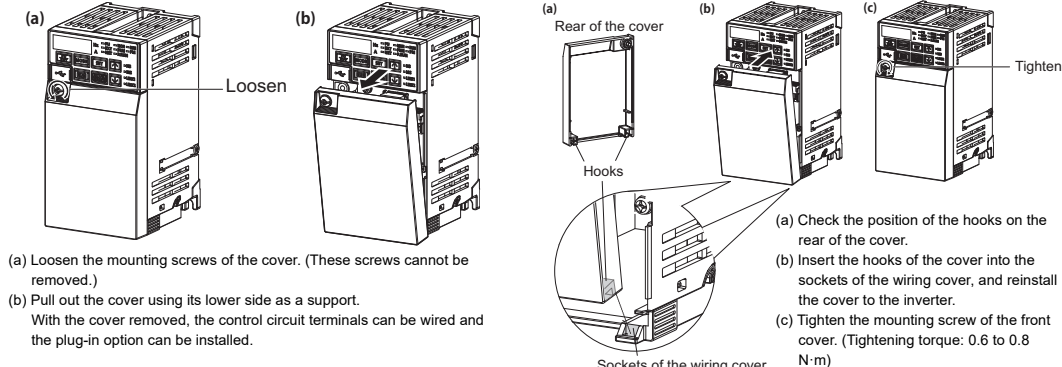


- When using the inverters at the surrounding air temperature of 40°C or less, the inverters can be installed side-by-side (closely attached with 0 cm clearance).
- For the FR-E820-0470(11K) or higher and FR-E840-0230(11K) or higher, allow 5 cm or more clearance.

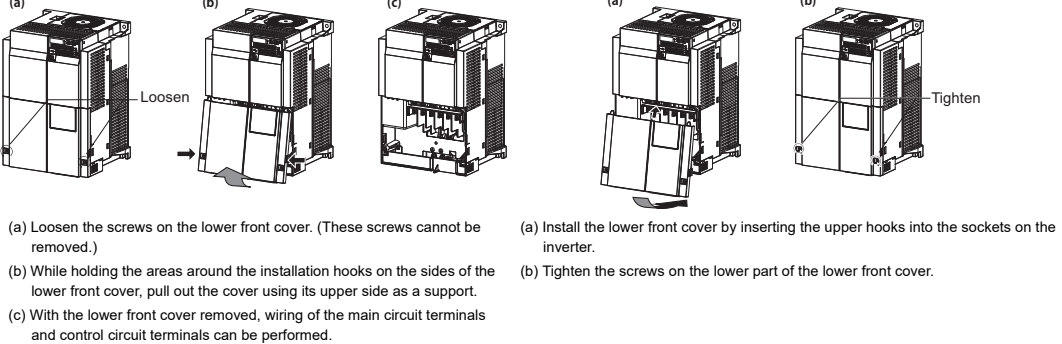
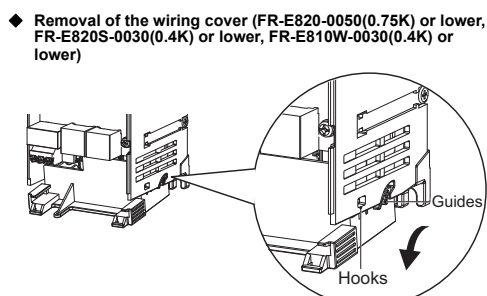
2 INSTALLATION AND WIRING

2.1 Removal and reinstallation of covers

◆ Removal of the front cover

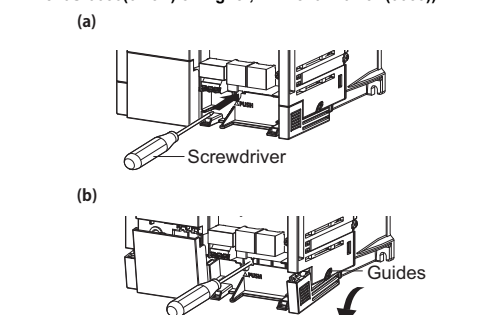


◆ Removal of the lower front cover (FR-E820-0240(5.5K) or higher, FR-E840-0230(11K) or higher)



Pull out the cover along the guides in the direction shown by the arrow in the figure above.

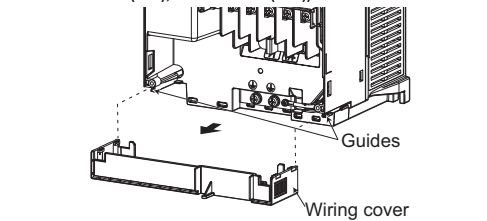
◆ Removal of the wiring cover (FR-E820-0080(1.5K) to FR-E820-0175(3.7K), FR-E840-0016(0.4K) to FR-E840-0050(3.7K), FR-E820S-0050(0.75K) or higher, FR-E810W-0.75K(0050))



(a) Insert a tool such as a flathead screwdriver into the half-hole above the "PUSH" mark on the wiring cover to push the stopper behind the wiring cover approx. 3 mm.

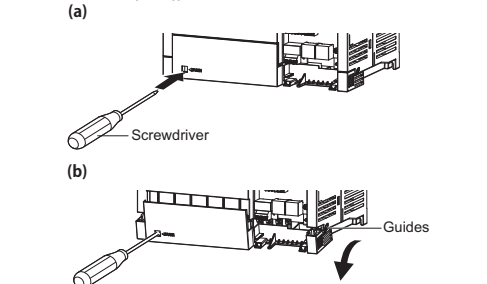
(b) Pull out the cover along the guides in the direction shown by the arrow in the figure above.

