

FR-F700 Series

Instruction Manual Supplement

Before using this FR-F746-EC (IP54 specification) inverter, please read through the following instructions along with the supplied manual for this inverter.

1. Inverter type

FR - **F746** - **00126** - EC

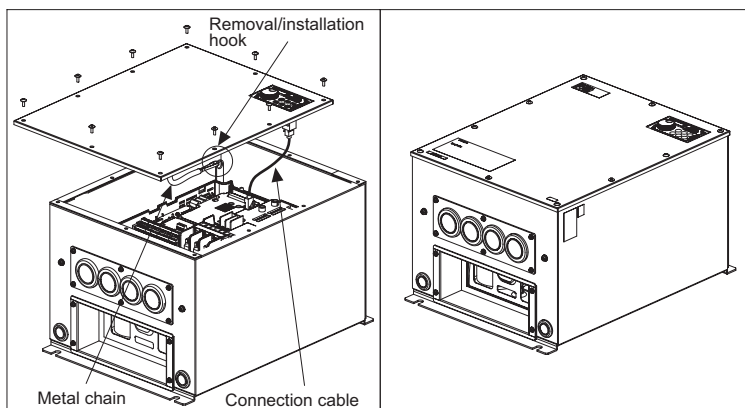
Symbol	Voltage/structure specification
F746	Three-phase 400V class/ waterproof structure IP54 (standard IEC 60529:2001) specification

Symbol	Description
00023 to 00620	Displays the SLD rated current

2. Removal and installation method of the front cover

(1) Removal

- After removing the installation screw, remove the front cover.*
 - Remove the connection cable from the PU connector.
 - Remove the hook of metal chain end from the inverter.
- * Since the metal chain is mounted to the front cover, remove the front cover slowly.



(2) Installation

- Install the hook of metal chain end to the inverter.
- Connect the connection cable to the PU connector.
- Fix the front cover using the installation screws securely.

CAUTION

- When installing the front cover, be careful not to pinch the connection cable or the metal chain.

3. Precautions for use of the inverter

There are following precautions for IP54 specification.

- (1) Do not remove the operation panel.

The operation panel is installed to the front cover.

The connection cable is also connected to PU connector internal of the inverter.

CAUTION

- The operation panel (FR-DU07) is designed to IP54 specifications.
Do not install the FR-DU07 mounted on the FR-F740-EC.
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- (2) Remove the rubber bushing and use the cable gland (equivalent for SKINTOP ST-M series, locknuts GMP-GL-M series and Gaskets GMP series, LAPP) so that cable wiring satisfies IP54.

For a hole in which the cable is not led, the rubber bush may be used without replacing.

- (3) Not supported to UL, cUL

- (4) The cooling fan fixes the fan cover with fixed screws.
For the type, refer to the following table.

Inverter Type		Fan Type	Units
F746	00083,00126	MMF-09D24TS-RP3 BKO-CA1640H03	1
	00170,00250,00310, 00380	MMF-09D24TS-RP3 BKO-CA1640H03	2
	00470,00620	MMF-12D24DS-RP3 BKO-CA1619H03	2
	00770	MMF-09D24DS-RP3 BKO-CA1640H03	2
	00930,01160	MMF-12D24DS-RP3 BKO-CA1619H03	2

- *1 The clearances above and under the inverter should be 10cm or more. (Spaces on both sides are not necessary.)
Since the fan cover is fixed with screws, leave enough clearances so that the screws can be removed with a driver and such.
- *2 The F746-00023 to 00052 do not have a cooling fan.

Removal procedure of cooling fan

- Remove the fixed screws to remove the fan cover.
- Remove the fan connection connector.
- Remove the cooling fan.

Installation procedure of cooling fan

- After confirming the orientation of the fan, reinstall the fan so that the arrow on the left of "AIR FLOW" faces up.



<Side of cooling fan>

- Connect the fan connection connector to return the connector to the original position.
When wiring, care must be taken to avoid the cables being caught by the fan.
- Install the fan cover and fix it with the fixed screws.

