

Graphic Panel

GP-MELSEC-Q (RS422)

Technical Support Manual

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Thank you very much for selecting Autonics products. For your safety, please read the following before using.

Preface

Thank you very much for selecting Autonics products.

Please familiarize yourself with the information contained in the **Safety Precautions** section before using this product.

This user manual contains information about the product and its proper use, and should be kept in a place where it will be easy to access.

Technical Support Manual Guide

- Please familiarize yourself with the information in this manual before using the product.
- This manual provides detailed information on the product's features. It does not offer any guarantee concerning matters beyond the scope of this manual.
- This manual may not be edited or reproduced in either part or whole without permission.
- This manual is not provided as part of the product package. Please visit our home-page (www.autonics.com) to download a copy.
- The manual's content may vary depending on changes to the product's software and other unforeseen developments within Autonics, and is subject to change without prior notice. Upgrade notice is provided through our homepage.
- We contrived to describe this manual more easily and correctly. However, if there are any corrections or questions, please notify us these on our homepage.

Technical Support Manual Symbols

Symbol	Description
Note	Supplementary information for a particular feature.
Å Warning	Failure to follow instructions can result in serious injury or death.
A Caution	Failure to follow instructions can lead to a minor injury or product damage.
Ex.	An example of the concerned feature's use.
×1	Annotation mark.

Safety Precautions

- Following these safety precautions will ensure the safe and proper use of the product and help prevent accidents, as well as minimizing possible hazards.
- Safety precautions are categorized as Warnings and Cautions, as defined below:

🔥 Warning	Warning	Failure to follow the instructions may lead to a serious injury or accident.
A Caution	Caution	Failure to follow the instructions may lead to a minor injury or accident.



 Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss. (e.g. nuclear power control, medical equipment, ships, vehicles, railways, aircraft, combustion apparatus, safety equipment, crime/disaster prevention devices, etc.)

Failure to follow this instruction may result in personal injury, fire, or economic loss.

In case using the Graphic Panel touch switch for controlling, do not use the switch as an emergency switches or those related to safety that may cause physical injury or property damage in the event of a malfunction.

Failure to follow this instruction may result in personal injury, fire, or economic loss.

 In case controlling other devices through Graphic Panel communication, and there is a possibility of malfunction due to communication error, an alternative circuit must be constructed.

Failure to follow this instruction may result in personal injury, fire, or economic loss.

- Do not use the product in an area or an environment not specified in the manual.
 Failure to follow this instruction may result in personal injury, fire, or economic loss.
- Do not connect, repair, or inspect the unit while connected to a power source.
 Failure to follow this instruction may result in electric shock or fire.
- Do not disassemble or modify the unit. Please contact us if necessary.
 Failure to follow this instruction may result in electric shock or fire.
- Use the insulated trans to supply the rectified power.
 Failure to follow this instruction may result in electric shock or fire.
- Do not use over the rated power.
 Failure to follow this instruction may result in electric shock or fire.
- This product uses lithium battery, do not disassemble or burn up.
 Failure to follow this instruction may result in explosion or fire.
- Wire properly after checking power terminal polarity.
 Failure to follow this instruction may result in fire or product malfunction

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- Please read all notes and cautions related to installation and wiring in the manual.
 Failure to follow this instruction may result in electric shock or product malfunction.
- Make sure the ground wire of Graphic Panel is wired separately from the ground wires of other devices. Ground resistance must be less than 100Ω, and a lead wire of which sectional area is over 1.25mm² should be used.
 Failure to follow this instruction may result in electric shock or product malfunction.
- When connecting Graphic Panel ports and constructing input/output, check the pin number and terminal block before connecting.

Failure to follow this instruction may result in fire or product malfunction.

