MITSUBISHI

Web Server Module

User's Manual

(Hardware)

QJ71WS96

Thank you for purchasing the Mitsubishi programmable controller MELSEC-Q Series.

Prior to use, please read both this manual and detailed manual thoroughly to fully understand the product.

MELSEC-Q

Mitsubishi Programmable Controller

| MODEL	QJ71WS96-U-HW-JE
MODEL CODE	13JT97
IB(NA)-0800231-E(0809)MEE	

● SAFETY PRECAUTIONS ●

(Always read these instructions before using this equipment.)

Before using this product, please read this manual and the relevant manuals introduced in this manual carefully and pay full attention to safety to handle the product correctly.

Note that these instructions apply only to this product. Refer to the user's manual of the CPU module for the programmable controller system safety instructions.

In this manual, the safety instructions 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 slight personal injury or physical damage.

Note that the ⚠**CAUTION** level may lead to a serious consequence according to the circumstances.

Always follow the instructions of both levels because they are important to personal safety.

Please save this manual to make it accessible when required and always forward it to the end user.

[Design Precautions]

⚠ **CAUTION**
● Do not bunch the control wires or communication cables with the main circuit or power wires, or install them close to each other. They should be installed 100 mm (3.94 inch) or more from each other. Not doing so could result in noise that would cause erroneous operation. ● Do not power off a station where this module is mounted and do not reset the programmable controller CPU while storing the settings into the standard ROM of the module using a Web browser. This may make the data unstable within the standard ROM and require resetting and re-storing, or it may cause a failure or malfunctions of the module.

[Installation Precautions]

⚠ **CAUTION**
● Use the programmable controller in the environment specified in the user's manual of the CPU module. Using this programmable controller in an environment outside the range of the general specifications could result in electric shock, fire, erroneous operation, and damage to or deterioration of the product. ● While pressing the installation lever located at the bottom of module, insert the module fixing tab into the fixing hole in the base unit until it stops. Then, securely mount the module with the fixing hole as a supporting point. Incorrect loading of the module can cause a malfunction, failure or drop. When using the programmable controller in the environment of much vibration, tighten the module with a screw. ● Completely turn off the externally supplied power used in the system before mounting or removing the module. Not doing so could result in damage to the product. ● Tighten the screw in the specified torque range. Undertightening can cause a drop, short circuit or malfunction. Overtightening can cause a drop, short circuit or malfunction due to damage to the screw or module. ● Do not directly touch the module's conductive parts or electronic components. Touching the conductive parts could cause an operation failure or give damage to the module. ● For connector wiring, correctly press, pressure-weld or solder the connecting part by using the tool specified by the manufacturer. Poor connection may cause short circuits, fires or malfunctions. ● Be sure to set the CompactFlash™ card by pressing it into the CompactFlash™ card slot. Confirm it is completely set. Poor contact may lead to malfunctions.

[Wiring Precautions]

⚠CAUTION
● Be sure to fix communication cables and power cables to the module by ducts or clamps. Failure to do so may cause damage of the module or the cables due to accidental pull or unintentional shifting of the cable, or malfunctions due to poor contact of the cables. ● Connect the connectors to the module securely. ● Tighten the terminal screws with the specified torque. If the terminal screws are loose, it could result in short circuits, fire, or erroneous operation. Tightening the terminal screws too far may cause damages to the screws and/or the module, resulting in fallout, short circuits, or malfunction. ● Do not hold the communication cable by hand when pulling it out from the module. Be sure to hold the connector by hand, when removing the cable with a connector from the module. Failure to do so may cause malfunctions or damage to the module or cable. ● Be sure there are no foreign substances such as sawdust or wiring debris inside the module. Such debris could cause fires, damage, or erroneous operation. ● The module has an ingress prevention label on its top to prevent foreign matter, such as wire offcuts, from entering the module during wiring. Do not peel this label during wiring. Before starting system operation, be sure to peel this label because of heat dissipation.

[Disposal Precautions]

⚠CAUTION
● When disposing of this product, treat it as industrial waste. When disposing of batteries, separate them from other wastes according to the local regulations. (For details of the battery directive in EU member states, refer to the Web Server Module User's Manual.)

[Transportation Precautions]

⚠CAUTION
● When transporting lithium batteries, make sure to treat them based on the transport regulations. (Refer to Chapter 8 for details of the controlled models.)

