### Mitsubishi Electric Programmable Controller Renewal Tool

**Conversion Adapter** Model ERNT-1JQ32SC62SC



**User's Manual** 

50CM-D180239-B(1611)

### MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED

HEAD OFFICE: Hulic KUDAN BLDG.1-13-5. KUDANKITA CHIYODA-KU. TOKYO 102-0073. JAP. NAGOYA ENGINEERING OFFICE: 139 SHIMOYASHIKICHO-SHIMOYASHIKI, KASUGAL, AICHI 486-0906, JAPAN



(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

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



Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.

Indicates that incorrect handling may cause hazardous conditions resulting in medium or minor injury and/or property damage.

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

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

[Precautions before using]

#### 

● When making a switch to the MELSEC-Q Series, be sure to consult user's manual supplied with individual module under the MELSEC-Q Series to confirm differences in various aspects including performance, function, CPU input/output signals between the two modules.

#### [Installation Precautions]

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- Use the Conversion Adapter in the environmental conditions that are specified in the general specification. If the Products are used in any environment beyond the bounds of the general specification, electric shock, fire, malfunction, or damage to or degradation of the Products will
- Do not directly touch any conductive parts of Conversion Adapter. Contact will cause malfunction or failure in the system.
- Fasten the Conversion Adapter securely with retaining screws, and tighten the screws by applying torque within specified limits. Loose screws can lead to the dropping of the Conversion Adapter, possibly causing breakage thereof. Excessive tightness of the screws can lead to breakage of the screws, Conversion Adapter, or MELSEC-Q Series Module, possibly causing the dropping, shorting, and malfunction thereof.
- Always check for correct match between MELSEC-Q Series and the Conversion Adapter Incorrect match can cause damage to the MELSEC-Q Series Module
- When installing or removing the MELSEC-Q Series Module complete with a Converter Adapter be sure to hold it with both hands. Dropping may lead to breakage.

### [Wiring Precautions]

### 

 Before attempting to install the Unit or carry out the necessary wiring, make certain that the external power supply, used in the system, is shut off on all three phases. Failure to do so may result in electric shock or damage to the product

### ♠ CAUTION

- Carry out wiring for the Conversion Adapter correctly after checking the specification and inal arrangement for the module used. Connecting a power supply with a different voltage rating or incorrect wiring may cause a fire or failure.
- Tighten the connector screws securely by applying torque within the specified limits. Loose screws will cause short circuit, fire or malfunction. Excessive tightening will damage the screws or the Conversion Adapter which in turn will cause dropping of parts, short circuit or malfunction.
- Use care to prevent foreign materials including cuttings and wiring debris from entering the Conversion Adapter or the MELSEC-Q Series Module. These will be cause for fire, failure or

#### [Startup and Maintenance Precautions]

#### ↑ WARNING

- Do not touch live connectors. There is a danger of electric shock or malfunction.
- Shut off the external power supply for the system in all phases before cleaning or retightenin the screws. Failure to do so may result in electric shock or cause the MELSEC-Q Series Module to fail or malfunction. Loose screws can lead to dropping, shorting, and malfunction. Excessive tightness of the screws can lead to breakage of the screws. Conversion Adapter, or MELSEC-G Series Module, possibly causing the dropping, shorting, and malfunction thereof.

#### ♠ CAUTION

- Do not modify the Conversion Adapter or take it apart. Doing so will cause failure, malfunction personal injury, or fire.
- Do not drop the Conversion Adapter or do not give a strong impact to it. This will cause

#### [Disposal Precautions]

#### / CAUTION

When disposing of the product, treat it as industrial waste.

# 安全注意事项 ●

(使用前请务必阅读)

使用本产品时,请仔细阅读本手册,并充分注意安全,正确地使用产品。 本手册中标注的注意事项仅记载了与本产品相关的内容。关于可编程控制器系 统的安全注意事项、请参阅所使用的MELSEC-Q系列CPU模块的用户手册。 在本●安全注意事项●中,安全注意事项的等级分为「警告」和「注意」