(5) Inspection

Check that packing is not removed at removal or reinstallation of a cover.
If packing is removed, contact the sales representative. If the inverter is used with packing removed, the inverter does not conform to IP54.

4. Rating

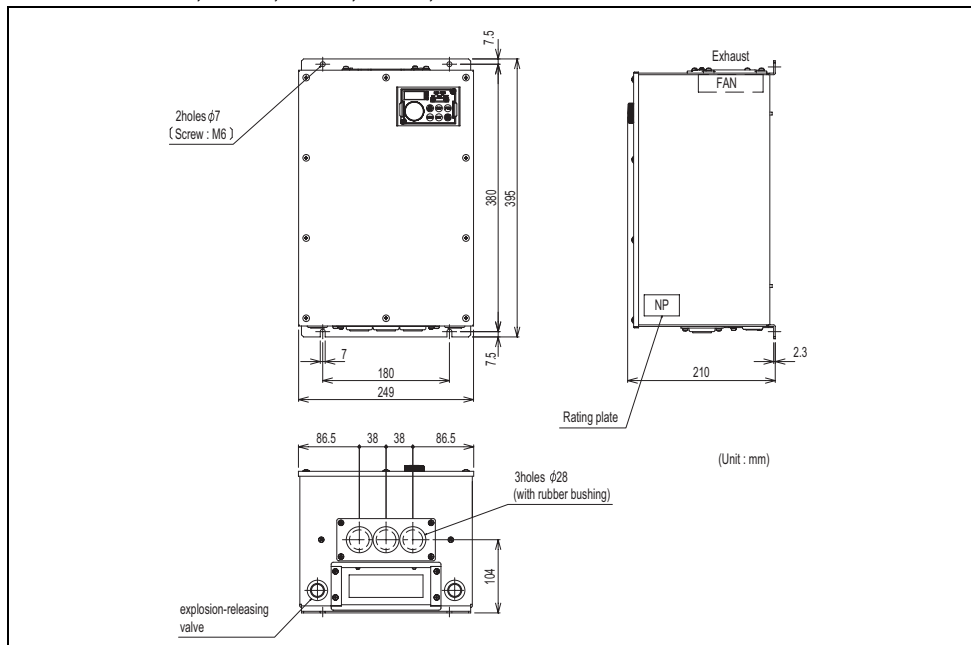
SLD is initially set.

Type FR-F746-□□□□-EC			00023	00038	00052	00083	00126	00170	00250	00310	00380	00470	00620	00770	00930	01160
Applied motor capacity (kW) *1			0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55
Output	Rated capacity (kVA) *2	LD	1.6	2.7	3.7	5.8	8.8	12.2	17.5	22.1	26.7	32.8	43.4	53.3	64.8	80.8
		SLD														
	Rated current(A) *3	LD	2.1 (1.8)	3.5 (3.0)	4.8 (4.1)	7.6 (6.5)	11.5 (9.8)	16 (13.6)	23 (20)	29 (25)	35 (30)	43 (37)	57 (48)	70 (60)	85 (72)	106 (90)
		SLD	2.3 (2.0)	3.8 (3.2)	5.2 (4.4)	8.3 (7.1)	12.6 (10.7)	17 (14.5)	25 (21)	31 (26)	38 (32)	47 (40)	62 (53)	77 (65)	93 (79)	116 (99)
	Overload current rating *4	LD	120%60s, 150%3s, Ambient temperature 40°C													
		SLD	110%60s, 120%3s, Ambient temperature 30°C													
Voltage *5			Three-phase 380V-480V													
Power supply	Rated input AC voltage/frequency		Three-phase 380V-480V 50/60Hz													
	Permissible AC voltage fluctuation		323 to 528V 50Hz/60Hz													
	Permissible frequency fluctuation		±5%													
	Power supply system capacity (kVA) *6	LD	2.5	4.5	5.5	9	12	17	20	28	34	41	52	66	80	100
SLD																
Protective structure			IP54													
Cooling system			Self cooling				Forced air cooling									
Approx. mass			12.5					18.5		21.5		30		27	42	42
Ambient temperature	LD	-10°C to 40°C (non-freezing)														
	SLD	-10°C to 30°C (non-freezing)														

