MITSUBISHI ELECTRIC

700 series

INVERTER FR-D700 INSTRUCTION MANUAL (BASIC)

FR-D720-0.1K to 7.5K-EA
FR-D740-0.4K to 7.5K-EA
FR-D720S-0.1K to 2.2K-EA

Thank you for choosing this Mitsubishi Inverter.
This Instruction Manual (Basic) provides handling information and precautions for use of the equipment.
Please forward this Instruction Manual (Basic) to the end user.

CONTENTS

To obtain the Instruction Manual (Applied) and the Safety stop function instruction manual

Contact where you purchased the inverter, your Mitsubishi sales representative, or the nearest Mitsubishi FA Center for the following manuals:

- *Instruction Manual (Applied) [IB(NA)-0600431ENG]*
- *Safety stop function instruction manual [BCN-A211508-000]*

These manuals are required if you are going to utilize functions and performance.

This Instruction Manual (Basic) provides handling information and precautions for use of the equipment.
Please forward this Instruction Manual (Basic) to the end user.

This section is specifically about safety matters

Do not attempt to install, operate, maintain or inspect the inverter until you have read through the Instruction Manual (Basic) and appended documents carefully and can use the equipment correctly. Do not use this product until you have a full knowledge of the equipment, safety information and instructions.
In this Instruction Manual (Basic), the safety instruction levels are classified into "WARNING" and "CAUTION".

⚠WARNING	Incorrect handling may cause hazardous conditions, resulting in death or severe injury.
⚠CAUTION	Incorrect handling may cause hazardous conditions, resulting in medium or slight injury, or may cause only material damage.

The ⚠CAUTION level may even lead to a serious consequence according to conditions. Both instruction levels must be followed because these are important to personal safety.

1. Electric Shock Prevention

⚠WARNING

- **While power is ON or when the inverter is running, do not open the front cover. Otherwise you may get an electric shock.**
- **Do not run the inverter with the front cover or wiring cover removed. Otherwise you may access the exposed high-voltage terminals or the charging part of the circuitry and get an electric shock.**
- **Even if power is OFF, do not remove the front cover except for wiring or periodic inspection. You may accidentally touch the charged inverter circuits and get an electric shock.**
- **Before wiring or inspection, power must be switched OFF. To confirm that, LED indication of the operation panel must be checked. (It must be OFF.) Any person who is involved in wiring or inspection shall wait for at least 10 minutes after the power supply has been switched OFF and check that there are no residual voltage using a tester or the like. The capacitor is charged with high voltage for some time after power OFF, and it is dangerous.**
- **This inverter must be earthed (grounded). Earthing (grounding) must conform to the requirements of national and local safety regulations and electrical code (NEC section 250, IEC 536 class 1 and other applicable standards).**
  A neutral-point earthed (grounded) power supply for 400V class inverter in compliance with EN standard must be used.
- **Any person who is involved in wiring or inspection of this equipment shall be fully competent to do the work.**
- **The inverter must be installed before wiring. Otherwise you may get an electric shock or be injured.**
- **Setting dial and key operations must be performed with dry hands to prevent an electric shock. Otherwise you may get an electric shock.**
- **Do not subject the cables to scratches, excessive stress, heavy loads or pinching. Otherwise you may get an electric shock.**
- **Do not change the cooling fan while power is ON. It is dangerous to change the cooling fan while power is ON.**
- **Do not touch the printed circuit board or handle the cables with wet hands. Otherwise you may get an electric shock.**
- **When measuring the main circuit capacitor capacity, the DC voltage is applied to the motor for 1s at powering OFF. Never touch the motor terminal, etc. right after powering OFF to prevent an electric shock.**

2. Fire Prevention

⚠CAUTION

- **Inverter must be installed on a nonflammable wall without holes (so that nobody touches the inverter heatsink on the rear side, etc.). Mounting it to or near flammable material can cause a fire.**
- **If the inverter has become faulty, the inverter power must be switched OFF. A continuous flow of large current could cause a fire.**
- **When using a brake resistor, a sequence that will turn OFF power when a fault signal is output must be configured. Otherwise the brake resistor may overheat due to damage of the brake transistor and possibly cause a fire.**
- **Do not connect a resistor directly to the DC terminals P/+ and N/-. Doing so could cause a fire.**

