MITSUBISHI

QA6ADP QA Conversion Adapter Module

User's Manual

QA6ADP

Thank you for buying the Mitsubishi general-purpose programmable logic controller MELSEC-Q Series

Prior to use, please read both this manual and detailed manual thoroughly and familiarize yourself with the product.

MITSEG-Q

Mitsubishi

Programmable Controller

MODEL	QA6ADP-U-JE					
MODEL	12 IV50					
CODE	13JY50					
IB(NA)-	0800402-B(0803)MEE					

© 2007 MITSUBISHI ELECTRIC CORPORATION

Revisions

* The manual number is noted at the lower right of the top cover.

Print Date	*Manual Number	Revision
Aug., 2007	IB(NA)-0800402-A	First printing
Mar., 2008	IB(NA)-0800402-B	Partial correction
		Section 2.2, 6.1

This manual confers no industrial property rights or any rights of any other kind, nor does it confer any patent licenses. Mitsubishi electric Corporation cannot be held responsible for any problems involving industrial property rights which may occur as a result of using the contents noted in this manual

© 2007 MITSUBISHI ELECTRIC CORPORATION

CONTENTS

1. OVI	ERVIEW	3
1.1	Overview	3
1.2	Included Parts	3
2. SYS	STEM CONFIGURATION	4
2.1	System Configuration	4
2.2	Configuration Device List	5
3. SPE	ECIFICATIONS	7
3.1	General Specifications	7
3.2	Performance Specifications	8
4. PAF	RT NAMES AND SETTING	9
4.1	Part Names	9
4.2	Extension Stage Number Setting	10
5. IMP	LEMENTATION AND INSTALLATION	11
5.1	Mounting/Removal of QA6ADP	11
5.2	Connection/Disconnection of Extension Cable	13
6. PRE	ECAUTION FOR USING QA6ADP	16
6.1	Current Consumption of QA6ADP	16
6.2	Voltage Drop of Extension Cable	17
7 FX	FERNAL DIMENSIONS	18

GENERIC TERMS AND ABBREVIATIONS

Unless otherwise specified, this manual uses the following generic terms and abbreviations to explain the QA conversion adapter module.

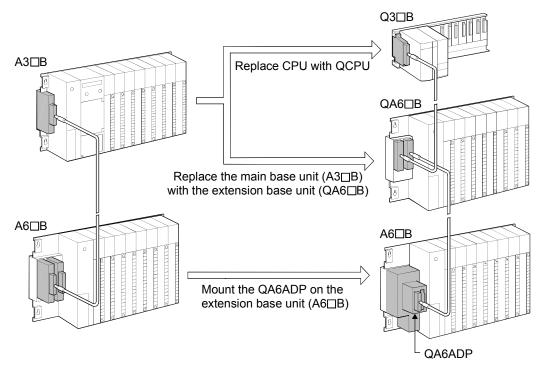
Generic term/Abbreviation	Description
A5□B	Generic term for A52B, A55B, and A58B extension base units on which A series I/O module and special function module can be mounted without power supply.
А6□В	Generic term for A62B, A65B, and A68B extension base units on which A series I/O module and special function module can be mounted.
QA6ADP	Abbreviation for QA6ADP QA conversion adapter module.
QA6ADP+A5□B/A6□B	Abbreviation for A large type extension base unit on which QA6ADP is mounted.

1.1 Overview

This user's manual describes the specifications, configuration device, part names and setting, and implementation and installation of the QA6ADP QA conversion adapter module.

For contents that are not described in this manual such as safety precautions, EMC and low voltage directives, or error code list, refer to QCPU User's Manual (Hardware Design, Maintenance and Inspection) (SH-080483).

The QA6ADP is the adapter module connecting the A (large type) series extension base unit to the Q series main base unit.



POINT

- The QA6ADP is CE-compliant. To meet the EMC directive, the extension base unit and module to be used in combination with the QA6ADP should be CE-compliant.
- When using a control line or communication cable, keep it away from the main circuit or power line 100mm or more.
 - Failure to do so may cause malfunction due to noise.

1.2 Included Parts

This section describes parts included with this module.

Product name	Model	Quantity	Remarks
QA6ADP QA conversion adapter module	QA6ADP	1	_
Adapter module mounting bracket	_	1	_
Mounting bracket fixing screw	_	1	
Board fixing screw	_	1	_
This manual	_	1	_

2. SYSTEM CONFIGURATION

2.1 System Configuration

This section describes the system configuration and restrictions when the QA6ADP is used.

