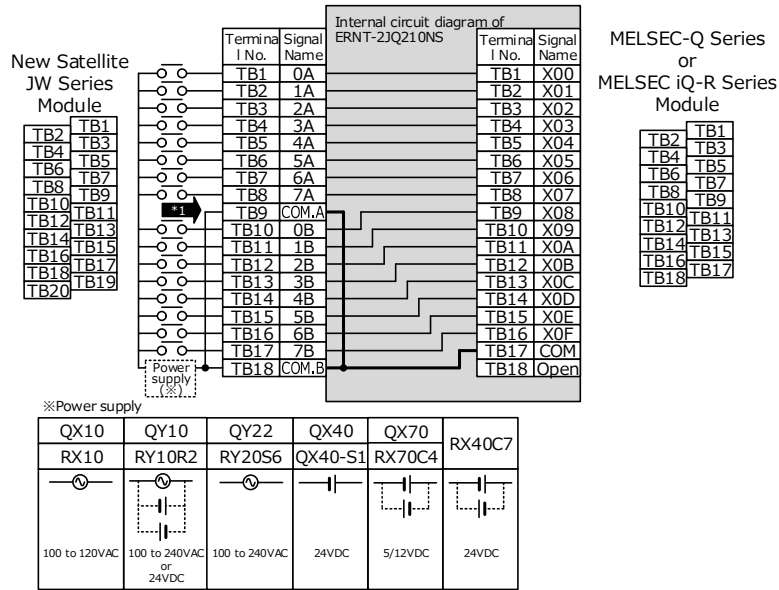




### 3. Product Specifications

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 or MELSEC iQ-R Series Module you use. Also, check that the specifications of the connected devices meet the specifications of the MELSEC-Q Series or MELSEC iQ-R Series Module.

Conversion Adapter Model	Before replacement	No. of in/output points	After replacement		After replacement		Conversion Adapter Weight (g)
	New Satellite JW Series Module Model		MELSEC-Q Series Module Model	No. of modules	MELSEC iQ-R Series Module Model	No. of modules	
ERNT-2JQ210NS	JW-211N/JW-211NA	16	QX10	1	RX10	1	75
	JW-212N/JW-212NA	16	QX40	1	RX40C7 RX70C4	1	
	JW-214N/JW-214NA	16	QX40-S1 QX70	1			
	JW-213S/JW-213SA	16	QY22	1	RY20S6	1	
	JW-214S/JW-214SA	16	QY10	1	RY10R2	1	



Precautions for wiring

\*1

Because the switch concerned causes the number of points per common to change from 8 (two circuits) to 16 (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 Comparison >

Specifications	Model	New Satellite JW Series	MELSEC-Q Series	MELSEC iQ-R Series
		JW-211N/JW-211NA	QX10	RX10
No. of input points		16 points	16 points	16 points
Rated input voltage		100 to 120VAC 50/60Hz (85 to 132VAC 50/60Hz)	100 to 120VAC (+10%/-15%) 50/60Hz(±3Hz)	100 to 120VAC (+10%/-15%) 50/60Hz(±3Hz)
Rated input current		Approx. 10mA(100VAC,60Hz) Approx. 8.4mA(100VAC,50Hz)	Approx. 8mA(100VAC,60Hz) Approx. 7mA(100VAC,50Hz)	8.2mA (100VAC,60Hz) 6.8mA (100VAC,50Hz)
Input impedance		Approx. 10kΩ(60Hz) Approx. 12kΩ(50Hz)	Approx. 12kΩ(60Hz) Approx. 15kΩ(50Hz)	12.2kΩ(60Hz) 14.6kΩ(50Hz)
Inrush current		Max. 480mA within 0.2ms (at 132VAC)	Max. 200mA within 1ms (at 132VAC)	Max. 200mA within 1ms
Operating voltage/current	ON	80VAC/7mA	80VAC or higher/5mA or higher (50Hz,60Hz)	80VAC or higher/5mA or higher (50Hz,60Hz)
	OFF	30VAC/3mA	30VAC or lower/1.7mA or lower (50Hz,60Hz)	30VAC or lower/1.7mA or lower (50Hz,60Hz)
Response time	OFF to ON	30ms or less	15ms or less (100VAC 50Hz,60Hz)	15ms or less (100VAC 50Hz,60Hz)
	ON to OFF	40ms or less	20ms or less (100VAC 50Hz,60Hz)	20ms or less (100VAC 50Hz,60Hz)
Isolation method		Photocoupler isolation	Photocoupler isolation	—
Common terminal arrangement		8 points/common (2 circuits)	16 points/common	16 points/common
External connections		18-point terminal block	18-point terminal block	18-point terminal block

