

FACTORY AUTOMATION

# INVERTER FR-D800(-E)

New Ethernet models join the FR-D800, our compact entry-level family  
— exclusive to global markets (excluding Japan).



# D800

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This evolution paves the way for our future.



Mitsubishi Electric Corporation operates across a wide range of sectors, from home appliances and building systems to railway solutions, factory automation equipment, and satellites and leverages the synergy created by these diverse sectors to address various challenges and provide optimal solutions worldwide.

We, the Mitsubishi Electric Group, will continue to evolve in "carbon neutrality" and a "circular economy" by promoting innovation in products and services and providing integrated solutions through our business activities, all in order to realize a vibrant and sustainable society.

Under "Changes for the Better" which reflects the Mitsubishi Electric Group's commitment to "always strive to achieve something better", Mitsubishi Electric FA will expand the value of its products and services in the FA system business by advancing the provision and expansion of integrated solutions under the slogan "Automating the World" for an even better tomorrow. Through automation technology, we aim to contribute to innovation not only in the manufacturing industry but also across society as a whole.

We stand as your partner in shaping a smarter, more efficient, and more sustainable future.



The Mitsubishi Electric Group is actively solving social issues, such as decarbonization and labor shortages, by providing production sites with energy-saving equipment and solutions that utilize automation systems, thereby helping towards a sustainable society.

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# This evolution paves the way for our future.

1 Features of the FR-D800 series



## D800



Inherits the advantages of the FR-D700 series.

Keeps the smallest class body,  
becomes further easier to choose  
and easier to use.

Environmentally friendly

"next-generation compact inverters"

help create the sustainable future.





1 Features of the FR-D800 Series



Product video >

# Features of the FR-D800 Series

The FR-D800 series inherits the advantages of the FR-D700 series.

While keeping the smallest class body, it becomes easier to choose, easier to use, and environmentally friendly.

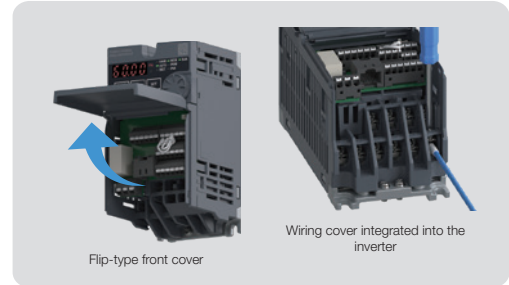
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Features of the FR-D800 series

## Quest for ease of use

### Quicker wiring

Improves wiring work efficiency with the flip-type front cover and the wiring cover integrated into the inverter.



## Revolution in ease of selection

### Easy to use, compact FR-D800 inverter

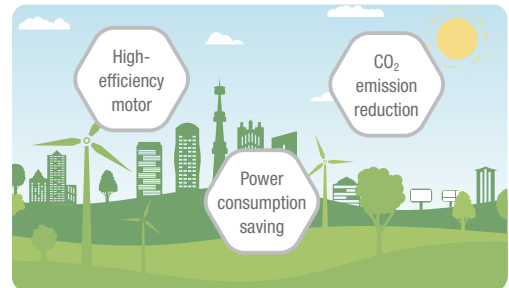
Inherits and enhances the functions of the FR-D700 and FR-F700PJ series. For easy operation with compact body, just choose the FR-D800 inverter.



## Advanced environmental performance

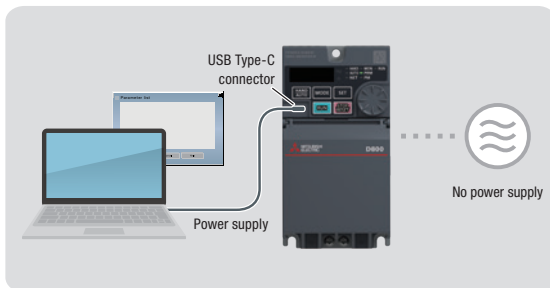
### Eco-friendly choice

- Helps reduce the running cost and CO<sub>2</sub> emission by using high-efficiency motors and reducing the standby power.
- The CO<sub>2</sub> emission reduction amount can be monitored.



## Settings using power supplied from the computer

With the power supplied from the computer (USB bus power connection)\*1, parameters can be set\*2. You can set parameters straight out of the box.

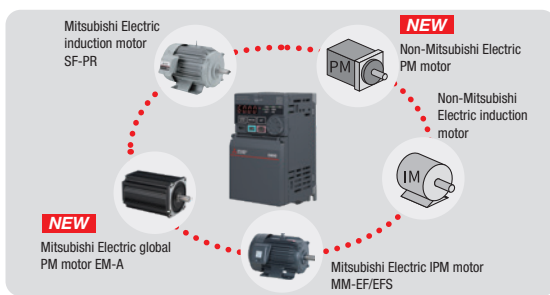


## User Friendly

\*1: The maximum SCCR is 500 mA. A PU connector cannot be used during USB bus power connection.  
\*2: Use FR Configurator2 to set parameters.

## Various motor controls by the FR-D800 inverter

Not only induction motors, PM motors are also supported. As a single inverter supports various control methods, inverters need not be prepared according to the motor type.

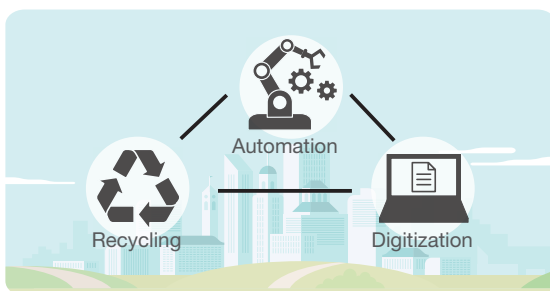


## Simple to Adapt

## Responsibility of manufacturing

Our activities to reduce the environmental load are as follows.

- Uses recycled materials such as resin.
- Reduces paper usage and promotes digitization.
- Promotes automation of the product production and packaging.
- Reduces the material usage by downsizing the products.



## Eco-Friendly



# Easy setup

Allows easy wiring and simple startup of networking

Improved wiring work efficiency

Parameters can be set without needing to power the main circuit

Time-saving through easy wiring

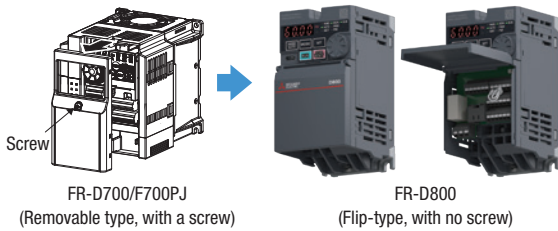
Information can be obtained easily from smartphones

Compatibility with worldwide networks

## Improved wiring work efficiency

### Flip-type front cover / No screw tightening (all capacities) **NEW**

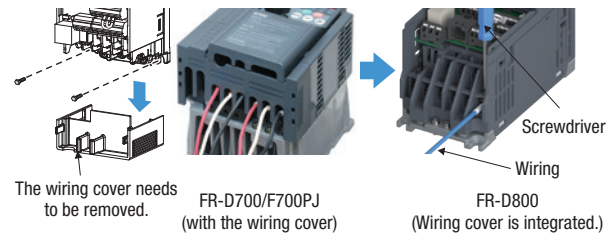
The new flip-type front cover has been adopted. This reduces the screw tightening work for the front cover. In addition, indication of the model name and SERIAL number is printed directly on the front upper-left corner of the product. Thus incorrect combination of the front cover and product can be avoided.



### Comb-shaped wiring cover integrated into the inverter (some capacities)

The wiring cover is integrated into the inverter, reducing removal and reinstallation work.