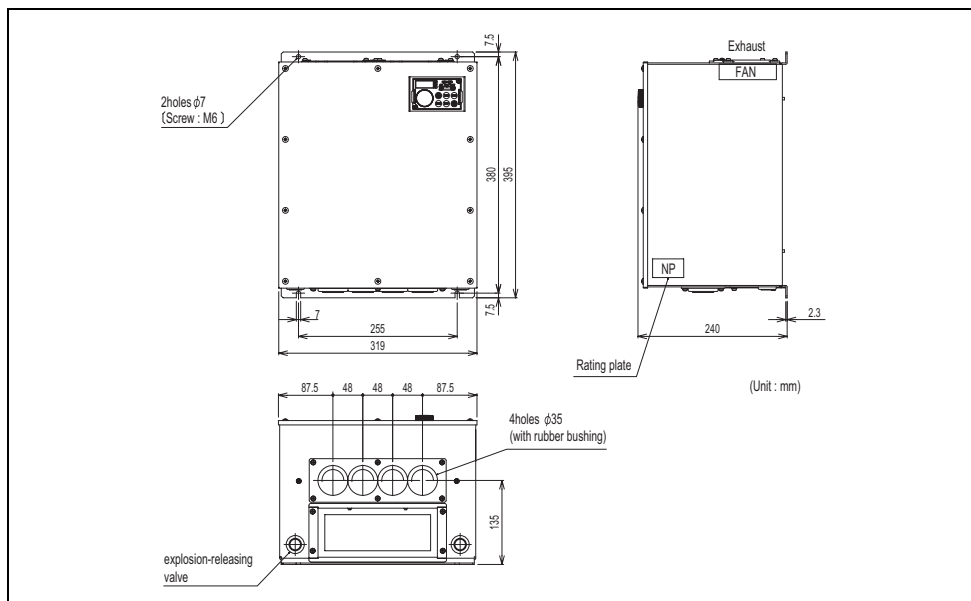
- *1 The applicable motor capacity indicated is the maximum capacity applicable for use of the Mitsubishi 4-pole standard motor.
- *2 The rated output capacity indicated assumes that the output voltage is 440V.
- *3 When operating the inverter with the carrier frequency set to 3kHz or more, the carrier frequency automatically decreases if the inverter output current exceeds the value in parenthesis of the rated current. This may cause the motor noise to increase.
- *4 The % value of the overload current rating indicated is the ratio of the overload current to the inverter's rated output current. For repeated duty, allow time for the inverter and motor to return to or below the temperatures under 100% load.
- *5 The maximum output voltage does not exceed the power supply voltage. The maximum output voltage can be changed within the setting range. However, the pulse voltage value of the inverter output side voltage remains unchanged at about $\sqrt{2}$ that of the power supply.
- *6 The power supply capacity varies with the value of the power supply side inverter impedance (including those of the input reactor and cables).