- (1) The QA6ADP+A5□B/A6□B is only applicable for the High Performance model QCPU (Q02CPU, Q02HCPU, Q06HCPU, Q12HCPU, and Q25HCPU).
- (2) Mount the Q5□B/Q6□B, QA6□B, and QA6ADP+A5□B/A6□B in order from the nearest position of the main base unit. The QA6ADP cannot be used in combination with the QA1S6□B.
- (3) The number of slots of the QA6ADP+A5□B/A6□B is always displayed in 8 slots, regardless of the number of slots of the extension base unit to be used in combination with the QA6ADP.
 Assign the I/O number of a module, putting each series in block and in order of "Q series→A series" or "A series→Q series".
 Failure to do so may cause an error (SP.UNITLAY ERR).
 In addition, do not duplicate the I/O number.
- (4) For the extension stage number setting of the extension base unit, set stage number (the first to seventh stages) to extension stages from the one nearest to the main base unit.
- (5) An extension cable connectable to the QA6ADP is the Q series extension cable only.
- (6) Set the same stage number to both the stage number setting connector of the extension base unit and that of the QA6ADP.
- (7) The QA6ADP+A5□B/A6□B cannot be used as the MELSECNET/H remote I/O station.
- (8) The bus connection with GOT is not available for the QA6ADP+A5□B/ A6□B.

[Extension stage number setting] Stage number setting connector High Performance model QCPU ---- Q38B Main base unit 9 10 11 12 13 14 15 Q series compatible extension base unit · Q68B (The Q5□B/Q6□B is connected to the main base unit or the Q5□B/Q6□B.) 16 17 18 19 20 21 A series compatible extension base unit °° 2 (The QA6□B is connected to the main --- QA68B base unit, the end of the Q5□B/Q6□B, or the QA6□B.) 25 26 27 28 29 30 31 A series compatible extension base unit (The QA6ADP+A5□B/A6□B is connected Power --- A68B to the main base unit, the end of the Q5□B/Q6□B/QA6□B, or the QA6ADP +A5□B/A6□B.)

QA6ADP

2.2 Configuration Device List

(1) Extension base unit mountable on the QA6ADP

The following shows extension base units that can be mounted on the QA6ADP.

Product name		Model			
Extension base unit	A52B,	A55B,	A58B,		
(Power supply module not	A55B-UL,	A58B-UL			
mounting type)					
Extension base unit	A62B,	A65B,	A68B,		
(Power supply module	A65B-UL,	A68B-UL			
mounting type)					

(2) Module mountable on the extension base unit where the QA6ADP is mounted

The following shows modules that can be mounted on the extension base unit where the QA6ADP is mounted.

Product name		Model		Remarks
Power supply module	A61P,	A61PN,	A62P,	
	A63P,	A61PEU,	A62PEU	
Power supply module	A68P			
(I/O slot mounting type)				
AC input module	AX10,	AX11,	AX11EU,	*6
	AX20,	AX21,	AX21EU	O
AC/DC input module	AX31,	AX31-S1		
DC input module		AX41,	AX41-S1,	
	AX42,	AX42-S1,	AX50-S1,	
	AX60-S1,	AX70,	AX71,	
	AX80,	AX80E,	AX81,	
	•	AX81-S2,	AX81-S3,	
	AX81B,			
Contact output module		AY10A,		
	-	AY11E,	·	
	AY11EEU,	•	AY13E,	
	AY13EU,			
Triac output module	AY22,			
Transistor output module	AY40,	AY40A,	AY41,	
	AY42,	•	•	
	AY42-S3,	AY42-S4,	AY50,	
	1	AY51-S1,	•	
	AY60S,		•	
	AY71,	•	AY80,	
	AY81,	AY82EP		
Dynamic I/O module	A42XY			
Combined I/O module	AH42			