Capacity	Three-phase 200 V class	0.75K or lower	Single-phase 100 V	0.4K or lower
	Three-phase 400 V class	1.5K or lower	Single-phase 200 V	0.75K or lower

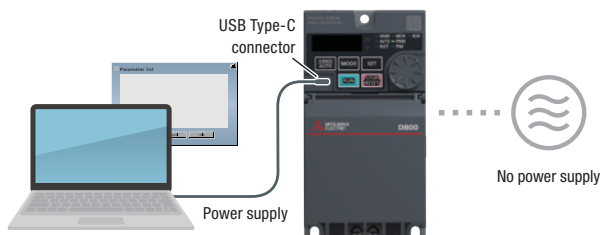


## Parameters can be set without needing to power the main circuit

### USB Type-C connector **NEW**

With the power supplied from the computer (USB bus power connection)<sup>\*1</sup>, parameters can be set using FR Configurator2 while the main circuit power supply is OFF. You can set parameters straight out of the box.

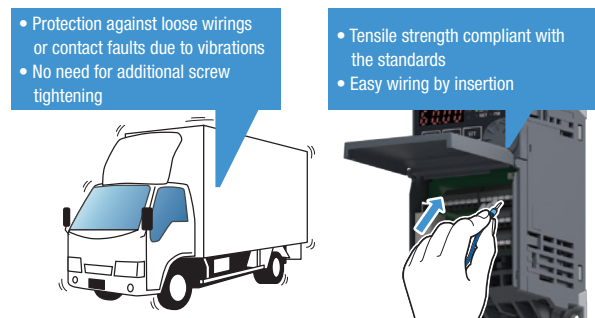
\*1: The maximum SCCR is 500 mA. A PU connector cannot be used during USB bus power connection.



## Time-saving through easy wiring

### Spring clamp control terminal block

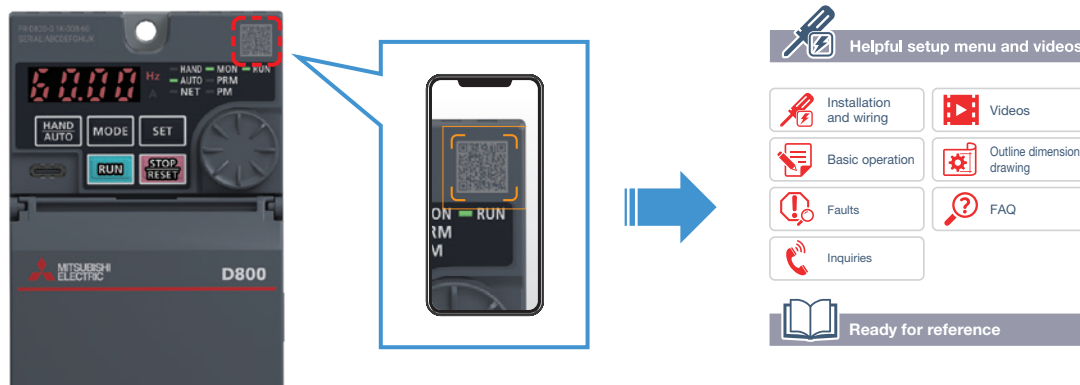
Spring clamp terminals have been adopted for control circuit terminals for easy wiring. Wires can be protected against loosening or contact faults due to vibrations during operation on a bogie or during transport. No additional screw tightening is required.



## Information can be obtained easily from smartphones

### Setup information web page **NEW**

The setup information website can be accessed using a tablet or smartphone from the 2D code on the front of the product. Information required for setup, such as how to connect and use the inverter, can be easily obtained on the setup information website.



## Compatibility with worldwide networks

### Supporting multi-protocols **NEW**

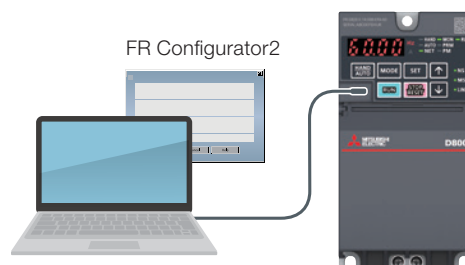
Inverter models that support protocols of major global industrial Ethernet networks are available. FR-E800 inverters support a variety of open networks without using any options, enabling the use of inverters on the existing network and assuring compatibility with various systems. Users can select a protocol group suitable for the intended system. It is possible to switch between protocols only by setting parameters. (Supported protocols differ depending on the model.)

Model	CC-Link IE TSN (100Mbps)	CC-Link IE Field Network Basic	MODBUS/TCP	PROFINET	EtherNet/IP
FR-D800-[-]-EPA	●	●	●	—	●
FR-D800-[-]-EPB	●	●	●	●	—

### Supporting model switching

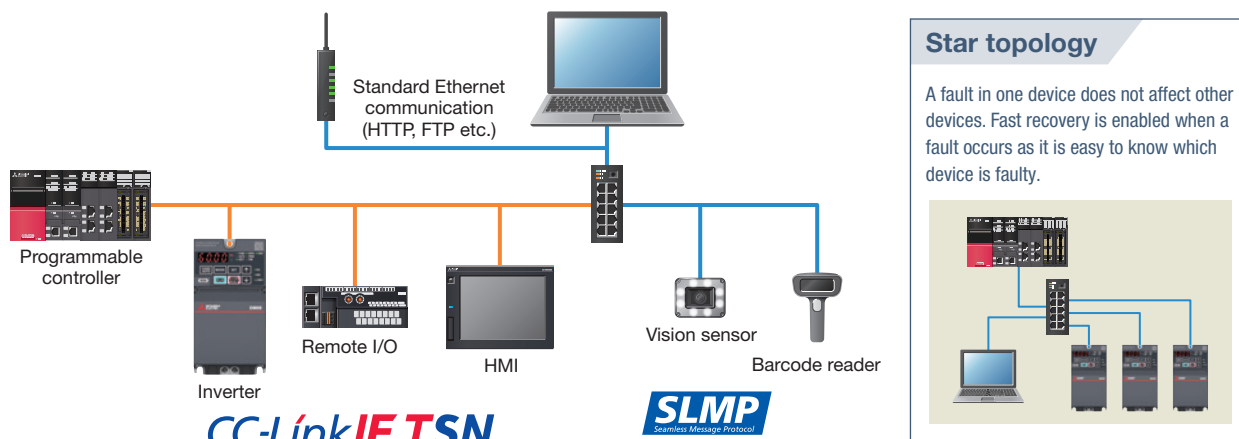
The firmware of the FR-D800-E series inverter can be switched between the FR-D800-EPA and the FR-D800-EPB by using FR Configurator2.

Note that replacing the rating plate or modifying its indications is not allowed. If the rating plate is modified, the product will not comply with the standards.



### Reducing the workload for system construction

Networks can be created also with non-FA devices that support SLMP and TCP/IP communication by connecting them in star topology.



# Lineup

FR-D 8 2 0 - 0.1K - 008

Symbol	Voltage class
1	100 V
2	200 V
4	400 V

Symbol	Input power
None	Three-phase
S	Single-phase
W	Single-phase <sup>1</sup>

Symbol	Rated capacity / rated current
0.1K-008 to 15K-580 (for 200 V)	Applicable motor capacity (ND) (kW) - Inverter rated current (ND) (A) <sup>2</sup>

Symbol	Circuit board coating <sup>3</sup>
None	Without coating
-60	With coating

Symbol	Protocol specification
None	Mitsubishi inverter protocol, MODBUS RTU
PA <sup>4</sup>	Protocol group A (CC-Link IE TSN, CC-Link IE Field Network Basic, MODBUS/TCP, and EtherNet/IP)
PB <sup>4</sup>	Protocol group B (CC-Link IE TSN, CC-Link IE Field Network Basic, MODBUS/TCP, and PROFINET)

Symbol	Communication
None	RS-485 communication
-E	Ethernet communication

## Voltage class and applicable capacity

Model	Power supply / voltage class	Rated capacity	0.1	0.2	0.4	0.75	1.5	2.2	3.7	5.5	7.5	11	15
FR-D820-[]K-[]	Three-phase 200 V	Rated current	008	014	025	042	070	100	165	238	318	450	580
			●	●	●	●	●	●	●	●	●	●	●
FR-D840-[]K-[]	Three-phase 400 V	Rated current	—	—	012	022	037	050	081	120	163	230	295
					●	●	●	●	●	●	●	●	●
FR-D820S-[]K-[]	Single-phase 200 V	Rated current	008	014	025	042	070	100	—	—	—	—	—
			●	●	●	●	●	●					
FR-D810W-[]K-[]	Single-phase 100 V	Rated current	008	014	025	042	—	—	—	—	—	—	—
			●	●	●	●							

●: Released

\*1: Double voltage rectification / 200 V output

\*2: "0.1K-008" means "0.1 kW, 0.8 A", and "15K-580" means "15 kW, 58.0 A".