Specifications	Model	New Satellite JW Series		MELSEC-Q Series			MELSEC iQ-R Series	
		JW-212N JW-212NA Positive/Negative shared common type	JW-214N JW-214NA Positive/Negative shared common type	QX40 Positive common type	QX40-S1 Positive common type	QX70 Positive/Negative shared common type	RX40C7 Positive/Negative shared common type	RX70C4 Positive/Negative shared common type
No. of input points		16 points	16 points	16 points	16 points	16 points	16 points	16 points
Rated input voltage		12/24VDC (10.5 to 26.4VDC)	12/24VDC (10.5 to 26.4VDC)	24VDC (+20%/-15%)	24VDC (+20%/-15%)	5VDC (+20%/-10%)/ 12VDC (+20%/-15%)	24VDC (20.4 to 28.8VDC)	5VDC(4.25 to 6VDC) 12VDC(10.2 to 14.4VDC)
Rated input current		Approx. 7.5mA(24VDC) Approx. 3.5mA(12VDC)	Approx. 7.5mA(24VDC) Approx. 3.5mA(12VDC)	Approx. 4mA	Approx. 6mA	Approx. 3.3mA(12VDC) Approx. 1.2mA(5VDC)	7.0mA TYP. (24VDC)	1.7mA TYP. (5VDC) 4.8mA TYP. (12VDC)
Input impedance		Approx. 3.3kΩ	Approx. 3.3kΩ	Approx. 5.6kΩ	Approx. 3.9kΩ	Approx. 3.3kΩ	3.3kΩ	2.3kΩ
Inrush current		—	—	—	—	—	—	—
Operating voltage/current	ON	10.5V/3mA	10.5V/3mA	19V or higher/ 3mA or higher	19V or higher/ 4mA or higher	3.5V or higher/ 1mA or higher	15V or higher/ 4mA or higher	3.5V or higher/ 1mA or higher
	OFF	5V/1.5mA	5V/1.5mA	11V or lower/ 1.7mA or lower	11V or lower/ 1.7mA or lower	1V or lower/ 0.1mA or lower	8V or lower/ 2mA or lower	1V or lower/ 0.1mA or lower
Response time	OFF to ON	10ms or less	0.5ms or less	1/5/10/20/70ms or less	0.1/0.2/0.4/0.6/1ms or less	1/5/10/20/70ms or less	0.1/0.2/0.4/0.6/1/5/ 10/20/70ms or less	0.2/0.3/0.4/0.5/1/5/ 10/20/70ms or less
	ON to OFF	10ms or less	1.5ms or less	1/5/10/20/70ms or less	0.1/0.2/0.4/0.6/1ms or less	1/5/10/20/70ms or less	0.35/0.4/0.5/0.7/1/5/ 10/20/70ms or less	0.41/0.5/0.6/0.7/1/5/ 10/20/70ms or less
Isolation method		Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	—	—
Common terminal arrangement		8 points/common (2 circuits)	8 points/common (2 circuits)	16 points/common	16 points/common	16 points/common	16 points/common	16 points/common
External connections		18-point terminal block	18-point terminal block	18-point terminal block	18-point terminal block	18-point terminal block	18-point terminal block	18-point terminal block