◆ Removal of the wiring cover (FR-E820-0240(5.5K) to 0600(15K), FR-E840-0230(11K), FR-E840-0300(15K))



Pull out the cover along the guides in the direction shown by the arrow in the figure above.

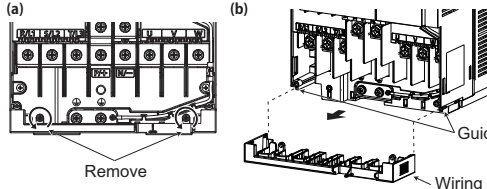
◆ Removal of the wiring cover (FR-E840-0120(5.5K), FR-E840-0170(7.5K))



(a) Insert a tool such as a flathead screwdriver into the half-hole above the "PUSH" mark on the wiring cover to push the stopper behind the wiring cover approx. 3 mm.

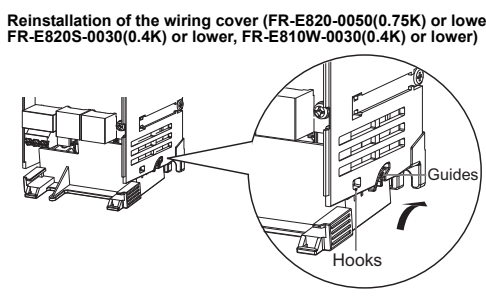
(b) Pull out the cover along the guides in the direction shown by the arrow in the figure above.

◆ Removal of the wiring cover (FR-E820-0760(18.5K), FR-E820-0900(22K), FR-E840-0380(18.5K), FR-E840-0440(22K))



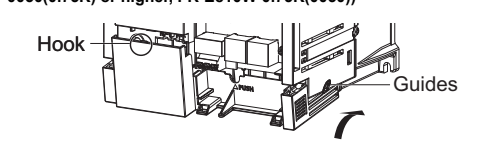
(a) Remove the mounting screws of the wiring cover.

(b) Pull out the cover along the guides in the direction shown by the arrow in the figure above.



Fit the cover to the inverter along the guides.

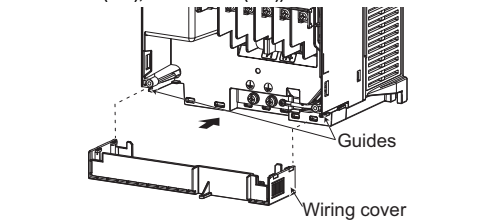
◆ Reinstallation of the wiring cover (FR-E820-0080(1.5K) to FR-E820-0175(3.7K), FR-E840-0016(0.4K) to FR-E840-0050(3.7K), FR-E820S-0050(0.75K) or higher, FR-E810W-0.75K(0050))



Fit the cover to the inverter along the guides. When the wiring cover has a hook as illustrated, push the hook into the socket of the inverter.

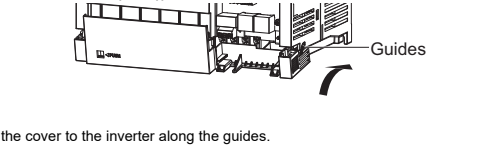


◆ Reinstallation of the wiring cover (FR-E820-0240(5.5K) to 0600(15K), FR-E840-0230(11K), FR-E840-0300(15K))



Fit the cover to the inverter along the guides.