5. Outline dimension drawings

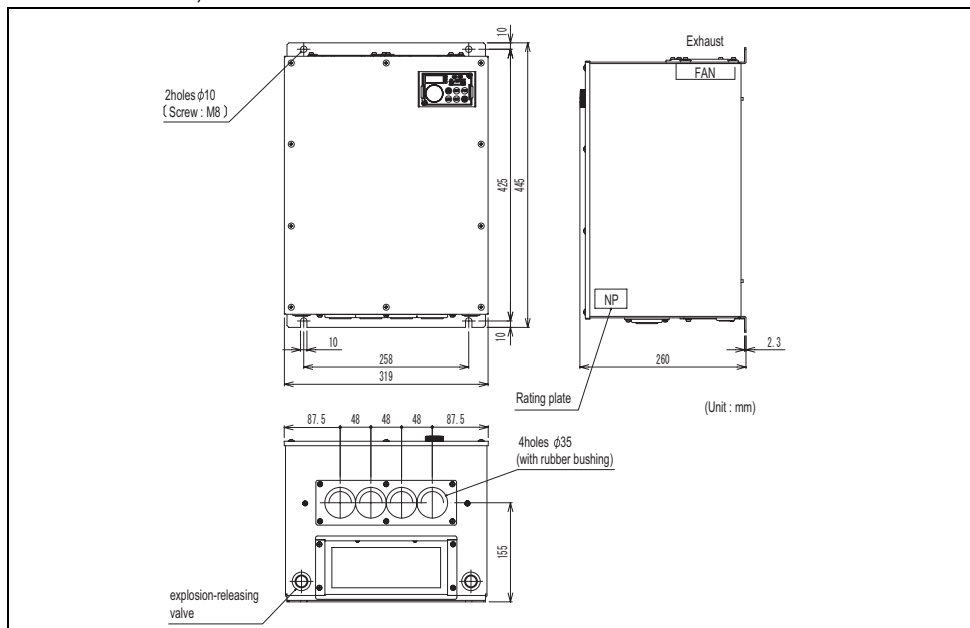
•FR-F746-00023,00038,00052,00083,00126-EC