\*3: Conforming to IEC 60721-3-3:1994 3C2/3S2

\*4: To change the protocol group, the firmware of the FR-D800-EPA can be changed from PA to PB, and the firmware of the FR-D800-EPB can be changed from PB to PA. After the firmware change, the protocol group before the change cannot be used. Download the firmware from the Mitsubishi Electric FA Global Website. For details on firmware change, refer to "Firmware update" in the FR Configurator2 Instruction Manual.

When changing the firmware from the initial status, be sure not to modify the indication on the rating plate including the inverter model name, such as revising it with a pen and replacing the plate. If the rating plate is modified, the product will not comply with the standards.

# Specifications

## Comparison of major specifications

Specifications		FR-D800	FR-D800-EPA/EPB	FR-E800	FR-E800-EPA/EPB	
Lineup		Three-phase 200 V 0.1K to 15K Three-phase 400 V 0.4K to 15K Single-phase 200V 0.1K to 2.2K Single-phase 100V 0.1K to 0.75K		Three-phase 200 V 0.1K to 22K Three-phase 400 V 0.4K to 22K Three-phase 575 V 0.75K to 7.5K Single-phase 200V 0.1K to 2.2K Single-phase 100V 0.1K to 0.75K		
Control method		V/F control Advanced magnetic flux vector control PM sensorless vector control (speed control)		V/F control Advanced magnetic flux vector control Real sensorless vector control (speed/torque control) Vector control (speed/torque/position control) PM sensorless vector control (speed/position control)		
Output frequency range		0.2 to 590 Hz		0.2 to 590 Hz		
Built-in brake transistor		Built-in for 0.4K to 15K		Built-in for 0.4K to 22K		
Input signal	Contact input	5		7	2	
	Pulse train input	100k pulses/s (inverter, for frequency setting)		100k pulses/s (option, for frequency setting)		
Output signal	Open collector output	2	1	2	0	
	Contact output (1 changeover contact)	1		1		
Fault output		1 changeover contact (240 VAC 2 A, 30 VDC 1 A), assignable to an open collector output terminal		1 changeover contact (240 VAC 2 A, 30 VDC 1 A), assignable to an open collector output terminal		
Monitor function	Pulse train output	Not available		1440 pulses/s, 1 mA	Not available	
	Analog output	0 to 10 VDC / 12 bits		0 to ±10 VDC	Not available	
Built-in communication function	RS-485 communication	PU connector or RS-485 terminals (Both cannot be used simultaneously.)	Not available	PU connector (2 ports for RS-485 communication are optional.)	Not available	
		Mitsubishi inverter protocol	Available	Not available	Available	Not available
		MODBUS <sup>®</sup> RTU	Available	Not available	Available	Not available
	Ethernet communication	Not available	Ethernet connector (1 port)	Not available	Ethernet connector (2 ports)	
	CC-Link IETSN	Not available	Available	Not available	Available	
	CC-Link IE Field Network Basic	Not available	Available	Not available	Available	
	MODBUS/TCP	Not available	Available	Not available	Available	
	EtherNet/IP	Not available	Available (Available for the FR-D800-EPA only)	Not available	Available (Available for the FR-E800-EPA only)	
PROFINET	Not available	Available (Available for the FR-D800-EPB only)	Not available	Available (Available for the FR-E800-EPB only)		
Inverter-to-inverter link function		Not supported		Not supported	Supported	
Functional safety	Function of ISO 61800-5-2	STO		STO		
	Safety level	SIL2, PLd, Cat.3		SIL2, PLd, Cat.3		
Surrounding air temperature		-20°C to +60°C * SLD rating: Derating is required for the temperature above 40°C. ND rating: Derating is required for the temperature above 50°C.		-20°C to +60°C * Derating is required for the temperature above 50°C.		
USB		Type-C (bus power connection supported)		Mini-B (bus power connection supported)		
Firmware update	Interface for connection with FR Configurator2	USB	USB, Ethernet	USB	USB, Ethernet	
	Model switching (changing communication specifications / protocol group)	Not supported (communication specifications fixed)	Protocol group (PA/PB) changeable (communication specifications fixed)	Not supported (communication specifications fixed)	Not supported (communication specifications and protocol group fixed)	
Trace function		Supported		Supported		
PLC function		Not supported		Supported		
Plug-in option		Not supported		1		
Parameter unit		Supported	Not supported	Supported	Not supported	

For more information on the specifications and options, refer to the catalogs and Instruction Manuals.

# Specifications

## ● Common specifications

Control	Control method		Soft-PWM control / High carrier frequency PWM control		
	Induction motor	Selectable among V/F control and Advanced magnetic flux vector control			
		PM motor	PM sensorless vector control		
	Output frequency range	Induction motor	0.2 to 590 Hz (The upper-limit frequency is 400 Hz under Advanced magnetic flux vector control.)		
		PM motor	0.2 to 400 Hz (not operable at a frequency higher than the maximum motor frequency)		
	Frequency setting and resolution	Analog input	0.015 Hz / 0 to 60 Hz at 0 to 10 V / 12 bits (terminals 2 and 4)		
		Digital input	0.03 Hz / 0 to 60 Hz at 0 to 5 V / 11 bits or 0 to 20 mA / 11 bits (terminals 2 and 4)		
	Frequency accuracy	Analog input	Within $\pm 0.2\%$ of the maximum output frequency (25°C $\pm 10^\circ\text{C}$ )		
		Digital input	0.01% or less of the set output frequency		
	Voltage/frequency characteristics		Base frequency can be set from 0 to 590 Hz. Constant-torque/variable-torque pattern can be selected (with induction motor only).		
	Starting torque	Induction motor	Advanced magnetic flux vector control: 200% at 0.5 Hz (3.7K or lower), 150% at 0.5 Hz (5.5K or higher)		
		PM motor	50%		
	Torque boost		Manual torque boost (induction motor only)		
	Acceleration/deceleration time setting		0 to 3600 s (acceleration and deceleration can be set individually), linear or S-pattern acceleration/deceleration modes are available.		
DC injection brake	Induction motor	Operation frequency (0 to 120 Hz), operation time (0 to 10 s), operation voltage (0% to 30%) variable (The current is limited at the inverter rated current.)			
	PM motor	Operation time (0 to 10 s) variable, operating voltage (operating current) fixed			
Stall prevention operation level		Operation current: 0% to 200% variable, with selectable availability of the function			
Torque limit level		Torque limit value can be set (0 to 400% variable). (Under PM sensorless vector control only)			
Operation	Frequency setting signal	Analog input	Terminals 2 and 4: 0 to 10 V / 0 to 5 V / 4 to 20 mA (0 to 20 mA)		
		Digital input	Input using the operation panel or parameter unit		
		Pulse train input	100k pulses/s (inverter)		
	Start signal		Forward and reverse rotation or start signal automatic self-holding input (3-wire input) can be selected.		
	Input signal		5	Low-speed operation command, middle-speed operation command, high-speed operation command, forward rotation command, reverse rotation command The input signal can be changed using <b>Pr.178 to Pr.182 (Input terminal function selection)</b> .	
	Operational function		Maximum and minimum frequency settings, multi-speed operation, acceleration/deceleration pattern, thermal protection, DC injection brake, starting frequency, JOG operation, output stop (MRS), stall prevention, regeneration avoidance, increased magnetic excitation deceleration, frequency jump, rotation display, automatic restart after instantaneous power failure, remote setting, retry function, carrier frequency selection, fast-response current limit, forward/reverse rotation prevention, operation mode selection, slip compensation, speed smoothing control, traverse, auto tuning, applied motor selection, RS-485 communication*1, Ethernet communication*2, PID control, easy dancer control, cooling fan operation selection, stop selection (deceleration stop/coasting), power failure time deceleration-to-stop function, life diagnosis, maintenance timer, current average monitor, multiple rating, speed control, torque limit, test operation, safety stop function, emergency drive, Optimum excitation control.		
	Output signal	Open collector output	Standard model: 2 Ethernet model: 1	Inverter running, Up to frequency, Fault The output signal can be changed using <b>Pr.190 to Pr.192 (Output terminal function selection)</b> .	
		Relay output	1		
		Analog output	Terminal AM: 0 to +10 V / 12 bits		
	Protective/warning function	Protective functions		Overcurrent trip during acceleration, overcurrent trip during constant speed, overcurrent trip during deceleration/stop, regenerative overvoltage trip during acceleration, regenerative overvoltage trip during constant speed, regenerative overvoltage trip during deceleration or stop, inverter overload trip (electronic thermal relay function), motor overload trip (electronic thermal relay function), heat sink overheat, undervoltage, input phase loss*3, stall prevention stop, loss of synchronism detection*4, upper limit fault detection, lower limit fault detection, brake transistor fault, output side earth (ground) fault overcurrent, output short circuit, inrush resistance overheat, output phase loss, external thermal relay operation, PTC thermistor operation*4, option fault*2, Internal storage device fault, parameter storage device fault, disconnected PU, retry count excess, CPU fault, abnormal output current detection, USB communication fault, analog input fault, safety circuit fault, speed deviation excess detection*4, PID signal fault, Ethernet communication fault*2, internal circuit fault	
Warning functions		Fan alarm, stall prevention (overcurrent), stall prevention (overvoltage), regenerative brake pre-alarm*4, electronic thermal relay function pre-alarm, PU stop, maintenance timer alarm, parameter write error, operation panel lock*4, Password locked*4, safety stop, load fault warning*4, emergency drive in operation*4, Continuous operation during communication fault*4, Ethernet communication fault*2, duplicate IP address*2, IP address fault*2, incorrect parameter setting			
Environment	Surrounding air temperature		-20°C to +60°C (non-freezing) SLD rating: The rated current must be reduced at a temperature above 40°C. ND rating: The rated current must be reduced at a temperature above 50°C. (For information on output current reduction, refer to the Instruction Manual (Connection).)		
	Surrounding air humidity		95% RH or less (non-condensing) (With circuit board coating (conforming to IEC 60721-3-3:1994 3C2/3S2)) 90% RH or less (non-condensing) (Without circuit board coating)		
	Storage temperature*5		-40°C to +70°C		
	Ambience		Indoors (free from corrosive gas, flammable gas, oil mist, dust and dirt)		
	Altitude/vibration		Maximum 3000 m*6, 5.9 m/s <sup>2</sup> or less at 10 to 55 Hz in X, Y, and Z directions		