3.Injury Prevention

⚠CAUTION

- **The voltage applied to each terminal must be the ones specified in the Instruction Manual. Otherwise burst, damage, etc. may occur.**
- **The cables must be connected to the correct terminals. Otherwise burst, damage, etc. may occur.**
- **Polarity must be correct. Otherwise burst, damage, etc. may occur.**
- **While power is ON or for some time after power-OFF, do not touch the inverter since the inverter will be extremely hot. Doing so can cause burns.**

4. Additional Instructions

Also the following points must be noted to prevent an accidental failure, injury, electric shock, etc.

(1) Transportation and Mounting

⚠CAUTION

- **The product must be transported in correct method that corresponds to the weight. Failure to do so may lead to injuries.**
- **Do not stack the boxes containing inverters higher than the number recommended.**
- **The product must be installed to the position where withstands the weight of the product according to the information in the Instruction Manual.**
- **Do not install or operate the inverter if it is damaged or has parts missing.**
- **When carrying the inverter, do not hold it by the front cover or setting dial; it may fall off or fail.**
- **Do not stand or rest heavy objects on the product.**
- **The inverter mounting orientation must be correct.**
- **Foreign conductive objects must be prevented from entering the inverter. That includes screws and metal fragments or other flammable substance such as oil.**
- **As the inverter is a precision instrument, do not drop or subject it to impact.**
- **The inverter must be used under the following environment: Otherwise the inverter may be damaged.**

Environment	Surrounding air temperature	-10°C to +50°C (non-freezing)
	Ambient humidity	90%RH or less (non-condensing)
	Storage temperature	-20°C to +65°C *1
	Atmosphere	Indoors (free from corrosive gas, flammable gas, oil mist, dust and dirt)
	Altitude/ vibration	Maximum 1,000m above sea level. 5.9m/s^2 or less at 10 to 55Hz (directions of X, Y, Z axes)

***1 Temperature applicable for a short time, e.g. in transit.**

(2) Wiring

⚠CAUTION

- Do not install a power factor correction capacitor or surge suppressor/capacitor type filter on the inverter output side. These devices on the inverter output side may be overheated or burn out.
- The connection orientation of the output cables U, V, W to the motor affects the rotation direction of the motor.

(3) Trial run

⚠CAUTION

- Before starting operation, each parameter must be confirmed and adjusted. A failure to do so may cause some machines to make unexpected motions.

(4) Usage

⚠WARNING

- Any person must stay away from the equipment when the retry function is set as it will restart suddenly after trip.
- Since pressing STOP RESET key may not stop output depending on the function setting status, separate circuit and switch that make an emergency stop (power OFF, mechanical brake operation for emergency stop, etc.) must be provided.
- OFF status of the start signal must be confirmed before resetting the inverter fault. Resetting inverter alarm with the start signal ON restarts the motor suddenly.
- The inverter must be used for three-phase induction motors.
  Connection of any other electrical equipment to the inverter output may damage the equipment.
- Do not modify the equipment.
- Do not perform parts removal which is not instructed in this manual. Doing so may lead to fault or damage of the product.

⚠CAUTION

- The electronic thermal relay function does not guarantee protection of the motor from overheating. It is recommended to install both an external thermal and PTC thermistor for overheat protection.
- Do not use a magnetic contactor on the inverter input for frequent starting/stopping of the inverter. Otherwise, the life of the inverter decreases.
- The effect of electromagnetic interference must be reduced by using an EMC filter or by other means. Otherwise nearby electronic equipment may be affected.
- Appropriate measures must be taken to suppress harmonics. Otherwise power supply harmonics from the inverter may heat/damage the power factor correction capacitor and generator.
- When driving a 400V class motor by the inverter, the motor must be an insulation-enhanced motor or measures must be taken to suppress surge voltage. Surge voltage attributable to the wiring constants may occur at the motor terminals, deteriorating the insulation of the motor.
- When parameter clear or all parameter clear is performed, the required parameters must be set again before starting operations because all parameters return to the initial value.
- The inverter can be easily set for high-speed operation. Before changing its setting, the performances of the motor and machine must be fully examined.
- Stop status cannot be hold by the inverter's brake function. In addition to the inverter's brake function, a holding device must be installed to ensure safety.
- Before running an inverter which had been stored for a long period, inspection and test operation must be performed.
- For prevention of damage due to static electricity, nearby metal must be touched before touching this product to eliminate static electricity from your body.

