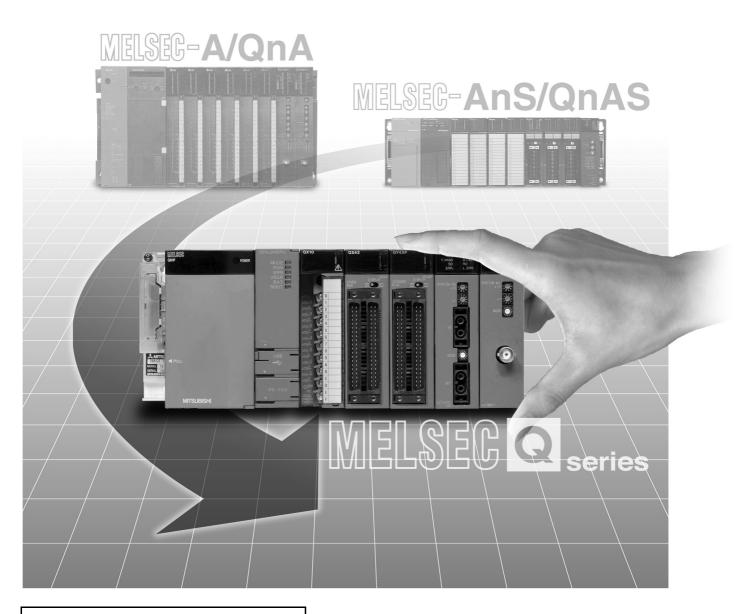


## **Programmable Controller**

## Transition from MELSEC-A/QnA (Large Type), AnS/QnAS (Small Type) Series to Q Series Handbook

## (Network Modules)



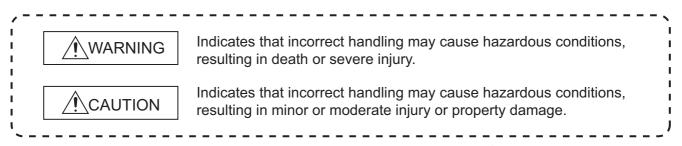
## Mar. 2020 Edition

## 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.

In this handbook, the safety precautions are classified into two levels: " / WARNING" and " CAUTION".



Under some circumstances, failure to observe the precautions given under "ACAUTION" 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]

### WARNING

• For the operating status of each station after a communication failure in the data link or the network, refer to the following manuals.

Failure to do so may result in an accident due to an incorrect output or malfunction.

- Q Corresponding MELSECNET/H Network System Reference Manual (PLC to PLC network)
- Q Corresponding MELSECNET/H Network System Reference Manual (Remote I/O network)
- Q Corresponding MELSECNET/H Remote I/O Module Reference Manual (MELSECNET/10 Mode)
- CC-Link System Master/Local Module User's Manual
- If a coaxial cable is disconnected, the network may be unstable, resulting in a communication failure of multiple stations. Configure an interlock circuit in the program to ensure that the entire system will always operate safely even if communications fail. Failure to do so may result in an accident due to an incorrect output or malfunction.
- 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 each intelligent function module. 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" signals as an output signal from the CPU module to the intelligent function module. Doing so may cause malfunction of the programmable controller system.
- To set the auto refresh parameter, select the device Y for the remote output (RY) refresh device.
   If a device other than Y is selected, the CPU module holds the device status even after its status is changed to STOP. For how to stop data link, refer to the following manual.
  - CC-Link System Master/Local Module User's Manual
- If a CC-Link dedicated cable is disconnected, the network may be unstable, resulting in a communication failure of multiple stations. Configure an interlock circuit in the program to ensure that the entire system will always operate safely even if communications fail.
   Failure to do so may result in an accident due to an incorrect output or malfunction.

### 

- After changing the parameter of the CPU module or the remote I/O module, reset the CPU module. Failure to do so may cause malfunction, since the previous parameter setting remains in the module.
- 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.

### [Installation Precautions]

### 

• 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.

## 

• Use the programmable controller in an environment that meets the general specifications in the user's manual for the CPU module used.

Failure to do so may result in electric shock, fire, malfunction, or damage to or deterioration of the product.

• To mount a Q series module, while pressing the module mounting lever located in the lower part of the module, fully insert the module fixing projection(s) into the hole(s) in the base unit and press the module until it snaps into place.

Incorrect mounting may cause malfunction, failure or drop of the module.

When using the programmable controller in an environment of frequent vibrations, fix the module with a screw.

Tighten the screw within the specified torque range.

Undertightening can cause drop of the screw, short circuit or malfunction.

Overtightening can damage the screw and/or module, resulting in drop, short circuit, or malfunction.

• To mount an A/AnS/QnA/QnAS module, fully insert the module fixing projection(s) located in the lower part of the module into the hole(s) in the base unit and press the module until it snaps into place (To fix an AnS series module to the base unit, tighten the screws within the specified torque range).

Incorrect mounting 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 the module. Failure to do so may result in damage to the product.
- A MELSECNET/H module with function version D or later can be replaced online (while power is on) on any remote I/O station. Note that there are restrictions on the modules that can be replaced online, and each module has its predetermined replacement procedure.
   For details, refer to the relevant section in the following.

• Q Corresponding MELSECNET/H Network System Reference Manual (Remote I/O network)

• 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.

## 

- Ground the FG terminal to the protective ground conductor dedicated to the programmable controller. Failure to do so may result in malfunction.
- Check the rated voltage and terminal layout before wiring the external power supply terminal block, and connect the cables correctly.
   Connecting a power supply with a different voltage rating or incorrect wiring may cause a fire or
- failure.
  Use applicable solderless terminals and tighten them within the specified torque range. If any spade solderless terminal is used, it may be disconnected when the terminal screw comes loose, resulting
- failure.
   Correctly solder coaxial cable connectors. Incomplete soldering may result in malfunction.
- Do not install the control lines or communication cables together with the main circuit lines or power cables.

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

- 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.
- Tighten the terminal screw within the specified torque range. Undertightening can cause short circuit 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 block screws. Pulling the cable connected to the module may result in malfunction and damage to the module or cable.

### [Wiring Precautions]

### • Mitsubishi Electric programmable controllers must be installed in control panels. Connect the main power supply to the power supply module in the control panel through a relay terminal block. Wiring and replacement of a power supply module must be performed by qualified maintenance personnel with knowledge of protection against electric shock. For wiring methods, refer to the QCPU User's Manual (Hardware Design, Maintenance and Inspection). • 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. Use CC-Link dedicated cables for the CC-Link system. If not, the performance of the CC-Link system is not guaranteed. For the maximum station-to-station distance and the overall cable distance, follow the specifications in the following. If not, normal data transmission will not be guaranteed. CC-Link System Master/Local Module User's Manual

### [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 screws or module fixing screws. Failure to do so may result in electric shock.

### [Startup and Maintenance Precautions]

## 

•	Before performing online operations (especially, program modification, forced output, and operating status change) for the running CPU module on another station from GX Developer over the MELSECNET/H network, read relevant manuals carefully and ensure the safety. Improper operation may damage machines or cause accidents. Do not disassemble or modify the modules. Doing so may cause failure, malfunction, injury, or a fire. Use any radio communication device such as a cellular phone or PHS (Personal Handy-phone System) more than 25cm away in all directions from the programmable controller. Failure to do so may cause malfunction. Shut off the external power supply (all phases) used in the system before mounting or removing a module. Failure to do so may cause the module to fail or malfunction.
•	
	on any remote I/O station. Note that there are restrictions on the modules that can be replaced online, and each module has its predetermined replacement procedure. For details, refer to the relevant section in the following manual.
•	<ul> <li>Q Corresponding MELSECNET/H Network System Reference Manual (Remote I/O network)</li> <li>Do not touch any terminal while power is on.</li> <li>Doing so will cause malfunction.</li> </ul>
•	Tighten the module fixing screw and the terminal screw 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, do not mount/remove the module to/from the base unit, and the terminal block to/from the module more than 50 times (IEC 61131-2 compliant) respectively.
•	Exceeding the limit of 50 times may cause malfunction. Before handling the module, touch a grounded metal object to discharge the static electricity from the human body. Failure to do so may cause the module to fail or malfunction.

### [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.

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

Print Date	* Handbook Number	Revision
Apr. 2005	L(NA)08048ENG-A	First edition
Oct. 2005	L(NA)08048ENG-B	Addition
		Section 1.1.3, Section 2.5.3, Section 2.5.4, Appendix 1
		Partial correction
		Contents, Section 2.5.2, Section 2.7, Section 3.5.2, Appendix $1 \rightarrow$ Appendix 2
Oct. 2006	L(NA)08048ENG-C	Addition
		Chapter 6
		Partial correction
		Section 1.3, Chapter 6 $\rightarrow$ Chapter 7, Chapter 7 $\rightarrow$ Chapter 8
Jul. 2007	L(NA)08048ENG-D	Addition
		Section 1.1.4, Chapter 7
		Partial correction
Nov. 2012	L(NA)08048ENG-E	Section 1.1.3, Chapter 7→Chapter 8, Chapter 8→Chapter 9 Revision on the new functions of the Universal model QCPU with a serial number
1101. 2012		(first five digits) of "13102" or later
		Model Addition
		QJ71NT11B, MELSEC-AnS/QnAS series, QA1S51B, 5C-FB
		Partial correction
		SAFETY PRECAUTIONS, Chapter 1 to 9, Appendix
Mar. 2016	L(NA)08048ENG-F	
		Addition Section 5.2
		Change Chanter O - Annendin 1 Annendin 2 Annendin 2 Annendin 2
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		Cover, Section 1.1, 1.1.3, 1.2, 2.6.2, 4.1, 4.2, 4.4, 4.5, 4.6.2, 5.1, 7.4, Appendix 3.4, WARRANTY
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		Chapter 6, 7
		Chapter 8 $\rightarrow$ Chapter 6
		SAFETY PRECAUTIONS, GENERIC TERMS AND ABBREVIATIONS, Section
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Print Date	* Handbook Number	Revision
Mar. 2020	L(NA)08048ENG-H	Addition
		Appendix 3
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		Partial correction
		Section 1.1

Japanese Handbook Version L08047-Q

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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. 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/abbreviatio	n Description					
■Series						
A series	Abbreviation for large types of Mitsubishi Electric MELSEC-A series programmable controllers					
AnS series	Abbreviation for compact types of Mitsubishi Electric MELSEC-A series programmable					
	controllers					
A/AnS series	Generic term for A series and AnS series					
QnA series	Abbreviation for large types of Mitsubishi Electric MELSEC-QnA series programmable					
	controllers					
QnAS series	Abbreviation for compact types of Mitsubishi Electric MELSEC-QnA series programmable					
QIIAO SEIIES	controllers					
QnA/QnAS series	Generic term for QnA series and QnAS series					
A/AnS/QnA/QnAS series	Generic term for A series, AnS series, QnA series, and QnAS series					
Q series	Abbreviation for Mitsubishi Electric MELSEC-Q series programmable controllers					
CPU module type						
CPU module	Generic term for A series, AnS series, QnA series, QnAS series, and Q series CPU modules					
Process CPU	Generic term for the Q02PHCPU, Q06PHCPU, Q12PHCPU, and Q25PHCPU					
Redundant CPU	Generic term for the Q12PRHCPU and Q25PRHCPU					
	Generic term for the Q00UJCPU, Q00UCPU, Q01UCPU, Q02UCPU, Q03UDCPU,					
	Q03UDVCPU, Q03UDECPU, Q04UDHCPU, Q04UDVCPU, Q04UDEHCPU, Q06UDHCPU,					
Universal model QCPU	Q06UDVCPU, Q06UDEHCPU, Q10UDHCPU, Q10UDEHCPU, Q13UDHCPU, Q13UDVCPU,					
	Q13UDEHCPU, Q20UDHCPU, Q20UDEHCPU, Q26UDHCPU, Q26UDVCPU, and					
	Q26UDEHCPU					
■CPU module model						
ACPU	Generic term for MELSEC-A series programmable controller CPUs					
AnSCPU	Generic term for MELSEC-AnS series programmable controller CPUs					
A/AnSCPU	Generic term for MELSEC-A series and MELSEC-AnS series programmable controller CPUs					
	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					
	Generic term for the A2ACPU, A2ACPU-S1, A3ACPU, A2ACPUP21/R21, A2ACPUP21/R21-					
AnACPU	S1, and A3ACPUP21/R21					
	Generic term for the A2UCPU, A2UCPU-S1, A3UCPU, A4UCPU, A2USCPU, A2USCPU-S1,					
AnUCPU	and A2USHCPU-S1					
AnN/AnACPU	Generic term for the AnNCPU and AnACPU					
AnN/AnA/AnSCPU	Generic term for the AnNCPU, AnACPU, and AnSCPU					
QnACPU	Generic term for MELSEC-QnA series programmable controller CPUs					
QnASCPU	Generic term for MELSEC-QnAS series programmable controller CPUs					
	Generic term for MELSEC-QnA series and MELSEC-QnAS series programmable controller					
QnA/QnASCPU	CPUs					
	GPUS Generic term for A series, AnS series, QnA series, and QnAS series programmable controller					
A/AnS/QnA/QnASCPU						
000	CPUs					
QCPU	Generic term for MELSEC-Q series programmable controller CPUs					

### [About symbols used in figures]

MELSECNET( II )	MELSECNET/H				
M m Master station L I Local station R r Remote I/O station	MPC     Control station       MR     Remote master station				
□ stands for the station No.	■ stands for the network No., and				
	□ stands for the station No.				

# INTRODUCTION

### 1.1 Transition from MELSECNET (II) and /B to MELSECNET/H

To replace the MELSECNET (II) and /B system with the Q series system, replace it with the MELSECNET/H system.

For a replacement method, refer to Appendix 3.

The following shows the configuration of the Q series MELSECNET/H system after the transition and the system configuration precautions at transition for each of the MELSECNET (II) and /B system configurations.

Network type	2-tier/3-tier	Component stations	Refer to
		Local station only	Section 1.1 (1) (a)
	2-tier system	Remote I/O station only	Section 1.1 (1) (b)
Optical loop		Mixture of local station and remote I/O station	Section 1.1 (1) (c)
Optical loop		Local station only	Section 1.1 (1) (d)
	3-tier system	2-tier local station, 3-tier remote I/O station	Section 1.1 (1) (e)
		Mixture of local station and remote I/O station	Section 1.1 (1) (f)
		Local station only	Section 1.1 (2) (a)
	2-tier system	Remote I/O station only	Section 1.1 (2) (b)
Coaxial loop		Mixture of local station and remote I/O station	Section 1.1 (2) (c)
Coaxial loop	3-tier system	Local station only	Section 1.1 (2) (d)
		2-tier local station, 3-tier remote I/O station	Section 1.1 (2) (e)
		Mixture of local station and remote I/O station	Section 1.1 (2) (f)
		Local station only	Section 1.1 (3) (a)
	2-tier system	Remote I/O station only	Section 1.1 (3) (b)
Twisted pair		Mixture of local station and remote I/O station	Section 1.1 (3) (c)
		Local station only	Section 1.1 (3) (d)
	3-tier system	2-tier local station, 3-tier remote I/O station	Section 1.1 (3) (e)
		Mixture of local station and remote I/O station	Section 1.1 (3) (f)

For details, refer to CHAPTER 2 and CHAPTER 3.

### (1) Optical cable system

(a) 2-tier system 1: System configuration example using local stations only

MELSECNET(II)	MELSECNET/H	System configuration precautions
Optical loop	Optical loop	<ol> <li>Distance between stations: If this value exceed the Q series specification values when re-using the MELSECNET(II) system cables, optical cables, etc. has to be changed.*1</li> <li>CPU: When replacing from an integrated type CPU, one new slot (32 points) is required.</li> <li>Number of stations: When 65 modules are connected, measures (e.g. dividing into two networks of 64 modules or less having a different network No.) are required.</li> </ol>

\*1 As the transmission speed of MELSECNET/H is faster than that of MELSECNET(II), the distance between stations may become shorter.

#### (b) 2-tier system 2: System configuration example using remote I/O stations only

MELSECNET( II )	MELSECNET/H		System configuration precautions
Optical loop	Optical loop		Distance between stations: If this value
$\frown$	$\frown$		exceed the Q series specification values
(M)			when re-using the MELSECNET(II)
			system cables, optical cables, etc. has to
$\left( R1 \right) \left( R3 \right)$	(1R1)Network 1 $(1R3)$		be changed. <sup>*1</sup>
$\langle \rangle$	$\mathbf{X} = \mathbf{Y}$	2)	CPU: When replacing from an integrated
(R2)	(1R2)		type CPU, one new slot (32 points) is
			required.

\*1 As the transmission speed of MELSECNET/H is faster than that of MELSECNET(II), the distance between stations may become shorter.

#### (c) 2-tier system 3: System configuration example using local stations/remote I/O stations

MELSECNET(II)	MELSECNET/H		System configuration precautions
Optical loop	Optical loop	1) 2) 3)	Distance between stations: If this value exceed the Q series specification values when re-using the MELSECNET(II) system cables, optical cables, etc. has to be changed. <sup>*1</sup> CPU: When replacing from an integrated type CPU, one new slot (32 points) is required. Composite system: As a mixture of a PLC to PLC network and a remote I/O network is not allowed on the Q series, the network has to be divided into two networks having different network Nos. For this reason, a separate network
			module for the remote master station is
			required.
		4)	New installation: A separate optical cable
			is required for the remote I/O stations.

\*1 As the transmission speed of MELSECNET/H is faster than that of MELSECNET(II), the distance between stations may become shorter.

#### (d) 3-tier system 1: System configuration example using local stations only

MELSECNET(II)	MELSECNET/H		System configuration precautions
Optical loop	Optical loop	1)	Distance between stations: If this value
			exceed the Q series specification values
(м)	(1MP4)		when re-using the MELSECNET(II)
			system cables, optical cables, etc. has to
$\begin{pmatrix} L1 \end{pmatrix}$ $\begin{pmatrix} L3 \end{pmatrix}$	(1Ns1)Network 1 (1Ns3)		be changed. <sup>*1</sup>
$\langle \rangle$		2)	CPU: When replacing from an integrated
L2/m	1Ns2/2Mp4		type CPU, one new slot (32 points) is
			required.
		3)	Number of stations: When 65 modules
	(2Ns1) Network 2 (2Ns3)		are connected, measures (e.g. dividing
			into two networks of 64 modules or less
	(2Ns2)		having a different network No.) are
			required.

\*1 As the transmission speed of MELSECNET/H is faster than that of MELSECNET(II), the distance between stations may become shorter.

(e) 3-tier system 2: System configuration example using 2-tier local stations and 3-tier remote I/O stations

MELSECNET( II )	MELSECNET/H		System configuration precautions
Optical loop	Optical loop	1)	Distance between stations: If this value
			exceed the Q series specification values
( M )	(1Mp4)		when re-using the MELSECNET(II)
			system cables, optical cables, etc. has to
$\begin{pmatrix} L1 \end{pmatrix}$ $\begin{pmatrix} L3 \end{pmatrix}$	(1Ns1)Network 1 (1Ns3)		be changed. <sup>*1</sup>
$\langle \rangle$		2)	CPU: When replacing from an integrated
L2/m	1Ns2/2MR		type CPU, one new slot (32 points) is
			required.
		3)	Number of stations: When 65 modules
(r1) $(r3)$	(2R1)Network 2(2R3)		are connected, measures (e.g. dividing
			into two networks of 64 modules or less
(r2)	(2R2)		having a different network No.) are
			required.

\*1 As the transmission speed of MELSECNET/H is faster than that of MELSECNET(II), the distance between stations may become shorter.

#### (f) 3-tier system 3: System configuration example using local stations/remote I/O stations

MELSECNET( II )	MELSECNET/H		System configuration precautions
		1)	Distance between stations: If this value exceed the Q series specification values
			when re-using the MELSECNET(II)
Optical loop			system cables, optical cables, etc. has to
M	Optical loop		be changed. <sup>*1</sup>
	(1MP4)	2)	CPU: When replacing from an integrated
			type CPU, one new slot (32 points) is
$\begin{pmatrix} L1 \end{pmatrix}$ $\begin{pmatrix} L3 \end{pmatrix}$	$(1N_{s}1)$ Network 1 $(1N_{s}3)$		required.
		3)	Composite system: As a mixture of a PLC
L2/m	-1Ns2/2Mp4/3Mr		to PLC network and a remote I/O network
			is not allowed on the Q series, the
(11) $(r3)$	Network 2 Network 3 (2Ns1) (3R3)		network has to be divided into two
$\langle \rangle$			networks having different network Nos.
	2Ns2		For this reason, a separate network
$\bigcirc$			module for the remote master station is
			required.
		4)	New installation: A separate optical cable
			is required for the remote I/O stations.

\*1 As the transmission speed of MELSECNET/H is faster than that of MELSECNET(II), the distance between stations may become shorter.

### (2) Coaxial cable system

(a) 2-tier system 1: System configuration example using local stations only

\*1 As the transmission speed of MELSECNET/H is faster than MELSECNET(II), and as the transmission method is different, the distance between stations and overall distance become shorter.

#### (b) 2-tier system 2: System configuration example using local stations only

MELSECNET(II)	MELSECNET/H	System configuration precautions
$\frac{\text{DELSECNET(II)}}{\text{Coaxial loop}}$	MELSECNET/H Coaxial bus	<ol> <li>Distance between stations: If this value exceed the Q series specification values when re-using the MELSECNET(II) system cables, 3C-2V has to be changed to 5C-2V.*1</li> <li>Overall distance: If this value exceeds the Q series specification value when MELSECNET(II) system cables are re- used, measures (e.g. adding a repeater unit) are required.*1</li> <li>CPU: When replacing an integrated type CPU, one new slot (32 points) is required.</li> <li>Number of stations: When 65 modules are connected, measures (e.g. dividing into two or three networks of 32 modules or less having a different network No.) are required.</li> <li>Duplex loop: When the transmission path</li> </ol>
		has to be duplexed, changes to an optical loop system, etc. are required.

MELSECNET( II )	MELSECNET/H		System configuration precautions
		1)	Distance between stations: If this value
			exceed the Q series specification values
			when re-using the MELSECNET(II)
			system cables, 3C-2V has to be changed
			to 5C-2V. <sup>*1</sup>
		2)	Overall distance: If this value exceeds the
			Q series specification value when
			MELSECNET(II) system cables are re-
Coaxial loop			used, measures (e.g. adding a repeater
	Coaxial bus		unit) are required. <sup>*1</sup>
( M )	$\frown$	3)	CPU: When replacing an integrated type
	1MP4/2MR		CPU, one new slot (32 points) is required.
(L1) $(R3)$	Network 1 Network 2	4)	Duplex loop: When the transmission path
$\langle \rangle$			has to be duplexed, changes to an optical
L2	(1Ns1) (1Ns2) (2R3)		loop system, etc. are required.
		5)	Composite system: As a mixture of a PLC
			to PLC network and a remote I/O network
			is not allowed on the Q series, the
			network has to be divided into two
			networks having different network Nos.
			For this reason, a separate network
			module for the remote master station is
			required.
		6)	New installation: A separate coaxial cable
			is required for the remote I/O stations.

### (c) 2-tier system 3: System configuration example using local stations/remote I/O stations

### (d) 3-tier system 1: System configuration example using local stations only

MELSECNET(II)	MELSECNET/H		System configuration precautions
		1)	Distance between stations: If this value
			exceed the Q series specification values
			when re-using the MELSECNET(II)
			system cables, 3C-2V has to be changed
Coaxial loop			to 5C-2V. <sup>*1</sup>
M	Coaxial bus	2)	Overall distance: If this value exceeds the
			Q series specification value when
			MELSECNET(II) system cables are re-
(L1) (L3)	Network 1		used, measures (e.g. adding a repeater
	(1Ns1) 1Ns2/2Mp4 (1Ns3)		unit) are required. <sup>*1</sup>
L2/m		3)	CPU: When replacing an integrated type
	Network 2		CPU, one new slot (32 points) is required.
(11) $(13)$		4)	Number of stations: When 65 modules
$\langle \rangle$	$(2N_{s1})$ $(2N_{s2})$ $(2N_{s3})$		are connected, measures (e.g. dividing
			into two or three networks of 32 modules
$\bigcirc$			or less having a different network No.) are
			required.
		5)	Duplex loop: When the transmission path
			has to be duplexed, changes to an optical
			loop system, etc. are required.

\*1 As the transmission speed of MELSECNET/H is faster than MELSECNET(II), and as the transmission method is different, the distance between stations and overall distance become shorter.

## (e) 3-tier system 2: System configuration example using 2-tier local stations and 3-tier remote I/O stations

MELSECNET(II)	MELSECNET/H		System configuration precautions
Coaxial loop	Coaxial bus	1) 2)	Distance between stations: If this value exceed the Q series specification values when re-using the MELSECNET(II) system cables, 3C-2V has to be changed to 5C-2V. <sup>*1</sup>
L1 L3 L2/m r1 r3	Network 1 Network 1 (1Ns1) 1Ns2/2MR (1Ns3) Network 2 (2R1) (2R2) (2R3)	3) 4)	MELSECNET(II) system cables are re- used, measures (e.g. adding a repeater unit) are required. <sup>*1</sup> CPU: When replacing an integrated type CPU, one new slot (32 points) is required.
		5)	Duplex loop: When the transmission path has to be duplexed, changes to an optical loop system, etc. are required.

#### MELSECNET(II) **MELSECNET/H** System configuration precautions 1) Distance between stations: If this value exceed the Q series specification values when re-using the MELSECNET(II) system cables, 3C-2V has to be changed to 5C-2V.\*1 2) Overall distance: If this value exceeds the Q series specification value when Coaxial loop MELSECNET(II) system cables are re-Coaxial bus Μ used, measures (e.g. adding a repeater unit) are required.\*1 (1M⊧4 L3 3) CPU: When replacing an integrated type L1 Network 1 CPU, one new slot (32 points) is required. 1Ns1)1Ns2/2Mp4/3Mr(1Ns3 4) Duplex loop: When the transmission path \_ L2/m has to be duplexed, changes to an optical Network 3 Network 2 loop system, etc. are required. 11 r3 5) Composite system: As a mixture of a PLC 3R3 2Ns1 2Ns2 to PLC network and a remote I/O network 12 is not allowed on the Q series, the network has to be divided into two networks having different network Nos. For this reason, a separate network module for the remote master station is required. 6) New installation: A separate coaxial cable is required for the remote I/O stations.

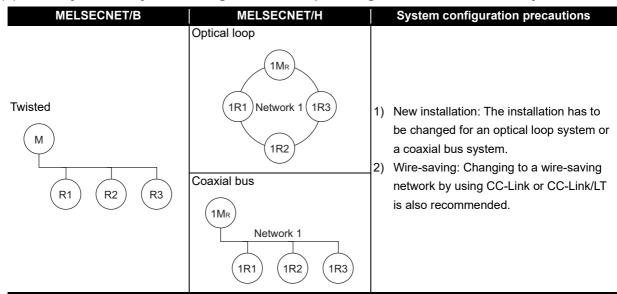
#### (f) 3-tier system 3: System configuration example using local stations/remote I/O stations

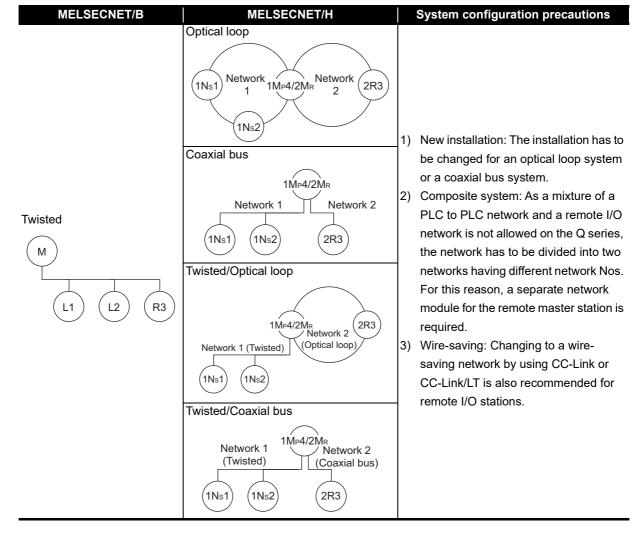
### (3) Twisted cable system

(a) 2-tier system 1: System configuration example using local stations only

MELSECNET/B	MELSECNET/H	System configuration precautions
	Optical loop	
Twisted	1MP4 1Ns1 Network 1 (1Ns3) 1Ns2 Coaxial bus	New installation: The installation has to be changed for an optical loop system or a coaxial bus system.
	1MP4 Network 1 (1Ns1) (1Ns2) (1Ns3)	
	Twisted cables (using existing	
L1 L2 L3	Cables)	Existing cables: Process the terminals for MELSECNET/H connection.
	Twisted cables (using CC-Link	
	dedicated cables)	
	M (L1) (L2) (L3)	New installation: Change the cables to CC- Link dedicated cables.

#### (b) 2-tier system 2: System configuration example using remote I/O stations only





#### (c) 2-tier system 3: System configuration example using local stations/remote I/O stations

1

### (d) 3-tier system 1: System configuration example using local stations only

MELSECNET/B	MELSECNET/H Optical loop	System configuration precautions
Twisted	1MP4       1Ns1       1Ns2/2MP4       2Ns1       Network 2       2Ns2   Coaxial bus       1MP4       Network 1       1Ns1       1Ns2/2MP4       1Ns1       1Ns2/2MP4       1Ns3       Network 1	New installation: The installation has to be changed for an optical loop system or a coaxial bus system.
L1 L2/m L3 11 L2 I3	(2Ns1) (2Ns2) (2Ns3) Twisted (using existing cables) (1MP4) Network 1 (1Ns1) 1Ns2/2MP4 (1Ns3) Network 2 (2Ns1) (2Ns2) (2Ns3)	Existing cables: Process the terminals for MELSECNET/H connection.
	Twisted (using CC-Link dedicated cables) (1MP4) Network 1 (1Ns1) 1Ns2/2MP4 (1Ns3) Network 2 (2Ns1) (2Ns2) (2Ns3)	New installation: Change the cables to CC- Link dedicated cables.

MELSECNET/B	MELSECNET/H	System configuration precautions
Twisted M L1 L2/m L3 r1 r2 r3	MELSECNET/H Optical loop 1MP4 1Ns1 Network 1 1Ns3 1Ns2/2MR 2R1 Network 2 2R3 2R2 Coaxial bus 1MP4 Network 1 1Ns1 1Ns2/2MR 1Ns3 Network 2	System configuration precautions New installation: The installation has to be changed for an optical loop system or a coaxial bus system. A PLC to PLC network can be changed to a twisted bus system, and a remote I/O network can be changed to an optical loop or coaxial bus system (refer to (c)).

(e) 3-tier system 2: System configuration example using 2-tier local stations and 3-tier remote I/O stations

#### (f) 3-tier system 3: System configuration example using local stations/remote I/O stations

# 1.2 Replacement of the MELSECNET/10 for A/AnS/QnA/QnAS Series with the MELSECNET/H for Q Series

The following shows the configuration of a MELSECNET/H network system for Q after transition and the system configuration precautions for transition for each of the system configurations for MELSECNET/ 10 network systems for A/AnS/QnA/QnAS series.

For details, refer to CHAPTER 4 REPLACEMENT OF THE MELSECNET/10 (PLC TO PLC NETWORK) and CHAPTER 5 REPLACEMENT OF THE MELSECNET/10(REMOTE I/O NETWORK).

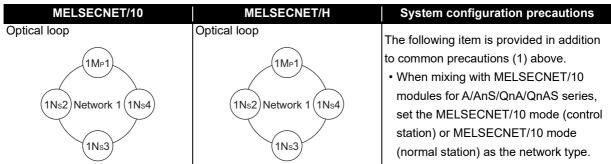
### (1) PLC to PLC network

Pay attention to the following common precautions when replacing PLC to PLC networks.

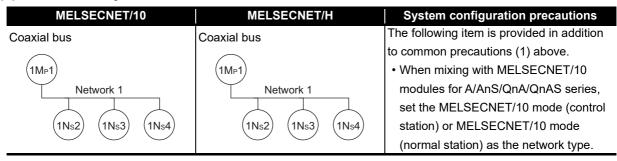
Common precautions

 Network parameters must be set for MELSECNET/H module of normal stations. When replacing MELSECNET/10 module mounted on the CPU module of the AnN/AnA/AnSCPU (excluding AnUS(H)CPU), newly set network parameters.

#### (a) Optical loop system



(b) Coaxial bus system



#### (c) Coaxial loop system

MELSECNET/10	MELSECNET/H	System configuration precautions
Coaxial loop	Coaxial bus 1Mp1 Network 1 1Ns2 1Ns3 1Ns4	<ul> <li>The following item is provided in addition to common precautions (1) described on the previous page.</li> <li>Overall distance: If this value exceeds the Q series specification value when the MELSECNET/10 system cables are re-used, measures (e.g. adding a repeater unit) are required.</li> <li>Number of stations: When 64 modules are connected, measures (e.g. dividing into two or three networks of 32 modules or less having a different network No.) are required.</li> <li>Duplex loop: When the transmission path has to be duplexed, changes to an optical loop system, etc. are required.</li> </ul>

#### (2) Remote I/O network

Pay attention to the following common precautions when replacing remote I/O networks.

#### Common precautions

- 1) Modules for remote I/O of the CPU module on each master station
  - (a) When the Q series CPU module on the master station is used On the remote I/O network, the MELSECNET/H module and MELSECNET/10 module for A/ AnS/QnA/QnAS series cannot be used in combination. When the master station is replaced with the Q series modules, replace all remote I/O station with the MELSECNET/H module for the Q series.
  - (b) When the AnU(S)/QnA(S) series CPU module on the master station is used On the remote I/O network, the MELSECNET/H module for the Q series and MELSECNET/10 module for the A/AnS/QnA/QnAS series can be used in combination using MELSECNET/10 mode.

O: Connection allowed, ×: Connection not allowed

Remote I/O station Remote master station	MELSECNET/10 module for A/AnS/QnA/QnAS series	MELSECNET/H module for Q series
AnU(S)/QnA(S)CPU + MELSECNET/10 module for A/AnS/QnA/QnAS series	0	O <sup>*1</sup> (MELSECNET/10 mode)
Q series CPU module + MELSECNET/H module for Q series	×	O (MELSECNET/H mode)

\*1 Modules with a serial number (first five digits) of "15012" or later

- 1) When replacing a multiplex master system, select Q12PHCPU, Q25PHCPU, Q12PRHCPU, or Q25PRHCPU as the CPU module.
- 2) When replacing a parallel master system, build a separate network having a different network No.

