



INVERTER

Control terminal option

FR-A8TR

INSTRUCTION MANUAL

Screw terminal block

PRE-OPERATION INSTRUCTIONS

1

INSTALLATION

2

Thank you for choosing this Mitsubishi inverter control terminal option.

This Instruction Manual provides handling information and precautions for use of the equipment. Incorrect handling might cause an unexpected fault. Before using this product, always read this Instruction Manual carefully to use this product correctly.

Please forward this Instruction Manual to the end user.

Safety instructions


Do not attempt to install, operate, maintain or inspect the product until you have read through this Instruction Manual and supplementary 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, 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.

Note that even the  CAUTION level may lead to a serious consequence depending on conditions. Be sure to follow the instructions of both levels as they are critical to personnel safety.

◆ Electric Shock Prevention

WARNING

- Do not remove the front cover or the wiring cover while the inverter power is ON. Do not operate the inverter with any cover or wiring cover removed, as accidental contact with exposed high-voltage terminals and internal components may occur, resulting in an electrical shock.
- Even if power is OFF, do not remove the front cover except for wiring or periodic inspection as you may accidentally touch the charged inverter circuits and get an electric shock.
- Before wiring or inspection, LED indication of the inverter unit operation panel must be switched OFF. Any person who is involved in wiring or inspection shall wait for 10 minutes or longer after power 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.
- Any person who is involved in wiring or inspection of this equipment shall be fully competent to do the work.
- The control terminal option must be installed before wiring. Otherwise you may get an electric shock or be injured.
- Do not touch the control terminal option or handle the cables with wet hands. Doing so may cause an electric shock.
- Do not subject the cables to scratches, excessive stress, heavy loads or pinching. Doing so may cause an electric shock.

◆ Injury Prevention

CAUTION

- The voltage applied to each terminal must be the ones specified in the Instruction Manual. Otherwise a burst, damage, etc. may occur.
- The cables must be connected to the correct terminals. Otherwise a burst, damage, etc. may occur.
- The polarity (+ and -) must be correct. Otherwise a burst or damage may occur.
- While power is ON or for some time after power OFF, do not touch the inverter as it will be extremely hot. Doing so may cause a burn.

◆ Additional Instructions

The following instructions must be also followed. If the product is handled incorrectly, it may cause unexpected fault, an injury, or an electric shock.

CAUTION

Transportation and installation

- Do not install or operate the control terminal option if it is damaged or has parts missing.
- Do not stand or rest heavy objects on the product.
- The 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.
- If halogen-based materials (fluorine, chlorine, bromine, iodine, etc.) infiltrate into a Mitsubishi product, the product will be damaged. Halogen-based materials are often included in fumigant, which is used to sterilize or disinfect wooden packages. When packaging, prevent residual fumigant components from being infiltrated into Mitsubishi products, or use an alternative sterilization or disinfection method (heat disinfection, etc.) for packaging. Sterilization or disinfection of wooden package should also be performed before packing a product.

Test operation

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

WARNING

Usage

- 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

Usage

- As all parameters return to their initial values after the Parameter clear or All parameter clear is performed, the parameters must be set again as required before the operation is started.
- Static electricity in your body must be discharged before you touch the product.

Maintenance, inspection and parts replacement

- Do not carry out a megger (insulation resistance) test.

Disposal

- The product must be treated as industrial waste.

General instruction

- For clarity purpose, illustrations in this Instruction Manual may be drawn with covers or safety guards removed. Ensure all covers and safety guards are properly installed prior to starting operation.

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1 PRE-OPERATION INSTRUCTIONS

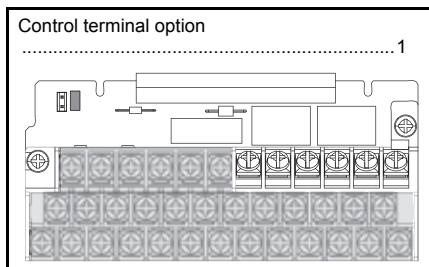
1.1 Unpacking and product confirmation

Take the control terminal option out of the package, check the product name, and confirm that the product is as you ordered and intact.

