



Mitsubishi Programmable Controller

Transition from MELSEC-AnS/QnAS (Small Type) Series to L Series Handbook

(Communications)



June 2015 Edition

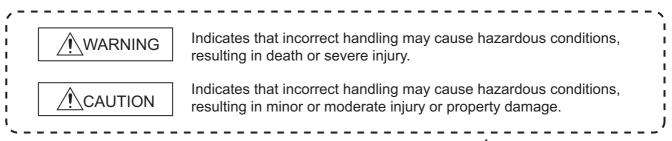
SAFETY PRECAUTIONS

(Read these precautions before using this product.)

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

The precautions given in this handbook are concerned with this product only. For the safety precautions of the programmable controller system, refer to the user's manual for the CPU module used.

In this manual, the safety precautions are classified into two levels: "MARNING" and "CAUTION".



Under some circumstances, failure to observe the precautions given under "<u>CAUTION</u>" may lead to serious consequences.

Observe the precautions of both levels because they are important for personal and system safety.

Make sure that the end users read this handbook and then keep the handbook in a safe place for future reference.

[Design Precautions]

• For the operating status of each station after a communication failure, refer to the manuals for the stations used.

Incorrect output or malfunction due to a communication failure may result in an accident.

- To prevent the malfunction of the programmable controller system due to harmful e-mails, take preventive measures (such as antivirus measures) so that the mail server for this module does not receive harmful e-mails.
- To maintain the safety against unauthorized access via the Internet, take measures such as installing a firewall.
- When connecting a peripheral with the CPU module or connecting a personal computer with an intelligent function module to modify data of a running programmable controller, configure an interlock circuit in the program to ensure that the entire system will always operate safely.
 For other forms of control (such as program modification or operating status change) of a running programmable controller, read the relevant manuals carefully and ensure that the operation is safe before proceeding.

Especially, when a remote programmable controller is controlled by an external device, immediate action cannot be taken if a problem occurs in the programmable controller due to a communication failure.

To prevent this, configure an interlock circuit in the program, and determine corrective actions to be taken between the external device and CPU module in case of a communication failure.

• Do not write any data to the "system area" of the buffer memory in the intelligent function module. Also, do not use any "use prohibited" signal as an output signal from the CPU module to the intelligent function module.

Doing so may cause malfunction of the programmable controller system.

[Design Precautions]

 Do not install the control lines or communication cables together with the main circuit lines or power cables.

Keep a distance of 100mm or more between them.

Failure to do so may result in malfunction due to noise.

When changing the operating status of the CPU module (such as remote RUN/STOP) from the external device, select "Always wait for OPEN (Communication possible at STOP time)" for the "Initial timing" setting in the network parameter. The communication line will be closed when "Do not wait for OPEN (Communications impossible at STOP time)" is selected and the remote STOP is executed from the external device. Consequently, the CPU module cannot reopen the communication line, and the external device cannot execute the remote RUN.

[Installation Precautions]

 Shut off the external power supply (all phases) used in the system before connecting or disconnecting a module.

Failure to do so may result in electric shock or cause the module to fail or malfunction.

[Installation Precautions]

- Use the programmable controller in an environment that meets the general specifications in the Safety Guidelines provided with the CPU module or head module.
 Failure to do so may result in electric shock, fire, malfunction, or damage to or deterioration of the product.
- To interconnect modules, engage the respective connectors and securely lock the module joint levers until they click. Incorrect interconnection may cause malfunction, failure, or drop of the module.
- Shut off the external power supply (all phases) used in the system before mounting or removing a module. Failure to do so may result in electric shock or cause the module to fail or malfunction.
- Do not directly touch any conductive parts and electronic components of the module. Doing so can cause malfunction or failure of the module.

[Wiring Precautions]

- Shut off the external power supply (all phases) used in the system before wiring.
 Failure to do so may result in electric shock or cause the module to fail or malfunction.
- After installation and wiring, attach the included terminal cover to the module before turning it on for operation.

Failure to do so may result in electric shock.

[Wiring Precautions]

 Use applicable solderless terminals and tighten them within the specified torque range.
If any spade solderless terminal is used, it may be disconnected when a terminal block screw comes
loose, resulting in failure.
 Connectors for external devices must be crimped or pressed with the tool specified by the
manufacturer, or must be correctly soldered.
Incomplete connections may cause short circuit, fire, or malfunction.
When connecting a connector with a cable, securely connect the connector part to the module.
 Place the cables in a duct or clamp them.
If not, dangling cable may swing or inadvertently be pulled, resulting in damage to the module or
cables or malfunction due to poor contact.
 Check the interface type and correctly connect the cable. Incorrect wiring (connecting the cable to an
incorrect interface) may cause failure of the module and external device.
 Tighten the terminal block screws within the specified torque range.
Undertightening can cause short circuit, fire, or malfunction.
Overtightening can damage the screw and/or module, resulting in drop, short circuit, fire, or
malfunction.
When disconnecting the cable from the module, do not pull the cable by the cable part.
For the cable with connector, hold the connector part of the cable.
For the cable connected to the terminal block, loosen the terminal screw.
Pulling the cable connected to the module may result in malfunction or damage to the module or
cable.
 Prevent foreign matter such as dust or wire chips from entering the module.
Such foreign matter can cause a fire, failure, or malfunction.
 A protective film is attached to the top of the module to prevent foreign matter, such as wire chips,
from entering the module during wiring.
Do not remove the film during wiring.
Remove it for heat dissipation before system operation.

[Startup and Maintenance Precautions]

- Do not touch any terminal while power is on. Doing so will cause electric shock or malfunction.
- Shut off the external power supply (all phases) used in the system before cleaning the module or retightening the terminal block screws.
 Failure to do so may result in electric shock.

[Startup and Maintenance Precautions]

- Do not disassemble or modify the modules. Doing so may cause failure, malfunction, injury, or a fire.
- Shut off the external power supply (all phases) used in the system before connecting or disconnecting a module.
- Failure to do so may cause the module to fail or malfunction.
- Tighten the terminal block screws within the specified torque range.
 Undertightening can cause drop of the component or wire, short circuit, or malfunction.
 Overtightening can damage the screw and/or module, resulting in drop, short circuit, or malfunction.
- After the first use of the product (module, display unit, and terminal block), the number of connections/disconnections is limited to 50 times (in accordance with IEC 61131-2).
 Exceeding the limit may cause malfunction.
- Before handling the module, touch a conducting object such as a grounded metal to discharge the static electricity from the human body.

Failure to do so may cause the module to fail or malfunction.

[Operating Precautions]

- When changing data and operating status, and modifying program of the running programmable controller from a personal computer connected to an intelligent function module, read relevant manuals carefully and ensure the safety before operation.
 Incorrect change or modification may cause system malfunction, damage to the machines, or accidents.
- While set values in the buffer memory are being registered to the flash ROM in the module, do not
 power off the station where the module is mounted or do not reset the CPU module.
 Doing so will affect the flash ROM data, and setting to the buffer memory and registration to the flash
 ROM need to be performed again.

Also, it may cause failure or malfunction of the module.

[Disposal Precautions]

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

CONDITIONS OF USE FOR THE PRODUCT

(1) Mitsubishi programmable controller ("the PRODUCT") shall be used in conditions;

i) where any problem, fault or failure occurring in the PRODUCT, if any, shall not lead to any major or serious accident; and

ii) where the backup and fail-safe function are systematically or automatically provided outside of the PRODUCT for the case of any problem, fault or failure occurring in the PRODUCT.

(2) The PRODUCT has been designed and manufactured for the purpose of being used in general industries.

MITSUBISHI SHALL HAVE NO RESPONSIBILITY OR LIABILITY (INCLUDING, BUT NOT LIMITED TO ANY AND ALL RESPONSIBILITY OR LIABILITY BASED ON CONTRACT, WARRANTY, TORT, PRODUCT LIABILITY) FOR ANY INJURY OR DEATH TO PERSONS OR LOSS OR DAMAGE TO PROPERTY CAUSED BY the PRODUCT THAT ARE OPERATED OR USED IN APPLICATION NOT INTENDED OR EXCLUDED BY INSTRUCTIONS, PRECAUTIONS, OR WARNING CONTAINED IN MITSUBISHI'S USER, INSTRUCTION AND/OR SAFETY MANUALS, TECHNICAL BULLETINS AND GUIDELINES FOR the PRODUCT. ("Prohibited Application")

Prohibited Applications include, but not limited to, the use of the PRODUCT in;

- Nuclear Power Plants and any other power plants operated by Power companies, and/or any other cases in which the public could be affected if any problem or fault occurs in the PRODUCT.
- Railway companies or Public service purposes, and/or any other cases in which establishment of a special quality assurance system is required by the Purchaser or End User.
- Aircraft or Aerospace, Medical applications, Train equipment, transport equipment such as Elevator and Escalator, Incineration and Fuel devices, Vehicles, Manned transportation, Equipment for Recreation and Amusement, and Safety devices, handling of Nuclear or Hazardous Materials or Chemicals, Mining and Drilling, and/or other applications where there is a significant risk of injury to the public or property.

Notwithstanding the above, restrictions Mitsubishi may in its sole discretion, authorize use of the PRODUCT in one or more of the Prohibited Applications, provided that the usage of the PRODUCT is limited only for the specific applications agreed to by Mitsubishi and provided further that no special quality assurance or fail-safe, redundant or other safety features which exceed the general specifications of the PRODUCTs are required. For details, please contact the Mitsubishi representative in your region.

REVISIONS

* The handbook number is given on the bottom left of the back cover.

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October, 2012	L(NA)08261ENG-A	First edition
January, 2014	L(NA)08261ENG-B	Addition
		Chapter 3
		Partial correction
		SAFETY PRECAUTIONS, GENERIC TERMS AND ABBREVIATIONS, Section
		1.1, 1.2, 2.2, Appendix 2, 2.2, 2.4, 2.5
June, 2015	L(NA)08261ENG-C	Change
		Chapter 4 \rightarrow Appendix 1, Appendix1 \rightarrow Appendix 2, Appendix 2 \rightarrow Appendix 3
		Partial correction
		Section 1.1, 2.2
	1	

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For the products shown in handbooks for transition, catalogues, and transition examples, refer to the manuals for the relevant products and check the detailed specifications, precautions for use, and restrictions before replacement.
 For the products manufactured by Mitsubishi Electric Engineering Co., Ltd., Mitsubishi Electric System & Service Co., Ltd., and other companies, refer to the catalogue for each product and check the detailed specifications, precautions for use, and restrictions before use.
 The manuals and catalogues for our products, products manufactured by Mitsubishi Electric Engineering Co., Ltd., and Mitsubishi Electric System & Service Co., Ltd., and Mitsubishi Electric System & Service Co., Ltd. are shown in Appendix of each handbook for transition.

• Products shown in this handbook are subject to change without notice.

GENERIC TERMS AND ABBREVIATIONS

Unless otherwise specified, this handbook uses the following generic terms and abbreviations.

Generic term/abbreviation	Description			
■Series				
A series	The abbreviation for large types of Mitsubishi MELSEC-A series programmable controllers			
AnS series	The abbreviation for small types of Mitsubishi MELSEC-A series programmable controllers			
QnAS series	The abbreviation for small types of Mitsubishi MELSEC-QnA series programmable controllers			
Q series	The abbreviation for Mitsubishi MELSEC-Q series programmable controllers			
L series	The abbreviation for Mitsubishi MELSEC-L series programmable controllers			
■CPU module type				
CPU module	A generic term for A series, AnS series, QnA series, QnAS series, Q series, and L series CPU			
CFO module	modules			
■CPU module model				
ACPU	A generic term for MELSEC-A series CPU modules			
AnSCPU	A generic term for MELSEC-AnS series CPU modules			
	A generic term for the A1NCPU, A1NCPUP21/R21, A1NCPUP21-S3, A2NCPU, A2NCPU-S1,			
AnNCPU	A2NCPUP21/R21, A2NCPUP21/R21-S1, A2NCPUP21-S3(S4), A3NCPU, A3NCPUP21/R21,			
	and A3NCPUP21-S3			
	A generic term for the A2ACPU, A2ACPU-S1, A3ACPU, A2ACPUP21/R21,			
AnACPU	A2ACPUP21/R21-S1, and A3ACPUP21/R21			
AnUCPU	A generic term for the A2UCPU, A2UCPU-S1, A3UCPU, and A4UCPU			
AnUS(H)CPU	A generic term for the A2USCPU, A2USCPU-S1, and A2USHCPU-S1			
A/AnSCPU	A generic term for the ACPU and AnSCPU			
AnN/AnACPU	A generic term for the AnNCPU and AnACPU			
AnN/AnA/AnSCPU A generic term for the AnNCPU, AnACPU, and AnSCPU				
QnACPU	A generic term for MELSEC-QnA series CPU modules			
QnASCPU A generic term for MELSEC-QnAS series CPU modules				
QCPU	A generic term for MELSEC-Q series CPU modules			
LCPU	A generic term for MELSEC-L series CPU modules			

INTRODUCTION

1.1 Modules Targeted for Replacement

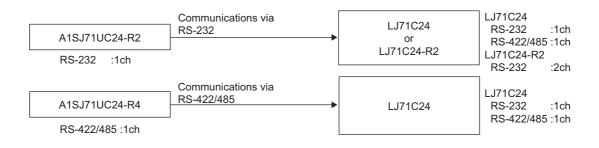
This handbook describes how to replace the following communication modules.

- AnS series computer link module:
- QnAS series serial communication module:
- AnS/QnAS series Ethernet interface module:

Refer to CHAPTER 2. Refer to CHAPTER 2. Refer to CHAPTER 3.

(1) Replacing AnS series computer link modules and QnAS series serial communication modules

(a) AnS series computer link modules



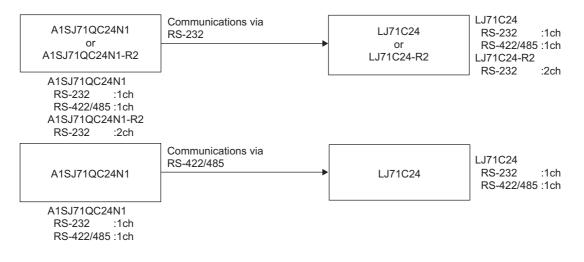
⊠Point ·

L series communication modules do not have a function equivalent to the multidrop link function of the AnS series communication module, A1SJ71UC24-R4.

Consider replacement to a CC-Link system.

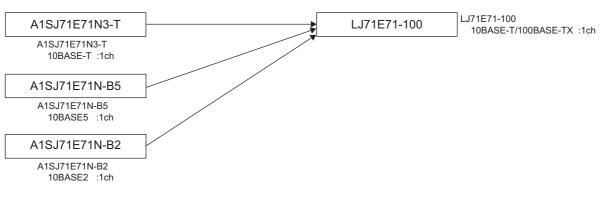
For the replacement method, refer to the Transition from MELSEC-A/QnA (Large Type), AnS/QnAS (Small Type) Series to Q Series Handbook (Communications).

(b) QnAS series serial communication modules

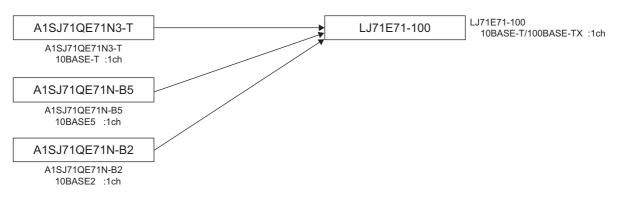


(2) Replacing the AnS series Ethernet interface module and QnAS series Ethernet interface module

(a) AnS series Ethernet interface module



(b) QnAS series Ethernet interface module



⊠Point

The L series Ethernet interface module does not support 10BASE5 and 10BASE2 of the Ethernet standards.

Consider converting 10BASE5 and 10BASE2 to the 10BASE-T of the Ethernet standard using a media converter.

(3) Replacing the AnS series intelligent communication module (A1SD51S)

No alternative modules are available in L series. Consider replacement with Q series modules or replacement of a system including external devices and programs.

1.2 General Precautions

(1) Utilizing AnS/QnAS series sequence programs in L series systems

AnS/QnAS series sequence programs can be converted for the use in L series systems using GX Developer. (Note that, with GX Works2, these programs cannot be converted.) When converting AnS/QnAS series sequence programs to L series ones, use GX Developer.

(2) Creating new L series sequence programs

L series sequence programs can be created using GX Developer or GX Works2. Use of GX Works2 helps users to make settings (module and communication) and perform debugging easily.

2 SERIAL COMMUNICATION MODULE REPLACEMENT

2.1 List of Serial Communication Modules to be Replaced

(1) AnS series

AnS series	L series alternative model	Remarks	
		A1SJ71UC24-R2	
	LJ71C24	RS-232: 1ch, RS-422/485: None	
	1024	LJ71C24	
A1SJ71UC24-R2		RS-232: 1ch, RS-422/485: 1ch	
A15J710C24-R2		A1SJ71UC24-R2	
	LJ71C24-R2	RS-232: 1ch, RS-422/485: None	
	LJ71C24-R2	LJ71C24-R2	
		RS-232: 2ch, RS-422/485: None	
		A1SJ71UC24-R4	
A1SJ71UC24-R4	LJ71C24	RS-232: None, RS-422/485: 1ch	
A13J710024-R4	11024	LJ71C24	
		RS-232: 1ch, RS-422/485: 1ch	
		Select a CPU module and serial	
A1SCPUC24-R2 *1	L02CPU + LJ71C24 or LJ71C24-R2	communication module as alternative	
		models.	

*1 This module is the CPU module built in the functions of the A1SJ71C24. The performance specifications of built-in functions are the same as the A1SJ71UC24-R2. For the performance specifications comparison after replacement, read the A1SCPUC24-R2 as the A1SJ71UC24-R2 in Section 2.2.1 (1).