Product name		Model		Remarks
High-speed counter module	AD61,	AD61S1		*1
A/D converter module	A68AD, A616AD	A68AD-S2,	A68ADN,	
D/A converter module	•	A62DA-S1, A616DAV,	•	
Temperature-digital converter module	•	A68RD4N, A60MXRN,	•	
Interrupt module	AI61,	AI61-S1		*2
Positioning module	AD70,	AD72		
	,	AD75M2, AD75P2-S3,	•	*1
A-A1S module conversion adapter	A1ADP-XY,	A1ADP-SP		*3 *4
MELSECNET/MINI-S3 master module	AJ71PT32-S AJ71T32-S3	,		*1
Intelligent communication module	AD51, AD51H-S3	AD51-S3,	AD51H,	*2
PC fault detection module	AS91			
MELSEC-I/OLINK module	AJ51T64			
B/NET interface module	AJ71B62-S3			
Blank cover	AG60			
Dummy module	AG62			

^{*1:} The dedicated instructions used in the QnA/A series program cannot be used in the QCPU.

Replace the dedicated instructions with the FROM/TO instructions.

*2: There is restriction on the number of mountable modules.

Product name		Model	No. of mountable modules
Intelligent communication module	AD51, AD51H,	AD51-S3, AD51H-S3	6
Interrupt module	Al61,	Al61-S1	1 *5

^{*3:} Using the A-A1S module conversion adapter enables to use modules equivalent to the AnS module by the module shown in the table. For the mountable modules, refer to A-A1S Module Conversion Adapter User's Manual (IB-0800352).

- *4: Only the multidrop link function can be used with the A1SJ71UC24-R4+A1ADP.
- *5: The interrupt module can use only one out of the Ql60 (when mounted on the Q3□B, Q5□B or Q6□B), Al61, and Al61-S1.
- *6: The normal operation of A series AC input module can be guaranteed only when the base unit on which the A series power supply module is mounted exists in the system.

 Make sure that the following condition is satisfied when A series AC input module is used.
 - A control of the format of the control of the contr
 - A series AC input module is mounted on the QA6□B or QA6ADP+A6□B.
 - A series AC input module is mounted on the QA6ADP+A5□B. However, A series compatible extension base unit, QA6□B or QA6ADP+A6□B, exists in the system.

3. SPECIFICATIONS

3.1 General Specifications

This section describes general specifications of the QA6ADP.

Item			Specification	ons			
Operating ambient temperature	0 to 55 °C						
Storage ambient temperature			-20 to 75	°C			
Operating ambient humidity		10 to	90 % RH, No-	condensir	ng		
Storage ambient humidity		10 to	90 % RH, No-	condensir	ng		
			Frequency	Accelera -tion	Amplitude	Sweep count	
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Conforming	Under	10 to 57 Hz		0.075 mm	10 times	
Vibration resistance	to JIS B 3502,	intermittent vibration	57 to 150 Hz	9.8 m/s ²		each in X, Y, Z	
	IEC 61131-2	Under continuous	10 to 57 Hz		00.35 mm (0.001 in.)	directions (for 80	
		vibration	57 to 150 Hz	4.9 m/s ²		`min).	
Shock resistance	(Conforming to JIS B 3502, IEC 61131-2 (147 m/s², 3 times in each of 3 directions XYZ)					
Operation			No corrosive g	125565			
ambiance		'	110 001100110 g				
Operating elevation *3		2000 m (6562 ft.) or less					
Installation location	Control panel						
Overvoltage category *1	II max.						
Pollution degree *2	2 max.						
Equipment category			Class I				

- *1: This indicates the section of the power supply to which the equipment is assumed to be connected between 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.
 - The surge voltage withstand level for up to the rated voltage of 300 V is 2500 V.
- *2: 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 must be expected occasionally.
- *3: Do not use or store the PLC in the environment when the pressure is higher than the atmospheric pressure at sea level.
 - Otherwise, malfunction may result.
 - To use the PLC in high-pressure environment, please contact your local Mitsubishi Repress entative.

3.2 Performance Specifications

This section describes performance specifications of the QA6ADP.