### (a) Optical loop system

• When the master station is replaced

MELSECNET/10	MELSECNET/H	System configuration precautions
Optical loop	Optical loop	
1MR 1R1 Network 1 (1R3) (1R2)	1MR 1R1 Network 1 1R3 1R2	The module configuration example when the master station is replaced 1M <sub>R</sub> : QCPU + QJ71LP21-25 1R1 to 1R3: QJ72LP25-25 (MELSECNET/H mode)

• When the module is replaced gradually

MELSECNET/10	MELSECNET/10	System configuration precautions
Optical loop	Optical loop	
$(1) \\ (1) $	1R1 (An) (An) Network 1 (An) (An) (An)	The example when the module is replaced gradually (1R3 is replaced with the Q series module) 1R3: A(1S)J72(Q)LP25 → QJ72LP25-25 (MELSECNET/10 mode)

### (b) Coaxial bus system

• When the master station is replaced

MELSECNET/10	MELSECNET/H	System configuration precautions
Coaxial bus	Coaxial bus	The module configuration example when the master station is replaced 1M <sub>R</sub> : QCPU + QJ71BR11 1R1 to 1R3: QJ72BR15 (MELSECNET/H mode)

#### • When the module is replaced gradually

MELSECNET/10	MELSECNET/10	System configuration precautions
Coaxial bus	Coaxial bus	The example when the module is replaced gradually (1R3 is replaced with the Q series module) 1R3: A(1S)J72(Q)BR15 $\rightarrow$ QJ72BR15 (MELSECNET/10 mode)

#### (c) Coaxial loop system

MELSECNET/10	MELSECNET/H	System configuration precautions
Coaxial loop	Coaxial bus	<ul> <li>The Q series modules do not support the coaxial loop system. When the existing system is replaced with the coaxial loop system, replace all remote I/O stations.</li> <li>Overall distance: If this value exceeds the Q series specification value when the MELSECNET/10 system cables are re-used, measures (e.g. adding a repeater unit) are required.</li> <li>Number of stations: When 64 modules are connected, measures (e.g. dividing into two or three networks of 32 modules or less having a different network No.) are required.</li> <li>Duplex loop: When the transmission path has to be duplexed, changes to an optical loop system, etc. are required.</li> </ul>

# 1.3 Replacing the CC-Link for A/AnS/QnA/QnAS Series with the CC-Link for Q Series

When using the A/AnS/QnA/QnAS series CC-Link system master/local module, replace it with the QJ61BT11N CC-Link system master/local module.

Currently used CC-Link dedicated cables, remote I/O stations, remote device stations, and intelligent device stations can be used excluding some models.

For details on models that cannot be used, check Section 6.7 Other Precautions.

MELSEC

## **2** REPLACEMENT OF MELSECNET (II) AND /B (PLC TO PLC NETWORK)

### 2.1 List of MELSECNET (II) and /B Alternative Models

### (1) Replacement of MELSECNET (II) modules with MELSECNET/H modules

Network type	A/AnS/A0J2(H) series	Alternative models for Q series	
Optical loop (CPU integrated type)	A1NCPUP21	CPU module + QJ71LP21-25 (Optical loop: SI cable supported)	
	A2NCPUP21		
	A2NCPUP21-S1		
	A3NCPUP21		
	A2ACPUP21		
	A2ACPUP21-S1		
	A3ACPUP21		
	A2CCPUP21		
	A0J2HCPUP21		
Optical loop (CPU integrated type)	A1NCPUP21-S3	CPU module + QJ71LP21G (Optical loop: GI cable supported)	
	A2NCPUP21-S3		
	A2NCPUP21-S4		
	A3NCPUP21-S3		
	A2ACPUP21-S3		
	A2ACPUP21-S4		
	A3ACPUP21-S3		
Coaxial loop (CPU integrated type)	A1NCPUR21	CPU module + QJ71BR11 (Coaxial bus)	
	A2NCPUR21		
	A2NCPUR21-S1		
	A3NCPUR21		
	A2ACPUR21		
	A2ACPUR21-S1		
	A3ACPUR21		
	A2CCPUR21		
	A0J2HCPUR21		
Optical loop	AJ71AP21	QJ71LP21-25 (Optical loop: SI cable supported)	
(Standalone)	A1SJ71AP21		
Optical loop (Standalone)	AJ71AP21-S3	QJ71LP21G (Optical loop: GI cable supported)	
	AJ71P22-S3 <sup>*1</sup>		
	AJ71AP22-S3 <sup>*1</sup>		
	A1SJ71AP21-S3	1	
Coaxial loop	AJ71AR21	QJ71BR11 (Coaxial bus)	
(Standalone)	A1SJ71AR21		

\*1 These modules can be used as the master station only.

2

### (2) Replacement of MELSECNET/B modules with MELSECNET/H modules

2

Network type	A/AnS series	Alternative models for Q series
	AJ71AT21B	QJ71NT11B (Twisted bus) <sup>*1</sup>
Twisted pair	A1SJ71AT21B	QJ71LP21-25 (Optical loop: SI cable supported)
		QJ71BR11 (Coaxial bus)

\*1 Supported by the QCPU only. A system including an A/AnS/QnA/QnAS series module cannot be configured. The twisted bus system can be employed for a PLC to PLC network, but not for a remote I/O network.

# 2.2 Specifications Comparisons

2

### 2.2.1 Module specifications comparisons

- (1) Comparison between MELSECNET (II) module (optical loop) and MELSECNET/H module (optical loop)
  - (a) SI optical fiber cable, H-PCF optical fiber cable

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

		Specifications			
ltem		MELSECNET ( II ) module MELSECNET/H module		Compat- ibility	Precautions for replacement
		Optical loop	Optical loop (QJ71LP21-25)	IDIIILY	
	X/Y	Max. 2048 points and max. number of I/ O points of CPU module on master station	(MELSECNET/10 mode), (MELSECNET/H mode), (MELSECNET/H extended mode) 8192 points	0	
Maximum number of link points per network	в	(MELSECNET mode) 1024 points     (MELSECNET II mode),     (MELSECNET II composite mode)     4096 points	(MELSECNET/10 mode) 8192 points     (MELSECNET/H mode),     (MELSECNET/H extended mode)     16384 points	0	
	w	(MELSECNET mode) 1024 points     (MELSECNET II mode),     (MELSECNET II composite mode)     4096 points	(MELSECNET/10 mode) 8192 points     (MELSECNET/H mode),     (MELSECNET/H extended mode)     16384 points	0	
Maximum nui of link points station		<ul> <li>(MELSECNET mode) 1024 bytes</li> <li>(MELSECNET II mode), (MELSECNET II composite mode)</li> <li>First half: 1024 bytes</li> <li>Second half: 1024 bytes</li> </ul>	(MELSECNET/10 mode), (MELSECNET/H mode) {(LY+LB) ÷ 8+(2 × LW)} ≤ 2000 bytes (MELSECNET/H extended mode) {(LY + LB) ÷ 8 + (2 × LW)} ≤ 35840 bytes	Δ	When the number of bytes exceeds 2000, mount two modules having the same network No., or set all modules on the network in the MELSECNET/H extended mode.
Communicati speed	ion	1.25Mbps	25Mbps/10Mbps	0	
Number of sta connected in network		65 stations (master station: 1, local station + remote I/O station: 64)	64 stations (control station: 1 normal station: 63)	۵	<ul> <li>Set the remote I/O network to a separate network.</li> <li>For the 65th station, configure a separate network.</li> </ul>
Applicable ca	able	SI optical cable H-PCF optical cable	SI optical cable H-PCF optical cable Broad-band H-PCF optical cable QSI optical cable	Δ	When using existing SI cables, the distance between stations may be shortened. (Refer to Section 2.2.2.)
Overall distar	nce	10km	30km	0	
Distance betw stations	ween	Refer to Section 2.2.2.	Refer to Section 2.2.2.	Δ	To ensure the same distance as before replacement, either change the optical cable, or install a gateway station midway along existing cables.
Maximum nui of networks	mber	-	239	Δ	New MELSECNET/H parameter (mandatory)
Communicati method	ion	Half duplex bit serial method	Token ring method	Δ	Nothing to be noted though the communication method differs.
Transmission method	1	Duple	x loop	0	
Modulation m (Encoding me		(Modulation method) CMI method	(Encoding method) NRZI coding	Δ	Nothing to be noted though the modulation method differs.
Transmission format	1	HDLC standard	s (frame format)	0	
Error control system		CRC(X <sup>16</sup> +X <sup>12</sup> +X <sup>5</sup> +1) a	and retry by a time over	0	
RAS function	I	<ul> <li>Loop-back function due to error detecti</li> <li>Diagnostic function for checking local I</li> </ul>		0	
Number of occupied I/O	points	CPU integrated type: 0 point, standalone:32 points per slot (I/O assignment: special 32 points)	32 points per slot (I/O assignment: intelli. 32 points)	Δ	When replacing from a CPU integrated type, an additional slot (32 points) is required.

## (b) Modules for GI optical cable

O: Compatible,  $\bigtriangleup:$  Partial change required,  $\times:$  Incompatible

Item		Specifications MELSECNET ( II ) module MELSECNET/H module			Drace: tions for
					Precautions for replacement
		Optical loop	Optical loop (QJ71LP21-25)	ibility	replacement
	X/Y	Max. 2048 points and max. number of I/O points of CPU module on master station	(MELSECNET/10 mode), (MELSECNET/H mode), (MELSECNET/H extended mode) 8192 points	0	
Maximum number of link points per network	в	(MELSECNET mode) 1024 points     (MELSECNET II mode),     (MELSECNET II composite mode)     4096 points	(MELSECNET/10 mode) 8192 points     (MELSECNET/H mode),     (MELSECNET/H extended mode)     16384 points	0	
	w	(MELSECNET mode) 1024 points     (MELSECNET II mode),     (MELSECNET II composite mode)     4096 points	(MELSECNET/10 mode) 8192 points     (MELSECNET/H mode),     (MELSECNET/H extended mode)     16384 points	0	
Maximum nu of link points station		<ul> <li>(MELSECNET mode) 1024 bytes</li> <li>(MELSECNET II mode), (MELSECNET II composite mode)</li> <li>First half: 1024 bytes</li> <li>Second half: 1024 bytes</li> </ul>	<ul> <li>(MELSECNET/10 mode), (MELSECNET/H mode) {(LY + LB) ÷ 8 + (2 × LW)} ≤ 2000 bytes</li> <li>(MELSECNET/H extended mode) {(LY + LB) ÷ 8 + (2 × LW)} ≤ 35840 bytes</li> </ul>	Δ	When the number of bytes exceeds 2000, mount two modules having the same network No., or set all modules on the network in the MELSECNET/H extended mode.
Communicat speed	ion	1.25Mbps	10Mbps	0	
Number of st connected in network		65 stations (master station: 1, local station + remote I/O station: 64)	64 stations (control station: 1 normal station: 63)	Δ	<ul> <li>Set the remote I/O network to a separate network.</li> <li>For the 65th station, configure a separate network.</li> </ul>
Applicable ca	able	GI optical cable			
Overall dista	nce	10km	30km	0	
Distance bet stations	ween	GI optical cable: 2km			
Maximum nu of networks	ımber	-	239	Δ	New MELSECNET/H parameter (mandatory)
Communicat method	ion	Half duplex bit serial method	Token ring method	Δ	Nothing to be noted though the communication method differs.
Transmission method	۱	Duplex loop			
Modulation method (Enc method)	oding	(Modulation method) CMI method	(Encoding method) NRZI coding	Δ	Nothing to be noted though the modulation method differs.
Transmission format		HDLC standard	s (frame format)	0	
Error control system			and retry by a time over	0	
RAS functior	ו	Loop-back function due to error detection     Diagnostic function for checking local lin		0	
Number of occupied I/O points		CPU integrated type: 0 point, Standalone:32 points per slot (I/O assignment: special 32 points)	32 points per slot (I/O assignment: intelli. 32 points)	Δ	When replacing from a CPU integrated type, an additional slot (32 points) is required.

# (2) Comparison between MELSECNET (II) module (coaxial loop) and MELSECNET/H module (coaxial bus)

ltem		Specifications			Procautions for	
		MELSECNET (II) module MELSECNET/H module		Compat- ibility	Precautions for replacement	
		Coaxial loop	Coaxial bus (QJ71BR11)	lishity	rophaoement	
	X/Y	Max. 2048 points and max. number of I/O points of CPU module on master station	(MELSECNET/10 mode), (MELSECNET/H mode), (MELSECNET/H extended mode) 8192 points	0		
Maximum number of link points per network	в	(MELSECNET mode) 1024 points     (MELSECNET II mode),     (MELSECNET II composite mode)     4096 points	(MELSECNET/10 mode) 8192 points     (MELSECNET/H mode),     (MELSECNET/H extended mode)     16384 points	0		
	w	(MELSECNET mode) 1024 points     (MELSECNET II mode),     (MELSECNET II composite mode)     4096 points	(MELSECNET/10 mode) 8192 points     (MELSECNET/H mode),     (MELSECNET/H extended mode)     16384 points	0		
Maximum nu of link points station		<ul> <li>(MELSECNET mode) 1024 bytes</li> <li>(MELSECNET II mode), (MELSECNET II composite mode)</li> <li>First half: 1024 bytes</li> <li>Second half: 1024 bytes</li> </ul>	<ul> <li>(MELSECNET/10 mode), (MELSECNET/H mode) {(LY + LB) ÷ 8 + (2 × LW)} ≤ 2000 bytes</li> <li>(MELSECNET/H extended mode) {(LY + LB) ÷ 8 + (2 × LW)} ≤ 35840 bytes</li> </ul>	Δ	When the number of bytes exceeds 2000, mount two modules having the same network No., or set all modules on the network in the MELSECNET/H extended mode.	
Communicat speed	ion	1.25Mbps	10Mbps	0		
Number of sta connected in network		65 stations (master station: 1, local station + remote I/O station: 64)	32 stations (control station: 1, normal station: 31)	Δ	<ul> <li>Set the remote I/O network to a separate network.</li> <li>For the 33th station, configure a separate network.</li> </ul>	
Applicable cable		3C-2V 5C-2V			When using existing cables, the overall distance and distance between stations becomes shorter.	
Overall dista	nce	3C-2V: 10km 5C-2V: 10km	3C-2V: 300m 5C-2V: 500m	Δ	Either use an A6BR10/ A6BR10-DC type repeater unit, or configure a separate network.	
Distance bet stations	ween	3C-2V: 500m 5C-2V: 500m	3C-2V: 300m 5C-2V: 500m	Δ	When using the 3C-2V, use the A6BR10/A6BR10-DC type repeater unit.	
Maximum nu of networks	mber	-	239	Δ	New MELSECNET/H parameter (mandatory)	
Communicat method	ion	Half duplex bit serial method	Token ring method	Δ	Nothing to be noted though the communication method differs.	
Transmissior method	ı	Duplex loop	Single bus	Δ	Nothing to be noted though the transmission method differs.	
Modulation method (Enc method)	oding	(Modulation method) CMI method	(Encoding method) Manchester code	Δ	Nothing to be noted though the modulation method differs.	
Transmissior format	1	HDLC standard	ls (frame format)	0		
Error control system		CRC(X <sup>16</sup> +X <sup>12</sup> +X <sup>5</sup> +1) a	and retry by a time over	0		
RAS functior		<ul> <li>Loop-back function due to error detection or broken cable</li> <li>Diagnostic function for checking local link lines</li> </ul>	Diagnostic function for checking local link lines	Δ	The loopback function cannot be used on a coaxial bus system. To use the loopback function, using an optical loop system is recommended.	
Number of occupied I/O points		CPU integrated type: 0 point, Standalone:32 points per slot (I/O assignment: special 32 points)	32 points per slot (I/O assignment: intelli. 32 points)	Δ	When replacing from a CPU integrated type, an additional slot (32 points) is required.	

2

2

# (3) Comparison between MELSECNET/B module (twisted pair) and MELSECNET/H module (optical loop/coaxial bus)

O: Compatible,	∆: Partial change	required, ×	: Incompatible

		Specifi	cations	. ,	1	
					Compat-	Precautions for
ltem		Twisted pair	Optical loop (QJ71LP21-25)	Coaxial bus (QJ71BR11)	ibility	replacement
	X/Y	Max. 2048 points and max. number of I/O points of CPU module on master station	(MELSECNET/10 mc (MELSECNET/H mod (MELSECNET/H exter points	de),	0	
Maximum number of link points per network	в	(MELSECNET mode) 1024 points     (MELSECNET II mode),     (MELSECNET II composite mode) 4096     points	(MELSECNET/10 r (MELSECNET/H m (MELSECNET/H e 16384 points	node),	0	
	w	(MELSECNET mode) 1024 points     (MELSECNET II mode),     (MELSECNET II composite mode) 4096     points	(MELSECNET/10 r (MELSECNET/H m (MELSECNET/H e 16384 points	node),	0	
Maximum nu of link points station		<ul> <li>(MELSECNET mode) 1024 bytes</li> <li>(MELSECNET II mode), (MELSECNET II composite mode)</li> <li>Link parameter first half: 1024 bytes</li> <li>Link parameter second half: 1024 bytes</li> </ul>	• (MELSECNET/10 mode), (MELSECNET/H mode) $\{(LY + LB) \div 8 + (2 \times LW)\} \leq 2000 \text{ bytes}$ • (MELSECNET/H extended mode) $\{(LY + LB) \div 8 + (2 \times LW)\} \leq 35840$ bytes		۵	When the number of bytes exceeds 2000, mount two modules having the same network No., or set all modules on the network in the MELSECNET/H extended mode.
Communicat	ion	125kbps/250kbps/500kbps/1Mbps	25Mbps/10Mbps	-	0	-
speed		·	-	10Mbps	0	
Number of sta		32 stations (master station: 1,	64 stations (control station: 1 normal station: 63)	-	Δ	Set the remote I/O network to a separate network.
network	i one	local station + remote I/O station: 31)	-	32 stations (control station: 1 normal station: 31)	Δ	Set the remote I/O network to a separate network.
Applicable ca	able	Shielded twisted pair cable	SI optical cable H-PCF optical cable Broad-band H-PCF optical cable QSI optical cable	-	Δ	A new optical cable has to be installed.
			-	3C-2V 5C-2V	Δ	A new coaxial cable has to be installed.
		125kbps: 1200m	30km	-	0	
Overall dista	nce	250kbps: 600m 500kbps: 400m 1Mbps: 200m	-	3C-2V: 300m 5C-2V: 500m	Δ	Either use an A6BR10/ A6BR10-DC type repeater unit, or configure a separate network.
Distance between		125kbps: 1200m 250kbps: 600m	Refer to Section 2.2.2.	-	Δ	When 1200 m is required, use GI optical cables for all optical cables, and use QJ71LP21G as the module.
stations		500kbps: 400m 1Mbps: 200m	-	3C-2V: 300m 5C-2V: 500m	Δ	Either use an A6BR10/ A6BR10-DC type repeater unit, or configure a separate network.
Maximum nu of networks	Imber	-	23	39	Δ	New MELSECNET/H parameter (mandatory)
Communicat method	ion	Half duplex bit serial method	Token bu	is method	Δ	Nothing to be noted though the communication method differs.
Transmissior method	ו	Single bus	Duplex loop	-	Δ	Nothing to be noted though the transmission method differs.
			-	Single bus	0	

	Specifications				
Item	MELSECNET/B module	MELSECNE	T/H module	Compat-	Precautions for
nem	Twisted pair	Optical loop (QJ71LP21-25)	Coaxial bus (QJ71BR11)	ibility	replacement
Modulation		(Encoding method) NRZI coding	-	0	
method (Encoding method)	(Modulation method) NRZI method	-	(Encoding method) Manchester code	Δ	Nothing to be noted though the modulation method differs.
Transmission format	HDLC standard	HDLC standards (frame format)			
Error control system	$CRC(X^{16}+X^{12}+X^{5}+1)$ and retry by a time over		0		
RAS function	Diagnostic function for	Diagnostic function for checking local link lines		0	
Occupied I/O points	Standalone:32 points per slot (I/O assignment: special 32 points)	32 points per slot (I/O assignment: intelli. 32 points)		0	

# 2.2.2 Cable performance comparisons

#### (1) Optical fiber cable

#### (a) Overall distance

The overall distance (30km) does not differ according to the optical fiber cable.

#### (b) Distance between stations

#### 1) SI optical fiber cable

O: Compatible,  $\bigtriangleup:$  Partial change required, x: Incompatible

Туре		MELSECNET(II) module		MELSECNET/H module (optical loop)		Precautions for replacement
		(optical loop)	10Mbps	25Mbps	ibility	replacement
SI optical fiber cable	L type	1km	500m	200m	Δ	
(Type: A-2P-□)	H type	500m	300m	100m	Δ	Refer to <sup>*1</sup> below.
SI optical fiber cable (Type: AN-2P-□)		1km	500m	200m	Δ	
H-PCF optical fiber cable		1km	1km	400m	Δ	Refer to <sup>*2</sup> below.
Broad-band H-PCF optical fiber cable		-	1km	1km	0	
QSI optical fiber cable		-	1km	1km	0	

\*1 When the distance between stations does not satisfy the MELSECNET/H specifications, either change the type of optical fiber cable, or install a gateway station midway along existing cables.

\*2 When the distance between stations does not satisfy the MELSECNET/H specifications, use at a communication speed of 10 Mbps, change the type of optical fiber cable, or install a gateway station midway along existing cables.

#### 2) GI optical fiber cable

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

Туре	MELSECNET ( II ) module (optical loop)	MELSECNET/H module (optical loop)	Compat- ibility	Precautions for replacement	
GI optical fiber cable	2km	2km	0		

#### (2) Coaxial cable

#### (a) Overall distance

		0. 00p	аныю, д. і	anda enange requirea, i meempaasie
Туре	MELSECNET ( II ) module (coaxial loop)	MELSECNET/H module (coaxial bus)	Compat- ibility	Precautions for replacement
3C-2V	10km	300m	Δ	Refer to <sup>*3</sup> below.
5C-2V	10km	500m	Δ	Refer to " below.

O: Compatible,  $\wedge$ : Partial change required,  $\times$ : Incompatible

 $\bigcirc$  Compatible  $\land$  Partial change required  $\times$  Incompatible

\*3 When the overall distance does not satisfy the MELSECNET/H specifications, either use an A6BR10/A6BR10-DC type repeater unit in the network, or configure a separate network.

#### (b) Distance between stations

		er eemp	аныю, д. і	andar onlange required, i meempaable
Туре	MELSECNET(II)module (coaxial loop)	MELSECNET/H module (coaxial bus)	Compat- ibility	Precautions for replacement
3C-2V	500m	300m	Δ	Refer to <sup>*4</sup> below.
5C-2V	500m	500m	0	Refer to <sup>-4</sup> below.

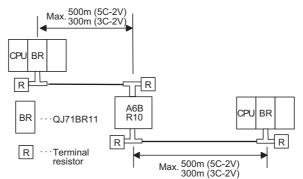
\*4 When the distance between stations does not satisfy the MELSECNET/H specifications, either use an A6BR10/A6BR10-DC type repeater unit in the network.

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Remarks
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The following shows the extension method when a repeater unit for the A6BR10/A6BR10-DC type MELSECNET/10 coaxial bus system is used.

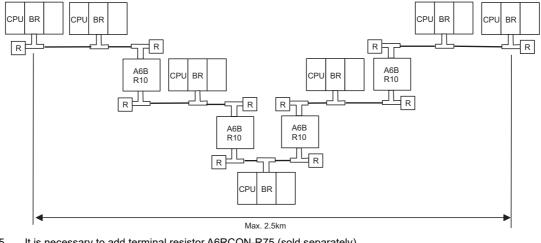
For details, refer to the Repeater Unit for the MELSECNET/10 Coaxial Bus System type A6BR10/ A6BR10-DC User's Manual (IB-66499).

(1) The distance between stations of 500m (5C-2V) and 300m (3C-2V) can be extended.



Up to four repeater units can be used in a single network.\*5 (2)

The overall distance can be extended to a maximum distance of 2.5 km.



\*5 It is necessary to add terminal resistor A6RCON-R75 (sold separately).

#### (3) Twisted pair cable

2

#### (a) Overall distance, Distance between stations

				0:	Compatible, $\triangle$ : Partial change required, × : Incompatible				
	Spec	fications							
Communication	MELSECNET/B module	MELSECNET/H module (QJ71NT11B)		Compat-	Precautions for replacement				
speed —	Twisted pair cable	Twisted pair cable	CC-Link dedicated cable	ibility					
125kbps	1200m	1200m	1200m	0					
250kbps	600m	-	-	0	Change the communication speed from 250Kbps to				
312kbps	-	600m	900m	0	312Kbps.				
500kbps	400m	-	-	0	Change the communication speed from 500Kbps to				
625kbps	-	400m	600m	0	625Kbps.				
1Mbps	200m	-	-	0	Change the communication speed from 1Mbps to				
1.25Mbps	-	200m	400m	0	1.25Mbps.				
2.5Mbps	-		200m	-					
5Mbps	-	(Not available)	150m	-	New function of MELSECNET/H				
10Mbps	-		100m	-	1				

#### (b) Cable performance

#### 1) Twisted pair cable

Item	Specifications (KNPEV-SB 0.5SQ × 1P <sup>*1</sup> )
Cable type	Shielded twisted pair cable
Number of cores	2
Conductive resistance (20°C)	39.4 Ω/km or lower
Insulation resistance (20°C)	10 MΩ/km or higher
Dielectric withstand voltage (V-min)	1000 V AC for one minute
Electrostatic capacity (1kHz)	70 nF/km or less (on average)
Characteristic impedance (100kHz)	110 ± 10Ω
Cross section	Biue White

\*1 The same specifications as the MELSECNET/B twisted pair cable.

To use the existing MELSECNET/B twisted pair cables, process the terminals.

For details, refer to the Q Corresponding MELSECNET/H Network System Reference Manual (PLC to PLC network) (SH-080049).

### 2) CC-Link dedicated cable

Product name	Mdele name	Remark
Ver.1.10-compatible CC-Link dedicated cable	FANC-110SBH	
	FA-CBL200PSBH	

# 2.3 Functional Comparisons

	Desci	ription	Compat-	Precautions for
Item	MELSECNET (II) module MELSECNET/B module	MELSECNET/H module	ibility	replacement
Cyclic transmission	<ul> <li>X/Y are used to perform 1:1 communications between the master station and local stations, and the master station and remote I/O stations.</li> <li>B/W are used to perform communications between the master station and all local stations.</li> </ul>	<ul> <li>LX/LY are used to perform 1:1 communications between the control station and normal stations.</li> <li>LB/LW are used to perform communications between the control station and all normal stations.</li> </ul>	0	
Transient transmission	<ul> <li>The LRDP/LWTP instructions issued from the master station are used to read/write devices on the programmable controller CPU of local stations.</li> <li>Other stations are accessed from GX Developer connected to the master station.</li> <li>The master station is accessed from GX Developer connected to local stations.</li> </ul>	<ul> <li>The READ/WRITE/ZNRD/ ZNWR instructions issued from the control station are used to read/write devices on the programmable controller CPU of normal stations.</li> <li>Other stations are accessed from GX Works2 or GX Developer connected to the control station.</li> <li>The control station and other normal stations are accessed from GX Works2 or GX Developer connected to a normal station.</li> </ul>	Δ	Correct the LRDP/LWTP instructions for reading/ writing devices on the programmable controller CPU of other stations to the READ/WRITE or ZNRD/ ZNWR instructions. (Refer to Section 2.6.2.)
Automatic return function	When a disconnected local station returns to normal status, it is automatically restored and the data link is resumed.	When a disconnected normal station returns to normal status, it is automatically restored and the data link is resumed.	0	
Loopback function	In the case of an optical loop system and coaxial loop system, faulty parts are disconnected when a fault (e.g. cable disconnection) occurs, and normal operation is continued on operable stations as a result of the loopback.	In the case of an optical loop system, faulty parts are disconnected when a fault (e.g. cable disconnection) occurs, and normal operation is continued on operable stations as a result of the loopback.	0	
Error detection	Faulty parts are detected by the data of special relays (M9200 to 9255) and special registers (D9200 to 9255).	Faulty parts are detected by the data of link special relays (SB0 to 1FF) and link special registers (SW0 to 1FF).	Δ	Change the devices in the sequence program. (Refer to Section 2.6.2.)
Self-diagnosis test function	Set the following test items by the mode setting switch: • Self-loopback test • Station-to-station test • Forward loop/reverse loop test	Set the following test items by the mode setting switch: • Self-loopback test • Internal self-loopback test • Hardware test Set the following test items in the network parameters: • Station-to-station test • Forward loop/reverse loop test	Δ	Set the station-to-station test and forward loop/ reverse loop test in the network parameter settings.

O: Compatible,  $\bigtriangleup:$  Partial change required,  $\times:$  Incompatible

# 2.4 Switch Settings Comparisons

(1) Comparison between MELSECNET (II) modules and MELSECNET/H (optical loop and coaxial bus) modules

		O: Compatible	e, $\triangle$ : Partial of	change required, × : Incompatible	
Switch name	Desc	ription	Compat-	Precautions for	
	MELSECNET(II)module	II ) module MELSECNET/H module		replacement	
Station number	Sets the station number.	0			
Mode select switch	Sets the mode for operation or self-diagnostics test.	Sets the mode for operation or self-diagnostics test.	Δ	Set the station-to-station test and forward loop/ reverse loop test in the GX Works2 or GX Developer network parameters.	

# (2) Comparison between MELSECNET/B modules and MELSECNET/H (optical loop and coaxial bus) modules

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

Switch name	Desc	Description					
	MELSECNET/B module	MELSECNET/H module	ibility	replacement			
Station number setting switch	Sets the station number.	Sets the station number.	0				
Mode select switch	Sets the mode for operation or self-diagnostics test.	Sets the mode for operation or self-diagnostics test.	Δ	Set the station-to-station test and forward loop/ reverse loop test in the GX Works2 or GX Developer network parameters			
Communication speed setting switch	Sets the communication speed.	-	Δ	The setting is not required.			

# (3) Comparison between MELSECNET/B modules and MELSECNET/H (twisted bus) modules

O: Compatible, △: Partial change required, × : Incompatible

Switch name	Desc	Compat-	Precautions for	
Switch hame	MELSECNET/B module	MELSECNET/H module	ibility	replacement
Station number setting switch	Sets the station number.	A station number is set using the station number/mode setting switch.	0	
Mode select switch	Sets the mode for operation or self-diagnostics test.	A self-diagnostic test is set using the station number/mode setting switch.	0	
Communication speed setting switch	Sets the communication speed.	Sets the communication speed.	Δ	Set a communication speed in the GX Works2 or GX Developer network parameters.

# 2.5 Parameter Comparisons

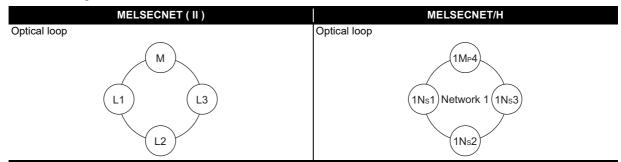
### 2.5.1 Parameter comparisons

The network parameters of MELSECNET (II) are deleted when the programmable controller type is changed with the GX Developer. After changing the programmable controller type, set the MELSECNET/H network parameters again.

#### (1) Replacing MELSECNET (II) with MELSECNET/H

The following shows a comparison between MELSECNET (II) network parameter settings and MELSECNET/H network parameter settings.

The MELSECNET (II) master station settings are compared with the MELSECNET/H control station settings, and the MELSECNET (II) local station setting are compared with the MELSECNET/H normal station settings.



	MELSECNET (II)			MELSECNET/H	Compat- ibility	Precautions for replacement
Ne	etwork type		Ne	twork type	0	
St	arting I/O No. <sup>*1</sup>		Starting I/O No.		0	
- (	Starting I/O No. <sup>*1</sup> - (No setting) Total number of (slave) stations - (No setting) LB/LW assignments (first half, second half) on the master static and local stations UX/LY assignments on the master stations		Network No.		$\Delta$	Mandatory for the MELSECNET/H.
То	tal number of (slave) stations		Tot	al number of (slave) stations	Δ	The total number of stations is 64 at maximum.
- (	No setting)		Group No.		Δ	Mandatory for the MELSECNET/H.
Master station ssignments		station	nts	LX/LY assignments on the control station and normal stations	0	
ter s	LB/LW assignments (first half,		Network range assignments	Station inherent parameter	Δ	*2
- s	and local stations	Cont		Supplemental settings-Secured data send Supplemental settings-Secured data receive	Δ	*3
Vetwor	LX/LY assignments on the master			LX/LY assignments on the control station and normal stations	0	
-	station and local stations			I/O master station specification	$\triangle$	Mandatory on communications of LX/LY
Re	efresh parameters <sup>*1</sup>		Re	fresh parameters	0	
Ne	etwork type <sup>*1</sup>		Network type		0	
Sta	arting I/O No. <sup>*1</sup>	uo	Sta	arting I/O No.	0	
station		stati	Ne	twork No.	Δ	Mandatory for the MELSECNET/H.
	No setting)	If, tation station If station Inaster	Gr	oup No.	Δ	Mandatory for the MELSECNET/H.
Lo Lo		Nor	Sta	ation inherent parameter	Δ	*2
Re	efresh parameters <sup>*1</sup>	1	Re	fresh parameters	0	

O: Compatible,  $\bigtriangleup:$  Partial change required, x: Incompatible

\*1 This is set when the AnU/AnUS(H)/QnA/QnASCPU is mounted.

\*2 Applied when LB/LW are set for both the first half/second half on MELSECNET (II). (For details, refer to Section 2.5.2 Example of changing parameters on 2-tier system.)

<sup>\*3</sup> This is the data separation prevention function for reading/writing cyclic data of two words or more in a single operation. (For details, refer to Section 2.7 Replacement Precautions.)

# 2.5.2 Example of changing parameters on 2-tier system

The following shows examples of how to change the LB/LW network parameters when replacing the MELSECNET (II) with MELSECNET/H.

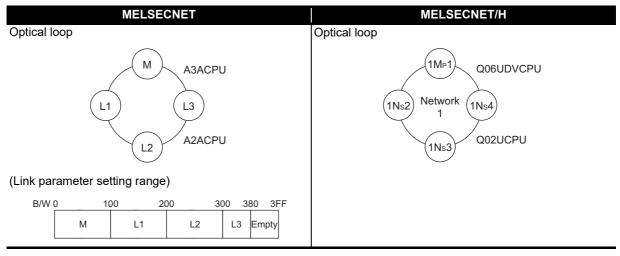
As MELSECNET (II) has three operation modes, the examples are shown for each operation mode.

- MELSECNET mode
- MELSECNET II mode
- MELSECNET II composite mode

# (1) MELSECNET mode

The following shows the procedure for changing the parameters in the case of a MELSECNET mode 2tier system configuration.

The MELSECNET master station is replaced with the MELSECNET/H control station, and MELSECNET local stations are replaced with MELSECNET/H normal stations.



A MELSECNET/H module set as normal station requires network parameter setting. For replacement of MELSECNET (II) module mounted on the CPU module of the AnN/AnA/AnSCPU (excluding AnUS(H)CPU), newly set network parameters.

The following shows parameters required on each station of MELSECNET/H.

	Common parameter (Network range assignment)	Refresh parameter
1Mp1	O (Refer to example in (c) 2))	$\triangle$ (Refer to example in (c) 3))
1Ns2		∠ (Refer to example in (d) 2))
1Ns3		∆ (Refer to example in (d) 2))
1Ns4		$\triangle$ (Refer to example in (d) 2))

 $O: Setting \ required/ \bigtriangleup: Setting \ required \ (Default \ setting \ is \ also \ acceptable)$ 

## (a) MELSECNET master station

2

The following shows the network parameter settings of the MELSECNET master station (A3ACPU).