\*1 Available only for the standard model.

\*2 Available for the Ethernet model.

\*3 Available for the three-phase power input model.

\*4 Not activated in the inverter in the initial state.

\*5 Applicable to conditions for a short time, for example, in transit.

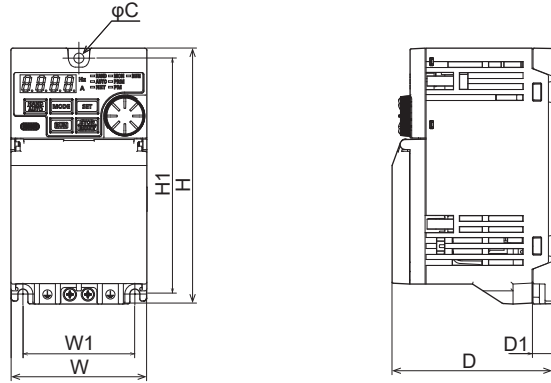
\*6 For the installation at an altitude above 1000 m, consider a 3% reduction in the rated current per 500 m increase in altitude.

# Outline Dimension Drawings

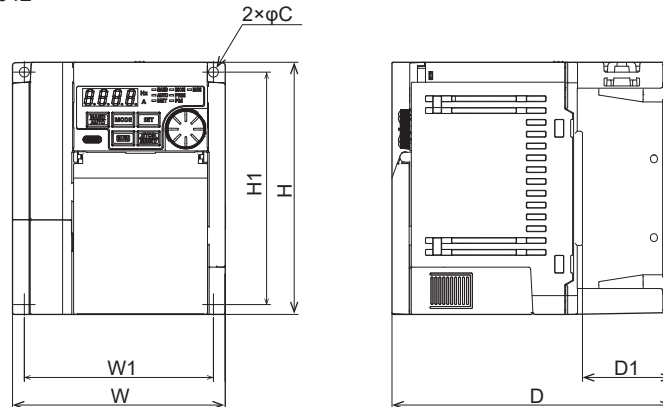
The standard model has a setting dial on the operation panel.  
The Ethernet model has UP and DOWN keys on the operation panel.

The outline dimension drawings are the same for the standard model and the Ethernet model. The standard model is used as an example.

- FR-D820-0.1K-008, FR-D820-0.2K-014, FR-D820-0.4K-025, FR-D820-0.75K-042
- FR-D840-0.4K-012, FR-D840-0.75K-022, FR-D840-1.5K-037
- FR-D820S-0.1K-008, FR-D820S-0.2K-014, FR-D820S-0.4K-025, FR-D820S-0.75K-042
- FR-D810W-0.1K-008, FR-D810W-0.2K-014, FR-D810W-0.4K-025



- FR-D820-1.5K-070, FR-D820-2.2K-100, FR-D820-3.7K-165, FR-D820-5.5K-238, FR-D820-7.5K-318, FR-D820-11K-450, FR-D820-15K-580
- FR-D840-2.2K-050, FR-D840-3.7K-081, FR-D840-5.5K-120, FR-D840-7.5K-163, FR-D840-11K-230, FR-D840-15K-295
- FR-D820S-1.5K-070, FR-D820S-2.2K-100
- FR-D810W-0.75K-042



### • Three-phase 200 V class

Inverter model	W	W1	H	H1	D	D1	C
FR-D820-0.1K-008 FR-D820-0.2K-014	68	56	128	118	80.5	10	5
FR-D820-0.4K-025					102.5	32	
FR-D820-0.75K-042					132.5	42	
FR-D820-1.5K-070 FR-D820-2.2K-100	108	96	128	118	132.5	36	5
FR-D820-3.7K-165					142.5	46	
FR-D820-5.5K-238 FR-D820-7.5K-318	220	208	150*1	138	155	68	5
FR-D820-11K-450 FR-D820-15K-580	220	195	260*2	244	190	84.7	6

### • Three-phase 400 V class

Inverter model	W	W1	H	H1	D	D1	C
FR-D840-0.4K-012 FR-D840-0.75K-022	68	56	128	118	129.5	42	5
FR-D840-1.5K-037					167.5	62	
FR-D840-2.2K-050 FR-D840-3.7K-081	108	96	128	118	155.5	36	5
FR-D840-5.5K-120 FR-D840-7.5K-163	220	208	150*1	138	155	68	5
FR-D840-11K-230 FR-D840-15K-295	180	164	260*2	244	190	71.5	6

### • Single-phase 200 V class

Inverter model	W	W1	H	H1	D	D1	C
FR-D820S-0.1K-008 FR-D820S-0.2K-014	68	56	128	118	80.5	10	5
FR-D820S-0.4K-025					132.5	32	
FR-D820S-0.75K-042					142.5	42	
FR-D820S-1.5K-070 FR-D820S-2.2K-100	108	96	128	118	145	36	5

### • Single-phase 100 V class

Inverter model	W	W1	H	H1	D	D1	C
FR-D810W-0.1K-008	68	56	128	118	80.5	10	5
FR-D810W-0.2K-014					110.5	10	
FR-D810W-0.4K-025					132.5	32	
FR-D810W-0.75K-042	108	96	128	118	145	36	5

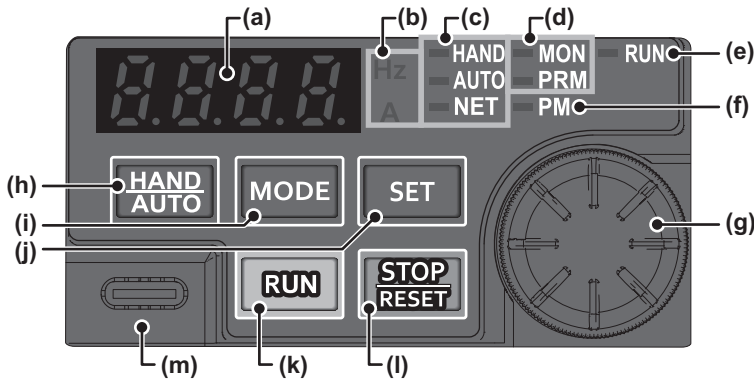
- \*1 The height dimension will be increased by about 2 mm as the fan cover fixing screw is installed.
- \*2 The height dimension will be increased by about 3 mm as the fan cover fixing screw is installed.