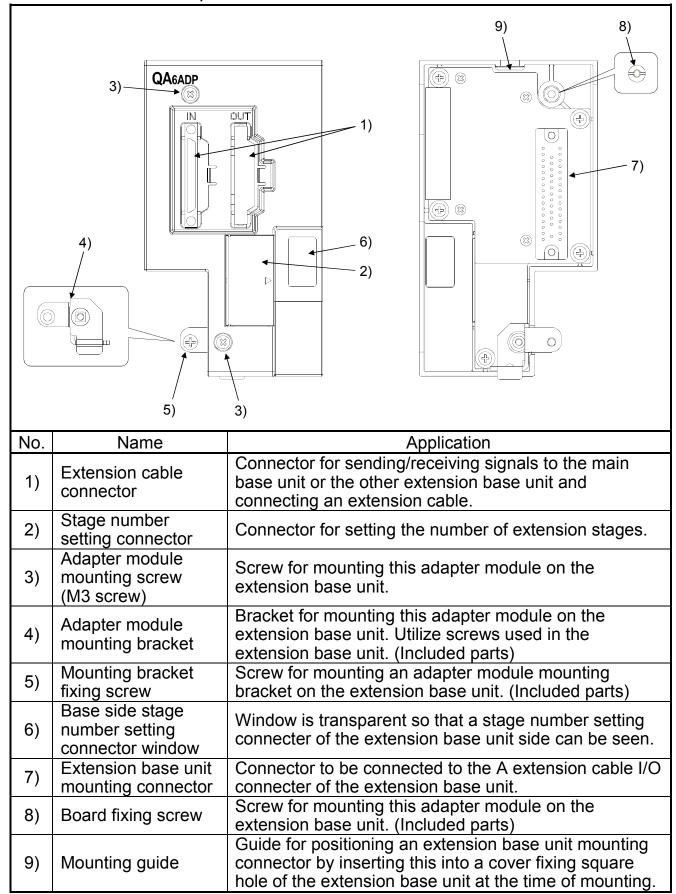
Item	Specifications
5VDC internal current consumption	110 mA
External dimensions *1	130 mm (5.11 inch) (H) × 73.5 mm (2.89 inch) (W) × 74 (2.91 inch) mm (D)
Weight	0.2 kg
Adapter mounting screw (M3) torque	0.36 to 0.48 N•m
Board fixing screw torque	0.61 to 0.82 N•m

^{*1:} The external dimensions show values in a status where the QA6ADP is mounted on the extension base unit.

4. PART NAMES AND SETTING

4.1 Part Names

This section describes part names of the QA6ADP.



4.2 Extension Stage Number Setting

Set the number of extension stages to both the QA6ADP and the extension base unit.

The same stage number should be set to both the stage number setting connector of the extension base unit and that of the QA6ADP.

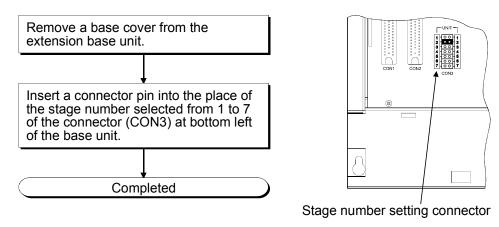
POINT

Set any number of 1 to 7 which matches to the number of extension stages for the stage number setting connector setting. If the stage number setting of the QA6ADP and that of the extension base unit is different, the two or more settings are made to one stage, the same stage number is duplicated, or no setting is made to the number of stages, incorrect input or incorrect output will occur.

(1) Extension stage number setting of the QA6ADP The following describes how to set the number of extension stages of the QA6ADP.

	Extension stage number setting						
	1 st stage	2 nd stage	3 rd stage	4 th stage	5 th stage	6 th stage	7 th stage
Stage number setting connector setting	0 0 1 2 3 4 5 0 0 6 7 PINI	○ ○ 1 2 2 3 4 4 5 0 0 6 7 PIN1	○ ○ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	○ ○ 1 ○ ○ ○ 2 ○ ○ ○ 3 ○ ○ ○ 4 ○ ○ ○ 6 ○ ○ ○ 7	0 0 1 2 2 3 4 5 6 7 PINI

(2) Extension stage number setting of the extension base unit



	Extension stage number setting						
	1 st stage	2 nd stage	3 rd stage	4 th stage	5 th stage	6 th stage	7 th stage
Stage number setting connector setting	UNIT 1 2 0 0 1 2 3 0 0 3 4 0 0 4 5 0 6 6 7 0 0 7 CON3	UNIT 1 2 2 2 2 2 3 4 0 0 4 5 0 0 6 6 7 0 0 7 CON3	UNIT 1 00 1 2 00 3 4 00 4 5 00 6 7 00 7 CON3	UNIT 1 00 1 2 00 3 4 0 4 5 00 6 7 00 7 CON3	UNIT 1 2 0 0 1 2 2 0 0 3 3 4 0 0 4 5 6 0 6 7 0 0 7 CON3	UNIT 1 2 0 1 2 2 0 0 3 3 4 0 0 4 5 6 6 7 0 0 7 CON3	UNIT 1 2 0 1 2 2 3 0 0 3 3 4 0 0 4 5 6 0 0 6 7 7 CON3

5. LOADING AND INSTALLATION

5.1 Mounting/Removal of QA6ADP

(1) Mounting of the QA6ADP

The following shows procedures for mounting the QA6ADP on the extension base unit.