(5) Emergency stop

⚠CAUTION

- A safety backup such as an emergency brake must be provided to prevent hazardous condition to the machine and equipment in case of inverter failure.
- When the breaker on the inverter input side trips, the wiring must be checked for fault (short circuit), and internal parts of the inverter for a damage, etc. The cause of the trip must be identified and removed before turning ON the power of the breaker.
- When any protective function is activated, appropriate corrective action must be taken, and the inverter must be reset before resuming operation.

(6) Maintenance, inspection and parts replacement

⚠CAUTION

- Do not carry out a megger (insulation resistance) test on the control circuit of the inverter. It will cause a failure.

(7) Disposal

⚠CAUTION

- The inverter must be treated as industrial waste.

General instruction

Many of the diagrams and drawings in this Instruction Manual (Basic) show the inverter without a cover or partially open for explanation. Never operate the inverter in this manner. The cover must be always reinstalled and the instruction in this Instruction Manual (Basic) must be followed when operating the inverter.

<Abbreviation>

PU	Operation panel and parameter unit (FR-PU04/FR-PU07)
Inverter	Mitsubishi inverter FR-D700 series
FR-D700	Mitsubishi inverter FR-D700 series
Pr.	Parameter number (Function number of inverter)
PU operation	Operation using the PU (operation panel/FR-PU04/FR-PU07)
External operation	Operation using the control circuit signals
Combined operation	Operation using both the PU (operation panel/FR-PU04/FR-PU07) and External operation
Mitsubishi standard motor	SF-JR
Mitsubishi constant-torque motor	SF-HRCA

<Trademark>

• Company and product names herein are the trademarks and registered trademarks of their respective owners.

<Mark>

REMARKS :Additional helpful contents and relations with other functions are stated.

NOTE :Contents requiring caution or cases when set functions are not activated are stated.

POINT :Useful contents and points are stated.

1 OUTLINE

1.1 Product checking and parts identification

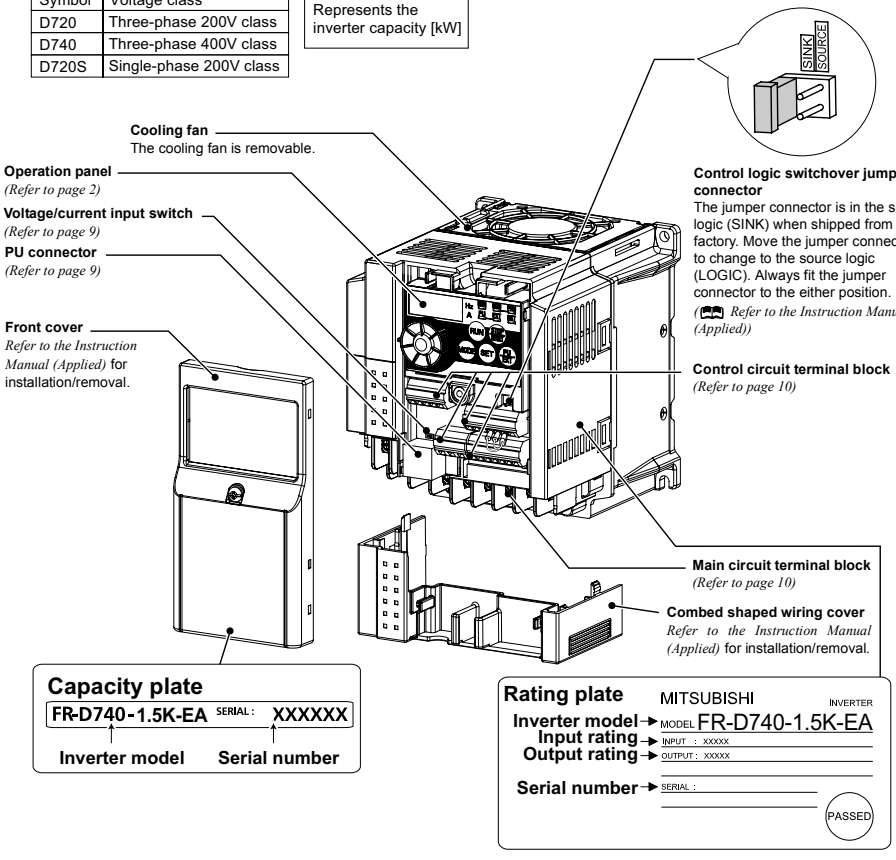
Unpack the inverter and check the capacity plate on the front cover and the rating plate on the inverter side face to ensure that the product agrees with your order and the inverter is intact.