(2) QnAS series

QnAS series model	L series alternative model	Remarks
		A1S71QC24N1
A1SJ71QC24N1	LJ71C24	RS-232: 1ch, RS-422/485: 1ch
A13J71QC24N1		LJ71C24
		RS-232: 1ch, RS-422/485: 1ch
		A1S71QC24N1-R2
	LJ71C24-R2	RS-232: 2ch, RS-422/485: None
A1SJ71QC24N1-R2		LJ71C24-R2
		RS-232: 2ch, RS-422/485: None

2.2 Performance Specifications Comparison

2.2.1 Module performance comparison

(1) Between AnS series and L series

(a) A1SJ71UC24-R2

Item Ans series Compatibility Procurtions for replacement Interface R5-232 RS-232 compliant (0-pin D-aub) Ich (2-24 tch L/T(C24 tch L/T(C2			Specifi			
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Communication method using dedicated protocol ¹¹ Half-duplex communication O Nonprocedural/ bidirectional communication Full-duplex communication (1:1 connection) Full-duplex communication (1:1 connection) O Synchronization method Start stop synchronization (synchronous method) O O Transmission speed 300 to 19200 bps 50 to 230400 bps O Data format Data bit 7 or 8 O Party bit 1 (vertical parity) or none O O Stop bit 1 or 2 O O Vertical parity or none O O O Stop bit 1 or 2 O O Nonprocedural/ bidirectional using decicated communication One request is processed during the END processing of the connected CPU module. O Communication using decicated instruction (for both transmission protocol Data is sent at each send request and is received at any time. O Communication using decicated instruction (for both transmission protocol Supported (MC protocol/ bidirectional/communication protocol/Not supported O Firer detection Supported (MC protocol/ bidirectional/communication protocol/Not supported				LJ71C24-R2: None		
Communication method protocol ^{*1} Full-duplex communication (1:1 connection) C Nonprocedural/ bidirectional communication Full-duplex communication (1:1 connection) Full-duplex communication (1:1 connection) O Synchronization method Start stop synchronization (synchronous method) O O Transmission speed 300 to 19200 bps 50 to 230400 bps O Data format Data bit 7 or 8 O Communication using dedicated protocol One request is processed during the END processing of the connected CPU module. O Access cycle Communication using dedicated protocol Data is sent at each send request and is received at any time. Communication using dedicated cPU module. O Communication using dedicated protocol Data is sent at each send request and is received at any time. Communication protocol O Received tectorial Data is sent at each send request and is received at any time. Communication protocol O Error detection Supported (MC protocol/ bidirectional/Not supported O Supported (MC protocol/ bidirectional/Not supported Supported (MC protocol/ bidirectional/Not supported O Transmission corror Suported (MC protocol/ bidirectional/Not supported <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
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bidirectional communication Full-duplex communication (1:1) connection) Connection) Connection) Synchronization method Start stop synchronization (asynchronous method) 0 0 Transmission speed 300 to 19200 bps 50 to 230400 bps 0 Data format Start bit 1 0 0 Data format Data bit 7 or 8 0 0 Party bit 1 (vertical parity) or none 0 0 0 Stop bit 1 or 2 0 0 0 Nonprocedural bidirectional communication using dedicated protocol One request is processed during the END processing of the connected CPU module. 0 0 Nonprocedural bidirectional communication protocol Data is sent at each send request and is received at any time. 0 0 Communication protocol - instruction (for both transmission and reception) 0 0 Error detection Sum check Supported (MC protocol/ bidirectional/onlyNot supported O 0 Transmission control Sum check Supported (MC protocol/ bidirectional/onlyNot supported 0 0	method	Nonprocedural/				
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Synchronization method Start stop synchronization (asynchronous method) O Transmission speed 300 to 19200 bps 50 to 230400 bps O Data format Start bit 1 O Data format Data bit 7 or 8 O Party bit 1 (vertical parity) or none O Stop bit 1 or 2 O Communication using decident protocol One request is processed during the END processing of the connected CPU module. O Access cycle Communication using decident protocol Data is sent at each send request and is received at any time. O Communication using communication protocol - Upon request by the decided instruction (for both transmission and reception) O Error detection Supported (MC protocol/ bidirectional/Not supported O O Fransmission control Supported (MC protocol/ bidirectional/Not supported O Transmission control Supported (MC protocol/ bidirectional/Not supported O Transmission control Supported (MC protocol/ bidirectional/Not supported O Unc editional DTR/DSR (ER/DR) control Available O Unc editional DTR/DSR (ER/DR) control Available O DTR/DSR (ER/DR) control Available Not available O <		communication	connection)			
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Communication using dedicated protocol One request is processed during the END processing of the connected CPU module. O Access cycle Nonprocedural/ bidirectional communication using communication protocol Data is sent at each send request and is received at any time. O Communication using communication protocol Data is sent at each send request and is received at any time. O Error detection Supported (MC protocol/ bidirectional/Not supported Upon request by the dedicated instruction (for both transmission and reception) O Error detection Supported (MC protocol/ bidirectional/Not supported Supported (MC protocol/ bidirectional/communication protocol/Not supported O Transmission control Error detection Supported (MC protocol/ bidirectional/Not supported O Transmission control Error detection Supported (MC protocol/ bidirectional/Not supported Not available O Transmission control Error detection Available Not available O Line RS-232 1:1 O O O		Party bit	1 (vertical parity) or none		0	
Access cycle Using dedicated protocol One request is processed during the END processing of the connected CPU module. O Access cycle Nonprocedural/ bidirectional communication using communication protocol Data is sent at each send request and is received at any time. O Communication using communication protocol Data is sent at each send request and is received at any time. O Error detection Supported (MC protocol/ bidirectional)/Not supported Upon request by the dedicated instruction (for both transmission and reception) O Error detection Sum check Supported (MC protocol/ bidirectional)/Not supported Supported (MC protocol/ bidirectional/communication protocol/Not supported O Transmission control Image: Comparison of the control of the contr		Stop bit	1 or 2		0	
Access cycle Using dedicated protocol CPU module. O Nonprocedural/ bidirectional communication Data is sent at each send request and is received at any time. O Communication using communication protocol Data is sent at each send request and is received at any time. O Communication protocol Upon request by the dedicated instruction (for both transmission and reception) O Error detection Surported (MC protocol/ bidirectional)/Not supported (MC protocol/ bidirectional)/Not supported O Transmission control Supported (MC protocol/ bidirectional)/Not supported Supported (MC protocol/ bidirectional/communication protocol)/Not supported O Transmission control CD signal control DC1/DC3 (Xon/Xoff) control DC2/DC4 control Available Available Not available Available O Line configuration RS-232 1:1 O						
Access cycle Nonprocedural/ bidirectional communication Data is sent at each send request and is received at any time. O Communication Communication Upon request by the dedicated instruction (for both transmission and reception) O Error detection Parity check Supported (odd/even)/Not supported O Sum check Supported (MC protocol/ bidirectional/communication protocol/bidirectional/communication protocol/Not supported O Transmission control Supported (MC protocol/ bidirectional/Not supported O Transmission control CD signal control Available Not available DC1/DC3 (Xon/Xoff) control DC2/DC4 control O Line configuration RS-232 1:1 O		-			0	
Access cycle bidirectional communication Data is sent at each send request and is received at any time. O Communication using communication protocol Upon request by the dedicated instruction (for both transmission and reception) O Error detection Parity check Supported (MC protocol/ bidirectional/Communication protocol/ bidirectional/Not supported O Error detection Sum check Supported (MC protocol/ bidirectional/Communication protocol/ bidirectional/Communication protocol/Not supported O Fransmission control Support (RE/DR) control Available Not available O Line RS-232 11 O Line RS-232 1:1, 1:n, n:1, m:n O		·				
Access cycle communication communication Communication using communication protocol Upon request by the dedicated instruction (for both transmission and reception) O Parity check Supported (MC protocol/ bidirectional)/Not supported O Sum check Supported (MC protocol/ bidirectional)/Not supported O Transmission control Supported (MC protocol/ bidirectional)/Not supported O Transmission control Transmission control Available Not available O Line configuration RS-232 1:1 O Line RS-232 1:1 O			Data is sent at each send request and is received at any time.		0	
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using communication protocol - Upon request by the dedicated instruction (for both transmission and reception) O Error detection Parity check Supported (odd/even)/Not supported O Sum check Supported (MC protocol/ bidirectional)/Not supported Supported (MC protocol/ bidirectional)/Not supported O Transmission control Supported (MC protocol/ bidirectional)/Not supported Supported (MC protocol/ bidirectional)/Not supported O Transmission control DTR/DSR (ER/DR) control DC1/DC3 (Xon/Xoff) control DC2/DC4 control Available Available Not available Available O Line configuration RS-232 1:1 O O						
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Protocol Parity check Supported (odd/even)/Not supported O Error detection Sum check Supported (MC protocol/ bidirectional)/Not supported Supported (MC protocol/ bidirectional/communication protocol)/Not supported O Transmission control Image: Control interval		communication	-			
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Entrol detection Sum check Supported (MC protocol/ bidirectional)/Not supported bidirectional/communication protocol)/Not supported O Transmission control Image: Control		Parity check	Supported (odd/ev	,	0	
Sum check Sum c	Error detection		Supported (MC protocol/		0	
Transmission control RS-232 RS-422/485 DTR/DSR (ER/DR) control Available Not available CD signal control Available Not available DC1/DC3 (Xon/Xoff) control Available Available Line RS-232 1:1 configuration RS-422/485 0		Sum check				
Transmission control DTR/DSR (ER/DR) control Available Not available O DTR/DSR (ER/DR) control Available Not available O DDTR/DSR (ER/DR) control Available Not available O DC1/DC3 (Xon/Xoff) control Available Available O Line RS-232 1:1 O configuration RS.422/485 1:1, 1:n, n:1, m:n O			, , ,	protocol)/Not supported		
Transmission control DTR/DSR (ER/DR) control Available Not available O DTR/DSR (ER/DR) control Available Not available O DDTR/DSR (ER/DR) control Available Not available O DC1/DC3 (Xon/Xoff) control Available Available O Line RS-232 1:1 O configuration RS.422/485 1:1, 1:n, n:1, m:n O						
Transmission control CD signal control Available Not available O DC1/DC3 (Xon/Xoff) control DC1/DC3 (Xon/Xoff) control Available Available O Line RS-232 1:1 O configuration RS.422/485 1:1, 1:n, n:1, m:n O						
Line configuration RS-232 1:1 O RS-422/485 1:1, 1:n, n:1, m:n O			DTR/DSR (ER/DR) contro	Available Not available		
DC1/DC3 (Xon/Xoff) control Available Available Line RS-232 1:1 O configuration RS.422/485 1:1, 1:n, n:1, m:n O	Transmission co	ntrol	CD signal control	Available Not available	0	
Line RS-232 1:1 O configuration RS_422/485 1:1, 1:n, n:1, m:n O						
configuration 1:1, 1:n, n:1, m:n						
configuration 1:1, 1:n, n:1, m:n	Line	RS-232	1.1		0	
	(connection)	RS-422/485	-		0	

O : Compatible, \bigtriangleup : Partial change required, ×: Incompatible

2 SERIAL COMMUNICATION MODULE REPLACEMENT

MELSEC

Item		Specifi			
		AnS series	L series	Compatibility	Precautions for
		A1SJ71UC24-R2 LJ71C24 LJ71C24-R2		compatibility	replacement
	Communication using dedicated protocol	1:1	1:1, 1:n, m:n (n: max. 32, m+n: max. 32)	0	
Line configuration (data communication)	Nonprocedural communication	1:1	1:1, 1:n, or n:1 (n: max. 32)	0	For details on linked operation between
	Bidirectional communication	1	:1	0	interfaces, refer to the manual for the module used.
	Communication using communication protocol	-	1:1 or n:1 (n: max. 32)	0	
Transmission	RS-232	Max.	Max. 15m		
distance	RS-422/485	-	Max. 1200m (overall distance)	0	
Number of writes to E ² PROM and number of writes to flash ROM		Max. 100000 times on the same area in E ² PROM	Max. 100000 times on the same area in flash ROM	0	
Number of occupied I/O points		32 points/slot (I/O assignment: special 32 points)	32 points (I/O assignment: intelli. 32 points)	0	

*1 In the L series, this protocol is called "MELSEC communication protocol" (MC protocol).

(b) A1SJ71UC24-R4

		Specifi		Precautions for		
lte	em	AnS series	Compatibility	replacement		
		A1SJ71UC24-R4	LJ71C24 RS-232 compliant (9-pin D-sub)			
	RS-232	-	1ch	-		
Interface	RS-422/485	RS-422/485 compliant 1ch	RS-422/485 compliant (2-piece terminal block) 1ch	Δ	Wiring needs to be changed.	
Communication	Communication using dedicated protocol ^{*1}	Half-duplex c	ommunication	0		
method	Nonprocedural/ bidirectional communication		ation (1:1 connection)/ on (1:n or m:n connection)	0		
Synchronization	method	Start stop synchronizatio	n (asynchronous method)	0		
Transmission sp	eed	300 to 19200 bps	50 to 230400 bps	0		
	Start bit		1	0		
	Data bit	7 с	or 8	0		
Data format	Party bit	1 (vertical pa	arity) or none	0		
	Stop bit		or 2	0		
	Communication using dedicated protocol	One request is processed during th	e END processing of the connected nodule.	0		
Access cycle	Nonprocedural/ bidirectional communication	Data is sent at each send requ	0			
Communication using communication protocol		-	0			
	Parity check	Supported (odd/ev	Supported (odd/even)/Not supported			
Error detection	Sum check	Supported (MC protocol/b	idirectional)/Not supported	0		
Transmission control		CD signal control	DC1/DC3 (Xon/Xoff) control			
Line	RS-232	-	0			
configuration (connection)	RS-422/485		1:1 n:1, m:n n+n: max. 32)	0		
	Communication using dedicated protocol	1:1, 1:	n, m:n n+n: max. 32)	0		
Line	Nonprocedural communication	1:1, 1:n (n: max. 32)	1:1, 1:n, or n:1 (n: max. 32)	0	For details on linked operation between	
configuration (data communication)	Bidirectional communication	1	:1	0	interfaces, refer to the manual for the module	
	Communication using communication protocol	-	1:1 or n:1 (n: max. 32)	0	used.	
Transmission	RS-232	-	Max. 15m	0		
distance	RS-422/485	Max. 500m (overall distance)	Max. 1200m (overall distance)	0		
Number of writes and number of w ROM		Max. 100000 times on the same area in E ² PROM	Max. 100000 times on the same area in flash ROM	0		
Number of occupied I/O points		32 points/slot (I/O assignment: special 32 points)	0			

O : Compatible, \bigtriangleup : Partial change required, ×: Incompatible

*1 In the L series, this protocol is called "MELSEC communication protocol" (MC protocol).

(2) Between QnAS series and L series

		Queen if it		required, ×: Incompati	
		Specifi QnAS series		Precautions for	
lt	tem	A1SJ71QC24N1	Compatibility	replacement	
		A1SJ71QC24N1 LJ71C24 A1SJ71QC24N1-R2 LJ71C24-R2			
		RS-232 compliant (9-pin D-sub)	RS-232 compliant (9-pin D-sub)		
	RS-232	A1SJ71QC24N1: 1ch	LJ71C24: 1ch	0	
		A1SJ71QC24N1-R2: 2ch	LJ71C24-R2: 2ch		
		RS-422/485 compliant	RS-422/485 compliant		
	RS-422/485	(2-piece terminal block) A1SJ71QC24N1: 1ch	(2-piece terminal block) LJ71C24: 1ch	Δ	Wiring needs to be changed.
		A1SJ71QC24N1-R2: None	LJ71C24-R2: None		changed.
	Communication				
	using dedicated	Half-duplex c	ommunication	0	
nterface	protocol ^{*1}			_	
Internace	Nonprocedural				
	protocol	Full-duplex communication	/half-duplex communication	0	
	communication				
	Bidirectional	Full duplox communication	(half duploy communication	0	
	protocol communication	Full-duplex communication	/half-duplex communication	0	
	Communication				
	using		Upon request by the dedicated		
	communication	-	instruction (for both transmission and reception)	0	
	protocol		and reception)		
Synchronization method		Start stop synchronization (asynchronous method)		0	
Fransmission sp	peed	300 to 115200 bps	50 to 230400 bps	0	
	Start bit		1	0	
Data format	Data bit	7 0	0		
Data format	Party bit	1 (vertical pa	0		
	Stop bit	1 or 2		0	
Communication		Requests are processed during the			
	using dedicated	CPU r	0		
	protocol				
	Nonprocedural protocol		0		
	communication		0		
Access cycle	Bidirectional	Data is sent at each send requ			
	protocol		0		
	communication				
	Communication		Upon request by the dedicated		
	using	-	instruction (for both transmission	0	
	communication protocol		and reception)		
	Parity check	Supported (odd/ev	/en)/Not supported	0	
-rran data atian			· / · · · · · · · ·	Ŭ	Select the status in
Error detection	Sum check	Supported/N	lot supported	0	parameter or user
					frame.
			RS-232 RS-422/485		
		DTR/DSR (ER/DR) contro			
Franchication	ontrol	RS/CS control		~	
Fransmission co	Unition			0	
		CD signal control	Available Not available		
		DC1/DC3 (Xon/Xoff) control	^{ol} Available Available		
		DC2/DC4 control			
_ine	RS-232	1	:1		
configuration	RS-422/485				
(connection)		(n: max. 32, m+n: max. 32)	(n: max. 32, m+n: max. 32)		

O : Compatible, \bigtriangleup : Partial change required, ×: Incompatible

2 serial communication module replacement

MELSEC

		Specifi			
14	em	QnAS series	L series	Compatibility	Precautions for
		A1SJ71QC24N1	LJ71C24	Compatibility	replacement
		A1SJ71QC24N1-R2	LJ71C24-R2		
	Communication using dedicated protocol		n, m:n n+n: max. 32)	0	
Line	Nonprocedural protocol communication	1:1, 1:n (n: max. 32)	1:1, 1:n, or n:1 (n: max. 32)	0	For details on linked operation between
configuration (data communication)	Bidirectional protocol communication	1	1	0	interfaces, refer to the manual for the module used.
	Communication using communication protocol	-	1:1 or n:1 (n: max. 32)	0	
Transmission	RS-232	Max	Max. 15m		
distance	RS-422/485	Max. 1200m (o	verall distance)	0	
Number of writes to E ² PROM and number of writes to flash ROM		Max. 100000 times on the same area in E ² PROM	Max. 100000 times on the same area in flash ROM	0	
Number of occupied I/O points		32 points/slot (I/O assignment: special 32 points)	32 points (I/O assignment: intelli. 32 points)	0	

*1 In the L series, this protocol is called "MELSEC communication protocol" (MC protocol).

2.2.2 Cable specifications comparison

(1) Between AnS series and L series

			O : Compatible, △	: Partial change	required, ×: Incompatible
		Specific	ations		
	Item	AnS series L series		Compatibility	Precautions for
	lioni	A1SJ71UC24-R2	LJ71C24	compationity	replacement
		A1SJ71UC24-R4	LJ71C24-R2		
	Cable	Use a cable that is compliant	with the RS-232 standard.*1	0	
	Cable length	Max.	15m	0	
RS-232	Applicable connector for external wiring (module side)	9-pin D-sub (male, screw type) (mating screw M2.6)	9-pin D-sub ^{*2} (male, screw type) (mating screw M2.6)	0	
			*1		
		Item	Description	0	
		Cable type	Shielded cable		
		Number of pairs	3P		
	Cable	Conductor resistance (20 °C)	88.0Ω /km or less		
		Insulation resistance	10000 M Ω -km or higher		
RS-422/485		Dielectric withstand voltage	500VDC for 1 minute		
		Electrostatic capacitance (1kHz)	Average 60nF/km or less		
		Characteristic impedance (100kHz)	110±10Ω		
	Cable length	Max. 500m (overall distance)	Max. 1200m (overall distance)	0	
	External wiring (module side)	Connected to t	erminal block	0	For details on the connection method, refer to the manual for the module used.

*1 The RS-232 and RS-422/485 recommended cables are specified in the MELSEC-L Serial Communication Module User's Manual (Basic).

*2 For the connector shell of the cable connected to the L series serial communication module, use the exclusive products listed in the MELSEC-L Serial Communication Module User's Manual (Basic).

(2) Between QnAS series and L series

		Specifica	ations		
	ltem -	QnAS series	L series	Compatibility	Precautions for
	ltem	A1SJ71QC24N1	LJ71C24	Compatibility	replacement
		A1SJ71QC24N1-R2	LJ71C24-R2		
	Cable	Use a cable that is compliant v	vith the RS-232 standard.*1	0	
	Cable length	Max. 1	5m	0	
RS-232	Applicable connector for external wiring (module side)	9-pin D-sub (male, screw type) (mating screw M2.6)	9-pin D-sub ^{*2} (male, screw type) (mating screw M2.6)	0	
			*1		
		ltem	Description		
		Cable type	Shielded cable	0	
		Number of pairs	3P		
	Cable	Conductor resistance (20 °C)	88.0Ω /km or less		
		Insulation resistance	10000 M Ω -km or higher		
RS-422/485		Dielectric withstand voltage	500VDC for 1 minute		
		Electrostatic capacitance (1kHz)	Average 60nF/km or less		
		Characteristic impedance (100kHz)	110±10Ω		
	Cable length	ngth Max. 1200m (overall distance)			
	External wiring (module side)	Connected to te	erminal block	0	For details on the connection method, refer to the manual fo the module used.

O : Compatible, \bigtriangleup : Partial change required, ×: Incompatible

*1 The RS-232 and RS-422/485 recommended cables are specified in the MELSEC-L Serial Communication Module User's Manual (Basic).

*2 For the connector shell of any cable connected to the L series serial communication module, use the exclusive products listed in MELSEC-L Serial Communication Module User's Manual (Basic).