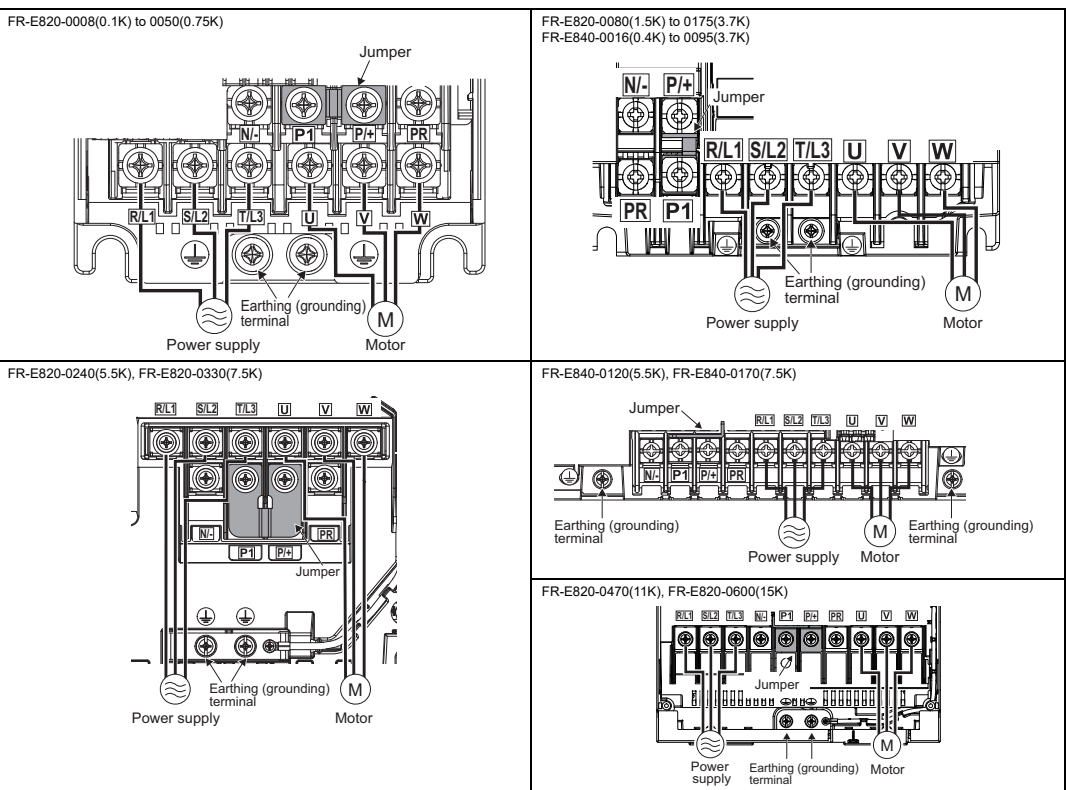
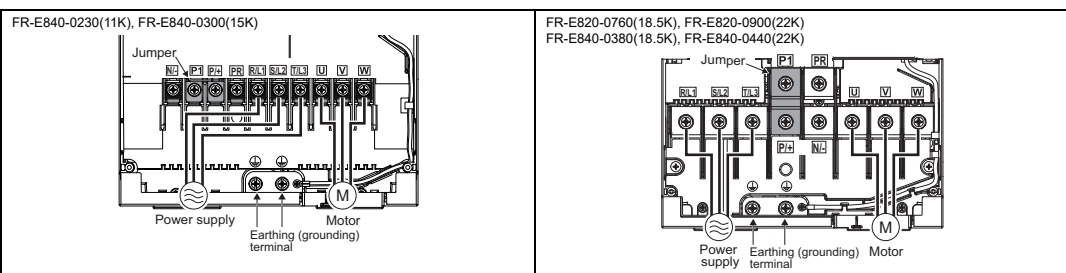
◆ Reinstallation of the wiring cover (FR-E840-0120(5.5K), FR-E840-0170(7.5K))



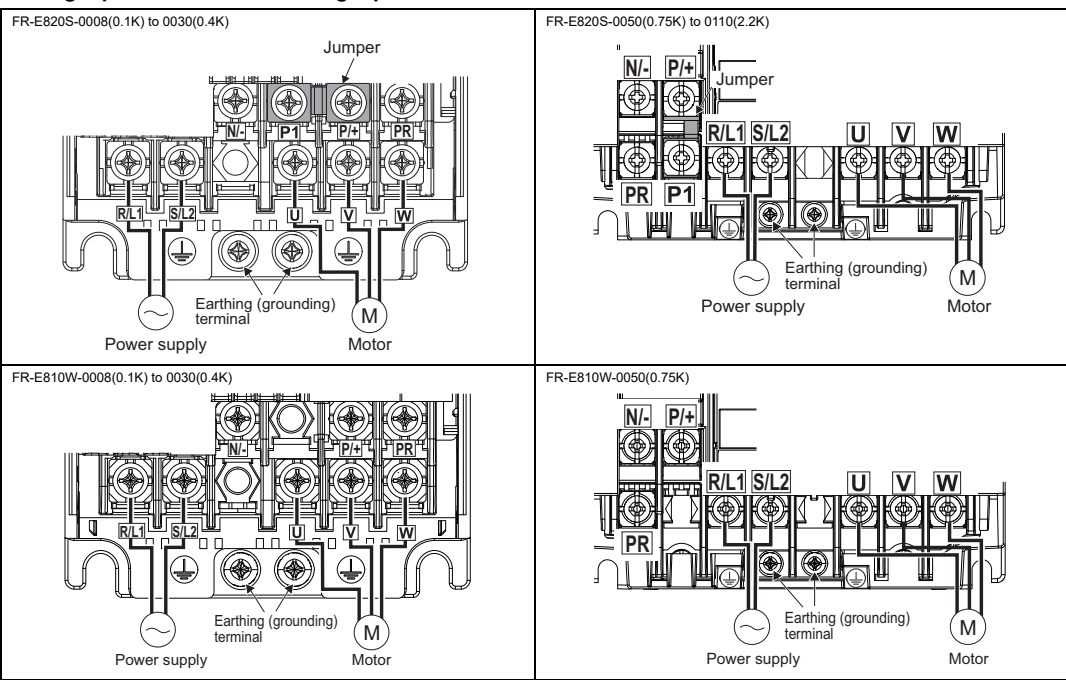
Fit the cover to the inverter along the guides.

2.2 Main circuit terminal layout and wiring to power supply and motor

◆ Three-phase 200/400 V class



◆ Single-phase 200 V class / Single-phase 100 V class



- Make sure the power cables are connected to terminals R/L1, S/L2, and T/L3 (the phases need not be matched). Never connect the power cable to terminals U, V, or W of the inverter. Doing so will damage the inverter.
- Connect the motor to terminals U, V, and W. The motor rotates counterclockwise when viewed from the motor load side when the forward rotation switch (signal) turns ON.

2.3 Recommended cables and wiring length

Select cables of recommended gauge size to ensure that the voltage drop will be 2% or less.