表示错误操作可能造成危险后果, 引起死亡或重伤



表示错误操作可能造成危险后果, 引起中度伤害, 轻 | 伤及财产损失。

另外,根据情况不同,即使是<u>个</u>注意中记载的事项,也可能引发严重后果。不 管哪个记载的都是非常重要的内容, 请务必遵守。

请妥善保管本手册,以便需要时取阅,并请将本手册交给最终用户。

### 【使用前的注意事项】

## 八 注 意

● 替换至MELSEC-Q系列时,为确认性能,功能,CPU对应的输入输出信号等 方面的差异,请务必参照MELSEC-Q系列的各模块的手册进行使用。

### 【安装注意事项】

# ⚠ 注 意

- 应在一般规格环境下使用转换适配器。如果在一般规格范围以外的环境 中使用转换适配器,可能导致触电,火灾,误动作,产品损坏或性能劣
- 请不要直接触摸转换适配器的导电部分。否则可能会造成系统误动作, 故障。
- 转换适配器应通过安装螺钉切实地加以固定,安装螺钉应在规定的扭矩 范围内切实地拧紧。如果螺钉拧得过松,有可能因掉落而导致转换适配器 破损。如果螺钉拧得过紧,有可能造成螺钉,转换适配器及MELSEC-Q系列 模块破损,从而导致掉落,短路或误动作。
- 请务必确认MELSEC-Q系列模块和转换适配器的组合是否正确。在错误组 合下使用时,可能会导致MELSEC-Q系列模块损坏。
- 在对安装了转换适配器的 MELSEC-Q 系列模块进行装卸时, 请务必用双手 拿住产品。否则会因落下而导致损坏。

### 【接线注意事项】

# ⚠ 警告

● 在进行安装,配线作业等时,必须将系统使用的外部供应电源全部断开 后再进行操作。如果未全部断开,有可能导致触电或产品损坏。

# ⚠ 注 意

- 请确认所使用模块的规格及端子排列后正确地进行转换适配器的接线。 如果输入不符合额定值的电压,连接不符合额定值的电源或接错线,可 能会导致火灾或故障。
- 连接器安装螺钉应在规定的扭矩范围内切实地拧紧。如果螺钉拧得过松, 有可能导致短路,火灾或误动作。如果螺钉拧得过紧,有可能造成螺钉 及转换适配器破损从而导致掉落, 短路或误动作。
- 请注意不要让切屑或接线头等异物进入转换适配器及MELSEC-Q系列模块 内。否则可能会导致火灾, 故障, 误动作。

#### 【启动和维护注意事项】

# 警 告

- 在通电状态下请勿触摸导电部分。否则可能导致触电或误动作。
- 在清洁模块或重新紧固螺钉时,必须将系统使用的外部供应电源全部断 开后再进行操作。如果未全部断开,有可能导致触电或MELSEC-Q系列模 块故障,误动作。如果螺钉拧得过松,有可能导致掉落,短路或误动作。 如果螺钉拧得过紧,有可能导致螺钉,转换适配器及MELSEC-Q系列模块 破损,从而导致掉落,短路或误动作。

### ⚠ 注 意

- 请不要拆卸, 改造转换适配器。否则可能会导致故障, 误动作, 受伤或火
- 请勿使转换适配器掉落或受到强烈撞击。否则可能导致破损

### 【废弃注意事项】

## 注意

● 废弃时请将本产品作为工业废弃物处理。

#### **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

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.

Address: Mitsubishi-Electric-Platz 1, 40882 Ratingen, Germany

#### 1. Overview

This manual describes specifications, handling and other information about the Conversion Adapter "ERNT-1JQ32SC62SC" available as Renewal Tools for the Mitsubishi Electric Programmable Controller. Before attempting to make a switch to MELSEC-Q Series in your installation, consult the user's manual supplied with individual module under the latter series to learn about how they differ in various aspects

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

Product	Shape	Quantity
Conversion Adapter		1
This manual	_	1

### 2. General Specifications

Item	Specifications					
Operating ambient temperature	0 to 55°C(Maximum surrounding air temperature 55°C)					
Storage ambient temperature	-25 to 75°C					
Operating ambient humidity Storage ambient humidity	5 to 95%RH, non-condensing					
,			Frequency	Constant acceleration	Half amplitude	Sweep count
Vibration resistance	Compliant with JIS B 3502 and IEC 61131-2	intermittent vibration Under	5 to 8.4Hz	-	3.5mm	10 times each in X, Y, Z directions
			8.4 to 150Hz	9.8m/s <sup>2</sup>	_	
			5 to 8.4Hz	-	1.75mm	
		continuous vibration	8.4 to 150Hz	4.9m/s <sup>2</sup>	_	_
Shock resistance	Compliant with JIS B 3502 and IEC 61131-2 (147 m/s², 3 times each in 3 directions X, Y, Z)					
Operating atmosphere	No corrosive gases					
Operating altitude *1	0 to 2000m					
Installation location	Inside a control panel					
Overvoltage category *2	II or less					
Pollution degree *3		·	2			

- \*1 : Do not use or store under pressure higher than the atmospheric pressure of altitude 0m
- : This indicates the section of the power supply to which the equipment is assumed to be con the public electrical power distribution network and the machinery within premises. Category II applies to equipment for which electrical power is supplied from fixed facilities
- This index indicates the degree to which conductive material is generated in terms of the environment in which the equipment is used. Pollution level 2 is when only non-conductive pollution occurs. A temporary conductivity caused by condensing