- Tighten bolt on terminal block with specified tightening torque.
 Failure to follow this instruction may result in short circuit, fire or product malfunction.
- Do not press the surface of the touch panel with sharp or hard objects.
 Failure to follow this instruction may result in touch panel damage.
- Keep Graphic Panel at the specified temperature.
 Failure to follow this instruction may result in LCD panel damage due to over the rated temperature range.
- Do not inflow dust or wire dregs into the unit.
 Failure to follow this instruction may result in fire or product malfunction.
- Do not use in an area with excessive humidity or temperature.
 Failure to follow this instruction may result in product damage or shortening the life cycle of the unit.
- Do not close ventilating opening of this product.
 Failure to follow this instruction may result in product damage due to increase inner heat.
- Keep the product out of direct sunlight or excessive dust.
 Failure to follow this instruction may result in product damage or shortening the life cycle of the unit.
- Do not use or store in a place with shock or vibration.
 Failure to follow this instruction may result in product damage or shortening the life cycle of the unit.
- When liquid crystal from the broken LCD is smeared with skin, wash it for 15 minutes. If it is gotten in the eye, wash it for 15 minutes and contact with the medical specialist for more information.
- Do not use water or oil-based detergent when cleaning the unit. Use dry cloth to clean the unit.

Failure to follow this instruction may result in electric shock or fire.

- Please separate as an industrial waste when disuse this unit.
- To change the battery, contact the store or an authorized technician.
- The manufacturer is not liable for damages that occur due to causes for which the manufacturer is not responsible, damages that occur due to an extraordinary situation, secondary damages, compensation for accidents, damages occurring on other products, compensation for other processes, and damage and loss of opportunity to the user due a malfunction of the product, regardless of the predictability of the accident.

 Note that this device is KCC certified for commercial use. Make proper applications for the product.

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1 System

1.1 Version

Software	Version	Note
GP Editor	V4.01 (build 023)	_
GP-S070 Firmware	V1.20	Release : 2016.01.26
Ms Windows	Windows 7	_
GX works2	V1.77F	_

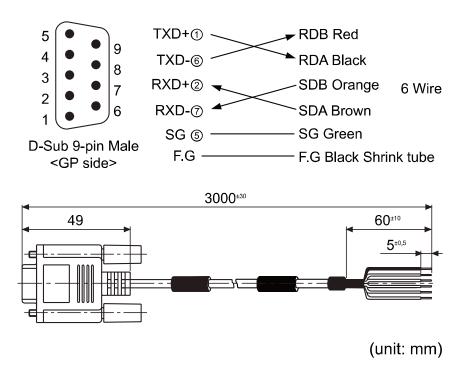
1.2 Connections



GP-S070-T9D6

CPU : Q02HCPU, Communication card: QJ71C24N

1.3 **Communication cable connection and dimensions** (communication cable model: C3M5P04-D9M0-W6*0)



2 **GP-S070 Communication Setting**

2.1 **GP Editor Setting**

1st Select [Project] - [New] on menu.

Project Se	elect	×
	New	
	Open	
🔽 Displa	ay this window when program is start	ed.

2nd At GP/PLC Type dialog box, set GP/LP Type and CH1/2 Group/Type.

Item	Setting
GP / LP Type	GP-S070 T9D6
CH1 Group / Type	MITSUBISHI Q SERIES / QhighP_EXT_MC
CH2 Group / Type	No Use

GP/LP Type :	GP-S070 T9D6 (800 X 480)	•
CH1 Group :	MITSUBISHI Q SERIES	•
CH1 Type :	QHighP_EXT_MC	MASTER
CH2 CH2 Group :	NoUse	
CH2 Type :	-	

3rd At Project Auxiliary Property dialog box, click $\,{}^\prime\text{OK'}$ and it changes screen to draw.

Project Auxiliary Property	×
Basic Key Window Language Serial Port Setup Menu Key	
Configure Key Window / Cursor Display Operate for screen switching :	
Display Cursor Only	
Call key window when detecting touch	
☐ Application of serial port, setup, menu key, configuration Image Color 256 color ▼	
Form	
Horizontal	
OK Cancel	

2.2 GP-S070 Setting

1st Touch top-left of the GP.



2nd Touch 'Environment'.

	mont.			
SYSTEM SET	TTING		øÞ	17/01/12 11:46 AM
Monitoring	Environment	Data	Functionality	Diagnostics

3rd Touch 'Serial Communication'.

SYSTEM SETTING ENVIRONMENT	17/01/12 11:47 AM
Serial Communication	Language
Local Ethernet	Screen Bright
Assistance Setting	Clock

4th At serial communication, set as below.

