Mitsubishi General-Purpose Programmable Controller
Renewal Tool Conversion Adapter

Model

ERNT-CQTX122

User's Manual

ERNT-CQTX121

Model	ERNT-CQTX122
50CM-D180079-A (1007)MEE	

● SAFETY PRECAUTIONS ●

(Always read these precautions prior to use.)

Before using this product, please read this manual carefully and pay full attention to safety to ensure that the product is used correctly.

The precautions presented in this manual are concerned with this product only. For Programmable Controller system safety precautions, refer to the user's manual of the MELSEC-Q series CPU module to be used.

In this manual, the safety precautions are ranked as "DANGER" and "CAUTION."

◇ DANGER	Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.
⚠ CAUTION	Indicates that incorrect handling may cause hazardous conditions, resulting in medium or minor injury and/or property damage.

Note that failure to observe the ⚠ CAUTION level instructions may lead to a serious consequence according to the circumstances. Always follow the precautions of both levels because they are important to personal safety.

Please keep this manual in an easy-to-access location for future reference, and be sure to provide the manual to the end user.

Installation Precautions

<table>
<tr><td colspan="2" align="center">⚠ CAUTION</td></tr>
</table>

● Use the conversion adapter and conversion adapter anchor base in an environment of the general specifications defined in the MELSEC-Q series CPU module user's manual. Failure to do so could lead to electric shock, fire, malfunction or product failure or deterioration.

● Do not come in direct contact with the conductive area of the conversion adapter. Doing so could lead to system malfunction or failure.

● Fully secure the conversion adapter and conversion adapter anchor base using the installation screws, and tighten the installation screws securely within the specified torque range. Failure to do so could cause the conversion adapter and anchor base to fall, resulting in conversion adapter and conversion adapter anchor base damage.

● When installing the conversion adapter, be careful of conversion adapter corners, installation screws, etc. Failure to do so may result in injury.

Wiring Precautions

<table>
<tr><td colspan="2" align="center">◇ DANGER</td></tr>
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● Be sure to shut off all phases of the external power supply before performing installation or wiring work. Failure to do so could result in electric shock or product damage.

● If you want to energize and run the unit after completing the installation and wiring work, be sure to close the terminal block cover attached to the SYSMAC C series terminal block. Failure to do so could result in electric shock.

<table>
<tr><td colspan="2" align="center">⚠ CAUTION</td></tr>
</table>

● Properly wire the conversion adapter after verifying the rated voltage and terminal layout of the input/output module to be used. Connecting a power supply with a different rating or improper wiring could lead to fire or product failure.

● Securely tighten the conversion adapter installation screws, conversion adapter anchor base installation screws and SYSMAC C series terminal block installation screws within the specified torque range. A loose screw may result in a short circuit, fire or malfunction. An excessively tightened screw may result in screw or conversion adapter damage, causing the conversion adapter to fall, a short circuit or product malfunction.

● Do not allow foreign matter such as cuttings or wiring shavings to enter the conversion adapter or module. Doing so could lead to fire, failure or malfunction.

Startup and Maintenance Precautions

⟨!⟩ DANGER
● Do not touch the terminals during energization. Doing so could result in electric shock or malfunction.
● Be sure to shut off all phases of the external power supply before cleaning and retightening the terminal screws. Failure to do so could lead to electric shock. Excessively tightened screws could result in conversion adapter or input/output module damage, causing the conversion adapter to fall, a short circuit or product malfunction.

⚠ CAUTION
● Do not disassemble or modify the conversion adapter. Doing so could lead to failure, malfunction, injury or fire.
● The conversion adapter case is made of resin. Do not drop or apply excessive impact to the case. Doing so could lead to conversion adapter damage.
● Be careful when touching conversion adapter corners and installation screws. Failure to do so may result in injury.

Disposal Precautions

⟨!⟩ DANGER
● When disposing of the product, treat it as industrial waste.

EMC AND LOW VOLTAGE DIRECTIVES

Compliance to the EMC Directive, which is one of the EU Directives, has been a legal obligation for the products sold in European countries since 1996 as well as the Low Voltage Directive since 1997.

Manufacturers who recognize their products are compliant to the EMC and Low Voltage Directives are required to declare that print a "CE mark" on their products.

Authorized representative in Europe

Authorized representative in Europe is shown below.