●Inverter model

FR - D740 - 1.5 K - EA

Symbol	Voltage class
D720	Three-phase 200V class
D740	Three-phase 400V class
D720S	Single-phase 200V class

Represents the inverter capacity [kW]



- **Accessory**
  - **Fan cover fixing screws (M3 × 35mm)**
    These screws are necessary for compliance with the EU Directive. (*Refer to page 42*)

Capacity	Number
1.5K to 3.7K	1
5.5K, 7.5K	2

1.2 Operation panel

1.2.1 Names and functions of the operation panel

The operation panel cannot be removed from the inverter.

Operation mode indicator
PU: Lit to indicate PU operation mode.
EXT: Lit to indicate External operation mode. (Lit at power-ON at initial setting.)
NET: Lit to indicate Network operation mode.
PU, EXT: Lit to indicate External/PU combined operation mode 1, 2.
These turn OFF when command source is not on operation panel.

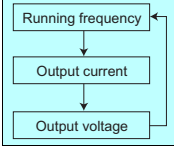
Unit indicator
Hz: Lit to indicate frequency. (Flickers when the set frequency monitor is displayed.)
A: Lit to indicate current.
(Both "Hz" and "A" turn OFF when other than the above is displayed.)

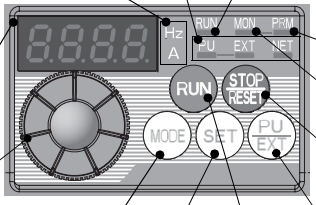
Monitor (4-digit LED)
Shows the frequency, parameter number, etc.

Setting dial
(Setting dial: Mitsubishi inverter dial)
The setting dial is used to change the frequency and parameter settings.
Press the setting dial to perform the following operations:
- To display a set frequency in the monitor mode
- To display the present setting during calibration
- To display a fault history number in the faults history mode

Mode switchover
Used to switch among different setting modes.
Pressing (PU/EXT) simultaneously changes the operation mode.
Pressing for a while (2s) can lock operation. *(Refer to the Instruction Manual (Applied))*

Determination of each setting
If pressed during operation, monitor changes as below:





Operating status indicator
Lit or flicker during inverter operation. *
* Lit: When the forward rotation operation is being performed.
Slow flickering (1.4s cycle): When the reverse rotation operation is being performed.
Fast flickering (0.2s cycle):
- When (RUN) was pressed or the start command was given, but the operation cannot be made.
- When the frequency command is less than the starting frequency.
- When the MRS signal is input.

Parameter setting mode indicator
Lit to indicate parameter setting mode.