Revisions

Print Date	*Manual Number	Revision
July, 2002	IB(NA)-0800231-A	First printing
Nov., 2002	IB(NA)-0800231-B	Correction Section 3.1(2), Chapter 4, Section 5.2(2)
Nov., 2003	IB(NA)-0800231-C	Correction Chapter 2, Chapter 6 Addition Safety Precautions, Section 3.1 (2), Chapter 8
Dec., 2007	IB(NA)-0800231-D	Change of a term "PLC" was changed to "programmable controller". Correction SAFETY PRECAUTIONS, Compliance with the EMC and Low Voltage Directives, Chapter 1, Chapter 2, Section 3.1, Section 5.1, Section 5.2, Section 8.1
Sep., 2008	IB(NA)-0800231-E	Correction SAFETY PRECAUTIONS, Compliance with the EMC and Low Voltage Directives, Section 3.1

CONTENTS

About Manual

The following manual is also related to this product.
In necessary, order it by quoting the details in the table below.

Related Manual

Manual name	Manual No. (Model code)
Web Server Module User's manual	SH-080320E (13JR58)

Compliance with the EMC and Low Voltage Directives

(1) For programmable controller system
To configure a system meeting the requirements of the EMC and Low Voltage Directives when incorporating the Mitsubishi programmable controller (EMC and Low Voltage Directives compliant) into other machinery or equipment, refer to Chapter 9 "EMC AND LOW VOLTAGE DIRECTIVES" of the QCPU User's Manual (Hardware Design, Maintenance and Inspection).
The CE mark, indicating compliance with the EMC and Low Voltage Directives, is printed on the rating plate of the programmable controller.

(2) For the product
For the compliance of this product with the EMC and Low Voltage Directives, refer to Section 9.1.3 "Cables" in Chapter 9 "EMC AND LOW VOLTAGE DIRECTIVES" of the QCPU User's Manual (Hardware Design, Maintenance and Inspection).

1. Overview

This manual explains how to install the QJ71WS96 Web server module (hereinafter referred to as Web server module) and how to wire them with other devices.

(Packing list)

Model name	Product name	Quantity
QJ71WS96	QJ71WS96 Web server module	1
	Battery (Q6BAT)	1

2. Performance Specifications

The following describes the performance specifications of the Web server module.
For the general specifications of the Web server module, refer to the user's manual of the CPU module used.

Item		Specifications	
10BASE-T/100BASE-TX		-	
	Interface (*1)	10BASE-T	100BASE-TX
	Data transmission speed	10Mbps	100Mbps
	Transmission method	Base band	
	Number of cascaded stages	Cascade connection Maximum 4 stages	Cascade connection Maximum 2 stages
	Maximum segment length(*2)	100m	
	Supported function	Auto negotiation function (automatically recognizes 10BASE-T/100BASE-TX)	
RS-232		-	
	Interface	Compliance with RS-232 (D-sub 9 pin)	
	Communication method	Full-duplex communication	
	Synchronization method	Start-stop synchronization method	
	Transmission speed	9600, 19200, 38400, 57600, 115200 bps	
	Transmission distance	Maximum 15m	
	Data format — Start bit	1	
	Data format — Data bit	8	
	Data format — Stop bit	1	
	Parity check	None	
	Transmission control	Flow control (RS/CS control) is available	
	Recommended cable	7/0.127 □P HRV-SV outside diameter: 8.5mm or longer (Oki Electric Cable Company, Limited Specify the number of pairs in □.)	
	External wiring applicable connector	9 pin D-sub (Male) fixing type	
CompactFlash™ card		-	
	Supply power voltage	3.3V±5%	
	Supply power capacity	Maximum 150mA	
	Size	TYPE I card	
	Number of mountable cards	1	
Number of occupied I/O points		32 points/1 slot (I/O assignment: intelligent 32 points)	
Maximum number of writes for Standard ROM (Flash ROM)		Maximum 100,000 times to one area	
Clock		The clock data is obtained from a programmable controller CPU (in multiple CPU system, CPU No.1) (every 60s)	
5V DC internal current consumption		0.65A	
External dimensions		98 (3.86 in.) (H) $\times$ 27.4 (1.08 in.) (W) $\times$ 90 (3.54 in.) (D) [mm]	
Weight		0.17 kg (0.37lb.)	

*1: Web server module recognizes 10BASE-T/100BASE-TX according to the external device.
For connection with the hub that does not have the auto negotiation function, set the hub side to the half-duplex communication mode.
*2: Distance between the hub and node.

