

## Easy and secure replacement by reusing the I/O terminal block wiring

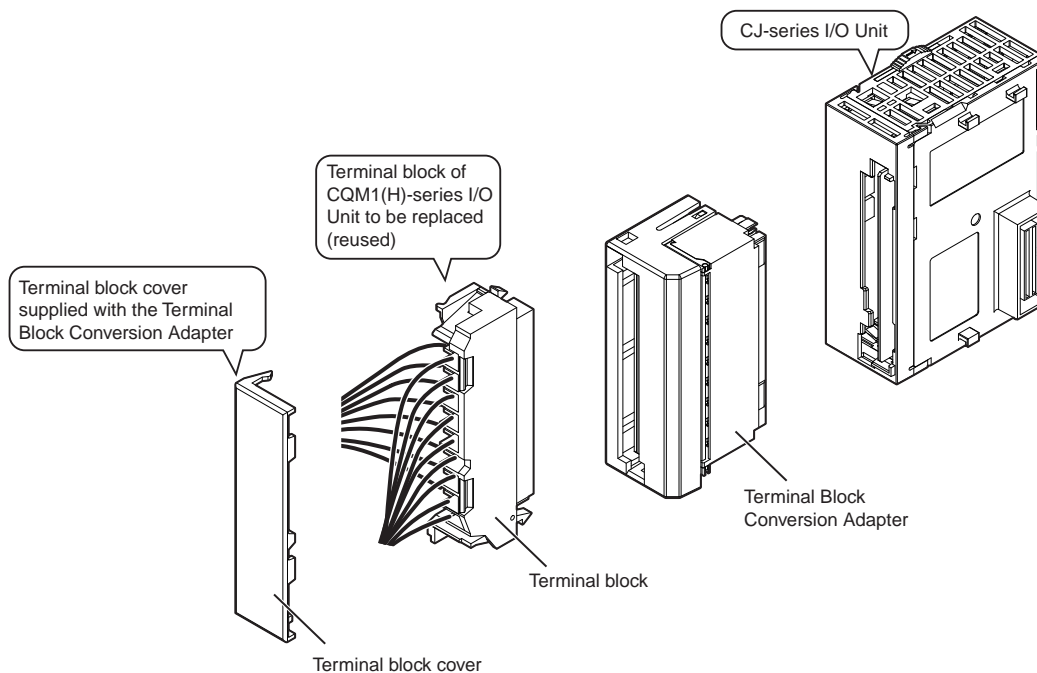
- You can replace CQM1(H) Series with CJ Series, efficiently using your assets.
- Time for wiring works and wiring check can be reduced.
- The CQM1 I/O terminal block can be directly mounted onto a CJ-Series I/O Unit.



## Features

The CQM1 I/O Terminal Block Conversion Adapter is a terminal block conversion adapter to reuse the terminal block wiring of the existing CQM1 I/O Units as is when replacing CQM1(H) Series with CJ Series.


If you use this terminal block conversion adapter, you don't need to redo the I/O wiring, by which you can reduce the time for wiring works, wiring check, and test run.



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## Ordering Information

### Terminal Block Conversion Adapter

Product name	Specifications	Model	Standards
CQM1 I/O Terminal Block Conversion Adapter 	Standard 18-pin terminal block conversion adapter used to replace the CQM1(H)-series I/O Units	CJ1W-AT411	---
	18-pin terminal block conversion adapter used to replace the CQM1-IA221	CJ1W-AT401	
	18-pin terminal block conversion adapter used to replace the CQM1-OA221/222	CJ1W-AT402	