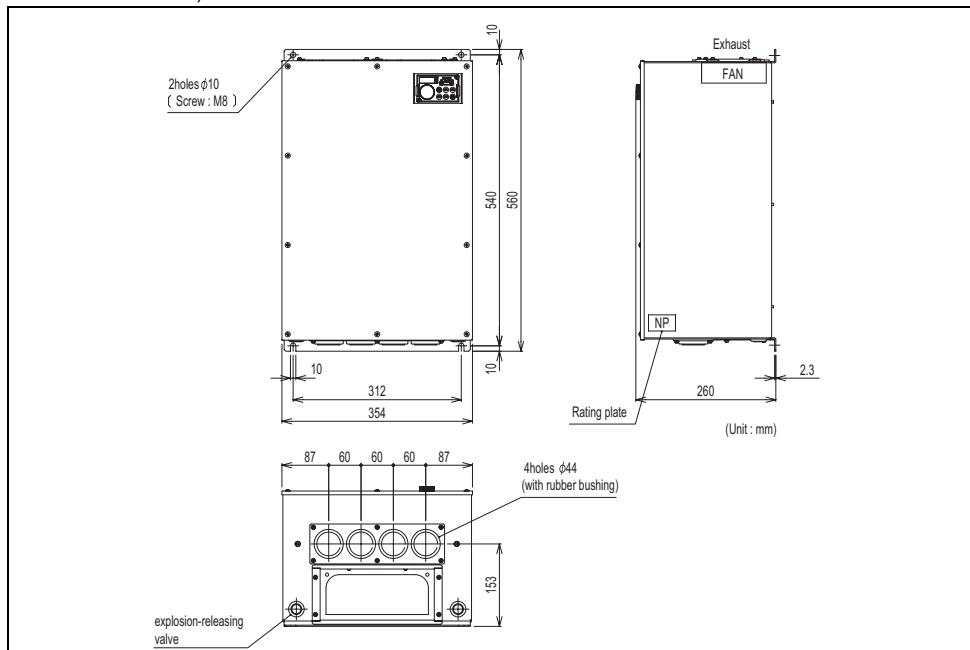
•FR-F746-00170,00250-EC



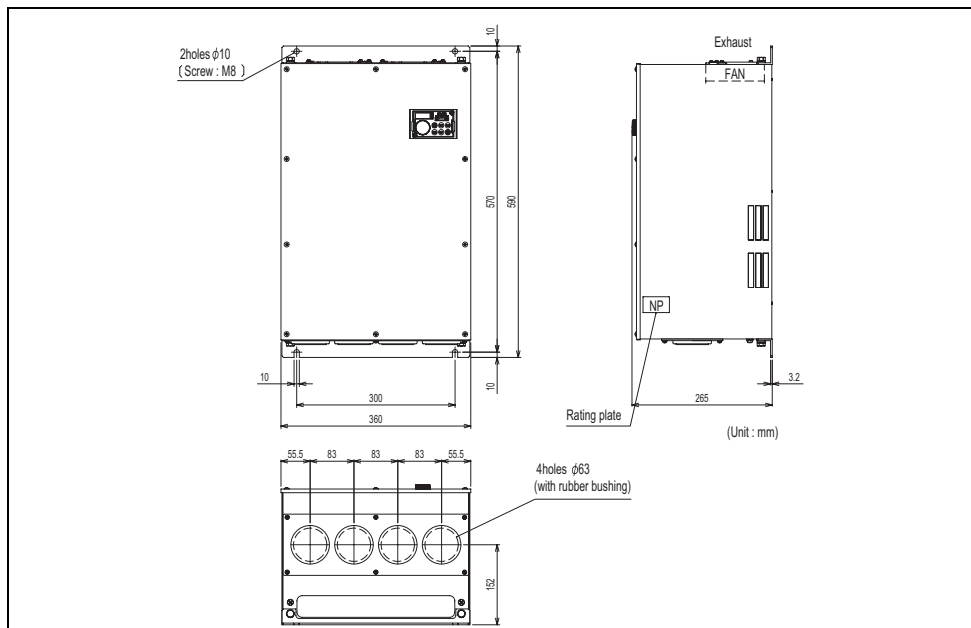
•FR-F746-00310,00380-EC



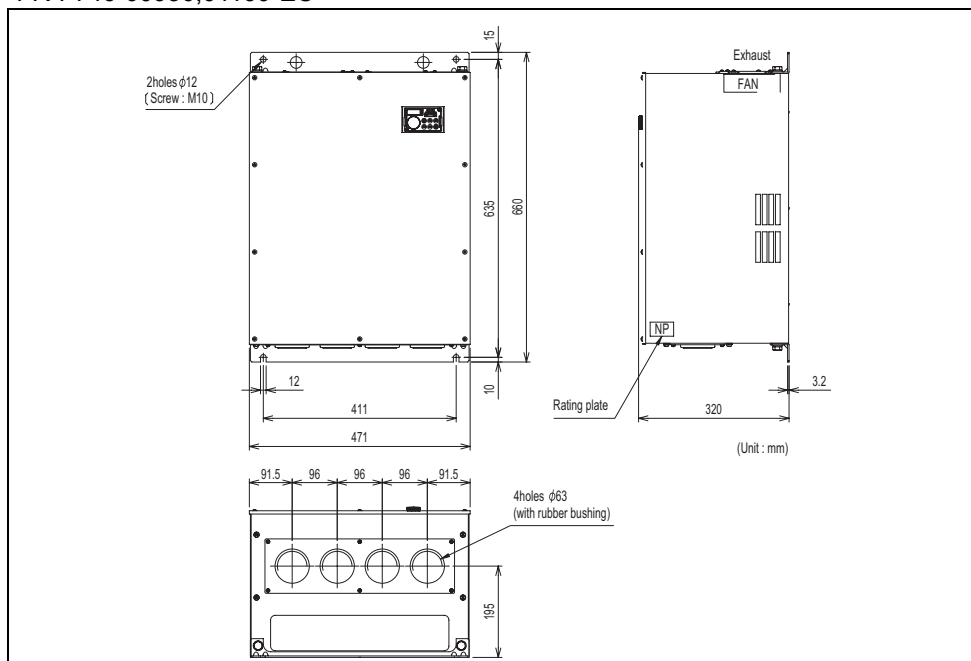
•FR-F746-00470,00620-EC



•FR-F746-00770-EC



•FR-F746-00930,01160-EC



MEMO