If the wiring distance is long between the inverter and motor, the voltage drop in the main circuit will cause the motor torque to decrease especially at a low speed. The following table shows the recommended cable size for cables that are 20 m in length at the ND rating. When using the inverter with the LD rating, refer to the FR-E800 Instruction Manual (Connection).

Applicable inverter model	Terminal screw size *4	Tightening torque N·m	Crimp terminal R/L1, S/L2, T/L3 *5	Cable gauge									
				HIV cables, etc. (mm ²) *1	AWG *2	PVC cables, etc. (mm ²) *3	Earth (grounding) cable	R/L1, S/L2, T/L3 *5	U, V, W	P/+	PR	Earth (grounding) terminal	Motor
FR-E820-0008(0.1K) to 0050(0.75K)	M3.5	1.2	2-3.5	2-3.5	2	2	2	14	14	2.5	2.5	2.5	
FR-E820-0080(1.5K), FR-E820-0110(2.2K)	M4(M3.5)	1.5	2-4	2-4	2	2	2	14	14	2.5	2.5	2.5	
FR-E820-0175(3.7K)	M4(M3.5)	1.5	5.5-4	5.5-4	3.5	3.5	3.5	12	12	4	4	4	
FR-E820-0240(5.5K)	M5	2.5	5.5-5	5.5-5	5.5	5.5	5.5	10	10	6	6	6	
FR-E820-0300(7.5K)	M5	2.5	14-5	8-5	14	8	5.5	8	8	16	10	6	
FR-E820-0470(11K)	M5	2.5	14-5	14-5	14	14	8	8	8	16	16	16	
FR-E820-0600(15K)	M5(M6)	4.4	22-6	22-6	22	22	14	4	4	25	25	16	
FR-E820-0760(18.5K)	M5(M6)	7.8	38-8	22-8	38	22	38	14	4	35	25	16	
FR-E820-0900(22K)	M5(M6)	7.8	38-8	38-8	38	38	38	22	2	35	35	25	
FR-E840-0160(0.4K) to 0095(3.7K)	M4	1.5	2-4	2	2	2	2	14	14	2.5	2.5	2.5	
FR-E840-0120(5.5K)	M4	1.5	5.5-4	2-4	3.5	2	3.5	12	14	4	2.5	4	
FR-E840-0170(7.5K)	M4	1.5	5.5-4	5.5-4	3.5	3.5	3.5	12	12	4	4	4	
FR-E840-0230(11K)	M4	1.5	5.5-4	5.5-4	5.5	5.5	5.5	10	10	6	6	10	
FR-E840-0300(15K)	M5	2.5	8-5	8-5	8	8	5.5	8	8	10	10	10	
FR-E840-0440(22K)	M6	4.4	14-6	8-6	14	8	14	8	6	16	10	16	
FR-E840-0440(22K)	M6	4.4	14-6	14-6	14	14	22	14	6	16	16	16	
FR-E820S-0008(0.1K) to 0030(0.4K)	M3.5	1.2	2-3.5	2-3.5	2	2	2	14	14	2.5	2.5	2.5	
FR-E820S-0080(1.5K)	M4	1.5	2-4	2-4	2	2	2	14	14	2.5	2.5	2.5	
FR-E820S-0110(2.2K)	M4	1.5	5.5-4	2-4	3.5	2	3.5	12	14	4	2.5	2.5	
FR-E810W-0008(0.1K) to 0030(0.4K)	M3.5	1.2	2-3.5	2-3.5	2	2	2	14	14	2.5	2.5	2.5	
FR-E810W-0050(0.75K)	M4	1.5	5.5-4	2-4	3.5	2	3.5	12	14	2.5	2.5	2.5	

- HIV cable (900 V grade heat-resistant PVC insulated wire) with a continuous maximum permissible temperature of 75°C. It is assumed that the cables will be used in a surrounding air temperature of 50°C or less and the wiring distance of 20 m or shorter.
- TWIV cable with a continuous maximum permissible temperature of 75°C. It is assumed that the cables will be used in a surrounding air temperature of 40°C or less and the wiring distance of 20 m or shorter. (For use in the United States or Canada, refer to the section 7.2 "Instructions for UL and cUL.")
- PVC cable with a continuous maximum permissible temperature of 75°C. It is assumed that the cables will be used in a surrounding air temperature of 40°C or less and the wiring distance of 20 m or shorter (selection example mainly for use in Europe).
- The screw size for terminals R/L1, S/L2, T/L3, U, V, W, PR, P/+, NI-, and P1, and the earthing (grounding) terminal is shown. For the single-phase 200 V power input models, the screw size for terminals R/L1, S/L2, U, V, W, PR, P/+, NI-, and the earthing (grounding) terminal is shown. For the single-phase 100 V power input models, the screw size for terminals R/L1, S/L2, U, V, W, PR, P/+, NI-, and the earthing (grounding) terminal is shown. The screw size for earthing (grounding) is 0.6 to 0.8 N·m. When using a single-phase power input model, terminals are R/L1 and S/L2.

The line voltage drop can be calculated by the following formula:

$$\text{Line voltage drop } [V] = \sqrt{3} \times \text{wire resistance } [m\Omega/m] \times \text{wiring distance } [m] \times \text{current } [A] / 1000$$

Use a larger diameter cable when the wiring distance is long or when the voltage drop (torque reduction) in the low speed range needs to be reduced.