(Unit: mm)

# Operation Panel

## ● FR-D800 (Standard model)

The operation panel cannot be removed from the inverter.



No.	Appearance	Name	Description
(a)		Monitor (4-digit LED)	Shows a numeric value (readout) of a monitor item such as the frequency or a parameter number. (The monitor item can be changed according to the settings of Pr.52, Pr.774 to Pr.776.)
(b)		Unit indication	Hz: ON when the actual frequency is monitored. (Blinks when the set frequency is monitored.) A: ON when the current is monitored. (Both "Hz" and "A" are OFF to indicate a value other than the frequency or the current.)
(c)		Inverter operation mode LED indicator	HAND: ON when the inverter is in the PU operation mode. AUTO: ON when the inverter is in the External operation mode. (ON when the inverter in the initial setting is powered ON.) NET: ON when the inverter is in the Network operation mode. Both HAND and AUTO are ON when the inverter is in the External/PU combined operation mode 1 or 2.
(d)		Operation panel mode LED indicator	MON: ON only when the first, second, or third monitor is displayed. PRM: ON when the operation panel is in the parameter setting mode. The indicator blinks when the inverter is in the easy setting mode.
(e)		Operating status indicator	ON or blinks during inverter running. ON: During forward rotation operation. Blinks slowly (1.4-second cycle): During reverse rotation operation. Blinks quickly (0.2-second cycle): Operation is disabled although the start command is given.*1
(f)		Controlled motor type LED indicator	ON when the PM sensorless vector control is selected. The indicator blinks during test operation. The indicator is OFF when the inverter controls the induction motor.
(g)		Setting dial	The setting dial of the Mitsubishi Electric inverters. Turn the setting dial to change the setting of frequency or parameter, etc. Press the setting dial to perform the following operations: To display a set frequency on the LED display in the monitor mode. (The monitor item shown on the display can be changed by using Pr.992.) To display the present setting during calibration.
(h)		HAND/AUTO key	Switches between the PU operation mode, the PUJOG operation mode, and the External operation mode. The easy setting of the inverter operation mode is enabled by pressing this key simultaneously with the MODE key. Also cancels the PU stop warning.
(i)		MODE key	Switches the operation panel to a different mode. The easy setting of the inverter operation mode is enabled by pressing this key simultaneously with the HAND/AUTO key. Every key on the operation panel becomes inoperable by holding this key for two seconds. The key lock function is disabled when Pr.161 = "0 (initial setting)".
(j)		SET key	Confirms each selection. When this key is pressed during inverter operation, the monitor item changes. (The monitor item on each screen can be changed according to the settings of Pr.52, Pr.774 to Pr.776.)
(k)		RUN key	Start command The direction of motor rotation depends on the Pr.40 setting. When Pr.40 = "0 (initial value)", the motor starts forward rotation.
(l)		STOP/RESET key	Stops the operation commands. Used to reset the inverter when the protective function is activated.
(m)		USB connector (USB Type-C)	FR Configurator2 is available by USB connection. USB bus power connection is available.*2

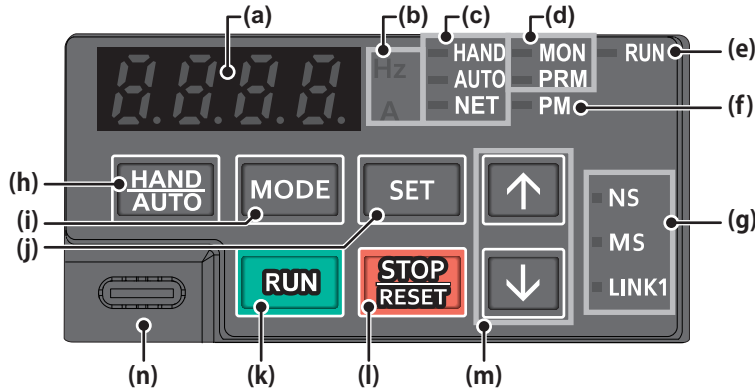
\*1 Situations such as when the MRS/X10 signal is input, during the automatic restart after instantaneous power failure, after auto tuning is complete, when "SE" (incorrect parameter setting) alarm occurs.

\*2 The maximum SCCR is 500 mA. A PU connector cannot be used during USB bus power connection.

For details on the parameters, refer to the Instruction Manual (Function).

## ● FR-D800-E (Ethernet model)

The operation panel cannot be removed from the inverter.



No.	Appearance	Name	Description
(a)		Monitor (4-digit LED)	Shows a numeric value (readout) of a monitor item such as the frequency or a parameter number. (The monitor item can be changed according to the settings of Pr.52, Pr.774 to Pr.776.)
(b)		Unit indication	Hz: ON when the actual frequency is monitored. (Blinks when the set frequency is monitored.) A: ON when the current is monitored. (Both "Hz" and "A" are OFF to indicate a value other than the frequency or the current.)
(c)		Inverter operation mode LED indicator	HAND: ON when the inverter is in the PU operation mode. AUTO: ON when the inverter is in the External operation mode. NET: ON when the inverter is in the Network operation mode. (ON when the inverter in the initial setting is powered ON.) Both HAND and AUTO are ON when the inverter is in the External/PU combined operation mode 1 or 2.
(d)		Operation panel mode LED indicator	MON: ON only when the first, second, or third monitor is displayed. PRM: ON when the operation panel is in the parameter setting mode. The indicator blinks when the inverter is in the easy setting mode.
(e)		Operating status indicator	ON or blinks during inverter running. ON: During forward rotation operation. Blinks slowly (1.4-second cycle): During reverse rotation operation. Blinks quickly (0.2-second cycle): Operation is disabled although the start command is given.*1
(f)		Controlled motor type LED indicator	ON when the PM sensorless vector control is selected. The indicator blinks during test operation. The indicator is OFF when the inverter controls the induction motor.
(g)		Ethernet communication status	Indicates the Ethernet communication status. For details, refer to the Instruction Manual (Communication).
(h)		HAND/AUTO key	Switches between the PU operation mode, the PUJOG operation mode, and the Network operation mode. The easy setting of the inverter operation mode is enabled by pressing this key simultaneously with the MODE key. Also cancels the PU stop warning.
(i)		MODE key	Switches the operation panel to a different mode. The easy setting of the inverter operation mode is enabled by pressing this key simultaneously with the HAND/AUTO key. Every key on the operation panel becomes inoperable by holding this key for two seconds. The key lock function is disabled when Pr.161 = "0 (initial setting)".
(j)		SET key	Confirms each selection. When this key is pressed during inverter operation, the monitor item changes. (The monitor item on each screen can be changed according to the settings of Pr.52, Pr.774 to Pr.776.)
(k)		RUN key	Start command The direction of motor rotation depends on the Pr.40 setting. When Pr.40 = "0 (initial value)", the motor starts forward rotation.
(l)		STOP/RESET key	Stops the operation commands. Used to reset the inverter when the protective function is activated.
(m)		UP/DOWN key	Used to change the setting of frequency or parameter.
(n)		USB connector (USB Type-C)	FR Configurator2 is available by USB connection. USB bus power connection is available.*2

\*1 Situations such as when the MRS/X10 signal is input, during the automatic restart after instantaneous power failure, after auto tuning is complete, when "SE" (incorrect parameter setting) alarm occurs.