## Connection of I/O Units and Terminal Block Conversion Adapter

### Supported Models

Replaced from: CQM1(H)-series I/O Units			Replaced to: CJ-series I/O Units *1			CQM1(H)-series I/O Unit Terminal Block Conversion Adapter Model
Product name	Specifications	Model	Product name	Specifications	Model	
CPU Unit	16 built-in inputs, 24 VDC	CQM1H-CPU□1	DC Input Unit	7 mA at 24 VDC, 16 inputs	CJ1W-ID211 *2	CJ1W-AT411
	16 built-in inputs, 24 VDC	CQM1-CPU□1(-V1) CQM1-CPU4□(-V1)		7 mA at 24 VDC, 16 inputs	CJ1W-ID211 *2	
DC Input Unit	10 mA at 12 to 24 VDC, 8 inputs, independent contacts	CQM1-ID211	DC Input Unit	10 mA at 12 to 24 VDC, 8 inputs, independent contacts	CJ1W-ID201	
	6 mA at 24 VDC, 16 inputs (16 points per common)	CQM1-ID212		7 mA at 24 VDC, 16 inputs (16 points per common)	CJ1W-ID211	
	6 mA at 12 VDC, 16 inputs (16 points per common)	CQM1-ID111		7 mA at 24 VDC, 16 inputs (16 points per common)	CJ1W-ID211 *3	
AC Input Unit	5 mA at 100 to 120 VAC, 8 inputs (8 points per common)	CQM1-IA121	AC Input Unit	7 mA at 100 to 120 VAC, 16 inputs (16 points per common)	CJ1W-IA111 *4	
Relay Output Unit	2 A at 250 VAC/24 VDC max., 8 outputs, independent contacts	CQM1-OC221	Relay Output Unit	2 A at 250 VAC/24 VDC max., 8 outputs, independent contacts	CJ1W-OC201	
	2 A at 250 VAC/24 VDC max., 16 outputs, (16 points per common)	CQM1-OC222		2 A at 250 VAC/24 VDC max., 16 outputs, (16 points per common)	CJ1W-OC211	
	2 A at 250 VAC/24 VDC max., 8 outputs, independent contacts	CQM1-OC224		2 A at 250 VAC/24 VDC max., 8 outputs, independent contacts	CJ1W-OC201	
Transistor Output Unit	2 A at 24 VDC, 8 outputs, (8 points per common)	CQM1-OD211	Transistor Output Unit	0.5 A at 12 to 24 VDC, 8 outputs, sinking (8 points per common)	CJ1W-OD203 *5	
	0.3 A at 5 to 24 VDC, 6 outputs (16 points per common)	CQM1-OD212		0.5 A at 12 to 24 VDC, 16 outputs, sinking, (16 points per common)	CJ1W-OD211 *6	
	0.3 A at 5 to 24 VDC, 6 outputs sourcing, (16 points per common)	CQM1-OD214		0.5 A at 12 to 24 VDC, 16 outputs, sourcing, (16 points per common)	CJ1W-OD212 *6	
	1.0 A at 24 VDC, 8 outputs, sourcing (8 points per common)	CQM1-OD215		0.5 A at 24 VDC, 8 outputs, sourcing, (8 points per common)	CJ1W-OD204 *5 *7	
AC Input Unit	6 mA at 200 to 240 VAC, 8 inputs (8 points per common)	CQM1-IA221	AC Input Unit	10 mA at 200 to 240 VAC, 8 inputs (8 points per common)	CJ1W-IA201	CJ1W-AT401
Triac Output Unit	0.4 A at 100 to 240 VAC, 8 outputs (4 points per common)	CQM1-OA221	Triac Output Unit	0.6 A at 250 VAC, 8 outputs (8 points per common)	CJ1W-OA201 *8	CJ1W-AT402
	0.4 A at 100 to 240 VAC, 6 outputs (4 points per common) (2 points per common)	CQM1-OA222	Triac Output Unit	0.6 A at 250 VAC, 8 outputs (8 points per common)	CJ1W-OA201 *8	

\*1. For some combinations, the specifications of the replaced Unit and the new Unit will not be the same. Check all of the following precautions.

\*2. You cannot use the interrupt inputs for interrupts. You can use them as normal inputs.

\*3. Change the power supply voltage from 12 VDC to 24 VDC. CQM1-IA121 CJ1W-IA111\*4

\*4. The CJ1W-IA111 provides 16 points, so you can expand the number of inputs by 8 points. Even if these inputs are not used, the internal circuits are connected. Never touch any unused terminals. There is a risk of electric shock.