◆ Total wiring length

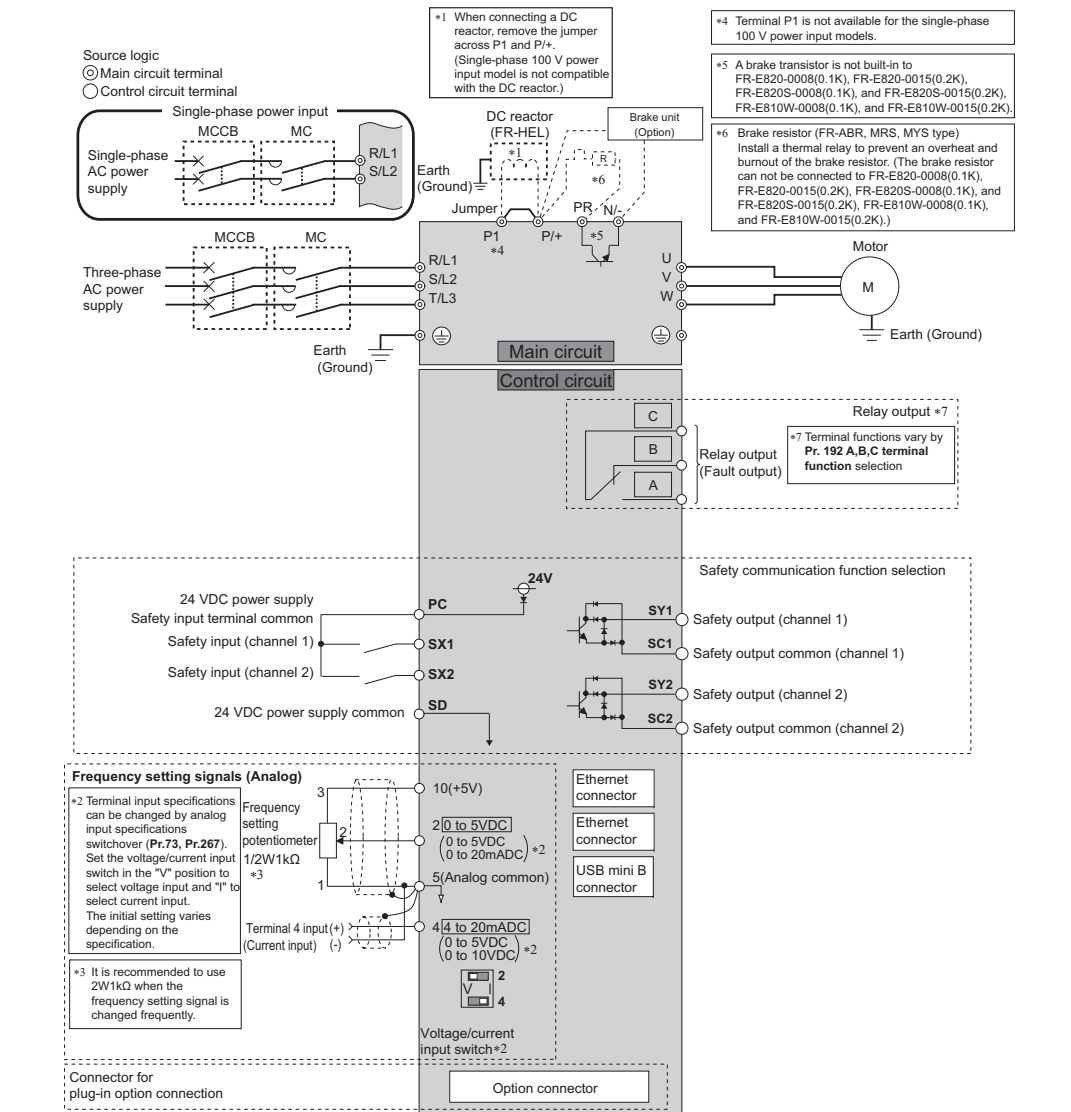
Connect one or more motors within the total wiring length (sum of the wiring lengths of the motor and the inverter) shown in the following table.

Cable type	Pr.72 setting (carrier frequency)	Voltage class	0.1K	0.2K	0.4K	0.75K	1.5K	2.2K	3.7K or higher
Shielded=1	1 (1 kHz) or lower	100 V, 200 V	50 m (200 m)	50 m (200 m)	75 m (300 m)	100 m (500 m)	100 m (500 m)	100 m (500 m)	100 m (500 m)
		400 V	—	—	50 m (200 m)	50 m (200 m)	75 m (300 m)	100 m (500 m)	100 m (500 m)
	2 (2 kHz) or higher	100 V, 200 V	10 m (30 m)	25 m (100 m)	50 m (200 m)	75 m (300 m)	100 m (500 m)	100 m (500 m)	100 m (500 m)
		400 V	—	—	10 m (30 m)	25 m (100 m)	50 m (200 m)	75 m (300 m)	100 m (500 m)

*1 The value in the parentheses is the total wiring length when unshielded cables are used.