Disconnect the A series extension cable from the extension base unit.

Remove a base cover from the extension base unit.

Set the stage number setting connector of the extension base unit.

Set the stage number setting connector of the QA6ADP. (The setting should be same as that of the stage number setting connector of the extension base unit.)

In case of the A5□B, disconnect a lead of the FG terminal (right side).

Among screws fixing a board of the extension base unit, remove two at the left. (Screws A and B shown in the figure.)

Utilize a mounting bracket fixing screw to mount the adapter module mounting bracket of the QA6ADP into a screw hole (B) at the bottom left of the board.

Mount a board fixing screw of the QA6ADP to a screw hole (A) at top left of the board.

Connect an extension base unit mounting connector of the QA6ADP to the IN side of an extension connector of the extension base unit.

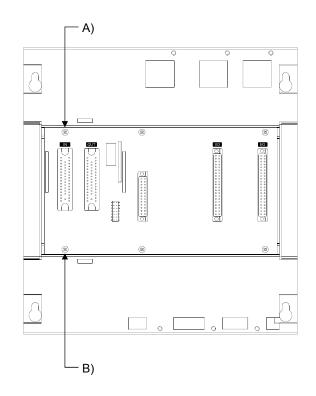
Tighten the adapter module mounting screws of the QA6ADP at two parts (top and bottom), placing a mounting guide.

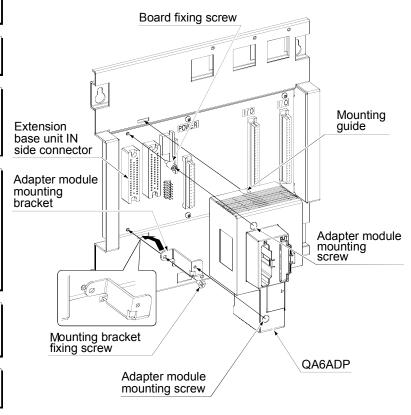
- Mount an upper mounting screw to a board fixing screw (at top left) of the extension base unit.
- Mount a lower mounting screw to the adapter module mounting bracket.

In case of the A5□B, connect the disconnected lead of the FG terminal (right side).

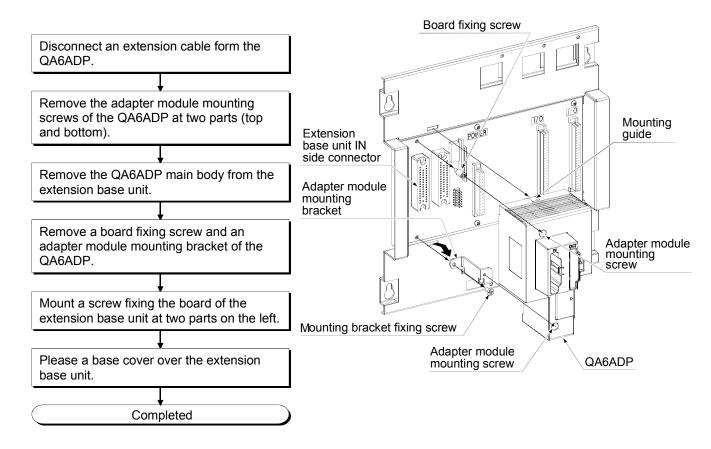
Connect the Q series extension cable to the QA6ADP and the upper/lower base unit.

Completed



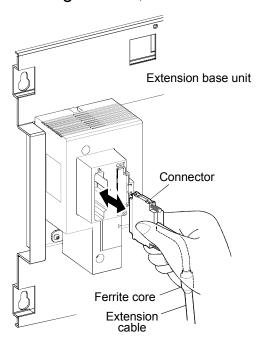


(2) Removal of the QA6ADP The following shows procedures for removing the QA6ADP from the extension base unit.