1)	Network parameter setting (A3ACPU: MELSECNET master station)
----	--

	Module No.1	Module No.2	Module No.3	Module No.4
Network type	MNET(Master station)		None 👻	None
Start I/O No.				
Network No.				
Total stations	3	3		
Group No.				
Station No.				
	Network range assignment			
		1		
▲				
Necessary setting(	Nosetting / Alreadyset ) Set if it is ne	eeded( No setting / Already set )		
nterlink transmission paramet	Start I/O No.: Input the start I/O No. installed in the	Valid module during other stat	ion access	
Acknowledge XY assignme	nt Routing parameters Ch	eck End	Cancel	

	on paramete	ers												
Assignment me O Points/St O Start/Enc	art	Tota	hitoring time al slave ions	e 200 3	×10ms	Swite	h screens	LB/LV	/ settings		•			
	Sendira	inge for ea	ach station	Send ra	ange for ea	ach station	M stati	ion -> R sta	ation	M stati	on <- Rista	ation		
L/R		LB	LB				LW		LW		LW			
station No.	Points	Start	End	Points	Start	End	Points	Start	End	Points	Start	End		
	256	0000	00FF	256	0000	00FF								
MO	256	0100	01FF	256	0100	01FF								
<u>M 0</u> L 1	1 200 1		02FF	256	0200	02FF								
M 0 L 1 L 2	256	0200	0211											

#### (b) MELSECNET local station

As all stations perform cyclic communication according to the network range assignments of the master station (A3ACPU), there are no parameter settings for network range assignment on local stations.

# (c) MELSECNET/H control station

2

The following shows the network parameter settings after replacing with the MELSECNET/H control station (Q06UDVCPU).

	Module 1	Module 2	Module 3	Module 4
Network Type	MNET/H Mode(Control Station)	None	None 👻	None
Start I/O No.	0000			
Network No.		1		
Total Stations	-	4		
Group No.				
Station No.				
Mode	Online 👻	·		
	Network Range Assignment			
	Refresh Parameters			
	Interrupt Settings			
	Return as Control Station 👻			
	Optical/Coaxial 🗸	•		

#### 2) Network range assignment (Q06UDVCPU: MELSECNET/H control station) Set up common and station inherent parameters. Assignment Method Monitoring Time 200 X 10ms C Points/Start Parameter Name Start/End Total Slave Stations 4 Switch Screens LB/LW Setting 💌 Send Range for each Station Low Speed LW Station No. Pairing LE LW Low Speed LB Points Points Start End Points Start End Start End Points Start End 256 0000 00FF 256 0100 01FF 256 0200 02FF 256 0000 00FF 256 0100 01FF Disable 👻 Disable -256 0200 02FF Disable -128 0300 037F 128 0300 037F Disable 🔻 -

Assignment Method Points/Start Start/End					ransient Tra		On Error H		Status			
	1	_	Link Si	de		_		_	PLC Si	de	_	•
	Dev. N	lame	Points	Start	End		Dev. 1	Name	Points	Start	End	-
Transfer SB	SB		512	0000	01FF	+	SB		512	0000	01FF -	_
Transfer SW	SW		512	0000	01FF	- <del>Ü</del> -	SW		512	0000	01FF	
Random Cyclic	LB					- <del>\.</del>		-				
Random Cyclic	LW					- 🖶 -		-				
Transfer 1	LB		896	0000	037F	- <del>()</del>	в	-	896	0000	037F	
Transfer 2	LW	4	896	0000	037F	+	W	-	896	000000	00037F	
Transfer 3		-				+		-				
Transfer 4		-				+		-				
Transfer 5		-				+		-				
Transfer 6		-				- <del>()</del> -		-				-

# (d) MELSECNET/H normal station

2

The following shows the network parameter settings after replacing with a MELSECNET/H normal station (Q02UCPU).

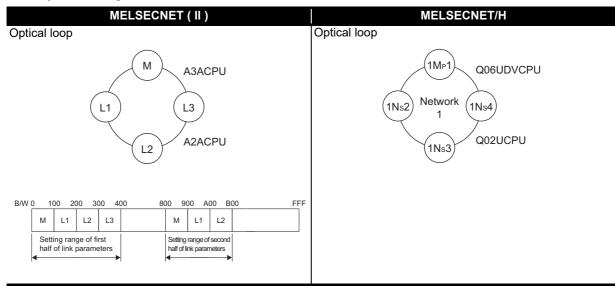
The same parameter settings are required on all normal stations.

	Module 1		Module 2		Module 3	Module 4	
Network Type	MNET/H Mode(Normal Station)	👻 No	one ·	-	None 👻	None	
Start I/O No.		0000					
Network No.		1					
Total Stations							
Group No.		0					
Station No.							
Mode	Online	-		-	-		
	Station Inherent Parameters						
	Refresh Parameters						
	Interrupt Settings						

Assignment Method C Points/Start ⓒ Start/End	1				Transient Tra		n Error H		Status				
		_	Link Si	ide	_	_			PLC Si	de	_		
	Dev. 1	Vame	Points	Start	End		Dev. 1	Name	Points	Start	End		
Transfer SB	SB		512	0000	01FF	+	SB		512	0000	01FF	-	
Transfer SW	SW		512	0000	01FF	- <del>Ü</del> -	SW		512	0000	01FF		
Random Cyclic	LB					- <del>Ü</del> -		-					
Random Cyclic	LW					- ₩-		-					
Transfer 1	LB	-	896	0000	037F	- <del>()</del> -	В	-	896	0000	037F		
Transfer 2	LW	-	896	0000	037F	- <del>()</del> -	W	-	896	000000	00037F		
Transfer 3		-				- 🕂 -		-					
Transfer 4		-				+		-					
Transfer 5		-				+		-					
Transfer 6		-				↔		-				-	

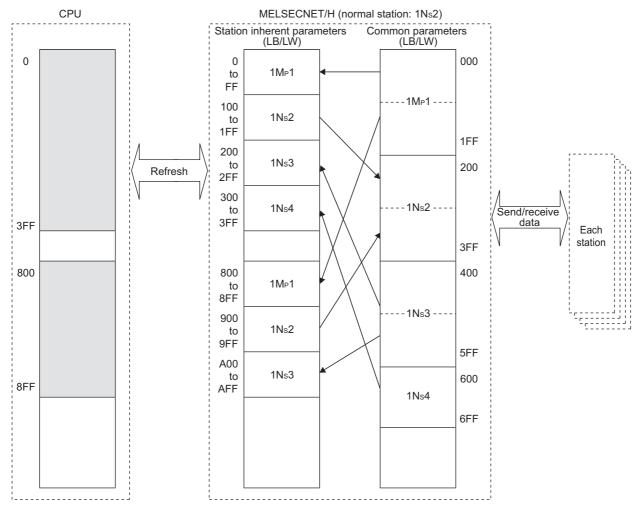
#### (2) MELSECNET II mode

The following shows the procedure for changing the parameters in the case of a MELSECNET II mode 2-tier system configuration.



Each of the MELSECNET II first and second half settings correspond to [Setting1] and [Setting2] set to all stations according to the "Station inherent parameters" on MELSECNET/H.

(Example) Station inherent parameters of a normal station (1Ns2)



A MELSECNET/H module set as normal station requires network parameter setting. For replacement of MELSECNET (II) module mounted on the CPU module of the AnN/AnA/AnSCPU (excluding AnUS(H)CPU), newly set network parameters.

The following shows parameters required on each station of MELSECNET/H.
---

	Common parameter (Network range assignment)	Station inherent parameter	Refresh parameter
1Mp1	0	0	Δ
IMPT	(Refer to example in (b) 2))	(Refer to example in (b) 3))	(Refer to example in (b) 4))
1Ns2		0	Δ
11152		(Refer to example in (c) 2))	(Refer to example in (c) 3))
1Ns3		0	Δ
11155		(Refer to example in (c) 2))	(Refer to example in (c) 3))
1Ns4		0	Δ
11154		(Refer to example in (c) 2))	(Refer to example in (c) 3))

O: Setting required/ △: Setting required (Default setting is also acceptable)

#### (a) MELSECNET II master station

2

The following shows the network parameter settings of the MELSECNET II master station (A3ACPU).

	Module No.1	Module No.2	Module No.3	Module No.4
Network type	MNET II (Master station)	None	✓ None	✓ None
Start I/O No.				
Network No.				
Total stations		3		
Group No.				
Station No.				
	Network range assignment			
		1		
	1	1		
Necessarv setting	Nosetting / Alreadyset ) Set if it is n	eeded( No setting / Already set )		
	Start I/O No.:	Valid module		
erlink transmission param	I have a submar to submar	during other	station access	
	inipat the start to two, installed in t	ne module in ro-point unit.		

) Network ra	nge assi	gnment	(A3ACI	PU: ME	LSECN	ET II ma	ster sta	tion)				
Setup commo	on paramete	ers										
Assignment me O Points/Sta O Start/End	art	Tot	nitoring time al slave ions	e 200 3	× 10ms	Swite	h screens	LB/LW	/ settings		•	
	Send ra	inge for ea	ach station	Sendira	ange for ea	ach station	Sendira	ange for ea	ach station	Send r	ange for ea	ach station 🔺
L/R		First half L	.B		First half L	W		Second h	ialf LB		Second h	ialf LW
station No.	Points	Start	End	Points	Start	End	Points	Start	End	Points	Start	End
MO	256	0000	00FF	256	0000	00FF	256	0800	08FF	256	0800	08FF
IIL 1	256	0100	01FF	256	0100	01FF	256	0900	09FF	256	0900	09FF
IIL 2	256	0200	02FF	256	0200	02FF	256	0A00	0AFF	256	0A00	OAFF
IIL 3	256	0300	03FF	256	0300	03FF						-
4												•

#### (b) MELSECNET/H control station

Each of the MELSECNET II first and second half settings correspond to [Setting1] and [Setting2] set according to the "Station inherent parameters" on MELSECNET/H.

Points when replacing the first and second half of MELSECNET II

MELSECNET sequence programs can be re-used more efficiently by using the station inherent parameters of MELSECNET/H. The followings describe the points when setting station inherent parameters.

Set station inherent parameters to all stations.

#### 1) Network parameter

The network parameter settings of the MELSECNET/H control station (Q06UDVCPU) are the same as the parameters when replaced with the MELSECNET mode.

Network parameter setting (Q06UDVCPU: MELSECNET/H control station)

	Module 1		Module 2		Module 3		Module 4
Network Type	MNET/H Mode(Control Station)	¥ I	None	-	None	-	None
Start I/O No.	00	000					
Network No.		1					
Total Stations		4					
Group No.		0					
Station No.							
Mode	Online	•		-	•	•	
	Network Range Assignment						
	Refresh Parameters						
	Interrupt Settings						
	Return as Control Station	-					
	Optical/Coaxial	-					
				1			
1							

#### 2) Network range assignment parameter

Set the total number of points in the first half and second half for the common parameters.

Network range assignment (Q06UDVCPU: MELSECNET/H control station)

	annorrana	station in	herent par	ameters.											
-Assignment		Monito	oring Time	20	0 X 10r	ns P	arameter 1	Name							
Start/E	nd	Total Station		4		S	witch Scre	ens LB	/LW Settin	ig 💌					
	Send Ran	ge for ead	h Station	Send Ran	ge for eac	h Station	Send Ran	ge for ead	h Station	Send Ran	ge for eac	h Station			٠
Station No.		LB			LW			Low Spee	d LB		Low Spee	d LW	Pairing		
	Points	Start	End	Points	Start	End	Points	Start	End	Points	Start	End	1		
1	512	0000	01FF	512	0000	01FF							Disable	-	
2	512	0200	03FF	512	0200	03FF							Disable	-	
3	512	0400	05FF	512	0400	05FF							Disable	-	
4	256	0600	06FF	256	0600	06FF							Disable	-	-

#### 3) Station inherent parameter

2

Set the first half in [Setting1] and the second half in [Setting2] as the inherent parameters.

Station inherent parameter (Q06UDVCPU: MELSECNET/H control station) Assignment Method Parameter Workspace Location C Points/Start Name Start/End Switch Screens Workspace Name LB Setting • Board No. 📃 💌 Read Cancel Network Range Assignment Setting 1 Setting 2 Pairing Station No LB LB LE End Points Start End Points Start Points Start End 256 0000 00FF 256 0800 08FF -Disable 09FF 256 0100 01FF 256 0900 Ŧ 0200 02FF 256 0A00 0AFF -0300 03FF **+ +** 

#### 4) Refresh parameters

Refresh parameters (Q06UDVCPU: MELSECNET/H control station) Assignment Method Transient Transmission Error History Status C Points/Start Overwrite O Hold Start/End PLC Side Link Side . Dev. Name Points Start End Dev. Name Points Start End Transfer SB 512 0000 01FF \*\*\*\*\* 512 0000 01FF Transfer SW SW 512 0000 01FF 512 0000 01FF Random Cyclic Random Cyclic W -8192 8192 1FFF Transfer 1 LB -0000 1FFF 0000 -0AFF 0AFF 0800 Transfer 2 0800 LB Ŧ 768 Ŧ 768 Transfer 3 1024 0000 03FF 1024 000000 0003FF W -Transfer 4 W -768 0800 0AFF 768 00080 000AFF -Transfer 5 --Transfer 6 -÷  $\mathbf{T}$ \* MELSECNET diagnostics may not be displayed correctly although END processing time of CPU is shortened when the points of SB transfer/SW transfer are reduced.

#### (c) MELSECNET/H normal station

2

#### 1) Network parameter setting

The network parameter settings of MELSECNET/H normal stations (Q02UCPU) are the same as those of MELSECNET/H normal stations when replaced with the MELSECNET mode. (Refer to the Section 2.5.2 (1) MELSECNET mode.)

#### 2) Station inherent parameter

For the station inherent parameter settings, settings of the same content as that for the control stations has to be set to all normal stations.

Station inherent parameter (Q02UCPU: MELSECNET/H normal station)

-Reference Ne Workspace Lo			ent EC\Gppw\			Assignmer	nt Method	Paran				_
workspace to	Lauon	J C. MILLO	LC (oppw)	1			1	Name			_	
Workspace Na	me					Start	t/End	Switch Scree		8 Setting		Ŧ
Project Name		Q06UDV	CPU_i Bo	oard No.	1 🔻							
Reference	e	Read		Cancel								
Reference					Setting 2	_	Network	Rance Ass	sianment		_	•
		Setting 1			Setting 2	_	Network	Range Ass	signment	4	,	•
Station No.			End		Setting 2 LB Start	End	Network Points	Range Ass LB Start	signment	Pairing	,	•
		Setting 1 LB	End	Points	LB Start	End	Points	LB Start	End	4	•	•
	Points	Setting 1 LB Start		Points 256	LB Start 0800	End 08FF	Points 512	LB Start 0000	End 01FF	Pairing		•
Station No.	Points 256	Setting 1 LB Start 0000	00FF	Points 256 256	LB Start 0800 0900	End 08FF 09FF	Points 512 512	LB Start 0000 0200	End 01FF 03FF	Pairing Disable		•

#### 3) Refresh parameters

The same parameter settings are required on all normal stations.

Assignment Method				T	ransient Tra		n Error I O Ho		Status			
		_	Link Si	de		_		_	PLC Si	ide		•
	Dev. N	Name	Points	Start	End		Dev.	Name	Points	Start	End	
Transfer SB	SB		512	0000	01FF	+	SB		512	0000	01FF	-
Transfer SW	SW		512	0000	01FF	- <del>()</del> -	SW		512	0000	01FF	
Random Cyclic	LB					- <del>()</del> -		-				
Random Cyclic	LW					- ₩-		-				
Transfer 1	LB	-	1024	0000	03FF	- <del>\.</del>	в	-	1024	0000	03FF	
Transfer 2	LB	-	768	0800	0AFF	- <del>()</del> -	в	-	768	0800	0AFF	
Transfer 3	LW	-	1024	0000	03FF	- <del>()</del> -	W	-	1024	000000	0003FF	
Transfer 4	LW	-	768	0800	0AFF	- <del>()</del> -	W	-	768	000800	000AFF	
Transfer 5		-				- <del>\.</del>		-				
Transfer 6		-				- <del>44</del> -		-				-

### (3) MELSECNET II composite mode

2

The following shows the procedures for changing the parameters in the case of a MELSECNET II composite mode 2-tier system configuration on an A3ACPU.

MELSECNET(II)	MELSECNET/H
Optical loop	Optical loop
A3ACPU M L1 L2 A2ACPU A2ACPU A3ACPU MELSECNET II mode compatible link modules are used for the M and L2 stations, and a MELSECNET mode compatible link module is used for the L1 station.	Network 1Ns2 Q06UDVCPU Network 1 1Ns3 Q02UCPU
B/W 0 100 200 300 400 500 FFF	
M L1 L2 M L2	
Setting range of first half of link parameters	

A MELSECNET/H module set as normal station requires network parameter setting. For replacement of MELSECNET (II) module mounted on the CPU module of the AnN/AnA/AnSCPU (excluding AnUS(H)CPU), newly set network parameters.

The following shows parameters required on each station of MELSECNET/H.

	Common parameter (Network range assignment)	Station inherent parameter	Refresh parameter
1Mp1	0	0	Δ
ninpr	(Refer to example in (b) 2))	(Refer to example in (b) 3))	(Refer to example in (b) 4))
1Ns2		0	Δ
11152		(Refer to example in (c) 2))	(Refer to example in (c) 3))
1Ns3		0	Δ
11155		(Refer to example in (c) 2))	(Refer to example in (c) 3))

O: Setting required/  $\triangle$ : Setting required (Default setting is also acceptable)

#### (a) MELSECNET II composite mode master station

The following shows the network parameter settings of the MELSECNET II composite mode master station (A3ACPU).

	Module No.1	Module No.2	Module No.3	Module No.4
Network type	MNET II comp. (Master station)	None 🚽	None	✓ None
Start I/O No.				
Network No.				
Total stations	2	2		
Group No.				
Station No.				
	Network range assignment			
Necessary setting Necessary setting nk transmission paran nowledge XY assignr	Start I/O No.: Input the start I/O No. installed in th	eeded(Nosetting / Alreadyset) Velid module ne module in 16-point unit. eck End	ion access 1	

#### Network range assignment (A3ACPU: MELSECNET II composite mode master station) : First half 2) Setup common parameters Assignment method-Monitoring time 200 ×10ms O Points/Start Total slave \_ 2 Switch screens First half LB/LW setting Start/End stations Send range for each station Send range for each station $\mathsf{M}$ station $\Rightarrow \mathsf{R}$ station M station <- R station . First half LW L/R First half LB LW LW Points Points End Points Start Points Start station No. Start End Start End End М О 256 0000 00FF 256 0000 00FF 256 256 01FF L 1 0100 01FF 0100 ∥L 2 256 0200 02FF 256 0200 02FF .

Assignment method       Monitoring time       200       X 10ms            • Points/Start           • Total slave         stations           2         Switch screens           Second half LB/LW settin             L/R         Second half LB	Setup comm	on paramet	ers										
L/R         Second half LB         Second half LW         Image: Second half LW <th>Assignment me O Points/St</th> <th>ethod art</th> <th>Mor Tota</th> <th>al slave</th> <th>e 200</th> <th>×10ms</th> <th>Swite</th> <th>ch screens</th> <th>Secon</th> <th>d half LB/</th> <th>LW settin</th> <th>•</th> <th></th>	Assignment me O Points/St	ethod art	Mor Tota	al slave	e 200	×10ms	Swite	ch screens	Secon	d half LB/	LW settin	•	
station No.         Points         Start         End         Points         Start         End         Points         Start         End           M 0         256         0300         03FF         256         0300         03FF		Sendira	ange for ea	ach station	Sendira	ange for ea	ach station						
M 0 256 0300 03FF 256 0300 0300 0300 0300 0300 0300 0300 0300 0300 03	L/R		Second h	alf LB		Second h	ialf LW						
	station No.	Points	Start	End	Points	Start	End	Points	Start	End	Points	Start	End
	MO	256	0300	03FF	256	0300	03FF						
IIL 2 256 0400 04FF 256 0400 04FF	L1												
	IL 2	256	0400	04FF	256	0400	04FF						•

#### (b) Q06UDVCPU (control station)

Each of the MELSECNET II first and second half settings correspond to [Setting1] and [Setting2] set according to the "Station inherent parameters" on MELSECNET/H.

Points when replacing the first and second half of MELSECNET II

MELSECNET sequence programs can be re-used more efficiently by using the station inherent parameters of MELSECNET/H. The followings describe the points when setting station inherent parameters.

• Set station inherent parameters to all stations.

#### 1) Network parameter

The network parameter settings of the MELSECNET/H control station (Q06UDVCPU) are the same as the parameters when replaced with the MELSECNET mode.

Network parameter setting (Q06UDVCPU: MELSECNET/H control station)

	Module 1	Module 2	Module 3	Module 4
Network Type	MNET/H Mode(Control Station)	None 🗸	None	None
Start I/O No.	00	0		
Network No.		1		
Total Stations		3		
Group No.		0		
Station No.				
Mode	Online	• •	·	•
	Network Range Assignment			
	Refresh Parameters			
	Interrupt Settings			
	Return as Control Station	-		
	Optical/Coaxial	-		

#### 2) Network range assignment parameter

Set the total number of points in the first half and second half for the common parameters.

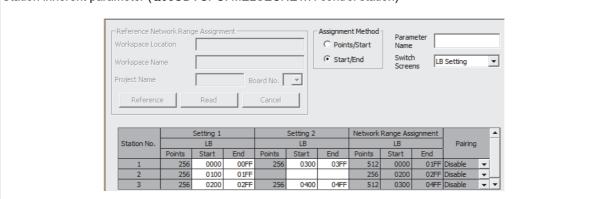
Network range assignment (Q06UDVCPU: MELSECNET/H control station)

Set up co	mmon and	station in	herent par	ameters.											
Assignment		Monito	oring Time	20	10 X 10n	ns l	Parameter I	Name							
Start/E	nd	Total : Statio		3		:	Switch Scre	ens LB	/LW Settir	ng 💌					
	Send Ran	ge for ead	h Station	Send Ran	ge for eac	h Station	Send Ran	ge for ead	h Station	Send Ran	ge for eac	h Station			٠
Station No.		LB			LW			Low Spee	d LB		Low Spee	d LW	Pairing		
	Points	Start	End	Points	Start	End	Points	Start	End	Points	Start	End			
1	512	0000	01FF	512	0000	01FF							Disable	-	
2	256	0200	02FF	256	0200	02FF							Disable	-	
3	512	0300	04FF	256	0400	04FF							Disable	-	-

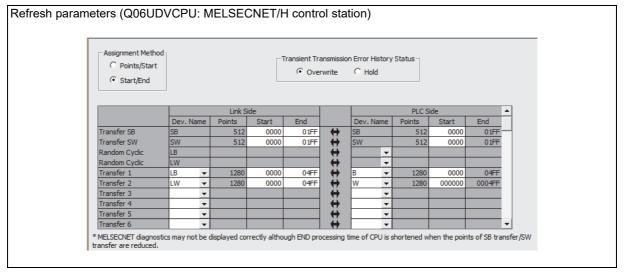
# 3) Station inherent parameter

Set the first half in [Setting1] and the second half in [Setting2] as the inherent parameters.

Station inherent parameter (Q06UDVCPU: MELSECNET/H control station)



#### 4) Refresh parameters



#### (c) MELSECNET/H normal station

2

#### 1) network parameter setting

The network parameter settings of MELSECNET/H normal stations (Q02UCPU) are the same as those of MELSECNET/H normal stations when replaced with the MELSECNET mode. (Refer to the MELSECNET mode.)

#### 2) Station inherent parameter

For the station inherent parameter settings, settings of the same content as that for the control stations has to be set to all normal stations. (Refer to the station inherent parameters of the MELSECNET/H control station.)

Station inherent parameter (Q02UCPU: MELSECNET/H normal station)

-Reference Ne Workspace Lo	-		ent EC\Gppw\	1		Assignmer	nt Method - s/Start	Param Name			_
Workspace Na	me					Start	/End	Switch Scree		8 Setting	ŀ
Project Name		Q06UDV	CPU_ł Bo	oard No.	1 🔻						
Reference	æ	Read		Cancel							
	:	Setting 1			Setting 2		Network I	Range Ass	signment		
Station No.		Setting 1 LB			Setting 2 LB		Network	Range Ass LB	signment	Pairing	-
Station No.	Points		End	Points		End	Network Points		signment End	Pairing	-
Station No.		LB	End 00FF	Points	LB	End 03FF		LB	End	Pairing Disable	•
Station No.	Points	LB Start		Points 256	LB Start		Points	LB Start	End 01FF		

#### 3) Refresh parameters

The same parameter settings are required on all normal stations.

Assignment Method Points/Start Start/End	1			T	ransient Tra		n Error H		Status			
			Link Si	de		_			PLC Si	de		
	Dev. N	Vame	Points	Start	End		Dev. 1	Name	Points	Start	End	7
Transfer SB	SB		512	0000	01FF	+	SB		512	0000	01FF -	-
Transfer SW	SW		512	0000	01FF	- <del>()</del> -	SW		512	0000	01FF	
Random Cyclic	LB					- <del>()</del> -		-				
Random Cyclic	LW					- <del>()</del> -		-				
Transfer 1	LB	-	1280	0000	04FF	- <del>()</del> -	В	-	1280	0000	04FF	
Transfer 2	LW	-	1280	0000	04FF	- <del>()</del> -	W	-	1280	000000	0004FF	
Transfer 3		-				- <del>()</del> -		-				
Transfer 4		-				- 🖶 -		-				
Transfer 5		-				- ₩-		-				
Transfer 6		-				- <del>()</del> -		-				-

# 2.5.3 Example of changing parameters on 3-tier system (When only the first half of link parameter is set)

The following shows how to change a system on which first half of LB/LW link parameters is set, when replacing the MELSECNET (II) 3-tier system with MELSECNET/H. Network range assignment of the present MELSECNET (II) 3-tier system can be used in replacement with MELSECNET/H. The MELSECNET (II) 2-tier is replaced with the network 1 of MELSECNET/H, and 3-tier is replaced with the network 2. The MELSECNET (II) master station is replaced with the MELSECNET/H control station,

and MELSECNET local stations are replaced with MELSECNET/H normal stations. **MELSECNET/H** MELSECNET (II) **Optical** loop Optical loop A2UCPU A3UCPU Q06UDVCPU Q02UCPU L2 Μ 1Mp3 1Ns2 MELSECNET/H MELSECNET (II) Network 1 2-tier A3UCPU Q06UDVCPU Gateway \_1/n 1Ns1/2Mp3 station MELSECNET/H MELSECNET (II) Network 2 3-tier 11 12 2Ns1 2Ns2 Q02UCPU Q02UCPU A2UCPU A2UCPU B/W 0 100 280 380 3FF Emptv L2 L1/m Μ Link parameter of 2-tier Link parameter of 3-tier m 11 12 master station (L1/m) 100 180 200 280

#### Concept of MELSECNET (II) 3-tier system replacement

Step 1: Control station (1Mp3) setting

Replace the link parameter setting of MELSECNET (II) 2-tier master station directly with "Network range assignment (Common parameters)" of MELSECNET/H network 1 control station 1Mp3.

Step 2: Gateway station (1Ns1/2Mp3) setting

Data transfer between 2 and 3-tier, performed automatically on MELSECNET (II), should be set with parameter setting on MELSECNET/H. Perform the following settings.

• Replace the link parameter setting of MELSECNET (II) 3-tier master station directly with "Network range assignment (Common parameters)" of MELSECNET/H network 2 control station 2Mp3.

The range assignment should be performed including the same LB/LW size as that of 1Mp3 to relay the network 1 control station 1Mp3.

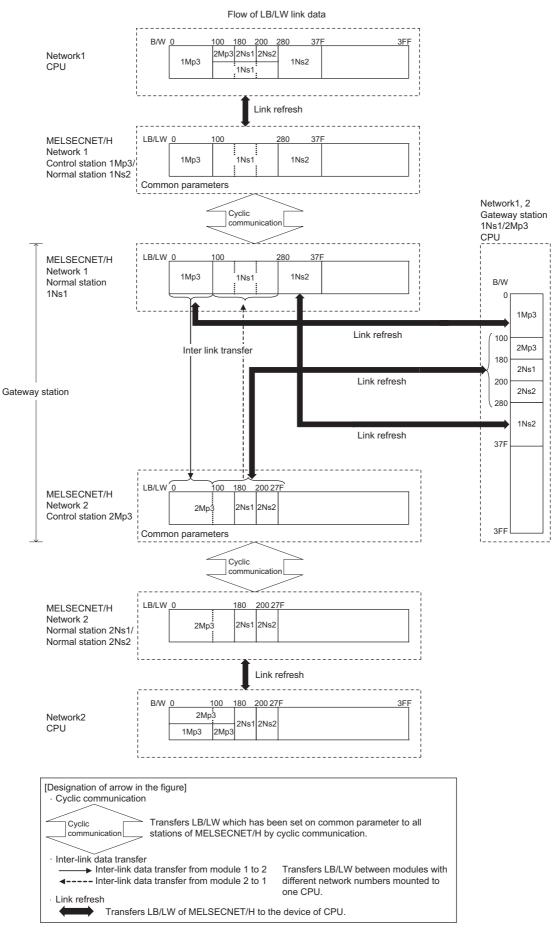
• Set "Refresh parameters" not to duplicate B/W of networks 1 and 2 on the CPU.

• Set data transfer between 2 and 3-tier of MELSECNET (II) in "Interlink transmission parameters" between gateway stations 1Ns1 and 2Mp3.

Step 3: Normal station (1Ns2, 2Ns1, 2Ns2) setting

Set "Refresh parameters" of each normal station (1Ns2, 2Ns1, 2Ns2) on MELSECNET/H networks 1 and 2.

#### The following shows the flow of MELSECNET/H link data after being replaced from MELSECNET (II).



Network parameter setting is required for control and normal stations on MELSECNET/H.

	Common parameter (Network range assignment)	Station inherent parameter	Refresh parameter	Inter-link data transfer
1Mp3	O (Refer to example in (e) 2))	-	$\triangle$ (Refer to example in (e) 3))	
1Ns2		-	$\triangle$ (Refer to example in (f) 2))	
1Ns1		-	O (Refer to example in (g) 2))	O (Refer to example in (h) 1))
2Mp3	O (Refer to example in (g) 3))	-	O (Refer to example in (g) 4))	
2Ns1		-	$\triangle$ (Refer to example in (i) 2))	
2Ns2		-	$\triangle$ (Refer to example in (i) 2))	

The following shows parameters required on each station of MELSECNET/H.

 $\bigcirc: Setting \ required \ (Default \ setting \ is \ also \ acceptable)/ \ -: \ Setting \ not \ required$ 

2

# (a) MELSECNET (II) 2-tier master station M

2

The following describes the network parameter setting of MELSECNET (II) 2-tier master station M (A3UCPU).

	Module No.1	Module No.2	Module No.3	Module No.4
Network type	MNET II (Master station)	None 🗸	None 🗸	None
Start I/O No.	0000			
Network No.				
Total stations	2			
Group No.				
Station No.				
	Network range assignment			
	Refresh parameters			
Necessary setting( transmission param	Start I/O No.: Input the start I/O No. installed in th		ion access	

Setup comm	ion parameti	ers										
Assignment m O Points/S O Start/En	tart	Tot	nitoring time al slave ions	200 2	×10ms	Swite	h screens	LB/LV	/ settings		<b>-</b>	
	Sendira	ange for ea	ach station	Sendra	ange for ea	ach station	Send ra	ange for ea	ach station	Send ra	ange for ea	ich statioi
L/R		First half L	_B		First half L	W		Second h	alf LB		Second h	alf LW
station No.	Points	Start	End	Points	Start	End	Points	Start	End	Points	Start	End
М 0	256	0000	00FF	256	0000	00FF						
∥L 1	384	0100	027F	384	0100	027F						
IL 2	256	0280	037F	256	0280	037F						

Assignment method Points/Start Start/End					nsmission error l ie © Hold			
						DLC 11		
		Link side				PLC side	¢	
	Points	Link side Start	End		BlockNo.	PLL side Points	s Start	End
LB<->B transmission(1)	Points 896		End 037F	+	BlockNo.			
LB<->B transmission(1) LW<->W transmission(1)		Start		<b>‡</b> ‡	BlockNo.	Points	Start	End 037F 037F

# (b) MELSECNET (II) 2-tier local station L2

As the cyclic communication is performed according to the network range assignments of the 2-tier master station (A3UCPU), there is no parameter setting for network range assignment on 2-tier local stations.

# (c) MELSECNET (II) 2-tier local station L1/3-tier master station m

The following describes the network parameter setting of MELSECNET (II) 2-tier local station L1/3-tier master station m (A3UCPU).

	Module No.1	Module No.2	Module No.3	Module No.4
Network type	MNET II (Local station) 🗸	MNET II (Master station) 🛛 🗸 🗸	None	None
Start I/O No.	0000	0020		
Network No.				
Total stations		2		
Group No.				
Station No.				
		Network range assignment		
		Refresh parameters		
Necessary setting(	Start I/O No.:	eded( Nosetting / Alreadyset ) Valid module during other stati e module in 16-point unit.	ion access	

Setup comm	on paramet	ers										
Assignment me O Points/St O Start/Enc	art	Tot	nitoring time al slave ions	e 200	× 10ms	Swito	h screens	LB/LW	/ settings		<b>-</b>	
	Sendira	ange for ea	ach station	Sendira	ange for ea	ach station	Send ra	ange for ea	ach station	Sendira	ange for ea	ach station
L/R		First half L	.B		First half l	W		Second h	alf LB		Second h	alf LW
station No.	Points	Start	End	Points	Start	End	Points	Start	End	Points	Start	End
М О	128	0100	017F	128	0100	017F						
∥L 1	128	0180	01FF	128	0180	01FF						
IL 2	128	0200	027F	128	0200	027F						

Assignment method Points/Start Start/End					nsmission error H te © Hold				
		Link side			PLC side				
	Points	Start	End		BlockNo.	Points	Start	End	
								0075	
LB<->B transmission(1)	640	0000	027F	+		640	0000	027F	
LB<->B transmission(1) LW<->W transmission(1)		0000	027F 027F	<b>*</b>		640 640	0000	027F 027F	

# (d) MELSECNET (II) 3-tier local station I1, I2

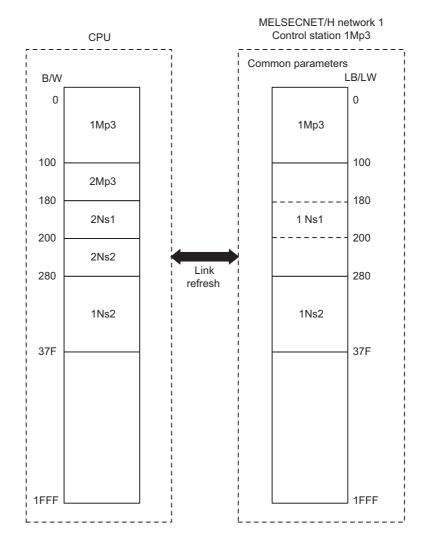
As the cyclic communication is performed according to the network range assignments of the 3-tier master station (A3UCPU), there is no parameter setting for network range assignment on 3-tier local stations.