	PROTOCOL	PORT	
CH1	MITSUBISHI Q SERIES / QHighP_EXT_MC	RS-422	SET
CH2	No Use	RS-232C	SET

(FOR	SYSTEM SETT	ING\ ENVIRONMENT\ SERIAL	્ર) 17/01/12 11:53 AM	
		PROTOCOL.	PORT		
	CH1		RS-422	SET	
	CH2	No Use	RS-232C	SET	
	GP STATION :	0			

5th Touch right 'SET' and set as below.

ltem	Setting	Note
Baud rate	115200	User setting
Flow control	XON/XOFF	Don't care
Parity bit	ODD	Fixed
Data bit	8-bit	User setting
Stop bit	1-bit	User setting

SYSTEM SETTING	, ENVIRONMENT\ SERIAL\ SERIAL S	PECIFICATION	Ø 17/03/08 3:39 PM
	CH1		
	BAUD RATE	115200	
	DATA LENGTH	8	
	PARITY	ODD	
	STOP	1	
	FLOW CONTROL	XON/XOFF	

2.3 GX Works2 Setting

1st Run GX Works2 and select [Project] – [New] on menu. Select project type, PLC series, type, and language.

1 2 21 7	·) · · ·	0	0
New Project			×
Project Type:			ОК
Simple Project		•	Cancel
	Use Label		
PLC Series:			
QCPU (Q mode)		-	
PLC Type:			
Q02/Q02H		-	
Language:			
Ladder		-	

2nd Click 'Intelligent Function Module' and 'New Module'.

62	🖎 🗞 🖻 🦺+
	Parameter Intelligent Function Module
	New Module
	Intelligent Function Module Parameter List,
	Read GX Configurator-QP Data
	Property

3rd Set items as below.

ltem	Setting	Note
Module Type	Serial Communication / Modem Interface Module	-
Module Name	QJ71C24N	-
Mounted Slot No.	0	Installed slot number
		OK Cancel

4th Double-click 'Switch Setting' and set items as below.



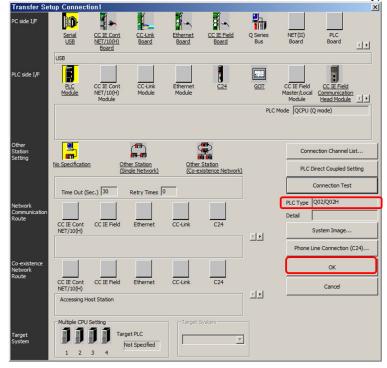
	Item	CH1	CH2		
	Operation setting	Independent	Independent		
	Data Bit	7	8		
	Parity Bit	None	Exist		
Transmission	Even/odd parity	Odd	Odd		
Setting	Stop bit	1	1		
	Sum check code	None	None		
	Online Change	Disable	Enable		
	Setting modifications	Disable	Enable		
Communic	ation rate setting	Auto Setting	115200bps		
Communicat	ion protocol setting	MELSOFT Connection	MC protocol (Format 1)		
Station numb	per setting (0 to 31)	1			
ne following setting is available for product information 10122000000000-B or later. ommunication protocol setting Predefined protocol This dialog setting is linked to the Switch Setting of the PLC parameter. Default value will be shown in the dialog if the Switch Setting of the PLC parameter contains an out-of-range value.					

Item	Setting	Note
Operation setting	Independent	Fixed
Data Bit	8	Fixed
Parity Bit	Exist	Fixed
Even/odd parity	Odd	Fixed
Stop bit	1	Fixed
Sum Check code	None	Fixed
Online Change	Enable	Don't care
Setting modifications	Enable	Don't care
Communication rate setting	1152000 bps	User setting
Communication protocol setting	MC protocol (Format1)	Fixed

5th Select 'Connection Destination' at Navigation tab and double-click 'Connection1'.

Navigation	×
Connection Destination	
📑 🖻 🦉 🗿	
Current Connection	
Connection1	
All Connections	
Connection1	
📲 Project	
🕎 User Library	
Gamection Destination	
	» *

6th Select connection method. Click 'Connection Test' and PLC Type displays Q02/Q02H.

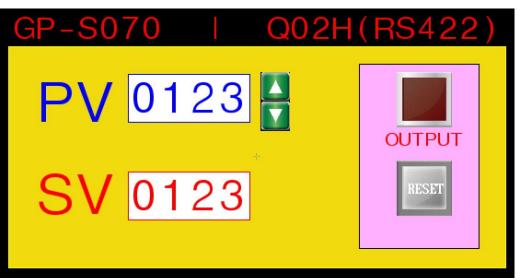


7th Select [Online] – [Write to PLC]. Click 'Select All' and 'Execute'.