5.2 Connection/Disconnection of Extension Cable

- (1) Precautions for handling an extension cable
 - Do not step on an extension cable.
 - When laying an extension cable, the minimum bend radius of the cable should be 55 mm (2.17 inch) or more. If it is less than 55 mm (2.17 inch), malfunction may occur due to characteristic deterioration, wire break etc.
 - When connecting or disconnecting an extension cable, do not hold ferrite cores mounted at both ends of the cable. In case of connecting/disconnecting a cable, hold the connector part of the cable.



Holding a ferrite core may cause cable break inside the connector. Also, if the ferrite core is shifted, the characteristic will change. When handling the cable, take care not to change position of the ferrite core.

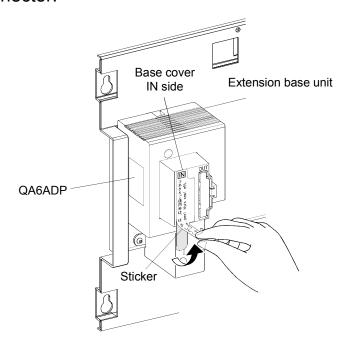
(2) Connection of extension cable The following shows extension cables connectable to the QA6ADP.

Model	Remarks
QC05B	0.45m cable
QC06B	0.6m cable
QC12B	1.2m cable
QC30B	3m cable
QC50B	5m cable
QC100B	10m cable

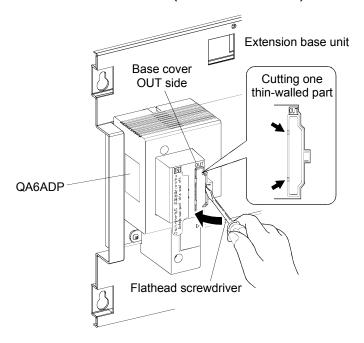
POINT

When connecting the base unit of the previous stage and the QA6ADP with an extension cable, be sure to connect the OUT side connector of the base unit of the previous stage and the IN side connector of the QA6ADP. If an extension cable is connected in the wrong way (IN \rightarrow IN, OUT \rightarrow OUT or IN \rightarrow OUT), the system will not operate normally.

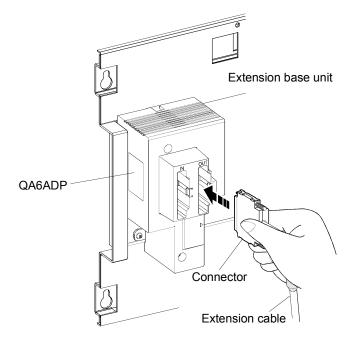
 To connect an extension cable to the QA6ADP, remove a sticker on the IN side connector.



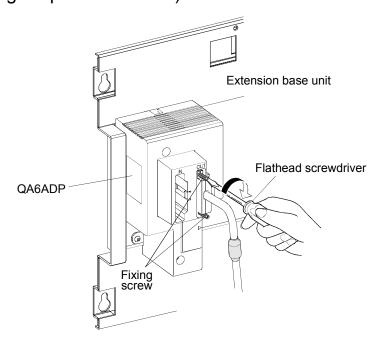
• To connect an extension cable to the OUT side connector of the QA6ADP, remove the portion (lid) under the characters "OUT" by tools such as a flathead screwdriver (5.5×75, 6×100).



 Hold the connector part of an extension cable when connecting the extension cable to the QA6ADP.



 Make sure to tighten fixing screws of the extension cable connector after connecting the extension cable.
 (Tightening torque: 0.20 N m)



(3) Disconnection of extension cable When disconnecting an extension cable, hold and pull the connector part of the extension cable after making sure that fixing screws have been completely removed.

6. PRECAUTION FOR USING QA6ADP

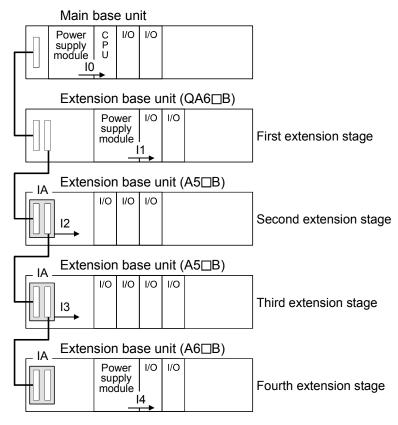
6.1 Current Consumption of QA6ADP

Since 5VDC is supplied to the QA6ADP from the power supply module of the main base unit, take the current consumption of the QA6ADP into consideration when selecting the power supply module for the main base unit.

n: Quantity of QA6ADP in system*1

*1 The quantity of the QA6ADP includes the QA6ADP when the A6 B is used.