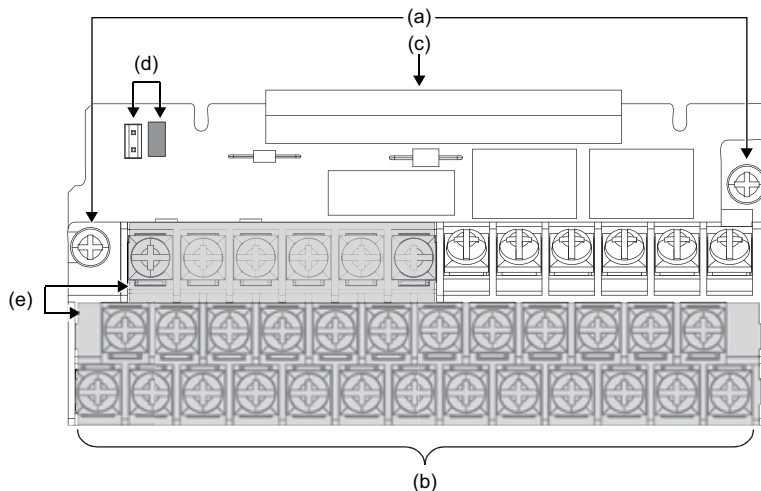
The product is a control terminal option for the FR-A800/FR-F800 series. (This option is not supported on the Ethernet communication type inverters.)

1.1.1 Product confirmation

Check the enclosed items.



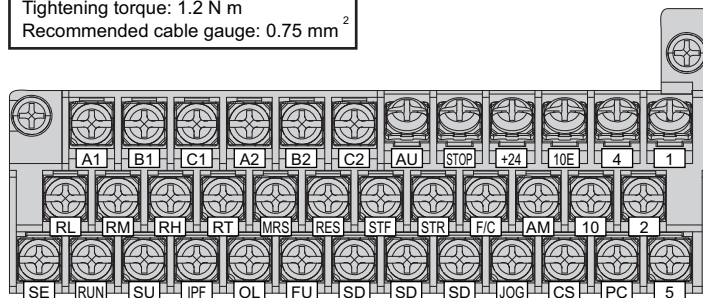
1.1.2 Component names



Symbol	Name	Description	Refer to page
a	Mounting screw	Fixes the option to the inverter.	10
b	Terminal block	Connect signal cables.	7
c	Connector	Connected to the control circuit connection connector of the inverter.	10
d	Control logic switchover jumper connector	Switches the control logic (sink logic or source logic).	8
e	Terminal block cover	Install this cover after wiring.	—

1.1.3 Terminal layout

Terminal screw size: M3.5
Tightening torque: 1.2 N m
Recommended cable gauge: 0.75 mm²



NOTE

- The inverter cover may not fit properly when using cables whose gauge is 1.25 mm² or larger, or when using many cables, and this could cause a contact fault of the operation panel.
- For the details of the terminal functions and specifications of the inverter, refer to the Instruction Manual (Detailed) of the inverter.

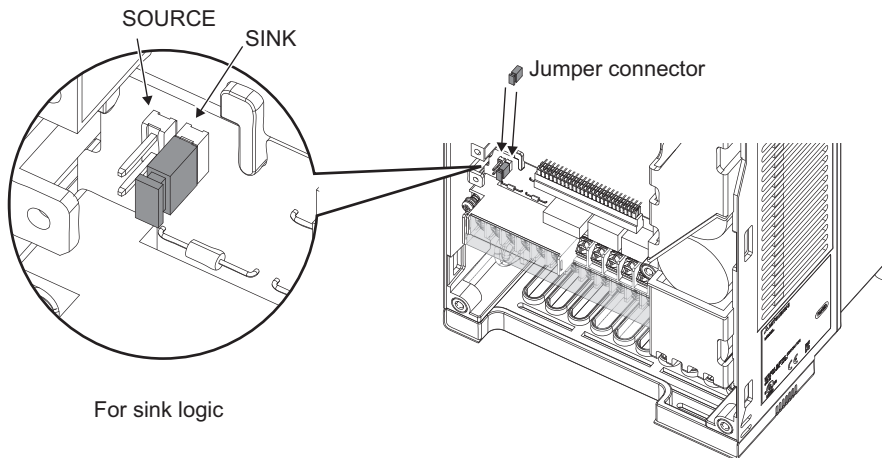
1.1.4 Control logic switchover

Switch the control logic of input signals as necessary.