### 3. Products Required by the Conversion Adapter

Conversion Adapter Anchor Base (Sold Separately)
The Conversion Adapter Anchor Base secures the bottom of the Conversion Adapter. One anchor

Conversion Adapter Anchor Base Model	Specifications	Weight (g)
ERNT-AQF12	12-slot conversion adapter anchor base	590
ERNT-AQF8	8-slot conversion adapter anchor base	410
ERNT-AQF5	5-slot conversion adapter anchor base	275
ERNT-AQF3	3-slot conversion adapter anchor base	185

(2) Base Adapter (Sold Separately)

Both the MELSEC-Q Series Base Unit and the Conversion Adapter Anchor Base can be installed on the Base Adapter without drilling screw holes However, drilling screw holes (M5 screws) is required to install the Base Adapter to the panel

For the Base Unit models marked with \*1 to \*5, two or more Base Adapter models are applicable

Select the most suitable Base Adapter according to the product dimensions.

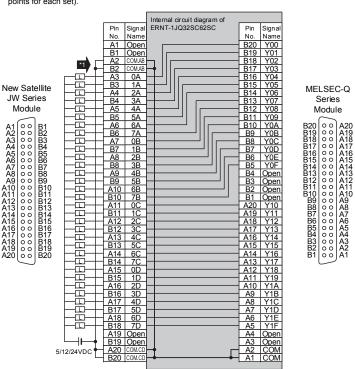
Base Adapter	Installable			Product dimensions	Weight			
Model		MELSEC-	Q Series I	Base U	nit	Conversion Adapter	Width×Height	(g)
	12 slots	8 slots	5 slots	3 slots	2 slots	Anchor Base	(mm)	
ERNT-AQB38	Q312B	312B ERNT-AQF12, ERNT-AQF8		480×240	970			
ERIVI-AQB30		Q38B(*1)				ERNT-AQF8	400^240	970
ERNT-AQB35		Q38B(*1)				ERNT-AQF8, ERNT-AQF5	382×240	795
ERINT-AQB33	EKIVI-AQD33		Q35B			ERNT-AQF5	302^240	195
ERNT-AQB32				Q33B		ERNT-AQF3	247×240	675
ERNT-AQB68 Q612B						ERNT-AQF12, ERNT-AQF8	466×240	930
ERIVI-AQBOO		Q68B(*2)				ERNT-AQF8	400^240	930
		Q68B(*2)				ERNT-AQF8, ERNT-AQF5	QF5	
ERNT-AQB65			Q65B(*3) Q55B(*4)			ERNT-AQF5	352×240	790
ERNT-AQB62				Q63B	Q52B(*5)	ERNT-AQF3	238×240	650
ERNT-AQB58		Q68B(*2)				ERNT-AQF8	411×240	870
ERNT-AQB55			Q65B(*3) Q55B(*4)			ERNT-AQF5	297×240	655
ERNT-AQB52					Q52B(*5)	ERNT-AQF3	183×240	505

### 4. Product Specifications

For detail specifications which do not appear in the specification comparison charts contained herein, see the user's manual supplied with the MELSEC-Q Series Module you use. Also, check that the specifications of the connected devices meet the specifications of the MELSEC-Q Series Module

Conversion Adapter Model	Before replacement Module Model	No. of output points	After replacement MELSEC-Q Series Module Model	No. of modules	Conversion Adapter Weight (g)
ERNT-1JQ32SC62SC	JW-32SC	32	QY41H	1	85
LINIT-10Q32300230	JW-62SC	64	Q14III	2*1	00

\*1 To replace the JW-62SC, two sets of the QY41H and the Conversion Adapter are required (32 points for each set



### Precautions for wiring

Because the switch concerned causes the number of points per common to change from 16 (two circuits) to 32 (one circuit), an alteration to the wiring is required if the commons on the existing modules have been used in separation from each other.

Specification Companson >					
	Model	New Satellit	te JW Series	MELSEC-Q シリーズ	
Specifications		JW-32SC Sink type	JW-62SC Sink type	QY41H Sink type	
Opcomedions	_	Silik type		Silik type	
No. of output p	oints	32 points	64 points*1	32 points	
Rated load volt	tage	5/12/24VDC	5/12/24VDC	5/12/24VDC	
Maximum load	current	0.3A/point, 4.8A/common	0.1A/point, 1.6A/common	0.2A/point, 2A/common	
Maximum inrus	sh current	1A, 100ms or less	0.12A, 100ms or less	0.7A, 10ms or less	
Leaked current at OFF		0.2mA or less	0.2mA or less	0.1mA or less	
Maximum voltage drop at ON		1VDC (MAX.) 1A	1.3VDC (MAX.) 0.1A	0.2VDC (MAX.) 0.1A	
Response	OFF to ON	1ms or less	1ms or less	2μs or less	
time	ON to OFF	1ms or less (resistive load)	1ms or less (resistive load)	2µs or less (resistive load)	
Surge suppressor		Zener diode	Zener diode Zener diode		
Fuse		No	No	No	
Isolation metho	od	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	
Common terminal arrangement		16 points/common	16 points/common	32 points/common	
External conne	ction system	40-pin connector	40-pin connector ×2	40-pin connector	

Make sure the section of the above table meets the specification of the machines and equipment connected to the MELSEC-Q Series Module.