# (e) MELSECNET/H network 1 control station 1Mp3

2

For MELSECNET/H network 1 control station 1Mp3, change the settings of MELSECNET (II) 2-tier master station by:

- Assigning LB/LW to each station by the setting of "Network range assignment (Common parameters)"
- Performing B/W refreshment by the setting of "Refresh parameters"



The following describes the network parameter setting of MELSECNET/H network 1 control station 1Mp3 (Q06UDVCPU).

	Module 1	Module 2	Module 3	Module 4
Network Type	MNET/H Mode(Control Station)	✓ None	✓ None	✓ None
Start I/O No.	00	DO		
Network No.		1		
Total Stations		3		
Group No.		0		
Station No.				
Mode	Online	<b>▼</b>	<b>•</b>	▼
	Network Range Assignment			
	Refresh Parameters			
	Interrupt Settings			
		•		
	Optical/Coaxial	•		

let	work range	assignr	nent (0	206UI	DVCP	J: ME	LSEC	NET/F	l netw	ork 1	contro	ol statio	on 1M	p3)		
	Set u	common an	d station in	herent par	ameters.											
		nt Method - ts/Start	Monit	oring Time	20	0 14 45	-									
	<ul> <li>Poir</li> <li>Star</li> </ul>		Total Statio		3	0 X 10r		Parameter   Switch Scre		/LW Settin	g 🔻					
		Send Day	nge for eac		Send Pan	ne for ear	h Station	Send Pan	ne for ead	h Station	Send Pan	ae for ead	Station	1		
	Station N		LB	115020011	Schartan	LW	11500001		Low Spee		Sena Ran	Low Spee		Pairin	g	
		Points	Start	End	Points	Start	End	Points	Start	End	Points	Start	End	1		
	1	384	0100	027F	384	0100	027F							Disable	Ŧ	
	2	256	0280	037F	256	0280	037F							Disable	-	
	3	256	0000	00FF	256	0000	00FF							Disable	-	-

Assignment Metho C Points/Start Start/End	d				Transient Tr		O Ho		Status			
		-	Link Si	de	_			_	PLC Si	de		-
	Dev. I	Name	Points	Start	End		Dev.	Name	Points	Start	End	1
Transfer SB	SB		512	0000	01FF	+	SB		512	0000	01FF	-
Transfer SB SI Transfer SW SI	SW		512	0000	01FF	₩.	SW		512	0000	01FF	
Random Cyclic	LB					₩.		•				
Random Cyclic	LW					÷₩.		•				
Transfer 1	LB	-	896	0000	037F	- <del>\.</del>	В	-	896	0000	037F	
Transfer 2	LW	-	896	0000	037F	÷	W	-	896	000000	00037F	
Transfer 3		-				- ₩		-				
Transfer 4		-				- ₩		-				
Transfer 5		-				- <del>()</del> -		-				
Transfer 6		-				- <del>()</del> -		-				-

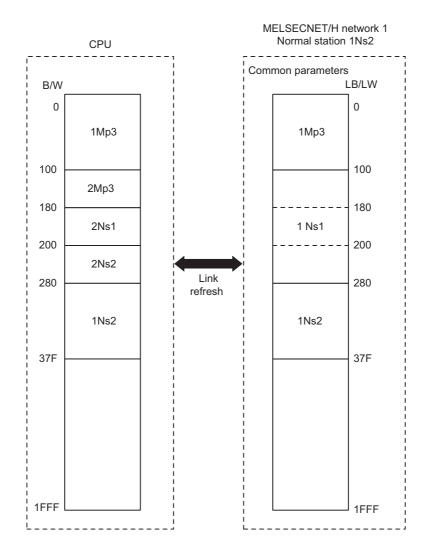
2

# (f) MELSECNET/H network 1 normal station 1Ns2

2

For MELSECNET/H network 1 normal station 1Ns2 that is not gateway station, change the settings by:

• Performing B/W refreshment by the setting of "Refresh parameters"



The following describes the network parameter setting of MELSECNET/H network 1 normal station 1Ns2 (Q02UCPU).

	Module 1		Module 2	Module 3		Module 4
Network Type	MNET/H Mode(Normal Station)	✓ None	•	- None	None	
Start I/O No.	(	0000				
Network No.		1				
Total Stations						
Group No.		0				
Station No.						
Mode	Online	•		-	-	
	Station Inherent Parameters					
	Refresh Parameters					
	Interrupt Settings					

Assignment Meth C Points/Start C Start/End					Transient Tra		n Error H		Status			
		_	Link Si	ide		_		_	PLC Si	de	4	7
	Dev. I	Name	Points	Start	End		Dev. 1	Name	Points	Start	End	1
Transfer SB	SB		512	0000	01FF	+	SB		512	0000	01FF	-
Transfer SW	SW		512	0000	01FF	- <del>\.</del>	SW		512	0000	01FF	
Random Cyclic	LB					- <del>\.</del>		-				
Random Cyclic	LW					÷		-				
Transfer 1	LB	-	896	0000	037F	- <del>()</del> -	В	-	896	0000	037F	
Transfer 2	LW	-	896	0000	037F	- <del>()</del> -	W	-	896	000000	00037F	
Transfer 3		-				+		-				
Transfer 4		-				+		-				
Transfer 5		-				+		-				
Transfer 6		-				↔		-				·

2

## (g) MELSECNET/H network 1 normal station 1Ns1/Network 2 control station 2Mp3 (Network range assignment of gateway stations, refresh parameters)

For MELSECNET/H network 1 normal station 1Ns1 that is gateway station, change the settings by: • Performing B/W refreshment by the setting of "Refresh parameters"<sup>\*1</sup>

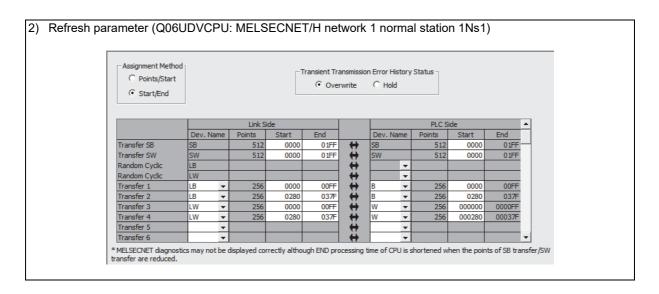
For MELSECNET/H network 2 control station 2Mp3 that is gateway station, change the settings of MELSECNET (II) 3-tier master station by:

- **MELSECNET/H network 1** MELSECNET/H network 2 CPU Normal station 1Ns1 Control station 2Mp3 Common parameters LB/LW B/W LB/LW 0 0 0 1Mp3 1Mp3 1Mp3 2Mp3 100 100 100 2Mp3 2Mp3 180 180 180 1Ns1 2Ns1 2Ns1 200 200 200 2Ns2 2Ns2 280 280 27F 1Ns2 1Ns2 37F 37F 1FFF 1FFF 1FFF Link refresh
- Assigning B/W refreshment by the setting of "Refresh parameters"<sup>\*1</sup>

- \*1 Set not to duplicate B/W on the CPU.
- \*2 Perform the LB/LW assignment for network 2 control station 2Mp3 including the same LB/LW area as that of 1Mp3 to relay network 1 control station 1Mp3.

The following describes the network parameter setting of MELSECNET/H network 1 normal station 1Ns1/network 2 control station 2Mp3 (Q06UDVCPU).

Network paramet	ter setting (Q06UDVCPU:	MELSECNET/H net	work 1 normal statio	n 1Ns1/network 2 contr
station 2Mp3)				
. ,				
	Module 1	Module 2	Module 3	Module 4
Network Type	MNET/H Mode(Normal Station) 👻	MNET/H Mode(Control Station)	✓ None	▼ None ▼
Start I/O No.	0000	002	20	
Network No.	1		2	
Total Stations			3	
Group No.	0		0	
Station No.				
Mode	Online 👻	Online	•	
		Network Range Assignment		
	Station Inherent Parameters			
	Refresh Parameters	Refresh Parameters		
	Interrupt Settings	Interrupt Settings		
		Return as Control Station	-	
		Optical/Coaxial ·	<b>•</b>	
4				Þ



3)	Netwo	k range a	ssignr	nent ((	206UI	DVCP	U: ME	LSEC	NET/I	l netw	ork 2/	contro	ol stati	on 2N	1p3)	
		Set up co	mmon and	station in	herent par	ameters.										
		Assignment C Points/	Start	Monito Total Statio		3	10 X 10n		arameter I Switch Scre		/LW Settin	ng 💌				
			Send Ran	ge for ead	h Station	Send Ran	ge for eac	h Station	Send Ran	-		Send Ran	-			<b>^</b>
		Station No.		LB			LW			Low Spee			Low Spee		Pairing	
			Points	Start	End	Points	Start	End	Points	Start	End	Points	Start	End		
		1	128	0180	01FF	128	0180	01FF							Disable	-
		2	128	0200	027F	128	0200	027F							Disable	•
		3	384	0000	017F	384	0000	017F							Disable	-   -

### 4) Refresh parameter (Q06UDVCPU: MELSECNET/H network 2 control station 2Mp3)

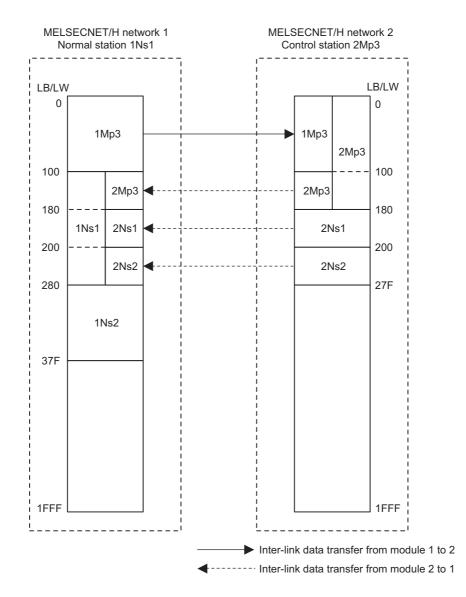
Assignment Method C Points/Start C Start/End					ransient Tra Over		n Error H O Hold		Status			
			Link Si	ide					PLC S	de		•
	Dev.	Name	Points	Start	End		Dev. N	ame	Points	Start	End	
Transfer SB	SB		512	0000	01FF	+	SB		512	0200	03FF -	-
Transfer SW	SW		512	0000	01FF	+	SW		512	0200	03FF	
Random Cyclic	LB					- <del>()</del> -		4				
Random Cyclic	LW					+		4				
Transfer 1	LB	-	384	0100	027F	- <del>()</del> -	В	٠	384	0100	027F	
Transfer 2	LW	-	384	0100	027F	- <del>()</del> -	W	-	384	000100	00027F	
Transfer 3		-				- <del>()</del> -		-				
Transfer 4		-				+		4				
Transfer 5		-				- <del>()</del> -		-				
Transfer 6		-				- 🖶 -		+				-

MELSEC

# (h) MELSECNET/H network 1 normal station 1Ns1/network 2 control station 2Mp3 (Inter-link data transfer of gateway station)

For data transfer between MELSECNET/H networks 1 and 2, change the setting of MELSECNET (II) 2 and 3-tier by:

• Transferring the data between networks 1 and 2 by the setting of "Interlink transmission parameters" between gateway stations 1Ns1 and 2Mp3

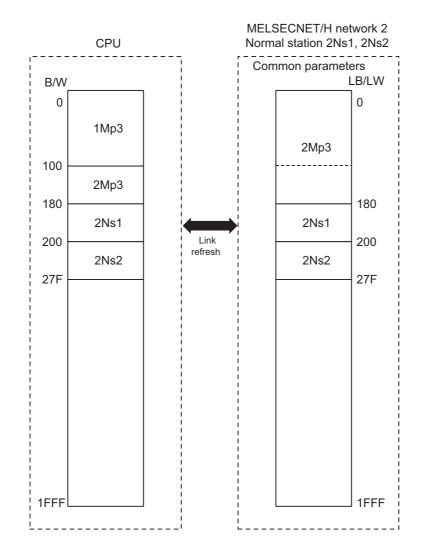


The following describes the inter-link data transfer setting of MELSECNET/H network 1 normal station 1Ns1/network 2 control station 2Mp3 (Q06UDVCPU).

		lethod —			Tra	nsfer from	Module	1:MNET/	H Mode(No	ormal Stat			
	Points/S	start (	Start/E	ind				2:MNET/	-			-	
		_	L	B	_	_		_	L	M	_	_	
No.	Т	ransfer fro			Transfer t	0	Т	ransfer fro			Transfer to	)	
	Points	Start	End	Points	Start	End	Points	Start	End	Points	Start	End	
1	256	0000	00FF	256	0000	00FF	256	0000	00FF	256	0000	00FF	
2													
3													
4													
5													
6													
8													
8													
10													
11 Trans The r	fer to link ange of Ti	: device mu ransfer to	ust be set link device	within the	e host stat be set in t	iion send r he link refi	range of i	the target je.	network n	nodule.			•
Trans The r	fer to link ange of Tr gnment M	ransfer to 1ethod —	ust be set link device Start/E	e cannot l	be set in t	he link refi	Module	the target e. 2:MNET/H 1:MNET/H	1 Mode(Ca	ontrol Sta		-	•
Trans The r	ange of Ti	ransfer to 1ethod —	link device	e cannot l	be set in t	he link refi	Module	e.	1 Mode(Ca	ontrol Sta ormal Stat		-	•
Trans The r	ignment M Points/S	ransfer to 1ethod —	<ul> <li>Start/E</li> </ul>	e cannot b	be set in t	he link refi nsfer from 'ransfer to	Module	: 2:MNET/r	1 Mode(Ca 1 Mode(Na L\	ontrol Sta ormal Stat		-	
Trans The r	ignment M Points/S	ransfer to 1ethod	<ul> <li>Start/E</li> </ul>	e cannot b	Trai T	he link refi nsfer from 'ransfer to	Module	: 2:MNET/H : 1:MNET/H	1 Mode(Ca 1 Mode(Na L\	ontrol Sta ormal Stat	ion)	End	
Trans The r	ignment M Points/S	ransfer to lethod	<ul> <li>Start/E</li> <li>L</li> </ul>	e cannot b	Trai Transfer t	he link refi nsfer from iransfer to	Module Module	e. 2:MNET/H 1:MNET/H ransfer fro	1 Mode(Ca 1 Mode(Na L\ om	ontrol Sta ormal Stat	ion) Transfer to		
Ass No.	ignment M Points/S	ransfer to lethod	Start/E     Log     End	ind B Points	Transfer to Start	nsfer from iransfer to o End	Module Module	2:MNET/h 1:MNET/h ransfer fro Start	H Mode (Ca H Mode (No Li Dam End	ontrol Sta rmal Sta W Points	ion) Transfer to Start	End	
Ass No. 1 2 3	ignment M Points/S	ransfer to lethod	Start/E     Log     End	ind B Points	Transfer to Start	nsfer from iransfer to o End	Module Module	2:MNET/h 1:MNET/h ransfer fro Start	H Mode (Ca H Mode (No Li Dam End	ontrol Sta rmal Sta W Points	ion) Transfer to Start	End	
Trans The r	ignment M Points/S	ransfer to lethod	Start/E     Log     End	ind B Points	Transfer to Start	nsfer from iransfer to o End	Module Module	2:MNET/h 1:MNET/h ransfer fro Start	H Mode (Ca H Mode (No Li Dam End	ontrol Sta rmal Sta W Points	ion) Transfer to Start	End	
Trans The r	ignment M Points/S	ransfer to lethod	Start/E     Log     End	ind B Points	Transfer to Start	nsfer from iransfer to o End	Module Module	2:MNET/h 1:MNET/h ransfer fro Start	H Mode (Ca H Mode (No Li Dam End	ontrol Sta rmal Sta W Points	ion) Transfer to Start	End	
Ass C No. 1 2 3 4 5 6	ignment M Points/S	ransfer to lethod	Start/E     Log     End	ind B Points	Transfer to Start	nsfer from iransfer to o End	Module Module	2:MNET/h 1:MNET/h ransfer fro Start	H Mode (Ca H Mode (No Li Dam End	ontrol Sta rmal Sta W Points	ion) Transfer to Start	End	
Ass Ass C No. 1 2 3 4 5 6 7	ignment M Points/S	ransfer to lethod	Start/E     Log     End	ind B Points	Transfer to Start	nsfer from iransfer to o End	Module Module	2:MNET/h 1:MNET/h ransfer fro Start	H Mode (Ca H Mode (No Li Dam End	ontrol Sta rmal Sta W Points	ion) Transfer to Start	End	
Ass No. 1 2 3 4 5 6 6 7 7 8	ignment M Points/S	ransfer to lethod	Start/E     Log     End	ind B Points	Transfer to Start	nsfer from iransfer to o End	Module Module	2:MNET/h 1:MNET/h ransfer fro Start	H Mode (Ca H Mode (No Li Dam End	ontrol Sta rmal Sta W Points	ion) Transfer to Start	End	
Ass Ass C No. 1 2 3 4 5 6 7	ignment M Points/S	ransfer to lethod	Start/E     Log     End	ind B Points	Transfer to Start	nsfer from iransfer to o End	Module Module	2:MNET/h 1:MNET/h ransfer fro Start	H Mode (Ca H Mode (No Li Dam End	ontrol Sta rmal Sta W Points	ion) Transfer to Start	End	

### (i) MELSECNET/H network 2 normal station 2Ns1, 2Ns2

For MELSECNET/H network 2 normal stations 2Ns1 and 2Ns2, change the settings by: • Performing B/W refreshment by the setting of "Refresh parameters"



The following describes the network parameter setting of MELSECNET/H network 2 normal stations 2Ns1, 2Ns2 (Q02UCPU).

### 1) Network parameter setting (Q02UCPU: MELSECNET/H network 2 normal stations 2Ns1, 2Ns2)

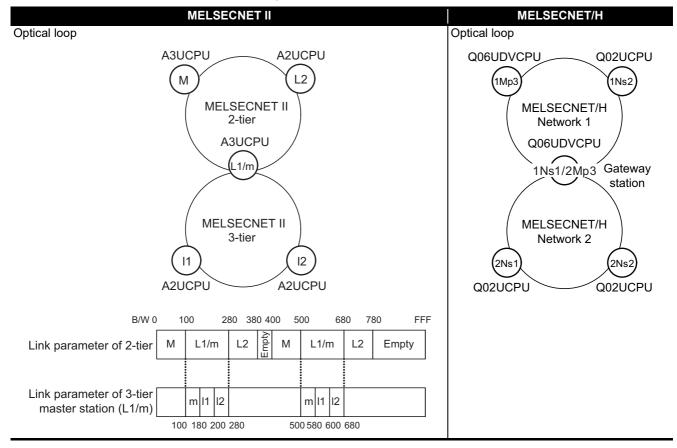
	Module 1	Module 2	Module 3	Module 4
Network Type	MNET/H Mode(Normal Station)	None	None	None
Start I/O No.	0000			
Network No.	2	2		
Total Stations				
Group No.	C			
Station No.				
Mode	Online 👻		·	•
	Station Inherent Parameters			
	Refresh Parameters			
	Interrupt Settings			
		1		1

Assignment Method C Points/Start Start/End					ransient Tra		in Error H O Hol		Status			
		_	Link Si	de	_	_		_	PLC S	ide	_	•
	Dev. N	lame	Points	Start	End		Dev. N	lame	Points	Start	End	-
Transfer SB	SB		512	0000	01FF	+	SB		512	0000	01FF	_
Transfer SW	SW		512	0000	01FF	- <del>()</del> -	SW		512	0000	01FF	
Random Cyclic	LB					- <del>()</del> -		-				
Random Cyclic	LW					- <del>()</del> -		-				
Transfer 1	LB	-	640	0000	027F	+	В	-	640	0000	027F	
Transfer 2	LW	4	640	0000	027F	- 🕂 -	W	4	640	000000	00027F	
Transfer 3		-				+		-				
Transfer 4		-				- <del>+ -</del> -		-				
Transfer 5		-				+		-				
Transfer 6		-				↔		-				-

# 2.5.4 Example of changing parameters on 3-tier system (When the first half/second half of link parameter is set)

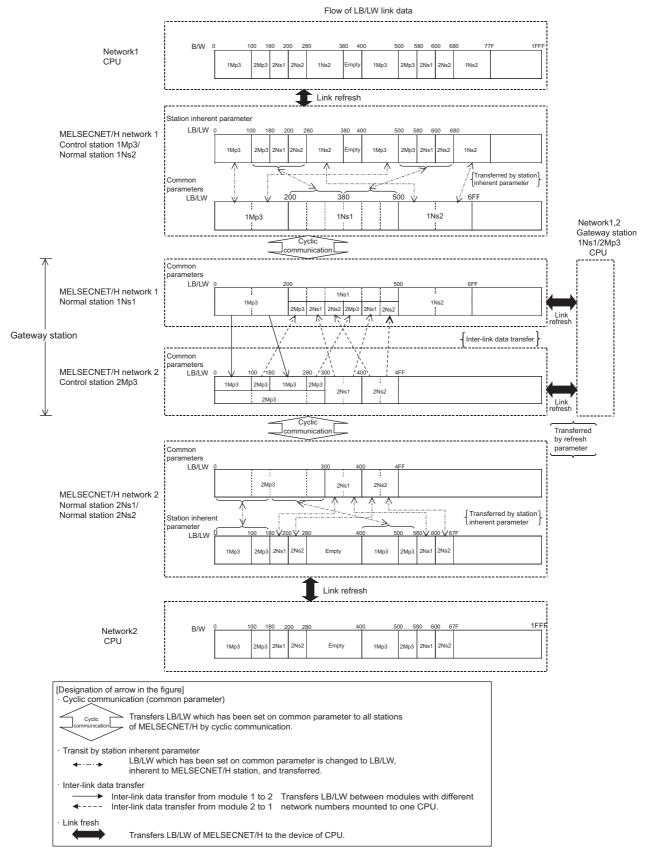
The following shows how to change network parameter on LB/LW, when replacing the MELSECNET II 3-tier system with MELSECNET/H. Network range assignment of the present MELSECNET II 3-tier system is used as it is for replacement with MELSECNET/H.

MELSECNET II 2-tier is replaced with the network 1 of MELSECNET/H, and 3-tier is replaced with the network 2. The MELSECNET II master station is replaced with the MELSECNET/H control station, and MELSECNET II local stations are replaced with MELSECNET/H normal stations.



Concept of MELSECNET II 3-tier system replacement
Step 1: Control station (1Mp3) setting
Set the link parameter setting on MELSECNET II 2-tier master station as MELSECNET/H network 1 control station 1Mp3.
• In "Network range assignment (Common parameters)" of control station 1Mp3, set the LB/LW (first half size + second half siz as a contiguous area on each station.
• It is divided into the first half LB/LW and the second half LB/LW, and transferred depending on the settings 1 and 2 of "Static inherent parameter".
Step 2: Common parameter and refresh parameter settings of gateway station (1Ns1/2Mp3)
"Common parameter" setting and "Refresh parameter setting" of the MELSECNET II 3-tier master station are set as MELSECNET/H network 2 control station 2Mp3 and network 1 normal station 1Ns1.
• In "Network range assignment (Common parameters)" of control station 2Mp3, set the LB/LW (first half size + second half siz as a contiguous area on each station.
The range assignment should be performed including the same LB/LW size as that of 1Mp3 to relay 1Mp3.
• Set "Refresh parameter" to transfer B/W by dividing it into the first half B/W and the second half B/W on each station of netwo
2 control station 2Mp3 and network 1 normal station 1Ns1.
Make sure that B/W of networks 1 and 2 will not duplicate on the CPU.
<ul> <li>As "Interlink transmission parameters" parameter the gateway station 1Ns1/2Mp3 is set for, do not set a station inherent parameter.</li> </ul>
Step 3: Inter-link data transfer setting of gateway station (1Ns1/2Mp3)
Data transfer between 2 and 3-tier, which is performed automatically on MELSECNET II, is performed by Inter-link data transfer on gateway station 1Ns1/2Mp3.
• LB/LW area shared by networks 1 and 2 is set by "Interlink transmission parameters" parameter of gateway station between 1Ns1 and 2Mp3.
Step 4: Station setting other than gateway stations (1Ns2, 2Ns1, 2Ns2)
"Station inherent parameter" and "Refresh parameters" of stations excluding gateway stations (1Ns2, 2Ns1, 2Ns2) are set.
• Set "Station inherent parameter" of network 1 normal station 1Ns2 as the same setting as that of network 1 control station 1Mp3.
• Set "Station inherent parameter" of network 2 normal station 2Ns2 as the same setting as that of network 2 normal station 2Ns1.
Set "Refresh parameter" to refresh all area of common parameters assigned on control stations.





Network parameter setting is required for control and normal stations on MELSECNET/H.

	Common parameter (Network range assignment)	Station inherent parameter	Refresh parameter	Inter-link data transfer
1Mp3	0	0	Δ	
ттро	(Refer to example in (e) 2))	(Refer to example in (e) 3))	(Refer to example in (e) 4))	
1Ns2		0	Δ	
11132		(Refer to example in (f) 2))	(Refer to example in (f) 3))	
1Ns1		_	0	
11131		_	(Refer to example in (g) 3))	0
2Mp3	0	_	0	(Refer to example in (g) 5))
210105	(Refer to example in (g) 2))	-	(Refer to example in (g) 4))	
2Ns1		0	Δ	
21151		(Refer to example in (h) 2))	(Refer to example in (h) 3))	
2Ns2		0	Δ	
21152		(Refer to example in (h) 2))	(Refer to example in (h) 3))	

The following shows parameters required on each station of MELSECNET/H.

 $\bigcirc: Setting \ required \ (Default \ setting \ is \ also \ acceptable)/ \ - \ Setting \ not \ required$ 

### (a) MELSECNET II 2-tier master station M

2

The following describes the network parameter setting of MELSECNET II 2-tier master station M (A3UCPU).

	Module No.1	Module No.2	Module No.3	Module No.4
Network type	MNET II (Master station) 🗸	None 🗸	None	▼ None
Start I/O No.	0000			
Network No.				
Total stations	2			
Group No.				
Station No.				
	Network range assignment			
	Refresh parameters			
Necessary setting[	No setting / Already set ) Set if it is ne	eded( Nosetting / Alreadyset )		
transmission parame	Start I/O No.: ters Input the start I/O No. installed in th	Valid module during other stal	tion access 1 💌	

Setup comm	ion paramet	ers											
Assignment m C Points/S C Start/En	tart	Tot	nitoring time al slave ions	200	× 10ms	Swite	h screens	LB/LW	/ settings		<b>-</b>		
	Sendira	ange for ea	ach station	Sendira	ange for ea	ach station	Send ra	ange for ea	ach station	Sendra	ange for ea	ach statio	n 4
L/R		First half L	.B		First half L	W		Second h	alf LB		Second h	alf LW	
station No.	Points	Start	End	Points	Start	End	Points	Start	End	Points	Start	End	
МО	256	0000	OOFF	256	0000	00FF	256	0400	04FF	256	0400	04FF	
IIL 1	384	0100	027F	384	0100	027F	384	0500	067F	384	0500	067F	
	256	0280	037F	256	0280	037F	256	0680	077F	256	0680	077F	

-Assignment method © Points/Start © Start/End				nsient tra Overwrit	nsmission error te ⓒ Holo		]	
		Link side				PLC side	e	4
	Points	Start	End		BlockNo.	Points	Start	End
LB<->B transmission(1)	1920	0000	077F	+		1920	0000	077F
	1920	0000	077F	- <del>()</del> -		1920	0000	077F
LW<->W transmission(1)	1920							07FF 🔻

### (b) MELSECNET II 2-tier local station L2

As the cyclic communication is performed according to the network range assignments of the 2-tier master station (A3UCPU), there is no parameter setting for network range assignment on 2-tier local stations.

### (c) MELSECNET II 2-tier local station L1/3-tier master station m (gateway station)

The following describes the network parameter settings of MELSECNET II 2-tier local station L1/3-tier master station m (A3UCPU).

	Module No.1	Module No.2	Module No.3	Module No.4
Network type	MNET II (Local station)	MNET II (Master station)	None	▼ None
Start I/O No.	000	0020		
Network No.				
Total stations		2		
Group No.				
Station No.				
		Network range assignment		
		Refresh parameters		
Necessary setting(	Start I/O No.:	eeded( Nosetting / Alreadyset ) Valid module during other stat he module in 16-point unit.	ion access 1	

Setup comm	on paramet	ers											
-Assignment me O Points/St		Mor	nitoring time	200	×10ms								
Start/End	1		al slave ions	2		Swite	h screens	LB/LV	/ settings		•		
	Send ra	ange for ea	ach station	Send ra	ange for ea	ach station	Send ra	ange for ea	ach station	Sendira	ange for ea	ach statio	n j
L/R		First half L	.B		First half L	.W		Second h	alf LB		Second h	alf LW	
station No.	Points	Start	End	Points	Start	End	Points	Start	End	Points	Start	End	
MO	128	0100	017F	128	0100	017F	128	0500	057F	128	0500	057F	
IIL 1	128	0180	01FF	128	0180	01FF	128	0580	05FF	128	0580	05FF	٦
IIL 2	128	0200	027F	128	0200	027F	128	0600	067F	128	0600	067F	Tr

-Assignment method © Points/Start © Start/End				nsient tra Overwrit	nsmission error ie © Holo			
	1	Link side				PLC side	:	
	Points	Link side Start	End		BlockNo.	PLC side Points	Start	End
LB<->B transmission(1)	Points 1920		End 077F	+	BlockNo.			End 077F
LB<->B transmission(1) LW<->W transmission(1)		Start		<b>‡</b> ‡	BlockNo.	Points	Start	

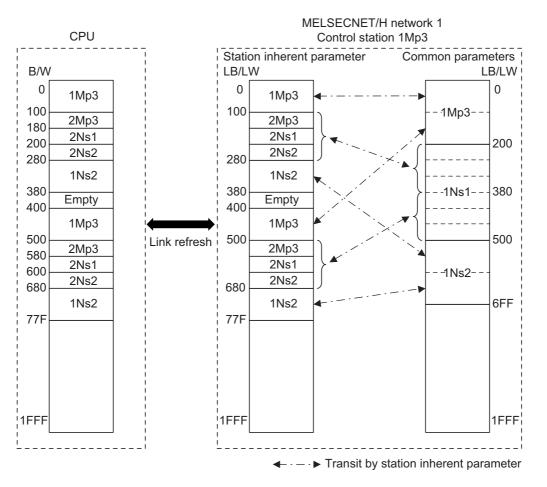
#### (d) MELSECNET II 3-tier local station I1, I2

As the cyclic communication is performed according to the network range assignments of the 3-tier master station (A3UCPU), there is no parameter setting for network range assignment on 3-tier local stations.

# (e) MELSECNET/H network 1 control station 1Mp3

For MELSECNET/H network 1 control station 1Mp3, change the settings of MELSECNET II 2-tier first half/second half setting by:

- Assigning LB/LW (first half + second half size) to each station by the setting of "Network range assignment (Common parameters)"
- Dividing the data into the first half LB/LW and second half LB/LW and transferring them by the setting of "Setting1" and "Setting2" of "Station inherent parameter"



The following describes the network parameter setting of MELSECNET/H network 1 control station 1Mp3 (Q06UDVCPU).

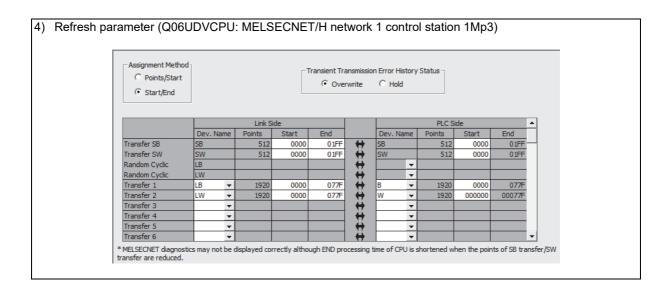
### 1) Network parameter setting (Q06UDVCPU: MELSECNET/H network 1 control station 1Mp3)

	Module 1	Module 2	Module 3	Module 4
Network Type	MNET/H Mode(Control Station)	None	None 🗸	None
Start I/O No.	000	0		
Network No.		1		
Total Stations		3		
Group No.		0		
Station No.				
Mode	Online .		-	
	Network Range Assignment			
	Refresh Parameters			
	Interrupt Settings			
	Return as Control Station	-		
	Optical/Coaxial ·	-		

#### 2) Network range assignment (Q06UDVCPU: MELSECNET/H network 1 control station 1Mp3)

Set up co	mmon and	station in	herent par	ameters.											
Assignment	Start	Monito	oring Time	20	0 X 10n	ns P	arameter I	Name							
Start/E	nd	Total : Statio		3		5	witch Scre	ens LB	/LW Settir	ng 💌					
	Send Ran	ge for ead	h Station	Send Ran	ge for ead	h Station	Send Ran	ge for ead	h Station	Send Ran	ge for eac	h Station			
Station No.		LB			LW			Low Spee	d LB		Low Spee	d LW	Pairin	9	
	Points	Start	End	Points	Start	End	Points	Start	End	Points	Start	End			
1	1 768	0200	04FF	768	0200	04FF							Disable	÷	
2	512	0500	06FF	512	0500	06FF							Disable	•	
3	512	0000	01FF	512	0000	01FF							Disable	-	-

aront parama	or IOO	21 ID\ <i>IC</i>					Elwork			lation	INF	55)
erent parame			JF U. I	VILLOL								
Reference		nge Assignm	ient			-	nt Method	Param				-
Workspace						C Point		Name Switch				_
Workspace	Vame	1				Start	/End	Scree		8 Setting		-
Project Nan	е		В	oard No.	~							
Refer	nce	Read		Cancel								
	_	Setting 1			Setting 2		Network F		ianment			•
Station N	). <b></b>	LB			LB		NELWORK	LB	agnment	Pairing		
	Points	Start	End	Points	Start	End	Points	Start	End	<u> </u>	_	
1	38		027F	384	0500	067F	768	0200		Disable	Ŧ	
2	25	0280	037F	256								
3	25	i 0000	00FF	256	0680 0400	077F 04FF	512 512	0500		Disable Disable	▼ ▼ 1	•
-Reference Workspace	vetwork Rai		00FF		0400	04FF	512 nt Method	0000 Param Name	01FF		_	•
Reference Workspace	Vetwork Ran Location		ooff	256	0400	04FF	512 nt Method - s/Start	0000 Param	01FF		_	
Reference	Vetwork Ran Location		ooff		0400	04FF Assignmer	512 nt Method - s/Start	0000 Param Name Switch	01FF	Disable	•	
Reference Workspace	Vetwork Ran Location Vame e		ooff	256	0400	04FF Assignmer	512 ht Method - s/Start	0000 Param Name Switch	01FF	Disable	•	
-Reference Workspace Workspace Project Nan	Vetwork Ran Location Vame e	ige Assignm	ooff	256 Dard No. Cancel		04FF Assignmer	512 nt Method s/Start /End	0000 Param Name Switch Screet	0 1FF	Disable		
Reference Workspace Workspace Project Nan Referen	Vetwork Rai Location Name e	nge Assignm	ooff	256 Dard No. Cancel	0400	04FF Assignmer	512 ht Method - s/Start	0000 Param Name Switch Screen	0 1FF	Disable V Setting		
-Reference Workspace Workspace Project Nan	vetwork Ran Location Vame e nce	Read	OOFF	256 Dard No. [ Cancel	0400	04FF Assignmer © Point (© Start	512 ht Method s/Start /End	0000 Param Name Switch Screet	01FF	Disable		
Reference Workspace Workspace Project Nan Referen	Vetwork Rai Location Name e	Ige Assignm	ooff	256 Dard No. Cancel	0400	04FF Assignmer	512 nt Method s/Start /End	0000 Param Name Switch Screen	01FF	Disable V Setting		
Reference Workspace Project Nan Referen	Vetwork Rar ocation Vame e nce	Read	BC	256 Deard No. Cancel Points	0400	04FF Assignmer © Point (© Start End	512 nt Method s/Start /End Network R	Param Name Switch Screet	01FF	Disable V Setting Pairing		

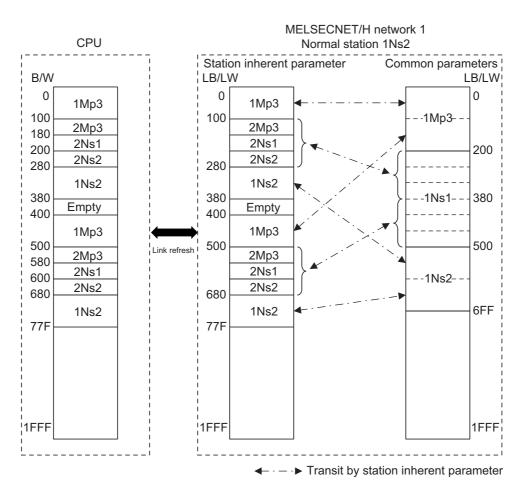


# (f) MELSECNET/H network 1 normal station 1Ns2

2

For MELSECNET/H network 1 normal station 1Ns2 that is not gateway station, change the settings of MELSECNET II 2-tier first half/second half setting by:

• Dividing the data into the first half LB/LW and second half LB/LW and transferring them by setting of "Setting1" and "Setting2" of "Station inherent parameter"



The following describes the network parameter setting of MELSECNET/H network 1 normal station 1Ns2 (Q02UCPU).