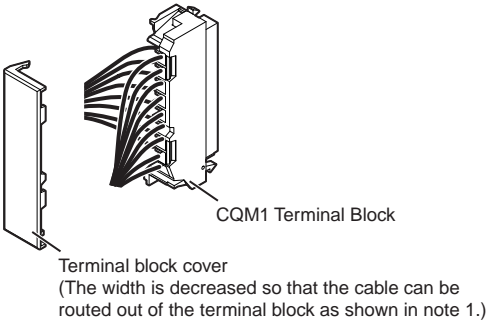
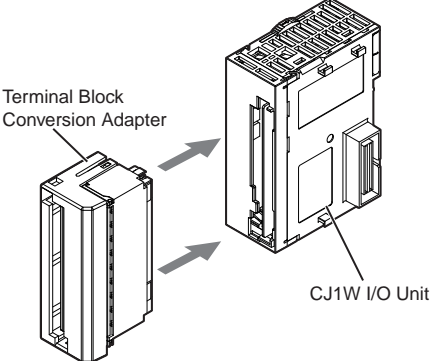
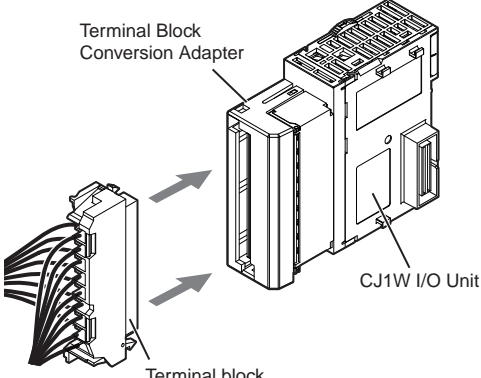
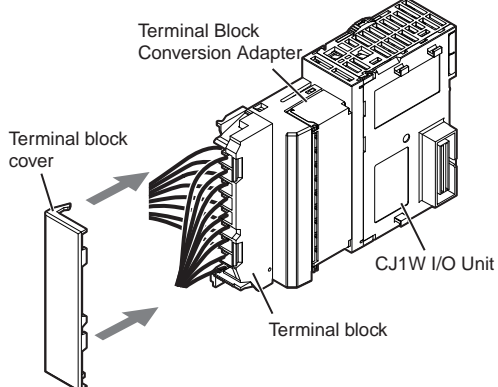
\*5. Do not exceed the CJ1's load current range. You cannot convert a Unit if the maximum load current is exceeded.

\*6. Do not exceed the CJ1's operating load voltage range. You cannot replace a Unit if the operating load voltage range is exceeded.

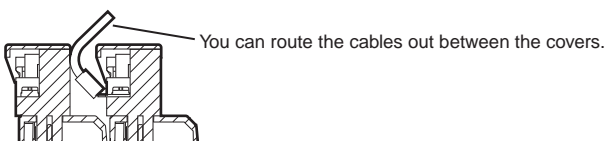
\*7. You cannot use the reset input (RST0 and RST1) and alarm output (ALM0 and ALM1).

\*8. The CQM1 has two circuits (i.e., two commons), but the CJ1W has only one circuit (i.e., one common). If you previously used two power supplies, convert to just one power supply.

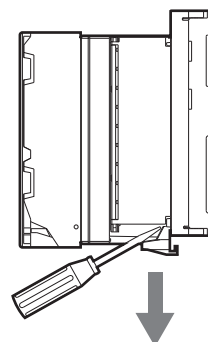
# Installation Procedure of Terminal Block Conversion Adapter

Step	Procedure	Drawing
1	Remove the terminal block from the existing CQM1 I/O unit. Then remove the terminal block cover from the terminal block.	 <p>CQM1 Terminal Block</p> <p>Terminal block cover (The width is decreased so that the cable can be routed out of the terminal block as shown in note 1.)</p>
2	Lock the Terminal Block Conversion Adapter to the CJ1W I/O Unit.	 <p>Terminal Block Conversion Adapter</p> <p>CJ1W I/O Unit</p>
3	Attach the terminal block that you removed in step 1 to the Terminal Block Conversion Adapter. Check the terminal block and wiring now to make sure that there are no problems. <ul style="list-style-type: none"> <li>• No loose screws.</li> <li>• No points where a cable is starting to break.</li> <li>• No rust or corrosion.</li> <li>• No terminal block damage.</li> <li>• The terminal block is fully inserted and secured.</li> </ul>	 <p>Terminal Block Conversion Adapter</p> <p>CJ1W I/O Unit</p> <p>Terminal block</p>
4	Attach the Terminal Block Cover that came with the Terminal Block Conversion Adapter to the terminal block.	 <p>Terminal Block Conversion Adapter</p> <p>CJ1W I/O Unit</p> <p>Terminal block cover</p> <p>Terminal block</p>

**Note: 1.** A CJ1W I/O Unit is 1 mm narrower than a CQM1 I/O Unit. Wiring will be easier if you bend the crimp terminals and cables as shown below when you attach the Terminal Block Conversion Adapter to the CJ1W I/O Unit.