Name: Mitsubishi Electric Europe B.V. (EMC C.C. Division)

Address: Gothaer strasse 8, 40880 Ratingen, Germany

1. Overview

This manual describes the Mitsubishi general-purpose Programmable Controller renewal tool conversion adapter (ERNT-CQTX122) and the conversion adapter anchor base (sold separately; ERNT-QF12/-QF8/-QF5) that secures the bottom of the conversion adapter. The conversion adapter is a product that converts the differences in SYSMAC C series and MELSEC-Q series pin assignments.

Once you have opened the packaging, verify that it contains the following products.

Product	Quantity
Conversion adapter	1
Mounting bracket	1
Mounting bracket fixing screw (M3.5 x 6)	4

2. Conversion Adapter Product Specifications

Conversion Adapter Model	SYSMAC C Series Module Model	MELSEC-Q Series Module Model	No. of modules	Conversion Adapter Weight (g)
ERNT-CQTX122	C500-IA122	QX10	2	250

C Series Terminal Block

A0	B0
A1	B1
A2	B2
A3	B3
A4	B4
A5	B5
A6	B6
A7	B7
A8	B8
A9	B9
A10	B10
A11	B11
A12	B12
A13	B13
A14	B14
A15	B15
A16	B16
A17	B17
A18	B18

I

Terminal No.	Signal Name
A0	IN00
A1	IN01
A2	IN02
A3	IN03
A4	IN04
A5	IN05
A6	IN06
A7	IN07
A8	COM
A9	IN08
A10	IN09
A11	IN10
A12	IN11
A13	IN12
A14	IN13
A15	IN14
A16	IN15
A17	COM
A18	Open

II

Terminal No.	Signal Name
B0	IN00
B1	IN01
B2	IN02
B3	IN03
B4	IN04
B5	IN05
B6	IN06
B7	IN07
B8	COM
B9	IN08
B10	IN09
B11	IN10
B12	IN11
B13	IN12
B14	IN13
B15	IN14
B16	IN15
B17	COM
B18	Open

Terminal No.	Signal Name
TB1	X00
TB2	X01
TB3	X02
TB4	X03
TB5	X04
TB6	X05
TB7	X06
TB8	X07
TB9	X08
TB10	X09
TB11	X0A
TB12	X0B
TB13	X0C
TB14	X0D
TB15	X0E
TB16	X0F
TB17	COM
TB18	Open

Terminal No.	Signal Name
TB1	X10
TB2	X11
TB3	X12
TB4	X13
TB5	X14
TB6	X15
TB7	X16
TB8	X17
TB9	X18
TB10	X19
TB11	X1A
TB12	X1B
TB13	X1C
TB14	X1D
TB15	X1E
TB16	X1F
TB17	COM
TB18	Open

Q Series Terminal Block Slot No.

TB2	TB1
TB4	TB3
TB6	TB5
TB8	TB7
TB10	TB9
TB12	TB11
TB14	TB13
TB16	TB15
TB18	TB17

Q Series Terminal Block Slot No. +1

TB2	TB1
TB4	TB3
TB6	TB5
TB8	TB7
TB10	TB9
TB12	TB11
TB14	TB13
TB16	TB15
TB18	TB17

Conversion Adapter

<Input Module Specification Comparison Chart>

Model / Specifications		SYSMAC C Series C500-IA122	MELSEC-Q Series QX10
No. of input points		32 points	16 points
Rated input voltage		100 to 120V AC(+10/-15%) 50/60 Hz	100 to 120V AC (+10/-15%) 50/60 Hz (±3Hz)
Rated input current		10 mA TYP (100V AC)	Approx. 8 mA(100V AC, 60 Hz) Approx. 7 mA(100V AC, 50 Hz)
ON voltage		60V AC minimum	80V AC or higher
OFF voltage		20V AC maximum	30V AC or less
Response time	OFF to ON	35 ms or less	15 ms or less (100V AC 50Hz, 60Hz)
	ON to OFF	55 ms or less	20 ms or less (100V AC 50Hz, 60Hz)
Isolation method		Photocoupler isolation	Photocoupler isolation
Internal current consumption		5V DC 60mA or less	50 mA (TYP. All points ON)
No. of points per common		8-points, 1 common	16-points, 1 common
External connection system		38-point terminal block	18-point terminal block

Note

1. Because the number of points per "common" is changed from 8 (4 circuits) to 16 (2 units), SYSMAC C Series-side Terminal Nos. A8 and A17, and B8 and B17 cannot be used in separation from each other.