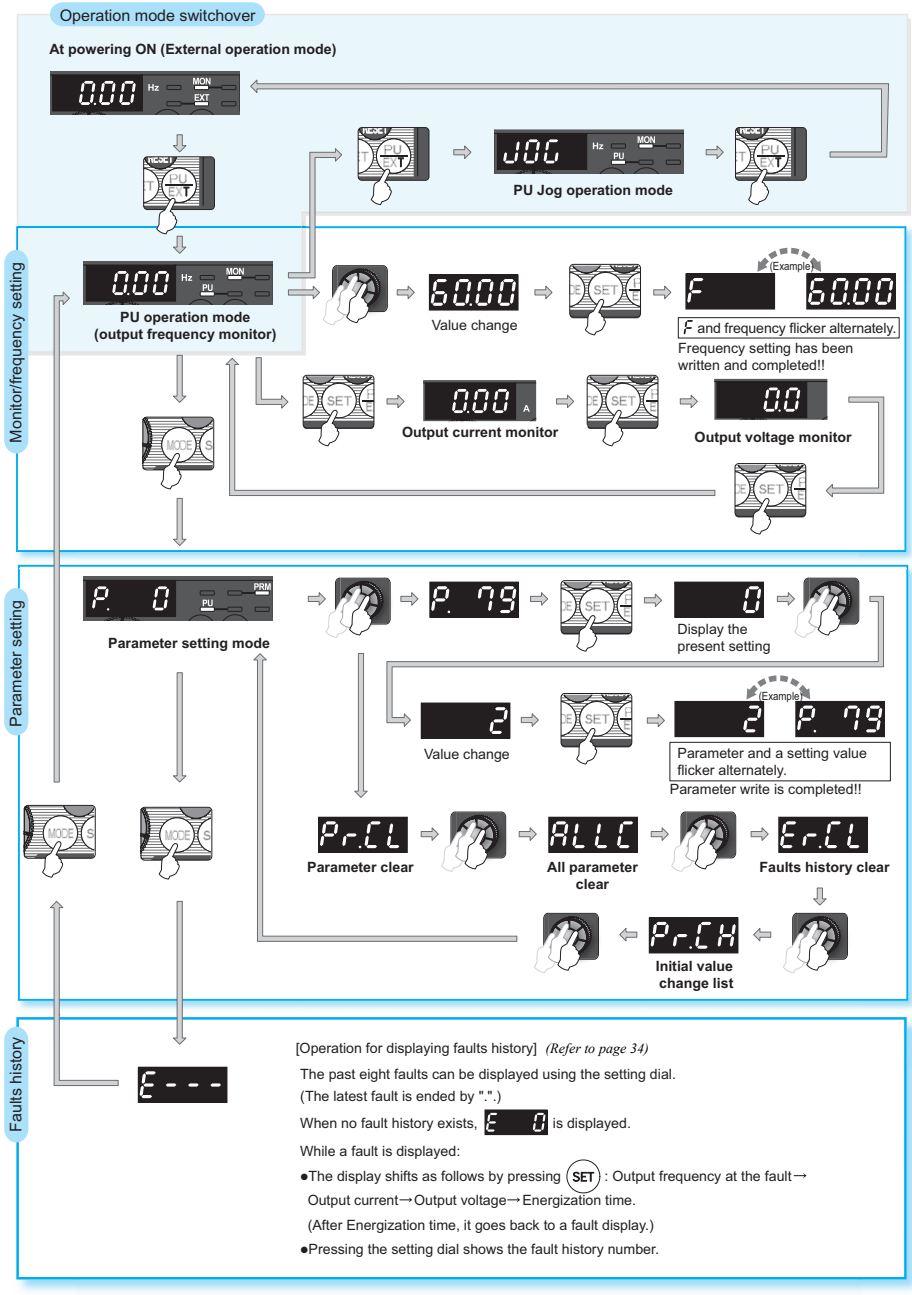
Monitor indicator
Lit to indicate monitoring mode.

STOP operation
Used to stop operation commands.
Used to reset a fault when the protective function (fault) is activated.

Operation mode switchover
Used to switch between the PU and External operation modes.
To use the External operation mode (operation using a separately connected frequency setting potentiometer and start signal), press this key to light up the EXT indicator.
(Press (MODE) simultaneously (0.5s), or change *Pr. 79* setting to change to combined mode .) *(Refer to the Instruction Manual (Applied))*
PU: PU operation mode
EXT: External operation mode
Cancels PU stop also.

Start command
The rotation direction can be selected by setting *Pr. 40*.

1.2.2 Basic operation (factory setting)



1.2.3 Changing the parameter setting value

Changing example — Change the *Pr. 1 Maximum frequency* setting.