3. Mounting and Installation

3.1 Handling Precautions

(1) Do not drop or apply severe shock to the module case since it is made of resin.

(2) Before touching the module, always touch grounded metal, etc. to discharge static electricity from human body, etc.
Not doing so can cause the module to fail or malfunction.

(3) Tighten the screws such as module fixing screws within the following ranges.

Screw position	Tightening torque range	Remarks
Module fixing screw (usually not required) (M3 screw) (*1)	0.36 to 0.48 N•m	-
RS-232 cable connector screw (M2.6)	0.20 to 0.39 N•m	Screw hole depth: L=3.2mm or less (Internal dimension from end face)

*1: The module can be easily fixed onto the base unit using the hook at the top of the module.
However, it is recommended to secure the module with the module fixing screw if the module is subject to significant vibration.

3.2 Installation Environment

For details, refer to the user's manual for the CPU module used.

■■ 4. Part Names ■■■■■■■■■■■

[When LED cover is closed]
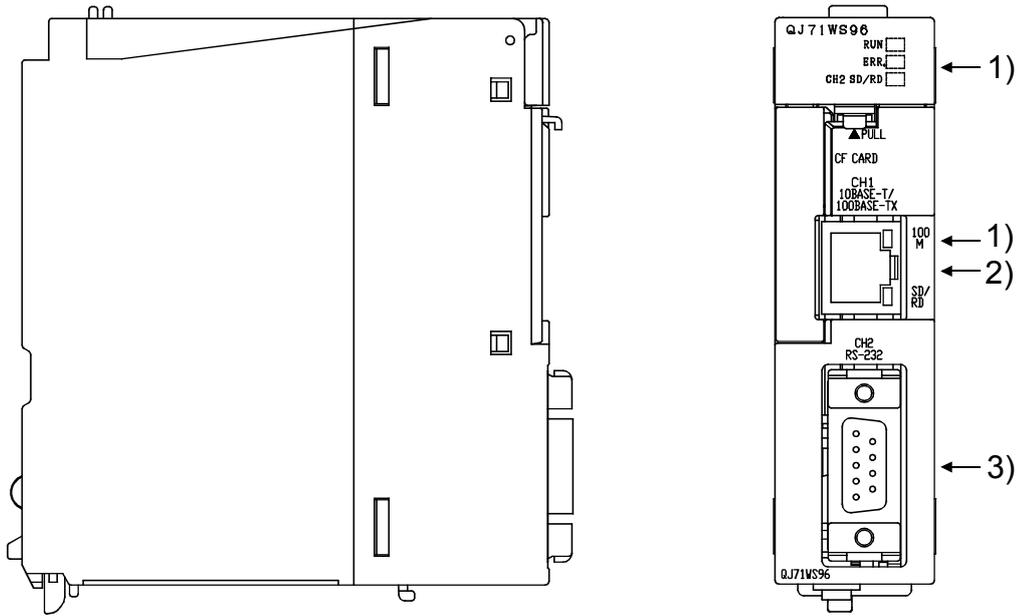
[When LED cover is opened]
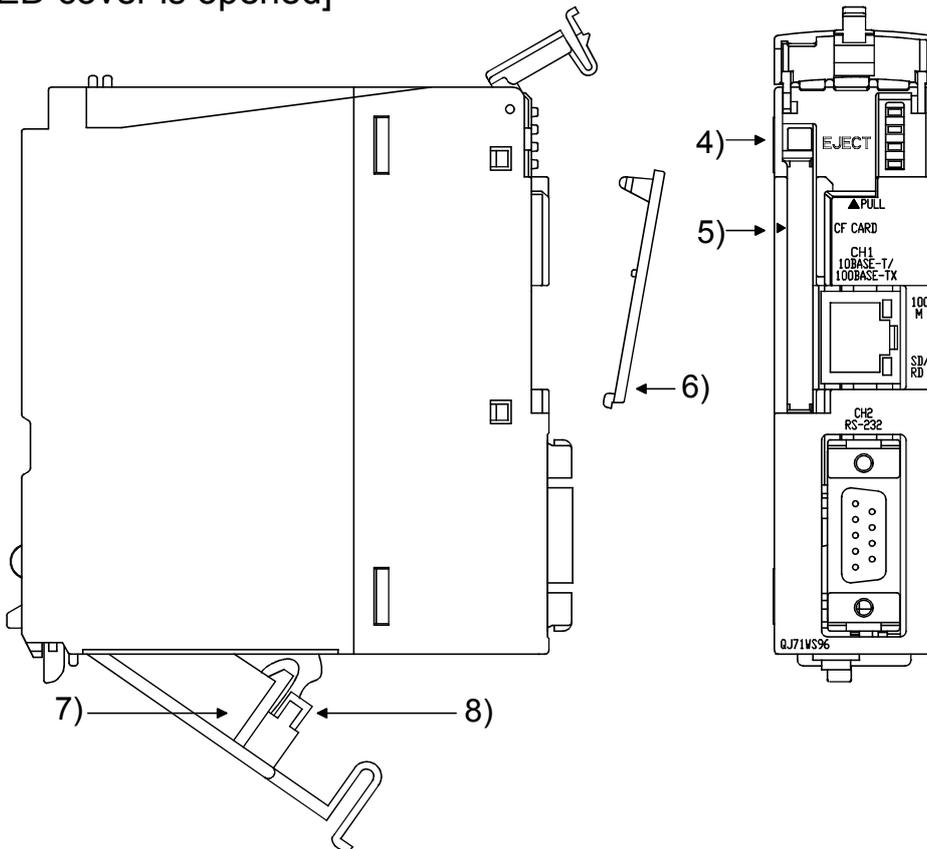
	Name	Description
1)	LED Display	Refer (1) LED display.
2)	10BASE-T/ 100BASE-TX interface connector (RJ45)	Used for connecting Web server module to 10BASE-T/100BASE-TX. (Web server module recognizes 10BASE-T/ 100BASE-TX according to the external device.)
3)	RS-232 interface connector	Used for connecting Web server module to RS-232.
4)	EJECT button	Used for ejecting a CompactFlash™ card from Web server module.
5)	CompactFlash™ card mounting slot	Slot for mounting a CompactFlash™ card onto Web server module.
6)	CompactFlash™ card mounting slot cover	Cover for CompactFlash™ card mounting slot.
7)	Battery	Battery for file protection.
8)	Battery connector pin	Connector pin for battery lead. (The battery lead is not connected to the connector at shipment to prevent battery consumption.)