2. For detailed specifications not stated in the Input Module Specification Comparison Chart and for general specifications, refer to the user's manual of the input module to be used. Those areas with specifications that are different for the SYSMAC C series and MELSEC-Q series are subject to specification restrictions upon replacement. Check the specifications of the connection device.

3. Products Required by the Conversion Adapter

(1) Conversion Adapter Anchor Base (Sold Separately)

The conversion adapter anchor base secures the bottom of the conversion adapter and is required for conversion adapter use. One anchor base is required per base.

Conversion Adapter Anchor Base Model	Specifications	
	Type	Weight (g)
ERNT-QF12	12-slot conversion adapter anchor base	620
ERNT-QF8	8-slot conversion adapter anchor base	435
ERNT-QF5	5-slot conversion adapter anchor base	290

(2) Base Adapter (Sold Separately)

The base adapter enables MELSEC-Q series installation using the installation holes of the SYSMAC C series base unit. (Additional hole machining not required)

Base Adapter Model	Specifications			
	SYSMAC C Series Compliant Module	MELSEC-Q Series Compliant Module	Installable Conversion Adapter Anchor Base	Weight (g)
ERNT-CQB081	C500-BC081/082 C500-BC091 C2000-BC061 C500-BI081 C2000-BI083	Q312B Q38B Q612B Q68B	ERNT-QF12 ERNT-QF8	892
ERNT-CQB051	C500-BC051/052 C500-BC061 C500-BI051	Q38B Q35B Q68B Q65B Q55B	ERNT-QF8 ERNT-QF5	710
ERNT-CQB031	C500-BC031	Q35B Q33B	ERNT-QF5	542

4. Mounting and Installation

4.1 Handling Precautions

(1) Do not touch the terminals during energization. Doing so could result in electric shock or malfunction.

(2) Do not disassemble or modify the conversion adapter. Doing so could result in failure, malfunction, injury or fire.

(3) Do not come in direct contact with the conductive area of the conversion adapter. Doing so could result in system malfunction or failure.

(4) Fully secure the conversion adapter and conversion adapter anchor base using the installation screws, and securely tighten the screws within the specified torque range. Failure to do so could cause the conversion adapter and anchor base to fall, resulting in conversion adapter and conversion adapter anchor base damage.

4.2 Use Precautions

Item	Use Precautions
Depth	The depth increases. Verification prior to installation is required. SYSMAC C series module → MELSEC-Q series module + Renewal tool Conversion adapter Base adapter Conversion adapter anchor base 122 150.9 **28.9mmUP(17.1mm)** The value in parentheses is the dimension when the base adapter is not used.

4.3 Installation Environment

For details of the installation environment, refer to the user's manual of the MELSEC-Q series CPU module to be used.