Operation	Display
1. Screen at power-ON The monitor display appears.	
2. Press (PU/EXT) to choose the PU operation mode.	(PU/EXT) ⇨  PU indicator is lit.
3. Press (MODE) to choose the parameter setting mode.	(MODE) ⇨  PRM indicator is lit. (The parameter number read previously appears.)
4. Turn dial until P. 1 *(Pr. 1)* appears.	dial ⇨ 
5. Press (SET) to read the present set value. " 120.0 "(120.0Hz (initial value)) appears.	(SET) ⇨ 
6. Turn dial to change the set value to " 60.00 " (60.00Hz).	dial ⇨ 
7. Press (SET) to set.	(SET) ⇨  **Flicker...Parameter setting complete!!**

- Turn dial to read another parameter.
- Press (SET) to show the setting again.
- Press (SET) twice to show the next parameter.
- Press (MODE) twice to return to frequency monitor.

REMARKS

? Er 1 to Er 4 is displayed...Why?

☞ Er 1 appears ..... Write disable error
Er2 appears ..... Write error during operation
Er3 appears ..... Calibration error
Er4 appears ..... Mode designation error

(For details, *refer to the Instruction Manual (Applied)*.)

- The number of digits displayed on the operation panel is four. Only the upper four digits of values can be displayed and set. If the values to be displayed have five digits or more including decimal places, the fifth or later numerals cannot be displayed nor set.
  (Example) For *Pr. 1*
  When 60Hz is set, 60.00 is displayed.
  When 120Hz is set, 120.0 is displayed and second decimal place is not displayed nor set.

1.2.4 Parameter clear/all parameter clear

POINT

- Set "1" in *Pr.CL Parameter clear, ALLC all parameter clear* to initialize all parameters. (Parameters are not cleared when "1" is set in *Pr. 77 Parameter write selection.*)
- Refer to the extended parameter list on of *the Instruction Manual (Applied)* for parameters cleared with this operation.

Operation	Display
1. Screen at power-ON The monitor display appears.	
2. Press PU/EXT to choose the PU operation mode.	PU indicator is lit. 
3. Press MODE to choose the parameter setting mode.	PRM indicator is lit.  (The parameter number read previously appears.)
4. Turn the dial until "PrCL (ALLC)" appears.	Parameter clear  All parameter clear 
5. Press SET to read the present set value. "0"(initial value) appears.	
6. Turn the dial to change it to the set value "1".	
7. Press SET to set.	Parameter clear  All parameter clear

Flicker ··· Parameter setting complete!!

- Turn the dial to read another parameter.
- Press SET to show the setting again.
- Press SET twice to show the next parameter.

Setting	Description
0	Clear is not executed.
1	Sets parameters back to the initial values. (Parameter clear sets back all parameters except *calibration parameters, terminal function selection parameters* to the initial values.) *Refer to the parameter list of the Instruction Manual (Applied)* for availability of parameter clear and all parameter clear.

REMARKS

?  are displayed alternately ... Why?

☞ The inverter is not in the PU operation mode.

☞ PU connector is used.

1. Press PU/EXT. [PU] is lit and the monitor (4-digit LED) displays "1". (When *Pr. 79* = "0" (initial value))
2. Carry out operation from step 6 again.

2 INSTALLATION AND WIRING

AC power supply
Use within the permissible power supply specifications of the inverter. To ensure safety, use a moulded case circuit breaker, earth leakage circuit breaker or magnetic contactor to switch power ON/OFF.
(Refer to page 39)

Moulded case circuit breaker (MCCB) or earth leakage circuit breaker (ELB), fuse
The breaker must be selected carefully since an in-rush current flows in the inverter at power on.
(Refer to page 7)

Magnetic contactor (MC)
Install the magnetic contactor to ensure safety. Do not use this magnetic contactor to start and stop the inverter. Doing so will cause the inverter life to be shorten.
(Refer to page 7)

Reactor (FR-HAL, FR-HEL option)
Reactors (option) must be used when power harmonics measures are taken, the power factor is to be improved or the inverter is installed near a large power supply system (500kVA or more). The inverter may be damaged if you do not use reactors. Select the reactor according to the model. Remove the jumpers across terminals P/+ and P1 to connect the DC reactor.