O : Compatible, \bigtriangleup : Partial change required, ×: Incompatible

2.3 Functional Comparison

(1) Between AnS series and L series

		Descr	iption				
	tem	AnS series L series		Compatibility	Precautions for replacement	Reference	
nem		A1SJ71UC24-R2 LJ71C24		Companishing	Frecautions for replacement	Reference	
	·	A1SJ71UC24-R4	LJ71C24-R2				
Communication using dedicated protocol ^{*1}	Device memory read/write	Reads/writes CPU module data from/to external devices. Sends data in the CPU module to external devices.		Δ	The applicable commands, accessible device ranges, and access to another station are restricted. The program on the external device side needs to be changed.		
	On-demand			Δ	Change to a sequence program that uses the dedicated instruction (ONDEMAND).		
Nonprocedural	Sending data to external device	Sends data in the CPU module to external devices.		Chapter to a consumption program that uses the			
communication	Receiving data from external device	Receives data sent fro to the CPU module.	om external devices	Δ	Change to a sequence program that uses the dedicated instructions (OUTPUT/INPUT).	Section 2.6.1	
Didina etiana el	Sending data to external device	Sends data in the CP devices.	U module to external	Δ			
Bidirectional communication	Receiving data from external device	Receives data sent from external devices to the CPU module.		Δ	Change to a sequence program that uses the dedicated instructions (BIDOUT/BIDIN).		
Transmission using printer function		Sends messages (chat the CPU module to the	0,	Δ	Change to a sequence program that uses the dedicated instruction (PRR). Messages are transmitted by nonprocedural protocol using user frames.		
	DTR/DSR control		Controls data transmission/reception with				
Transmission	CD control signal	external devices by R signals.	S-232 control	0			
control	DC code control	Sends/receives DC codes (including Xon/ Xoff) and controls data transmission/ reception with external devices.		0			

*1 In the L series, this protocol is called "MELSEC communication protocol" (MC protocol).

(2) Between QnAS series and L series

					O : Compatible, \triangle : Partial change required,	*. Incompatible
		Descr	iption			
1	tem	QnAS series	L series	Compatibility	Precautions for replacement	Reference
	.cm	A1SJ71QC24N1	LJ71C24	compationity	r recutions for replacement	Reference
		A1SJ71QC24N1-R2	LJ71C24-R2			
	Communication	Performs communicat		0		
	in ASCII mode	protocol using ASCII	data.	0		
	Communication	Performs communicat		0		
Communication	in binary mode	protocol using binary		0		
using dedicated	Device memory	Reads/writes CPU mo	odule data from/to	0		
protocol ^{*1}	read/write	external devices.		0		
p. 0.0000	Access to another	Reads/writes data to		0	The program on the PC side may need to be	
	station	another station in the network system.		0	changed depending on the connected network.	
	On-demand	Sends data in the CPI devices.	U module to external	0		
	Sending/receiving data to/from	Sends/receives data t	between the CPU	0		
	external device	module and external of	devices.	0		
Nonprocedural	Sending/receiving	Sends/receives data i	n user frames (data			
protocol	data in user	registered to the seria	Il communication	0		
communication	frames	module).				
	Sending/receiving	Converts binary data				
	data by ASCII-	it is transmitted, and converts received		0		
	binary conversion	ASCII data to binary of	lata.			
	Sending/receiving	Sends/receives data t	petween the CPU	-		
Bidirectional	data to/from external devices	module and external of	devices.	0		
protocol	Sending/receiving	Converts binary data	to ASCII data before			
communication	data by ASCII-	it is transmitted, and c		0		
	binary conversion	ASCII data to binary of		U		
		Sends/receives data				
		to/from the CPU				
	by link dedicated	module on another				
instruction (SEND/RECV, R		station (multidrop	-	×	Consider replacement to a CC-Link system.	Section 2.6.2
(SEND/RECV, R REQ)	EAD/WRITE,	connection) using				
REQ)		link dedicated				
		instructions.				
	DTR/DSR control	DSR control Controls data transmission/recept		0		
	RS/CS control	external devices by R	S-232 control	0		
Transmission	CD control signal	signals.		0		
control		Sends/receives DC co	odes (including Xon/			
	DC code control	Xoff) and controls data	a transmission/	0		
		reception with externa	al devices.			

O : Compatible, \bigtriangleup : Partial change required, ×: Incompatible

*1 In the L series, this protocol is called "MELSEC communication protocol" (MC protocol).

2.4 Switch Setting Comparison

(1) Between AnS series and L series

(a) A1SJ71UC24-R2

					O : Com	patible, \triangle : Part	al change required,	×: Incompatible
			1	Description				
				AnS series	L series	0	Precautions for	
5	Switch name			A1SJ71UC24-R2	LJ71C24 LJ71C24-R2	Compatibility	replacement	Reference
			The	mode of each interface is set				
				ording to the data				
			con	nmunication function to be used.				
				RS-232 (for CH1)				
			0	Use prohibited				
			1	Dedicated protocol (Format 1)				
			to	to				
Mode setting s	witch		4	Dedicated protocol (Format 4)	Δ	Δ		
Ū				Nonprocedural mode				
			5	or				
				bidirectional mode				
			6					
			to	Use prohibited				
			Е					l
			F	Self-loopback test				
			The station number of the module is set for data communications using dedicated protocol.			Δ		Section 2.7
Station numbe	r setting	switch			-		Set the switches in PLC parameters using GX Works2. Refer to (3).	
		A1ADP-SP	The switch is set to ON to use the computer link function by mounting			-		
	SW03	setting			-			
			the A1SJ71UC24-R2 to the A1ADP.				Relef to (3).	
	0.440.4	Write during		enable/disable status of Write				
	SW04	RUN setting	during RUN in data communications		-	Δ		
	014/05		usir	ng dedicated protocol is set.		-		
	SW05	Transmission	The	transmission speed for data				
	to SW07	speed setting	con	nmunications is set.	-	Δ		
Transmission	3007		The	e data bit length of the data to be				
specifications	SW08	Data bit setting		ismitted/received is set.	-	Δ		
setting switch			_	parity bit status of the data to be				
	SW09 Parity bit setting			smitted/received is set.	-	Δ		
	SW10	Even/odd parity	The	type of parity bit add to the data	_	Δ		
	0.1.10	setting	_	e transmitted/received is set.				
	SW11	Stop bit setting		stop bit length of the data to be	-			
		,		smitted/received is set.		-		
		Sum check		sum check code status in data				
	SW12	setting		nmunications using dedicated	-	Δ		
			pro	tocol is set.				

(b) A1SJ71UC24-R4

				Description				
				AnS series	L series	Competibility	Precautions for	Poforonco
5	Switch name		A1SJ71UC24-R4		LJ71C24 LJ71C24-R2	Compatibility	replacement	Reference
				mode of each interface is set				
			acc	ording to the data				
			com	munication function to be used.				
				RS-422/485 (for CH2)				
			0					
			to	Use prohibited				
			3					
				Nonprocedural mode				
Mode setting s	switch		4	or	-	Δ	Set the switches in	
				bidirectional mode			PLC parameters	
			5	Dedicated protocol (Format 1)			using GX Works2.	
			to	to			Refer to (3).	
			8	Dedicated protocol (Format 4)				
			9					
			to	Use prohibited				
			F	Self-loopback test				
			The station number of the module is set for data communications using					
Station numbe	r setting	switch			-	Δ		
	1	N	dedicated protocol.					
	SW01	Master station/ Local station	The station type for use of multidrop				The L series	
	3001	setting	link	function is set.	-		modules do not	
		Computer link/					support the	Section 2.7
	SW02	multidrop link		function of the computer link	-		multidrop link	
		selection	unit	used is set.			function.	
		A1ADP-SP	The	switch is set to on to use the				
	SW03	setting	computer link function by mounting		-	-		
				A1SJ71UC24-R4 to the A1ADP.				
		Write during		enable/disable status of Write				
	SW04	RUN enabled/		ng RUN in data communications	-	Δ		
Transmission	SW05	disabled setting	usir	ig dedicated protocol is set.				
specification	to	Transmission	The	transmission speed for data	_	^		
switch	SW07	speed setting	com	munications is set.	-	Δ	Set the switches in	
			The	data bit length of the data to be			PLC parameters	
	SW08	Data bit setting		smitted/received is set.	-	Δ	using GX Works2.	
				parity bit status of the data to be			Refer to (3).	
	SW09	Parity bit setting	tran	smitted/received is set.	-	Δ		
	SW10	Even/odd parity	The	type of parity bit add to the data				
	50010	setting	to b	e transmitted/received is set.	-	Δ		
	SW11	Stop bit setting	The	stop bit length of the data to be	_	Δ		
	0,011	Stop bit setting		smitted/received is set.	-		ļ	
		Sum check		sum check code status in data				
	SW12	setting		munications using dedicated	-	Δ		
			prot	ocol is set.				

O : Compatible, \bigtriangleup : Partial change required, ×: Incompatible

(2) Between QnAS series and L series

A1SJ71QC24N1 A1SJ71QC24N1-R2 LJ71C24 LJ71C24-R2 replacement The mode of each interface is set according to the data communication function to be used. Image: Communication function to be used. Image: Communication function to be used. Image: Image: Communication function to be used. Image: Communication function to be used. Image: Communication function to be used. Image: Image: Communication function to be used. Image: Communication function to be used. Image: Communication function to be used. Image: Image: Communication function function to be used. Image: Communication function to be used. Image: Communication function to be used. Image: Image: Communication function function function to be used. Image: Communication function to be used. Image: Communication function to be used. Image: Communication function to be used. Image: Image: Communication function funct	Reference
Switch name A1SJ71QC24N1 A1SJ71QC24N1-R2 LJ71C24 LJ71C24-R2 Compatibility replacement replacement The mode of each interface is set according to the data communication function to be used. Image: Communication function to be used.	Reference
A1SJ71QC24N1-R2 LJ71C24-R2 The mode of each interface is set according to the data communication function to be used. (For independent operation/linked operation) Dedicated protocol (Format 1) Dedicated protocol (Format 2) Dedicated protocol (Format 3) Dedicated protocol (Format 5) Nonprocedural protocol Nonprocedural protocol Setting impossible Setting impossible 	
Mode setting switch The mode of each interface is set according to the data communication function to be used. (For independent operation/linked operation) Dedicated protocol (Format 1) Dedicated protocol (Format 2) Dedicated protocol (Format 3) Dedicated protocol (Format 4) Dedicated protocol (Format 5) Nonprocedural protocol Setting impossible Description 	
Mode setting switch communication function to be used. (For independent operation/ linked operation) 1 Dedicated protocol (Format 1) 2 Dedicated protocol (Format 2) 3 Dedicated protocol (Format 3) 4 Dedicated protocol (Format 4) 5 Dedicated protocol (Format 5) 6 Nonprocedural protocol 7 Bidirectional protocol 8 to Setting impossible D	
0 (For independent operation/ linked operation) 1 Dedicated protocol (Format 1) 2 Dedicated protocol (Format 2) 3 Dedicated protocol (Format 3) 4 Dedicated protocol (Format 4) 5 Dedicated protocol (Format 5) 6 Nonprocedural protocol 7 Bidirectional protocol 8 to De Setting impossible	
0 linked operation) 1 Dedicated protocol (Format 1) 2 Dedicated protocol (Format 2) 3 Dedicated protocol (Format 3) 4 Dedicated protocol (Format 4) 5 Dedicated protocol (Format 5) 6 Nonprocedural protocol 7 Bidirectional protocol 8 to to Setting impossible	
Iniked operation) 1 Dedicated protocol (Format 1) 2 Dedicated protocol (Format 2) 3 Dedicated protocol (Format 3) 4 Dedicated protocol (Format 4) 5 Dedicated protocol (Format 5) 6 Nonprocedural protocol 7 Bidirectional protocol 8 to to Setting impossible D D	
2 Dedicated protocol (Format 2) 3 Dedicated protocol (Format 3) 4 Dedicated protocol (Format 4) 5 Dedicated protocol (Format 5) 6 Nonprocedural protocol 7 Bidirectional protocol 8 to De Setting impossible	
3 Dedicated protocol (Format 3) 4 Dedicated protocol (Format 4) 5 Dedicated protocol (Format 5) 6 Nonprocedural protocol 7 Bidirectional protocol 8 Example 10 Setting impossible D D	
Mode setting switch 4 Dedicated protocol (Format 4) - △ 5 Dedicated protocol (Format 5) - △ 6 Nonprocedural protocol - △ 7 Bidirectional protocol - ● 8 - D - ● D - - ● ●	
5 Dedicated protocol (Format 5) 6 Nonprocedural protocol 7 Bidirectional protocol 8 to Setting impossible D	
6 Nonprocedural protocol 7 Bidirectional protocol 8 to D Setting impossible	
7 Bidirectional protocol 8	
8 to Setting impossible D	
to Setting impossible	
E ROM/RAM/switch test	
F Self-loopback test	
The station number of the module is	
Station number setting switch set for data communications using -	
dedicated protocol.	
Operation Operation (independent operation/	
SW01 setting linked operation) of the two	
	Section 2.7
SW02 Data bit setting The data bit length of the data to be transmitted/received is set.	0000000020
Parity bit	
SW03 enable/disable	
setting	
The type of parity bit added to the	
SW04 Even parity/odd data to be transmitted/received is	
parity setting set.	
The stop bit length of the data to be	
Transmission SW05 Stop bit setting transmitted/received is set.	
specification Sum check The sum check code status in data	
switch SW06 enable/disable communications using dedicated -	
setting protocol is set.	
Write during The enable/disable status of Write	
SW07 RUN enable/ during RUN in data communications -	
disable setting using dedicated protocol is set.	
SW08 Setting change The enable/disable status of mode	
enable/olsable switching and E*PROM write is set.	
SW09 Transmission The transmission speed for data	
10 speed setting communications is set $-\Delta$	
SW12 SW13	
to - (All switches are set to OFF.)	

O : Compatible, \bigtriangleup : Partial change required, ×: Incompatible

*1 Set the L series serial communication module switch settings in PLC parameters of GX Works2.



2.5 Program Comparison

2.5.1 I/O signal comparison

(1) Between AnS series and L series

I/O signal assignments are incompatible between AnS series and L series. Create a new sequence program.

O : Compatible, \bigtriangleup : Partial change required, ×: Incompatible

Input signal	Signal name AnS series A1SJ71UC24-R2	- Compatibility	Precautions for replacement	
	A1SJ71UC24-R4			
Xn0	Send completed	\bigtriangleup	In the L series, Xn0, Xn1, Xn7, and Xn8 are used as this signal.	
Xn1	Received data read request	Δ	In the L series, Xn3, Xn4, XnA, and XnB are used as this signal.	
Xn2	Global signal	Δ	In the L series, $X(n+1)A$ and $X(n+1)B$ are used as this signal.	
Xn3	On-demand function operating	Δ	Transmission complete of on-demand data is confirmed by the complete device of the ONDEMAND instruction.	
Xn4		Δ		
Xn5	Computer link module transmission sequence state	Δ	The status is confirmed in the buffer memory area, Transmission sequence state storage area (addresses: 597 (256 _H), 613 (265 _H)).	
Xn6		Δ		
Xn7	Computer link module READY signal		In the L series, X(n+1)E is used as this signal.	
Xn8	Use prohibited	Δ	In the L series, Xn8 is used as the transmission abnormal completion signal.	
Xn9	Mode switching complete	Δ	In the L series, Xn6 is used as this signal.	
XnA	Use prohibited	Δ	In the L series, XnA and XnB are used as signals for various	
XnB	Use prohibited	Δ	applications (refer to (2)).	
XnC	Use prohibited	0		
XnD	Watch dog timer error	Δ	In the L series, X(n+1)F is used as this signal.	
XnE	Use prohibited	Δ		
to	to	Δ	In the L series, XnE to X(n+1)F are used as signals for various applications (refer to (2)).	
X(n+1)F	Use prohibited	Δ		

Output signal —	Signal name AnS series A1SJ71UC24-R2 A1SJ71UC24-R4	Compatibility	Precautions for replacement	
Yn0	Use prohibited	Δ		
to	to	Δ	In the L series, Yn0 to YnF are used as signals for various application: (refer to (2)).	
YnF	Use prohibited	Δ		
Y(n+1)0	Send request	Δ	In the L series, Yn0 and Yn7 are used as this signal.	
Y(n+1)1	Received data read completed	Δ	In the L series, Yn1 and Yn8 are used as this signal.	
Y(n+1)2	Use prohibited	Δ		
to	to	Δ	In the L series, $Y(n+1)2$ to $Y(n+1)8$ are used as signals for various application (refer to (2)).	
Y(n+1)8	Use prohibited	Δ		
Y(n+1)9	Mode switching request	Δ	In the L series, Yn2 and Yn9 are used as this signal.	
Y(n+1)A	Use prohibited	0		
Y(n+1)B	Use prohibited	0		
Y(n+1)C	Use prohibited	Δ	In the L series, Y(n+1)C is used as the system setting default request signal.	
Y(n+1)D	Use prohibited	0		
Y(n+1)E	Use prohibited	0		
Y(n+1)F	Use prohibited	0		

(2) Between QnAS series and L series

	Signal name					
Device number	QnAS series		L series		Compatibility	Precautions for
Bevice number		A1SJ71QC24N1			Compationity	replacement
		A1SJ71QC24N1-R2		LJ71C24-R2		
Xn0		Transmission ended normally	CH1	Transmission normal completion	0	
Xn1		Transmission ended abnormally		Transmission abnormal completion	0	
Xn2	CH1	Busy performing transmission processing		Transmission processing	0	
Xn3		Receive data read request		Reception data read request	0	
Xn4		Receive error detection		Reception abnormal detection	0	
Xn5		System area (use prohibited)		System area (use prohibited)	0	
Xn6	С	H1 Mode switching (initial processing)		CH1 Mode switching	0	
Xn7		Transmission ended normally		Transmission normal completion	0	
Xn8		Transmission ended abnormally		Transmission abnormal completion	0	
Xn9	CH2	Busy performing transmission processing	CH2	Transmission processing	0	
XnA		Receive data read request		Reception data read request	0	
XnB		Receive error detected		Reception abnormal detection	0	
XnC		System area (use prohibited)	System area (use prohibited)		0	
XnD	CH2 Mode switching (initial processing)		CH2 Mode switching		0	
XnE		CH1 ERR. LED ON CH1 ER		CH1 ERR. occurrence	0	
XnF		CH2 ERR. LED ON	CH2 ERR. occurrence		0	
X(n+1)0		Initialization ended	Modem initialization completion		0	
X(n+1)1		Dialing	Dialing		0	
X(n+1)2		Connecting	Connection		0	
X(n+1)3	Init	tialization/connection ended abnormally	Initialization/connection abnormal completion		0	
X(n+1)4		Modem disconnection ended	Modem disconnection complete		0	
X(n+1)5		Notification ended normally	Notification ended normally		0	
X(n+1)6		Notification ended abnormally		Notification ended abnormally	0	
X(n+1)7		EEPROM read complete		Flash ROM read completion	0	
X(n+1)8		EEPROM write complete	Flash ROM write completion		0	
X(n+1)9	EEP	ROM system parameters write complete	Flash ROM system setting write completion		0	
X(n+1)A		CH1 Global signal	CH1 Global signal		0	
X(n+1)B		CH2 Global signal	CH1 Global signal		0	
X(n+1)C	;	System parameters default complete	System setting default completion		0	
X(n+1)D		System area (use prohibited)		System area (use prohibited)	0	
X(n+1)E		QC24N ready (access possible)		C24 ready	0	
X(n+1)F		Watchdog timer error	Watchdog timer error		0	

O : Compatible, \bigtriangleup : Partial change required, ×: Incompatible

O · Compatible	∧ · Partial	change required,	× Incompatible

	Signal name					
Device number	QnAS series		L series		Compatibility	Precautions for
	A1SJ71QC24N1 A1SJ71QC24N1-R2		LJ71C24 LJ71C24-R2			replacement
Yn0		Send request		Transmission request	0	
Yn1	CH1	Receive data read complete	CH1	Reception data read completion	0	
Yn2		Remote switching request		Mode switching request	0	
Yn3		Use prohibited		Use prohibited	0	
to		to		to	0	
Yn6		Use prohibited		Use prohibited	0	
Yn7		Send request		Transmission request	0	
Yn8	CH2	Receive data read complete	CH2	Reception data read completion	0	
Yn9		Mode switching request		Mode switching request	0	
YnA		Use prohibited		Use prohibited	0	
to		to		to	0	
YnD		Use prohibited		Use prohibited	0	
YnE		CH1 ERR. LED OFF request	CH1 ERR. clear request		0	
YnF		CH2 ERR. LED OFF request	CH2 ERR. clear request		0	
Y(n+1)0		Initialization request	Modem initialization request (standby request)		0	
Y(n+1)1		Connection request	Connection request		0	
Y(n+1)2		Modem disconnection request	Modem disconnection request		0	
Y(n+1)3		Use prohibited	Use prohibited		0	
Y(n+1)4		Notification-issued request	Notification issued request		0	
Y(n+1)5		Use prohibited	Use prohibited		0	
Y(n+1)6		Use prohibited	Use prohibited		0	
Y(n+1)7		EEPROM read request	Flash ROM read request		0	
Y(n+1)8		EEPROM write request	Flash ROM write request		0	
Y(n+1)9	EEF	PROM system parameters write request	Flash ROM system setting write request		0	
Y(n+1)A		Use prohibited	Use prohibited		0	
Y(n+1)B		Use prohibited	Use prohibited		0	
Y(n+1)C		System parameters default request	System setting default request		0	
Y(n+1)D		Use prohibited	Use prohibited		0	
Y(n+1)E		Use prohibited	Use prohibited		0	
Y(n+1)F		Use prohibited	Use prohibited		0	

2.5.2 Buffer memory address comparison

(1) Between AnS series and L series

Buffer memory address assignments are incompatible between AnS series and L series. Create a new sequence program.