The following shows the concept of the current consumption of the power supply module mounted on the main base unit.



Symbol	Description
I	Rated current of power supply module on the main base unit
10	Current consumption of CPU and I/O modules mounted on the main base unit
I1 to I4	Current consumption of I/O mounted on the extension base unit in first to fourth stages
IA	Current consumption of the QA6ADP

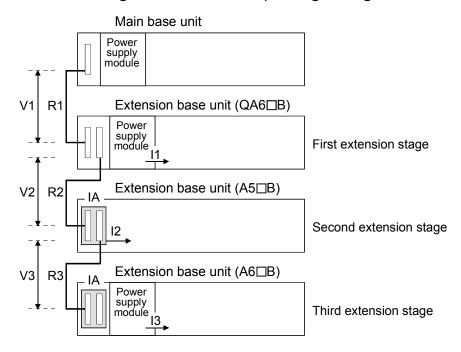
In case of the above system, use the QA6ADP when the current consumption of the power supply module mounted on the main base unit meets the following formula.

[Calculating formula]
$$I > I0 + I2 + I3 + IA \times 3$$

6.2 Voltage Drop of Extension Cable

Since 5VDC is supplied to the QA6ADP from the power supply module mounted on the main base unit, the voltage drop will be caused in the extension cable. If the specified voltage (4.75VDC or more) is not supplied to the IN side connector of the QA6ADP+A5□B/A6□B, wrong input/output may occur. When using the QA6ADP, check that the IN side connector of the QA6ADP+A5□B/A6□B has 4.75VDC or more.

The following shows an example regarding how to calculate the voltage drop.



-			
Model	Conductor		
Model	resistance value		
QC05B	0.044Ω		
QC06B	0.051Ω		
QC12B	0.082Ω		
QC30B	0.172Ω		
QC50B	0.273Ω		
QC100B	0.530Ω		

Symbol	Description		
V	Sum of voltage drop		
V1	Voltage drop due to an extension cable between the main base unit and the QA6□B		
Vn	Voltage drop due to an extension cable between the extension base unit (n-1th extension stage) and the extension base unit (nth extension stage)		
R1	Resistance value of a cable between the main base unit and the extension base unit QA6□B		
Rn	Resistance value of an extension cable between the extension base unit (n-1th extension stage) and the extension base unit (nth extension stage)		
I1 to I3	5VDC current consumption in the first to third stages *1		
IA	Current consumption of the QA6ADP		

^{*1:} Since the current consumptions I1 to I3 vary depending on modules to be mounted, refer to the manual for the module to be mounted.

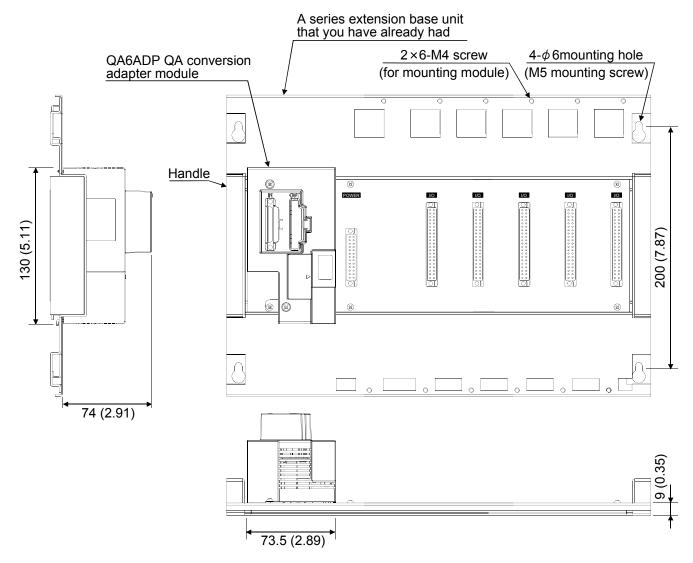
[Calculating formula]

$$V = V1 + V2 + V3 = R1 \times (I2 + IA \times 2) + R2 \times (I2 + IA \times 2) + R3 \times IA$$