When driving a 400 V class motor by the inverter, surge voltages attributable to the wiring constants may occur at the motor terminals, deteriorating the insulation of the motor. In this case, use a "400 V class inverter-driven insulation-enhanced motor" and set **Pr.72 PWM frequency selection** according to the wiring length: "14.5 kHz or less" when the wiring length is 50 m or shorter, "8 kHz or less" when the wiring length is from 50 m to 100 m, or "2 kHz or less" when the wiring length is longer than 100 m.

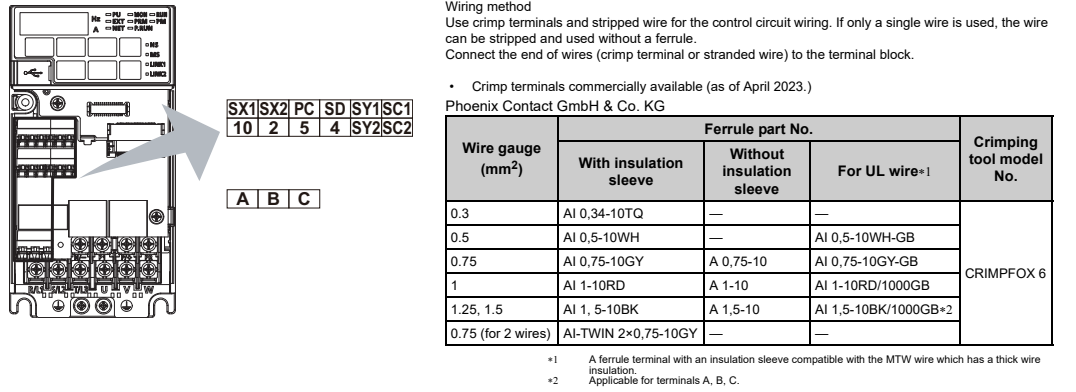
2.4 Terminal connection diagram



2.5 Details on the main circuit terminals and the control circuit terminals

Type	Terminal symbol	Common	Terminal name	Terminal function description
Main circuit	R/L1, S/L2, T/L3=1	—	AC power input	Connected to the commercial power supply.
	U, V, W	—	Inverter output	Connected to a three-phase squirrel cage motor or a PM motor.
	P/+, PR	—	Brake resistor connection	Connect an optional brake transistor (MRS, MYS, FR-ABR) between terminal P/+ and PR. (Not available for FR-E820-0008(0.1K), FR-E820-0015(0.2K), FR-E820S-0008(0.1K), and FR-E810W-0008(0.1K).)
	P/+, NI-	—	Brake unit connection	Connect the brake unit (FR-BU2, FR-BU3, FR-BU4). The high power factor converter (FR-HC2), power regeneration common converter (FR-CV), and multifunction regeneration converter (FR-XC) is a mode other than power regeneration mode 2) cannot be used.
Frequency setting	P/+ , P1+2	—	DC reactor connection	Remove the jumper across terminals P/+ and P1, and connect a DC reactor. (A DC reactor cannot be connected to the single-phase 100 V power input models.) When a DC reactor is not connected, the jumper across terminals P/+ and P1 should not be removed.
	⊕	—	Earth (ground)	For earthing (grounding) the inverter chassis. Be sure to earth (ground) the inverter.
	10	5	Power supply for a frequency setting potentiometer	Used as the power supply for an external frequency setting (speed setting) potentiometer.
	2	5	Frequency setting (voltage)	Inputting 0 to 5 VDC (or 0 to 10 VDC) provides the maximum output frequency at 5 V (or 10 V) and makes input and output proportional. Use Pr.73 to switch among input 0 to 5 VDC (initial setting), 0 to 10 VDC, and 0 to 20 mA. * The initial setting varies depending on the specification. Set the voltage/current input switch to the "I" position to select current input (0 to 20 mA).
Input signal	4	5	Frequency setting (current)	Inputting 4 to 20 mA DC (or 0 to 5 VDC, 0 to 10 VDC) provides the maximum output frequency at 20 mA and makes input and output proportional. This input signal is valid only when the AU signal is ON (terminal 2 input is invalid). To use terminal 4 (current input at initial setting), assign "4" to Pr.178 to

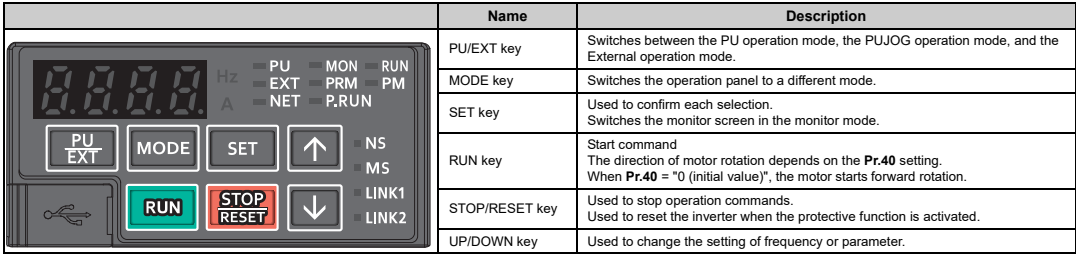
2.6 Control circuit terminal layout



3 BASIC OPERATION

3.1 Components of the operation panel

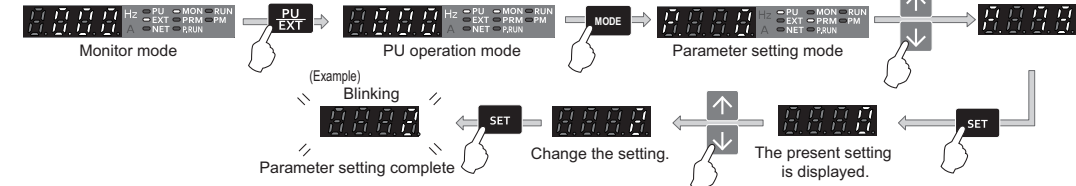
The operation panel cannot be removed from the inverter.