	Module 1	Module 2	Module 3	Module 4
Network Type	MNET/H Mode(Normal Station)	None	✓ None	✓ None
Start I/O No.	000	D		
Network No.		1		
Total Stations				
Group No.		D		
Station No.				
Mode	Online		•	<b>•</b>
	Station Inherent Parameters			
	Refresh Parameters			
	Interrupt Settings			

	<u>.</u>		(0.00										•	
2)	Station inherent	: paramete	er (Q02	2UCPI	U: ME	LSEC	NET/F	I netw	ork 1 r	norma	al stati	on 1Ns	s2)	
		Reference Ne						-	nt Method		meter 🗌			
		Workspace Lo	cation	C: MELS	SEC\Gppw	1		O Point	ts/Start	Name				
		Workspace Na	me					Star	t/End	Swite		Setting	-	
		Project Name				oard No.								
		Frojectivalile		TQ000DA	CFO_C B	oard No. j								
		Reference	e	Read		Cancel								
													_	
				Setting 1			Setting 2		Network		signment		<b></b>	
		Station No.	Points	LB Start	End	Points	LB Start	End	Points	LB Start	End	Pairing	)	
		1	384	0100	027F	384	0500	067F	768	0200		Disable	•	
		2	256	0280	037F	256	0680	077F	512	0500	06FF	Disable	<b>•</b>	
		3	256	0000	00FF	256	0400	04FF	512	0000	01FF	Disable	<b>v v</b>	
	[													
		-Reference Ne						Assignmer		Param	neter		_	
		Workspace Loo	ation	C: MELS	EC\Gppw\			C Point	s/Start	Name				
		Workspace Na	me					Start	/End	Switch Scree		Setting	-	
										Scree	ns /			
		Project Name		QUEUDV	CPU_C BC	oard No.								
		Reference	e	Read		Cancel								
				Setting 1			Setting 2		Network F		signment		<b></b>	
		Station No.		LW			LW			LW		Pairing		
1		1	Points	Start 0100	End 027F	Points 384	Start 0500	End 067F	Points	Start 0200	End	Disable	•	
		2	384 256	0100	027F	256	0500	067F	768 512	0200		Disable Disable	▼ ▼	
		3	256	0000	00FF	256	0400	04FF	512	0000		Disable	• •	
	I													

2

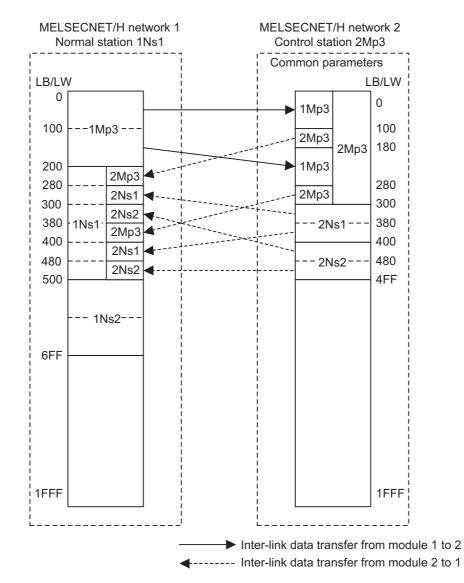
### 3) Refresh parameter (Q02UCPU: MELSECNET/H network 1 normal station 1Ns2)

Assignment Method					Transient T		n Error Histor C Hold	y Status –			
			Link S	ide				PLC S	ide		<b></b>
	Dev.	Name	Points	Start	End		Dev. Name	Points	Start	End	
Transfer SB	SB		512	0000	01FF	+	SB	512	0000	01FF -	-
Transfer SW	SW		512	0000	01FF		SW	512	0000	01FF	
Random Cyclic	LB					i ↔	-				
Random Cyclic	LW					i ↔	-				
Transfer 1	LB	-	1920	0000	077F	i ↔	в 👻	1920	0000	077F	
Transfer 2	LW	-	1920	0000	077F	₩.	w 👻	1920	000000	00077F	
Transfer 3		-					-				
Transfer 4		-				+					
Transfer 5		-				- <del>()</del> -	-				
Transfer 6		-									<b>+</b>

# (g) MELSECNET/H network 1 normal station 1Ns1/network 2 control station 2Mp3 (gateway station)

For data transfer between MELSECNET/H networks 1 and 2, change the setting of MELSECNET II 2 and 3-tier by:

- Assigning LB/LW of network 2 control station 2Mp3 including LB/LW size of network 1 control station 1Mp3 by the setting of "Network range assignment (Common parameters)" on network 2 control station 2Mp3
- Transferring the data between networks 1 and 2 by the setting of "Interlink transmission parameters" between gateway stations 1Ns1 and 2Mp3

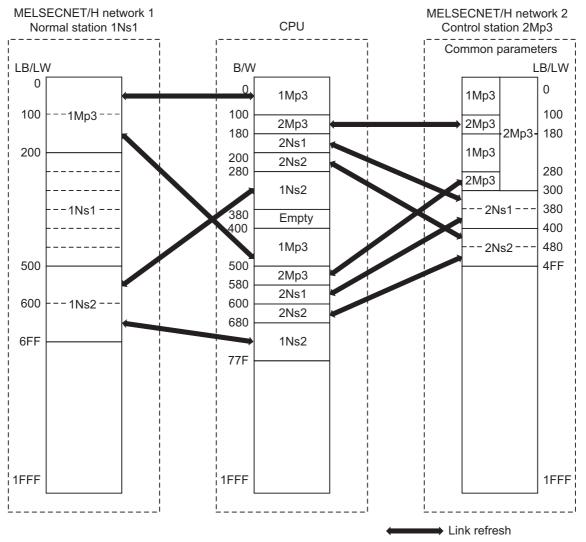


For MELSECNET/H normal station 1Ns1 that is gateway station, change the settings of MELSECNET II 2-tier first half/second half settings by:

 Dividing the data into the first half and second half and refreshing them by the setting of "Refresh parameters"<sup>\*1</sup>

Also, for MELSECNET/H control station 2Mp3 of gateway station, change the settings of MELSECNET II 3-tier first half/second half settings by:

- Assigning LB/LW (first + last size) to each station by the setting of "Network range assignment (Common parameters)"<sup>\*2</sup>
- Dividing the data into the first half and second half and refreshing them by the setting of "Refresh parameters"<sup>\*1</sup>



\*1 Set not to duplicate B/W on the CPU.

\*2 Perform the LB/LW assignment for network 2 control station 2Mp3 including the same LB/LW area as that of 1Mp3 to relay network 1 control station 1Mp3.

The following describes the network parameter setting of MELSECNET/H network 1 normal station 1Ns1/network 2 control station 2Mp3 (Q06UDVCPU).

1)	Network parameter :	setting (Q06UDVCPU:	MELSECNET/H net	work 1 normal station	1Ns1/network 2 control
	station 2Mp3)				
	• /				
[		Module 1	Module 2	Module 3	Module 4
	Network Type	MNET/H Mode(Normal Station)	MNET/H Mode(Control Station)	None 🗸	None 👻
	Start I/O No.	0000	0020	0	
[	Network No.	1		2	
	Total Stations			3	
	Group No.	0	'	0	
	Station No.				
	Mode	Online 👻	Online 👻	· ·	<b>•</b>
			Network Range Assignment		
		Station Inherent Parameters			
		Refresh Parameters	Refresh Parameters		
		Interrupt Settings	Interrupt Settings		
			Return as Control Station 👻	•	
			Optical/Coaxial		
		4			
		4	4	4	
			1		
l	•				

-	Ũ							l netw					• /		
Set up co	mmon and	l station in	nerent par	ameters.											
Assignment I C Points/ C Start/E		3	0 X 10r		arameter I witch Scre		/LW Settin	g 💌							
Start/End Total Slave Stations				Send Ran	ge for eac	h Station	Send Range for each Station Send Range				nge for each Station		n		
Station No.		LB			LW			Low Spee	d LB		Low Spee	d LW	Pairing		
	Points	Start	End	Points	Start	End	Points	Start	End	Points	Start	End			
1	256	0300	03FF	256	0300	03FF							Disable	-	
2	256	0400	04FF	256	0400	04FF							Disable	-	
2	768	0000	02FF	768	0000	02FF							Disable	-	-

### 3) Refresh parameter (Q06UDVCPU: MELSECNET/H network 1 normal station 1Ns1)

C Points/Start			Г	ransient Tra • Over		n Error H		Status			
Start/End											
		Link S	ide					PLC Si	de	-	
	Dev. Name	Points	Start	End		Dev. N	Vame	Points	Start	End	1
Transfer SB	SB	512	0000	01FF	+	SB		512	0000	01FF	-
Transfer SW	SW	512	0000	01FF	+	SW		512	0000	01FF	
Random Cyclic	LB				+		-				
Random Cyclic	LW				+		-				
Transfer 1	LB 🔹	256	0000	00FF	+	В	-	256	0000	00FF	
Transfer 2	LB 🔹	256	0100	01FF	+	В	-	256	0400	04FF	
Transfer 3	LB 🔹	256	0500	05FF	+	В	-	256	0280	037F	
Transfer 4	LB 🔹	256	0600	06FF	+	В	-	256	0680	077F	
Transfer 5	LW	256	0000	00FF	+	W	-	256	000000	0000FF	
Transfer 6	LW 🔹	256	0100	01FF	+	W	-	256	000400	0004FF	
Transfer 7	LW	256	0500	05FF	+	W	-	256	000280	00037F	
Transfer 8	LW 🔹	256	0600	06FF	- <del>()</del> -	W	-	256	000680	00077F	
Transfer 9					÷		-				·

	Assignment Method O Points/Start O Start/End					ransient Tra		On Error I		Status			
				Link Si	ide					PLC Si	de		
		Dev. N	lame	Points	Start	End		Dev. I	Name	Points	Start	End	1
Tra	ansfer SB	SB		512	0000	01FF	+	SB		512	0200	03FF	4
Tra	ansfer SW	SW		512	0000	01FF	÷₩.	SW		512	0200	03FF	
Ra	ndom Cyclic	LB					-₩-		-				
Ra	ndom Cyclic	LW					-₩-		•				
Tra	ansfer 1	LB	-	128	0100	017F	-₩-	в	-	128	0100	017F	
Tr	ansfer 2	LB	-	128	0280	02FF	-₩-	в	-	128	0500	057F	
Tra	ansfer 3	LB	-	128	0300	037F	-₩-	в	-	128	0180	01FF	
Tr	ansfer 4	LB	-	128	0380	03FF	-₩-	в	-	128	0580	05FF	
Tra	ansfer 5	LB	-	128	0400	047F	-₩-	в	-	128	0200	027F	
Tra	ansfer 6	LB	-	128	0480	04FF	-₩-	в	-	128	0600	067F	
Tr	ansfer 7	LW	-	128	0100	017F	-₩-	w	-	128	000100	00017F	
Tr	ansfer 8	LW	-	128	0280	02FF	-₩-	W	-	128	000500	00057F	
Tr	ansfer 9	LW	-	128	0300	037F	÷₩.	W	-	128	000180	0001FF	
Tr	ansfer 10	LW	-	128	0380	03FF	-₩-	w	-	128	000580	0005FF	
Tr	ansfer 11	LW	-	128	0400	047F	- <del>\.</del>	W	-	128	000200	00027F	
Tr	ansfer 12	LW	<b>–</b>	128	0480	04FF	₩.	W	-	128	000600	00067F	
	ansfer 13		-	120	0.00		- Ц	<u> </u>			000000	•	

# 5) Inter-link data transfer parameter (Q06UDVCPU: MELSECNET/H network 1 normal station 1Ns1/network 2 control station 2Mp3)

	gnment M Points/S		Start/E	ind		nsfer from Transfer to		: 1:MNET/					
			L	В					L	N			
No.	Т	Transfer from Transfer to					Т	ransfer fro	om		Transfer t	0	
	Points	nts Start End Points Start E				End	Points	Start	End	Points	Start	End	
1	256	0000	00FF	256	0000	00FF	256	0000	00FF	256	0000	00FF	
2	256	0100	01FF	256	0180	027F	256	0100	01FF	256	0180	027F	
3													
4													
5													
6													
7													
8													
9													
10													
11													-

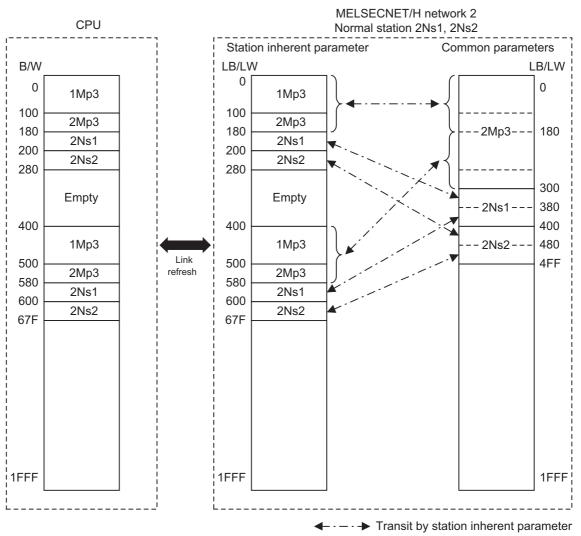
0	Points/S	tart (	Start/E	nd				2:MNET/H				-	
			U	В					LV	N			٠
No.	Т	Transfer from Transfer to						ransfer fro	om		Transfer to	)	
	Points	Start	End	Points	Start	End	Points	Start	End	Points	Start	End	
1	128	0100	017F	128	0200	027F	128	0100	017F	128	0200	027F	
2	128	0280	02FF	128	0380	03FF	128	0280	02FF	128	0380	03FF	
3	128	0300	037F	128	0280	02FF	128	0300	037F	128	0280	02FF	
4	128	0380	03FF	128	0400	047F	128	0380	03FF	128	0400	047F	
5	128	0400	047F	128	0300	037F	128	0400	047F	128	0300	037F	
6	128	0480	04FF	128	0480	04FF	128	0480	04FF	128	0480	04FF	
7													
8													
9													
10													
11													-

# (h) MELSECNET/H network 2 normal station 2Ns1, 2Ns2

2

For MELSECNET/H network 2 normal station 2Ns1, 2Ns2 that is not gateway station, change the settings of MELSECNET II 2-tier first half/second half setting by:

• Dividing the data into the first half LB/LW and second half LB/LW and transferring them by the setting of "Setting1" and "Setting2" of "Station inherent parameter"



The following describes the network parameter setting of MELSECNET/H network 1 normal stations 2Ns1, 2Ns2 (Q02UCPU).

	Module 1	Module 2		Module 3	Module 4
Network Type	MNET/H Mode(Normal Station)	✓ None	✓ None	✓ Non	e
Start I/O No.	0	000			
Network No.		2			
Total Stations					
Group No.		0			
Station No.					
Mode	Online	<b>•</b>	-	-	
	Station Inherent Parameters				
	Refresh Parameters				
	Interrupt Settings				

-Reference Net	work Rang	e Assianm	ent —			Assignmen	t Method -				
Workspace Loo	-		EC\Gppw\			C Point		Param Name			
Workspace Loc	adon	10.1/12202		`				Switch	. –		_
Workspace Na	ne					<ul> <li>Start</li> </ul>	/End	Scree		Setting	_
Project Name		Q06UDV	CPU_i Bo	oard No.	2 💌						
Referenc	e	Read		Cancel							
		Setting 1	_		Setting 2		Network F	Rance Ass	ianment		-
Station No.		LB			LB			LB		Pairing	1
	Points	Start	End	Points	Start	End	Points	Start	End	ĺ	
1	128	0180	01FF	128	0580	05FF	256	0300		Disable	Ŧ
2	128	0200	027F	128	0600	067F	256	0400		Disable	<b>.</b>
3	384	0000	017F	384	0400	057F	768	0000	02FF	Disable	•
Reference Ne Workspace Lo Workspace Na	twork Ran	ge Assignm					nt Method		neter	Disable W Setting	<b>•</b>
Reference Ne Workspace Lo	twork Ran	ge Assignm	nent EC\Gppw			Assignme O Point	nt Method	Parar Name Switc	neter		
Reference Ne Workspace Lo Workspace Na	twork Ran cation me	ge Assignm	nent EC\Gppw	\		Assignme O Point	nt Method	Parar Name Switc	neter		
Reference Ne Workspace Lo Workspace Na Project Name	twork Ran cation me	ge Assignm C:\MELS Q06UDV Read	nent EC\Gppw	No.	2 💌	Assignme O Point	nt Method ts/Start t/End	Parar Name Switc Scree	neter h ns	W Setting	
Reference Ne Workspace Lo Workspace Na Project Name Reference	twork Ran cation me	ge Assignm C: MELS Q06UDV Read Setting 1	nent EC\Gppw	No.	2 V Setting 2	Assignme O Point	nt Method ts/Start t/End	Parar Name Switc Scree Range As	neter h ns	W Setting	
Reference Ne Workspace Lo Workspace Na Project Name	twork Ran cation me	ge Assignm C:\MELS Q06UDV Read	nent EC\Gppw	No.	2 💌	Assignme O Point	nt Method ts/Start t/End	Parar Name Switc Scree	neter h ns	W Setting	
Reference Ne Workspace Lo Workspace Na Project Name Reference	twork Range	ge Assignm C: WELS Q06UDV Read Setting 1 LW	ient EC\Gppw 'CPU_i B	loard No. Cancel Points	2 V Setting 2 LW Start	Assignme C Point C Start	nt Method ts/Start t/End Network	Parar Name Switc Scree Range As LW	neter h h L signment End	W Setting	
Reference Ne Workspace Lo Workspace Na Project Name Reference Station No.	twork Ranger	ge Assignm C:\MELS Q06UDV Read Setting 1 LW Start	EC\Gppw CCPU_i B	loard No. [ Cancel Points 128	2 V Setting 2 LW Start 0580	Assignme O Poini O Stari	nt Method ts/Start t/End Network	Parar Name Switc Scree Range As LW Start	neter h h ns L signment End 03FF	W Setting	g

### 3) Refresh parameter (Q02UCPU: MELSECNET/H network 2 normal stations 2Ns1, 2Ns2)

Assignment Method					ransient Tra		C Hold	Status			
			Link Si	de				PLC S	ide		
	Dev. N	Vame	Points	Start	End		Dev. Name	Points	Start	End	7
Transfer SB	SB		512	0000	01FF	+	SB	512	0000	01FF	-
Transfer SW	SW		512	0000	01FF	- <del>()</del> -	SW	512	0000	01FF	
Random Cyclic	LB					+	-				
Random Cyclic	LW					- <del>()</del> -	-				
Transfer 1	LB	-	1664	0000	067F	+	В 💌	1664	0000	067F	
Transfer 2	LW	-	1664	0000	067F	- <del>()</del> -	w 👻	1664	000000	00067F	
Transfer 3		-				- <del>()</del> -	-				
Transfer 4		-				- <del>()</del> -	-				
Transfer 5		-				+	-				
Transfer 6		-				- <del>()</del> -	-				·

# 2.6 Program Comparisons

2

## 2.6.1 Comparison of special relays M (SB) and special registers D (SW)

### (1) Master station special relays

Special relays enabled when host station is the master station.

 ${\sf O}$  : Compatible,  ${\,\bigtriangleup}$  : Partial change required, × : Incompatible

Spec	ial relay in the case master sta			Correspon	ding MELSECNET/H	-	
Number		Description	Number	Name	Description	Compat- ibility	Precautions for replacement
M9200	LRDP instruction received	OFF : Not accepted ON : Accepted	None	-	-	Δ	Delete when used in a sequence program. (Refer to Section 2.6.2 Transient instructions.)
M9201	LRDP instruction complete	OFF : Not completed ON : Completed	None	-	-	Δ	Delete when used in a sequence program. (Refer to Section 2.6.2 Transient instructions.)
M9202	LWTP instruction received	OFF : Not accepted ON : Accepted	None	-	-	Δ	Delete when used in a sequence program. (Refer to Section 2.6.2 Transient instructions.)
M9203	LWTP instruction complete	OFF : Not completed ON : Completed	None	-	-	Δ	Delete when used in a sequence program. (Refer to Section 2.6.2 Transient instructions.)
M9206	Link parameter error in the host	OFF : Normal ON : Abnormal	SB0055	Receive parameter error	OFF : Parameter normal ON : Parameter abnormal	0	
M9207	Link parameter check results	OFF : Match ON : Mismatch	None	-	-	Δ	Delete when used in a sequence program as a 3-tier system cannot be configured.
M9208	Master station B,W transmission range setting (only master station of lower link)	OFF : Transmits to tier2 and tier3 ON : Transmits to tier2 only	None	-	-	Δ	Delete when used in a sequence program as a 3-tier system cannot be configured.
M9209	Check instructions of link parameters (only master station of lower link)	OFF : Executing the check function ON : Check non- execution	None	-	-	Δ	Delete when used in a sequence program as a 3-tier system cannot be configured.
M9210	Link card error (for master station)	OFF : Normal ON : Abnormal	SB0020	Module status	OFF : Normal ON : Abnormal	0	
M9224	Link status	OFF : Online ON : Offline, station- to-station test, or self-loopback test	SB0043	Online switch	OFF : Online ON : Other than online	0	
M9225	Forward loop error	OFF : Normal	SB0090	Host loop status	OFF : Normal ON : Abnormal	0	When ON, confirm the loop status by SW0090. The loop status can also be judged by the host station bits of SW0091 to SW0094.
WIJZZU		ON : Abnormal	SB0092 (when host station is remote master station)	Forward loop status of the remote master station	OFF : Normal ON : Abnormal	0	

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Spec	ial relay in the case master st	of MELSECNET (II) ation		Correspo	nding MELSECNET/H	special re	lay
Number	Name	Description	Number	Name	Description	Compat- ibility	Precautions for replacement
M9226	Reverse loop error	OFF : Normal	SB0090	Host loop status	OFF : Normal ON : Abnormal	0	When ON, confirm the loop status by SW0090. The loop status can also be judged by the host station bits of SW0095 to SW0098.
W9220	226 Reverse loop error ON : Abnormal	ON : Abnormal	SB0096 (when host station is remote master station)	Reverse loop status of the remote master station	OFF : Normal ON : Abnormal	0	
M9227	Loop test status	OFF : Not being executed ON : Forward loop test/reverse loop test execution underway	SB00AC	Offline test instruction status	OFF : Not instructed ON : Instructed	0	
M9232	Local station operation status	OFF : RUN or STEP RUN status ON : STOP or PAUSE status	SB0084	Each station CPU RUN status	OFF : All stations RUN or STEP RUN status ON : Stations in the STOP or PAUSE status exist	0	
M9233	Local station error detection status	OFF : No error ON : Error detection	None	-	-	Δ	Can be substituted by SB0074.
M9235	Local station, remote I/O station parameter error detection status	OFF : No error ON : Error detection	SB007C	Parameter status of each station	OFF : No station detected parameter errors ON : A station detected parameter errors	0	
M9236	Local station, remote I/O station initial communications status	OFF : No communication ON : Communication in progress	SB0078	Parameter status of each station	OFF : Parameter communication not in progress ON : Parameter communication in progress	0	
M9237	Local station, remote I/O station error	OFF : Normal ON : Abnormal	SB0074	Cyclic transmission status of each station	OFF : All stations normal ON : Station where cyclic transmission is not executing exist	0	
M9238	Local station, remote I/O station	OFF : Normal	SB0091	Forward loop status	OFF : All stations normal ON : Faulty station present	0	
	forward/reverse loop error	ON : Abnormal	SB0095	Reverse loop status	OFF : All stations normal ON : Faulty station present	0	

 $\bigcirc$  : Compatible,  $\triangle$  : Partial change required, × : Incompatible

# (2) Local station special relay

2

Special relays enabled when host station is the local station.

Special		MELSECNET (II) local		_	ELSECNET/H special		·
Number	statior Name	Description	Number	Name	Description	Compat- ibility	Precautions for replacement
M9204	LRDP instruction complete	OFF : Not completed ON : Completed	None	-	-	Δ	Delete when used in a sequence program. (Refer to Section 2.6.2 Transient instructions.)
M9205	LWTP instruction complete	OFF : Not completed ON : Completed	None	-	-	Δ	Delete when used in a sequence program. (Refer to Section 2.6.2 Transient instructions.)
M9211	Link card error (for local station)	OFF : Normal ON : Abnormal	SB0020	Module status OFF : Normal ON : Abnormal		0	
M9240	Link status	OFF : Online ON : Offline, station- to-station test, or self-loopback test	SB0043	Online switch	OFF : Online ON : Other than online	0	
M9241	Forward loop error	OFF : Normal ON : Abnormal	SB0090	Host loop status	OFF : Normal ON : Abnormal	0	When ON, confirm the loop status by SW0090. The loop status can also be judged by the host station bits of SW0091 to SW0094.
M9242	Reverse loop error	OFF : Normal ON : Abnormal	SB0090	Host loop status	OFF : Normal ON : Abnormal	0	When ON, confirm the loop status by SW0090. The loop status can also be judged by the host station bits of SW0095 to SW0098.
M9243	Loopback execution	OFF : Loopback not executed ON : Loopback execution	SB0090	Host loop status	OFF : Normal ON : Abnormal	0	When ON, confirm the loop status by SW0090. The loop status can also be judged by whether SW0099 and SW009A are the host station No.
M9246	Data not received from master station	OFF : Received ON : Not received	None	-	-	Δ	Delete when used in a sequence program as a 3-tier system cannot be configured.
M9247	Data not received from the upper loop in 3-tier system	OFF : Received ON : Not received	None	-	-	Δ	Delete when used in a sequence program as a 3-tier system cannot be configured.
M9250	Parameter unreceived	OFF : Received ON : Not received	SB0054	Parameter receive status	OFF : Receive completed ON : Not received	0	
M9251	Link break	OFF : Normal ON : Cancel	SB0049	Host station data link status	OFF : Normal ON : Abnormal	0	
M9252	Loop test status	OFF : Not being executed ON : Forward loop test/reverse loop test execution underway	SB00AE	Offline testing response designation	OFF : No response ON : Response	0	

 $\bigcirc$  : Compatible,  $\bigtriangleup$  : Partial change required, × : Incompatible

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Special	relay in the case of statior	MELSECNET (II) local		M	ELSECNET/H special	relay	
Number	Name	Description	Number	Name	Description	Compat- ibility	Precautions for replacement
M9253	Master station operation status	OFF : RUN or STEP RUN status ON : STOP or PAUSE status	SW0084 to SW0087	Each station CPU RUN status	Stores the CPU RUN status of each station.	0	When the MELSECNET II master station is the MELSECNET/H specified control station, the operation status is distinguished by the corresponding bit of the control station specified on SW0084 to SW0087.
M9254	Operating status of other local stations	OFF : RUN or STEP RUN status ON : STOP or PAUSE status	SB0084	Each station CPU RUN status	OFF : All stations RUN or STEP RUN status ON : Stations in the STOP or PAUSE status exist	0	
M9255	Local station error on stations other than host station	OFF : Normal ON : Abnormal	SB0074	Cyclic transmission status of each station	OFF : All stations normal ON : Station where cyclic transmission is not executing exist	0	

## (3) Master station special register

2

Special register enabled when host station is the master station.

Specia	I register in the <u>cas</u>	e of MELSECNET (II)	O : Compatible, △ : Partial change required, × : Incompatible MELSECNET/H special register							
	master sta			MEL	SECNET/H special re					
Number	Name	Description	Number	Name	Description	Compat- ibility	Precautions for replacement			
D9200	LRDP processing results	<ol> <li>Normal completion</li> <li>LRDP instruction setting fault</li> <li>Error at relevant station</li> <li>Relevant station LRDP execution disabled</li> </ol>	None	-	-	Δ	Delete when used in a sequence program. (Refer to Section 2.6.2 Transient instructions.)			
D9201	LWTP processing results	<ol> <li>Normal completion</li> <li>LWTP instruction setting fault</li> <li>Error at relevant station</li> <li>Relevant station LRDP execution disabled</li> </ol>	None	-	-	Δ	Delete when used in a sequence program. (Refer to Section 2.6.2 Transient instructions.)			
D9202 D9203 D9241 D9242	Local station link type	Stores whether or not the slave station is a MELSECNET compatible station or a MELSECNET II compatible station.	None	-	-	Δ	Delete when used in a sequence program due to MELSECNET/H system.			
D9204	Link status	<ul> <li>Forward loop, during data link</li> <li>Reverse loop, during data link</li> <li>Loopback</li> <li>implemented in forward/reverse directions</li> <li>Loopback</li> <li>implemented in only forward direction</li> <li>Loopback</li> <li>implemented only in reverse direction</li> <li>Data link disabled</li> </ul>	SW0049 (SW0090 to SW009A)	Cause of data link transmission stop	<ol> <li>Normal</li> <li>Stop instruction issued</li> <li>No common parameters</li> <li>Common parameter error</li> <li>Host station CPU error</li> <li>Communication canceled</li> </ol>	Δ	Check whether or not the data link is normally SW0049. (Loop status is judged comprehensively by SW0090 to SW009A.)			
D9205	Station implementing loopback	Station that implemented forward loopback	SW0099	Loopback station (forward loop side)	Stores the number of stations executing the loopback on the forward loop side.	0				
D9206	Station implementing loopback	Station that implemented reverse loopback	SW009A	Loopback station (reverse loop side)	Stores the number of stations executing the loopback on the reverse loop side.	0				
D9207		Max. value	SW006B		Max. value	0				
D9208	Link scan time	Min. value	SW006C	Link scan time	Min. value	0	4			
D9209		Current value	SW006D		Current value	0				
D9210	Retry	Stored as cumulative	SW00C8	Number of retries on the forward loop side	Accumulates and stores the number of retries on the forward loop side.	Δ	The retries on the forward loop side are stored as a cumulative value.			
	,	value	SW00C9	Number of retries on the reverse loop side	Accumulates and stores the number of retries on the reverse loop side.	Δ	The retries on the reverse loop side are stored as a cumulative value.			

 $\bigcirc$  : Compatible,  $\bigtriangleup$  : Partial change required, × : Incompatible

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 $\bigcirc$  : Compatible,  $\ {\bigtriangleup}$  : Partial change required,  $\times$  : Incompatible

Specia	al register in the cas master sta	e of MELSECNET (II) ation		MEL	SECNET/H special r	egister										
Number	Name	Description	Number	Name	Description	Compat- ibility	Precautions for replacement									
D9211	Loop switching count	Stored as cumulative value	SW00CE	Loop switching count	Accumulates and stores the number of loop checks conducted.	0										
D9212			SW0084													
D9213	Local station	Stores local stations in a STOP or PAUSE	SW0085	Each station CPU	Stores the CPU RUN status of each	0										
D9214	operation status	status.	SW0086	RUN status	station.	0										
D9215		510105.	SW0087		Station.											
D9216		Stores whether each														
D9217	Local station error	local station has	None -		_		Can be substituted by									
D9218	detection status	detected any error in	NONE	-	-		SW0074 to SW0077.									
D9219		other station.														
D9220	Local station	Turns ON when a local	SW007C	-												
D9221	parameter	station or a remote I/O	SW007D	Parameter error	Stores the											
D9222	mismatch	station has detected	SW007E	status of each	parameter status of	0										
D9223	Remote I/O station I/O assignment error	an error on the link parameters from the master station.	SW007F	station	each station.											
D9224	Local station,	Stores stations that are	SW0078	Parameter	Stores the											
D9225	remote I/O station	Stores stations that are performing		performing								SW0079	communication	communication		
D9226	initial	communication of link	SW007A	status of each	status of each	0										
D9227	communication underway	parameters.	SW007B	station	station parameters.											
D9228	Local station.		SW0074	Quelle transmission	Stores the svelis											
D9229	remote I/O station	Stores data link error	SW0075	Cyclic transmission status of each	Stores the cyclic transmission status	0										
D9230	error	stations.	SW0076	station	of each station.	0										
D9231			SW0077													
D9232			SW0091	-	Stores the forward		The error on the loop									
D9233			SW0092	Forward loop status	loop status of each	Δ	line of the forward loop									
D9234	Local station and	Stores the station that	SW0093	of each station	station.		is stored.									
D9235	remote I/O station	detected the error on	SW0094													
D9236	loop error	the forward loop line	SW0095	Reverse loop	Stores the reverse		The error on the loop									
D9237	-	and reverse loop line.	SW0096	status of each	loop status of each		line of the reverse loop									
D9238	-		SW0097	station	station.		is stored.									
D9239			SW0098				<b>T</b> I (1									
D9240	Number of receive error detection times	Stores cumulative total of receive errors	SW00B8 to SW00C7	Various error counters	Various error counters	Δ	The error count for each error cause is stored.									