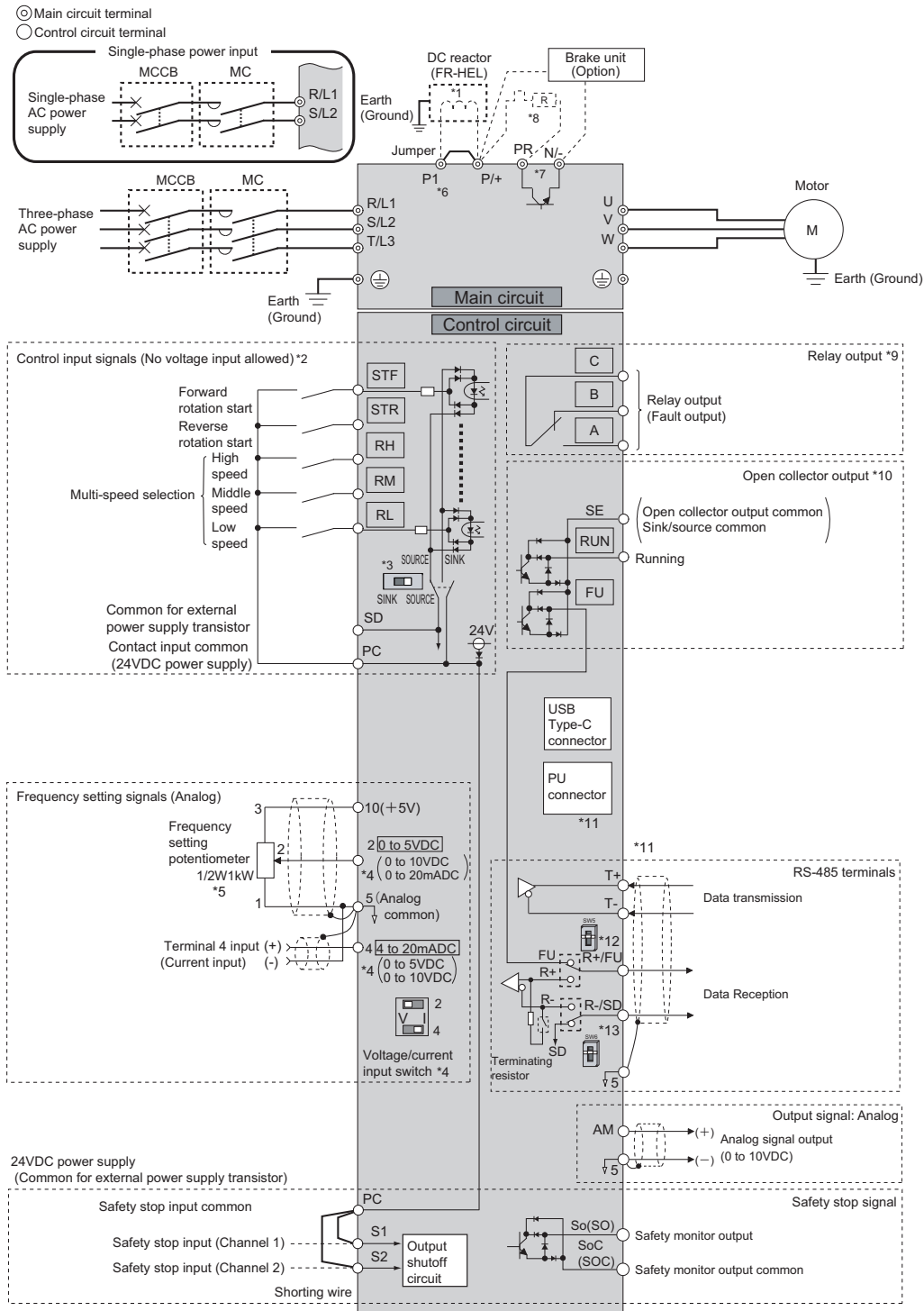
\*2 The maximum SCCR is 500 mA.

For details on the parameters, refer to the Instruction Manual (Function).

# Terminal Connection Diagram

## ◆ FR-D800 (Standard model (source logic))

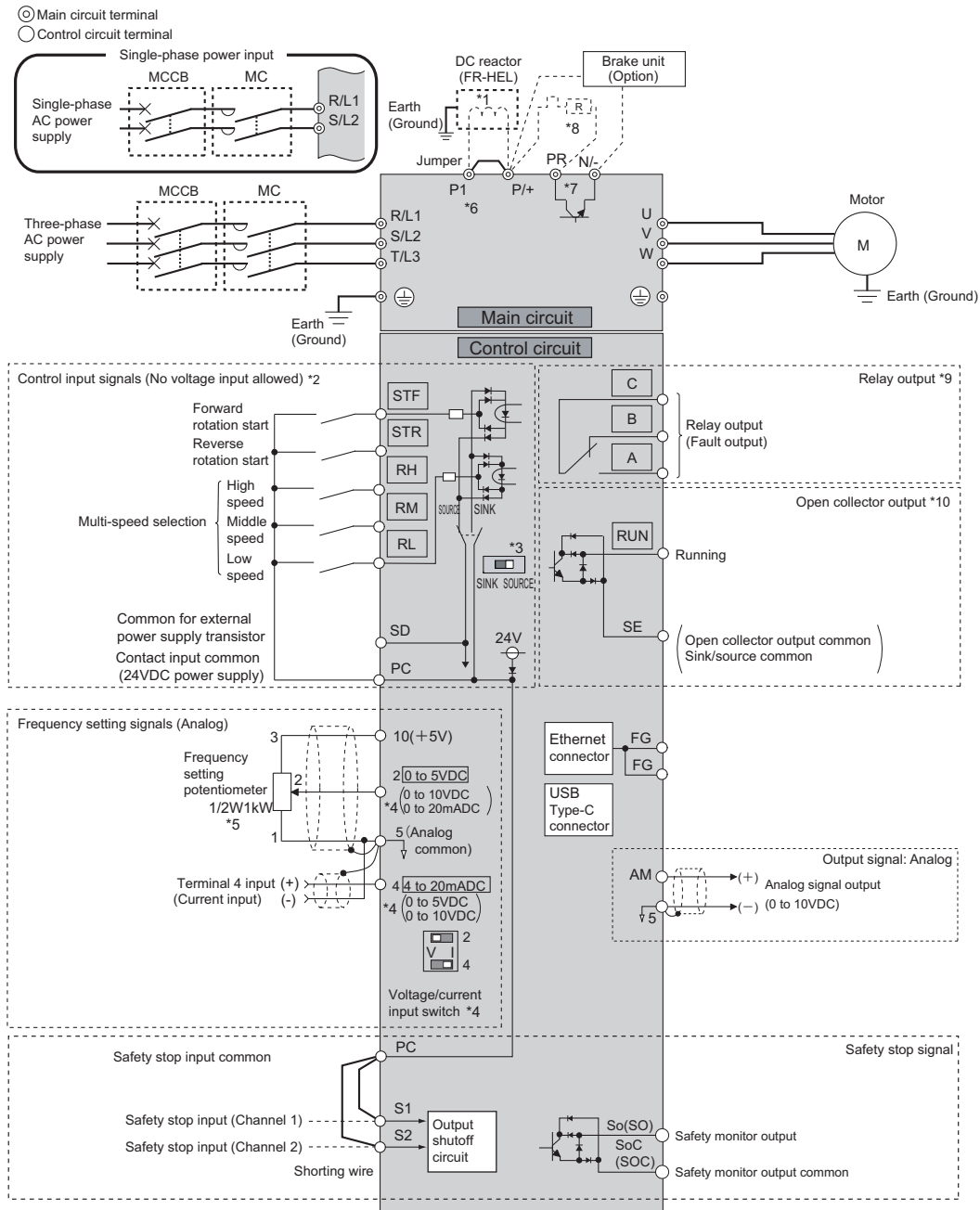
For details on the terminal specifications, refer to the Instruction Manual (Connection).