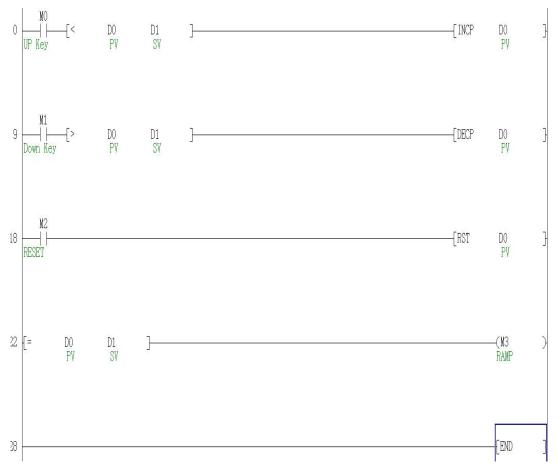
ne Data Operation							
nnection Channel List							
rial Port PLC Module Connection(JSB)						System Image
PLC Module	© <u>₩</u> rite	C <u>v</u> ecution Targe	(erify et Data(N	0 D			
tle 🛛	Parameter +Program	Select		el All Sel	ections		
Module Name/Da	ta Name	litte	Target	Detail	Last Change	Target Mem	ory Size
표 미쓰비시pic							
PLC Data						Program Memor	ry/D
			✓	Detail			
MAIN			✓		2016/06/22 08:03	2:02	2228 Bytes
- 🖃 🛃 Parameter			✓				
PLC/Network/Remote	Password/Switch Setting		•		2016/06/22 08:03	2:02	630 Bytes
Global Device Comment			✓				
COMMENT				Detail	2016/06/22 08:0	2:02	
- C 🖉 Device Memory			V	Detail			
📖 👼 MAIN			✓		2016/06/22 08:03	2:02	
Necessary Setting(No Set Vriting Size 3,5848ytes	ing / Already Set)	Set if it is ne	eeded(No S		Already Set) Free Volume		es <u>Refresh</u>
ated <u>Functions <<</u>			1				Execute Close
Remote Set Clock	PLC User Data Wri	te Title	Format PL Memory		ear PLC Memory	Arrange PLC Memory	

3 Examples

3.1 GP-S070 Drawing



3.2 PLC Program



GP-SC)70		PLC Device		
ltem	Tag Property	Usage	Bit	Word	
1	Numeral display	Counter present value	_	D0	
2	Numeral input	Counter target value	_	D1	
3	Touch key (momentary)	Input (Up)	M0	_	
4	Touch key (momentary)	Input (Down)	M1	_	
5	Lamp	Counter output	М3	—	
6	Touch key (momentary)	Reset	M2	_	

3.3 GP-S070 – PLC device connection

3.4 **GP Editor Drawing**

3.4.1 Numeral display

Select [Draw]–[Numeral Display] at menu. Click 'Device' to set the device as below.

Items	Setting
Channel	[CH1]QHighP_EXT_MC
Station	1
Device	D0

Numeral Display Property Basic Form Operation		<u>1</u>
Shape	Frame : Plate : Color :	(255,255,255) ¥ (0,0,0) ¥ (255,255,255) ¥
	D0 Number with sign	€ 16bit▼ C 32bit

3.4.2 Numeral input

Select [Draw]–[Numeral Input] at menu. Click 'Device' to set the device as below.

Items	Setting
Channel	[CH1]QHighP_EXT_MC
Station	1
Device	D1
	rigger Other
Shape	Frame : (255,255,265) ▼ Plate : (0 0.0) ▼ Color : (255,255,255) ▼
Device	1 #001 D1 © 16bit Number with sign 💽 O 32bit
Project,	OK Cancel Apply

3.4.3 Touch key (Up key)

Select [Draw]–[Touch Key]–[Action]–[Bit]. Click 'Device' to set the device as below.