# (4) Local station special register

2

Special registers enabled when host station is a local station

Specia	I register in the cas master sta	e of MELSECNET (II) ation	MELSECNET/H special register						
Number	Name	Description	Number	Name	Description	Compat- ibility	Precautions for replacement		
D9243	Station number information for host station	Stores the station number. (0 to 64)	SW0042	Station No.	Stores the station number of the host.	0			
D9244	Number of link device stations	Stores number of slave stations.	SW0056	Total number of link stations	Stores the total number of link stations that is set with the parameters.	0			
D9245	Number of receive error detection times	Stores cumulative total of receive errors.	SW00B8 to SW00C7	Various error counters	Various error counters	Δ	The error count for each error cause is stored.		
D9248			SW0084		Stores the CPU				
D9249	Local station	Stores local stations in a STOP or PAUSE	SW0085	Each station CPU					
D9250	operation status	status.	SW0086	RUN status	RUN status of each station.	0			
D9251			SW0087						
D9252			SW0074						
D9253	Local station error	Stores the local station	SW0075	Cyclic transmission	Stores the cyclic	_			
D9254	status	number other than the host, which is in error.	SW0076	status of each station	transmission status of each station.	0			
D9255	1	,	SW0077						

 $\bigcirc$  : Compatible,  $\bigtriangleup$  : Partial change required, × : Incompatible

### 2.6.2 Transient instructions

### (1) MELSECNET II dedicated instruction

Dedicated instructions that were used on MELSECNET II need to be replaced with the following dedicated instructions on MELSECNET/H.

The table below shows a comparison between dedicated instructions on MELSECNET II and dedicated instructions on MELSECNET/H. The table also shows reference items in the Q Corresponding MELSECNET/H Network System Reference Manual (PLC to PLC Network). Check these reference items before changing the sequence program.

	MELSECNE	IT II		MELSEC	NET/H	Reference
Instruction name	Category	Category Description		Category	Description	item in the manual
	Pooding from	The master station reads the word	READ SREAD	Other station word device read	Reads device data on other stations of target network No.	Section 7.4.5
LRDP Reading from local station	devices (T, C, D, W) on local stations.	ZNRD	Other station word device read	Reads device data on other stations of target network No. by A-compatible instructions.	Section 7.4.5	
	Writing to local	The master station writes to the word	WRITE SWRITE	Other station word device write	Writes data to devices on other stations of target network No.	Section 7.4.5
LWTP	Writing to local station	devices (T, C, D, W) on local stations.	ZNWR	Other station word device write	Writes data to devices on other stations of target network No. by A-compatible instructions.	Section 7.4.5

The following describes operation by the instructions.

O : Can be used, *. Cannot be used							
		Execution			Target		
		station		station			
Instruction	Name		Description		QnA/	AnU/	
		QCPU		QCPU	QnA- SCPU	AnUS(H) CPU	
READ SREAD	Other station word device read	0	Reads CPU device data on target stations of target network No. (in 16-bit units)	0	0	×	
WRITE SWRITE	Other station word device write	0	Writes data to CPU device on target station of target network No. (in 16-bit units) (Devices on the target station can be turned ON by SWRITE.)	0	0	×	

⊖ : Can be used, ×: Cannot be used

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Execution Target station station Instruction Name Description QnA/ AnU/ QCPU QCPU QnA-AnUS(H) SCPU CPU [A-compatible instruction] Reads CPU device data on target stations of target network No. Network module Network module CPU CPU Channel 1 Other Word device O\*1 HH[ZNRD] Fixed ZNRD station word 0 Ο Ο AnACPU 2594 device read AnNCPU Word device 2594 41-[A-compatible instruction] Writes data to CPU device on target station of target network No. Network module Network module CPU CPU Other O\*1 Word device ZNWR station word 0 Ο Ο AnACPU Channel 2 \* Fixed device write AnNCPU H-[ZNWR] 361 

O : Can be used, × : Cannot be used

\*1 CPU modules of the following version or later when the target station is the A2UCPU(S1), A3UCPU, A4UCPU, or A2USCPU(S1)

• A2UCPU(S1), A3UCPU, A4UCPU: Version AY (manufactured in July 1995) or later

• A2USCPU(S1): Version CP (manufactured in July 1995) or later

# 2.7 Replacement Precautions

The following shows the replacement precautions when replacing MELSECNET (II) with MELSECNET/ H.

### (1) Cables

For details on precautions for optical cables and coaxial cables, refer to Section 2.2.2 Cable performance comparisons.

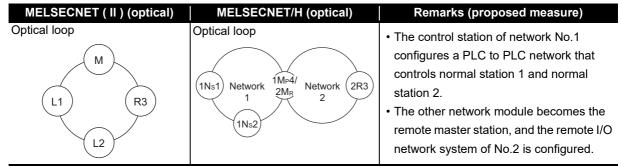
### (2) System configuration

# (a) System configuration using local stations and remote I/O stations in MELSECNET mode and MELSECNET II mode

MELSECNET/H system, which is a composite system comprising local stations and remote stations, provides high-performance functions by making a separation between local stations and remote stations. It therefore cannot be configured by a mixture of local stations and remote stations. For this reason, in a MELSECNET (II) system, when replacing a system, which comprises a mixture of local stations and remote I/O stations connected to a single master station, with a MELSEC/H system, the following system configuration is necessary. Normal stations are connected to a single control station, and remote I/O stations are controlled by an additional remote master station (the control station in a remote I/O system is defined as the "remote master station"). The following shows a system configuration example.

For a parameter change example, refer to Section 3.5.2.

System configuration using local and remote stations (optical)



### (b) MELSECNET (II) system comprising 65 connected modules

The maximum number of stations on the MELSECNET/H system is 64 (one control station, 63 normal stations).

The maximum number of stations on the MELSECNET (II) system is 65 (one master station, 64 local stations + remote I/O stations). For this reason, when the maximum number of 65 MELSECNET/H modules are connected, measures (e.g. division into two networks of 64 modules or less having a different network No.) are required.

### (3) Sequence program

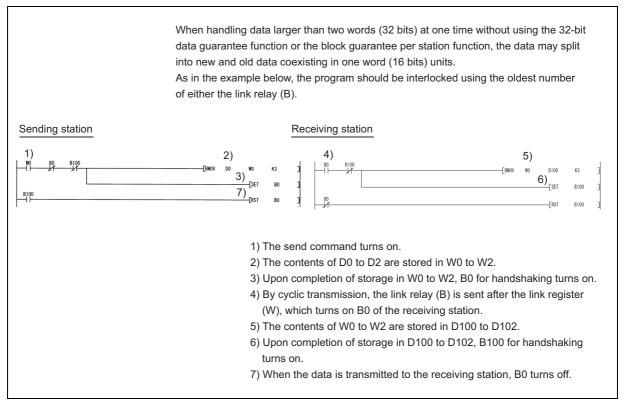
### (a) Data separation prevention

When two words (32 bits) or more of cyclic data are handled, the old data sometimes is mixed with the new data. To read/write cyclic data of two words or more in a single operation, set data separation prevention by the following method.

### 1) Interlock program using BW

Data separation can be prevented by performing handshaking using BW between the cyclic data sending station and cyclic data receiving station.

The following shows an example of an interlock program for handshaking.



#### 2) Per-station block guarantee function

When the "interlock program using BW" in 1) cannot be made, use the per-station block guarantee function for MELSECNET/H cyclic data. By enabling the per-station block guarantee function, handshaking is performed between CPU modules and network modules to refresh the network, and enables data separation prevention of cyclic data per station. The per-station block guarantee function is enabled when "Secured data send" and "Secured data receive" in the following parameters are set.

MELSECNET/10H Supplementary Setting         Constant Scan         Maximum No. of Returns to System Stations in 1 Scan         Station         Image: With multiplex transmission         Image: With multiplex transmission							
✓       There is a data link through the sub-controlling station is down.         ✓       Block send data assurance per station         ✓       Block receive data assurance per station         Transient Setting	Year         Month         Day         Hour         Minute         Second           1						
]	End Cancel						

(b) BW first half/second half assignments in the MELSECNET II mode and composite mode Set the station inherent parameters of the MELSECNET/H to all stations to re-use MELSECNET II sequence programs more efficiently.

#### (c) Processing time

The link scan time and link refresh time differ between the A/AnS/QnA/QnAS series and the Q series. For details on processing times, refer to the manual for the respective module.

#### (4) Precautions for system where AnN/AnS/AnACPU are mixed.

Pay attention to the following when replacing the MELSECNET II system where AnN/AnA/AnSCPU (excluding AnUS(H)CPU) are mixed, with the MELSECNET/10 system. Refer to "Chapter 11 COMPOSITE SYSTEMS" in "Type MELSECNET/10 Network system (PLC to PLC network) Reference Manual", for details.

#### (a) Control station of the MELSECNET/10 system

MELSECNET/10 system after transition requires one AnU/AnUS(H)/QnA/QnAS/QCPU as a control station.

In addition, because AnN/AnA/AnSCPU (excluding AnUS(H)CPU) cannot be a sub-control station in the transition to MELSECNET/10, the MELSECNET/10 system after transition requires two or more AnU/AnUS(H)/QnA/QnAS/QCPU to use the control station shift function of MELSECNET/10.

#### (b) Device range where data link can be executed on the MELSECNET/10 system

Device range where data link can be executed on the MELSECNET/10 system is the device range of AnN/AnS/AnACPU to be connected.

	X/Y	B/Y
AnN/AnSCPU (excluding AnUS(H)CPU)	Maximum 0000 to 07FF <sup>*1</sup>	0000 to 03FF
AnACPU	Maximum 0000 to 07FF <sup>*2</sup>	0000 to 0FFF

\*1 For A3NCPU. Depends on the number of I/O points that can be controlled by AnN/AnSCPU (excluding AnUS(H)CPU).

\*2 For A3ACPU. Depends on the number of I/O points that can be controlled by AnACPU.

#### (c) When AnN/AnA/AnSCPU (excluding AnUS(H)CPU) are mixed in transition from MELSECNET II composite mode to MELSECNET/10

Communicable B/W range is 0 to 3FF when AnN/AnSCPU (excluding AnUS(H)CPU) are mixed on MELSECNET/10.

When the second half is set on the MELSECNET II composite mode, it is necessary to divide with station inherent parameter for transferring data, but the station inherent parameter cannot be set on AnN/AnSCPU (excluding AnUS(H)CPU).

AnACPU can communicate at the range of B/W0 to FFF, but station inherent parameter cannot be set.

From here onwards, it may cause a communication error of the area divided by station inherent parameter at the other station where transmission of B/W 400 or later cannot be made.

When replacing MELSECNET II composite mode with MELSECNET/10 where AnN/AnA/AnSCPU (excluding AnUS(H)CPU) are mixed, replace AnN/AnA/AnSCPU (excluding AnUS(H)CPU) with a CPU that is applicable to MELSECNET/10, such as QCPU.

## **3** REPLACEMENT OF MELSECNET (II) AND /B (REMOTE I/O NETWORK)

## 3.1 List of MELSECNET (II) and /B Alternative Models

3

#### (1) Replacement of MELSECNET (II) modules with MELSECNET/H modules

Network type	A/AnS/A0J2(H) series	Alternative models for Q series				
	A1NCPUP21					
	A2NCPUP21					
	A2NCPUP21-S1					
	A3NCPUP21	-				
Optical loop	A2ACPUP21	CPU module + QJ71LP21-25 (Optical loop: SI cable				
(CPU integrated type)	A2ACPUP21-S1	supported)				
	A3ACPUP21					
	A2CCPUP21					
	A0J2HCPUP21					
	A1NCPUP21-S3					
	A2NCPUP21-S3					
	A2NCPUP21-S4					
Optical loop	A3NCPUP21-S3	CPU module + QJ71LP21G (Optical loop: GI cable				
(CPU integrated type)	A2ACPUP21-S3	supported)				
	A2ACPUP21-S4					
	A3ACPUP21-S3					
	A1NCPUR21					
	A2NCPUR21					
	A2NCPUR21-S1	-				
	A3NCPUR21					
Coaxial loop	A2ACPUR21	CPU module + QJ71BR11 (Coaxial bus)				
(CPU integrated type)	A2ACPUR21-S1					
	A3ACPUR21					
	A2CCPUR21					
	A0J2HCPUR21					
	AJ71AP21					
Optical loop (Standalone)	A1SJ71AP21	QJ71LP21-25 (Optical loop: SI cable supported)				
	AJ71P21-S3					
	AJ71AP21-S3					
Optical loop (Standalone)	AJ71P22-S3	QJ71LP21G (Optical loop: GI cable supported)				
	AJ71AP22-S3					
	A1SJ71AP21-S3					
	AJ71AR21					
Coaxial loop (Standalone)	A1SJ71AR21	QJ71BR11 (Coaxial bus)				
Optical loop (Standalone)	AJ72P25					
(Remote I/O station)	AJ72P25-S1	QJ72LP25-25 (Optical loop: SI cable supported)				
Optical loop (Standalone)	AJ72P25-S3					
(Remote I/O station)	A0J2P25	QJ72LP25G (Optical loop: GI cable supported)				
	AJ72R25					
Coaxial loop (Standalone)	AJ72R25-S1	QJ72BR15 (Coaxial bus)				
(Remote I/O station)	A0J2R25					

Network type	A/AnS series	Alternative models for Q series
Twistod pair	AJ71AT21B	QJ71LP21-25 (Optical loop)
Twisted pair	A1SJ71AT21B	QJ71BR11 (Coaxial bus)
Twisted pair	AJ72T25B	QJ72LP25-25 (Optical loop)
Twisted pair	A1SJ72T25B	QJ72BR15 (Coaxial bus)

3

## 3.2 Specifications Comparisons

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### 3.2.1 Module specifications comparisons

- (1) Comparison between MELSECNET (II) module (optical loop) and MELSECNET/H module (optical loop)
  - (a) SI optical cable, H-PCF optical cable

 $\bigcirc$  : Compatible,  $\ {\bigtriangleup}$  : Partial change required, ×: Incompatible

		Specifications				
lte	m			Compat-	Precautions for replacement	
inte		Optical loop	Optical loop (QJ71LP21-25, QJ72LP25-25)	ibility		
	X/Y	Max. 2048 points and max. number of I/O points of CPU module on master station	8192 points			
Maximum number of link points per	В	-	16384 points (Remote master station $\rightarrow$ remote I/O station: 8192 points, remote I/O station $\rightarrow$ remote master station: 8192 points)	0		
network	w	(MELSECNET mode) 1024 points     (MELSECNET II composite mode)     4096 points	16384 points (Remote master station $\rightarrow$ remote I/O station: 8192 points, remote I/O station $\rightarrow$ remote master station: 8192 points)	0		
Maximum number of link points per station	Master station Remote I/O station	• (MELSECNET mode) 1024 bytes     • (MELSECNET II composite mode)     First half: 1024 bytes 512 bytes	Remote master station $\rightarrow$ remote I/O station {(LY + LB) $\div$ 8 + (2 × LW)} $\leq$ 1600 bytes Remote I/O station $\rightarrow$ remote master station {(LX + LB) $\div$ 8 + (2 × LW)} $\leq$ 1600 bytes	0		
Maximum I/O points		512 points	4096 points	0		
Communic speed	ation	1.25 Mbps	25Mbps/10Mbps	0		
Number of connected network		65 stations (Master station: 1, local station + remote I/O station: 64)	65 stations (Remote master station: 1, remote I/O station: 64)		Set the PLC to PLC network to a separate network.	
Applicable	cable	SI optical cable H-PCF optical cable	SI optical cable H-PCF optical cable Broad-band H-PCF optical cable QSI optical cable		When using existing SI cables, the distance between stations may be shortened. (Refer to Section 3.2.2.)	
Overall dis	tance	10km	30km	0		
Distance b stations	etween	Refer to Section 3.2.2.	Refer to Section 3.2.2.	Δ	To ensure the same distance as before replacement, either change the optical cable, or install a gateway station midway along existing cables.	
Maximum networks	number of	-	239	Δ	New MELSECNET/H parameter (mandatory)	
Communic method	ation	Half duplex bit serial method	Token ring method	Δ	Nothing to be noted though the communication method differs.	
Transmiss method	ion	Duplex loop		0		
Modulation (Encoding		(Modulation method) CMI method	(Encoding method) NRZI coding	Δ	Nothing to be noted though the modulation method differs.	
Transmiss	ion format	HDLC standards (frame format)		0		
Error contr	ol system	CRC (X <sup>16</sup> +X <sup>12</sup> +X <sup>6</sup> +1) and retry by a tim	ne over	0		
RAS functi	ion	<ul> <li>Loop-back function due to error dete</li> <li>Diagnostic function for checking local</li> </ul>		0		
Number of I/O points	occupied	(Master station) CPU integrated type: 0 point Standalone:32 points per slot (I/O assignment: special 32 points)	cal link lines (Master station) 32 points per slot (I/O assignment: intelli. 32 points)		When the master station is replaced from a CPU integrated type, one new slot (32 points) is required.	

### (b) Modules for GI optical cable

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		Specifications				
lte	em	MELSECNET (II) module         MELSECNET/H module         C           Optical loop         Optical loop(QJ71LP21G, QJ72LP25G)         C		Compat-	Precautions for replacement	
				ibility		
	X/Y	Max. 2048 points and max. number of I/O points of CPU module on master station	8192 points	0		
Maximum number of link points per	в	-	16384 points (Remote master station $\rightarrow$ remote I/O station: 8192 points, remote I/O station $\rightarrow$ remote master station: 8192 points)	0		
network	w	(MELSECNET mode) 1024 points     (MELSECNET II composite mode)     4096 points	16384 points (Remote master station $\rightarrow$ remote I/O station: 8192 points, remote I/O station $\rightarrow$ remote master station: 8192 points)	0		
Maximum number of link points	Master station	(MELSECNET mode) 1024 bytes     (MELSECNET II composite mode) link parameter First half: 1024 bytes link parameter Second half: 1024 bytes	Remote master station $\rightarrow$ remote I/O station {(LY + LB) $\div$ 8 + (2 × LW)} $\leq$ 1600 bytes	0		
per station	Remote I/O station	512 bytes	Remote I/O station $\rightarrow$ remote master station {(LX + LB) $\div$ 8 + (2 × LW)} $\leq$ 1600 bytes			
Maximum I/O points		512 points	4096 points	0		
Communio speed	cation	1.25 Mbps	10 Mbps	0		
Number of connected network		65 stations (Master station: 1, local station + remote I/O station: 64)	65 stations (Remote master station: 1, remote I/O station: 64)	Δ	Set the PLC to PLC network to a separate network.	
Applicable	cable	GI optical cable	GI optical cable	0		
Overall dis	stance	10 km	30 km	0		
Distance b stations	oetween	GI optical cable: 2km	Gl optical cable: 2km	0		
Maximum networks	number of	-	239	Δ	New MELSECNET/H parameter (mandatory)	
Communio method	cation	Half duplex bit serial method	Token ring method	Δ	Nothing to be noted though the communication method differs.	
Transmiss method	ion	Duplex loop		0		
Modulation method (Encoding method)		(Modulation method) CMI method	(Encoding method) NRZI coding	Δ	Nothing to be noted though the modulation method differs.	
Transmission format		HDLC standards (frame format)		0		
Error conti	rol system	CRC (X <sup>16</sup> +X <sup>12</sup> +X <sup>5</sup> +1) and retry by a tim	ie over	0		
RAS funct	ion	<ul> <li>Loop-back function due to error detect</li> <li>Diagnostic function for checking local</li> </ul>		0		
Number of I/O points	foccupied	(Master station) CPU integrated type: 0 point Standalone:32 points per slot (I/O assignment: special 32 points)	(Master station) 32 points per slot (I/O assignment: intelli. 32 points)	Δ	When the master station is replaced from a CPU integrated type, one new slot (32 points) is required.	

O : Compatible,  $\bigtriangleup$  : Partial change required,  $\times$  : Incompatible

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## (2) Comparison between MELSECNET (II) module (coaxial loop) and MELSECNET/H module (coaxial bus)

 $\bigcirc$  : Compatible,  $\bigtriangleup$  : Partial change required, × : Incompatible

		Speci			
lte	m	MELSECNET (II) module MELSECNET/H module		Compat- ibility	Precautions for replacement
		Coaxial loop	Coaxial bus (QJ71BR11, QJ72BR15)	IDIIIty	
	X/Y	Max. 2048 points and max. number of I/O points of CPU module on master station	f 8192 points		
Maximum number of link points per	В	-	16384 points (Remote master station $\rightarrow$ remote I/O station: 8192 points, remote I/O station $\rightarrow$ remote master station: 8192 points)	0	
network	w	(MELSECNET mode) 1024 points     (MELSECNET II composite mode)     4096 points	16384 points (Remote master station $\rightarrow$ remote I/O station: 8192 points, remote I/O station $\rightarrow$ remote master station: 8192 points)	0	
Maximum number of link points	Master station	(MELSECNET mode) 1024 bytes     (MELSECNET II composite mode)     link parameter first half: 1024 bytes	Remote master station $\rightarrow$ remote I/O station {(LY + LB) $\div$ 8 + (2 × LW)} $\leq$ 1600 bytes	0	
per station	Remote I/O station	512 bytes	Remote I/O station $\rightarrow$ remote master station {(LX + LB) $\div$ 8 + (2 × LW)} $\leq$ 1600 bytes		
Maximum I/O points		512 points	4096 points	0	
Communic speed	ation	1.25 Mbps	10 Mbps	0	
Number of stations         65 stations (Master station: 1, local         33 stations (R		33 stations (Remote master station: 1, remote I/O station: 32)	Δ	<ul> <li>Set the PLC to PLC network to a separate network.</li> <li>For stations over 33, build a separate network.</li> </ul>	
Applicable cable		3C-2V 5C-2V		Δ	When using existing cables, the overall distance and distance between stations becomes shorter.
Overall dis	tance	3C-2V: 10km 5C-2V: 10km	3C-2V: 300m 5C-2V: 500m	Δ	Either use an A6BR10/ A6BR10-DC type repeater unit, or configure a separate network.
Distance b stations	etween	3C-2V: 500m 5C-2V: 500m	3C-2V: 300m 5C-2V: 500m	Δ	When using the 3C-2V, use the A6BR10/A6BR10-DC type repeater unit.
Maximum networks	number of	-	239	Δ	New MELSECNET/H parameter (mandatory)
Communic method	ation	Half duplex bit serial method	Token ring method	Δ	Nothing to be noted though the communication method differs.
Transmiss method	ion	Duplex loop	Single bus	Δ	Nothing to be noted though the transmission method differs.
Modulation (Encoding		(Modulation method) CMI method	(Encoding method) Manchester code	Δ	Nothing to be noted though the modulation method differs.
Transmiss format	ion	HDLC standards (frame format)	·	0	
Error control system		CRC ( $X^{16}+X^{12}+X^{5}+1$ ) and retry by a tim	e over	0	
RAS function		<ul> <li>Loop-back function due to error detection or broken cable</li> <li>Diagnostic function for checking local link lines</li> </ul>	Diagnostic function for checking local link lines	Δ	The loopback function cannot be used on a coaxial bus system. To use the loopback function, using an optical loop system is recommended.
Number of I/O points	occupied	(Master station) CPU integrated type: 0 point Standalone:32 points per slot (I/O assignment: special 32 points)	(Master station) 32 points per slot (I/O assignment: intelli. 32 points)	Δ	When the master station is replaced from a CPU integrated type, one new slot (32 points) is required.

## (3) Comparison between MELSECNET/B module (twisted pair) and MELSECNET/H module (optical loop/coaxial bus)

○ : Compatible.	△: Partial change	required. ×	: Incompatible

			fiention			nange required, × : incompatible
		Speci MELSECNET/B module	fications MELSECNE	ET/H module	Compat-	
Ite	em	Twisted pair	Optical loop (QJ71LP21-25)	Coaxial bus (QJ71BR11)	ibility	Precautions for replacement
	X/Y	Max. 2048 points and max. number of I/O points of CPU module on master station	8192 points		0	
Maximum number of link points per	в	-	station: 8192 points	(Remote master station $\rightarrow$ remote I/O station: 8192 points, remote I/O station $\rightarrow$ remote master		
network	w	(MELSECNET mode) 1024 points     (MELSECNET II composite mode)     4096 points	16384 points (Remote master sta station: 8192 points remote I/O station – station: 8192 points	, → remote master	0	
Maximum number of link points per station	Master station     • (MELSECNET mode) 1024 bytes • (MELSECNET II composite mode) Link parameter first half: 1024 bytes     Remote master station → remote I/O station {(LY + LB) ÷ 8 + (2 × LW)} ≤ 1600 bytes       Remote I/O     512 bytes     Remote station		0			
Maximum I/O points		512 points	4096 points	<u>,,                                   </u>	0	
Communic	<u> </u>		25Mbps/10Mbps	-	0	
speed		125kbps/250kbps/500kbps/1Mbps	-	10Mbps	0	-
Number of connected		32 stations (Master station: 1,	65 stations (Remote master station: 1, remote I/ O station: 64)	-	Δ	Set the PLC to PLC network to a separate network.
network	in one	local station + remote I/O station: 31)	-	33 stations (Remote master station: 1, remote I/ O station: 32)	Δ	Set the PLC to PLC network to a separate network.
Applicable cable		Shielded twisted pair cable	SI optical cable H-PCF optical cable Broad-band H-PCF optical cable QSI optical cable	-	Δ	A new optical cable has to be installed.
			-	3C-2V 5C-2V	Δ	A new coaxial cable has to be installed.
		125kbps: 1200m	30km	-	0	
Overall distance		250kbps: 600m 500kbps: 400m 1Mbps: 200m	-	3C-2V: 300m 5C-2V: 500m	Δ	Either use an A6BR10/ A6BR10-DC type repeater unit, or configure a separate network.
Distance between stations		125kbps: 1200m 250kbps: 600m	Refer to Section 3.2.2.	-	0	When 1200m is required, use GI optical cables for all optical cables, and use QJ71LP21G as the module.
		500kbps: 400m 1Mbps: 200m	-	3C-2V: 300m 5C-2V: 500m	Δ	Either use an A6BR10/ A6BR10-DC type repeater unit, or configure a separate network.
Maximum networks	number of	-	239	·	Δ	New MELSECNET/H parameter (mandatory)

(to next page)

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 ${\sf O}$  : Compatible,  $\, {\boldsymbol{\bigtriangleup}}$  : Partial change required, × : Incompatible

	Specifications				
ltem	MELSECNET/B module	MELSECNET/H module		Compat-	Precautions for replacement
nem	Twisted pair	Optical loop (QJ71LP21-25)	Coaxial bus (QJ71BR11)	ibility	
Communication method	Half duplex bit serial method	Token ring method		Δ	Nothing to be noted though the communication method differs.
Transmission	Single hus	Duplex loop	-	0	
method	Single bus	-	Single bus	0	
Modulation method	(Modulation method) NRZI method	(Encoding method) NRZI coding	-	0	
(Encoding method)		-	(Encoding method) Manchester code	Δ	Nothing to be noted though the modulation method differs.
Transmission format	HDLC standards (frame format)			0	
Error control system	CRC (X <sup>16</sup> +X <sup>12</sup> +X <sup>5</sup> +1) and retry by a time over			0	
RAS function	Diagnostic function for checking local lin	hecking local link lines			
Number of occupied I/O points	(Master station) Standalone: 32 points per slot (I/O assignment: special 32 points)	(Master station) 32 points per slot (I/ 32 points)	(Master station) 32 points per slot (I/O assignment: intelli.		

#### 3.2.2 Cable performance comparisons

#### (1) Optical fiber cable

#### (a) Overall distance

The overall distance (30km) does not differ according to the optical fiber cable.

#### (b) Distance between stations

#### 1) SI optical fiber cable

 ${\sf O}$  : Compatible,  $\,{\scriptstyle \bigtriangleup}$  : Partial change required, × : Incompatible

Туре		MELSECNET (II) module	MELSECNET/H module (Optical loop)		Compat- ibility	Precautions for replacement
		(Optical loop)	10Mbps	25Mbps	IDIIILY	replacement
SI optical fiber cable	L type	1km	500m	200m	Δ	
(type: A-2P-D) H type		500m	300m	100m	Δ	Refer to <sup>*1</sup> below.
SI optical fiber cable (typ	be: AN-2P-□)	1km	500m	200m	Δ	
H-PCF optical fiber cable		1km	1km	400m	Δ	Refer to <sup>*2</sup> below.
Broad-band H-PCF optical fiber cable		-	1km	1km	0	
QSI optical fiber cable		-	1km	1km	0	

\*1 When the distance between stations does not satisfy the MELSECNET/H specifications, either change the type of optical fiber cable, or install a gateway station midway along existing cables.

\*2 When the distance between stations does not satisfy the MELSECNET/H specifications, use at a communication speed of 10 Mbps, change the type of optical fiber cable, or install a gateway station midway along existing cables.

#### 2) GI optical fiber cable

 $\bigcirc$  : Compatible,  $\bigtriangleup$  : Partial change required, × : Incompatible

Туре	MELSECNET (II) module (Optical loop)	MELSECNET/H module (Optical loop)	Compat- ibility	Precautions for replacement
GI optical fiber cable	2km	2km	0	

#### (2) Coaxial cable

#### (a) Overall distance

		O : Compa	atible, 🛆 : Pa	artial change required, × : Incompatible
Туре	MELSECNET (II) module (Coaxial loop)	MELSECNET/H module (Coaxial bus)	Compat- ibility	Precautions for replacement
3C-2V	10km	300m	Δ	Refer to <sup>*3</sup> below.
5C-2V	10km	500m	Δ	Refer to <sup>2</sup> below.

\*3 When the overall distance does not satisfy the MELSECNET/H specifications, either use an A6BR10/A6BR10-DC type repeater unit in the network, or configure a separate network.

#### (b) Distance between stations

 $\bigcirc$  : Compatible,  $\bigtriangleup$  : Partial change required, × : Incompatible

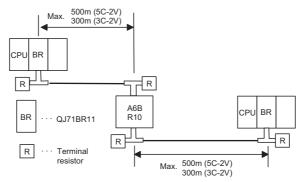
Туре	MELSECNET (II) module (Coaxial loop)	MELSECNET/H module (Coaxial bus)	Compat- ibility	Precautions for replacement
3C-2V	500m	300m	Δ	Refer to <sup>*4</sup> below.
5C-2V	500m	500m	0	Refer to <sup>*4</sup> below.

\*4 When the distance between stations does not satisfy the MELSECNET/H specifications, either use an A6BR10/A6BR10-DC type repeater unit in the network.

Remarks

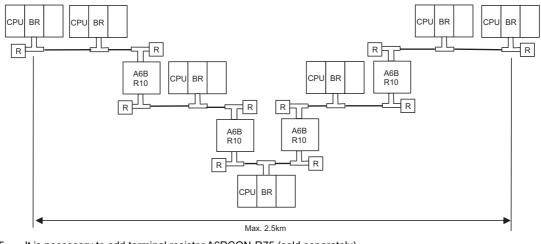
The following shows the extension method when a repeater unit for the A6BR10/A6BR10-DC type MELSECNET/10 coaxial bus system is used. For details, refer to the Repeater Unit for the MELSECNET/10 Coaxial Bus System type A6BR10/A6BR10-DC User's Manual (IB-66499).

(1) The distance between stations of 500m (5C-2V) and 300m (3C-2V) can be extended.



(2) Up to four repeater units can be used in a single network.<sup>\*5</sup>

The overall distance can be extended to a maximum distance of 2.5 km.



\*5 It is necessary to add terminal resistor A6RCON-R75 (sold separately).

## 3.3 Functional Comparisons

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	Deser	iption		
ltem	MELSECNET (II) module MELSECNET/B module	MELSECNET/H module	Compat- ibility	Precautions for replacement
Cyclic transmission	X/Y are used to perform 1:1 communications between the master station and local stations, and the master station and remote I/O stations.	X/Y are used to perform 1:1 communications between the remote master station and remote I/O stations.	0	
Transient transmission	<ul> <li>The RFRP/RTOP instructions issued from the master station are used to read/write the buffer memory of special function modules at remote I/ O stations.</li> <li>Other stations are accessed from GX Developer connected to the master station.</li> <li>The master station is accessed from GX Developer connected to remote I/O stations.</li> </ul>	<ul> <li>The REMFR/REMTO instructions issued from the remote master station are used to read/write the buffer memory of intelligent function modules at remote I/O stations.</li> <li>Other stations are accessed from GX Works2 or GX Developer connected to the remote master station.</li> <li>The remote master station is accessed from GX Works2 or GX Developer connected to remote I/O stations.</li> </ul>	Δ	Correct the RFRP/RTOP instructions for reading/ writing buffer memory on intelligent function modules at remote I/O stations to the REMFR/REMTO instructions. (Refer to Section 3.6.2.)
Automatic return	When a disconnected remote I/C		0	
function Loopback function	status, it is automatically restore In the case of an optical loop system and coaxial loop system, faulty parts are disconnected when a fault (e.g. cable disconnection) occurs, and normal operation is continued on operable stations as a result of the loopback.	In the case of an optical loop system, faulty parts are disconnected when a fault (e.g. cable disconnection) occurs, and normal operation is continued on operable stations as a result of the loopback.	0	
Error detection	Faulty parts are detected by the data of special relays (M9200 to 9255) and special registers (D9200 to 9255).	Faulty parts are detected by the data of link special relays (SB0 to 1FF) and link special registers (SW0 to 1FF).	Δ	Change the devices in the sequence program. (Refer to Section 3.6.1.)
Self-diagnosis test function	Set the following test items by the mode setting switch: • Self-loopback test • Station-to-station test • Forward loop/reverse loop test	Set the following test items by the mode setting switch: • Self-loopback test • Internal self-loopback test • Hardware test Set the following test items in the network parameters: • Forward loop/reverse loop test	Δ	<ul> <li>Set the forward loop/ reverse loop test in the network parameter settings.</li> <li>Substitute the station-to- station test with the forward loop/reverse loop test.</li> </ul>

 $\bigcirc$  : Compatible,  $\bigtriangleup$  : Partial change required, × : Incompatible

### 3.4 Switch Settings Comparisons

#### (1) Comparison between MELSECNET (II) modules and MELSECNET/H modules

		⊖ : Compatible,	$\triangle$ : Partial of	change required, × : Incompatible
Switch name	Desc	ription	Compat-	Precautions for
	MELSECNET (II) module	MELSECNET/H module	ibility	replacement
Station number setting switch	Sets the station number.	Sets the station number.	0	
Mode select switch	Sets the mode for operation self-diagnostics test.	Sets the mode for operation self-diagnostics test.	Δ	The forward loop/reverse loop test is set in GX Works2 or GX Developer network parameter settings.

#### (2) Comparison between MELSECNET/B modules and MELSECNET/H modules

 $\bigcirc$  : Compatible,  $\bigtriangleup$  : Partial change required, × : Incompatible

Quiteb nome	Descr	ription	Compat-	Precautions for
Switch name	MELSECNET (II) module	MELSECNET/H module	ibility	replacement
Station number setting switch	Sets the station number.	Sets the station number.	0	
Mode select switch	Sets the mode for operation self-diagnostics test.	Sets the mode for operation self-diagnostics test.	Δ	The forward loop/reverse loop test is set in GX Works2 or GX Developer network parameter settings.
Communication speed setting switch	Sets the communication speed.	-	Δ	The setting is not required.