5. Part Names and Installation Method
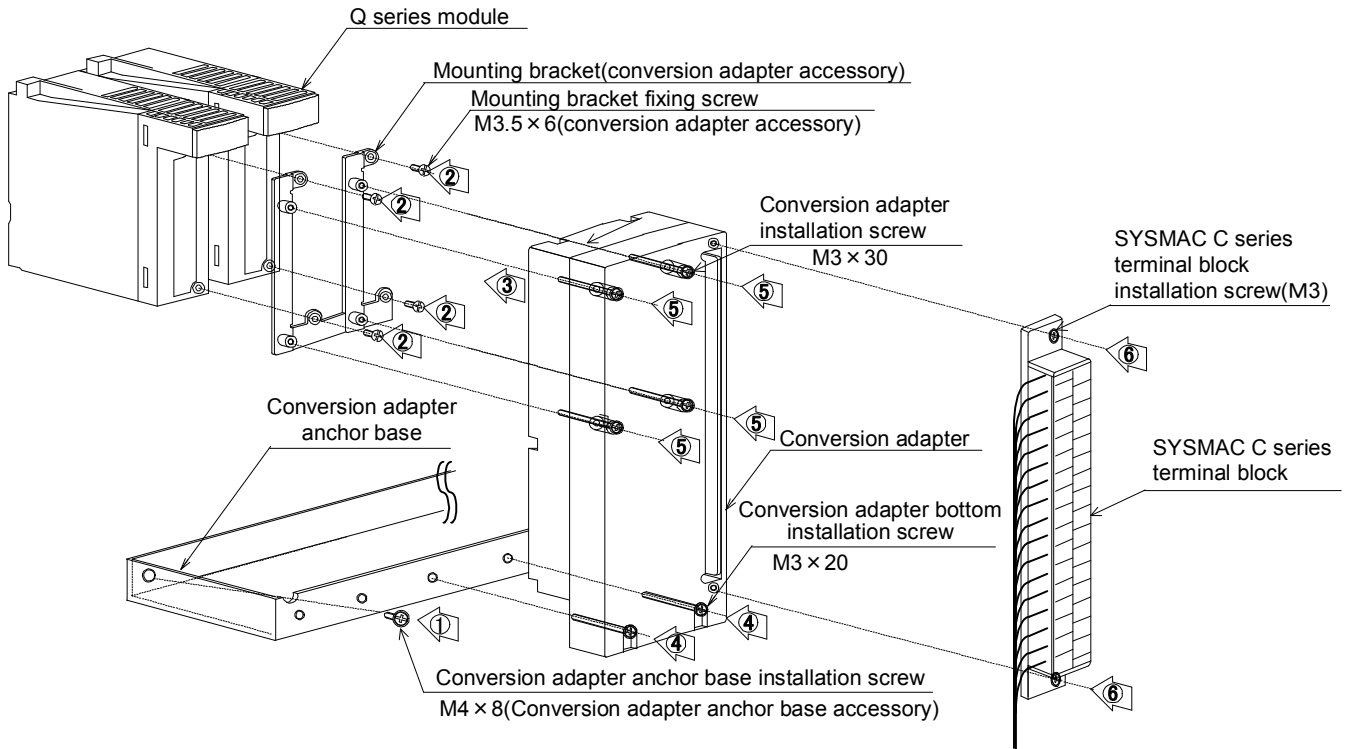
5.1 Installation Method

[1]   Secure the conversion adapter anchor base to the base adapter or control panel using the conversion adapter anchor base installation screws (M4 × 8) provided as an accessory. (Two end locations)

[2]   Secure the mounting bracket to the Q series module using the mounting bracket fixing screws [M3.5 × 6 (conversion adapter accessory); two upper/lower locations].

[3]   Mount the conversion adapter onto the mounting bracket.

[4]   Secure the conversion adapter using the conversion adapter bottom installation screw (M3 × 20; 2 location).

[5]   Secure the conversion adapter using the conversion adapter installation screws (M3 × 30; 4 locations).

[6]   Secure the SYSMAC C series terminal block to the conversion adapter using the terminal block installation screws (M3; two upper/lower locations).

5.2 Tightening Torque

Tighten the module installation screws to the specified torque below. An inappropriate tightening torque could cause the product to fall or result in a short circuit, product failure or malfunction.

Screw Location	Tightening Torque Range
Conversion adapter anchor base installation screw (M4 screw)	139 to 189N·cm
Mounting bracket fixing screw (M3.5 screw)	68 to 92 N·cm
Conversion adapter bottom installation screw (M3 screw)	43 to 57 N·cm
Conversion adapter installation screw (M3 screw)	
SYSMAC C series terminal block installation screw (M3 screw)	

6. Conversion Adapter Anchor Base Installation Method

To use the conversion adapter, a conversion adapter anchor base (ERNT-QF12/-QF8/-QF5) is required.

Q Base Unit Conversion Adapter Anchor Base	Q312B	Q38B	Q35B	Q33B	Q612B	Q68B	Q65B	Q55B
ERNT-QF12	◎	×	×	×	◎	×	×	×
ERNT-QF8	○	◎	×	×	○	◎	×	×
ERNT-QF5	×	○	◎	○	×	○	◎	◎

◎: Applicable

○: Applicable (with some restrictions[1])

×: Not applicable

*1: There are certain slots in which the conversion adapter cannot be installed. For example, the conversion adapter cannot be installed in Slots 8 to 11 (4 slots) of the Q base unit when Q312B (Q base unit) is used with ERNT-QF8 (conversion adapter anchor base).

The machining of screw holes (M4 × 2 locations) used to install the conversion adapter anchor base, such as described below, is required when a base adapter (sold separately) is not used.