- \*1 Remove the jumper between P1 and P/+ to connect the DC reactor. (Single-phase 100 V power input model is not compatible with the DC reactor.)
- \*2 The function of these terminals can be changed using the Input terminal function selection (Pr.178 to Pr.182). (Refer to the Instruction Manual (Function).)
- \*3 The initial setting varies depending on the specification.
- \*4 Terminal input specifications can be changed by analog input specification switchover (Pr.73, Pr.267). To input voltage, set the voltage/current input switch to "V". To input current, set the switch to "I". The initial setting varies depending on the specification. (Refer to the Instruction Manual (Function).)
- \*5 It is recommended to use 2 W 1 kΩ when the frequency setting signal is changed frequently.
- \*6 Terminal P1 is not available for the single-phase 100 V power input models.
- \*7 A brake transistor is not built in to the FR-D820-0.1K-008, FR-D820-0.2K-014, FR-D820S-0.1K-008, FR-D820S-0.2K-014, FR-D810W-0.1K-008, and FR-D810W-0.2K-014.
- \*8 Brake resistor (FR-ABR, MRS, MYS)  
Install a thermal relay to prevent overheating and damage of brake resistors. (A brake resistor cannot be connected to the FR-D820-0.1K-008, FR-D820-0.2K-014, FR-D820S-0.1K-008, FR-D820S-0.2K-014, FR-D810W-0.1K-008, and FR-D810W-0.2K-014.)
- \*9 The function of these terminals can be changed using the Pr.192 ABC terminal function selection.
- \*10 The function of these terminals can be changed using the Output terminal function selection (Pr.190 or Pr.191). (Refer to the Instruction Manual (Function).)
- \*11 The communication circuit is shared between the PU connector and the RS-485 terminals. The PU connector and the RS-485 terminals cannot be used simultaneously. Use either the connector or the terminals, and do not wire the other. RS-485 communication via the PU connector is enabled initially.
- \*12 Initially set to FU. Switch between R+ and FU. Both cannot be selected at the same time.
- \*13 Initially set to SD. Switch between R- and SD. Both cannot be selected at the same time.

## ◆ FR-D800-E (Ethernet model (source logic))

For details on the terminal specifications, refer to the Instruction Manual (Connection).



- \*1 Remove the jumper between P1 and P/+ to connect the DC reactor. (Single-phase 100 V power input model is not compatible with the DC reactor.)
- \*2 The function of these terminals can be changed using the Input terminal function selection (Pr.178 to Pr.182). (Refer to the Instruction Manual (Function).)
- \*3 The initial setting varies depending on the specification.
- \*4 Terminal input specifications can be changed by analog input specification switchover (Pr.73, Pr.267). To input voltage, set the voltage/current input switch to "V". To input current, set the switch to "I". The initial setting varies depending on the specification. (Refer to the Instruction Manual (Function).)
- \*5 It is recommended to use 2 W 1 kΩ when the frequency setting signal is changed frequently.
- \*6 Terminal P1 is not available for the single-phase 100 V power input models.
- \*7 A brake transistor is not built in to the FR-D820-0.1K-008, FR-D820-0.2K-014, FR-D820S-0.1K-008, FR-D820S-0.2K-014, FR-D810W-0.1K-008, and FR-D810W-0.2K-014.
- \*8 Brake resistor (FR-ABR, MRS, MYS)  
Install a thermal relay to prevent overheating and damage of brake resistors. (A brake resistor cannot be connected to the FR-D820-0.1K-008, FR-D820-0.2K-014, FR-D820S-0.1K-008, FR-D820S-0.2K-014, FR-D810W-0.1K-008, and FR-D810W-0.2K-014.)
- \*9 The function of these terminals can be changed using the Pr.192 ABC terminal function selection.
- \*10 The function of these terminals can be changed using the Output terminal function selection (Pr.190). (Refer to the Instruction Manual (Function).)

# Related Documents

When using this inverter for the first time, prepare the following manuals as required and use the inverter safely. The latest version of e-Manuals and the latest PDF manuals can be downloaded from the Mitsubishi Electric FA Global Website.

◆ **Catalog**

<https://www.MitsubishiElectric.com/fa/download/search.page?mode=catalog&kisyu=/inv>

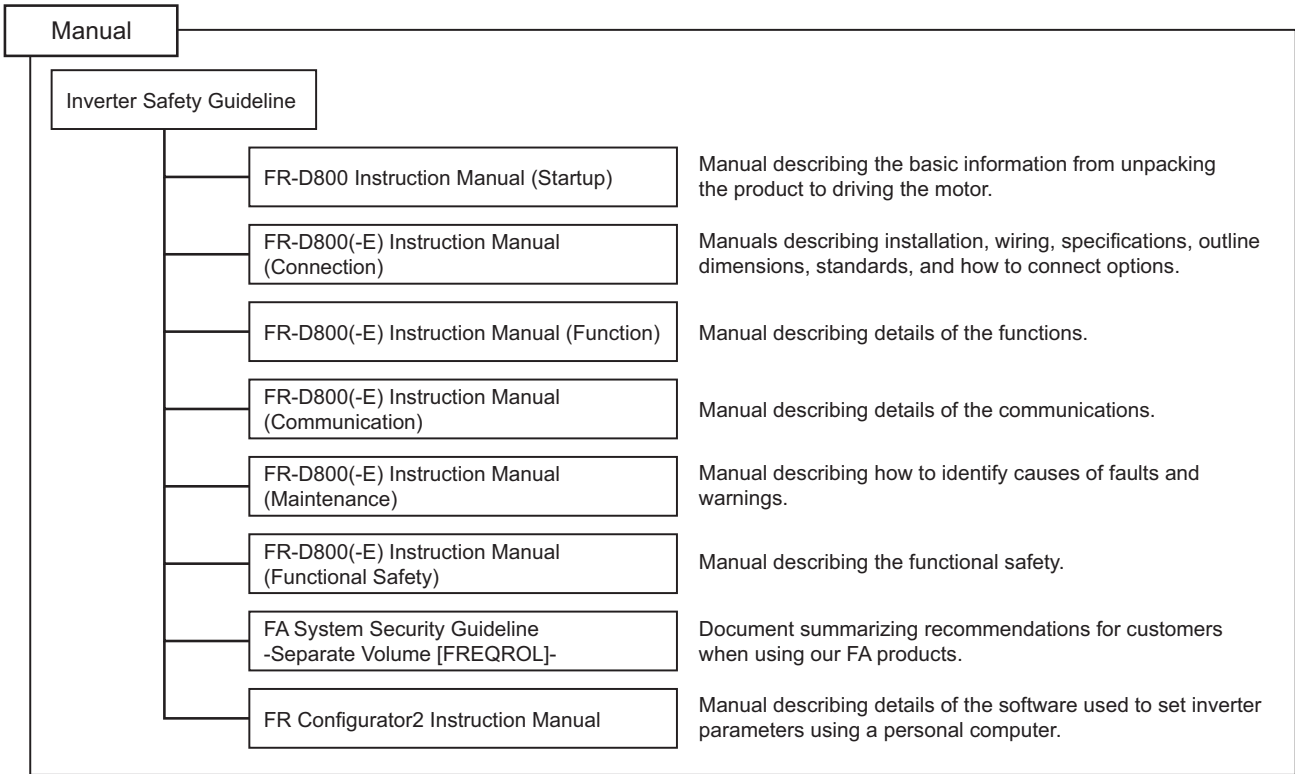
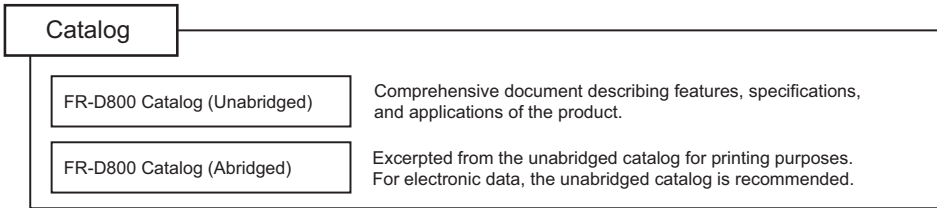
◆ **Manual**

<https://www.MitsubishiElectric.com/fa/download/search.page?mode=manual&kisyu=/inv&category1=FREQROL-D800>



- e-Manual refers to the Mitsubishi FA electronic book manuals that can be browsed using a dedicated tool.
- e-Manual has the following features:  
 Required information can be cross-searched in multiple manuals.  
 Pages that users often browse can be bookmarked.