Parameter unit (FR-PU07)

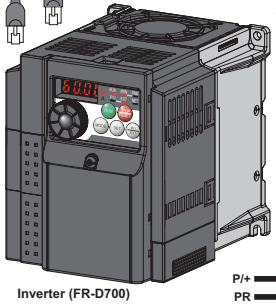
Enclosure surface operation panel (FR-PA07)
By connecting the connection cable (FR-CB2) to the PU connector, operation can be performed from FR-PU07, FR-PA07.

RS-232C - RS-485 converter is required when connecting to PC with RS-232C interface.
(Refer to the Instruction Manual (Applied))

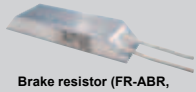
RS-485⇔RS-232C Converter

S1
S2
SC

Approved safety relay module
Required for compliance with safety standard.



Inverter (FR-D700)



Brake resistor (FR-ABR, MRS type, MYS type)
Braking capability can be improved. (0.4K or more)
(Refer to page 17)

P/+
PR

AC reactor (FR-HAL)

DC reactor (FR-HEL) *

EMC filter (ferrite core) * (FR-BSF01, FR-BLF)
Install an EMC filter (ferrite core) to reduce the electromagnetic noise generated from the inverter. Effective in the range from about 1MHz to 10MHz. When more wires are passed through, a more effective result can be obtained. A wire should be wound four turns or more.

P/+ P1

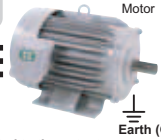
EMC filter (capacitor) * (FR-BIF)
Reduces the radio noise.

R/L1 S/L2 T/L3
P/+ N/-

Earth (Ground)

U V W

EMC filter (ferrite core) (FR-BSF01, FR-BLF)
Install an EMC filter (ferrite core) to reduce the electromagnetic noise generated from the inverter. Effective in the range from about 1MHz to 10MHz. A wire should be wound four turns at a maximum.



Motor

Earth (Ground)

* Filterpack (FR-BFP2), which contains DC reactor and EMC filter in one package, is also available.

High power factor converter (FR-HC)
Power supply harmonics can be greatly suppressed. Install this as required.

Power regeneration common converter (FR-CV)
Great braking capability is obtained. Install this as required.

Brake unit (FR-BU2)

P/+ PR
P/+
PR

Resistor unit (FR-BR) Discharging resistor (GZG, GRZG)
The regenerative braking capability of the inverter can be exhibited fully. Install this as required.

Devices connected to the output
Do not install a power factor correction capacitor, surge suppressor or EMC filter (capacitor) on the output side of the inverter. When installing a moulded case circuit breaker on the output side of the inverter, contact each manufacturer for selection of the moulded case circuit breaker.

Earth (Ground)
To prevent an electric shock, always earth (ground) the motor and inverter. For reduction of induction noise from the power line of the inverter, it is recommended to wire the earth (ground) cable by returning it to the earth (ground) terminal of the inverter.

NOTE

- **The life of the inverter is influenced by surrounding air temperature. The surrounding air temperature should be as low as possible within the permissible range. This must be noted especially when the inverter is installed in an enclosure.** *(Refer to page 8)*
- **Wrong wiring might lead to damage of the inverter. The control signal lines must be kept fully away from the main circuit to protect them from noise.** *(Refer to page 9)*
- **Do not install a power factor correction capacitor, surge suppressor or EMC filter (capacitor) on the inverter output side. This will cause the inverter to trip or the capacitor and surge suppressor to be damaged. If any of the above devices are connected, immediately remove them.**
- **Electromagnetic wave interference**
  The input/output (main circuit) of the inverter includes high frequency components, which may interfere with the communication devices (such as AM radios) used near the inverter. In this case, install the FR-BIF optional EMC filter (capacitor) (for use in the input side only) or FR-BSF01 or FR-BLF EMC filter (ferrite core) to minimize interference. *(Refer to Chapter 3 of the Instruction Manual (Applied)).*
- **Refer to the Instruction Manual of each option and peripheral devices for details of peripheral devices.**

2.1 Peripheral devices

Check the inverter model of the inverter you purchased. Appropriate peripheral devices must be selected according to the capacity. Refer to the following list and prepare appropriate peripheral devices.