(1) With Main Base Unit Q312B, Q38B, Q35B or Q33B
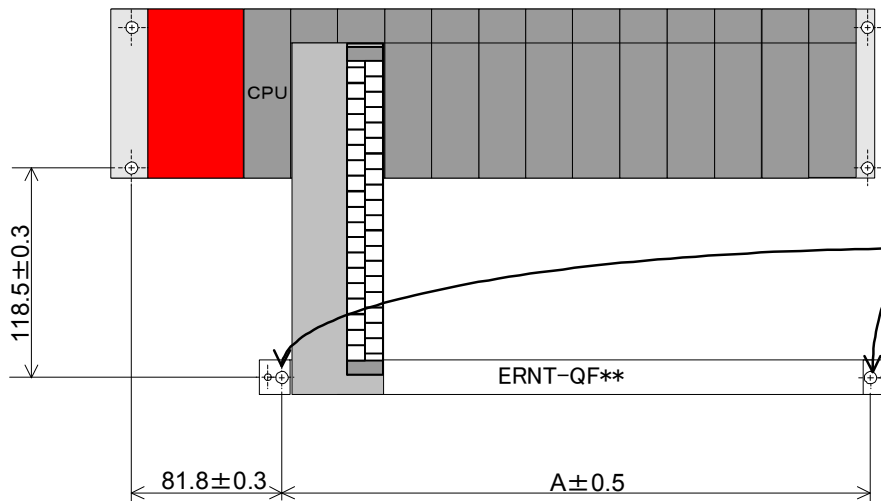
Machine screw holes (M4 x 2 locations) in these locations for conversion adapter anchor base installation.

Conversion Adapter Anchor Base	A
ERNT-QF12	347.2
ERNT-QF8	236
ERNT-QF5	152.6

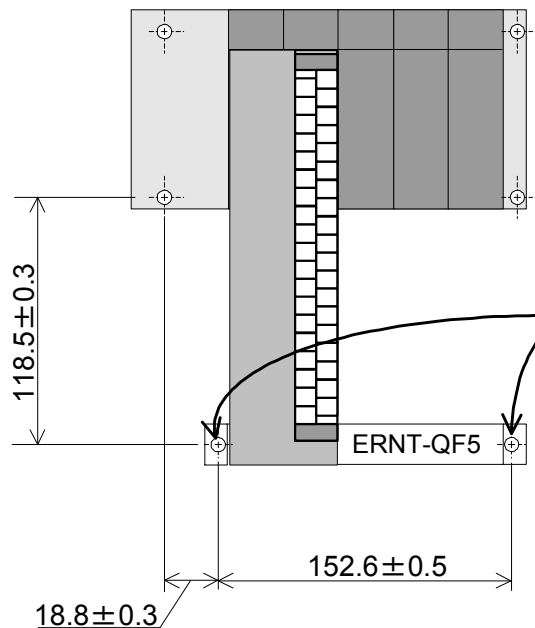118.5±0.3

81.8±0.3

A±0.5

ERNT−QF**

CPU

(2) With Extension Base Unit Q612B, Q68B or Q65B

Machine screw holes (M4 x 2 locations) in these locations for conversion adapter anchor base installation.

ERNT−QF∗∗

118.5±0.3

74.4±0.3

A±0.5

Conversion Adapter Anchor Base	A
ERNT-QF12	347.2
ERNT-QF8	236
ERNT-QF5	152.6

(3) With Extension Base Unit Q55B

Machine screw holes (M4 x 2 locations) in these locations for conversion adapter anchor base installation.

ERNT-QF5

118.5±0.3

152.6±0.5

18.8±0.3

| Tips |
|---|
| Use of a base adapter (sold separately) eliminates the need for additional screw hole machining on the control panel. (A base adapter is a product that enables MELSEC-Q series installation using the SYSMAC C series installation holes.) |