The following table lists the default address assignments for the areas used for initial setting and data communications.

O : Compatible, \bigtriangleup : Partial change required, ×: Incompatible

AnS series					
Address		Name	Compatibility	Precautions for replacement	
Hexadecimal	Decimal	A1SJ71UC24-R2 A1SJ71UC24-R4	compatibility		
0 _H	0	No-protocol send data length storage area	Δ	In the L series, this area is assigned to the addresses 400_{H} , 800_{H} (1024, 2048).	
1 _H to	1 to	Send data storage area	Δ	In the L series, this area is assigned to the addresses starting from 401 _H , 801 _H (1025, 2049).	
7F _H 80 _H	127 128	No-protocol received data length storage area	Δ	In the L series, this area is assigned to the addresses 600 _H , A00 _H (1536, 2560).	
81 _H to FF _H	129 to 255	Received data storage area	Δ	In the L series, this area is assigned to the addresses starting from 601_{H} , $A01_{\text{H}}$ (1537, 2561).	
100 _H	256	Area to specify completed code in no-protocol mode	Δ	In the L series, this area is assigned to the addresses $A5_{H}$, 145_{H} (165, 325).	
to	to	:	Δ	In the L series, $101_{\rm H}$ (257) and subsequent addresses are used for various applications.	
103 _H	259	Area to specify word or byte units in no-protocol mode	Δ	In the L series, this area is assigned to the addresses 96 _H , 136 _H (150, 310). ^{*1}	
104 _H	260	Area to specify head address of send buffer memory for no-protocol mode	Δ	In the L series, this area is assigned to the addresses $A2_{\rm H}$, $142_{\rm H}$ (162, 322). ^{*1}	
105 _H	261	Area to specify send buffer size for no-protocol mode	Δ	In the L series, this area is assigned to the addresses $A3_{\rm H}$, 14 $3_{\rm H}$ (163, 323). ^{*1}	
106 _H	262	Area to specify head address of receive buffer memory for no-protocol mode	Δ	In the L series, this area is assigned to the addresses $A6_{\rm H}$, $146_{\rm H}$ (166, 326). ^{*1}	
107 _H	263	Area to specify receive buffer size for no-protocol mode	Δ	In the L series, this area is assigned to the addresses A7 _H , 147 _H (167, 327). ^{*1}	
108 _H	264	Area to specify receive completed data length in no- protocol mode	Δ	In the L series, this area is assigned to the addresses $A4_{\rm H}$, 144 _H (164, 324). ^{*1}	
109 _H	265	Area to specify head address of on-demand buffer memory	Δ	In the L series, this area is assigned to the addresses A0 _H , 140 _H (160, 320). ^{*1}	
10A _H	266	Area to specify on-demand data length	Δ	In the L series, this area is assigned to the addresses $A1_{H}$, 141_{H} (161, 321). ^{*1}	
10B _H	267	Area to specify RS-232C CD terminal check	Δ	In the L series, this area is assigned to the addresses $97_{\rm H}$, $137_{\rm H}$ (151, 311). ^{*1}	
to	to	:	Δ	In the L series, $10C_{H}$ (152) and subsequent addresses	
DFF _H	3583	-		are used for various applications.	

*1 Configure initial settings using the utility package (GX Configurator-SC).

If GX Works2 is used, configure initial settings under intelligent function module settings.

(2) QnAS series

The following table lists the default address assignments for the areas used for initial setting and data communications.

Addre	220	Na	$O: \text{Compatible}, \ \Delta:$ me	Partial change re	equired, ×: Incompatible
Adure		QnAS series	L series		Precautions for
Hexadecimal	Decimal	A1SJ71QC24N1	LJ71C24	Compatibility	replacement
		A1SJ71QC24N1-R2	LJ71C24-R2		
0	0	System setting area	LED and communication error clear	-	
0 _H	0	CH1 LED OFF, communication error clear request area	CH1 LED OFF, communication error clear request	0	
to	to	to	to	0	
2E _H	46	Areas for modem functions	Areas for modem functions-1		
to	to	(For initial setting)	(For initial setting)	0	
38 _H	56				
39 _H	57	System area (Use prohibited)	System area (Use prohibited)	0	
to	to	to	to	0	
8F _H	143	System area (Use prohibited)	System area (Use prohibited)	0	
90 _H , 130 _H 91 _H , 131 _H	144, 304 145, 305	Areas for mode switching	Areas for mode switching	0	
92 _H , 132 _H	146, 306	System area (Use prohibited)	RS and DTR signal status designation	Δ	Use the default value.
93 _H , 133 _H	147, 307	DTR/DSR, DC control designation	DTR/DSR, DC control designation	0	
94 _H , 134 _H	148, 308	DC1/DC3 code designation	DC1/DC3 code designation	0	
95 _H , 135 _H	149, 309	DC2/DC4 code designation	DC2/DC4 code designation	0	
96 _H , 136 _H	150, 310	Word/byte designation	Word/byte units designation	0	
97 _H , 137 _H	151, 311	RS-232 CD terminal check designation	CD terminal check designation (for RS-232)	0	
to	to	to	to	0	
A0 _H , 140 _H	160, 320	On-demand, buffer memory head address designation	On-demand, buffer memory head address designation	0	
A1 _H , 141 _H	161, 321	On-demand, data length designation	On-demand, data length designation	0	
A2 _H , 142 _H	162, 322	Send buffer memory	Transmission buffer memory	0	
A3 _H , 143 _H	163, 323	head address designation Send buffer memory length designation	head address designation Transmission buffer memory length designation	0	
A4 _H , 144 _H	164, 324	Received data count designation	Received data count designation	0	
A5 _H , 145 _H	165, 325	Receive complete code designation	Receive complete code designation	0	
		Receive buffer memory head address	Receive buffer memory head address	0	
A6 _H , 146 _H	166, 326	designation	designation	0	
A7 _H , 147 _H	167, 327	Receive buffer memory length designation	Receive buffer memory length designation	0	
to	to	to	to	0	
200 _H	512				
to	to	System information area	System information area	0	
220 _H	544				
221 _H	545				
to 23D _H	to 573	Areas for modem functions	Areas for modem functions	0	
230 _H 23E _H	573	System information area		-	
to	to		System area (Use prohibited)		1
24E _H	590	System area (Use prohibited)		0	
24F _H	591		Station No. setting check	0	
to	to	to	to	0	
3FF _H	1023	System area (Use prohibited)	System area (Use prohibited)	0	

2 SERIAL COMMUNICATION MODULE REPLACEMENT

Address		Nar		quired, ×: Incompatible	
		QnAS series L series		Compatibility	Precautions for replacement
Hexadecimal Decimal	A1SJ71QC24N1	LJ71C24			
		A1SJ71QC24N1-R2	LJ71C24-R2		
400 _H	1024	CH1 Send/receive buffer memory	CH1 Transmission/receive area	-	
400H	1024	Send data count designation	Transmission data count designation	0	
401 _H	1025				
to	to	Send data designation	Transmission data designation	0	
5FF _H	1535				
600 _H	1536	Receive data count designation	Receive data count designation	0	
601 _H	1537				
to	to	Receive data storage	Receive data storage	0	
7FF _H	2047				
800 _H	2048	CH2 send/receive buffer memory	CH2 Transmission/receive area	-	
800H	2040	Send data count designation	Transmission data count designation	0	
801 _H	2049				
to	to	Send data designation	Transmission data designation	0	
9FF _H	2559				
A00 _H	2560	Receive data count designation	Receive data count designation	0	
A01 _H	2561				
to	to	Receive data storage	Receive data storage	0	
BFF _H	3071				
C00 _H	3072				
to	to	User area	User setting area	0	
1AFF _H	6911				
1B00 _H	6912	User frame			
to	to	registration	User registration data	0	
1FF6 _H	8182				
1FF7 _H	8183			0	
to	to	System area(Use prohibited)	System area (Use prohibited)		
1FFF _H	8191				
2000 _H	8192		Flash ROM write		Sequence programs
			allow/prohibit designation		need to be added
2001 _H	8193	-			depending on the
to	to		(Areas for new functions)		functions used.
7FFF _H	32767				<u> </u>

O: Compatible, \triangle : Partial change required, ×: Incompatible

2.6 Reuse of Existing Programs

2.6.1 Reuse of AnS series programs

Data communications between the CPU module and external devices and between CPU modules that have been performed by the AnS series computer link modules can also be performed using the L series serial communication modules.

The following summarizes how to utilize AnS series computer link module programs for the L series serial communication modules after module replacement.

Item	Device	Precautions	Remarks	
Initial setting	CPU module	[Initial settings using the utility package] Make initial settings using the utility package (GX Configurator- SC). [Deleting the initial setting program] Delete the initial setting program. [Setting the sum check code of the bidirectional protocol] To add sum check codes to the messages in bidirectional protocol communications, configure switch settings in PLC parameters using GX Works2.	Refer to the MELSEC-L Serial Communication Module User's Manual (Basic).	
Communication using dedicated protocol	CPU module	[Access to another station] When accessing other station's CPU module via MELSECNET/ H, set "Valid module during other station access" in network parameters using GX Works2. [Data transmission by the on-demand function] Change to a sequence program that uses the dedicated instruction (ONDEMAND).	 Refer to the GX Works2 Version 1 Operating Manual (Common). Refer to the MELSEC-L Serial Communication Module 	
(MC protocol communication)	Communication target device	[Accessing the CPU module] The applicable commands, accessible device ranges, and access to another station are restricted. ^{*1*2} [Access to another station] Another station cannot be accessed via the data link system (MELSECNET(II), MELSECNET/B).	User's Manual (Basic). Refer to the MELSEC-Q/L MELSEC Communication Protocol Reference Manual.	
Nonprocedural	CPU module	[Transmission/reception of data] Change to a sequence program that uses the dedicated instructions (INPUT, OUTPUT).		
communication (Nonprocedural protocol communication)	Communication target device	[Transmission of data] When receiving data by the receive end code on the CPU module side, transmit the end code data (default: CR+LF (codes: $0D_H$, $0A_H$)) at the end of the data to be transmitted to the CPU module. ^{*3}	Refer to the MELSEC-L Serial Communication Module User's Manual (Basic).	
Bidirectional communication (Bidirectional protocol communication)	CPU module	[Transmission/reception of data] Change to a sequence program that uses the dedicated instructions (BIDIN, BIDOUT).		
Transmission using printer function	CPU module	[Printing messages on a printer] When messages ^{*4} were being printed on a printer, create a transmission program using user frames of the L series serial communication module. ^{*5} Delete programs that use the regular printer function.	Refer to the MELSEC-Q/L Serial Communication Module User's Manual (Application).	
	CPU module	[Assignment of I/O signals] There is no compatibility in the I/O signal (X/Y) assignments between the AnS and L series. Check the I/O signals (X/Y) in use, and correct the program.	Refer to the MELSEC-L Serial	
Others	CPU module and communication target device	[Assignment of buffer memory areas] There is no compatibility in the buffer memory area assignments between the AnS and L series. Check the target buffer memory areas of the data to be read/ written and their addresses, and correct the program.	Refer to the MELSEC-L Serial Communication Module User's Manual (Basic).	

*1 External devices can access only the device memory in the CPU module. The accessible device range is the same as that of the AnS series CPU module.

The following devices cannot be accessed from external devices:

- Devices newly added to the LCPU
- Latch relay (L) and step relay (S)

* In the LCPU, the latch relay (L) and step relay (S) are devices separate from the internal relay (M). However, external devices access the internal relay (M) when either of the latch relay (L) or step relay (S) is specified.

File register (R)

To access memories other than device memory, use new commands for L series serial communication modules. (Create a new program.)

- *2 The following devices shall be accessed for the special relay (M9000 or later) and special register (D9000 or later):
 - When D9000 to D9255 are specified: SD1000 to SD1255
 - \bullet When D9000 to D9255 are specified: SM1000 to SM1255
- *3 Registering a receive end code to the L series serial communication module enables data transmission from external devices in the same way that the AnS series computer link module did.
- *4 User frames of the L series serial communication modules are equivalent to messages handled by the AnS series computer link modules.
- *5 Messages (user frames) can be registered using the utility package (GX Configurator-SC). Messages are transmitted by using the dedicated instruction (PRR). If GX Works2 is used, messages can be transmitted using its intelligent function module setting.

2.6.2 Reuse of QnAS series programs

Data communications between the CPU module and external devices and between CPU modules that have been performed by the QnAS series serial communication modules can also be performed using the L series serial communication modules.

The following summarizes how to utilize QnAS series serial communication module programs for the L series serial communication modules after module replacement.

Item	Device	Precautions	Remarks
Communication by link dedicated instruction	CPU module	[Communication by link dedicated instruction] There is no function that sends/receives data to/from the CPU module on another station (multidrop connection) using link dedicated instructions. The communication method needs to be changed (e.g. communication over CC-Link network). Delete the data communication program using the link dedicated instruction.	
Others	Communication target device	[Data communications via RS-422/485 interface] The precautions for data communications via RS-422/485 interface are the same as those for the QnAS series serial communication modules. Check operation of the RS-422/485 interface of the CPU module, and adjust the timing by inserting a waiting time, as needed.	Refer to the MELSEC-L Serial Communication Module User's Manual (Basic).

2.7 Other Precautions

This section describes other precautions for module replacement.

(1) Processing time

The processing time for data communications differs between the AnS/QnAS series and L series modules.

For this reason, some data communications timing may be also different. Adjust the timing by inserting a waiting time, as needed.

For details on processing time, refer to the manual for the module used.

(2) Switch settings

To use L series serial communication modules, set the operation mode, station number, and transmission specifications in the following parameter setting window using GX Works2:

• "Switch setting for intelligent function module" window

The L series serial communication modules do not have switches for setting the mode, station number, and transmission specifications.

(3) Data communications via RS-422/485 interface

The precautions for data communications via RS-422/485 interface are the same as those for the QnAS series serial communication modules.

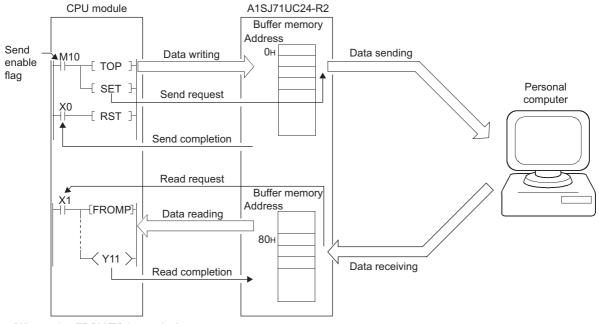
If external devices may receive the wrong data, attach a pullup/pulldown transistor to the external devices.

2.8 Program Examples

This section provides modification examples of the nonprocedural communications program for the AnS series computer link module to the one for L series serial communication module. Program modification is required when replacing AnS series programmable controller systems with L series programmable controller systems.

When applying the program examples introduced in this section to the actual system, ensure applicability and confirm that it will not cause system control problems.

(1) Program example of AnS series computer link module



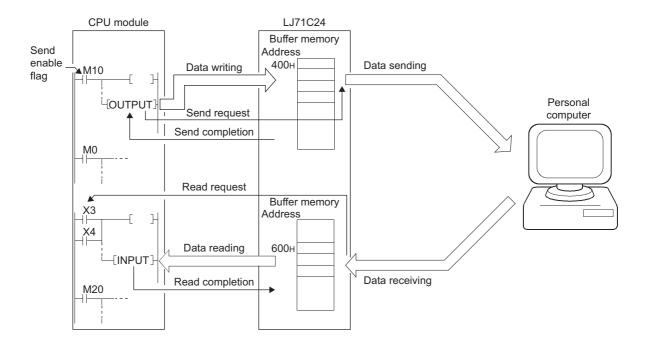
(When using FROM/TO instruction)

(a) When application instructions (FROM/TO) are used

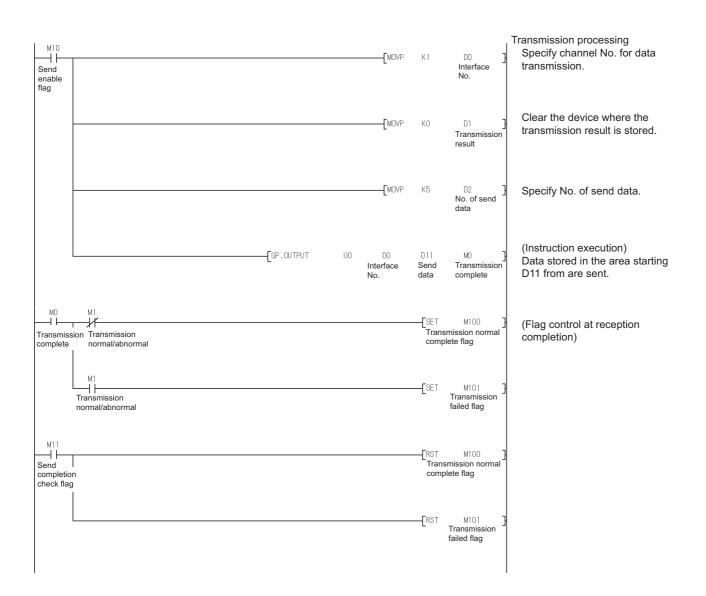
M10 Send enable flag	X7 X0 Module Transmission ready complete signal	V10 Don Send request	TOP	HO	HO	К5	К1]	Transmission processing Write No. of send data.
			[TOP	HO	H1	D11 Send data	К5	3	Write send data.
X0						[SET	Y10 Send request	3	Perform send request.
Transmiss	i sion					[rst	Y10 Send request	3	Turn off the send request signal upon transmission completion.
M1 1							M100 mission norn ete flag] nal	(Flag control at transmission completion)
M11 Send con check flag							M100 mission norn ete flag		Reception processing
X1 Receive data read			 FROMP	HO	H80	D22 No. of rec data	K1 ceive]	Read No. of receive data.
					[MOVP	D22 No. of rec data	Z	3	Transfer the No. of receive data to the index register.
			FROMP	HO	H81	D30 Receive data	KOZ	3	Read received amount of data
							(Y11 Receive data ead complet		Turn on the read complete signal of the receive data.
							M102 ption norma lete flag	,]	(Flag control at reception completion)
M12 Receive of check flag	completion						M102 ption norma lete flag	ы]	