To change the control logic, change the jumper connector position on the control circuit board.

Connect the jumper connector to the connector pin of the desired control logic.

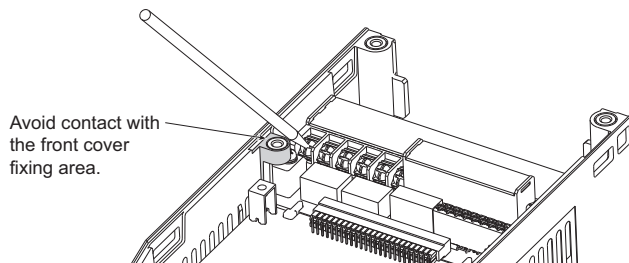
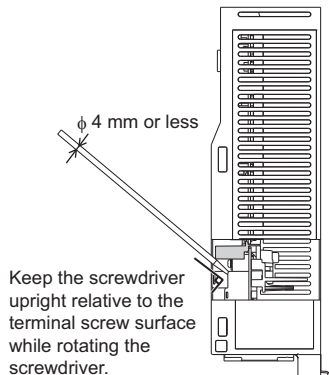
(For the details, refer to the Instruction Manual of the inverter.)



1.2 Restrictions for the FR-A8TR

As compared with the standard control circuit terminal block, the FR-A8TR has the following restrictions.

- When the plug-in option FR-A8NS is used, terminals +24, 10E, 4, STOP, and AU of the FR-A8TR cannot be used.
- Because the height is restricted, two wires cannot be wired to upper-row terminals (except for terminals A1, B1, C1, A2, B2, and C2) and middle-row terminals on the terminal block.
- The safety stop function is not available.
- For the connection to the terminal 1, use a screwdriver with a diameter of 4 mm or less. To avoid contact with the front cover fixing area, put the screwdriver upright relative to the terminal screw surface.



2 INSTALLATION

2.1 Pre-installation instructions

Check that the inverter's input power and the control circuit power are both OFF.

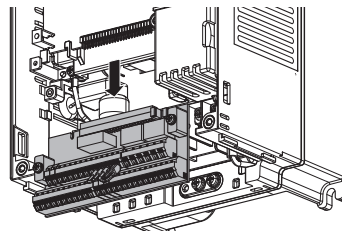
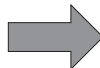
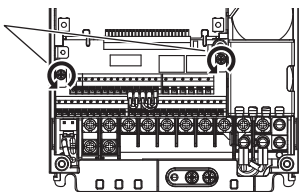
CAUTION

- Do not mount or remove the control terminal option while the input power is ON. Doing so may damage the inverter or the control terminal option.
- To avoid damage due to static electricity, static electricity in your body must be discharged before you touch the product.

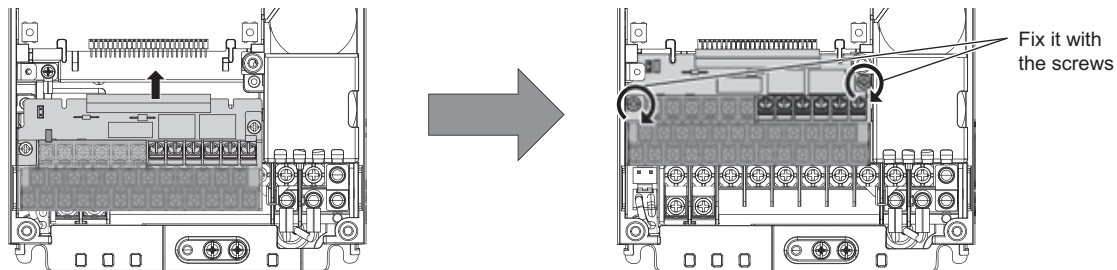
2.2 Installation procedure

- (1) Loosen the two mounting screws at the both side of the standard control circuit terminal block. (These screws cannot be removed.)
Slide down the control circuit terminal block to remove it.