(1) LED display
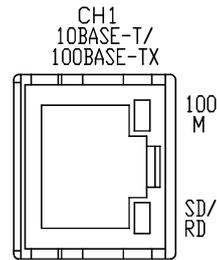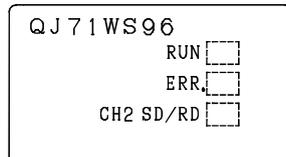
LED name	LED status	Description
RUN	ON	Normally operating (It may take some time until RUN LED turns ON after the module is started.)
	OFF	Watch dog timer error occurrence (Hardware error)
ERR.	OFF	Normal operation
	ON	Module continue error
	Flickering	Module stop error
CH2 SD/RD	ON	CH2 side: data receiving or data sending
	OFF	Data not transmitted
100M	ON	100Mbps
	OFF	10Mbps
SD/RD	ON	CH1 side: data receiving or data sending
	OFF	Data not transmitted

5. External Wiring

5.1 Connecting to the 10BASE-T/100BASE-TX

Use the twisted pair cable that meets IEEE802.3 10BASE-T/100BASE-TX standards when connecting to the 10BASE-T/100BASE-TX interface.

   (1) For 100Mbps

      Use either of the following cables.

      (a) Unshielded twisted pair cable (UTP cable), Category 5

      (b) Shielded twisted pair cable (STP cable), Category 5

   (2) For 10Mbps

      Use either of the following cables.

      (a) Unshielded twisted pair cable (UTP cable), Category 3 (4,5)

      (b) Shielded twisted pair cable (STP cable), Category 3 (4,5)

POINT

During the high speed communication (100Mbps) via 100BASE-TX connection, a communication error may occur due to the effect of high frequency noise generated from the device other than programmable controller, depending on the installation environment.

Take the following countermeasures on the Web server module side to eliminate the effect of high frequency noise.

(1) Wiring
- Do not bundle the twisted pair cables with the main circuit or power cables or bring them close to each other.
- Make sure to place the twisted pair cable in a duct.

(2) Cable
- In the environment where the cable is susceptible to noise, use the shielded twisted pair cable (STP cable).

(3) 10Mbps communication
- Connect the 10Mbps-compatible device with Web server module, and then transmit the data to the device at transmission speed of 10Mbps.