(b) When dedicated instructions (PRN/INPUT) are used

M10 X7 X0 Y10 Send Module Transmission Send enable ready complete request flag signal	[LEDB PRN]	Transmission processing
	ESUB HO	Specify the module's head I/O signal.
	[SUB K5	Specify No. of send data.
	LEDC D11 Send data	Specify send data.
	LEDC M0 Transmission complete	Specify a device by which execution completion can be checked.
	LEDR	(Instruction execution)
M0 Transmission complete	SET M100 Transmission normal complete flag	(Flag control at transmission completion)
M11 Send completion check flag	RST M100 Transmission normal complete flag	
M9038 ↓[MO	/ K5 D23 Allowable No. of receive data	Reception processing Specify allowable No. of receive data.
X1 Receive	LEDB INPUT	}
data read	[SUB НО]	Specify the module's head I/O signal.
	LEDC D23 Allowable No. of receive data	Specify allowable No. of receive data.
	LEDC D30 Receive data	Specify a head device from which receive data are stored.
	LEDC M20 Reception complete	Specify a device by which execution completion can be checked.
	[LEDR	(Instruction execution)
M20 Receive complete	SET M102 Reception normal complete flag	(Flag control at reception completion)
M12 Receive completion check flag	RST M102 Reception normal complete flag	



(2) Program example of L series serial communication module



CH1 read request		[MOVP	K1	D20 Interface No.	Reception processing Specify channel No. for data reception.
CH1 reception error detection	[ЕМОЧ	/P KO	D21 Receptio result	K2 on	Clear the device where the reception result is stored.
		(MOVP		D23 Allowable No. of receive data	Specify allowable No. of receive data.
	G.INPUT UO	D20 Interface No.	D30	M20 Reception complete	(Instruction execution) Receive data are stored in the area starting from D30.
M20 Reception complete	M21 H Reception normal/abnormal		Eset	M102 Reception norma complete flag] (Flag control at reception d completion)
	M21 Reception normal/abnormal		[Set	M103 Reception failed flag	3
M12 Receive completion check flag				M102 Reception normal complete flag	7
			[RST	M103 Reception failed flag	3

3 ETHERNET INTERFACE MODULE REPLACEMENT

3.1 List of Ethernet Interface Modules to be Replaced

(1) Transition from AnS series to L series

AnS series	Alternative model
A1SJ71E71N3-T	
A1SJ71E71N-B5	LJ71E71-100
A1SJ71E71N-B2	

(2) Transition from QnAS series to L series

QnAS series	Alternative model
A1SJ71QE71N3-T	
A1SJ71QE71N-B5	LJ71E71-100
A1SJ71QE71N-B2	

3.2 Performance Specifications Comparison

3.2.1 Module performance comparison

(1) Comparison between AnS series and L series

(a) Comparison between A1SJ71E71N3-T (10BASE-T)

O : Compatible, \bigtriangleup : Partial change required, ×: Incompatible

		Specifi	cations		Due e cutierre feu	
	Item	AnS series	L series	Compatibility	Precautions for	
		A1SJ71E71N3-T	LJ71E71-100		replacement	
	Transmission speed	10Mbps	100Mbps/10Mbps	0		
	Interface	RJ45	RJ45 (AUTO MDI/MDI-X)	Δ		
	Communication mode	Half-duplex	Full duplex/Half-duplex	0		
	Transmission method	Base	band	0		
Transmission specifications	Maximum segment length	100	0			
	Maximum number of nodes/connection	Cascade conne	0	Up to two modules can be connected in a cascade connection when using at 100 Mbps. *2		
Transfer data	Number of allowable simultaneously open connections	8 connections	16 connections	0		
storage	Fixed buffer	1k word × 8	1k word ×16	Δ	Change the sequence	
memory	Random access buffer	3k words × 2	6k words × 1	Δ	program as buffer memory assignments differ. (Refer to Section 3.6.2.)	
No. of occupie	d I/O points	32 points/slot (I/O assignment: special 32 points)	32 points (I/O assignment: intelli 32 points)	0		

*1 Length between hub and node

*2 This is the number of nodes that can be connected when a repeater hub is used. For the number of nodes that can be connected when a switching hub is used, contact the manufacturer of the switching hub used.

(b) Comparison between A1SJ71E71N-B5 (10BASE5)

		Specifi	cations		Dressutions for	
	Item	AnS series	L series	Compatibility	Precautions for	
		A1SJ71E71N-B5	LJ71E71-100		replacement	
	Transmission speed	10Mbps		×		
	Communication mode	Half-duplex		×		
	Transmission method	Base band		×		
Transmission specifications	Max. distance between nodes	2500m	Consider converting 10BASE5	×		
	Maximum segment length	500m	to 10BASE-T.	×		
	Maximum number of nodes/connection	100/segment		×		
	Minimum node interval	2.5m		×		
Transfer data	Number of allowable simultaneously open connections	8 connections	16 connections	0		
storage	Fixed buffer	1k word × 8	1k word × 16	Δ	Change the sequence	
memory	Random access buffer	3k words × 2	6k words × 1	Δ	program as buffer memory assignments differ. (Refer to Sectio 3.6.2.)	
No. of occupie	d I/O points	32 points/slot (I/O assignment: special 32 points)	32 points (I/O assignment: intelli 32 points)	0		
12VDC externation capacity (Trans	al power supply sceiver)	Use a transceiver and AUI cables that satisfy specifications.	Consider converting 10BASE5 to 10BASE-T.	×		

O : Compatible, \bigtriangleup : Partial change required, ×: Incompatible

(c) Comparison between A1SJ71E71N-B2 (10BASE2)

			O : Compatible, \triangle :	Partial change	required, ×: Incompatibl	
		Speci	Specifications		Precautions for	
	Item	AnS series	Compatibility	replacement		
		A1SJ71E71N-B2	LJ71E71-100		replacement	
	Transmission speed	10Mbps		×		
	Communication mode	Half-duplex		×		
	Transmission method	Base band		×		
Transmission specifications	Max. distance between nodes	925m	Consider converting 10BASE2 to	×		
	Maximum segment length	185m	10BASE-T.	×		
	Maximum number of nodes/connection	30/segment		×		
	Minimum node interval	0.5m		×		
Transfer data	Number of allowable simultaneously open connections	8 connections	16 connections	0		
storage	Fixed buffer	1k word × 8	1k word × 16	Δ	Change the sequence	
memory	Random access buffer	3k words × 2	6k words × 1	Δ	program as buffer memory assignments differ. (Refer to Section 3.6.2.)	
No. of occupie	ed I/O points	32 points/slot (I/O assignment: special 32 points)	32 points (I/O assignment: intelli 32 points)	0		

(2) Comparison between QnAS series and L series

(a) Comparison between A1SJ71QE71N3-T (10BASE-T)

O: Compatible, \triangle : Partial change required, \times : Incompatible

		Specific	cations		Desses time for multiple
Item		QnAS series L series C		Compatibility	Precautions for replace- ment
		A1SJ71QE71N3-T	LJ71E71-100		ment
	Transmission speed	10Mbps	100Mbps/10Mbps	0	
	Interface	RJ45	RJ45 (AUTO MDI/MDI-X)	Δ	
	Communication mode	Half-duplex	Full duplex/Half-duplex	0	
Transmission	Transmission method	Base	band	0	
specification M le	Maximum segment length	100	0		
	Maximum number of nodes/connection	Cascade conne	0	Up to two modules can be connected in a cascade connection when using at 100 Mbps. *2	
Transfer data	Number of allowable simultaneously open connections	8 connections	16 connections	0	
memory	Fixed buffer	1k word × 8	1k word × 16	0	
	Random access buffer	6k words × 1		0	
No. of E ² PRO	M writes	Max. 100,000 times on same area in E ² PROM	_	Δ	No E ² PROM (Refer to Section 3.8.)
No. of occupied I/O points		32 points/slot (I/O assignment: special 32 points)	32 points (I/O assignment: intelli 32 points)	0	

*1 Length between hub and node

*2 This is the number of nodes that can be connected when a repeater hub is used. For the number of nodes that can be connected when a switching hub is used, contact the manufacturer of the switching hub used.

(b) Comparison between A1SJ71QE71N-B5 (10BASE5)

		Specifi	cations		Precautions for replace-
	Item	QnAS series	L series	Compatibility	
		A1SJ71QE71N-B5 LJ71E71-100			ment
	Transmission speed	10Mbps		×	
	Communication mode	Half-duplex		×	
	Transmission method	Base band		×	
Transmission	Max. distance between nodes	2500m	Consider converting 10BASE5 to	×	
specifications	Maximum segment length	500m	10BASE-T.	×	
	Maximum number of nodes/connection	100/segment		×	
	Minimum node interval	2.5m		×	
Transfer data	Number of allowable simultaneously open connections	8 connections	16 connections	0	
storage memory	Fixed buffer	1k word × 8	1k word × 16	0	
memory	Random access buffer	6k wo	rds × 1	0	
No. of E ² PROM writes		Max. 100,000 times on same area in E ² PROM	_	Δ	No E ² PROM (Refer to Section 3.8.)
No. of occupie	d I/O points	32 points/slot (I/O assignment: special 32 points)	32 points (I/O assignment: intelli 32 points)	0	
12VDC extern capacity (Tran	al power supply sceiver)	Use a transceiver and AUI cables that satisfy specifications.	Consider converting 10BASE5 to 10BASE-T.	0	

O: Compatible, \triangle : Partial change required, ×: Incompatible

O: Compatible, \triangle : Partial change required, ×: Incompatible

(c) Comparison between A1SJ71QE71N-B2 (10BASE2)

		Specifi	ĺ	B	
	Item	QnAS series	L series	Compatibility	Precautions for replace- ment
		A1SJ71QE71N-B2	LJ71E71-100		
	Transmission speed	10Mbps		×	
	Communication mode	Half-duplex		×	
	Transmission method	Base band		×	
Transmission	Max. distance between nodes	925m	Consider converting 10BASE2 to	×	
specifications	Maximum segment length	185m	10BASE-T.	×	
	Maximum number of nodes/connection	30/segment		×	
	Minimum node interval	0.5m		×	
Transfer data	Number of allowable simultaneously open connections	8 connections	16 connections	0	
storage	Fixed buffer	1k word × 8	1k word × 16	0	
memory	Random access buffer	6k wor	ds × 1	0	
No. of E ² PRO	M writes	Max. 100,000 times on same area in E ² PROM	_		No E ² PROM (Refer to Section 3.8.)
No. of occupied I/O points		32 points/slot (I/O assignment: special 32 points)	32 points (I/O assignment: intelli 32 points)	0	

3.2.2 Cable specifications comparison

The L series does not support 10BASE5 and 10BASE2 of the Ethernet standards. Consider converting 10BASE5 and 10BASE2 to 10BASE-T using a media converter.

If 10BASE-T has been used in the AnS/QnAS series system, the connected devices such as hubs^{*1} or cables can be used without modification.

For details on the connection devices, refer to the MELSEC-L Ethernet Interface Module User's Manual (Basic).

*1 When connecting a hub that does not have the auto-negotiation function On a connection with a hub that does not have the auto-negotiation function, set the hub side to the half-duplex communication mode.

3.3 Functional Comparison

(1) Comparison between AnS series and L series

O : Compatible, \bigtriangleup : Partial change required, ×: Incompatible

	Descr	iption			
	AnS series	L series			
Item	A1SJ71E71N3-T A1SJ71E71N-B5 A1SJ71E71N-B2	LJ71E71-100	Compatibility	Precautions for replacement	
Initial processing	The state in which data commu device is possible is set.	unications with an external	Δ	Set in the GX Works2 network parameters. ^{*1} (Delete the sequence program of the section corresponding to the function.) (Refer to Section 3.9.)	
Open processing	The communications line for per communications with external of	•	Δ	Change to a sequence program that uses the dedicated instructions (OPEN, CLOSE). * ⁵ (Refer to Section 3.9.)	
Communications using fixed buffer (procedural, nonprocedural)	The fixed buffer on the Etherne send/receive the desired data l controller CPU and external de	between the programmable	Δ	Change to a sequence program that uses the dedicated instructions (BUFSND, BUFRCV). (Refer to Section 3.9.)	
Communications using random access buffer	Data is read/written to the rand Ethernet interface module from		Δ	Change the sequence program as buffer memory assignments differ. (Refer to Section 3.6.2.)	
Read/write communications of programmable controller CPU internal data	Programmable controller CPU from external devices.	data is read/written to and	Δ	Some of the commands and device ranges are restricted. (Refer to Section 3.7.)	
Broadcast communication	Data is sent/received to all extended Ethernet network as the Ethern IP-based data communications	net interface module by UDP/	0		
Communications while the programmable controller CPU is stopped	Data communications can be c programmable controller CPU passive open processing)		Δ	Set in the GX Works2 network parameters. ^{*2} (Delete the sequence program of the section corresponding to the function.)	
Router relay function	Data communications is perfor gateway.	med via a router and a	Δ	Set in the GX Works2 network parameters. ^{*3} (Delete the sequence program of the section corresponding to the function.)	
Existence check of external device	Whether or not the external development of the connection is established (in checked.		Δ	Change to a sequence program that uses the dedicated instructions (OPEN). *5	
Communications using pairing open	The connection is opened with connection for transmission as communications)		Δ	Change to a sequence program that uses the dedicated instructions (OPEN). ^{*4*5}	
Unit of timer set values for data communications	Set the unit (500ms/2s) of timer values	Fixed to 500ms	Δ	Set in the GX Works2 network parameters. (Delete the sequence program of the section corresponding to the function.) The unit of timer set values is 500ms.	

*1 Initial processing

- The L series performs initial processing by setting the following items in the GX Works2 network parameters.
- Settings from "Network Type" to "Mode"
- "Operation Setting"
- "Initial Setting"

There is no need for a sequence program for initial processing/end processing.

A Network Parameter - MELSECNE	T/CC IE/Ethernet &	lodule Configuration	ı	
E Set network configuration setting in C	C IE Field configuration	window		
		Module 1		Module 2
Network Type	Ethernet		✓ None	
Start I/O No.		00	00	
Network No.			1	
Total Stations				
Group No.			0	
Station No.			1	
Mode	Online		▼	
	Ope	eration Setting		
	Ir	hitial Setting		
	C	pen Setting		
	Router	Relay Parameter		
	Station No	o.<->IP Information		
	FTI	P Parameters		
		-mail Setting		
	Inte	rrupt Settings		
Interliel: Transmission Decembers	I/O No. :	/ Set) Set if it is n EX) to start I/O No. in whi	Valid Module Du	ring Other Station Access
Antonioutadana XV				1 1
Assignment Routing Parameters	Assignment Image	Group Setting	Check	End
Print Window Print Window Preview				
•				1

*2 Communications while the programmable controller CPU is stopped

By setting "Operation Setting" - "Initial Timing" to "Always wait for OPEN", the L series can perform communications while the programmable controller CPU is stopped.

For connections for which passive open and communications during a stop are set to enabled, it is not necessary to use a sequence program for communications during a stop/open processing/close processing.

Ethernet Operation Setting	
Communication Data Code	Initial Timing
Binary Code	 Do not wait for OPEN (Communications impossible at STOP time)
C ASCII Code	 Always wait for OPEN (Communication possible at STOP time)
IP Address Setting	Send Frame Setting
Input Format DEC	Ethernet(V2.0)
IP Address 192 0	0 1 254 C IEEE802.3
🔲 Enable Online Change	TCP Existence Confirmation Setting
	Use the KeepAlive
	C Use the Ping
End	Cancel

*3 Router relay function

The L series sets the router relay function at "Network Parameter" - "Router Relay Parameter" on GX Works2. There is no need for a sequence program for the router relay function.

ß	Netw	ork Pa	ramete	r Settii	ng the	Ethern	et Rout	er Rela	y Para	net	er [
	Router Relay Function Not Used											
	Sub	onet Mas	k Pattern									
	Def	ault Rou	iter IP Ad	dress 🗌								
	Rou	uter Info	rmation		In	put Form	at DEC	•				
	No.		Sub-net	Address		F	Router IF	Address		•		
	1											
	3											
	4											
	6											
	7									-		
	Clear Check End Cancel											

*4 Communications using pairing open

On the L series, the pairing open setting of connection No.8 and 16 is not possible. (The AnS series supported the pairing open setting of connection No. 8 for receiving and connection No. 1 for sending.) When the pairing open setting of connection No.8 has been made, change the sequence program. On the L series, the pairing open settings of connection No.1 to 7, and 9 to 15 are possible.

*5 Open processing When "Operation Setting" - "Initial Timing" in GX Works2 is set to "Always wait for OPEN", the sequence program using dedicated instruction (OPEN/CLOSE) is not required.

(2) Comparison between QnAS series and L series

O : Compatible, \bigtriangleup : Partial change required, ×: Incompatible

		Descr	ription		
Item		QnAS series	L series		
		A1SJ71QE71N3-T A1SJ71QE71N-B5 LJ71E71-100 A1SJ71QE71N-B2		Compatibility	Precautions for replacement
Initial	Sequence program	The state in which data comm	unications with an external	Δ	Some communications are restricted. *1
processing	GX Works2 network parameters	device is possible is set.		0	
Open processing	g	The communications line for percent communications with external		0	
Communications (procedural, non	s using fixed buffer aprocedural)	The fixed buffer on the Etherne send/receive the desired data controller CPU and external de	between the programmable	0	
Communications access buffer	s using random	Data is read/written to the rand Ethernet interface module from		0	
Read/write comr programmable c internal data		Programmable controller CPU data is read/written to and from external devices.		Δ	Some of the commands and device ranges are restricted. (Refer to Section 3.7.)
Communications instructions	s using data link	Use data link instructions to re controller CPU data of other st		0	
File transfer (FTP server functions)		Use FTP commands to read/write individual files from external devices.		Δ	The default log-in name and password have been changed from "AJ71QE71" to "LJ71E71", so set the log-in name again.
Broadcast comn	nunication	Data is sent/received to all ext Ethernet network as the Ethern IP-based data communications	net interface module by UDP/	0	
Communications programmable c stopped		Data communications can be continued when the programmable controller CPU enters a stop state. (during passive open processing)		Δ	Delete the sequence program of the section corresponding to the function, and set in the GX Works2 network parameters. *2
MELSECNET/H, MELSECNET/10 relay exchange		On a network system comprising a mixture of Ethernet and MELSECNET/H or MELSECNET/10, or a network system that relays through multiple Ethernets, data communications is performed via these multiple networks.		Δ	Some communications are restricted. ^{*3}
Router relay function		Data communications is perfor gateway.	med via a router and a	0	
Existence check	of external device	Whether or not the external dee the connection is established (checked.	vice is operating normally after in open processing) is	0	
Communications using pairing open		The connection is opened with connection for reception and connection for transmission as a single pair. (for fixed buffer communications)		Δ	Some communications are restricted. *4
Parameter registration to E ² PROM		Saves parameters to E ² PROM.	_	Δ	No E ² PROM (Refer to Section 3.8.)

*1 Initial processing using a sequence program

- All of the items such as data code setting that were set on the QnA series exchange condition setting switch operate in an OFF state.
- To change the communication conditions, add the sequence program for re-initial processing.
- As the network number and station number cannot be set, the Ethernet interface module cannot be connected with MELSOFT products such as GX Works2.

To perform the above, perform initial processing by GX Works2 network parameters.

*2 Communications while the programmable controller CPU is stopped

By setting "Operation Setting" - "Initial Timing" to "Always wait for OPEN", the L series can perform communications while the programmable controller CPU is stopped.

For connections for which passive open and communications during a stop are set to enabled, it is not necessary to use a sequence program for communications during a stop/open processing/close processing.