### **3.5 Parameter Comparisons**

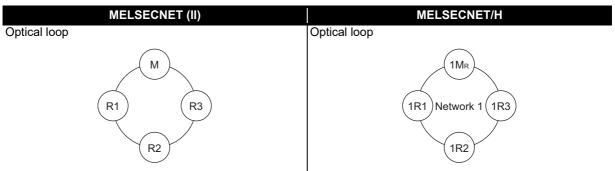
#### 3.5.1 Parameter comparisons

The network parameters of MELSECNET (II) are deleted when the programmable controller type is changed with the GX Developer. After changing the programmable controller type, set the MELSECNET/H network parameters again.

#### (1) MELSECNET (II) $\rightarrow$ MELSECNET/H

The following shows a comparison between MELSECNET (II) network parameter settings and MELSECNET/H network parameter settings.

The MELSECNET (II) master station is compared with the MELSECNET/H master station.



	ME	ELSECNET (II)		М	ELSECNET/H	Compat- ibility	Precautions for replacement
	Net	work type		Net	work type	0	
	Star	ting I/O No. <sup>*1</sup>		Star	rting I/O No.	0	
	- (N	o setting)	Network No.		^	Mandatory for the	
	- (11	o setting)	Network No.		Δ	MELSECNET/H.	
	Tota	al number of (slave) stations		Total number of (slave) stations		0	
					LB, LW assignments on the		
	ts				master station and remote	0	
Master	nen	LB, LW assignments on the	Master	ents	I/O stations		
station	signments	master station and remote	station	assignments	Station inherent parameter	$\triangle$	*2
otation	ass	I/O stations		assi	Supplemental settings-		
	range				Secured data send		*3
				( rar	Supplemental settings-	Δ	
	Network			Vetwork range	Secured data receive		
	etw	LX/LY assignments on the		Net	LX/LY assignments on the		
	Ž	master station and remote			master station and remote	0	
		I/O stations			I/O stations		
	Ref	resh parameters <sup>*1</sup>		Ref	resh parameters	0	
Remote I/O			Remote I/O	/NI	o potting)		
station	- (14	o setting)	station	- (1	o setting)		

 $\bigcirc$  : Compatible,  $\triangle$  : Partial change required, × : Incompatible

\*1 This is set when the AnU/AnUS(H)/QnA/QnASCPU is mounted.

\*2 Applied when LB/LW are set for both the first half/second half on MELSECNET (II). (For details, refer to Section 3.5.2 Parameter change example.)

\*3 This is the data separation prevention function for reading/writing cyclic data of two words or more in a single operation. (For details, refer to Section 3.7 Replacement Precautions.)

#### 3.5.2 Parameter change example

The following shows an example of how to change the LB/LW, LX/LY network parameters when replacing the MELSECNET remote system with MELSECNET/H.

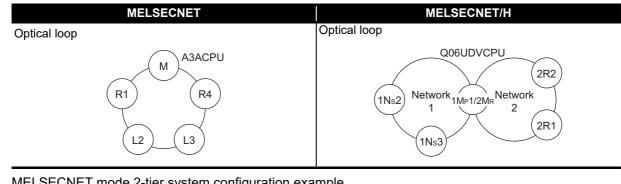
The MELSECNET remote system can be used in the following operation modes.

- MELSECNET mode
- MELSECNET II composite mode

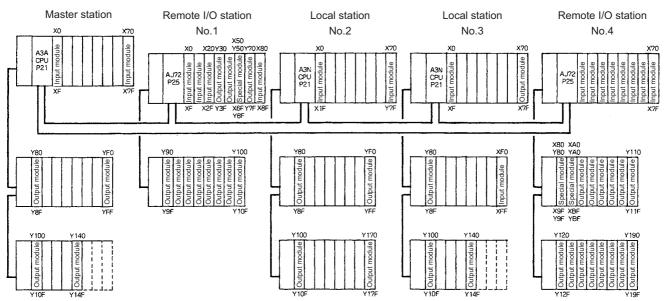
#### (1) MELSECNET mode

The following shows the procedure for changing the parameters in the case of a MELSECNET mode 2tier system configuration.

A MELSECNET composite system comprising local stations and remote I/O stations is divided into a PLC to PLC network and a remote I/O network in the MELSECNET/H.

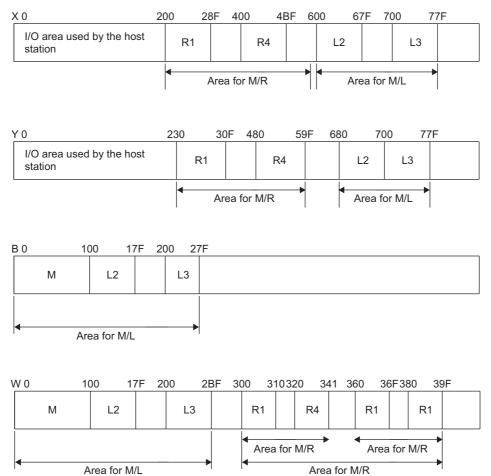


#### MELSECNET mode 2-tier system configuration example



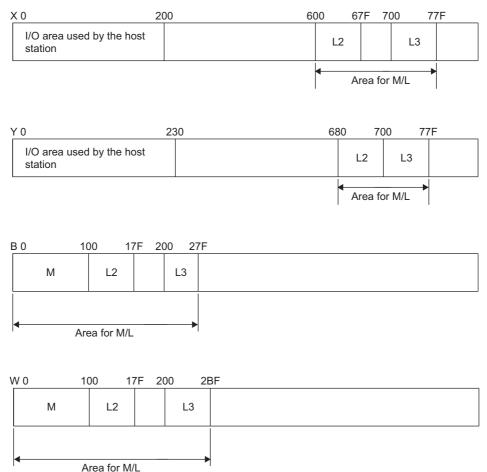
MELS

#### (a) Setting ranges of MELSECNET link parameters



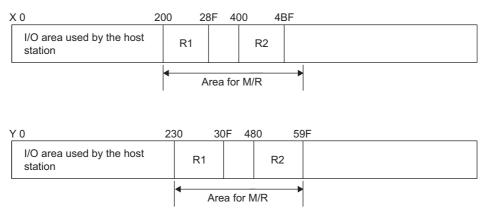
#### (b) Setting ranges of MELSECNET/H link parameters

#### 1) Setting ranges of network 1 link parameters



#### 2) Setting ranges of network 2 link parameters

The REMFR, REMTO instructions do not use B, W, and the setting of B, W is not required. Only X,Y are set.



A MELSECNET/H module set as normal station requires network parameter setting. For replacement of MELSECNET (II) module mounted on the CPU module of the AnN/AnA/AnSCPU (excluding AnUS(H)CPU), newly set network parameters.

	Common parameter (Network range assignment)	Refresh parameter
1Mp1	0	0
imp i	(Refer to example in (e) 2) and 3))	(Refer to example in (e) 4))
2MR	0	0
21011	(Refer to example in (f) 1) and 2))	(Refer to example in (f) 3))
1Ns2		0
11132		(Refer to example in (g) 2))
1Ns3		0
11155		(Refer to example in (g) 2))
2R2		
2R3		

The following shows parameters required on each station of MELSECNET/H.

O : Setting required/  $\bigtriangleup$  : Setting required (Default setting is also acceptable)

#### (c) MELSECNET master station

3

The following shows the network parameter settings of the MELSECNET master station (A3ACPU).

#### 1) Network parameter setting (A3ACPU: MELSECNET master station)

(Master station)	None 👻	None 👻	None
4			
Network range assignment			
	1	1	
ing / Alreadyset ) Set if it is ne	eded( Nosetting / Alreadyset )		
Start I/O No.: Input the start I/O No. installed in th	Valid module during other stat	ion access	
	ng / Alreadyset ) Set if it is ne Start 1/0 No.: Input the start 1/0 No. installed in th	ng / Already set ) Set if it is needed( No setting / Already set ) Start I/O No.: Valid module Input the start I/O No. installed in the module in 16-point unit.	ng / Already set ) Set if it is needed( No setting / Already set ) Start I/O No.: Input the start I/O No. installed in the module in 16-point unit.

Setup comr	non paramet	ers										
Assignment m		Mor	nitoring tim	e 200	×10ms							
Start/Er	d		al slave ions	4		Swite	ch screens	LX/LY	settings	1	•	
			M station	-> L/R sta	tion				M station	k-L/R stal	tion	
L/R		LY			LX/LY			LX			LY/LX	
station No.	Points	Start	End	Points	Start	End	Points	Start	End	Points	Start	End
М 0												
R 1	224	0230	030F	224	0030	010F	144	0200	028F	144	0000	008F
L 2	128	0680	06FF	128	0200	027F	128	0600	067F	128	0280	02FF
	128	0700	077F	128	0200	027F	128	0700	077F	128	0200	027F
L 3		0480	059F	288	0080	019F	192	0400	04BF	192	0000	OOBF

<ul> <li>Setup comm</li> </ul>	on paramet	ers											
Assignment m C Points/S C Start/En	tart	Tot	nitoring time al slave ions	e 200	× 10ms	Switc	h screens	LB/LV	/ settings	1	-		
	Send ra	ange for ea	ach station	Sendir	ange for ea	ach station	M stati	on -> Rista	ation	M stati	on <-R st	ation	ŀ
L/R		LB			LW			LW			LW		
station No.	Points	Start	End	Points	Start	End	Points	Start	End	Points	Start	End	
МО	256	0000	00FF	256	0000	00FF							
R 1							17	0300	0310	16	0360	036F	
L 2	128	0100	017F	128	0100	017F							
	128	0200	027F	192	0200	02BF							
L 3							34	0320	0341	32	0380	039F	

#### (d) MELSECNET local station, remote I/O station

As all stations perform cyclic communication according to the network range assignments of the master station (A3ACPU), the network range assignment parameters of local stations and remote I/O stations need not be set.

#### (e) MELSECNET/H control station (network 1)

The following shows the network parameter settings for when a station is replaced with a MELSECNET/H control station (network 1).

	Module 1	Module 2	Module 3	Module 4
Network Type	MNET/H Mode(Control Station)	MNET/H(Remote Master)	None	✓ None
Start I/O No.	0000	0020		
Network No.	1	. 2	2	
Total Stations	3	2	2	
Group No.	0			
Station No.				
Mode	Online 👻	Online 🗸		<b>~</b>
	Network Range Assignment	Network Range Assignment		
	Refresh Parameters	Refresh Parameters		
	Interrupt Settings	Interrupt Settings		
	Return as Control Station 🗸			
	Optical/Coaxial 🗸			

letwork r	ange as	signn	nent (0	2060[	DVCP	U: ME	LSEC	NET/I	H cont	rol sta	tion)			
	Set up cor	mmon and	station in	nerent par	ameters.									
	Assignment Method     Monitoring Time     200     X 10ms     Parameter Name       Image: Comparison of Start/End     Total Slave     3     Switch Screens     LX/LY Setting(1)													
				M St>	L St.					M St. <-	L St.			<b>^</b>
	Station No.		LY			LX			LX			LY		
		Points	Start	End	Points	Start	End	Points	Start	End	Points	Start	End	
M	laster 1 1													
	2	128	0680	06FF	128	0200	027F	128	0600	067F	128	0280	02FF	
	3	128	0700	077F	128	0200	027F	128	0700	077F	128	0200	027F	-

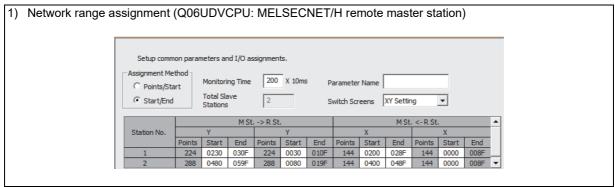
work ran	ge as	ssignn	nent (	20001	JVCP		LSEU			IOI SIE	uon)					
	at up car		station in	horopt par	amatara											
5	Set up common and station inherent parameters.															
Assic	Assignment Method 7															
0	Points/S	Start	Monit	oring Time	20	200 X 10ms Parameter Name										
	Start/Er		Total	Slave	_		13 1	arameteri								
	0.001.0721		Statio		3		5	Switch Scre	ens  LB	/LW Settin	g 💌					
		Send Ran	ge for eac	h Station	Send Ran	ge for ead	h Station	Send Ran	ge for eac	h Station	Send Ran	ge for ead	h Station		4	•
Statio	on No.		LB		LW			Low Sp		eed LB Low Speed LW		d LW	Pairing			
		Points	Start	End	Points	Start	End	Points	Start	End	Points	Start	End			
Maste	r1 1	256	0000	00FF	256	0000	00FF							Disable	-	
	2	128	0100	017F	128	0100	017F							Disable	- 1	
	3	128	0200	027F	144	0200	028F							Disable		•

#### 4) Refresh parameters (Q06UDVCPU: MELSECNET/H control station)

<ul> <li>Points/Start</li> <li>Start/End</li> </ul>					ransient Tra Ove		n Error Histor	y Status -			
			Link S	ide				PLC S	ide		
	Dev. N	lame	Points	Start	End		Dev. Name	Points	Start	End	1
Transfer SB	SB		512	0000	01FF	+	SB	512	0000	01FF	-
Transfer SW	SW		512	0000	01FF	+	SW	512	0000	01FF	
Random Cyclic	LB					+	-				
Random Cyclic	LW					+					
Transfer 1	LB	-	768	0000	02FF	+	B 💌	768	0000	02FF	
Transfer 2	LW	-	768	0000	02FF	+	W 🚽	768	000000	0002FF	
Transfer 3	LX	-	128	0600	067F	+	X 👻	128	0600	067F	
Transfer 4	LX	-	128	0700	077F	+	X 👻	128	0700	077F	
Transfer 5	LY	-	128	0680	06FF	+	Y 🗸	128	0680	06FF	
Transfer 6	LY	-	128	0700	077F	+	Y 👻	128	0700	077F 🔻	

#### (f) MELSECNET/H remote master station (network 2)

The following shows the network parameter settings for when a station is replaced with a MELSECNET/H remote master station (network 2).

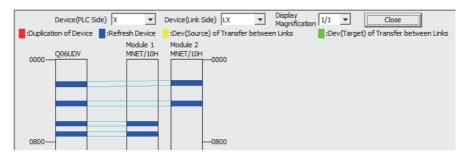


#### 2) Network range assignment (Q06UDVCPU: MELSECNET/H remote master station) Setup common parameters and I/O assignments. Assignment Method 200 X 10ms Monitoring Time Parameter Name C Points/Start Total Slave Stations Start/End 2 Switch Screens -M St. -> R St. M St. <- R St. M St. -> R St M St. <- R St . Station No. Start End Points Start End Points Start End Points Start End Points

Assignment Metho C Points/Start ⓒ Start/End	d			T	ransient Tra Over		n Error I C Ho		Status			
		_	Link Si	ide		_		_	PLC Si	de		1
	Dev. 1	Name	Points	Start	End		Dev. I	Name	Points	Start	End	1
Transfer SB	SB		512	0000	01FF	+	SB		512	0200	03FF -	-
Transfer SW	SW		512	0000	01FF	- <del>\.</del>	SW		512	0200	03FF	
Random Cyclic	LB					- <del>\.</del>		-				
Random Cyclic	LW					÷₩.		-				
Transfer 1	LX	-	144	0200	028F	÷₩.	Х	-	144	0220	02AF	
Transfer 2	LX	-	144	0400	048F	- <del>()</del> -	x	-	144	0400	048F	
Transfer 3	LY	-	224	0230	030F	- <del>()</del> -	Y	-	224	0230	030F	
Transfer 4	LY	-	288	0480	059F	- <del>()</del> -	Y	-	288	0480	059F	
Transfer 5		-				- <del>()</del> -		-				
Transfer 6		-				+		-				·

3

An overall picture of CPU-side device assignments on the Q06UDVCPU to which the PLC to PLC network (control station) and remote I/O network (remote master station) is mounted can be checked at [Assignment image diagram] in the GX Works2 or GX Developer network parameters. After setting the parameters, make sure that assignments are correctly set.



Device(PLC Side	) Y 🔻	Device(Link Side) LY  Display  Display  1/1  Close
Duplication of Device	:Refresh Device	:Dev(Source) of Transfer between Links :Dev(Target) of Transfer between Links
	Module 1 MNET/10H	Module 2 MINET/10H 0000
0800-		

#### (g) MELSECNET/H normal station (network 1)

3

The following shows the network parameter settings for when a station is replaced with a MELSECNET/H control station (network 1).

The same parameter settings are required on all normal stations.

	Module 1	Module 2	Module 3	Module 4
Network Type	MNET/H Mode(Normal Station)	▼ None	None 👻	None
Start I/O No.	00	000		
Network No.		1		
Total Stations				
Group No.		0		
Station No.				
Mode	Online	• ·	· · · · · · · · · · · · · · · · · · ·	
	Station Inherent Parameters			
	Refresh Parameters			
	Interrupt Settings			

Assignment Metho C Points/Start © Start/End				T	ransient Tra		n Error H		Status			
		Link Side					PLC Side			•		
	Dev. 1	Vame	Points	Start	End		Dev. N	Name	Points	Start	End	
Transfer SB	SB		512	0000	01FF	+	SB		512	0000	01FF -	_
Transfer SW	SW		512	0000	01FF	- <del>()</del> -	SW		512	0000	01FF	
Random Cyclic	LB					- <del>\.</del>		-				
Random Cyclic	LW					- <del>()</del> -		-				
Transfer 1	LB	-	768	0000	02FF	- <del>()</del> -	В	-	768	0000	02FF	
Transfer 2	LW	-	768	0000	02FF	- <del>()</del> -	W	-	768	000000	0002FF	
Transfer 3	LX	-	128	0200	027F	+	X	-	128	0200	027F	
Transfer 4	LY	-	128	0280	02FF	- <del>()</del> -	Y	-	128	0280	02FF	
Transfer 5		+				- <del>()</del> -		-				
Transfer 6		+				↔		-				<b>-</b>

### 3.6 Program Comparisons

3

#### 3.6.1 Comparison of special relays M (SB) and special registers D (SW)

#### (1) Master station special relays

Special relays enabled when host station is the master station

Spec	ial relay in the case master sta				ding MELSECNET/H	-	required, × : Incompatible lay
Number	Name	Description	Number	Name	Description	Compat- ibility	Precautions for replacement
M9200	LRDP instruction received	OFF : Not accepted ON : Accepted	None	-	-	Δ	Delete when used in a sequence program. (Refer to Section 2.6.2 Transient instructions.)
M9201	LRDP instruction complete	OFF : Not completed ON : Completed	None	-	-	Δ	Delete when used in a sequence program. (Refer to Section 2.6.2 Transient instructions.)
M9202	LWTP instruction received	OFF : Not accepted ON : Accepted	None	-	-	Δ	Delete when used in a sequence program. (Refer to Section 2.6.2 Transient instructions.)
M9203	LWTP instruction complete	OFF : Not completed ON : Completed	None	-	-	Δ	Delete when used in a sequence program. (Refer to Section 2.6.2 Transient instructions.)
M9206	Link parameter error in the host	OFF : Normal ON : Abnormal	SB0055	Receive parameter error	OFF: Parameter normal ON: Parameter abnormal	0	
M9207	Link parameter check results	OFF : Match ON : Mismatch	None	-	-	Δ	Delete when used in a sequence program as a 3-tier system cannot be configured.
M9208	Master station B,W transmission range setting (only master station of lower link)	OFF : Transmits to tier2 and tier3 ON : Transmits to tier2 only	None	-	-	Δ	Delete when used in a sequence program as a 3-tier system cannot be configured.
M9209	Check instructions of link parameters (only master station of lower link)	OFF : Executing the check function ON : Check non- execution	None	-	-	Δ	Delete when used in a sequence program as a 3-tier system cannot be configured.
M9210	Link card error (for master station)	OFF : Normal ON : Abnormal	SB0020	Module status	OFF : Normal ON : Abnormal	0	
M9224	Link status	OFF : Online ON : Offline, station- to-station test, or self-loopback test	SB0043	Online switch	OFF : Online ON : Other than online	0	
M9225	Forward loop error	OFF : Normal	SB0090	Host loop status	OFF : Normal ON : Abnormal	0	When ON, confirm the loop status by SW0090. The loop status can also be judged by the host station bits of SW0091 to SW0094.
110220		ON : Abnormal	SB0092 (when host station is remote master station)	Forward loop status of the remote master station	OFF : Normal ON : Abnormal	0	

 $\bigcirc$  : Compatible,  $\triangle$  : Partial change required, × : Incompatible

(to next page)

 $\bigcirc$  : Compatible,  $\bigtriangleup$  : Partial change required, × : Incompatible

Speci	ial relay in the case master sta	of MELSECNET (II) ation			nding MELSECNET/H	Ū	ay
Number		Description	Number	Name	Description	Compat- ibility	Precautions for replacement
M9226	Reverse loop error	OFF : Normal	SB0090	Host loop status	OFF : Normal ON : Abnormal	0	When ON, confirm the loop status by SW0090. The loop status can also be judged by the host station bits of SW0095 to SW0098.
M9220	Reverse loop enor	ON : Abnormal	SB0096 (when host station is remote master station)	Reverse loop status of the remote master station	OFF : Normal ON : Abnormal	0	
M9227	Loop test status	OFF : Not being executed ON : Forward loop test/reverse loop test execution underway	SB00AC	Offline test instruction status	OFF : Not instructed ON : Instructed	0	
M9232	Local station operation status	OFF : RUN or STEP RUN status ON : STOP or PAUSE status	SB0084	Each station CPU RUN status	OFF : All stations RUN or STEP RUN status ON : Stations in the STOP or PAUSE status exist	0	
M9233	Local station error detection status	OFF : No error ON : Error detection	None	-	-	Δ	Can be substituted by SB0074.
M9235	Local station, remote I/O station parameter error detection status	OFF : No error ON : Error detection	SB007C	Parameter status of each station	OFF : No station detected parameter errors ON : A station detected parameter errors	0	
M9236	Local station, remote I/O station initial communications status	OFF : No communication ON : Communication in progress	SB0078	Parameter status of each station	OFF : Parameter communication not in progress ON : Parameter communication in progress	0	
M9237	Local station, remote I/O station error	OFF : Normal ON : Abnormal	SB0074	Cyclic transmission status of each station	OFF : All stations normal ON : Station where cyclic transmission is not executing exist	0	
M9238	Local station, remote I/O station	OFF : Normal	SB0091	Forward loop status	OFF : All stations normal ON : Faulty station present	0	
M9200	forward/reverse loop error	ON : Abnormal	SB0095	Reverse loop status	OFF : All stations normal ON : Faulty station present	0	

3

### (2) Master station special register

3

Special register enabled when host station is the master station

Specia	I register in the cas master sta	e of MELSECNET (II) ation			SECNET/H special r	-	required, × : Incompatible
Number	Name	Description	Number	Name	Description	Compat- ibility	Precautions for replacement
D9200	LRDP processing results	<ol> <li>Normal completion</li> <li>LRDP instruction setting fault</li> <li>Error at relevant station</li> <li>Relevant station LRDP execution disabled</li> </ol>	None	-	-	Δ	Delete when used in a sequence program. (Refer to Section 2.6.2 Transient instructions.)
D9201	LWTP processing results	<ol> <li>Normal completion</li> <li>LWTP instruction setting fault</li> <li>Error at relevant station</li> <li>Relevant station LRDP execution disabled</li> </ol>	None	-	-	Δ	Delete when used in a sequence program. (Refer to Section 2.6.2 Transient instructions.)
D9202 D9203 D9241 D9242	Local station link type	Stores whether or not the slave station is a MELSECNET compatible station or a MELSECNET II compatible station.	None	-	-	Δ	Delete when used in a sequence program due to MELSECNET/H system.
D9204	Link status	<ol> <li>Forward loop, during data link</li> <li>Reverse loop, during data link</li> <li>Loopback</li> <li>implemented in forward/reverse directions</li> <li>Loopback</li> <li>implemented in only forward</li> <li>direction</li> <li>Loopback</li> <li>implemented only in reverse direction</li> <li>5: Data link disabled</li> </ol>	SW0049 (SW0090 to SW009A)	Cause of data link transmission stop	<ul> <li>0: Normal</li> <li>1: Stop instruction issued</li> <li>2: No common parameters</li> <li>3: Common parameter error</li> <li>4: Host station CPU error</li> <li>6: Communication canceled</li> </ul>	Δ	Check whether or not the data link is normally SW0049. (Loop status is judged comprehensively by SW0090 to SW009A.)
D9205	Station implementing loopback	Station that implemented forward loopback	SW0099	Loopback station (forward loop side)	Stores the number of stations executing the loopback on the forward loop side.	0	
D9206	Station implementing loopback	Station that implemented reverse loopback	SW009A	Loopback station (reverse loop side)	Stores the number of stations executing the loopback on the reverse loop side.	0	
D9207		Max. value	SW006B		Max. value	0	
D9208	Link scan time	Min. value	SW006C	Link scan time	Min. value	0	
D9209		Current value	SW006D		Current value	0	
D9210	Retry	Stored as cumulative	SW00C8	Number of retries on the forward loop side	Accumulates and stores the number of retries on the forward loop side.	Δ	The retries on the forward loop side are stored as a cumulative value.
		value	SW00C9	Number of retries on the reverse loop side	Accumulates and stores the number of retries on the reverse loop side.	Δ	The retries on the reverse loop side are stored as a cumulative value.

 $\bigcirc$  : Compatible,  $\bigtriangleup$  : Partial change required, × : Incompatible

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Specia	I register in the cas master sta	e of MELSECNET (II) ation		MEL	SECNET/H special r	egister																		
Number	Name	Description	Number	Name	Description	Compat- ibility	Precautions for replacement																	
D9211	Loop switching count	Stored as cumulative value	SW00CE	Loop switching count	Accumulates and stores the number of loop checks conducted.	0																		
D9212			SW0084																					
D9213	Local station	Stores local stations in a STOP or PAUSE	SW0085	Each station CPU	Stores the CPU RUN status of each																			
D9214	operation status	status.				SW0086	RUN status	station.	0															
D9215		Status.	SW0087		Station.																			
D9216		Stores whether each																						
D9217	Local station error	local station has	None	_	_		Can be substituted by																	
D9218	detection status	detected any error in	NULLE	-	-	Δ	SW0074 to SW0077.																	
D9219		other station.																						
D9220	Local station	Turns ON when a local	SW007C																					
D9221	parameter	station has detected an error on the link		SW007D	Parameter error	Stores the																		
D9222	mismatch		SW007E	status of each	parameter status of	0																		
D9223	Remote I/O station I/O assignment error		SW007F	station	each station.	Ŭ																		
D9224	Local station,	Stores stations that are - performing -	SW0078	Deremeter	Stores the																			
D9225	remote I/O station			performing	performing	performing	performing	performing	performing	performing	performing	performing	performing	performing	performing	performing	performing	performing	performing	SW0079	Parameter communication	communication		
D9226	initial																			0	0	1 0	0	SW007A
D9227	communication underway	parameters.	SW007B	station	station parameters.																			
D9228	Local station,		SW0074	Cyclic transmission	Stores the cyclic																			
D9229	remote I/O station	Stores data link error	SW0075	status of each	transmission status	0																		
D9230	error	stations.	SW0076	station	of each station.	0																		
D9231			SW0077																					
D9232			SW0091		Stores the forward		The error on the loop																	
D9233			SW0092	Forward loop status	loop status of each		line of the forward loop																	
D9234	Local station and	Stores the station that	SW0093	of each station	station.		is stored.																	
D9235	remote I/O station	detected the error on	SW0094																					
D9236	loop error	the forward loop line	SW0095	Reverse loop	Stores the reverse		The error on the loop																	
D9237		and reverse loop line.	SW0096	status of each	loop status of each		line of the reverse loop																	
D9238			SW0097	station	station.		is stored.																	
D9239			SW0098																					
D9240	Number of receive error detection times	Stores cumulative total of receive errors	SW00B8 to SW00C7	Various error counters	Various error counters	Δ	The error count for each error cause is stored.																	

## JKK)

### 3.6.2 Transient instructions

### (1) MELSECNET dedicated instruction

Dedicated instructions that were used on MELSECNET must be replaced with the following dedicated instructions on MELSECNET/H.

The following table shows a comparison between dedicated instructions on MELSECNET and dedicated instructions on MELSECNET/H. The table also shows reference items in the Q Corresponding MELSECNET/H Network System Reference Manual (Remote I/O Network). Check these reference items before changing the sequence program.

	MELSECNE	T (II)		NET/H		
Instruction name	Category	Description	Instruction name	Category	Description of change	Reference item in the manual
RFRP	Reading data from remote I/O station	The master station reads the data of special modules mounted on remote I/O stations.	REMFR	Reading data from buffer memory on remote I/O station intelligent function modules	Reads data from buffer memory on a target remote I/O station intelligent function module.	Section 7.1.1
RTOP	Writing data to remote I/O station	The master station writes data to special modules mounted on remote I/O stations.	REMTO	5	Writes data to buffer memory on a target remote I/O station intelligent function module.	Section 7.1.1

The following describes operation by the instructions.

○ : Can be used, × : Cannot be used

Instruction	Name	Execution station QCPU	Description	Targetstation Remote I/O module
REMFR	Reading from buffer memory on remote I/O station intelligent function module	0	Reads data from buffer memory on a target remote I/O station intelligent function module.	0
REMTO	Writing to buffer memory on remote I/O station intelligent function module	0	Writes data to buffer memory on a target remote I/O station intelligent function module.	0

### 3.7 Replacement Precautions

The following shows the replacement precautions when replacing MELSECNET (II) with MELSECNET/H.

#### (1) Cables

For details on precautions for optical cables and coaxial cables, refer to Section 2.2.2 Cable performance comparisons.

#### (2) System configuration

## (a) System configuration using local stations and remote I/O stations in MELSECNET mode and MELSECNET II mode

MELSECNET/H system, which is a composite system comprising local stations and remote stations, provides high-performance functions by making a separation between local stations and remote stations. It therefore cannot be configured by a mixture of local stations and remote stations. For this reason, in a MELSECNET (II) system, when replacing a system, which comprises a mixture of local stations and remote I/O stations connected to a single master station, with a MELSEC/H system, the following system configuration is necessary. Normal stations are connected to a single control station, and remote I/O stations are controlled by an additional remote master station (the control station in a remote I/O system is defined as the "remote master station"). The following shows a system configuration example.

MELSECNET (II) (optical)	MELSECNET/H (optical)	Remarks (proposed measure)
Optical loop M L1 R3 L2	Optical loop	<ul> <li>The control station of network No.1 configures a PLC to PLC network that controls normal station 1 and normal station 2.</li> <li>The other network module becomes the remote master station, and the remote I/O network system of No.2 is configured.</li> </ul>

System configuration using local and remote stations (optical)

#### (3) Sequence program

#### (a) Data separation prevention

When two words (32 bits) or more of cyclic data (e.g. current value of the positioning module) are handled, the old data sometimes is mixed with the new data. To read/write cyclic data of two words or more in a single operation, set data separation prevention by the per-station block guarantee function.

By enabling the per-station block guarantee function, handshaking is performed between CPU modules and network modules to refresh the network and to enable data separation to be prevented in station units. The per-station block guarantee function is enabled when "Secured data send" and "Secured data receive" in the following parameters are set. Enabling the per-station block guarantee function is recommended.

MNET/10(H) Common Parameters Supplemental
Constant Scan ms
Maximum No. of Returns to System Stations in 1 Scan 2 Station
With multiplex transmission
$\hfill \hfill $
✓ Block send data assurance per station
Block receive data assurance per station
END asynchronous setting
(Link scanning asynchronous from sequence scanning)
Transient Setting
Maximum No. of Transients in 1 Scan 2 Times
Maximum No. of Transients in One Station 2 Times
Link Start Instruction
$\square$ Links automatically when the power is turned ON.
$\hfill \hfill $
Links automatically when the parallel sub-master station's power is turned on,
End Cancel

#### (b) I/O assignments

The I/O assignment function is used to reserve and set module information to prevent I/O numbers from deviating even if a module is mounted later on in an empty slot, and to conserve the number of I/O points.

With MELSECNET/H, each of the I/O assignments are set on each remote I/O station. With MELSECNET (II), however, as the I/O assignments of all remote I/O stations were set on the master station CPU. Set the I/O assignments of each remote I/O station again at transition to MELSECNET/H.

Also, as the I/O assignment settings of PLC parameters are not cleared when the programmable controller type is changed (e.g. when A3ACPU is changed to Q06UDVCPU), manually clear the I/O assignment settings for the remote I/O stations.

#### (c) Processing time

The link scan time and link refresh time differ between the A/AnS/QnA/QnAS series and the Q series. For details on processing times, refer to the manual for the respective module.

## REPLACEMENT OF THE MELSECNET/10 (PLC TO PLC NETWORK)

The Q series network modules support the MELSECNET/10 mode (functional and performance compatibility mode) and MELSECNET/H extended mode (high functionality and high-speed mode). This chapter describes the replacement using MELSECNET/10 mode that has the compatibility to the existing network and is used the A, AnS, QnA, and QnAS series CPU modules in combination. For details on the MELSECNET/H mode and MELSECNET/H extended mode, refer to the Q Corresponding MELSECNET/H Network System Reference Manual (PLC to PLC network). the MELSECNET/H mode and MELSECNET/H extended mode can be used when all stations are replaced with the Q series modules.