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

< Specification Comparison >

Specifications	Model	New Satellite JW Series		MELSEC-Q Series	MELSEC iQ-R series
		JW-213S (TRIAC output)	JW-213SA (TRIAC output)	QY22 (TRIAC output)	RY20S6 (TRIAC output)
No. of output points		16 points	16 points	16 points	16 points
Rated load voltage		100 to 240VAC 50/60Hz	100 to 240VAC 50/60Hz	100 to 240VAC 50/60Hz±5%	100 to 240VAC (+10%/-15%) 50/60Hz(±3Hz)
Maximum load current		0.5A/point, 2A/common	1A/point, 2A/common	0.6A/point, 4.8A/common	0.6A/point, 4.8A/common
Minimum load current		15mA	15mA	25mA	25mA
Maximum inrush current		6A, 100ms or less	6A, 100ms or less	20A/cycle or less	20A/cycle or less
Leaked current at OFF		1.5mA or lower(120VAC) 3mA or lower(240VAC)	1.5mA or lower(120VAC) 3mA or lower(240VAC)	1.5mA or lower (120VAC 60Hz) 3mA or lower (240VAC 60Hz)	1.5mA or lower (120VAC 60Hz) 3mA or lower (240VAC 60Hz)
Maximum voltage drop at ON		1.6V or lower(0.3A)	1.6V or lower(0.3A)	1.5V or lower	1.5V or lower (at load current of 0.6A)
Response time	OFF to ON	1ms or less	1ms or less	1ms + 0.5 cycles or less	1ms + 0.5 cycles or less
	ON to OFF	1ms + 0.5 cycles or less	1ms + 0.5 cycles or less	1ms + 0.5 cycles or less (rated load, resistance load)	1ms + 0.5 cycles or less (rated load, resistance load)
Surge suppressor		Varistor	Varistor	CR absorber	CR absorber
Fuse		3A (unchangeable)	3.15A (unchangeable)	None	None
Isolation method		Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	—
Common terminal arrangement		8 points/common (2 circuits)	8 points/common (2 circuits)	16 points/common	16 points/common
External connection system		18-point terminal block	18-point terminal block	18-point terminal block	18-point terminal block

Specifications	Model	New Satellite JW Series	MELSEC-Q Series	MELSEC iQ-R series
		JW-214S/JW-214SA	QY10	RY10R2
No. of output points		16 points	16 points	16 points
Rated load voltage		30VDC / 250VAC	24VDC / 240VAC	24VDC / 240VAC
Maximum load current		2A/point, 5A/common	2A/point, 8A/common	2A/point, 8A/common
Minimum load current		10mA (5VDC)	1mA (5VDC)	1mA (5VDC)
Maximum inrush current		—	—	—
Leaked current at OFF		—	—	—
Maximum voltage drop at ON		—	—	—
Response time	OFF to ON	10ms or less	10ms or less	10ms or less
	ON to OFF	10ms or less	12ms or less	12ms or less
Surge suppressor		None	None	None
Fuse		None	None	None
Isolation method		Relay	Relay	—
Common terminal arrangement		8 points/common (2 circuits)	16 points/common	16 points/common
External connection system		18-point terminal block	18-point terminal block	18-point terminal block

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

### 4. Mounting and Installation

#### 4.1 Handling 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.
- Do not touch live terminals. There is a danger of electric shock or malfunction.
- Do not modify the Conversion Adapter or take it apart. Doing so will cause failure, malfunction, personal injury, or fire.
- Do not touch the energized part of the Conversion Adaptor directly. Contact will cause malfunction or failure in the system.
- Fasten the Conversion Adapter and the Mounting Bracket 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, or Mounting Bracket, possibly causing breakage thereof. Excessive tightness of the screws can lead to breakage of the screws, Converter Adaptor, Mounting Bracket, or MELSEC-Q Series or MELSEC iQ-R Series Module, possibly causing the dropping, shorting, and malfunction thereof.
- Use care to prevent foreign materials including cuttings and wiring debris from entering the Conversion Adapter or the MELSEC-Q Series or MELSEC iQ-R Series Module. These will be cause for fire, failure or malfunction.
- Do not drop the Conversion Adapter and Mounting Bracket or do not give a strong impact to it. This will cause damage.

#### 4.2 Use Precautions

Item		New Satellite JW Series → MELSEC-Q Series	New Satellite JW Series → MELSEC iQ-R Series
Use Precautions	Width dimension of module	Because the module is reduced in width dimension (35mm→27.4mm) and thus in area available for wiring, check dimensional data before installing the module. <div><div>New Satellite JW Series</div><div>MELSEC-Q Series</div><div>Upgrade Tool</div><div></div><div>Unit:mm</div></div>	Because the module is reduced in width dimension (35mm→27.8mm) and thus in area available for wiring, check dimensional data before installing the module. <div><div>New Satellite JW Series</div><div>MELSEC iQ-R Series</div><div>Upgrade Tool</div><div></div><div>Unit:mm</div></div>