1 To replace the JW-62SC, two sets of the QY41H and the Conversion Adapter are required (32 points for each set).

### 5. Mounting and Installation

#### 5.1 Handling Precautions

- (1) Before attempting to install the Unit or carry out the necessary wiring, make certain that the external power supply, used in the system, is shut off on all three phases. Failure to do so may result in electric shock or damage to the product.

  (2) Do not touch live connectors. There is a danger of electric shock or malfunction.
- (3) Do not modify the Conversion Adapter or take it apart. Doing so will cause failure, malfunction,
- personal injury, or fire. (4) Do not touch the energized part of the Conversion Adaptor directly. Contact will cause
- malfunction or failure in the system. (5) Fasten the Conversion Adapter securely with retaining screws, and tighten the screws by applying torque within specified limits. Loose screws can lead to the dropping of the Conversion Adapter, possibly causing breakage thereof. Excessive tightness of the screws can lead to breakage of the screws, Conversion Adapter, or MELSEC-Q Series Module, possibly causing the dropping, shorting, and malfunction thereof.
- (6) Use care to prevent foreign materials including cuttings and wiring debris from entering the Conversion Adapter or the MELSEC-Q Series Module. These will be cause for fire, failure or
- (7) Do not drop the Conversion Adapter or do not give a strong impact to it. This will cause damage.

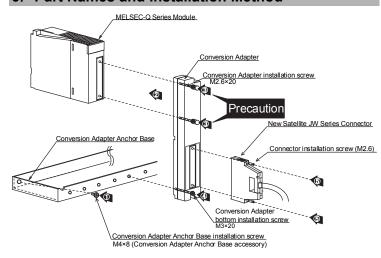
#### 5.2 Use Precautions

Item	Use Precautions		
Depth dimension	The depth dimension required for installation is 161.4mm. Check the installation condition.  MELSEC-Q Series  Renewal Tool  130.5  UP  30.9mm  Unit:mm		
	*The each depth dimension is measured from the panel surface.  New Satellite JW Series: Base Unit + Input/output Module + Connector, MELSEC-Q Series + Renewal Tool: Base Unit + Input/output Module + Conversion Adapter + Connector		

#### 5.3 Installation Environment

The installation environment is the same as MELSEC-Q Series CPU Module to use. Refer to the user's manual of the MELSEC-Q Series CPU Module to be used.

### 6. Part Names and Installation Method



#### 6.1 Installation Method



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



Mount the Conversion Adapter onto the MELSEC-Q Series Module



Secure the Conversion Adapter using the Conversion Adapter installation screws (M2.6 × 20; 2

Before tightening the installation screws, check that the Conversion Adapter has been securely installed on the MELSEC-Q Series Module. Tightening the screws in floating-off state r tilting state will damage the Conversion Adapter installation screw



Secure the Conversion Adapter using the Conversion Adapter bottom installation screw (M3 x 20; 1 location).



Secure the connector of the New Satellite JW Series to the Conversion Adapter with the connector installation screws (M2.6; two upper/lower locations).

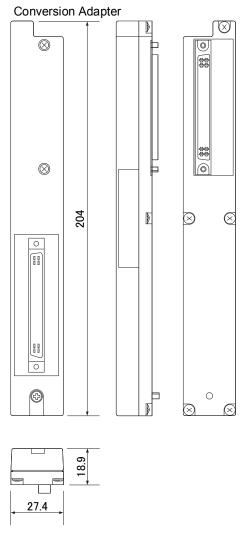
### 6.2 Tightening Torque

Tighten the installation screws to the specified torque below. An inappropriate tightening torque could

cause the product to fail of result in a short circuit, product failure of mailuriction.				
Screw Location	Tightening Torque Range			
Conversion Adapter Anchor Base installation screw (M4×8)	1.39 to 1.89N·m			
Conversion Adapter installation screw (M2.6×20)	0.20 to 0.29N·m			
Conversion Adapter bottom installation screw (M3×20)	0.43 to 0.57N·m			
Connector installation screw (M2.6)	0.20 to 0.29N·m			

### 7. External Dimensions

Unit:mm



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# **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)

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 Warrant 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

This document is a new publication, effective November 2016. Specifications are subject to change without notice.