Starting/stopping the inverter on the operation panel



Parameter setting



4 PARAMETERS

For details, refer to the FR-E800 Instruction Manual (Function).
The PDF manual can also be downloaded from the Mitsubishi Electric FA Global Website.



5 LIST OF FAULT DISPLAYS

For details, refer to the FR-E800 Instruction Manual (Maintenance).
The PDF manual can also be downloaded from the Mitsubishi Electric FA Global Website.



6 SPECIFICATIONS

6.1 Inverter rating

◆ Three-phase 200 V class

Model FR-E820-□		0008	0015	0030	0050	0080	0110	0175	0240	0330	0470	0600	0760	0900		
		0.1K	0.2K	0.4K	0.75K	1.5K	2.2K	3.7K	5.5K	7.5K	11K	15K	18.5K	22K		
Applicable motor capacity (kW) ⁺¹		LD	0.2	0.4	0.75	1.1	2.2	3.0	5.5	7.5	11.0	15.0	18.5	22.0	30.0	
		ND	0.1	0.2	0.4	0.75	1.1	2.2	3.7	5.5	7.5	11.0	15.0	18.5	22.0	
Output	Rated capacity (kVA) ⁺²	LD	0.5	0.8	1.4	2.4	3.8	4.8	7.8	12.0	15.9	22.3	27.5	35.1	45.8	
		ND	0.3	0.6	1.2	2.0	3.2	4.4	7.0	9.6	13.1	18.7	23.9	30.3	35.9	
	Rated current (A) ⁺⁷	LD	1.3	2.0	3.5	6.0	9.6	12.0	19.6	30.0	40.0	56.0	69.0	88.0	115.0	
		ND	(1.1)	(1.7)	(3.0)	(5.1)	(8.2)	(10.2)	(16.7)	(25.5)	(34.0)	(47.6)	(58.7)	(74.8)	(97.8)	
	Overload current rating ⁺³	LD	0.8	1.5	2.0	3.0	5.0	8.0	11.0	17.5	24.0	33.0	47.0	60.0	80.0	
		ND	(0.8)	(1.4)	(2.5)	(4.1)	(7.0)	(10.0)	(16.5)	(23.0)	(31.0)	(44.0)	(57.0)	(72.0)	(86.0)	
	Rated voltage ⁺⁴	LD	120% 60 s, 150% 3 s (inverse-time characteristics) at surrounding air temperature of 50°C													
		ND	150% 60 s, 200% 3 s (inverse-time characteristics) at surrounding air temperature of 50°C													
	Regenerative braking	Rated voltage ⁺⁴	Three-phase 200 to 240 V													
		Brake transistor	Not installed													
Regenerative braking	Maximum brake torque (ND reference) ⁺⁵	Built-in														
		150%	100%		50%		20%									
Power supply ⁺¹²	Rated input AC (DC) voltage/frequency		Three-phase 200 to 240 V 50/60 Hz (283 to 339 VDC ⁺⁹)													
	Permissible AC (DC) voltage fluctuation		170 to 264 V, 150 to 240 V (243 to 273 VDC ⁺⁹)													
	Permissible frequency fluctuation		±5%													
	Rated input current (A) ⁺⁸	Without DC reactor	LD	1.0	3.0	5.1	8.2	12.5	16.1	25.5	37.1	48.6	74.3	90.5	112.9	139.5
		With DC reactor	LD	1.4	2.3	4.5	7.0	10.7	15.0	23.1	30.5	41.0	53.6	79.9	99.0	114.3
Power supply capacity (kVA) ⁺⁶	Without DC reactor	LD	1.3	2.0	3.5	6.0	9.6	12.0	20.0	30.0	40.0	56.0	69.0	88.0	115.0	
		ND	0.8	1.5	2.0	3.0	5.0	8.0	11.0	17.5	24.0	33.0	47.0	60.0	76.0	90.0
	With DC reactor	LD	0.7	1.1	1.9	3.1	4.8	6.2	9.7	15.0	19.0	29.0	35.0	43.0	54.0	
		ND	0.5	0.9	1.7	2.7	4.1	5.7	8.8	12.0	16.0	25.0	31.0	38.0	44.0	
Protective structure	Cooling system	LD	0.5	0.8	1.3	2.3	3.7	4.6	7.5	11.0	15.0	21.0	26.0	34.0	44.0	
		ND	0.3	0.6	1.1	1.9	3.0	4.2	6.7	9.1	13.0	18.0	23.0	29.0	34.0	
Approx. mass (kg)		Open type (IP20 for IEC 60529 only)														
		Natural														
		Forced air														
		0.5	0.5	0.7	1.0	1.4	1.4	1.8	3.3	3.3	5.4	5.6	11.0	11.0		