Ethernet Operation Se	ing 👂
Communication Data Code C Binary Code ASCII Code IP Address Setting Input Format DEC IP Address 192	Initial Timing Do not wait for OPEN (Communications impossible at STOP time) Always wait for OPEN (Communication possible at STOP time) Send Frame Setting C Ethernet(V2.0) D 1 254 C IEFER02.3
Enable Online Change	TCP Existence Confirmation Setting © Use the KeepAlive © Use the Ping End Cancel

- *3 MELSECNET/H, MELSECNET/10 relay exchange On the L series, Ethernet parameters (network number and station number) using the EPRSET instruction cannot be set. When the EPRSET instruction is in use, delete the sequence program of the corresponding section, and set the Ethernet parameters in the GX Works2 network parameters.
- *4 Communications using pairing open

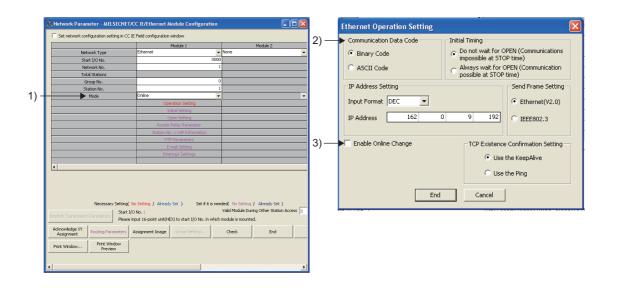
On the L series, the pairing open setting of connection No.8 and 16 is not possible. (The QnAS series supported the pairing open setting of connection No. 8 for receiving and connection No. 1 for sending.) When the pairing open setting of connection No.8 has been made, change the sequence program. On the L series, the pairing open settings of connection No.1 to 7, and 9 to 15 are possible.

3.4 Switch Setting Comparison

(1) Comparison between AnS series and L series

				O: Compatible	, \triangle : Partial chan	ge required, ×: Incompatible
			Descriptio	n		
			AnS series	L series		Precautions for replace-
	Switch	name	A1SJ71E71N3-T		Compatibility	ment
			A1SJ71E71N-B5	LJ71E71-100		ment
			A1SJ71E71N-B2			
			Selects the operation mode.			
			0: Online			
			1: Offline			Set in the GX Works2
Operation	mode set	ting switch	2: Test 1	-	\bigtriangleup	network parameters. (1) in *1)
			(self-loopback test)			
			3: Test 2 (RAM test)			
		-	4: Test 3 (ROM test)			
		Selection of line	Selects line processing when a	-		Closes the line when a
	SW1	SW1 processing at a	TCP ULP timeout error occurs.		Δ	TCP ULP timeout error occurs.
		TCP timeout	OFF: Closes the line			
		error	ON: Does not close the line			
			Selects the communications data	-		Set in the GX Works2
	SW2	Data code	code type.		Δ	network parameters. (2) in
Exchange		setting	OFF: Binary code			*1)
condition		_	ON: ASCII code			
setting switch		CPU	Selects write during RUN enable/			Set in the GX Works2
SWITCH	SW7	communications	disable.	-	\bigtriangleup	network parameters. (3) in
		timing setting	OFF: Write during RUN disabled ON: Write during RUN enabled			*1)
			Selects the initial processing			
			startup timing.			A quick start is performed
	SW8	Initial timing	OFF: Quick start	-	\bigtriangleup	(Initial processing starts up with no delay time.)
			ON: Normal start			

*1 GX Works2 network parameters

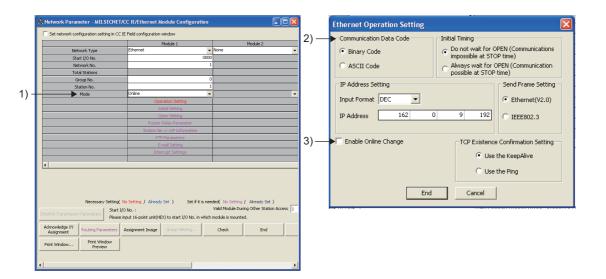


O : Compatible, \triangle : Partial change required, ×: Incompatible

(2) Comparison between QnAS series and L series

			Description	1	Ì		
			QnAS series	L series		Precautions for replace	
	Switch	name	A1SJ71QE71N3-T		Compatibility	ment	
			A1SJ71QE71N-B5	LJ71E71-100		ment	
			A1SJ71QE71N-B2				
			Selects the operation mode.				
			0: Online				
			1: Offline			Set in the GX Works2	
Operation	mode set	ting switch	2: Test 1 (self-loopback test)	_	\bigtriangleup	network parameters. (1) in	
•		0	3: Test 2 (RAM test)			*1)	
			4: Test 3 (ROM test)			- /	
			5: Test 4 (E ² PROM test)				
	SW1 Selection of line processing at a TCP timeout error	Selection of line	Selects line processing when a				
		TCP ULP timeout error occurs.			Closes the line when a TCP ULP timeout error		
		TCP timeout	OFF: Closes the line	-	Δ		
		error	ON: Does not close the line			occurs.	
	SW2 Data code setting		Selects the communications data			Set in the GX Works2	
		code type.	-	Δ	network parameters. (2) ir *1)		
		OFF: Binary code					
			ON: ASCII code			1)	
Exchange		Automatic	Selects the startup method when a				
condition	SW3		module is started.	_	Δ	Operation follows the	
setting	0.110	setting	OFF: Operation follows Y19			setting of Y19.*2	
switch		ootg	ON: Operation regardless of Y19				
		CPU	Selects write during RUN enable/			Set in the GX Works2	
	SW7	communications	disable.	_		network parameters. (3) i	
	-	timing setting	OFF: Write during RUN disabled		_	*1)	
		<u> </u>	ON: Write during RUN enabled			·	
			Selects the initial processing			A quick start is performe	
	SW8	Initial timing	startup timing.	_	Δ	(Initial processing starts up with no delay time.)	
		Ŭ	OFF: Quick start		_		
			ON: Normal start			mar no delay ante.)	

*1 GX Works2 network parameters



*2 When performing initial processing using GX Works2 network parameters, initial processing is executed automatically. (There is no need for a sequence program for initial processing/end processing.)

3.5 Parameter Comparison

(1) Comparison between AnS series and L series

On the AnS series, the parameters of the Ethernet interface module are set in the buffer memory. On the L series, however, the parameters are set using GX Works2 network parameters. Therefore, there is no compatibility between the parameters of the AnS series and the L series. When replacing the AnS series with the L series, delete the parameter settings of the AnS series and set new parameters on GX Works2.

(2) Comparison between QnAS series and L series

O: Compatible. \triangle : Partial change required. \times : Incompatible Description QnAS series L series Parameter name A1SJ71QE71N3-T Compatibility Precautions for replacement A1SJ71QE71N-B5 LJ71E71-100 A1SJ71QE71N-B2 Network type 0 Start I/O No. 0 Network No. 0 Group No 0 Station No. 0 On the QnAS series, the mode Mode was set on the operation mode Δ setting switch. Network parameter IP address setting Operational setting Ο Initial settings On the QnAS series, the setting _ \triangle was set in the sequence Open settings _ \triangle program. Station No. <-> IP information 0 **FTP** Parameters 0 Router relay parameter 0 Routing parameter 0

3.6 Program Comparison

3.6.1 I/O signal

(1) Comparison between AnS series and L series

	Signal			
	AnS series	L series		
Input signal	A1SJ71E71N3-T		Compatibility	Precautions for replac ment
	A1SJ71E71N-B5 A1SJ71E71N-B2	LJ71E71-100		
Xn0		eption end (For connection No.1)	0	
Xn1	Transmission error detection or reception		0	
Xn2	Transmission normal end or rece		0	
Xn2 Xn3	Transmission error detection or reception	,	0	
Xn4	Transmission normal end or rece	,	0	
Xn5	Transmission error detection or reception	,	0	
Xn6	Transmission normal end or rece	,	0	
Xn7	Transmission error detection or reception	,	0	
Xn8	Transmission normal end or rece	, ,	0	
Xn9	Transmission error detection or reception		0	
XnA	Transmission normal end or rece	, ,	0	
XnB		,	0	
XnD		Transmission error detection or reception error detection (For connection No.6)		
XnD		Transmission normal end or reception end (For connection No.7) Transmission error detection or reception error detection (For connection No.7)		
XnE	Transmission normal end or rece	, ,	0	
XnF	Transmission error detection or reception		0	
X(n+1)0	Open end (For o		0	
X(n+1)1	Open end (For c	,	0	
X(n+1)2	Open end (For o	,	0	
X(n+1)3	Open end (For c	,	0	
X(n+1)4	Open end (For c	,	0	
X(n+1)5	· · ·	connection No.6)	0	
X(n+1)6	Open end (For o	,	0	
X(n+1)7	· · ·	connection No.8)	0	
X(n+1)8	Open erro	,	0	
X(n+1)9	Initial no		0	
X(n+1)A	Initial er		0	
X(n+1)B		Use prohibited		
X(n+1)C	COM. ERI	0		
X(n+1)D			0	
X(n+1)E	Use pro	bhibited	0	
X(n+1)F	Watchdog timer	error detection	0	

		-	ule, △: Partial ch	ange required, ×: Incompatik
	Signal			
Output signal	AnS series A1SJ71E71N3-T A1SJ71E71N-B5 A1SJ71E71N-B2	L series	Compatibility	Precautions for replace- ment
Yn0	Transmission request or reception	end check (For connection No.1)	0	
Yn1	Transmission request or reception	end check (For connection No.2)	0	
Yn2	Transmission request or reception	end check (For connection No.3)	0	
Yn3	Transmission request or reception	end check (For connection No.4)	0	
Yn4	Transmission request or reception	end check (For connection No.5)	0	
Yn5	Transmission request or reception	end check (For connection No.6)	0	
Yn6	Transmission request or reception	end check (For connection No.7)	0	
Yn7	Transmission request or reception	end check (For connection No.8)	0	
Yn8	Open request (Fo	r connection No.1)	0	
Yn9	Open request (Fo	r connection No.2)	0	
YnA	Open request (Fo	r connection No.3)	0	
YnB	Open request (Fo	r connection No.4)	0	
YnC	Open request (Fo	r connection No.5)	0	
YnD	Open request (Fo	r connection No.6)	0	
YnE	Open request (Fo	connection No.7)	0	
YnF	Open request (Fo	r connection No.8)	0	
Y(n+1)0			0	
Y(n+1)1			0	
Y(n+1)2			0	
Y(n+1)3	Use pro	bhibited	0	
Y(n+1)4			0	
Y(n+1)5			0	
Y(n+1)6			0	
Y(n+1)7	COM. ERR LE	D OFF request	0	
Y(n+1)8	Use pro	phibited	0	
Y(n+1)9	Initial r	equest	0	
Y(n+1)A			0	
Y(n+1)B	Use pro	phibited	0	
Y(n+1)C	Buffer memory channel switching	Use prohibited	Δ	Buffer memory channel setting is not required. Delete the sequence program of the section corresponding to the function.
Y(n+1)D			0	
Y(n+1)E	Use pro	bhibited	0	
Y(n+1)F			0	

O : Compatible, \triangle : Partial change required, ×: Incompatible

(2) Comparison between QnAS series and L series

	Signal	name		
	QnAS series	L series		Precautions for repla
Input signal	A1SJ71QE71N3-T A1SJ71QE71N-B5 A1SJ71QE71N-B2	LJ71E71-100	Compatibility	ment
Xn0	Transmission normal end or rece	eption end (For connection No 1)	0	
Xn1	Transmission error detection or reception		0	
Xn2	Transmission normal end or rece	· · · · · ·	0	
Xn3	Transmission error detection or reception		0	
Xn4	Transmission normal end or rece	,	0	
Xn5	Transmission error detection or reception		0	
Xn6	Transmission normal end or rece	· · · · · ·	0	
Xn7	Transmission error detection or reception		0	
Xn8	Transmission normal end or rece	· · · · · ·	0	
Xn9	Transmission error detection or reception		0	
XnA	Transmission normal end or rece	,	0	
XnB		Transmission reception error detection (For connection No.6)		
XnC	Transmission normal end or rece	· · · · · ·	0	
XnD	Transmission error detection or reception		0	
XnE	· · · ·	Transmission error detection of reception error detection (of connection No.7) Transmission normal end or reception end (For connection No.8)		
XnF		Transmission error detection or reception error detection (For connection No.8)		
X(n+1)0		Open end (For connection No.1)		
X(n+1)1	Open end (For c		0	
X(n+1)2	Open end (For c	,	0	
X(n+1)3	Open end (For c	,	0	
X(n+1)4	Open end (For c	,	0	
X(n+1)5	Open end (For c	•	0	
X(n+1)6	Open end (For c		0	
X(n+1)7	Open end (For c	,	0	
X(n+1)8	Open error	,	0	
X(n+1)9		Initial normal end		
X(n+1)A	Initial error end		0	
X(n+1)B		Use prohibited		
X(n+1)C	COM. ERF		0	
X(n+1)D	E ² PROM read complete		Δ	No E ² PROM
X(n+1)E	E ² PROM write complete	Use prohibited		(Refer to Section 3.8.)
X(n+1)F	Watchdog timer	error datastian	0	, ,

	Signa	l name		
	QnAS series	L series		Precautions for replace-
Output signal	A1SJ71QE71N3-T A1SJ71QE71N-B5 A1SJ71QE71N-B2	LJ71E71-100	Compatibility	ment
Yn0	Transmission request or reception	n end check (For connection No.1)	0	
Yn1	Transmission request or reception	n end check (For connection No.2)	0	
Yn2	Transmission request or reception	n end check (For connection No.3)	0	
Yn3	Transmission request or reception	n end check (For connection No.4)	0	
Yn4	Transmission request or reception	n end check (For connection No.5)	0	
Yn5	Transmission request or reception	n end check (For connection No.6)	0	
Yn6	Transmission request or reception	n end check (For connection No.7)	0	
Yn7	Transmission request or reception	n end check (For connection No.8)	0	
Yn8	Open request (Fo	r connection No.1)	0	
Yn9	Open request (Fo	r connection No.2)	0	
YnA	Open request (Fo	r connection No.3)	0	
YnB	Open request (Fo	r connection No.4)	0	
YnC	Open request (For connection No.5)		0	
YnD	Open request (For connection No.6)		0	
YnE	Open request (Fo	r connection No.7)	0	
YnF	Open request (Fo	r connection No.8)	0	
Y(n+1)0	E ² PROM read request	Use prohibited	Δ	No E ² PROM
Y(n+1)1	E ² PROM write request	Ose prohibited	Δ	(Refer to Section 3.8.)
Y(n+1)2			0	
Y(n+1)3			0	
Y(n+1)4	Use pro	ohibited	0	
Y(n+1)5			0	
Y(n+1)6			0	
Y(n+1)7	COM. ERR LE	D OFF request	0	
Y(n+1)8	Use pro	ohibited	0	
Y(n+1)9	Initial request		0	
Y(n+1)A			0	
Y(n+1)B			0	
Y(n+1)C	lles re	abibitad	0	
Y(n+1)D	Use pro	ohibited	0	
Y(n+1)E			0	
Y(n+1)F			0	

O : Compatible, \bigtriangleup : Partial change required, ×: Incompatible

3.6.2 Buffer memory

(1) Comparison between AnS series and L series

There is no compatibility in the buffer memory assignments between the AnS series and the L series. Make a new sequence program.

Buffor mom	ory address	AnS series Buffer memory name		
Bullet mem	ory address	A1SJ71E71N3-T	Compatibility	Precautions for replacement
HEX	DEC	A1SJ71E71N-B5		
		A1SJ71E71N-B2		
0 to 1 _H	0 to 1	Local station IP address	Δ	Set in GX Works2 network parameters.
2 _H	2	Special function setting	Δ	oct in ox worksz network parameters.
3 _H	3	Timer setting time units	Δ	Not used on the L series.
4 to 5 _H	4 to 5	System area (Use prohibited)	-	
6 _H	6	TCP Maximum Segment transmission setting	Δ	$1E_{H}$ (30) is used on the L series.
7 _H	7	Destination existence check start interval timer value	Δ	
8 _H	8	Destination existence check interval timer value	Δ	
9 _H	9	Destination existence check, No. of retries	Δ	
A _H	10	TCP ULP timeout value	Δ	
B _H	11	TCP zero window timer value	Δ	
C _H	12	TCP retransmit timer value	Δ	Set in GX Works2 network parameters.
D _H	13	TCP end timer value	Δ	
E _H	14	IP reassembly timer value	Δ	
F _H	15	Response monitoring timer value	Δ	
10 to 17 _H	16 to 23	Application setting area (Connection No.1 to 8)	Δ	
18 to 4F _H	24 to 79	Exchange address settings area (Connection No.1 to 8)	Δ	
50 _H	80	Initial error code	Δ	69 _H (105) is used on the L series.
51 to 52 _H	81 to 82	Local station IP address	Δ	6A to 6B _H (106 to 107) is used on the L series.
53 to 55 _H	83 to 85	Local station Ethernet address	Δ	6C to 6E _H (108 to 110) is used on the L series.
56 to 58 _H	86 to 88	System area (Use prohibited)	_	
		Information for each connection		78 to C7 _H (120 to 199) is used on the L
59 to A8 _H	89 to 168	(Connection No.1 to 8)	Δ	series.
A9 to B3 _H	169 to 179	Error log 1 to 11	Δ	E5 to $174_{\rm H}$ (229 to 372) is used on the L series.
B4 to 16F _H	180 to 367	System area (Use prohibited)	-	
170 to 1A3 _H	368 to 419	Status information by protocol type	Δ	178 to 1E1 _H (376 to 481) is used on the I series.
1A4 to 1BF _H	420 to 447	System area (Use prohibited)	-	
1C0 to 1C1 _H	448 to 449	Subnet mask field	Δ	
1C2 to 1C3 _H	450 to 451	Default router IP address	Δ	
1C4 _H	452	No. of registered routers	Δ	Set in GX Works2 network parameters.
1C5 to 1D8 _H	453 to 472	Setting of router 1 to 5	Δ	
1D9 to 1EF _H	473 to 495	System area (Use prohibited)	-	
1F0 _H	496	Communication specification during STOP	Δ	Not used on the L series.
1F1 to 1FF _H	497 to 511	System area (Use prohibited)	-	
200 to 11FF _H	512 to 4607	Fixed buffer No.1 to 8	Δ	680 to 267F _H (1664 to 9855) is used on the L series.
1200 to 1DFF _H	4608 to 7679	Random access buffer	Δ	2680 to 3E7F_{H} (9856 to 15999) is used o the L series.

(2) Comparison between QnAS series and L series

The buffer memory assignment of the QnAS series is compatible with that of the L series. The sequence program of the QnAS series can be used as is.