Items	Setting
Channel	[CH1]QHighP_EXT_MC
Station	1
Device	MO
Action	Momentary

		1
Basic Form Action Option/Trigger		
Action Device/Screen Switching		
1 Bit Momentary [CH1]M0	Bit	
	Word	
	Screen Switching	
	Edit	
	Delete	
□ Key Code : 0020	Browse	
☐ Key Code : 0020	Browse	
☐ Key Code : 0020 👘	Browse	
☐ Key Code : 0020	Browse	
☐ Key Code : 0020 👘	Browse	
► Key Code : 0020 +	Browse	

3.4.4 Touch key (Down key)

Select [Draw]–[Touch Key]–[Action]–[Bit]. Click 'Device' to set the device as below.

Items	Setting
Channel	[CH1]QHighP_EXT_MC
Station	1
Device	M1
Action	Momentary

asic Form Action Option/Trigger		
Action Device/Screen Switching		
1 Bit Momentary [CH1]M1	Bit	
	Word	
	Screen Switching	
	Edit	
	Delete	
☐ Key Code : 0020 =	Browse	

3.4.5 Lamp

Select [Draw]-[Lamp]. Click 'Device' to set the device as below.

ltem	Setting
Channel	[CH1]QHighP_EXT_MC
Station	1
Device	М3

Shape	
Shape	
Shape	
Basic Figure C Part C Graphic Library	
OK Cancel	Apply

3.4.6 Touch key (Reset key)

[Select [Draw]–[Touch Key]–[Action]–[Bit]. Click 'Device' to set the device as below.

Item	Setting
Channel	[CH1]QHighP_EXT_MC
Station	1
Device	M2
Action	Momentary

Deale France Action Order /Titered		
Basic Form Action Option/Trigger		
Action Device/Screen Switching		
1 Bit Momentary [CH1]M2		
	Bit	
	Word	
	Screen Switching	
	Edit	
	Delete	
□ Key Code : 0020 -	Browse	
☐ Key Code : 0020	Browse	
□ Key Code : 0020	Browse	

4 Appendix

4.1 Serial setting

Serial port setting are available at GP-S070 and GP Editor.

GP Editor is available only for CH1 serial port setting.

ltem	Setting at GP Editor	Setting at GP-S070
CH1 comm. setting	Avaliable	Avaliable
CH2 comm. setting	Unavailable	Avaliable

1st Check the settings; Application of serial port, setup, menu key, configuration at [Common]-[Auxiliary Configuration]-[Project].

Project Auxiliary Property	>
Basic Key Window Language Serial Port Setup Menu Key	
Configure Key Window / Cursor Display	
Display Cursor Only	
✓ Call key window when detecting touch	
Application of serial port, setup, menu key, configuration	
Image Color 256 color	
Form	
Horizontal	
OK Cancel	

roject Auxiliary Prope	rty	
Basic Key Window La	anguage Serial Port Setup Menu Key -	
Port Configuration		
Baudrate :	19200bps	
Handshaking :	XON/XOFF	
Parity :	None	
Data Bit :	8bit	
Stop Bit :	1bit 💌	
	OK Cancel	

2nd At [Serial Port] tab, set CH1 port configuration.

3rd At [Setup] tab, set CH1 port, station settings. For CH2, the left port is automatically alloted.

Project Auxiliary Property 📀 🔁 🔁
Basic Key Window Language Serial Port Setup Menu Key
Preserve time of opening screen :
Off time of backlight :
Configuration of initial screen number :
Buzzer
On Off System Information
Port Configuration
Port : RS232
Station : 1
GP Station : 0
OK Cancel





Major Products

Major Products Photoelectic Sensors-Ther Optic Sensors-Door Sensors-Door Side Sensors-Area Sensors Proximity Sensors-Pressure Sensors-Connectors/Sockets-Rotary Encoders-Panel Meters Counters-Timers-Temperature Controllers-SSRs/Power Controllers Sensor Controllers Graphic/Logic Panels-Temperature/Homidity Transducers-Switching Mode Power Supplies Stepper Motors/Drivers/Motion Controllers-I/O Terminal Blocks & Cables-Display Units Control Switches/Lamps/Buzzers-Field Network Devices-Tachmeter/Pulse(Rate) Meters -Laser Marking System(Fiber, CO., Nd:YAG)-Laser Welding/Cutting System

Any proposal for a product improvement and development: Product@autonics.com

Dimensions or specifications on this manual are subject to change and some models may be discontinued without notice.

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