◆ Three-phase 400 V class

Model FR-E840-□		0016	0026	0040	0060	0095	0120	0170	0230	0300	0380	0440
		0.4K	0.75K	1.5K	2.2K	3.7K	5.5K	7.5K	11K	15K	18.5K	22K
Applicable motor capacity (kW) ⁺¹	LD	0.75	1.5	2.2	3.0	5.5	7.5	11.0	15.0	18.5	22.0	30.0
	ND	0.4	0.75	1.5	2.2	3.7	5.5	7.5	11.0	15.0	18.5	22.0
Rated capacity (kVA) ⁺²	LD	1.6	2.7	4.2	5.3	8.5	13.3	17.5	26.7	31.2	34.3	45.7
	ND	1.2	2.0	3.0	4.6	7.2	9.1	13.0	17.5	22.9	29.0	35.5
Rated current (A) ⁺⁷	LD	2.1	3.5	5.3	6.9	11.1	17.5	23.0	35.0	41.0	45.0	60.0
	ND	1.8	3.0	4.7	6.9	10.4	14.9	19.6	29.8	34.9	38.3	51.0
Overload current rating ⁺³	LD	1.6	2.6	4.0	6.0	9.5	12.0	17.0	23.0	30.0	38.0	44.0
	ND	120% 60 s, 150% 3 s (inverse-time characteristics) at surrounding air temperature of 50°C										
Rated voltage ⁺⁴	LD	Three-phase 380 to 480 V										
	ND	Three-phase 380 to 480 V										
Regenerative braking	LD	Not installed										
	ND	150%										
Rated input AC (DC) voltage/frequency	LD	Three-phase 380 to 480 V 50 Hz/60 Hz (537 to 679VDC ⁺⁹)										
	ND	Three-phase 380 to 480 V										
Permissible AC (DC) voltage fluctuation	LD	323 to 528 V, 50 Hz/60 Hz (457 to 740VDC ⁺⁹)										
	ND	323 to 528 V, 50 Hz/60 Hz										
Permissible frequency fluctuation	LD	±5%										
	ND	±5%										
Rated input current (A) ⁺⁵	LD	2.7	4.4	6.7	9.5	14.1	17.8	24.7	32.1	41.0	50.8	57.3
	ND	2.1	3.5	5.5	6.9	11.0	18.0	23.0	35.0	41.0	45.0	60.0
Power supply capacity (kVA) ⁺⁶	LD	1.6	2.6	4.0	6.0	9.5	12.0	17.0	23.0	30.0	38.0	44.0
	ND	1.2	2.0	3.0	4.6	7.2	9.1	13.0	18.0	23.0	29.0	34.0
Protective structure	LD	Open type (IP20 for IEC 60529 only)										
	ND	Open type (IP20 for IEC 60529 only)										
Cooling system	LD	Natural										
	ND	Natural										
Approx. mass (kg)	LD	1.2	1.4	1.4	1.8	1.8	2.4	2.4	4.8	4.9	11.0	11.0
	ND	1.2	1.4	1.4	1.8	1.8	2.4	2.4	4.8	4.9	11.0	11.0

◆ Single-phase 200 V class

Model FR-E820S-□		0008	0015	0030	0050	0080	0110
		0.1K	0.2K	0.4K	0.75K	1.5K	2.2K
Applicable motor capacity (kW) ⁺¹	ND	0.1	0.2	0.4	0.75	1.5	2.2
	ND	0.3	0.6	1.2	2.0	3.2	4.4
Rated current (A) ⁺⁷	LD	0.8	1.5	2.5	4.0	6.0	8.0
	ND	0.8	1.5	2.5	4.0	6.0	8.0
Overload current rating ⁺³	LD	150% 60 s, 200% 3 s (inverse-time characteristics) at surrounding air temperature of 50°C					
	ND	150% 60 s, 200% 3 s (inverse-time characteristics) at surrounding air temperature of 50°C					
Rated voltage ⁺⁴	LD	Three-phase 200 to 240 V					
	ND	Three-phase 200 to 240 V					
Regenerative braking	LD	Not installed					
	ND	150%					
Rated input AC voltage/frequency	LD	Single-phase 200 to 240 V, 50 Hz/60 Hz					
	ND	Single-phase 200 to 240 V, 50 Hz/60 Hz					
Permissible AC voltage fluctuation	LD	170 to 264 V, 50 Hz/60 Hz					
	ND	170 to 264 V, 50 Hz/60 Hz					
Permissible frequency fluctuation	LD	±5%					
	ND	±5%					
Rated input current (A) ⁺⁵	LD	2.3	4.1	7.9	11.2	17.9	25.0
	ND	1.4	2.6	5.2	8.7	13.9	19.1
Power supply capacity (kVA) ⁺⁶	LD	0.4	0.8	1.5	2.5	4.5	5.5
	ND	0.3	0.6	1.1	1.9	3.0	4.2
Protective structure	LD	Open type (IP20 for IEC 60529 only)					
	ND	Open type (IP20 for IEC 60529 only)					
Cooling system	LD	Natural					
	ND	Natural					
Approx. mass (kg)	LD	0.5	0.5	0.8	1.3	1.4	1.9
	ND	0.5	0.5	0.8	1.3	1.4	1.9

◆ Single-phase 100 V class

Model FR-E810W-□		0008	0015	0030	0050
		0.1K	0.2K	0.4K	0.