The following shows the documents related to the FR-D800 inverter.



◆ **Catalog**

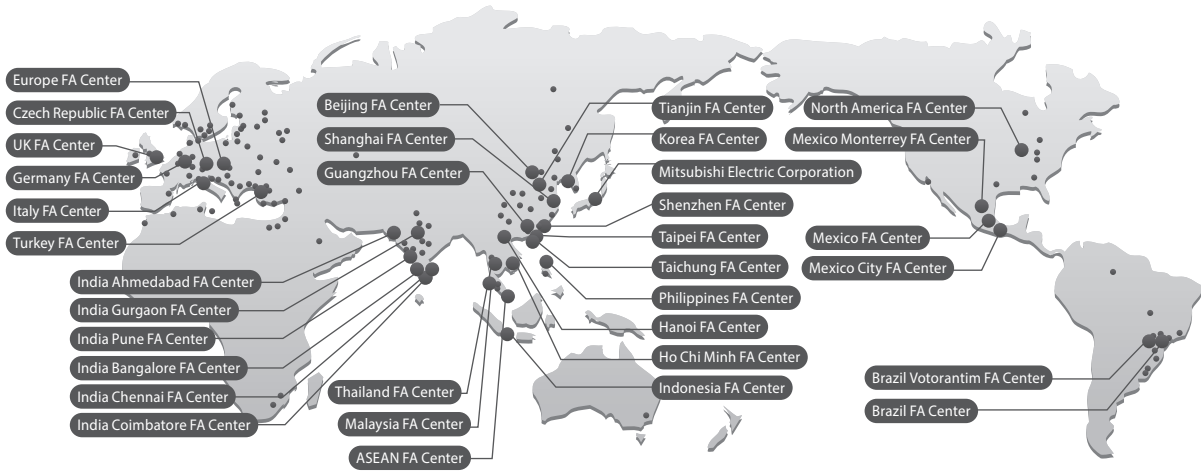
Name	Document number
FR-D800 Catalog (Unabridged)	L-06153ENG
FR-D800 Catalog (Abridged)	L-06151ENG

◆ **Manual**

Name	Document number
FR-D800 Inverter Safety Guideline	IB-0601019
FR-D800-E Inverter Safety Guideline	IB-0601022
FR-D800 Instruction Manual (Startup)	IB-0601026ENG
FR-D800(-E) Instruction Manual (Connection)	IB-0601031ENG
FR-D800(-E) Instruction Manual (Function)	IB-0601036ENG
FR-D800(-E) Instruction Manual (Communication)	IB-0601041ENG
FR-D800(-E) Instruction Manual (Maintenance)	IB-0601046ENG
FR-D800(-E) Instruction Manual (Functional Safety)	BCN-A23498-003(E)
FA System Security Guideline -Separate Volume [FREQROL]-	BCN-C22005-1054
FR Configurator2 Instruction Manual	IB-0600516ENG

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China (Guangzhou)	Mitsubishi Electric Automation (China) Ltd. Guangzhou FA Center
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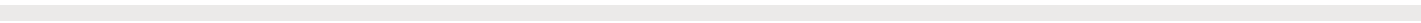
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<https://www.MitsubishiElectric.com/fa/about-us/overseas/index.html>



**MEMO**

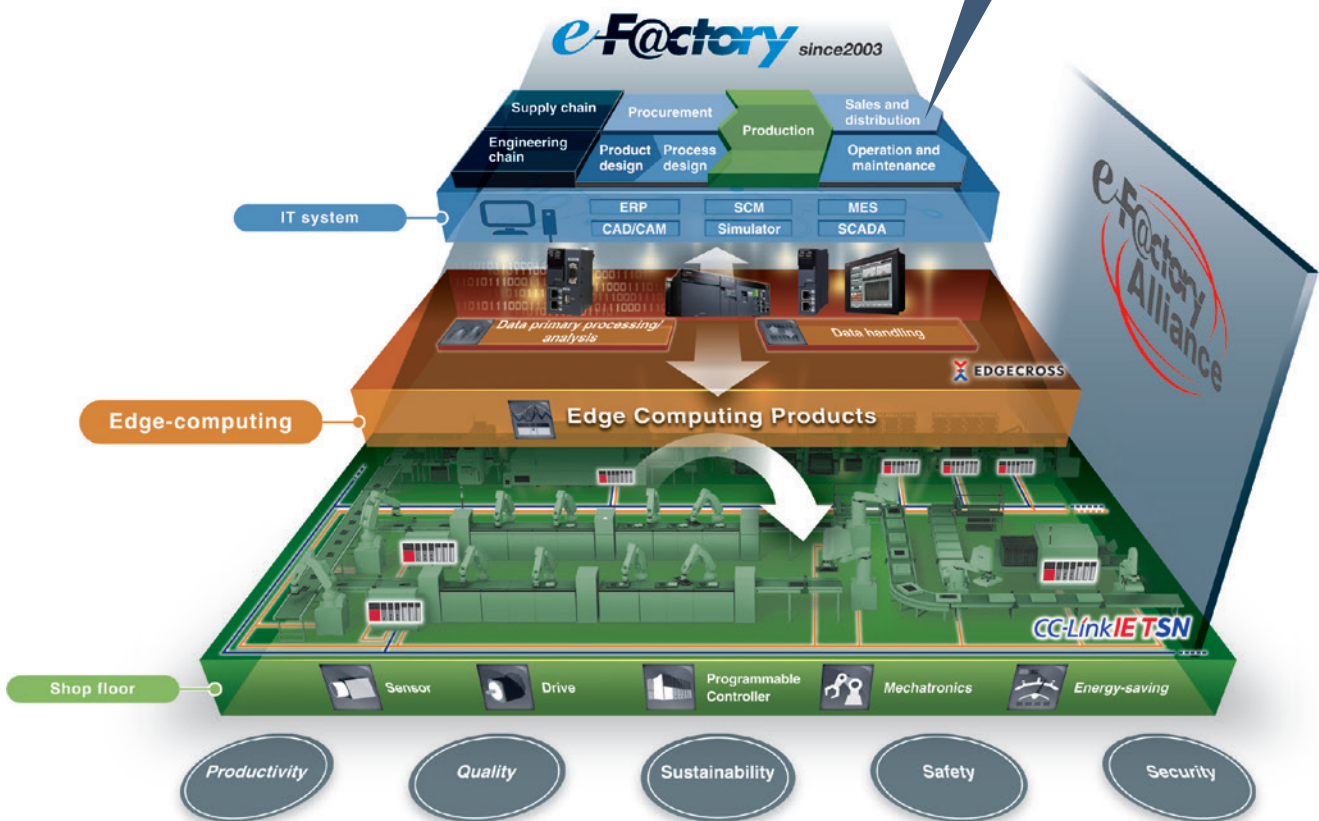
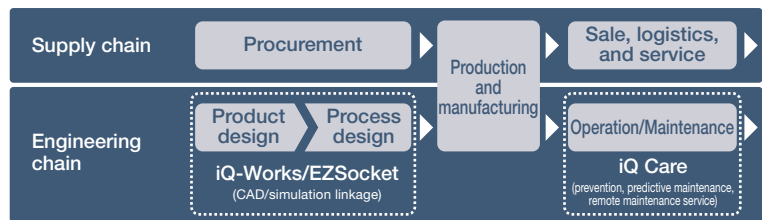


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