## 4.2 Use Precautions

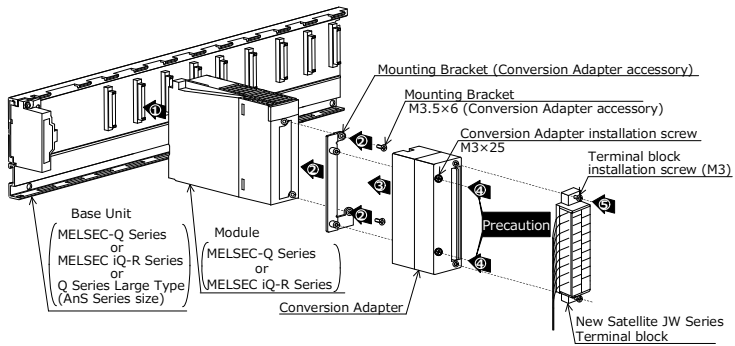
Item		New Satellite JW Series → MELSEC-Q Series	New Satellite JW Series → MELSEC iQ-R Series	
Depth dimension		Because the module is increased in depth dimension, check dimensional data before installing the module.	Because the module is increased in depth dimension, check dimensional data before installing the module.	
		<div><div><div>QX10/QX40/QX40-S1/QX70/QX80/QY10</div><div><div><div>New Satellite JW Series</div><div>MELSEC-Q Series + Upgrade Tool</div></div><div><div><div><div>110</div></div><div><div><div>137.5 (128.5)</div></div></div><div>UP</div><div><div>27.5mm (18.5mm)</div></div></div><div>Unit : mm</div></div><div><div><div>QY22</div><div><div>New Satellite JW Series</div><div>MELSEC-Q Series + Upgrade Tool</div></div><div><div><div>110</div><div>159.5 (150.5)</div></div><div>UP</div><div><div>49.5mm (40.5mm)</div></div></div><div>Unit : mm</div></div></div></div></div></div>	<div><div><div>New Satellite JW Series</div><div>MELSEC iQ-R Series + Upgrade Tool</div></div><div><div><div>110</div><div>169.6</div></div><div>UP</div><div><div>59.6mm</div></div></div><div>Unit : mm</div></div>	
		<p>*The each depth dimension is measured from the panel surface. The value in parentheses (shorter by 9mm) is the dimension when the AnS-size Q Series Large Type Base Unit is not used.</p> <p>New Satellite JW Series: Base Unit + Input/output Module + Terminal block</p> <p>MELSEC-Q Series + Upgrade Tool: Q Series Large Type Base Unit (AnS Series Size) + Input/output Module + Conversion Adapter + Terminal block</p>	<p>*The each depth dimension is measured from the panel surface.</p> <p>New Satellite JW Series: Base Unit + Input/output Module + Terminal block</p> <p>MELSEC iQ-R Series + Upgrade Tool: Base Unit + Input/output Module + Conversion Adapter + Terminal block</p>	
Use Precautions	Interference of the terminal block	<div><div><div>QX10/QX40/QX40-S1/QX70/QY10</div><div><p>When mounting the following Conversion Adapter on the right side of the Conversion Adapter, it is recommended to use the AnS-size Q series large type base unit (Q □ □ BLS, Q □ □ BLS-D) manufactured by Mitsubishi Electric so that the Conversion Adapter does not interfere with the terminal block of the existing module.</p><p>When using the MELSEC-Q Series Base Unit, leave one slot open between them.</p><p>Conversion Adapters : ERNT-2JQ210NS (Installed to the QY22) ERNT-2JQ232S262S ERNT-2JQ234N264N</p><div><div><div>The Conversion Adapter interferes with the terminal block of the New Satellite JW Series.</div><div><div><div>Terminal block of the New Satellite JW Series</div><div>Conversion Adapter (Except the one installed to the QY22)</div><div>Input / Output Module</div></div><div><div><div>Terminal block of connector of the New Satellite JW Series</div><div>Conversion Adapter (Installed to the QY22) ·ERNT-2JQ210NS ·ERNT-2JQ234N264N ·ERNT-2JQ232S262S</div><div>Input / Output Module</div></div></div><div>Leave one slot open.</div></div></div></div></div></div></div>	<div><div><div>QY22</div><div><p>When installing the Conversion Adapter to the QY22 and mounting either of the following Conversion Adapters on the left side of the QY22, it is recommended to use the AnS-size Q Series Large Type Base Unit (Q □ □ BLS, Q □ □ BLS-D) manufactured by Mitsubishi Electric so that the Conversion Adapter does not interfere with the terminal block.</p><p>When using the MELSEC-Q Series Base Unit, leave one slot open between them.</p><p>Conversion Adapters : ERNT-2JQ210NS (Except the one installed to the QY22) ERNT-2JQ212S</p><div><div><div>The Conversion Adapter interferes with the terminal block of the New Satellite JW Series.</div><div><div><div>Terminal block of the New Satellite JW Series</div><div>Conversion Adapter (Except the one installed to the QY22) ·ERNT-2JQ210NS ·ERNT-2JQ212S</div><div>Input / Output Module</div></div><div><div><div>Conversion Adapter ·ERNT-2JQ210NS</div><div>QY22</div></div></div><div>Leave one slot open.</div></div></div></div></div></div></div>	<div><div>No constraint</div></div>

### 4.3 Installation Environment

Refer to the manual supplied with the MELSEC-Q Series or MELSEC iQ-R Series module you use.