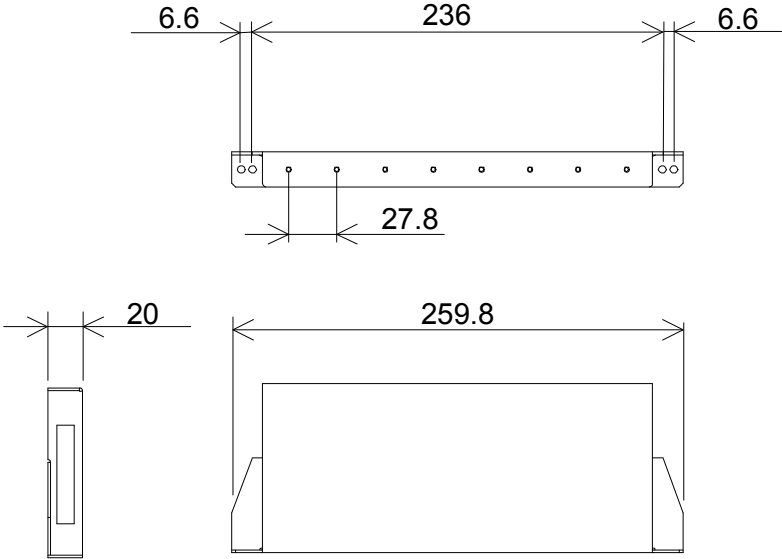# 7. External Dimensions

7.1 Conversion Adapter

Mounting bracket

204

55.2

92

53.5

41.9
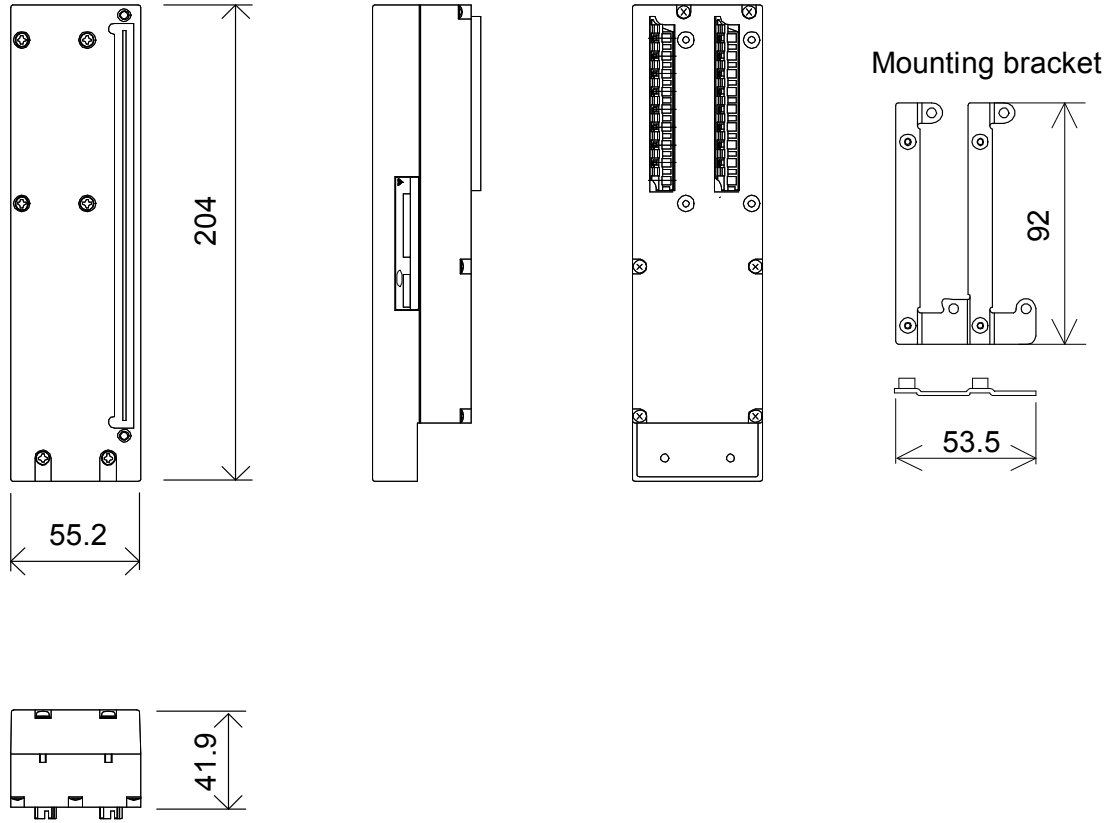
7.2 Conversion Adapter Anchor Base

(1) ERNT-QF12

6.6

347.2

6.6

27.8

20

371
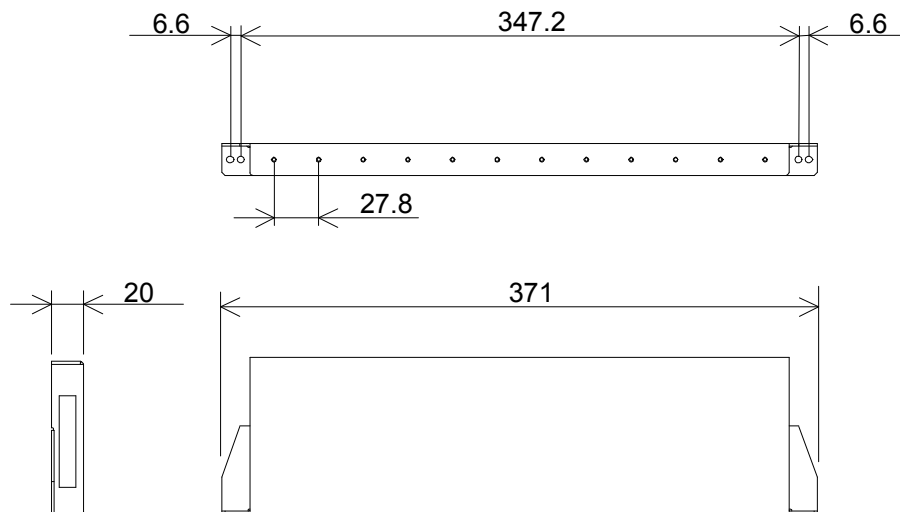
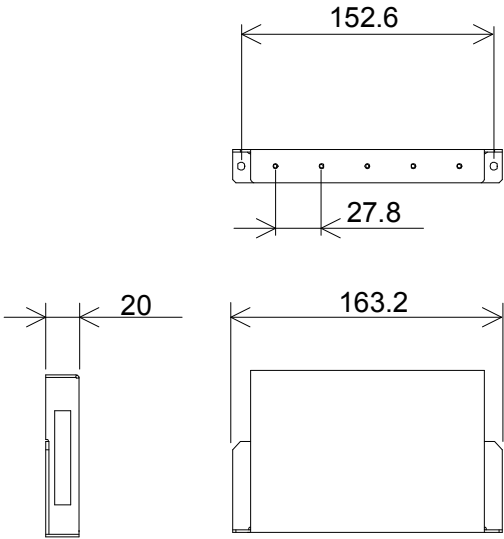**(2)   ERNT-QF8**

(3)   ERNT-QF5

Product Warranty Details

Please confirm the following product warranty details prior to product use.

Gratis Warranty Terms and Gratis Warranty Range

If any fault or defect (hereinafter referred to as "Failure") attributable to Mitsubishi Electric Engineering Company Limited (hereinafter referred to as "MEE") should occur within the gratis warranty period, MEE shall repair the product free of charge via the distributor from whom you made your purchase.

■ **Gratis Warranty Period**

The gratis warranty period of this product shall be one (1) year from the date of purchase or delivery to the designated place.
Note that after manufacture and shipment from MEE, the maximum distribution period shall be six (6) months, and the gratis warranty period after manufacturing shall be limited to eighteen (18) months.
In addition, the gratis warranty period for repaired products shall not exceed the gratis warranty period established prior to repair.

■ **Gratis Warranty Range**

The gratis warranty range shall be limited to normal use based on the usage conditions, methods and environment, etc., defined by the terms and precautions, etc., given in the instruction manual, user's manual and caution labels on the product.

Warranty Period after Discontinuation of Production

(1)　MEE shall offer product repair services (fee applied) for seven (7) years after production of the product has been discontinued. Discontinuation of production shall be reported via distributors.
(2)　Product supply (including spare parts) is not possible after production has been discontinued.

Exclusion of Opportunity Loss and Secondary Loss from Warranty Liability

Regardless of the gratis warranty period, MEE shall not be liable for compensation for damages arising from causes not attributable to MEE, opportunity losses or lost profits incurred by the user due to Failures of MEE products, damages or secondary damages arising from special circumstances, whether foreseen or unforeseen by MEE, compensation for accidents, compensation for damages to products other than MEE products, or compensation for other work carried out by the user.

Changes in Product Specifications

The specifications given in the catalogs, manuals and technical documents are subject to change without notice.

This document is a new publication, effective July 2010. Specifications are subject to change without notice. The standard price does not include consumption tax. Please note that consumption tax will be added at the time of purchase. This manual was printed on recycled paper.

Developed July 2010

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