5.2 Connecting to the RS-232

Use the RS-232 cable when connecting to the RS-232 interface.
 (1) RS-232 connector specifications
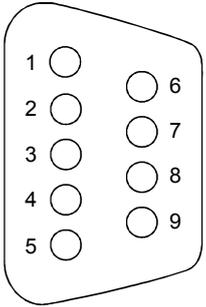
Pin No.	Signal abbreviation	Signal name	Signal direction Web server module ←→ Modem
1	CD(DCD)	Data Carrier Detect	←
2	RD(RXD)	Received Data	←
3	SD(TXD)	Transmitted Data	→
4	ER(DTR)	Data Terminal Ready	→
5	SG(GND)	Signal Ground	←→
6	DR(DSR)	Data Set Ready	←
7	RS(RTS)	Request To Send	→
8	CS(CTS)	Clear To Send	←
9	CI(RI)	Ring Indicator	←

 (2) RS-232 interface connector
    The Web server module uses the following RS-232 interface connector.
      • DDK Ltd.
        9 pin D-sub (Female) screw type
        17L-10090-27 (D9AC) (-FA)
    Use the following model as a connector shell of the Web server module side
    connection cable.
      • DDK Ltd.
        Plug, shell: 17JE-23090-02 (D8A) (-CG)
      • Connector fitting screw (M2.6)
 (3) RS-232 cable
    Use the RS-232-compliant cable of up to 15m.
    [Recommended cable]
      • Oki Electric Cable Co., Ltd.
        7/0.127 □P HRV-SV ... □: Specify the number of pairs. (For 13 pairs,
                                 specify 7/0.127 13P HRV-SV.)

6. Setting from GX Developer

Set the mode, default operation, battery error detection, logging monitor and response monitoring time for Web server module on the "Intelligent function module switch setting" screen.

Item	Description
Switch 1	Mode setting
Switch 2	Default operation setting/Battery error detection setting/Logging monitor setting
Switch 3 (lower byte)	Response monitoring time setting
Switch 4 to 5	For system use (Do not set)

(1) Mode setting (Switch 1)

Select the operation mode for Web server module.

Setting number	Item	Description
0000H	Online	Normal operation mode
0001H	Hardware test	Tests the ROM/RAM/switch settings
0002H	CH1 Self-loopback test	Tests the self diagnostics for CH1.
0003H	CH2 Self-loopback test	Tests the self diagnostics for CH2.
9999 (270FH)	Module initialization mode	Initializes the module to default setting.

(2) Default operation setting/Battery error detection setting/Logging monitor setting (switch 2)

b15	to	b5	b4	b3	b2	b1	b0	
Speccify 0. *				0				Switch 2

Logging monitor setting
0: Not display the latest file update time.
1: Displays the latest file update time.

Battery error detection setting
0: Detects battery error.
1: Not detect battery error.

Default operation setting (Account setting)
0: Operates according to the account setting.
1: Operates according to the default setting.
  • User name : QJ71WS96
  • Password   : MITSUBISHI
  • Access authority :
    Device write/Tag component write/
    Administrator
  • Initial screen :
    Standard screen top page

Default operation setting (System setting)
0: Operates according to the system setting.
1: Operates according to the default system setting.
  • IP address   : 192.168.3.3
  • Subnet mask   : 255.255.255.0
  • Connecting through LAN or the router.
  • Use the default HTTP port number (80).
  • Use the default FTP port number (21).
  • System name : QJ71WS96
  • Does not execute network diagnoses (Ping).
  • Automatic connection to network at start-up.

Default operation setting (IP filter setting)
0: Operates according to the IP filter setting.
1: Operates according to the default IP filter setting.
  • The IP packet with no filter setting is passed. (Without filter setting)

* A switch setting error (0180h) will occur during hardware test if this area is other than 0.

(a) Default operation setting (bit 0, 1)
For the account setting, system setting and IP filter setting, whether the default setting is enabled or not is set in this setting.
1) Account setting (bit 0)
0: Operates according to the account setting.
1: Operates according to the default setting.
2) System setting and IP filter setting (bit 1)
0: Operates according to the system setting/IP filter setting.
1: Operates according to the default setting.
(b) Battery error detection setting (bit 2)
This setting is provided to determine whether battery error detection is enabled or not while the Web server module is operating without battery.
0: Detects battery error.
1: Not detect battery error.

(c) Logging monitor setting (bit 4)

Whether the latest file update time is displayed or not in the file specification field of the logging monitor is set in this setting.

0: Not display the latest file update time.

1: Displays the latest file update time.

(3) Response monitoring time setting (switch 3 (lower byte))

This is the setting for timeout time (second) from when a module sends a request to the CPU of the accessed device until the CPU responds to it. Response timeout error will occur if the CPU of the accessed device does not respond to the request after the set time has passed.

Setting range: 15 to 255 (second)　(default value: 15 seconds)

Response monitoring time will be automatically default value (15 seconds) if it is not set or set to any of 0 to 14.

b15	to	b8 b7	to	b0	
(Upper byte) *		(lower byte)			Swich 3

Specify 0. *
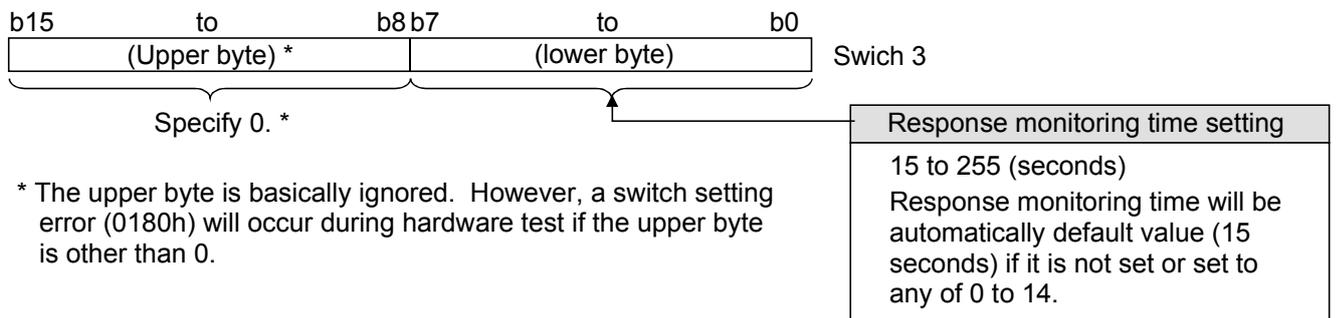
* The upper byte is basically ignored. However, a switch setting error (0180h) will occur during hardware test if the upper byte is other than 0.

Response monitoring time setting
15 to 255 (seconds) Response monitoring time will be automatically default value (15 seconds) if it is not set or set to any of 0 to 14.

7. External Dimensions
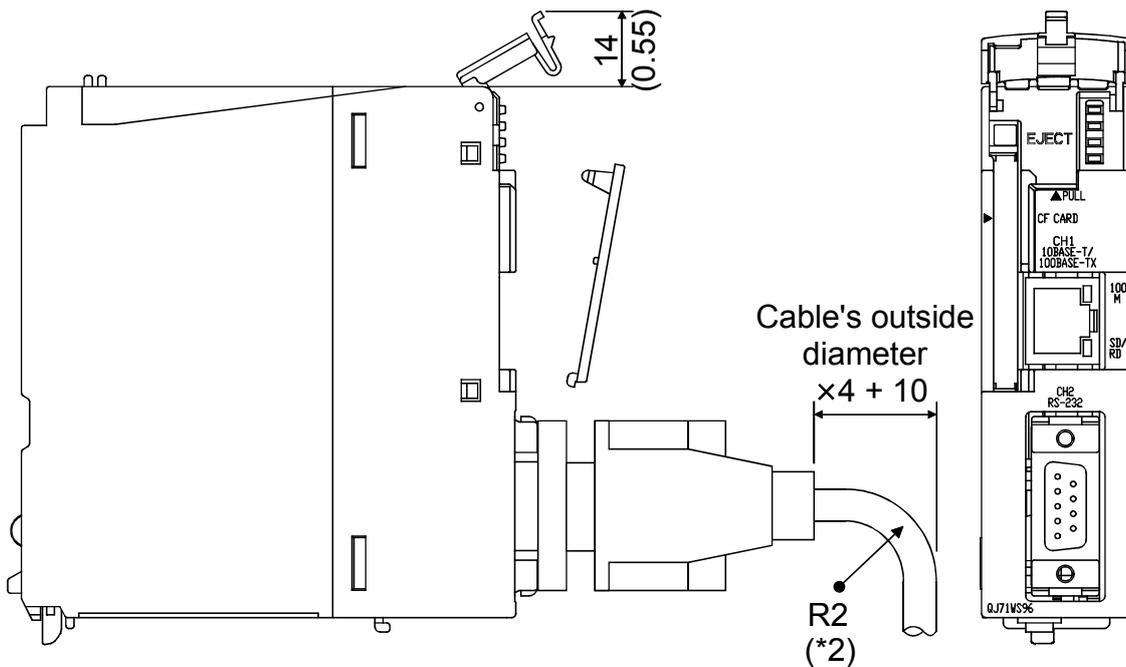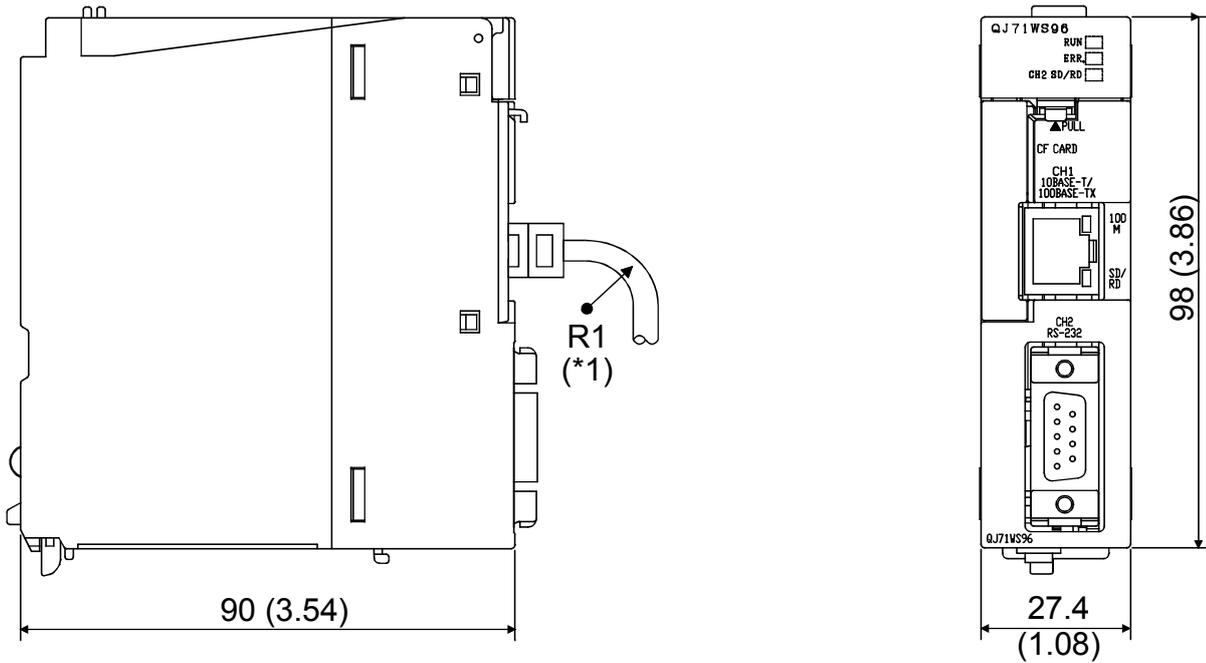
(Unit:mm (in.))

*1: The bending radius near the connectors (reference value: R1) should be four times as long as the cable's outside diameter or more when connecting the twisted pair cable.

*2: The bending radius near the connectors (reference value: R2) should be four times as long as the cable's outside diameter or more when connecting the RS-232 cable.

8. Transportation Precautions

When transporting lithium batteries, make sure to treat them based on the transport regulations.

8.1 Target Models of Regulations
The batteries for the Web server module are classified as follows:

Product name	Model	Product supply status	Classification for transportation
Q series battery	Q6BAT	Lithium battery	Non-dangerous goods

8.2 Transport Guidelines
Comply with IATA Dangerous Goods Regulations, IMDG code and the local transport regulations when transporting products after unpacking or repacking, while Mitsubishi ships products with packages to comply with the transport regulations.
Please consult your carrier for further details.

CompactFlash is a trademark of SanDisk Corporation.
All other company names and product names used in this manual are trademarks or registered trademarks of their respective companies.

Warranty

Mitsubishi will not be held liable for damage caused by factors found not to be the cause of Mitsubishi; machine damage or lost profits caused by faults in the Mitsubishi products; damage, secondary damage, accident compensation caused by special factors unpredictable by Mitsubishi; damages to products other than Mitsubishi products; and to other duties.

⚠ For safe use

- This product has been manufactured as a general-purpose part for general industries, and has not been designed or manufactured to be incorporated in a device or system used in purposes related to human life.
- Before using the product for special purposes such as nuclear power, electric power, aerospace, medicine or passenger movement vehicles, consult with Mitsubishi.
- This product has been manufactured under strict quality control. However, when installing the product where major accidents or losses could occur if the product fails, install appropriate backup or failsafe functions in the system.

Country/Region	Sales office/Tel
U.S.A	Mitsubishi Electric Automation Inc. 500 Corporate Woods Parkway Vernon Hills, IL 60061, U.S.A. Tel : +1-847-478-2100
Brazil	MELCO-TEC Rep. Com.e Assessoria Tecnica Ltda. Rua Correia Dias, 184, Edificio Paraiso Trade Center-8 andar Paraiso, Sao Paulo, SP Brazil Tel : +55-11-5908-8331
Germany	Mitsubishi Electric Europe B.V. German Branch Gothaer Strasse 8 D-40880 Ratingen, GERMANY Tel : +49-2102-486-0
U.K	Mitsubishi Electric Europe B.V. UK Branch Travellers Lane, Hatfield, Hertfordshire., AL10 8XB, U.K. Tel : +44-1707-276100
Italy	Mitsubishi Electric Europe B.V. Italian Branch Centro Dir. Colleoni, Pal. Perseo-Ingr.2 Via Paracelso 12, I-20041 Agrate Brianza., Milano, Italy Tel : +39-039-60531
Spain	Mitsubishi Electric Europe B.V. Spanish Branch Carretera de Rubi 76-80, E-08190 Sant Cugat del Valles, Barcelona, Spain Tel : +34-93-565-3131
France	Mitsubishi Electric Europe B.V. French Branch 25, Boulevard des Bouvets, F-92741 Nanterre Cedex, France TEL: +33-1-5568-5568
South Africa	Circuit Breaker Industries Ltd. Private Bag 2016, ZA-1600 Isando, South Africa Tel : +27-11-928-2000

Country/Region	Sales office/Tel
Hong Kong	Mitsubishi Electric Automation (Hong Kong) Ltd. 10th Floor, Manulife Tower, 169 Electric Road, North Point, Hong Kong Tel : +852-2887-8870
China	Mitsubishi Electric Automation (Shanghai) Ltd. 4/F Zhi Fu Plazz, No.80 Xin Chang Road, Shanghai 200003, China Tel : +86-21-6120-0808
Taiwan	Setsuyo Enterprise Co., Ltd. 6F No.105 Wu-Kung 3rd.Rd, Wu-Ku Hsiang, Taipei Hsine, Taiwan Tel : +886-2-2299-2499
Korea	Mitsubishi Electric Automation Korea Co., Ltd. 1480-6, Gayang-dong, Gangseo-ku Seoul 157-200, Korea Tel : +82-2-3660-9552
Singapore	Mitsubishi Electric Asia Pte, Ltd. 307 Alexandra Road #05-01/02, Mitsubishi Electric Building, Singapore 159943 Tel : +65-6470-2460
Thailand	Mitsubishi Electric Automation (Thailand) Co., Ltd. Bang-Chan Industrial Estate No.111 Moo 4, Serithai Rd, T.Kannayao, A.Kannayao, Bangkok 10230 Thailand Tel : +66-2-517-1326
Indonesia	P.T. Autoteknindo Sumber Makmur Muara Karang Selatan, Block A/Utara No.1 Kav. No.11 Kawasan Industri Pergudangan Jakarta - Utara 14440, P.O.Box 5045 Jakarta, 11050 Indonesia Tel : +62-21-6630833
India	Messung Systems Pvt, Ltd. Electronic Sadan NO:III Unit No15, M.I.D.C Bhosari, Pune-411026, India Tel : +91-20-2712-3130
Australia	Mitsubishi Electric Australia Pty. Ltd. 348 Victoria Road, Rydalmere, N.S.W 2116, Australia Tel : +61-2-9684-7777

▲ MITSUBISHI ELECTRIC CORPORATION

When exported from Japan, this manual does not require application to the Ministry of Economy, Trade and Industry for service transaction permission.

Specifications subject to change without notice.
Printed in Japan on recycled paper.