- MELSEC-Q Series: QCPU User's Manual (SH-080483ENG)
- MELSEC iQ-R Series: Safety Guidelines (IB-0800525E)

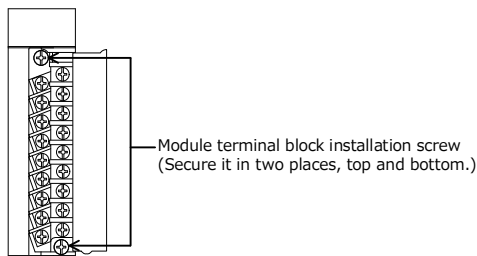
## 5. Part Names and Installation Method



## 5.1 Installation Method

Installation with the Control panel	Installation with the DIN rail
<p>Install the Base unit (MELSEC-Q Series or the AnS-size Q Series Large Type or the MELSEC iQ-R Series) on the control panel.</p> <p>When replacing the current module with the MELSEC-Q Series, It is recommended to use the AnS-size Q Series Large Type Base Unit because the Conversion Adapter may interfere with the terminal block of the neighboring module.</p> <p>For how to install the Base Unit on the control panel, refer to the “QCPU User’s Manual” or the “Q Series Large Type Base Unit/Blank Cover (AnS Series Size) User’s Manual” or the “MELSEC iQ-R Module Configuration Manual”.</p>	<p>Install the DIN rail mounting adapter manufactured by Mitsubishi Electric to the Base unit (MELSEC-Q Series or the AnS-size Q Series Large Type or the MELSEC iQ-R Series).</p> <p>When replacing the current module with the MELSEC-Q Series, It is recommended to use the AnS-size Q Series Large Type Base Unit because the Conversion Adapter may interfere with the terminal block of the neighboring module.</p> <p>For how to install the Base Unit on the DIN rail, refer to the “QCPU User’s Manual” or the “Q Series Large Type Base Unit/Blank Cover (AnS Series Size) User’s Manual” or the “MELSEC iQ-R Module Configuration Manual”.</p>

- ① Install the Module to the Base Unit. In addition, remove the terminal block attached with the Module after loosening the terminal block installation screws (2 places up and down).



- 2 Secure the Mounting Bracket to the 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 installation screws (M3 × 25; 2 locations).

## Precaution

Before tightening the installation screws, check that the Conversion Adapter has been securely installed on the Module. Tightening the screws in floating-off state or tilting state will damage the Conversion Adapter installation screws and the Mounting Bracket.

- 5 Secure the terminal block of the New Satellite JW Series to the Conversion Adapter with the terminal block installation screws (M3; two upper/lower locations).

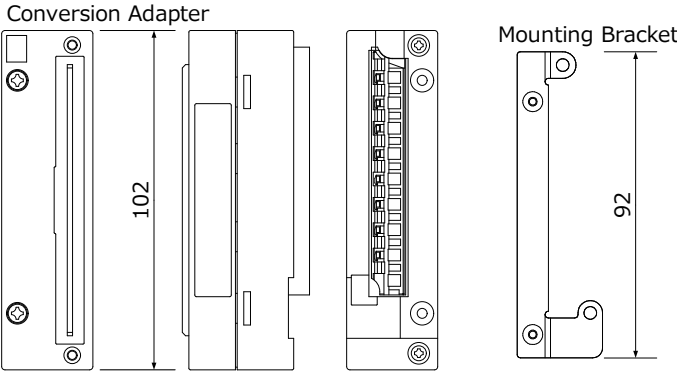
## 5.2 Tightening Torque

Tighten the 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
Mounting Bracket fixing screw (M3.5×6)	0.68 to 0.92N·m
Conversion Adapter installation screw (M3×25)	0.43 to 0.57N·m
Terminal block installation screw (M3)	0.5 to 0.6N·m

## 6. 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) 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 June 2020. Specifications are subject to change without notice.