Loosen the screws



- (2) Be careful not to bend the pins of the inverter's control circuit connector, install the control terminal option and fix it with the mounting screws for the control terminal option. (Tightening torque: 0.33 to 0.4 N•m)

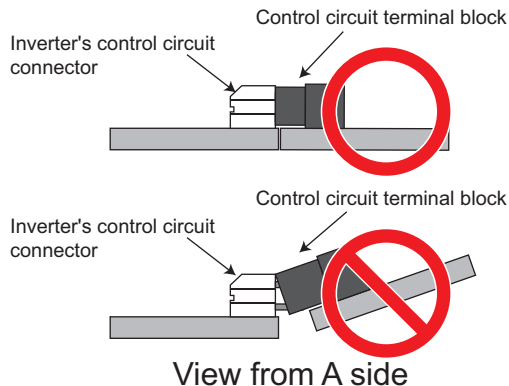
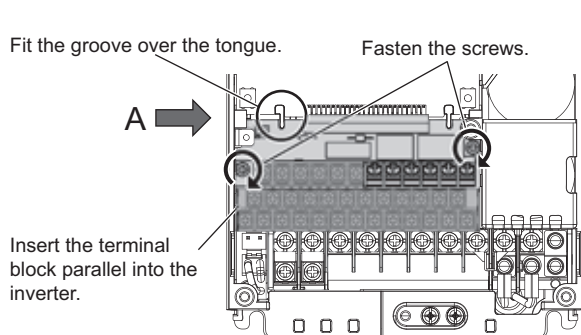


2.3 Precautions for removal and reinstallation of the control circuit terminal block

The following are the precautions to remove or reinstall the control circuit terminal block.

Observe the following for proper handling to avoid malfunctions or failures of the inverter.

- To remove or reinstall the control circuit terminal block, keep it upright so that it is parallel with the inverter.
- To install the control circuit terminal block, slide it upward so that the groove on the terminal block fits over the tongue on the inverter. Adjust the terminal block position for alignment with the screw fixing bases.
- Check that the terminal block is parallel with the inverter and the pins of the inverter's control circuit connector are not bent. After checking the proper connection, fix the terminal block with two screws.



NOTE

- Do not tilt the terminal block while tightening the screws or removing it from the inverter. (Otherwise, a stress applied to the control circuit terminal block or the control circuit connector may cause damage to them.)

APPENDIX

Restricted Use of Hazardous Substances in Electronic and Electrical Products

The mark of restricted use of hazardous substances in electronic and electrical products is applied to the product as follows based on the “Management Methods for the Restriction of the Use of Hazardous Substances in Electrical and Electronic Products” of the People’s Republic of China.

电器电子产品有害物质限制使用标识要求



本产品中所含有的有害物质的名称、含量、含有部件如下表所示。

- 产品中所含有害物质的名称及含量

部件名称*2	有害物质*1					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
电路板组件 (包括印刷电路板及其构成的零部件, 如电阻、电容、集成电路、连接器等)、电子部件	×	○	×	○	○	○
金属壳体、金属部件	×	○	○	○	○	○
树脂壳体、树脂部件	○	○	○	○	○	○
螺丝、电线	○	○	○	○	○	○

上表依据SJ/T11364的规定编制。

○：表示该有害物质在该部件所有均质材料中的含量均在GB/T26572规定的限量要求以下。

×：表示该有害物质在该部件的至少一种均质材料中的含量超出GB/T26572规定的限量要求。

*1 即使表中记载为 ×，根据产品型号，也可能会有有害物质的含量为限制值以下的情况。

*2 根据产品型号，一部分部件可能不包含在产品中。

MEMO

REVISIONS

*The manual number is given on the bottom left of the back cover.

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Dec. 2014	IB(NA)-0600566ENG-A	First edition
Dec. 2017	IB(NA)-0600566ENG-B	Addition <ul style="list-style-type: none">• Precautions for removal and reinstallation of the control circuit terminal block• Restricted Use of Hazardous Substances in Electronic and Electrical Products

INVERTER

mitsubishi **MITSUBISHI ELECTRIC CORPORATION**

HEAD OFFICE: TOKYO BUILDING 2-7-3, MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN