MITSUBISHI

A1SJ71QC24 (-R2)
Serial Communications Module

User's Manual
(Hardware)

Thank you for buying the Mitsubishi General Use PC MELSEC-Q2AS Series. Before use, please read this manual carefully and correctly operate the module with a sufficient understanding of the Q2AS series PC functions and performance. Please place this manual in a location where it is available to end users.

MODEL	A1SQC24-U-H/W-E
MODEL CODE	13J853

IB-66686-B (9808) MEE

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

● SAFETY PRECAUTIONS●

(Read these precautions before using.)

When using Mitsubishi equipment, thoroughly read this manual and the associated manuals introduced in the manual. Also pay careful attention to safety and handle the module properly.
These precautions apply only to Mitsubishi equipment. Refer to the CPU module user's manual for a description of the PC system safety precautions.
These ●SAFETY PRECAUTIONS● classify the safety precautions into two categories: "DANGER" and "CAUTION".

⚠DANGER	**Procedures which may lead to a dangerous condition and cause death or serious injury if not carried out properly.**
⚠CAUTION	**Procedures which may lead to a dangerous condition and cause superficial to medium injury, or physical damage only, if not carried out properly.**

Depending on circumstances, procedures indicated by ⚠**CAUTION** may also be linked to serious results.
In any case, it is important to follow the directions for usage.
Store this manual in a safe place so that you can take it out and read it whenever necessary. Always forward it to the end user.

[DESIGN PRECAUTIONS]

⚠DANGER

- When performing the control of the PC in operation (especially changing data, program, and operation status (status control)) by connecting a personal computer, etc. to the special function module, configure an interlock circuit in a sequence program so the safety of the overall system is always maintained.
  Especially, when this control is performed to a remote PC from an external device, troubles that have occurred on the PC side may not be able to immediately be handled if there is a data communication error. Define a troubleshooting agreement between external devices and the PC CPU for data communication error occurrences, as well as construct an interlock circuit in the sequence program.

[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 100mm (3.9 inch) or more from each other.
  Not doing so could result in noise that would cause erroneous operation.

[INSTALLATION PRECAUTIONS]

⚠CAUTION

- Use the PC in an environment that meets the general specifications contained in this manual. Using this PC 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.
- Switch all phases of the external power supply off when installing or placing wiring. Not doing so could result in electric shock or damage to the product.
- Insert the tabs at the bottom of the module into the mounting holes in the base unit. Then, tighten the module installation screws with specified torque. If the module is not properly installed, it may result in malfunction, breakdowns, or the module may fall off.
- Tighten the screw within the range of specified torque.
  If the screws are loose, it may result in fallout, short circuits, or malfunction.
  Tightening the screws too far may cause damages to the screws and/or the module, resulting in a fallout, short circuits, or malfunction.
- Do not directly touch the module's conductive parts or electronic components. Doing so could cause malfunction or trouble in the module.
- Perform correct pressure-displacement, crimp-contact or soldering for wire connections using the tools specified by the manufactures. Attach connectors to the module securely.

[WIRING PRECAUTIONS]

⚠CAUTION

- Be sure to secure communication cables in ducts or fix them with cramps. Failure to do so may cause a damage to the module or cables due to dangling, shifting or inadvertent handling of cables, or misoperation due to bad cable connection.
- Before connecting the cables, check the type of interface to be connected. Connection, or erroneous wiring, to the wrong interface may damage the module and external devices.
- Tighten the terminal screw within the range of specified torque.
  If the screws are loose, it may result in short circuits or malfunction.
  Tightening the screws too far may cause damages to the screws and/or the module, resulting in a fallout, short circuits, or malfunction.
- Do not grab on the cable when removing the communication cable connected to the module.
  When removing the cable with a connector, hold the connector on the side that is connected to the module.
  When removing the cable without a connector, first loosen the screws on the part that is connected to the module.
  Pulling the cable that is still connected to the module may cause a damage to the module or cable, or misoperation due to bad cable contacts.
- 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.

[STARTING AND MAINTENANCE PRECAUTIONS]

⚠DANGER

- Do not touch the connector while the power is on. Doing so could cause erroneous operation.
- Switch all phases of the external power supply off before cleaning or re-tightening screws. If you do not switch off the external power supply, it will cause failure or malfunction of the module.
  If the screws are loose, it may result in fallout, short circuits, or malfunction.
  Tightening the screws too far may cause damages to the screws and/or the module, resulting in a fallout, short circuits, or malfunction.

[STARTING AND MAINTENANCE PRECAUTIONS]

⚠CAUTION

- Do not disassemble or modify the modules. Doing so could cause trouble, erroneous operation, injury, or fire.
- Switch all phases of the external power supply off before mounting or removing the module. If you do not switch off the external power supply, it will cause failure or malfunction of the module.

[OPERATING PRECAUTIONS]

⚠DANGER

- Do not write data into the "system area" of the buffer memory of special function modules. Also, do not output the "prohibited to use" signal as the output signal to a special function module from the PC CPU.
  Writing data into the "system area" or outputting a signal for "prohibited to use" may cause system malfunctions in the PC.

⚠CAUTION

- Before performing the control of the PC in operation (especially changing data, program, and operation status (status control)) by connecting a personal computer, etc. to the special function module, read the manual carefully and confirm if the overall safety is maintained.
  Failure to perform correct operations to change data, program, or the status may result in system malfunction, machine damage, or an accident.
- When using the module while values, such as buffer memory set values, are registered in the EEPROM, do not turn off the power supply for the module loading station nor reset the PC CPU.
  If the power supply for the module loading station is truned off or the PC CPU is reset while any values are registered, the data contents in the EEPROM become inconsistent and as a result the values must be set again in the buffer memory, etc. and reregistered to the EEPROM. Also this may cause failure and malfunction of the module.

[DISPOSAL PRECAUTIONS]

⚠CAUTION

- When disposing of this product, treat it as industrial waste.

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About This Manual

The following product manuals are available. Please use this table as a reference to request the appropriate manual as necessary.

Related Manual

Manual Names	Manual No. (Model Code)
Serial Communications Module Guidebook	IB-66622 (13JF11)
Serial Communications Module User's Manual	IB-66612 (13J825) *1
Computer Link Guidebook	SH-3510 (13JE76)
Computer Link/Multidrop Link Module User's Manual (Computer Link Function, Printer Function)	SH-3511 (13JE77)

*1 A1SJ71QC24 (-R2)'s updated information is added in the manual printed after manual IB-66612-B.

Please read Serial Communications Module User's Manual before using this module.

Correspondence to EMC DIRECTIVE

To make the PCs compliant with the EMC directive, refer to Chapter 2 "EMC AND LOW-VOLTAGE DIRECTIVE" in the PC CPU user's manual (Hardware).

* When the PC CPU user's manual (Hardware) does not include Chapter 2 "EMC AND LOW-VOLTAGE DIRECTIVE", refer to QnA Series CPU Compatible High-Speed Access Basic Base Unit Corresponding CPU EMC Conforming Product Additional Explanation (IB-68837) (optional).

1. Overview

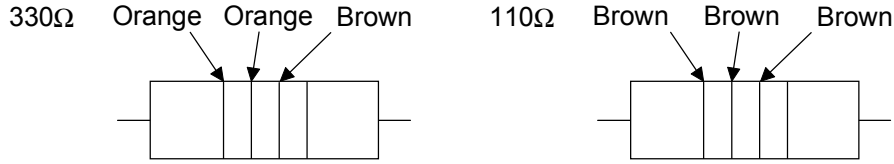
This manual describes how to install the following serial communications modules and how to wire them with external devices.

When unpacking the module, check that the products listed in the table below are present.

Model	Product Name	Qty.
A1SJ71QC24	A1SJ71QC24 serial communications module	1
	RS-422 communication terminal resistor 330Ω, 1/4W (orange/orange/brown/)	2
	RS-485 communication terminal resistor 110Ω, 1/2W (brown/brown/brown/)	2
A1SJ71QC24-R2	A1SJ71QC24N-R2 serial communication module	1

* Unless there is a need to identify each device, all of the modules are referred to as "QC24".

* How to discriminate between the terminating resistors



2. Transmission Specifications

The transmission specifications of the QC24 is shown below.
Refer to CPU module User's Manual for QC24 general specification.

Item		Specifications	
		A1SJ71QC24	A1SJ71QC24-R2
Interface	CH1	RS-232C	RS-232C
	CH2	RS-422/485	RS-232C
Communications system		Full-duplex/Half-duplex (Only RS-232C interface is selectable.)	
Synchronous system		Asynchronous system	
Transmission speed (Unit : bps)		19200, 9600, 4800, 2400, 1200, 600, 300 (Each of CH1 and CH2 selects.)	
Data format	Start bit	1	
	Data bit	7 / 8	
	Parity bit	1 (yes) / 0 (no)	
	Stop bit	1 / 2	

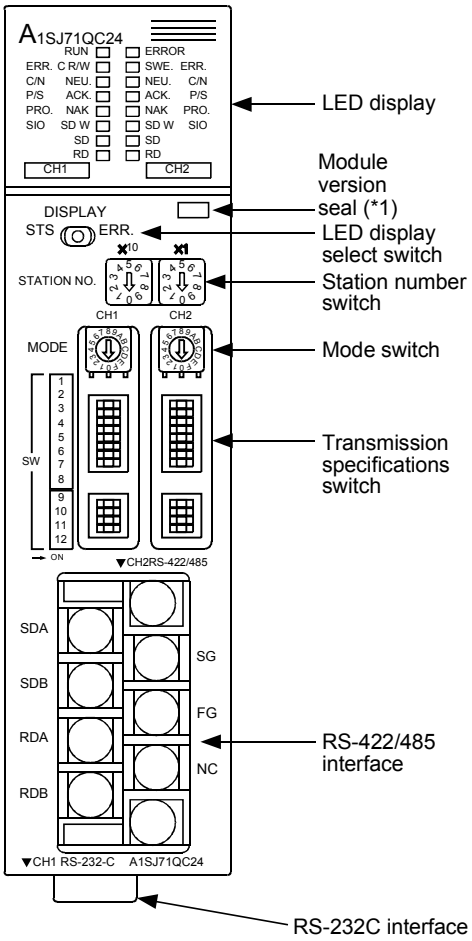
Item	Specifications	
	A1SJ71QC24	A1SJ71QC24-R2

<table>
<tr><td colspan="2" rowspan="2">Error detection</td><td>Parity check</td><td colspan="3">Yes (odd/even) / No</td></tr>
<tr><td>Sum check code</td><td colspan="3">Yes / No</td></tr>
<tr><td colspan="2" rowspan="2">Transmission control</td><td>DTR/DSR</td><td colspan="3">Yes (Only RS-232C interface is selectable.) / No</td></tr>
<tr><td>DC code</td><td colspan="3">Yes (DC1/DC3, DC2/DC4) / No</td></tr>
<tr><td colspan="2">Writing to EEPROM</td><td colspan="3">100,000 times for the same area (Max.)</td></tr>
<tr><td rowspan="6">Line conn-ection</td><td rowspan="3">Indep-endent mode</td><td>Dedicated protocol</td><td colspan="3" rowspan="3">RS-232C..... 1:1
RS-422/485.. 1:1, 1:n, m:n
* Only 1: 1 can be used for the bidirectional protocol.
m:n can only be used for a dedicated protocol.</td></tr>
<tr><td>Non procedure protocol</td></tr>
<tr><td>Bidirectional protocol</td></tr>
<tr><td rowspan="3">Linked mode</td><td>Dedicated protocol</td><td>1:n, m:n</td><td rowspan="3" colspan="2">(Communication disable with internal mode)</td></tr>
<tr><td>Non procedure protocol</td><td>1:n</td></tr>
<tr><td>Bidirectional protocol</td><td>(Communication disable with internal mode)</td></tr>
<tr><td colspan="3">Transmission distance</td><td colspan="3">RS-232C..... 15m (49.2ft.) or less
RS-422/485.. 1200m (3937.0ft.) or less</td></tr>
<tr><td colspan="3">Power consumption (5 VDC)</td><td>0.24A</td><td colspan="2">0.155A</td></tr>
<tr><td colspan="3">Number of I/O points</td><td colspan="3">32 points (*1)</td></tr>
<tr><td colspan="3">Weight: kg (lb)</td><td>0.294 (0.65)</td><td colspan="2">0.249 (0.55)</td></tr>
</table>

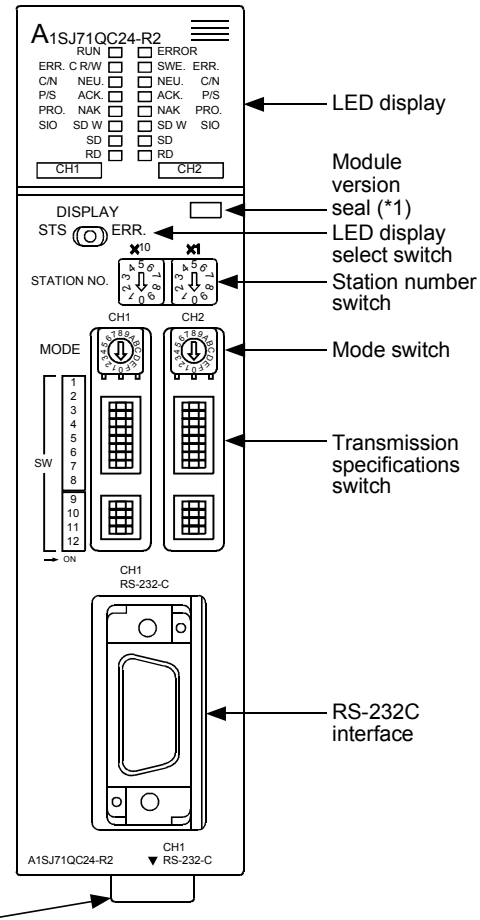
*1 Set special 32 points when allocating I/O by GPP function. Set "AJ71QC24" as a model name registration when using dedicated command.

3. Name of Each Part and Setting

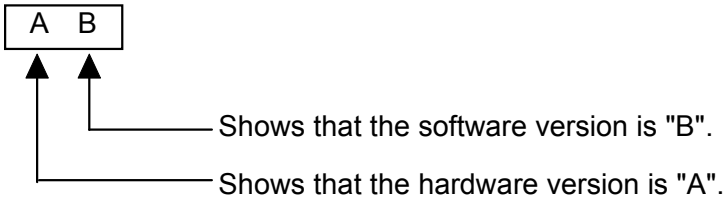
· A1SJ71QC24



· A1SJ71QC24-R2

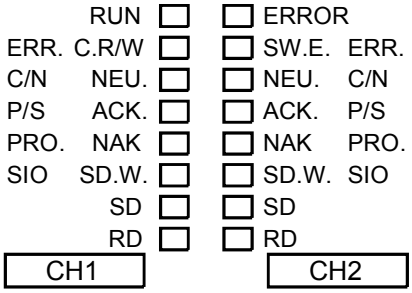


*1 Seal showing the module hardware version and software version.
(Example)



(1) LED Display

The display LEDs indicate the data communication status, operating status, error status of the QC24.



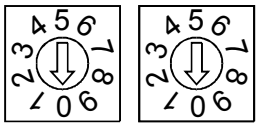
LED Name		Meaning of LED Display	LED ON (ON/BLINK)	LED OFF (OFF)	Initial Status of LED	Related Protocol		
						Dedi-cated	Non proced-ure	Bidire-ctional
RUN		Normal Operation	Normal	Abnormal	ON	○		
ERROR		Error batch	Any of ERR. error, C/N error, P/S error, PRO error, SIO error occur	Normal	OFF			
SD		CH□ send status	Blinks during data transmission	Not sent	OFF			
RD		CH□ receive status	Blinks during data reception	Not received	OFF			
Display select switch STS side	C.R/W	Communicating with PC	Blinks during PC communications (when not communicating is OFF)		OFF	○		
	SW. E.	Switch setting error	Switch setting error	Normal	OFF			
	NEU.	CH□ neutral status	Transmission sequence initial status (Waiting to receive command messages)	Command message receive completed	*1	○	—	
	ACK.	CH□ [Normal End] transmission	After [Normal End] transmitted	After [Abnormal End] transmitted	OFF			
	NAK	CH□ [Abnormal End] transmission	After [Abnormal End] transmitted	After [Normal end] transmitted	OFF			
	SD.W.	Send wait status	When data send wait state generated	After start of transmission	OFF	○		
Display select switch ERR. side.	ERR.	CH□ error occurrence	Switch setting error, mode switching error, send error, receive error, on-demand error	Normal	OFF	○		
	C/N	CH□ and PC CPU communications result	*2	Normal	OFF	○	—	
	P/S	CH□ parity/sum check error	Parity/sum check error	Normal	OFF	○		
	PRO.	CH□ protocol error	Communications protocol error	Normal	OFF	○	—	
	SIO	CH□ SIO error	Overrun, framing error	Normal	OFF	○		
			When receive data purged because OS area is full.	Normal	OFF	—	○	

*1 The displayed content is valid when the dedicated protocol is set as the target interface.
The LED is off when other than the dedicated protocol is set as the target interface.

*2 The LED is turned on when an illegal communication request is received from an external device, or an error occurs while accessing the PC CPU.

(2) Station number switch setting

Set the station number so that external devices can specify the PC as the target of access during data communication via the dedicated protocol.

Station Switch Details	Description
Station No. X 10 X 1 	(1) Station number of the local QC24 is set from 0 to 31. (Do not set a station number over 32.) (2) X10 sets the station number 10 digit. (3) X1 sets the station number 1 digit. (4) Make sure that the station number setting does not overlap with another QC24, etc., on the same network. (5) Not necessary to set the station numbers in connect order. Station numbers can also be skipped.

(The factory setting is [00].)

(3) Mode switch setting

Set data communication functions for each interface.

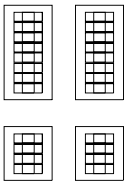
Mode Switch Details	Mode Switch No.	Setting Contents		
Mode	0	When CH1 and CH2 operation is linked: Set CH1 to 0 Set CH2 to 1 to 6 When CH1 and CH2 operate independently: Setting impossible.		
	1	Dedicated protocol	ASCII mode	Format 1
	2			Format 2
	3			Format 3
	4			Format 4
	5		Binary mode	Format 5
	6	Non procedure protocol		
	7	Bidirectional protocol		
CH□ 	8 to D	Setting impossible		
	E	ROM/RAM/switch test		
	F	Self loopback test		

(The factory setting is "1")

Point

Always set "1" to "7" for the mode setting switch on the interface side that is not connected to the external device.

(4) Transmission specifications switch setting
Set specifications for the communication with the data communication destination device, as well as other items.

Switch Details	Switch CH1	Switch CH2	Setting Item	Switch State OFF	Switch State ON	Notes
	SW1		Operation setting	Independent operation	Linked operation	Set CH1 to OFF. CH2 can be set to ON/OFF.
	SW2		Data bits setting	7 bits	8 bits	Parity bit not included.
	SW3		Parity bit enable /disable setting	Disable	Enable	When set to Enable, the setting of SW4 is effective.
	SW4		Even parity /odd parity setting	Odd	Even	Effective only when Parity Bit Enable is selected.
	SW5		Stop bit setting	1 bit	2 bits	—
	SW6		Sum check enable /disable setting	Disable	Enable	Dedicated protocol, bidirectional protocol
	SW7		Write during RUN enable/disable setting	Disable	Enable	Dedicated protocol
	SW8		Setting change enable/disable	Disable (prohibit)	Enable (allow)	Sets mode switching and EEPROM write allow/prohibit.
	SW9 to SW12		Transmission speed setting	(*1)		Each of CH1 and CH2 can select.

(The factory settings are all OFF.)

*1 The data transmission speeds allowed to set are as follows:

		Transmission speed (unit: bps)											
		300	600	1200	2400	4800	9600	19200	38400	14400	28800	57600	115200
Switch	SW09	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON
	SW10	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON
	SW11	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
	SW12	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON

* Settings other than above are not accepted.

Point

The transmission specification setting switch shown above is located on the modules whose hardware versions are as follows:

- A1SJ71QC24: Version F or later
- A1SJ71QC24-R2: Version E or later

Even though the switch layout has been changed, the function set by each switch and the corresponding ON/OFF position remain the same as those of the conventional model.

4. Mounting and Installation

This section describes the handling precautions and installation environment common to all the modules when handling the QC24 from unpacking to installation.

Refer to the User's Manual of the PC CPU module used for a detailed description of mounting and installation of the module.

4.1 Handling Precautions

This section describes the module handling precautions.

(1) The module case is made of plastic. Be sure not to drop it or subject it to strong vibration.

(2) Tighten the module installation screws within the following tightening torque range.

Screw	Tightening Torque Range
RS-422/485 terminal block terminal screws (M3.5 screws)	59 to 88N • cm {6 to 9kgf • cm} (5.2 to 7.8lb • inch)
Module installation screws (M4 screws)	78 to 118N • cm {8 to 12kgf • cm} (6.9 to 10.4lb • inch)
RS-422/485 terminal block installation screws (M3 screws)	39 to 59N • cm {4 to 6kgf • cm} (3.5 to 5.2lb • inch)
RS-232C connector installation screw (M2.6 screws)	19 to 24N • cm {1.9 to 2.4kgf • cm} (1.7 to 2.0lb • inch)

4.2 Installation Environment

Do not install the Q2AS series PC in the following environments.

(1) Where the ambient temperature exceeds the 0 to 55°C range.

(2) Where the ambient humidity exceeds the 10 to 90% RH range.

(3) Where condensation is produced by sudden temperature changes.

(4) Where corrosive or combustible gas is present.

(5) Where dust, iron powder and other conductive powder, oil mist, salt, or organic solvents are prevalent.

(6) In direct sunlight.

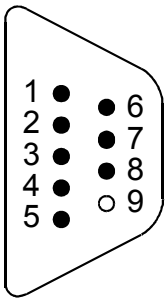
(7) Where a strong electric or magnetic field is generated.

(8) Where vibration and shock may be transmitted directly to the module.

5. External Wiring

5.1 Connecting RS-232C Line

The standard connection procedure for RS-232C line is explained below.



Pin No.	Signal Code	Signal Name	Signal Direction (QC24 (*1) ◀▶ External Device)
1	CD	Receive carrier detection	←
2	RD (RXD)	Received data	←
3	SD (TXD)	Send data	→
4	DTR (ER)	Data terminal ready	→
5	SG	Signal ground	
6	DSR (DR)	Data set ready	←
7	RS (RTS)	Send request	→
8	CS (CTS)	Send enabled	←

*1 A1SJ71QC24 : CH1 side
A1SJ71QC24-R2 : CH1 side/CH2 side

The following type of the RS-232C connector is used. The counter connector must match this connector.

9-pin D-sub (female) screw type

17L-10090-27-D9AC (DDK ELECTRONICS LTD)

(1) An example of connecting to an external device which is capable of turning ON/OFF the CD signal (pin 1)

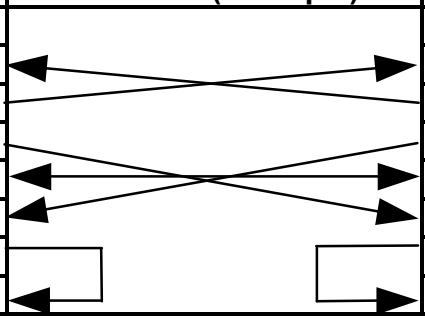
(Full-duplex/Half-duplex communications)

QC24 Side		Connection and Signal Direction (Example)	External Device
Signal Name	Pin No.		Signal Name
CD	1		CD
RD (RXD)	2		RD (RXD)
SD (TXD)	3		SD (TXD)
DTR (ER)	4		DTR (ER)
SG	5		SG
DSR (DR)	6		DSR (DR)
RS (RTS)	7		RS (RTS)
CS (CTS)	8		CS (CTS)

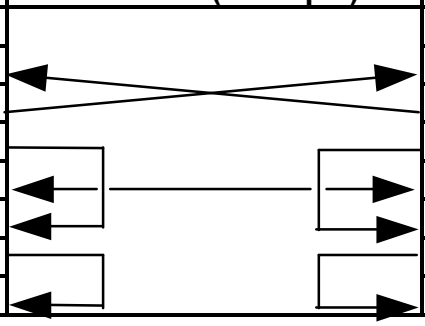
(2) An example of connecting to an external device which is not capable of turning ON/OFF the CD signal (pin 1)

(a) An example for DC code control or DTR/DSR control

(Full-duplex communications)

QC24 side		Connection and Signal Direction (Example)	External Device
Signal Name	Pin No.		Signal Name
CD	1		CD
RD (RXD)	2		RD (RXD)
SD (TXD)	3		SD (TXD)
DTR (ER)	4		DTR (ER)
SG	5		SG
DSR (DR)	6		DSR (DR)
RS (RTS)	7		RS (RTS)
CS (CTS)	8		CS (CTS)

(b) An example for DC code control (Full-duplex communications)

QC24 Side		Connection and Signal Direction (Example)	External Device
Signal Name	Pin No.		Signal Name
CD	1		CD
RD (RXD)	2		RD (RXD)
SD (TXD)	3		SD (TXD)
DTR (ER)	4		DTR (ER)
SG	5		SG
DSR (DR)	6		DSR (DR)
RS (RTS)	7		RS (RTS)
CS (CTS)	8		CS (CTS)

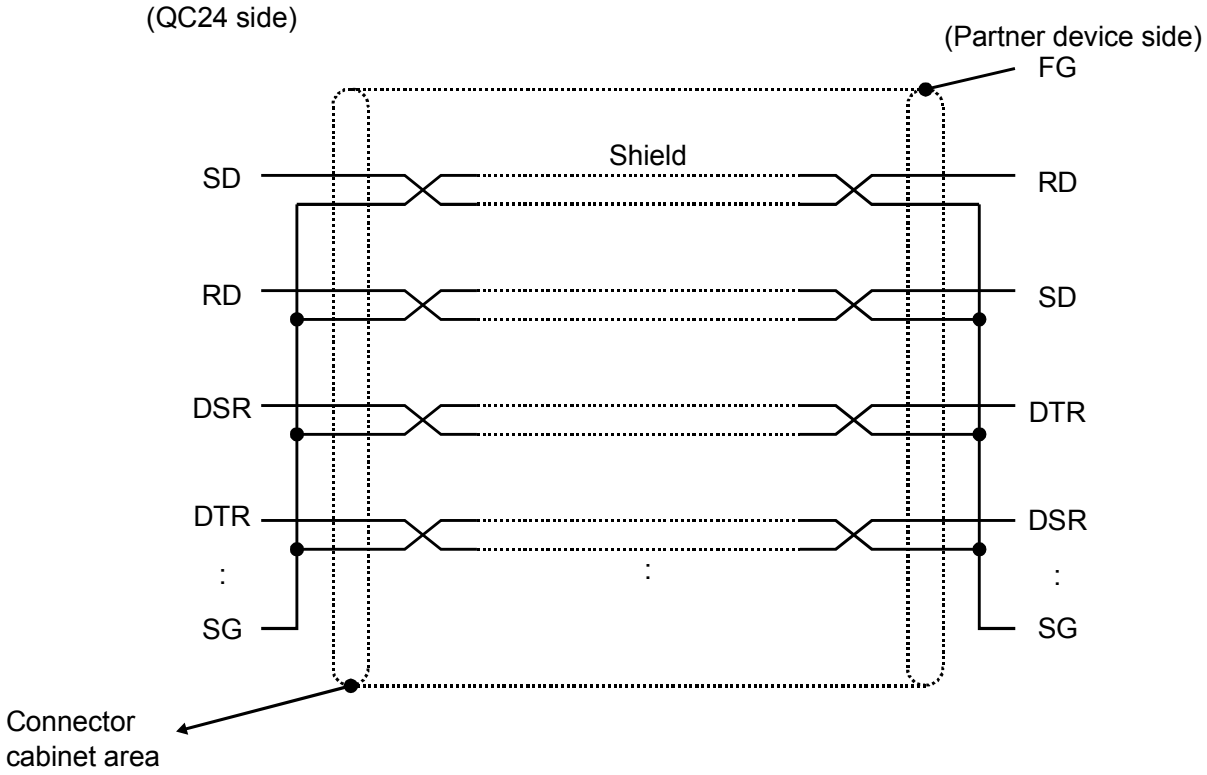
(3) Precaution when performing connections

1) Handle the FG signal and the shield of the connection cable in the following manner.

	Connection Method	Remark
FG signal	Connect to the connector cabinet area on the QC24 side.	● Do not short circuit the FG signal and the SG signal of the connection cable.
Shield	Connect to the FG terminal on the external device side or connector cabinet area on the QC24 side.	● When the FG signal and the SG signal are internally connected on the external device side, do not connect the FG signal to the QC24.

2) When a normal data communication cannot be performed because of external noise even though the wiring has been made as above, perform the wiring as follows:

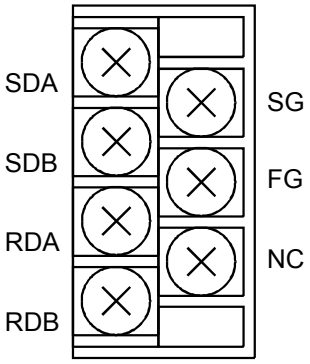
- Connect between the FG terminal of the external device side and connector cabinet area of the QC24 side with the shield of the connection cable.
  On the external device side, however, follow the instruction manual of the external device.
- Connect each signal other than SG of the connection cable by paring up with SG.



3) Do not connect a RS-422 device to the RS-232C interface.
If a RS-422 device is connected, the RS-422 interface hardware on the connected device will be damaged, and communication will be disabled.

5.2 Connecting RS-422/485 Line

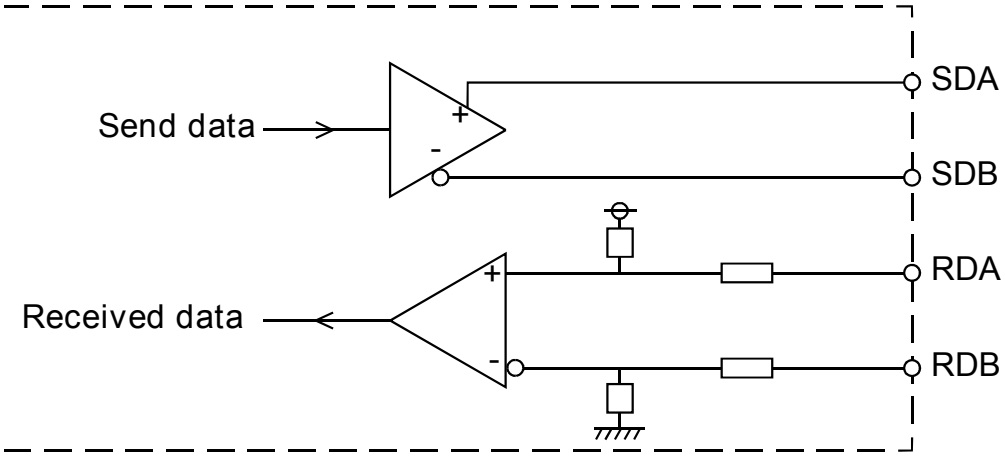
The standard connection procedure for RS-422/485 line is explained below.



Signal Code	Signal Name	Signal Direction (QC24 (*1) ◀▶ External Device)
SDA	Send data (+)	→
SDB	Send data (-)	→
RDA	Received data (+)	←
RDB	Received data (-)	←
SG	Signal ground	←
FG	Frame ground	◀▶
NC	(Empty)	◀▶

*1 A1SJ71QC24 : CH2 side
A1SJ71QC24-R2 : (None)

(Function block diagram for the QC24 side)



Point

If the QC24 is the first or last station on the RS-422/485 line, connect a terminal resistor of the following specifications to the RS-422/485 interface.

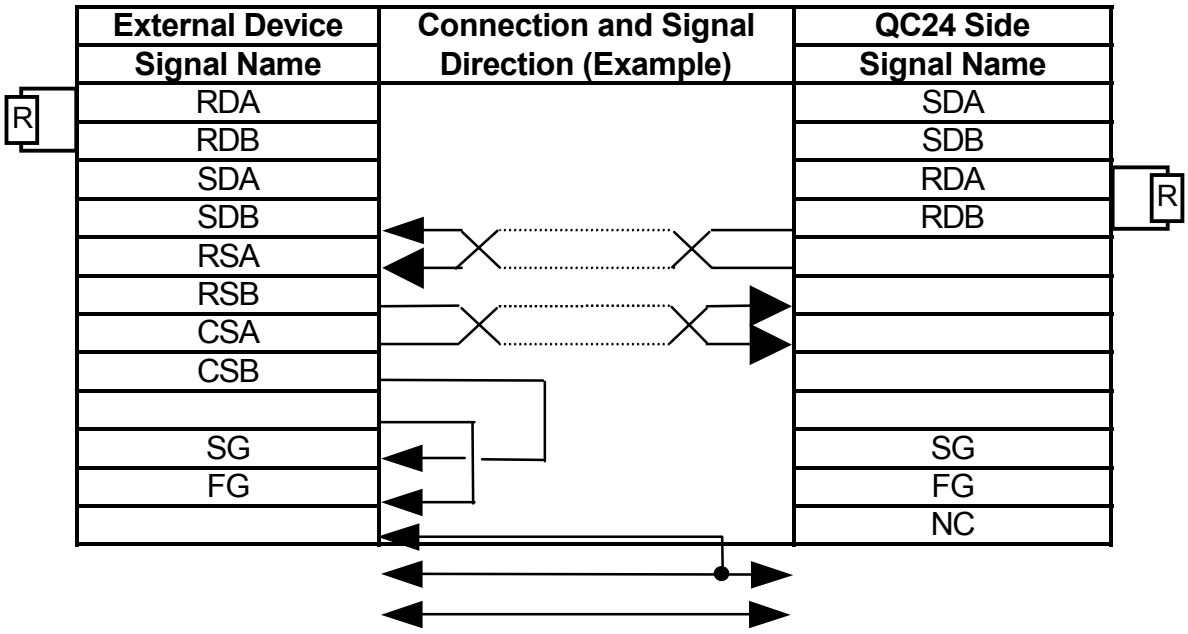
Data communication will be disturbed if a terminal resistor is not used.

- For RS-422 communication ····· 330 Ω, 1/4 W
- For RS-485 communication ····· 110 Ω, 1/2 W

(1) When a QC24 is connected to each external device, connect a terminal resistor between RDA and RDB.
(2) When the relationship between the numbers of connected external devices and QC24s is 1:n, connect terminal resisters between SDA and SDB and between RDA and RDB.
(3) When the relationship between the numbers of connected external devices and QC24s is m:n, connect a terminal resister between RDA and RDB.

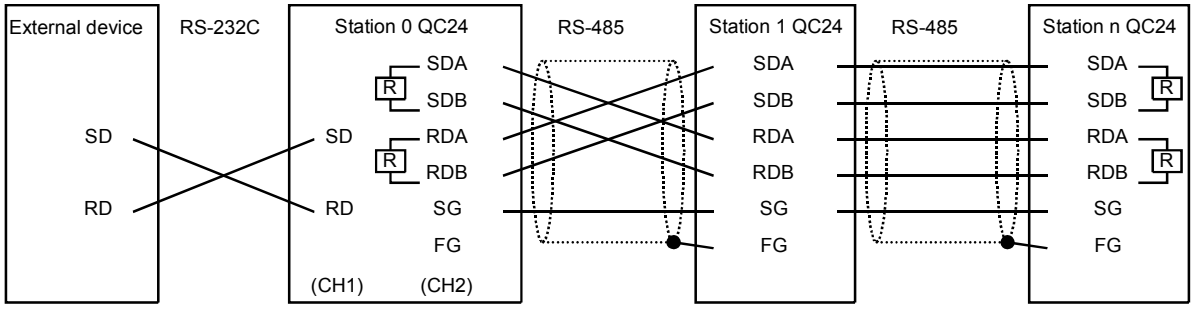
The R in the wiring diagram below indicates the connection of a terminal resistor.

(1) Example of connecting external devices and QC24 by 1:1

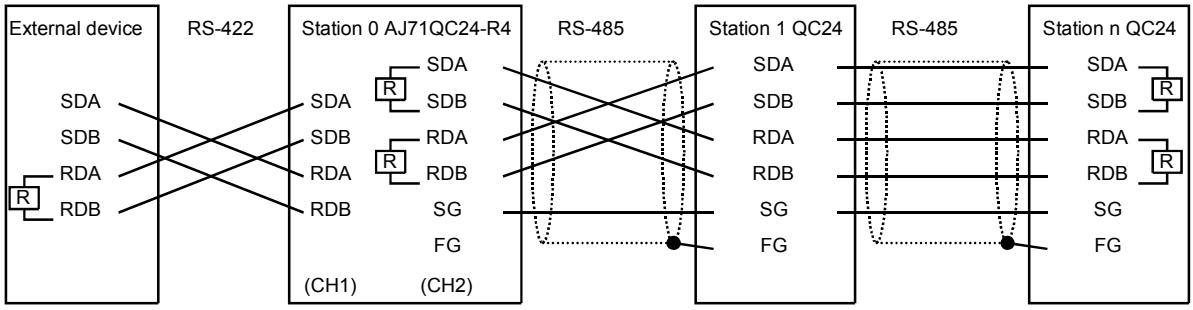


(2) Example of connecting external devices and QC24 by 1:n

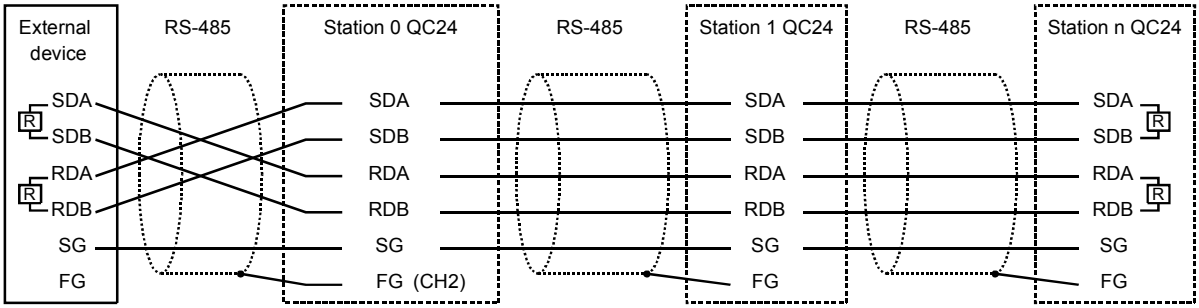
1) Connecting external devices and QC24 using RS-232C



2) Connecting external devices and QC24 using RS-422

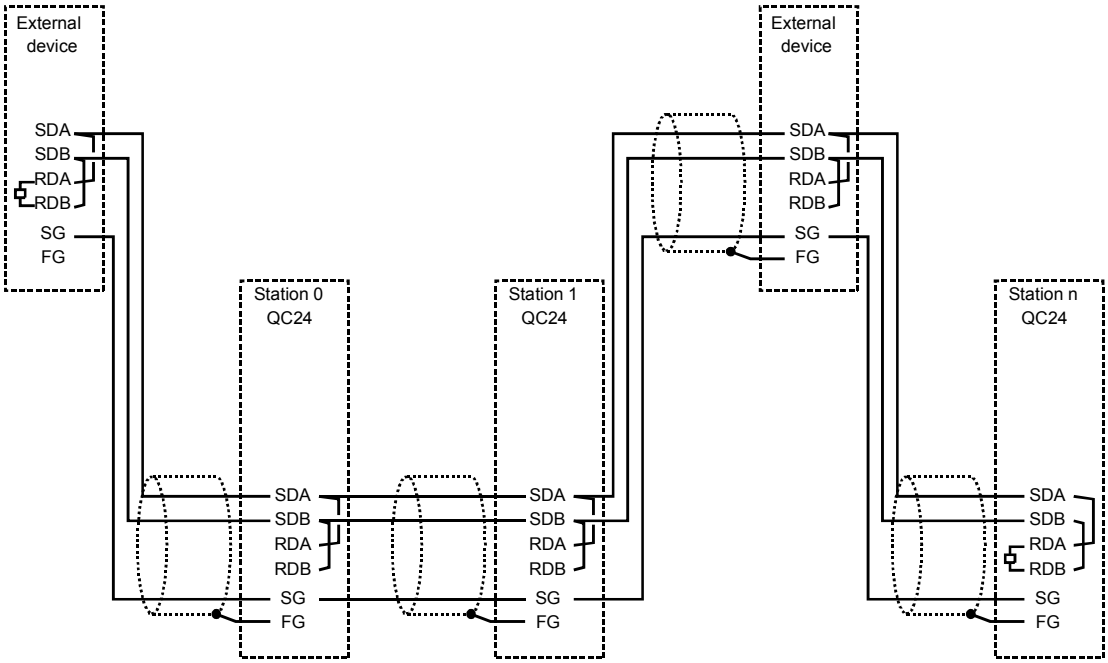


3) Connecting external devices and QC24 using RS-485



(3) Example of connecting external devices and QC24 by m:n

* Connecting external devices and QC24 using RS-485



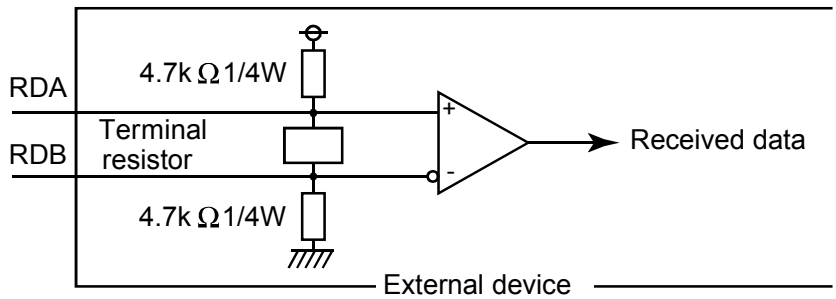
Point

In case of connecting external devices and QC24 by m:n, refer to Section 5.1 for an example of connecting external devices and QC24 using RS-232C.

(4) Countermeasure for data receive errors at the external device with RS-422 and RS-422/485 connections

During the data communication with external devices via QC24 RS-422/485 interface , if the external device receives an error data, install pull-up and pull-down resistors to the external device side (about 4.7kΩ, 1/4 W as a reference of resistor value).

Installation of pull-up and pull-down resistors will prevent a data receive error.



Point

When there is a pull-up or pull-down resistor at the external device, erroneous data is not received.

Remark

The following describes the case when a pull-up or pull-down resistor is not installed to the external device.

1) When no station is sending, the send line becomes high impedance and noise, etc. may cause the send line to change and the external device to receive erroneous data.
In this case, there is probably a parity error or framing error. Therefore, skip the erroneous data.

2) Since the first data during data reception is fixed in the following cases, also skip the receive data until the head data is received.

- When using a dedicated protocol for data communication, the user selects the first data according to the mode and format used.
- When performing data communication using user frames with Non procedure protocol, the user selects the first data according to the user frames registered in the QC24.

(5) Connection precautions

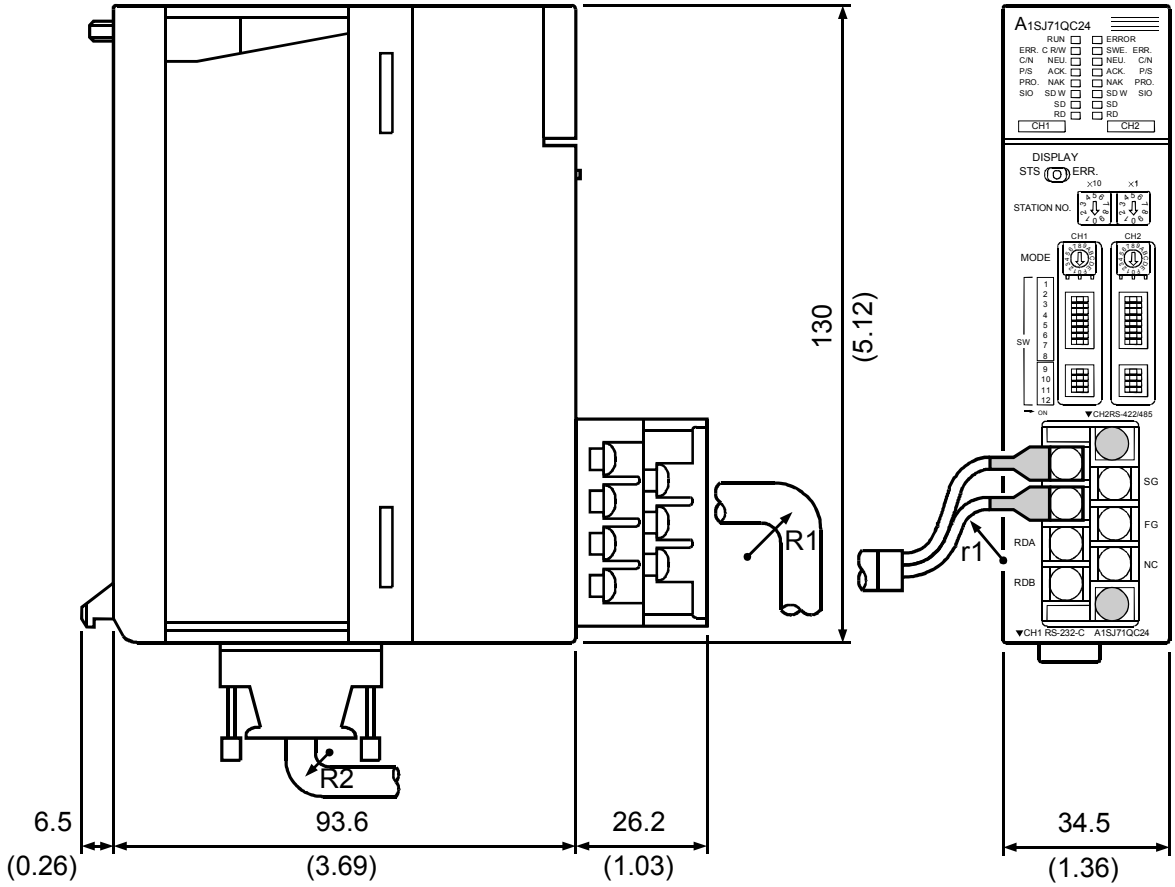
When connecting the QC24 SG and FG signals to the external device, connect them according to the specifications of the external device.

Point

(1) In the description of the setting and connection of the terminal resistor in this section, if the RS-232C — RS-422 converters, etc. are used on the stations on both ends of the network, the setting and connection of the terminal resistor is necessary on the converter side.
(2) The devices connected to the QC24 RS-422/485 interface must be unified with either RS-422 or RS-485 for 1:n and m:n connections.

6. External Dimensions

(A1SJ71QC24 (-R2))



mm (inch)

R1 (bend radius near terminal board) : Cable diameter × 4
R2 (bend radius near connector) : Cable diameter × 4
r1 (bend radius near crimp terminal) : Can be connected within the range over which bending is not excessive

* Except for the interface section, the A1SJ71QC24 (-R2) outline dimensions of all two models are the same.
The illustration above shows the outline dimensions of the A1SJ71QC24.