Buffer mem	ory address	Buffer mei	nory name		
		QnAS series	L series		
HEX	DEC	A1SJ71QE71N3-T A1SJ71QE71N-B5 A1SJ71QE71N-B2	LJ71E71-100	Compatibility	Precautions for replacement
0 to 1 _H	0 to 1	Local station	n IP address	0	
2 to 3 _H	2 to 3	System area (Jse prohibited)	0	
4 _H	4	Special fun	ction setting	0	
5 to A _H	5 to 10	System area (Jse prohibited)	0	
B to 13 _H	11 to 19	Monitori	ng timer	0	
14 _H	20	Automatically op	en UDP port No.	0	
15 to 1D _H	21 to 29	System area (Use prohibited)	0	
1E _H	30	TCP Maximum Segme	nt transmission setting	0	
1F _H	31	System area (Use prohibited)	Exchange condition setting	0	
20 to 27 _H	32 to 39	Application setting area	(Connection No.1 to 8)	0	
28 to 5F _H	40 to 95	Exchange address settings	area (Connection No.1 to 8)	0	
60 to 66 _H	96 to 102	System area (Jse prohibited)	0	
67 _H	103	Communication specification during STOP		Δ	
68 _H	104	E ² PROM parameter portion specification	System area (Use prohibited)	Δ	Delete the sequence program.
69 _H	105	Initial er	ror code	0	
6A to 6B _H	106 to 107	Local station	Local station IP address		
6C to 6E _H	108 to 110	Local station E	thernet address	0	
6F _H	111	Syster	n area	0	
70 _H	112	E ² PROM register status		Δ	
71 _H	113	Parameter use status	System area (Use prohibited)	Δ	Delete the sequence program.
72 _H	114	E ² PROM read result	System area (Ose prombiled)	Δ	Delete the sequence program.
73 _H	115	E ² PROM write result		Δ	
74 _H	116	Automatically op	en UDP port No.	0	
75 _H	117	System area (Use prohibited)	0	
76 _H	118	Network No	/Station No.	0	
77 _H	119	Grou	p No.	0	
78 to C7 _H	120 to 199	Information for each connect	ction (Connection No.1 to 8)	0	
C8 _H	200	LED ON status (Left side)	LED ON status	Δ	Check the LED ON status at C8 _H (200
C9 _H	201	LED ON status (Right side)	Hub connection status area	Δ	
CA _H	202	Operation mode se	etting switch status	0	
CB _H	203	Exchange condition setting switch status	GX Works2 setting status	Δ	Stores the setting status of the GX Works2 network parameters.
CCH	204	System area (Use prohibited)	0	
CD _H	205	RECV instruction	execution request	0	
CEH	206	System area (Use prohibited)	0	
CF to DF _H	207 to 223	Data link command exe	cution result by channel	Δ	Stores the execution result of the ZNRI ZNWR instructions.
E0 to E2 _H	224 to 226	System area (Use prohibited)	0	
E3 _H	227	No. of error	s generated	0	
E4 _H	228	Error log w	rite pointer	0	
E5 to 174 _H	229 to 372	Error log b	ock 1 to 16	0	
175 to 177 _H	373 to 375	System area (Jse prohibited)	0	

				O : Compatible, \triangle	: Partial change required, ×: Incompatible
Buffer mem	ory address	Buffer me	mory name		
		QnAS series	L series		
HEX	DEC	A1SJ71QE71N3-T A1SJ71QE71N-B5 A1SJ71QE71N-B2	LJ71E71-100	Compatibility	Precautions for replacement
178 to 1FF _H	376 to 511	Status informatio	n by protocol type	Δ	Some assignments differ. For details, refer to the MELSEC-L Ethernet Interface Module User's Manual (Basic).
200 to 201 _H	512 to 513	Subnet r	mask field	0	
202 to 203 _H	514 to 515	Default route	Default router IP address		
204 _H	516	No. of registered routers		0	
205 to 224 _H	517 to 548	Setting of router 1 to 8		0	
225 to 227 _H	549 to 551	System area (Use prohibited)		0	
228 _H	552	Number of conversion table data		0	
229 to 3A8 _H	553 to 936	Conversion infor	Conversion information No.1 to 64		
3A9 to 3AA _H	937 to 938	Net mask pattern for M	IELSECNET/10 routing	0	
3AB to 3AF _H	939 to 943	System area (Use prohibited)	0	
3B0 to 67F _H	944 to 1663	FTP :	FTP setting		The default log-in name and password have been changed from "AJ71QE71" to "LJ71E71". Set in GX Works2 network parameters.
680 to 267F _H	1664 to 9855	Fixed buff	er No.1 to 8	0	
2680 to 3E7F _H	9856 to 15999	Random a	ccess buffer	0	

 \bigcirc : Compatible \land : Partial change required x: Incompatible

3.7 Reuse of Existing Programs

(1) AnS series

			ial change required, ×: Incompatible
	Compa	Precautions for replace-	
Item	Program (Communication tar- get device)	Sequence program (Ethernet Interface module)	ment
Communications using fixed buffer (procedural, nonprocedural)	Ο	Δ	[Programmable controller side] The sequence program is not compatible as buffer memory assignments differ. Change to a sequence program that uses the dedicated instructions (BUFSND, BUFRCV).
Communications using random access buffer	Ο	Δ	[Programmable controller side] The sequence program is not compatible as buffer memory assignments differ. Check the buffer memory assignments and change the sequence program.
Read/write communications of programmable controller CPU internal data	Δ	_	[Communication target device side] Some of the commands and device ranges are restricted. ^{*1}

*1 Read/write communications of programmable controller CPU internal data

(1) On the L series, some commands (batch read/writer of microcomputer) are not usable.

For details, refer to the MELSEC-Q/L MELSEC Communication Protocol Reference Manual.

(2) Devices of the same name only that exist on the AnS series programmable controller CPU can be read/written within the device ranges of AnACPU.

The following devices cannot be accessed from external devices:

- Devices newly added on by LCPU
- Latch relays (L) and step relays (S) (In the case of LCPU, the internal relays (M), the latch relays (L) and step relays (S) of other devices can not be specified as target devices to be accessed.)
- File registers (R)

(3) The following devices are accessed on special relays (M9000 onwards) and special registers (D9000 onwards):

- SD1000 to SD1255 are accessed by specifying D9000 to D9255.
- SM1000 to SM1255 are accessed by specifying M9000 to M9255.

(2) QnAS series

		\bigcirc : Compatible, \triangle : Parti	al change required, ×: Incompatible
	Compa	Processions for replace	
Item	Program (Communication tar-	Sequence program	Precautions for replace- ment
	get device)	(Ethernet Interface module)	ment
Communications using fixed			
buffer	0	0	
(procedural, nonprocedural)			
Communications using			
random access buffer	0	0	
			[Communication target
Read/write of programmable			device side]
controller CPU internal data	Δ	_	Some of the commands and
controller CPO Internal data			device ranges are
			restricted.*1
Communications using data		0	
link instructions	0	0	
			[Communication target
			device side]
File transfer (FTP server			The default log-in name and
functions)	Δ	-	password have been
Turiotions,			changed from "AJ71QE71" to
			"LJ71E71", so set the log-in
			name again.

*1 Read/write of programmable controller CPU internal data

(1) Commands relating to file operations on LCPU differ from commands for QnACPU.

For details, refer to the MELSEC communication protocol reference manual.

(2) The program for accessing the programmable controller CPU in the data link system cannot be used. (The LCPU cannot be connected to MELSECNET (II) and MELSECNET/B.)

3.8 Other Precaution

(1) Parameter registration to E²PROM

As the L series Ethernet internet module does not have an E^2 PROM, delete the sequence program of the section corresponding to parameter registration to E^2 PROM.

On the L series Ethernet interface module, set the GX Works2 network parameters to save parameters to the programmable controller CPU.

(2) Initial processing/end processing

Initial processing using GX Works2 network parameters cannot be used jointly with initial processing/ end processing using the sequence program.

When using GX Works2 network parameters, delete processing by the sequence program.

(3) Open processing/close processing

Do not use open processing/close processing using I/O signals with open/close processing using dedicated instructions (OPEN/CLOSE) in the same connection.

(4) Passive open processing

The L series Ethernet interface module cannot cancel open requests before an open end after passive open processing is executed.

Perform close processing after an open end.

(5) Communications using fixed buffer

Do not use fixed buffer communication using I/O signals and fixed buffer communication using dedicated instructions (BUFSND/BUFRCV/BUFRCVS) in the same connection.

(6) About processing time

The data communications processing time differs on the AnS/QnAS series modules and L series modules.

For this reason, the data communications timing, etc. also differ.

If necessary, adjust the timing by inserting a wait time, for example.

For actual details on processing times, refer to the manual for the respective module.

(7) Replacement of the 10BASE5/10BASE2 with the 10BASE-T

The AnS/QnAS series 10BASE5/10BASE2 module is required to be also replaced with the L series 10BASE-T module. Note that a media converter is required.

3.9 Program Examples

The following shows a program example at transition from the AnS series to the L series. When applying the program example introduced in this section to an actual program, sufficiently study if there will be any problem in control on the target system.

(1) System configuration

The following shows the system configuration used in the program example in this section.

(a) AnS series

	Etherne	t interface module ^{*1}	Transmission request	External device
A2USCPU	Connection No.1	for fixed buffer transmission -	signal (Y0)	

(b) L series

	Ethernet interface module*1	_	External device
L26CPU-BT	Connection No.1 for fixed buffer transmission	BUFSND instruction	

*1 The I/O signals of the Ethernet interface module shall be X/Y0 to X/Y1F.

3.9.1 Initial processing

The following shows a program example for performing initial processing.

(1) AnS series

The AnS series performs initial processing by writing parameters for initial processing by the sequence program to buffer memory and turning the initial request signal (Y19) ON.

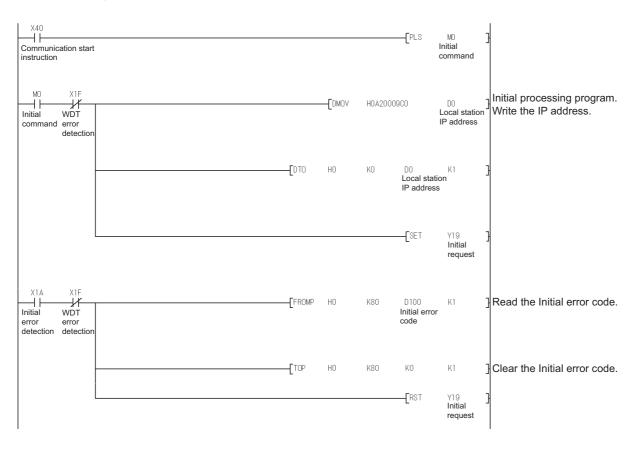
(a) Program conditions

The following shows a program example for performing initial processing when the communication start instruction (X40) is turned ON.

Set the parameters for initial processing as follows. (Otherwise, use default values.)

Buffer memory address DEC (HEX)	Item	Set value
0 to 1(0 to 1 _H)	Local station IP address	A20009C0 _H (162.0.9.192)

(b) Program example



⊠Point

On the L series, the parameter for initial processing is set using GX Works2 network parameters. When replacing the AnS series with the L series, refer to (1)(b) to delete the program where the parameter for initial processing is set and set the parameter using GX Works2 network parameters.

(2) L series

The L series performs initial processing by setting the following items in the GX Works2 network parameters.

- Settings from "Network Type" to "Mode"
- "Operation Setting"
- "Initial Setting"

When replacing the AnS series with the L series, delete the AnS series' sequence program for initial processing.

(a) Program conditions

Set as follows in the GX Works2 network parameters:

IP address: A20009C0H(162.0.9.192)

Other than IP address: Use default values.

(b) Network parameter setting example

1) "Network Parameter - MELSECNET/CC IE/Ethernet Module Configuration"

1 Set network con	figuration setting in CC	IE Field configuration	window			
			Module 1		Module 2	
Neb	work Type	Ethernet		✓ None		-
Sta	rt I/O No.		0	000		
Nel	twork No.			1		
Tot	al Stations					
Gr	roup No.			0		
St	ation No.			1		
	Mode	Online		<u> </u>		•
			ration Setting			
			iitial Setting			
			pen Setting			
		Router	Relay Parameter			
			o.<->IP Information			
			^o Parameters			
			mail Setting			
		Inte	rrupt Settings			
Interlink Transmission	Start I/	'O No. :	/ Set) Set if it is i X) to start I/O No. in wh	Valid Module Du	ring Other Station Acc	ess 1
Acknowledge XY Assignment	Routing Parameters	Assignment Image	Group Setting	Check	End	
Print Window	Print Window Preview					
d.					1	

2) "Operation Setting"

Ethernet Operation Setting	
Communication Data Code	Initial Timing
Binary Code	 Do not wait for OPEN (Communications impossible at STOP time)
C ASCII Code	C Always wait for OPEN (Communication possible at STOP time)
IP Address Setting	Send Frame Setting
Input Format DEC	Ethernet(V2.0)
IP Address 192 0	0 1 254 O IEEE802.3
Enable Online Change	TCP Existence Confirmation Setting C Use the KeepAlive C Use the Ping
End	Cancel

3) "Initial Setting"

	Setting Value	Default Value	In Unit
TCP ULP Timer		60	X 500ms
TCP Zero Window Timer		20	X 500ms
TCP Resend Timer		20	X 500ms
TCP End Timer		40	X 500ms
IP Assembly Timer		10	X 500ms
Response Monitoring Timer		60	X 500ms
Dest. Confirmation Start Interval		1200	X 500ms
Dest. Confirmation Interval		20	X 500ms
Dest. Confirmation Resend		3	Times
NS Setting nput Format DEC IP Address of DNS Server1 IP Address of DNS Server2			

3.9.2 Open/close processing

The following shows a program example for performing open processing/close processing.

(1) AnS series

[Open processing]

The AnS series performs initial processing by writing communication parameters for initial processing by the sequence program to buffer memory and turning Open request signal (Y8) ON.

[Close processing]

The AnS series performs close processing by turning Open request signal (Y8) OFF, or by the close request (FIN) from an external device.

(a) **Program conditions**

The following shows a program example for performing open processing (unpassive open) on connection No.1 when initial normal end (X19) turns ON.

Set the communication parameters as follows. (Otherwise, use default values.)

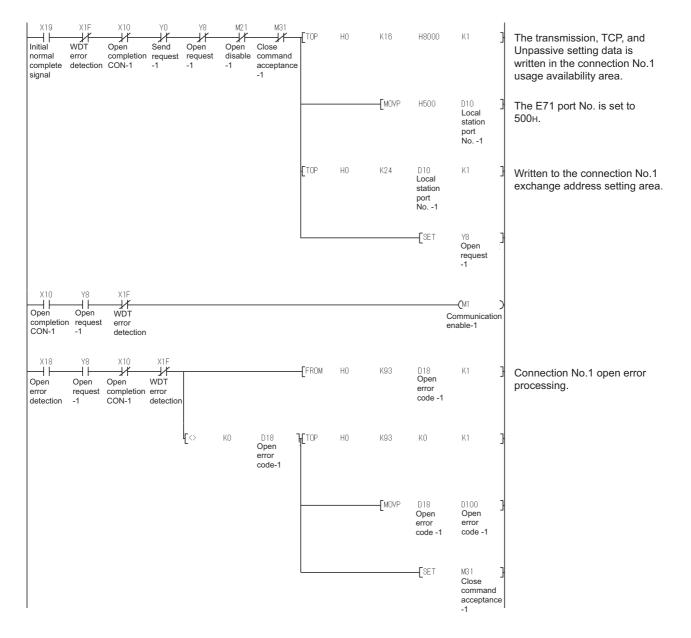
Buffer memory address	Item		Set value
DEC (HEX)			
	Connection No.1 application setting area		
16 (10 _H)	Sets the application of the fixed buffer (b0).	0: Transmission	
	Destination existence check setting (b1)	0: No existence check	8000 _H
	Pairing open setting (b7)	0: Not pairing open	
	Communication method (protocol)	0: TCP/IP	
	Communication protocol setting (b8)		
	Communications using fixed buffer procedure	0: Performed	
	performed/not performed (b9)	0. Fenomed	
	Open method setting (b15, b14)	10: Unpassive open	
24 (18 _H)	Host port number (For connection No.1)		500 _H

⊠Point -

The open processing and the close processing on the L series have different methods from those on the AnS series.

When replacing the AnS series with the L series, refer to Section 3.9.2 (2) and change the program of the open processing and close processing.

(b) Program example



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(2) L series

[Open processing]

The L series uses the dedicated instruction (OPEN) to perform open processing.

The communication parameters can be set using one of the following methods:

• In the control data of the dedicated instruction (OPEN)

• On GX Works2, select "Network Parameter" - "Ethernet / CC IE Field" - (Ethernet) - "Open Setting". [Close processing]

The L series performs close processing by either using the dedicated instruction (CLOSE), or by the close request (FIN) from an external device.

(a) Program conditions

The following shows a program example for performing open processing (unpassive open) on connection No.1 when initial normal end (X19) turns ON with the initial normal end signal (M5000) ON.

Set the communication parameters in "Network Parameter" on GX Works2.

(b) Network parameter setting example

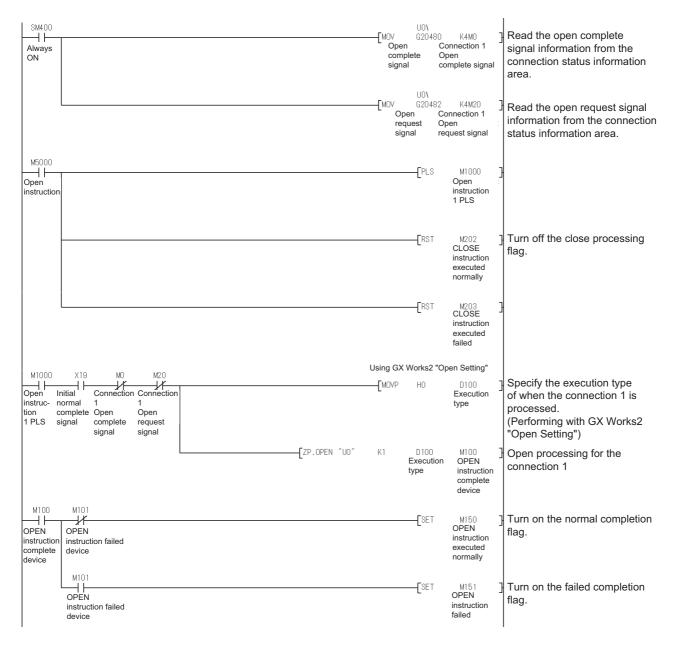
1) "Open Setting"

🤽 Network Parameter Ethernet Open Setting Module No.: 1														
IP Address/Port No. Input Format														
		Protocol	Open System	Fixed Bu	ffer	Fixed Buffer Communication		Pairing Open		Existence Host Station Confirmation Port No.		Destination IP Address	Destination Port No.	
	1	TCP 🔻	Unpassive •	 Send 	-	Procedure Exist 🛛 👻	- [-	No Confirm 📼	0500			
	2	-		-	Ŧ		•		•					
	3	-		-	Ŧ		-		-	-				
	4	•		-	Ŧ		•		-					
	5	•		-	-		-		-					
	6	•		-	•		-		-	•				
	7	-		-	•		-		-	•				
	8			• •	• •	_	•		Ŧ					
	9 10			• •	Ŧ		Ŧ		Ŧ	_				
	10	• •		• •	• •		Ŧ		÷					
	12			• •	Ŧ		Ŧ		÷	•				
	13	· ·		• •	-		_		Ŧ	•				
	14	-		-	-	•			Ŧ	•				
	15	•		-	-		-	•	-	-				
	16	-		-	-		-	•	-	-				

⊠Point

When replacing the AnS series with the L series, change the open processing/close processing program of the AnS series to that of the L series.

(c) Program example



⊠Point

When "Operation Setting" - "Initial Timing" in GX Works2 is set to "Always wait for OPEN", the sequence program for open processing/close processing is not required.

3.9.3 Communication using fixed buffer

The following shows a program example for performing communication using fixed buffer.

(1) AnS series

[Transmission processing]

The AnS series performs data transmission processing to external devices from the fixed buffer by writing the send data to the fixed buffer area by the sequence program, and turning the send request signal (Y0) ON.

[Reception processing]

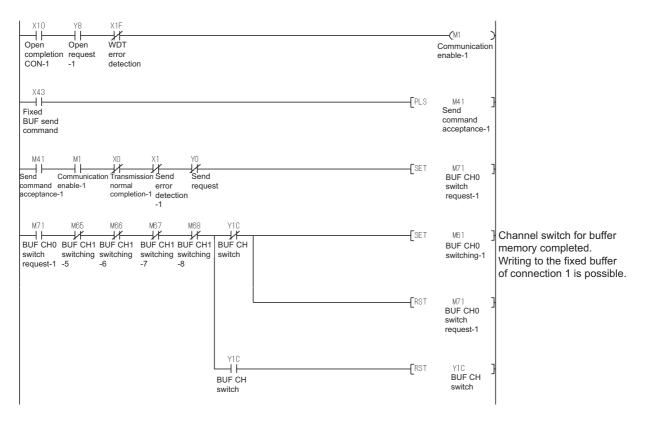
On the AnS series, the reception completion signal (X0) turns ON when data is received to the fixed buffer area.