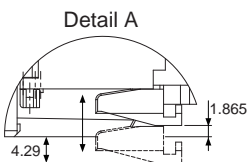
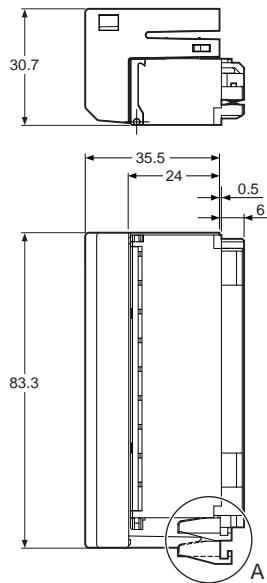
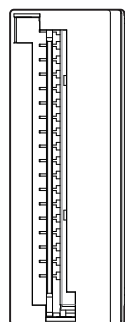


**2.** Use a flat-blade screwdriver or similar tool to pull down and release the lock on the terminal block.



# Dimensions

CJ1W-AT411



## Dimensional Difference List

Replace to: CJ-series I/O Units		Replaced from: CQM1(H)-series I/O Units	

# Internal Wiring Diagram

Terminal Block Conversion Adapter	Pin assignment and internal wiring
CJ1W-AT411	<p>Diagram showing the internal wiring for the CJ1W-AT411 adapter. The CQM1 I/O block (left) has pins B0 through B8. The CJ I/O block (right) has pins A0 through A8. The wiring is as follows:</p> <ul style="list-style-type: none"> <li>B0 → A0</li> <li>B1 → A1</li> <li>B2 → A2</li> <li>B3 → A3</li> <li>B4 → A4</li> <li>B5 → A5</li> <li>B6 → A6</li> <li>B7 → A7</li> <li>B8 → A8</li> </ul>
CJ1W-AT401	<p>Diagram showing the internal wiring for the CJ1W-AT401 adapter. The CQM1 I/O block (left) has pins B0 through B8. The CJ I/O block (right) has pins A0 through A8. The wiring is as follows:</p> <ul style="list-style-type: none"> <li>B0 → A0</li> <li>B1 → A1</li> <li>B2 → A2</li> <li>B3 → A3</li> <li>B4 → A4</li> <li>B5 → A5</li> <li>B6 → A6</li> <li>B7 → A7</li> <li>B8 → A8</li> </ul>
CJ1W-AT402	<p>Diagram showing the internal wiring for the CJ1W-AT402 adapter. The CQM1 I/O block (left) has pins B0 through B8. The CJ I/O block (right) has pins A0 through A8. The wiring is as follows:</p> <ul style="list-style-type: none"> <li>B0 → A0</li> <li>B1 → A1</li> <li>B2 → A2</li> <li>B3 → A3</li> <li>B4 → A4</li> <li>B5 → A5</li> <li>B6 → A6</li> <li>B7 → A7</li> <li>B8 → A8</li> </ul>

## Precautions

- Please read and understand the precautions, restrictions, and reminders described on the manuals of PLCs (both of the PLC used in the existing system and the PLC you will use to replace the existing PLC) and sufficiently confirm that the operation is correct before you start actual operation.
- When a CQM1-series I/O Terminal Block Conversion Adapter is used, the depth is increased by about 19 mm compared to CQM1(H) Series.
- When you use the I/O Terminal Block Conversion Adapter in the right-hand slot to the CJ2M-CPU1□ CPU Unit, please secure enough space by mounting a CJ1W-SP001 Space Unit because it may interfere with the connectors to the USB port and built-in RS-232C communications port.
- When you use the I/O Terminal Block Conversion Adapter in the right-hand slot to an I/O Control Unit, please secure enough space by mounting a CJ1W-SP001 Space Unit because it may interfere with the connector of I/O connection cable.
- This Terminal Block Conversion Adapter cannot be used if any functions other than normal inputs are used in the CQM1(H)-series CPU Unit Built-in Input.

## Related Manuals

The following manuals are related to the CQM1 Terminal Block Conversion Adapter. Use these manuals for reference.

Cat. No.	Manual name	Description
P087	CQM1(H) Replacement Guide From CQM1(H) to CJ2	Refer to this guide when replacing CQM1(H) with CJ2.
W472	CJ-series CJ2 CPU Unit Hardware User's Manual	Describes the following for CJ2 CPU Units: <ul style="list-style-type: none"> <li>• Overview and features</li> <li>• Basic system configuration</li> <li>• Part nomenclature and functions</li> <li>• Mounting and setting procedure</li> <li>• Remedies for errors</li> </ul> Also refer to the <i>Software User's Manual (W473)</i> .
W363	CQM1H-CPU□□/□□□□□□ Programmable Controllers/Inner Boards Operation Manual	Describes the system configuration and installation of the CQM1H and provides a basic explanation of operating procedures for the Programming Consoles.
W393	CJ1H-CPU□□H(-R), CJ1G-CPU□□/ CPU□□H/CPU□□P, CJ1M-CPU□□ Programmable Controllers Operation Manual	Provides an outlines of and describes the design, installation, maintenance, and other basic operations for the CJ-series PLCs.

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