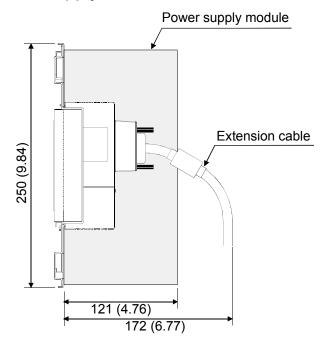
The minimum value of the 5VDC output voltage of the power supply module mounted on the main base unit is set to 4.90VDC. Therefore, the voltage of the IN side connector of the QA6ADP+A5□B/A6□B in the final stage is 4.75VDC or more only when the sum (V) of voltage drop is 0.15V or less.

7. COMPATIBLE MODELS LIST

This chapter describes external dimensions of the QA6ADP.



Power supply module, Extension cable



Unit: mm (inch)

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	n Sales office/Tel	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	Hong Kong	Mitsubishi Electric Automation (Hong Kong) Ltd. 10th Floor, Manulife Tower, 169 Electric Road, North Point, Hong Kong
Brazil	MELCO-TEC Rep. Com.e Assessoria Tecnica Ltda. Rua Correia Dias, 184, Edificio Paraiso Trade Center-8 andar Paraiso, Sao Paulo, SP Brazil	China	Tel: +852-2887-8870 Mitsubishi Electric Automation (Shanghai) Ltd. 4/F Zhi Fu Plazz, No.80 Xin Chang Road, Shanghai 200003, China Tel: +86-21-6120-0808
Germany	Tel: +55-11-5908-8331 Mitsubishi Electric Europe B.V. German Branch Gothaer Strasse 8 D-40880 Ratingen,	Taiwan	Setsuyo Enterprise Co., Ltd. 6F No.105 Wu-Kung 3rd.Rd, Wu-Ku Hsiang, Taipei Hsine, Taiwan Tel: +886-2-2299-2499
U.K	GERMANY Tel : +49-2102-486-0 Mitsubishi Electric Europe B.V. UK	Korea	Mitsubishi Electric Automation Korea Co., Ltd. 1480-6, Gayang-dong, Gangseo-ku
	Branch Travellers Lane, Hatfield, Hertfordshire., AL10 8XB, U.K. Tel: +44-1707-276100	Singapore	Seoul 157-200, Korea Tel: +82-2-3660-9552 Mitsubishi Electric Asia Pte, Ltd. 307 Alexandra Road #05-01/02, Mitsubishi Electric Building,
Italy	Mitsubishi Electric Europe B.V. Italian Branch Centro Dir. Colleoni, Pal. Perseo-Ingr.2	Thailand	Singapore 159943 Tel: +65-6470-2460 Mitsubishi Electric Automation (Thailand)
	Via Paracelso 12, I-20041 Agrate Brianza., Milano, Italy Tel: +39-039-60531	mailanu	Co., Ltd. Bang-Chan Industrial Estate No.111 Moo 4, Serithai Rd, T.Kannayao,
Spain	Mitsubishi Electric Europe B.V. Spanish Branch		A.Kannayao, Bangkok 10230 Thailand Tel: +66-2-517-1326
France	Carretera de Rubi 76-80, E-08190 Sant Cugat del Valles, Barcelona, Spain Tel : +34-93-565-3131 Mitsubishi Electric Europe B.V. French	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
	Branch 25, Boulevard des Bouvets, F-92741 Nanterre Cedex, France TEL: +33-1-5568-5568	India	Tel: +62-21-6630833 Messung Systems Pvt, Ltd. Electronic Sadan NO:III Unit No15, M.I.D.C Bhosari, Pune-411026, India
South Africa	Circuit Breaker Industries Ltd. Private Bag 2016, ZA-1600 Isando, South Africa Tel: +27-11-928-2000	Australia	Tel: +91-20-2712-3130 Mitsubishi Electric Australia Pty. Ltd. 348 Victoria Road, Rydalmere, N.S.W 2116, Australia Tel: +61-2-9684-7777

★MITSUBISHI ELECTRIC CORPORATION

HEAD OFFICE : TOKYO BUILDING, 2-7-3 MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN NAGOYA WORKS : 1-14, YADA-MINAMI 5-CHOME, HIGASHI-KU, NAGOYA, JAPAN

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