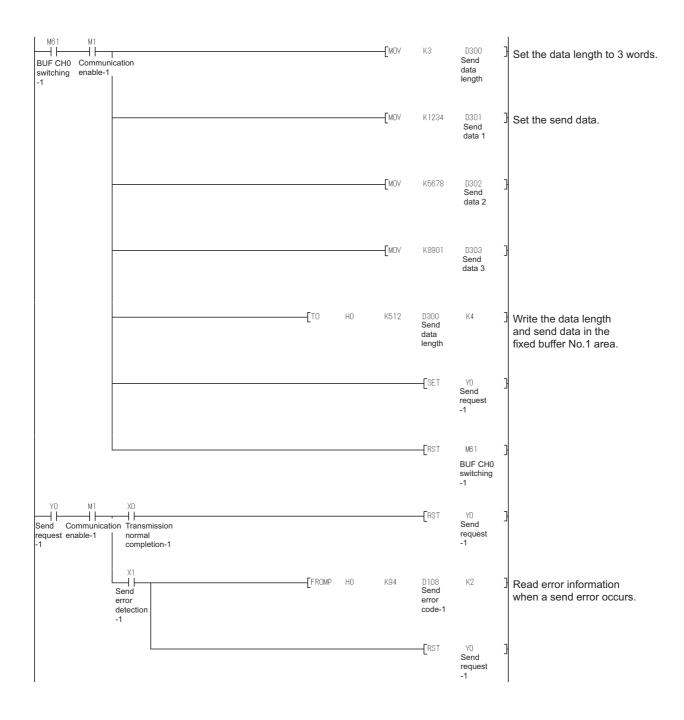
The A/AnS series performs data reception processing by reading received data from the fixed buffer area by the sequence program, and turning the reception completion confirmation signal (Y0) ON.

(a) Program conditions

The following shows a program example for performing transmission processing by fixed buffer No.1 when the fixed buffer transmission instruction (X43) is turned ON.

(b) Program example





(2) L series

[Transmission processing]

The L series uses the dedicated instruction (BUFSND) to perform data transmission from the fixed buffer to an external device.

[Reception processing]

On the L series, the fixed buffer reception status signal (corresponding bit of address $5005_{\rm H}$) in buffer memory turns ON when data is received to the fixed buffer area.

The L series uses the dedicated instruction (BUFRCV) to perform data reception.

(a) Program conditions

The following shows a program example for performing transmission processing by fixed buffer No.1 when the transmission instruction (M7000) is turned ON.

(b) Program example

M7000 Send instruction	X19 Initial normal complete signal	M0 Connection 1 open complete signal					[PLS	M3000 Send instruction 1PLS	}	Specify the setting data for transmission processing
M3000 Send instruction 1PLS						[MOV	K3	D300 Data length setting (No. of words)]	Word length to send the data
			 			[MOV	K1234	D301 Send data setting	}	Send data
						[MOV	K5678	D302 Send data setting]	
						[MOV	K8901	D303 Send data setting	}	
			 ZP.BUFSND	″UO″	K1		D300 I length ng (No. of Is)	M300 BUFSND instruction complete device	}	Transmission processing by the connection 1.
M300 BUFSND instruction complete device	M301 BUFSND instruction f device	ailed						M350 ocessing for rmal completion	ן י	Turn on the normal completion flag.
	M301 BUFSND instruction f device	ailed						M351 ocessing for or completion]	Turn on the failed completion flag.

APPENDICES

Appendix 1 External Dimensions

For external dimensions of modules shown in this handbook, refer to the user's manual for each module.

Appendix 2 Spare Parts Storage

- (1) The general specifications of programmable controllers are as follows. Please do not store
- (2) The general specifications of programmable controllers are as follows. Please do not store spare parts under a high temperature or high humidity condition, even within the range guaranteed by the specifications.

Storage ambient temperature	-20 to 75°C
Storage ambient humidity	10 to 90%, no condensation

- (3) Store in a place avoiding direct sunlight.
- (4) Store under condition with less dust or no corrosive gas.
- (5) The battery capacity of an A6BAT or A8BAT battery or a lithium-coin battery (commercially available) for memory card will be decreased by its self-discharging even when not used. Replace it with a new one in 5 years as a guideline.
- (6) For a power supply module, CPU module with built-in power supply, or analog module that use any aluminum electrolytic capacitor, which is indicated in the table below, take the following measures since the characteristics will be deteriorated when the aluminum electrolytic capacitor is left un-energized for a long time.

Product	Model			
CPU module	A1SJHCPU			
(Power supply built-in type)				
Power supply module	A1S61PN, A1S62PN, A1S63P			
	A1S64AD, A1S68AD, A1S62DA, A1S68DAI, A1S68DAV, A1S63ADA,			
Analog module	A1S66ADA			

[Countermeasures for preventing aluminum electrolytic capacitor characteristics deterioration] Apply the rated voltage to the aluminum electrolytic capacitor for several hours once a year to activate it. Or, rotate products at the periodic inspection (in every 1 year or two).

[Reference]

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The life of an aluminum electrolytic capacitor, even if not used, under a normal temperature decreases approximately at 1/4 speed of the case when it is energized.

Appendix 3 Relevant Manuals

Appendix 3.1 Replacement handbooks

(1) Transition guides

No.	Manual name	Manual number	Transition target	
NO.			A (large)	AnS (small)
1	MELSEC-A/QnA Series Transition Guide	L-08077E	0	×
2	MELSEC-AnS/QnAS (Small Type) Series Transition Guide	L08236E	×	0

(2) Transition handbooks

No.	Manual name	Manual number	Transiti	on target
NO.	Manual name	Manual number	A (large)	AnS (small)
	Transition from MELSEC-A/QnA (Large Type) Series to Q Series Handbook (Fundamentals)	L-08043ENG	0	×
1	Transition from MELSEC-AnS/QnAS (Small Type) Series to Q Series Handbook (Fundamentals)	L-080219ENG	×	0
	Transition from MELSEC-AnS/QnAS (Small Type) Series to L Series Handbook (Fundamentals)	L08258ENG	×	0
	Transition from MELSEC-A/QnA (Large Type) Series to Q Series Handbook (Intelligent Function Modules)	L-08046ENG	0	×
2	Transition from MELSEC-AnS/QnAS (Small Type) Series to Q Series Handbook (Intelligent Function Modules)	L-08220ENG	×	0
	Transition from MELSEC-AnS/QnAS (Small Type) Series to L Series Handbook (Intelligent Function Modules)	L08259ENG	×	0
3	Transition from MELSEC-A/QnA (Large Type), AnS/QnAS (Small Type) Series to Q Series Handbook (Network Modules)	L-08048ENG	0	0
3	Transition from MELSEC-AnS/QnAS (Small Type) Series to L Series Handbook (Network Modules)	L08260ENG	×	0
4	Transition from MELSEC-A/QnA (Large Type), AnS/QnAS (Small Type) Series to Q Series Handbook (Communications)	L-08050ENG	0	0
4	Transition from MELSEC-AnS/QnAS (Small Type) Series to L Series Handbook (Communications)	L08261ENG	×	0
5	Transition from MELSEC-A0J2H Series to Q Series Handbook	L-08060ENG	0	0
6	Transition from MELSECNET/MINI-S3, A2C(I/O) to CC-Link Handbook	L-08061ENG	0	0
7	Transition from MELSEC-I/OLINK to CC-Link/LT Handbook	L-08062ENG	0	0
8	Transition of CPUs in MELSEC Redundant System Handbook (Transition from Q4ARCPU to QnPRHCPU)	L-08117ENG	0	×

(3) Transition examples manual

No	. Manual name	Manual number	Transition target		
No.	. Manual name		A (large)	AnS (small)	
1	MELSEC-A/QnA Series Transition Examples	L-08121E	0	0	

(4) Others

No	Manual name	Manual number	Transition target		
NO.		Wanual number	A (large)	AnS (small)	
1	Procedures for Replacing Positioning Module AD71 with QD75	FA-A-0060	0	0	
2	Precautions for replacing A/QnA (large type) series CPU with Universal model QCPU	FA-A-0068	0	×	

Appendix 3.2 A series

No.	Manual name	Manual number	Model code
1	For A Ethernet Interface Module User's Manual	SH-080192	13JR45

Appendix 3.3 AnS series

No.	Manual name	Manual number	Model code
1	Computer Link Module Guidebook	SH-3510	13JE76
2	Computer Link Module (Com. link func./Print. func.) User's Manual	SH-3511	13JE77
3	Computer Link Module (Multidrop function) User's Manual	BCN-P5677	-
4	Type A1SD51S Intelligent communication module User's Manual	IB-66551	13JE90
5	AD51H-BASIC Programming Manual (Command)	SH-080090	13JF63
6	AD51H-BASIC Programming Manual (Debug and Compile)	SH-080091	13JF64

Appendix 3.4 QnAS series

No.	Manual name	Manual number	Model code
1	Computer Link Module Guidebook	SH-3510	13JE76
2	Serial Communications Module User's Manual (Modem Function Additional	IB-66612	13J825
2	Version)	10-00012	10020
3	For QnA Ethernet Interface Module User's Manual	SH-080146	13JR33

Appendix 3.5 L series

No.	Manual name	Manual number	Model code
1	MELSEC-L Serial Communication Module User's Manual (Basic)	SH-080894ENG	13JZ40
2	MELSEC-Q/L Serial Communication Module User's Manual (Application)	SH-080007	13JL87
3	MELSEC-Q/L MELSEC Communication Protocol Reference Manual	SH-080008	13JF89
4	MELSEC-L Ethernet Interface Module User's Manual (Basic)	SH-081105ENG	13JZ73
5	MELSEC-Q/L Ethernet Interface Module User's Manual (Application)	SH-080010	13JL89
6	MELSEC-Q/L Ethernet Interface Module User's Manual (Web function)	SH-080180	13JR40

Memo	

WARRANTY

Please confirm the following product warranty details before using this product.

1. Gratis Warranty Term and Gratis Warranty Range

If any faults or defects (hereinafter "Failure") found to be the responsibility of Mitsubishi occurs during use of the product within the gratis warranty term, the product shall be repaired at no cost via the sales representative or Mitsubishi Service Company.

However, if repairs are required onsite at domestic or overseas location, expenses to send an engineer will be solely at the customer's discretion. Mitsubishi shall not be held responsible for any re-commissioning, maintenance, or testing on site that involves replacement of the failed module.

maintenance, or testing on-site that involves replacement of the failed module.

[Gratis Warranty Term]

The gratis warranty term of the product shall be for one year after the date of purchase or delivery to a designated place.

Note that after manufacture and shipment from Mitsubishi, the maximum distribution period shall be six (6) months, and the longest gratis warranty term after manufacturing shall be eighteen (18) months. The gratis warranty term of repair parts shall not exceed the gratis warranty term before repairs.

[Gratis Warranty Range]

- (1) The range shall be limited to normal use within the usage state, usage methods and usage environment, etc., which follow the conditions and precautions, etc., given in the instruction manual, user's manual and caution labels on the product.
- (2) Even within the gratis warranty term, repairs shall be charged for in the following cases.
 - 1. Failure occurring from inappropriate storage or handling, carelessness or negligence by the user. Failure caused by the user's hardware or software design.
 - 2. Failure caused by unapproved modifications, etc., to the product by the user.
 - 3. When the Mitsubishi product is assembled into a user's device, Failure that could have been avoided if functions or structures, judged as necessary in the legal safety measures the user's device is subject to or as necessary by industry standards, had been provided.
 - 4. Failure that could have been avoided if consumable parts (battery, backlight, fuse, etc.) designated in the instruction manual had been correctly serviced or replaced.
 - 5. Failure caused by external irresistible forces such as fires or abnormal voltages, and Failure caused by force majeure such as earthquakes, lightning, wind and water damage.
 - 6. Failure caused by reasons unpredictable by scientific technology standards at time of shipment from Mitsubishi.
 - 7. Any other failure found not to be the responsibility of Mitsubishi or that admitted not to be so by the user.

2. Onerous repair term after discontinuation of production

- (1) Mitsubishi shall accept onerous product repairs for seven (7) years after production of the product is discontinued.
- Discontinuation of production shall be notified with Mitsubishi Technical Bulletins, etc.
- (2) Product supply (including repair parts) is not available after production is discontinued.

3. Overseas service

Overseas, repairs shall be accepted by Mitsubishi's local overseas FA Center. Note that the repair conditions at each FA Center may differ.

4. Exclusion of loss in opportunity and secondary loss from warranty liability

Regardless of the gratis warranty term, Mitsubishi shall not be liable for compensation of damages caused by any cause found not to be the responsibility of Mitsubishi, loss in opportunity, lost profits incurred to the user by Failures of Mitsubishi products, special damages and secondary damages whether foreseeable or not, compensation for accidents, and compensation for damages to products other than Mitsubishi products, replacement by the user, maintenance of on-site equipment, start-up test run and other tasks.

5. Changes in product specifications

The specifications given in the catalogs, manuals or technical documents are subject to change without prior notice.

Country/Region	Sales office	Tel/Fax
USA	MITSUBISHI ELECTRIC AUTOMATION, INC. 500 Corporate Woods Parkway, Vernon Hills, IL 60061, U.S.A.	Tel : +1-847-478-2100 Fax : +1-847-478-2253
Mexico	MITSUBISHI ELECTRIC AUTOMATION, INC. Mexico Branch Mariano Escobedo #69, Col. Zona Industrial, Tlalnepantla Edo, C.P.54030, Mexico	Tel : +52-55-3067-7500
Brazil	MITSUBISHI ELECTRIC DO BRASIL COMÉRCIO E SERVIÇOS LTDA. Rua Jussara, 1750-Bloco B Anexo, Jardim Santa Cecilia, CEP 06465-070, Barueri-SP, Brasil	Tel : +55-11-4689-3000 Fax : +55-11-4689-3016
Germany	MITSUBISHI ELECTRIC EUROPE B.V. German Branch Gothaer Strasse 8, D-40880 Ratingen, Germany	Tel : +49-2102-486-0 Fax : +49-2102-486-1120
UK	MITSUBISHI ELECTRIC EUROPE B.V. UK Branch Travellers Lane, Hatfield, Hertfordshire, AL10 8XB, U.K.	Tel : +44-1707-28-8780 Fax : +44-1707-27-8695
Ireland	MITSUBISHI ELECTRIC EUROPE B.V. Irish Branch Westgate Business Park, Ballymount, IRL-Dublin 24, Ireland	Tel : +353-1-4198800 Fax : +353-1-4198890
Italy	MITSUBISHI ELECTRIC EUROPE B.V. Italian Branch Centro Direzionale Colleoni-Palazzo Sirio Viale Colleoni 7, 20864 Agrate Brianza(Milano) Italy	Tel : +39-039-60531 Fax : +39-039-6053-312
Spain	MITSUBISHI ELECTRIC EUROPE, B.V. Spanish Branch Carretera de Rubí, 76-80-Apdo. 420, 08173 Sant Cugat del Vallés (Barcelona), Spain	Tel : +34-935-65-3131 Fax : +34-935-89-1579
France	MITSUBISHI ELECTRIC EUROPE B.V. French Branch 25, Boulevard des Bouvets, F-92741 Nanterre Cedex, France	Tel : +33-1-55-68-55-68 Fax : +33-1-55-68-57-57
Czech Republic	MITSUBISHI ELECTRIC EUROPE B.V. Czech Branch Avenir Business Park, Radlicka 751/113e, 158 00 Praha5, Czech Republic	Tel : +420-251-551-470 Fax : +420-251-551-471
Poland	MITSUBISHI ELECTRIC EUROPE B.V. Polish Branch ul. Krakowska 50, 32-083 Balice, Poland	Tel : +48-12-630-47-00 Fax : +48-12-630-47-01
Sweden	MITSUBISHI ELECTRIC EUROPE B.V. (Scandinavia) Fjelievägen 8, SE-22736 Lund, Sweden	Tel : +46-8-625-10-00 Fax : +46-46-39-70-18
Russia	MITSUBISHI ELECTRIC EUROPE B.V. Russian Branch St. Petersburg office Piskarevsky pr. 2, bld 2, lit "Sch", BC "Benua", office 720; RU-195027 St. Petersburg, Russia	Tel : +7-812-633-3497 Fax : +7-812-633-3499
Turkey	MITSUBISHI ELECTRIC TURKEY A.Ş Ümraniye Branch Serifali Mahallesi Nutuk Sokak No:5, TR-34775 Umraniye, Istanbul, Turkey	Tel : +90-216-526-3990 Fax : +90 -216-526-3995
Dubai	MITSUBISHI ELECTRIC EUROPE B.V. Dubai Branch Dubai Silicon Oasis, P.O.BOX 341241, Dubai, U.A.E.	Tel : +971-4-3724716 Fax : +971-4-3724721
South Africa	ADROIT TECHNOLOGIES 20 Waterford Office Park, 189 Witkoppen Road, Fourways, Johannesburg, South Africa	Tel : +27-11-658-8100 Fax : +27-11-658-8101
China	MITSUBISHI ELECTRIC AUTOMATION (CHINA) LTD. No.1386 Hongqiao Road, Mitsubishi Electric Automation Center, Shanghai, China	Tel : +86-21-2322-3030 Fax : +86-21-2322-3000
Taiwan	SETSUYO ENTERPRISE CO., LTD. 6F, No.105, Wugong 3rd Road, Wugu District, New Taipei City 24889, Taiwan, R.O.C.	Tel : +886-2-2299-2499 Fax : +886-2-2299-2509
Korea	MITSUBISHI ELECTRIC AUTOMATION KOREA CO., LTD. 7F-9F, Gangseo Hangang Xi-tower A, 401, Yangcheon-ro, Gangseo-Gu, Seoul 157-801, Korea	Tel : +82-2-3660-9530 Fax : +82-2-3664-8372
Singapore	MITSUBISHI ELECTRIC ASIA PTE. LTD. 307, Alexandra Road, Mitsubishi Electric Building, Singapore 159943	Tel : +65-6473-2308 Fax : +65-6476-7439
Thailand	MITSUBISHI ELECTRIC FACTORY AUTOMATION (THAILAND) CO., LTD. 12th Floor, SV.City Building, Office Tower 1, No. 896/19 and 20 Rama 3 Road, Kwaeng Bangpongpang, Khet Yannawa, Bangkok 10120, Thailand	Tel : +66-2682-6522 Fax : +66-2682-6020
Vietnam	MITSUBISHI ELECTRIC VIETNAM COMPANY LIMITED Hanoi Branch 6-Floor, Detech Tower, 8 Ton That Thuyet Street, My Dinh 2 Ward, Nam Tu Liem District, Hanoi, Vietnam	Tel : +84-4-3937-8075 Fax : +84-4-3937-8076
Indonesia	PT. MITSUBISHI ELECTRIC INDONESIA Gedung Jaya 11th Floor, JL. MH. Thamrin No.12, Jakarta Pusat 10340, Indonesia	Tel : +62-21-3192-6461 Fax : +62-21-3192-3942
India	MITSUBISHI ELECTRIC INDIA PVT. LTD. Pune Branch Emerald House, EL-3, J Block, M.I.D.C Bhosari, Pune-411026, Maharashtra, India	Tel : +91-20-2710-2000 Fax : +91-20-2710-2100
Australia	MITSUBISHI ELECTRIC AUSTRALIA PTY. LTD. 348 Victoria Road, P.O. Box 11, Rydalmere, N.S.W 2116, Australia	Tel : +61-2-9684-7777 Fax : +61-2-9684-7245

Mitsubishi Electric Corporation Nagoya Works is a factory certified for ISO 14001 (standards for environmental management systems) and ISO 9001(standards for quality assurance management systems)





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