	Inverter Model	Motor Output (kW)	Moulded Case Circuit Breaker (MCCB) *1 or Earth Leakage Circuit Breaker (ELB) *2		Magnetic Contactor (MC) *3		Reactor	
			Reactor connection		Reactor connection		FR-HAL	FR-HEL
			without	with	without	with		
Three-Phase 200V	FR-D720-0.1K	0.1	5A	5A	S-N10	S-N10	0.4K *4	0.4K *4
	FR-D720-0.2K	0.2	5A	5A	S-N10	S-N10	0.4K *4	0.4K *4
	FR-D720-0.4K	0.4	5A	5A	S-N10	S-N10	0.4K	0.4K
	FR-D720-0.75K	0.75	10A	5A	S-N10	S-N10	0.75K	0.75K
	FR-D720-1.5K	1.5	15A	10A	S-N10	S-N10	1.5K	1.5K
	FR-D720-2.2K	2.2	20A	15A	S-N10	S-N10	2.2K	2.2K
	FR-D720-3.7K	3.7	30A	30A	S-N20, S-N21	S-N10	3.7K	3.7K
	FR-D720-5.5K	5.5	50A	40A	S-N20, S-N21	S-N20, S-N21	5.5K	5.5K
	FR-D720-7.5K	7.5	60A	50A	S-N25	S-N20, S-N21	7.5K	7.5K
Three-Phase 400V	FR-D740-0.4K	0.4	5A	5A	S-N10	S-N10	H0.4K	H0.4K
	FR-D740-0.75K	0.75	5A	5A	S-N10	S-N10	H0.75K	H0.75K
	FR-D740-1.5K	1.5	10A	10A	S-N10	S-N10	H1.5K	H1.5K
	FR-D740-2.2K	2.2	15A	10A	S-N10	S-N10	H2.2K	H2.2K
	FR-D740-3.7K	3.7	20A	15A	S-N10	S-N10	H3.7K	H3.7K
	FR-D740-5.5K	5.5	30A	20A	S-N20, S-N21	S-N11, S-N12	H5.5K	H5.5K
	FR-D740-7.5K	7.5	30A	30A	S-N20, S-N21	S-N20, S-N21	H7.5K	H7.5K
Single-Phase 200V	FR-D720S-0.1K	0.1	5A	5A	S-N10	S-N10	0.4K *4	0.4K *4
	FR-D720S-0.2K	0.2	5A	5A	S-N10	S-N10	0.4K *4	0.4K *4
	FR-D720S-0.4K	0.4	10A	10A	S-N10	S-N10	0.75K *4	0.75K *4
	FR-D720S-0.75K	0.75	15A	10A	S-N10	S-N10	1.5K *4	1.5K *4
	FR-D720S-1.5K	1.5	20A	20A	S-N10	S-N10	2.2K *4	2.2K *4
	FR-D720S-2.2K	2.2	40A	30A	S-N20, S-N21	S-N10	3.7K *4	3.7K *4

*1 •Select a MCCB according to the power supply capacity.
•Install one MCCB per inverter.

*2 For the use in the United States or Canada, select a UL and cUL certified fuse with Class T fuse equivalent cut-off speed or faster with the appropriate rating for branch circuit protection. Alternatively, select a UL489 molded case circuit breaker (MCCB). (*Refer to page 45*)

*3 Magnetic contactor is selected based on the AC-1 class. The electrical durability of magnetic contactor is 500,000 times. When the magnetic contactor is used for emergency stop during motor driving, the electrical durability is 25 times.
When using the MC for emergency stop during motor driving or using on the motor side during commercial-power supply operation, select the MC with class AC-3 rated current for the motor rated current.

*4 The power factor may be slightly lower.

NOTE

- **When the inverter capacity is larger than the motor capacity, select a MCCB and a magnetic contactor according to the inverter model, and cable and reactor according to the motor output.**
- **When the breaker on the inverter input side trips, check for the wiring fault (short circuit), damage to internal parts of the inverter, etc. Identify the cause of the trip, then remove the cause and power ON the breaker.**