### 4.1 List of MELSECNET/10 Alternative Models

#### (1) Replacement of the A/AnS series

Network type	A/AnS series	Q series
	AJ71LP21	QJ71LP21-25
Optical loop	A1SJ71LP21	QJ7 1LF2 1-25
	AJ71LP21G	QJ71LP21G
Capying loop	AJ71LR21	
Coaxial loop	A1SJ71LR21	QJ71BR11
Coaxial bus	AJ71BR11	Q37 IBR11
	A1SJ71BR11	

#### (2) Replacement of the QnA/QnAS series

Network type	QnA series	Q series
	AJ71QLP21	QJ71LP21-25
	A1SJ71QLP21	QJ7 1LF21-25
Optical loop	AJ71QLP21S	0 1711 0218 25
	A1SJ71QLP21S	QJ71LP21S-25
	AJ71QLP21G	QJ71LP21G
Cooviel leep	AJ71QLR21	
Coaxial loop	A1SJ71QLR21	QJ71BR11
Coaxial bus	AJ71QBR11	
	A1SJ71QBR11	

## 4.2 Specifications Comparisons

Δ

#### 4.2.1 Module specifications comparisons

## (1) Comparison of AJ71LP21/A1SJ71LP21/AJ71QLP21/A1SJ71QLP21 and QJ71LP21-25 (MELSECNET/10 mode)

 $\bigcirc$  : Compatible,  $\bigtriangleup$  : Partial change required, ×: Incompatible

			Specifications			
ltem		AJ71LP21 A1SJ71LP21	AJ71QLP21 A1SJ71QLP21	QJ71LP21-25 MELSECNET/10 mode)	Compatibility	Precautions for replacement
Maximum	LX/LY	8192 points		0		
number of link	LB	8192 points		0		
points per network	LW	8192 points			0	
Maximum numb points per station		{(LY + LB) ÷ 8 + (2 >	$(LW) \leq 2000 \text{ bytes}$		0	
Communication	speed	10Mbps			0	
Communication	method	Token ring method			0	
Synchronous typ	be	Frame synchronizat	ion method		0	
Encoding metho	d	NRZI coding (Non F	Return to Zero Inverte	ed)	0	
Transmission me	ethod	Duplex loop			0	
Transmission for	rmat	HDLC standards (fra	ame format)		0	
Maximum number of networks		255 (Total number of PLC to PLC networks and remote I/O networks)	239 (Total number of PLC to PLC networks and remote I/O networks)		Δ	Network No.240 to No.255 cannot be set. Alternate them with unused network No.
Maximum number of groups		9			0	
Number of static	ons					
connected in on	e network	64 stations (Control station: 1, normal station: 63)			0	
Applicable cable	•	SI optical cable, H-PCF optical cable, Broad-band H-PCF optical cable, and QSI optical cable			0	
Overall distance		30km			0	
Distance betwee stations	en		cable: 500m, H-PCF optical cable: 1km, Broad-band H- cal cable: 1km, and QSI optical cable: 1km			
Error control sys	tem	CRC(X <sup>16</sup> + X <sup>12</sup> + X <sup>5</sup>	<sup>5</sup> + 1) and retry by a t	ime over	0	
RAS function		<ul> <li>Diagnostic function</li> <li>Prevention of system</li> <li>Abnormal detection</li> <li>registers</li> </ul>	oop-back function due to error detection or broken cable Diagnostic function for checking local link lines Prevention of system down by switching the control station Abnormal detection using link special relays and link special egisters Network monitoring and various diagnostic functions		0	
Transient transmission		N:N communication     Dedicated link ins	on (e.g. monitor, prog truction	gram up/download)	For comparison of dedic △ link instruction, refer to Section 4.6.2.	
Number of occupoints	Number of occupied I/O points         32 points per slot (I/O assignment: special 32 points)         32 points per slot (I/O assignment: intelli. 32 points)				0	

# (2) Comparison of AJ71QLP21S/A1SJ71QLP21S and QJ71LP21S-25 (MELSECNET/10 mode)

			$\bigcirc$ : Compatible, $\triangle$ : Partial change required, ×: Incompatible				
Item		Specif	ications				
		AJ71LP21/A1SJ71LP21	QJ71LP21-25 (MELSECNET/10 mode)	Compatibility	Precautions for replacement		
Maximum number	X/Y	8192 points	(	0			
of link points per	В	8192 points		0			
network	W	8192 points		0			
Maximum number o	of link points	((V + D) + 0 + (2 + W)) < 2000	0 hutaa	0			
per station		$\{(Y + B) \div 8 + (2 \times W)\} \le 2000$	U bytes	0			
Communication spe	eed	10Mbps		0			
Communication me	thod	Token ring method		0			
Synchronous type		Frame synchronization metho	d	0			
Encoding method		NRZI coding (Non Return to Z	Zero Inverted)	0			
Transmission metho	bd	Duplex loop		0			
Transmission forma	ıt	HDLC standards (frame forma	at)	0			
Maximum number o	of networks	239 (Total number of PLC to F networks)	PLC networks and remote I/O	0			
Maximum number o	of groups	9		0			
Number of stations one network	connected in	64 stations (Control station: 1	, normal station: 63)	0			
Applicable cable		SI optical cable, H-PCF optical optical cable, and QSI optical		0			
Overall distance		30km	Cabic	0			
		SI optical cable: 500m, H-PCF	Fontical cable: 1km Broad-	0			
Distance between s	stations	· ·	m, and QSI optical cable: 1km	0			
Error control system	n	CRC(X <sup>16</sup> + X <sup>12</sup> + X <sup>5</sup> + 1) and		0			
			error detection or broken cable	•			
		Diagnostic function for check	cking local link lines				
PAS function		Prevention of system down	by switching the control station	0			
RAS function		Abnormal detection using lin	nk special relays and link	0			
		special registers					
		Network monitoring and var	-				
		N:N communication (e.g.	N:N communication (e.g.		For comparison of dedicated		
Transient transmiss	ion	monitor, program up/	monitor, program up/	Δ	link instruction, refer to		
		download)	download)		Section 4.6.2.		
	Voltage	Dedicated link instruction 20.4VDC to 31.2VDC	Dedicated link instruction	-			
			20.4VDC to 31.2VDC	0			
External power	Current	0.2A	0.20A	0	2		
supply	Applicable cable size	0.75 to 2mm <sup>2</sup>	0.3 to 1.25mm <sup>2</sup>	Δ	Cables of 1.25mm <sup>2</sup> or more should be replaced with cables of 0.3 to 1.25mm.		
Number of occupied I/O points		AJ71QLP21S: 32 points per slot (I/O assignment: special 32 points) A1SJ71QLP21S: 48 points 2 slots (I/O assignment: first half empty 16 points, second half special 32 points)	48 points 2 slots (I/O assignment: <u>first half</u> empty 16 points, <u>second half</u> intelli. 32 points)	Δ	When the AJ71QLP21S is replaced, set the [Empty 16 points] of first half to the [Empty 0 point] with I/O assignment.		

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## (3) Comparison of AJ71LP21G/AJ71QLP21G and QJ71LP21G (MELSECNET/10 mode)

4

			Specifications				
Item		AJ71LP21G AJ71QLP21G QJ71LP21G (MELSECNET/10 mode)			Compatibility	Precautions for replacement	
Maximum	LX/LY	8192 points			0		
number of link	ber of link LB 8192 points				0		
points per network	LW	8192 points			0		
Maximum numb		{(LY + LB) ÷ 8 + (2 ×	$(LW) \leq 2000 \text{ bytes}$		0		
Communication	speed	10Mbps			0		
Communication	method	Token ring method			0		
Synchronous typ	be	Frame synchronizat	ion method		0		
Encoding metho	d	NRZI coding (Non R	Return to Zero Inverte	ed)	0		
Transmission me	ethod	Duplex loop			0		
Transmission for	rmat	HDLC standards (fra	ame format)		0		
Maximum number of networks		255 (Total number of PLC to PLC networks and remote I/O networks)	239 (Total number of PLC to PLC networks and remote I/O networks)		Δ	Network No.240 to No.250 cannot be set. Alternate them with unused network No.	
Maximum number of groups		9	)				
Number of static connected in one		64 stations (Control station: 1, normal station: 63)			0		
Applicable cable	•	GI optical cable			0		
Overall distance		30km			0		
Distance betwee stations	en	GI optical cable: 2kr	n		0		
Error control sys	tem	CRC(X <sup>16</sup> + X <sup>12</sup> + X <sup>5</sup>	<sup>5</sup> + 1) and retry by a	time over	0		
RAS function		<ul> <li>Diagnostic functio</li> <li>Abnormal detectic registers</li> </ul>	n due to error detect n for checking local on using link special ng and various diagn	ink lines relays and link special	0		
Transient transmission		N:N communication     Dedicated link ins	on (e.g. monitor, proo truction			For comparison of dedicated link instruction, refer to Section 4.6.2.	
Number of occup points	pied I/O	32 points per slot (I/ special 32 points)	O assignment:	32 points per slot (I/O assignment: intelli. 32 points)	0		

 $\bigcirc$  : Compatible,  $\bigtriangleup$  : Partial change required, ×: Incompatible

## (4) Comparison of AJ71LR21/A1SJ71LR21/AJ71QLR21/A1SJ71QLR21 and QJ71BR11 (MELSECNET/10 mode)

				-	pauble, $\Delta$ . Pau	ial change required, ×: Incompatible
ltem		AJ71LR21 A1SJ71LR21	Specifications AJ71QLR21 A1SJ71QLR21	QJ71BR11 (MELSECNET/10 mode)	Compatibility	Precautions for replacement
Maximum LX/LY		8192 points			0	
number of link	LB	8192 points			0	
points per network	LW	8192 points			0	
Maximum numbe points per station		{(LY + LB) ÷ 8 + (2 >	< LW)} $\leq$ 2000 bytes		0	
Communication s	peed	10Mbps			0	
Communication n	nethod	Token ring method			Δ	Nothing to be noted though the communication method differs.
Synchronous type	e	Frame synchronizat	ion method	•	0	
Encoding method	1	Manchester code			0	
Transmission method		Duplex loop		Single bus	Δ	The loopback function and multiplex transmission function cannot be used on a coaxial bus system. To use the functions, using an optical loop system is recommended.
Transmission form	nat	HDLC standards (fra	ame format)	0		
Maximum number of networks		255 (Total number of PLC to PLC networks and remote I/O networks)	LC 239 (Total number of PLC to PLC networks		۵	Network No.240 to No.250 cannot be set. Alternate them with unused network No.
Maximum numbe groups	r of	9				
Number of stations connected in one network			ns (Control station: 1, normal 3) 31		۵	Normal stations up to 31 stations can be used on a coaxial bus system. To use 32 normal stations or more, using an optical loop system is recommended.
Applicable cable		3C-2V, 5C-2V, 5C-FB		-	0	
Overall distance		3C-2V: 19.2km 5C-2V, 5C-FB: 30kn	n	3C-2V: 300m 5C-2V, 5C-FB: 500m	Δ	Either use an A6BR10/ A6BR10-DC type repeater unit, or use an optical loop system.
Distance betweer stations	ı	3C-2V: 300m 5C-2V, 5C-FB: 500n	n		0	
Error control system $CRC(X^{16} + X^{12} + X^5 + 1)$ and retry by a time over			time over	0		

 $\bigcirc$  : Compatible,  $\bigtriangleup$  : Partial change required, ×: Incompatible

4

# REPLACEMENT OF THE MELSECNET/10 (PLC TO PLC NETWORK)

		Specifications				
ltem	AJ71LR21 AJ71QLR21 A1SJ71LR21 A1SJ71QLR21		QJ71BR11 (MELSECNET/10 mode)	Compatibility	Precautions for replacement	
RAS function	<ul> <li>Loop-back function due to error detection or broken cable</li> <li>Diagnostic function for checking local link lines</li> <li>Prevention of system down by switching the control station</li> <li>Abnormal detection using link special relays and link special registers</li> <li>Network monitoring and various diagnostic functions</li> </ul>		<ul> <li>Diagnostic function for checking local link lines</li> <li>Prevention of system down by switching the control station</li> <li>Abnormal detection using link special relays and link special registers</li> <li>Network monitoring and various diagnostic functions</li> </ul>	Δ	The loopback function cannot be used on a coaxial bus system. To use the loopback function, using an optical loop system is recommended.	
Transient transmission	<ul> <li>N:N communication (e.g. monitor, program up/download)</li> <li>Dedicated link instruction</li> </ul>			Δ	For comparison of dedicated link instruction, refer to Section 4.6.2.	
Number of occupied I/O points	32 points per slot (I/ special 32 points)	O assignment:	32 points per slot (I/O assignment: intelli. 32 points)	0		

**MELSEC** 

## (5) Comparison of AJ71BR11/A1SJ71BR11/ AJ71QBR11/A1SJ71QBR11 and QJ71BR11 (MELSECNET/10 mode)

		1				tial change required, ×: Incompatibl
ltem		AJ71BR11 A1SJ71BR11	Specifications AJ71QBR11 A1SJ71QBR11	QJ72LP21G (MELSECNET/10 mode)	Compatibility	Precautions for replacement
Maximum	LX/LY	8192 points			0	
number of link	LB	8192 points			0	
points per network	LW	8192 points			0	
Maximum numb points per statio		{(LY + LB) ÷ 8 + (2 >	< LW)} $\leq$ 2000 bytes	3	0	
Communication	speed	10Mbps			0	
Communication	method	Token bus method			0	
Synchronous typ	be	Frame synchronizat	ion method		0	
Encoding metho	d	Manchester code			0	
Transmission me		Single bus			Δ	
Transmission for	rmat	HDLC standards (fra	ame format)		0	
Maximum number of networks		255 (Total number of PLC to PLC networks and remote I/O networks)	239 (Total number of PLC to PLC networks and remote I/O networks)		Δ	Network No.240 to No.250 cannot be set. Alternate them with unused network No.
Maximum number of groups		9			0	
Number of static			tation: 31)	0		
Applicable cable	•	3C-2V, 5C-2V, 5C-FB			0	
Overall distance		3C-2V: 300m 5C-2V, 5C-FB: 500m			0	
Distance betwee stations	en	3C-2V: 300m 5C-2V, 5C-FB: 500r	n		0	
Error control sys	tem	CRC(X <sup>16</sup> + X <sup>12</sup> + X <sup>5</sup>	<sup>5</sup> + 1) and retry by a	time over	0	
RAS function       • Diagnostic function for checking local link lines         • Prevention of system down by switching the control station         • Abnormal detection using link special relays and link special registers         • Network monitoring and various diagnostic functions			link lines ing the control station relays and link special	0		
Transient transmission			<ul> <li>N:N communication (e.g. monitor, program up/download)</li> <li>Dedicated link instruction</li> </ul>			For comparison of dedicated link instruction, refer to Section 4.6.2.
Number of occupied I/O 132 points per slot (I/O assignment:				32 points per slot (I/O assignment: intelli. 32 points)	0	

 $\bigcirc$ : Compatible,  $\triangle$ : Partial change required, ×: Incompatible

# 4.2.2 Cable performance comparisons

# (1) Optical fiber cable

Overall distance and distance between stations do not differ depending on the optical fiber cable. For overall distance and distance between stations, refer to Section 4.2.1.

# (2) Coaxial cable

# (a) Overall distance

 $\bigcirc$  : Compatible,  $\triangle$  : Partial change required, ×: Incompatible Specifications A/AnS/QnA/QnAS series Q series Compat-**Precautions for** Туре **MELSECNET/10** module **MELSECNET/H module** ibility replacement Coaxial bus Coaxial loop (Coaxial bus) 3C-2V 300m 300m 19.2km Δ Refer to<sup>\*1</sup> below 5C-2V 500m 500m 30km Refer to<sup>\*1</sup> below Δ

\*1 When the overall distance does not satisfy the MELSECNET/H specifications, either use an A6BR10/A6BR10-DC type repeater unit in the network, or configure a separate network.

### (b) Distance between stations

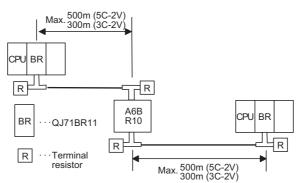
 $\bigcirc$  : Compatible,  $\bigtriangleup$  : Partial change required, ×: Incompatible

		Specific			
Tuno	A/AnS/QnA/QnAS series		Q series	Compat-	Precautions for
Туре	MELSECNET/10 module		MELSECNET/H module	ibility	replacement
	Coaxial bus	Coaxial loop	(Coaxial bus)		
3C-2V	300m	300m	300m	0	
5C-2V	500m	500m	500m	0	

The following shows the extension method when a repeater unit for the A6BR10/A6BR10-DC type MELSECNET/10 coaxial bus system is used.

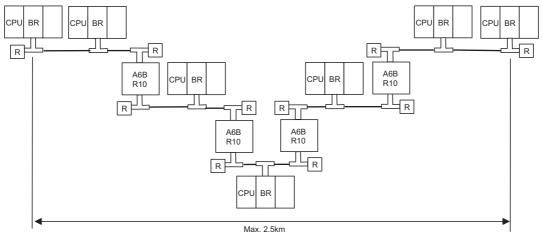
For details, refer to the Repeater Unit for the MELSECNET/10 Coaxial Bus System type A6BR10/ A6BR10-DC User's Manual (IB-66499).

(1) The distance between stations of 500m (5C-2V) and 300m (3C-2V) can be extended.



(2) Up to four repeater units can be used in a single network.<sup>\*2</sup>

The overall distance can be extended to a maximum distance of 2.5 km.



\*2 It is necessary to add terminal resistor A6RCON-R75 (sold separately).

# 4.3 Functional Comparisons

## (1) A/AnS series

		Descr		oatible, ∆∶l		
	Item	A/AnS series	Q series	Compat- ibility	Precautions for replacement	
		MELSECNET/10 module <sup>*1</sup>	MELSECNET/H module <sup>*2</sup>	ionity		
	Communication using B/W (1:N communication)	Performs communications wi relay and link register. (Comr	-	0		
Cyclic transfer function	Communication using X/Y (1:1 communication)	Performs communications be and the other station in pairs.		0		
clic tran	Constant link scan function	Keeps link scan time constar	nt.	0		
Cyc	Data link stop/ restart function	Stops cyclic transmission ten GX Developer.	nporarily with GX Works2 or	0		
	Inter-link data transfer function	Transfers link data to multiple all at once, when multiple net programmable controller.		0		
Transient transmission function	Transient transmission function	Communicates only when communication requests are ssued between each stations. (Communication using ledicated link instruction and GX Works2/GX Developer.)		Δ	<ul> <li>LRDP instruction and LWTP instruction cannot be used. Change them to ZNRD instruction, ZNWR instruction, READ instruction and WRITE instruction.</li> <li>For comparison of dedicated link instruction, refer to Section 4.6.2.</li> </ul>	
Transie	Routing function	Performs transient transmiss network No. are different.		0		
	Group function	Performs transient transmiss group with an instruction.		0		
Con func	trol station shift tion	Enables to continue data link to sub-control station, even it		0		
Mul <sup>a</sup> func	tiplex transmission tion	Performs high-speed commutation transmission channel (forwar		0		
	Automatic return function	Returns the station disconne system when it goes to norm link.		0		
E	Loopback function	Keeps normal operation betw disconnecting faulty area at e cable break.		0		
unctio	Station detach function	Keeps normal operation betv except faulty stations and sta	•	0		
RAS function	Diagnostic function	Checks line conditions of the conditions of the		Δ	Set diagnostic items for station- to-station test and forward loop/ reverse loop test in GX Works2 or GX Developer network parameters.	
	Data link status detect function	Detects faulty area with data special register.	of link special relay and link	0		

	Descr		O a man a t	
Item	A/AnS series	Q series	Compat- ibility	Precautions for replacement
	MELSECNET/10 module <sup>*1</sup>	MELSECNET/H module <sup>*2</sup>	ionity	
	Treats the stations, which are	e to be connected in the		
Reserved station	future, as reserved stations.		0	
function	By specifying the stations, wl	nich are not connected, as	0	
	reserved stations, communic			

\*1 Use GX Developer.

\*2 Use GX Works2 or GX Developer.

# (2) QnA/QnAS series

4

		Descr	iption		
	Item	QnA/QnAS series	Q series	Compat-	Precautions for replacement
		MELSECNET/10 module <sup>*1</sup>	MELSECNET/H module <sup>*2</sup>	ibility	
	Communication	Performs communications with all stations using link			
	using B/W	relay and link register. (Comr	nunication using B/W)	0	
	Communication	Performs communications be	etween I/O master station	-	
	using X/Y	and the other station in pairs.	(Communication using X/Y)	0	
	Cyclic transmission	Stops cyclic transmission ten	nporarily with GX Works2 or	0	
c	stop/restart	GX Developer.		0	
ctio	Inter-link data	Transfers link data to multiple			
fun	transfer function	all at once, when multiple net	works are connected to one	0	
sfer		programmable controller.			
rans	Direct access to the	Reads/writes directly from/to		0	
lic t	link devices	module on the sequence pro	gram.	0	
Cyclic transfer function	Increase of sending	Allows multiple modules, of v	which the network No. are		
-	points by mounting	the same, to be mounted to o		_	
	multiple modules of	and increases sending points		0	
	the same network	bytes.			
	No.		. 4		
	Default of network	Eliminates the refresh param		0	
	refresh parameter	esh parameter         default values of refresh parameters.           Communicates only when communication requests are			
	Transient	issued between each station			
	transmission function	dedicated link instruction and	, o	0	
_		Developer.)			
stior		Performs transient transmiss	ion to other stations of which		
Transient transmission function	Routing function	network No. are different.		0	
ion		Performs transient transmiss	ion to all stations in the		
liss	Group function	group with an instruction.		0	
nsn	Dedicated link	Performs communications wi	th other station at desired	0	
t tra	instruction	timing using dedicated link in	struction.	0	
ien	Specification of	Processes the requests that	cannot specify network No.	0	
ans	default network	of access path.		0	
Ē	Clock setup for				
	stations on network	Performs clock setup to CPU		0	
	with peripheral	network with GX Works2 or 0	GX Developer.	0	
	device				
	trol station shift	Enables to continue data link		0	
func		to sub-control station, even if		-	
	tiplex transmission	Performs high-speed commu		0	
tunc	tion	transmission channel (forwar	,		
		Treats the stations, which are	e to be connected in the		
Res	erved station function	future, as reserved stations.	high are not connected as	0	
		By specifying the stations, where the stations is a second stations communic			
		reserved stations, communication error does not occur.			

 $\bigcirc$  : Compatible,  $\ {\bigtriangleup}$  : Partial change required, ×: Incompatible

(To next page)

	Item	Description QnA/QnAS series QnA/QnAS module <sup>*1</sup> MELSECNET/10 module <sup>*2</sup>	Compat- ibility	Precautions for replacement			
	ple dual-structured vork	Switches link data refresh target to the standby network to continue data link when break causes error in regular network.	×	For Universal model QCPU, the simple dual-structured system cannot be configured. Configure a single network system.			
Usir	ng SB/SW as user flag	Sends desired control data to all stations using user-flag status (SW01F0 to SW01F3) without using link device.		Change UFSET, UFRST and UFOUT instructions to a sequence program that uses the link relay and link register.			
	Automatic return function	Returns the station disconnected from data link to the system when it goes to normal status and restarts data link.	0				
	Loopback function	Keeps normal operation between operable stations by disconnecting faulty area at error occurrence such as cable break.	0				
	Prevention of station failure by using external power supply	Prevents loopback due to shutdown of programmable controller.	0				
	Station detach function	Keeps normal operation between operable stations except faulty stations and stations switched off.	0				
RAS function	Transient transmission available even if programmable controller CPU is in error	Checks the errors for CPU modules of which a stop error occurs, via network from GX Works2 or GX Developer.	0				
	Checking the transient transmission abnormal detection time	Checks error completion time, abnormal detection network number and abnormal detection station number of transient transmission.	0				
	Diagnostic function	Checks line conditions of the network and setting conditions of the module.	Δ	Set diagnostic items for station- to-station test and forward loop/ reverse loop test in GX Works2 or GX Developer network parameters.			

 $\bigcirc$  : Compatible,  $\ {\bigtriangleup}$  : Partial change required, ×: Incompatible

\*1 Use GX Developer.

\*2 Use GX Works2 or GX Developer.

# 4.4 Switch Settings Comparisons

	Description				
Switch name	A/AnS/QnA/QnAS series MELSECNET/10 module	Q series MELSECNET/H module (MELSECNET/10 mode)	Compat- ibility	Precautions for replacement	
Network No. setting switch	Sets the network No.	-	Δ	<ul> <li>Set in GX Works2 or GX Developer network parameters.</li> <li>Network No.240 to No.255 cannot be set.</li> <li>Alternate them with unused network Nos.</li> </ul>	
Group No. setting switch	Sets the group No.	-	Δ	Set in GX Works2 or GX Developer network parameters.	
Mode setting switch	Sets the mode. <setting range=""> 0: Online 2: Offline 3: Loop test (forward loop)<sup>*1</sup> 4: Loop test (reverse loop)<sup>*1</sup> 5: Station-to-station test (master station) 6: Station-to-station test (slave station) 7: Self-loopback test 8: Internal self-loopback test 9: H/W test D: Network No. check E: Group No. check F: Station No. check</setting>	Sets the mode. <setting range=""> 0: Online 1: Self-loopback test 2: Internal self-loopback test 3: hardware test</setting>	Δ	<ul> <li>Set offline, loop test and station-to-station test in GX Works2 or GX Developer network parameters.</li> <li>Check network No., group No. and station No. in GX Works2 or GX Developer network diagnostics (host information).</li> </ul>	
Condition setting switch	Sets the operation conditions.	-	Δ	This switch cannot make parameter setting. Set in GX Works2 or GX Developer network parameters.	

 $\bigcirc$  : Compatible,  $\ {\bigtriangleup}$  : Partial change required, ×: Incompatible

\*1 The QnA/QnAS series support the loop test.

 $\bigcirc$  : Compatible,  $\ {\bigtriangleup}$  : Partial change required, ×: Incompatible

# 4.5 Parameter Comparisons

4

### (1) Parameter of control station

		Desci	ription			
Parameter name	A/AnS/QnA/QnAS series MELSECNET/10 module		MELSECNE	Q series MELSECNET/H module (MELSECNET/10 mode)		Precautions for replacement
	Network type		Network type		0	
	Starting I/O No	-	Starting I/O No	-	0	
	Network No.	Network No.		Network No.		Network No.240 to No.255 cannot be set. Alternate them with unused network Nos.
	Total number or stations	f (slave)	Total number o stations	f (slave)	0	
		-		Group No.		Set the group No. in GX Works2 or GX Developer network parameters.
	-		Mode		Δ	Set the mode in GX Works2 or GX Developer network parameters.
		Monitoring time		Monitoring time	0	
Network		LB/LW setting		LB/LW setting	0	
parameter		LX/LY setting		LX/LY setting	0	
	Network range assignment (common	I/O master station specification	Network range assignment (common	I/O master station specification	0	
	parameter)	Reserved station designation	parameter)	Reserved station designation	0	
		Supplemental settings		Supplemental settings	0	
	Station inheren	t parameter	Station inheren	t parameter	0	
	Refresh param	eters	Refresh param	eters	0	
	Inter-link data t	ransfer	Inter-link data t	ransfer	0	
	Routing parame	eters	Routing param	eters	0	
	Valid module de station access	uring other	Valid module de station access	uring other	0	

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# (2) Parameter of normal station

	Desc	cription			
Parameter name	A/AnS/QnA/QnAS series MELSECNET/10 module	Q series MELSECNET/H module (MELSECNET/10 mode)	Compat- ibility	Precautions for replacement	
	Network type	Network type	0		
	Starting I/O No.	Starting I/O No.	0		
	Network No.	Network No.	Δ	Network No.240 to No.255 cannot be set. Alternate them with unused network Nos.	
Network	-	Group No.	Δ	Set the group No. in GX Works2 or GX Developer network parameters.	
parameter	-	Mode	Δ	Set the mode in GX Works2 or GX Developer network parameters.	
	Station inherent parameter	Station inherent parameter	0		
	Refresh parameters	Refresh parameters	0		
	Inter-link data transfer	Inter-link data transfer	0		
	Routing parameters	Routing parameters	0		
	Valid module during other station access	Valid module during other station access	0		

# (3) Parameter of standby station<sup>\*1</sup>

Δ

		0:	Compatible,	$\Delta$ : Partial change required, ×: Incompatible	
	Desc	ription			
Parameter name	QnA/QnAS series MELSECNET/10 module	Q series MELSECNET/H module (MELSECNET/10 mode)	Compat- ibility	Precautions for replacement	
	Network type	Network type	0		
	Starting I/O No.	Starting I/O No.	0		
	Network No. Network No.		0		
	-	Group No.	Δ	Set the group No. in GX Works2 or GX Developer network parameters.	
Network parameter	-	Mode	Δ	Set the mode in GX Works2 or GX Developer network parameters.	
	Standby station compatible module	Standby station compatible module	0		
	Routing parameters	Routing parameters	0		
	Valid module during other station access	Valid module during other station access	0		

\*1 Standby station is a station type of simple dual-structured system.

Only the following CPU modules support the simple dual-structured system.

Process CPU

 $\bigcirc$  : Compatible,  $\triangle$  : Partial change required, ×: Incompatible

# 4.6 Program Comparisons

# 4.6.1 Comparison of link special relay (SB)/link special register (SW)

The table below shows only link special relay (SB) and link special register (SW) to be used in interlock program.

Device name and device No. of MELSECNET/H module are described in link device of internal MELSECNET/H module.

Changing sequence program should be performed after checking the refreshed device of link device in refresh parameters.

# (1) AnN/AnA/AnSCPU (excluding AnUS(H)CPU)

When MELSECNET/10 module is mounted to the CPU module of the AnN/AnA/AnSCPU (excluding AnUS(H)CPU), link special relay (SB) and link special register (SW) are assigned to special relay and special register of CPU module.

For replacing with a MELSECNET/H module, change sequence program in reference to the following.

## (a) Link special relay (SB)

	AnN/AnA/A MELSECNET/			QCPI MELSECNET/		Compat-	Precautions for replacement
Number	Name	Description	Number	Name	Description	ibility	·
M9204	LRDP instruction complete	OFF : Not completed ON : Completed	-	-	-	Δ	LRDP instruction cannot be used. When using it in sequence program, delete corresponding part.
M9205	LWTP instruction complete	OFF : Not completed ON : Completed	-	-	-	Δ	LWTP instruction cannot be used. When using it in sequence program, delete corresponding part.
M9211	Module status	OFF : Normal ON : Abnormal	SB0020	Module status	OFF : Normal ON : Abnormal	0	
M9240	Online host status	OFF : Online ON : Offline, self- loopback test, station-to- station test	SB0043	Online switch (host station)	OFF : Online ON : Other than online	0	
M9241	Forward loop status	OFF : Normal ON : Abnormal	SB0090	Host loop status	OFF : Normal ON : Abnormal	Δ	When SB0090 turns on, check the loop condition with SW0090, or check by host bit of SW0091 to SW0094.
M9242	Reverse loop status	OFF : Normal ON : Abnormal	SB0090	Host loop status	OFF : Normal ON : Abnormal	Δ	When SB0090 turns on, check the loop condition with SW0090, or check by host bit of SW0095 to SW0098.
M9243	Loopback status	OFF : Loopback inexecution ON : Loopback execution	SB0090	Host loop status	OFF : Normal ON : Abnormal	Δ	When SB0090 turns on, check the loop condition with SW0090, or check by SW0099 or SW009A.
M9246	Data not received (Control station)	OFF : Received ON : Not received	-	-	-	Δ	When using it in sequence program, delete corresponding part.
M9250	Parameter unreceived	OFF : Received ON : Not received	SB0054	Parameter receive status	OFF : Receive completed ON : Unreceived	0	
M9251	Communication status	OFF : Normal ON : Abnormal	SB0049	Host data link status	OFF : Normal ON : Abnormal	0	

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	A NI / A	-00011		0.00	- · ·		r change required, ×. incompatible
	AnN/AnA/A MELSECNET/			QCPU MELSECNET/H module			Precautions for replacement
Number	Name	Description	Number	Name	Description	ibility	Precautions for replacement
M9252	Loop test status	OFF : Not being executed ON : Forward loop test/reverse loop test execution underway	SB00AE	Offline testing response designation	OFF : No response ON : Response	0	
M9253	Control station operation status	OFF : RUN or STEP RUN ON : STOP or PAUSE	SW0084 to SW0087	Each station CPU RUN status	Stores the CPU RUN status of each station. (Including the host)	0	
M9254	Other station operation status	OFF : All stations are in the RUN or STEP RUN status ON : Any station in the STOP or PAUSE status exist	SB0084	Each station CPU RUN status	OFF : All stations are in the RUN or STEP RUN status ON : Station in the STOP or PAUSE status exist (including the host)	0	
M9255	Other station communication status	OFF : All stations normal ON : Any error station identified	SB0074	Cyclic transmission status of each station	OFF : All stations are executing data linking ON : Stations that are not executing data linking exist	0	

 $\bigcirc$  : Compatible,  $\bigtriangleup$  : Partial change required, ×: Incompatible

# (b) Link special register (SW)

O : Compatible,  $\ {\bigtriangleup}$  : Partial change required, ×: Incompatible

	AnN/AnA/AnSCPU MELSECNET/10 module			QCPU MELSECNET/H module			Precautions for replacement
Number	Name	Description	Number	Name	Description	ibility	
D9243	Host station number	Stores the station number of the host.	SW0042	Station No.	Stores the station number of the host.	0	
D9244	Maximum station No.	Stores the maximum station No. set in network parameters.	SW0059	Total number of link stations	Stores the total number of link stations set in network parameters.	0	
D9245	Communication error count	Accumulates and stores the communication error times.	SW00B8 to SW00C7	Error counters	Accumulates and stores the various error time.	Δ	The error count for each error cause is stored.
D9248 to D9251	Other station CPU RUN status	Stores the CPU RUN status of other station.	SW0084 to SW0087	Each station CPU RUN status	Stores the RUN status of each station. (Including the host)	0	
D9252 to D9255	Data link status of other station	Stores the data link status of other station.	SW0074 to SW0077	Cyclic transmission status of each station	Stores the cyclic transmission status of each station.	0	

## (2) AnU/AnUS(H)/QnA/QnASCPU

The following device name and device No. are described in link device of internal MELSECNET/10 or MELSECNET/H module.

Changing sequence program should be performed after checking the refreshed device of link device in refresh parameters.

### (a) Link special relay (SB)

		O : Compatible,	$\Delta$ : Partial ch	ange required, ×: Incompatible
	Nun	nber		
Item	AnU/AnUS(H)/QnA/ QnASCPU MELSECNET/10 module	QCPU MELSECNET/H module	Compat- ibility	Precautions for replacement
Module status	SB0020	SB0020	0	
Baton pass status (host)	SB0047	SB0047	0	
Data link status of each station	SB0049	SB0049	0	
Baton pass status of each station	SB0070	SB0070	0	
Cyclic transmission status of each station	SB0074	SB0074	0	

### (b) Link special register (SW)

 $\bigcirc$  : Compatible,  $\bigtriangleup$  : Partial change required, ×: Incompatible

	Nun				
Item	AnU/AnUS(H)/QnA/ QnASCPU MELSECNET/10 module	QCPU MELSECNET/H module	Compat- ibility	Precautions for replacement	
Baton pass status of each station	SW0070 to SW0073	SW0070 to SW0073	0		
Cyclic transmission status of each station	SW0074 to SW0077	SW0074 to SW0077	0		

Remarks

For link special relay (SB) and link special register (SW) that are not described in this section, refer to each manual.

# 4.6.2 Comparison of dedicated instructions

# (1) A/AnSCPU

Δ

	$\bigcirc$ : Compatible, $\triangle$ : Partial change required, ×: Incompatible						
	Descr	Description					
Instruction name	A/AnSCPU MELSECNET/10 module	QCPU MELSECNET/H module (MELSECNET/10 mode)	Compat- ibility	Precautions for replacement			
ZNRD instruction	Reads the device data of othe	er station.		Instruction format differs. Change the sequence program.			
ZNWR instruction	Writes data to the device of ot	Δ	Instruction format differs. Change the sequence program.				
LRDP instruction	Reads the device data of other station only by station - number designation.		Δ	LRDP instruction cannot be used. Change them to ZNRD or READ instruction.			
LWTP instruction	Writes data to the device of other station only by station number designation.	-	Δ	LWTP instruction cannot be used. Change them to ZNWR or WRITE instruction.			

# (2) QnA/QnASCPU

$\bigcirc$ : Compatible, $\triangle$ : Partial change required, ×: Incompatible						
	Descr	iption				
Instruction name	QnA/QnASCPU MELSECNET/10 module	QCPU MELSECNET/H module (MELSECNET/10 mode)	Compat- ibility	Precautions for replacement		
SEND instruction	Sends data to target station.		0			
RECV instruction	Reads data sent by SEND ins module.	truction to device of CPU	0			
READ instruction, SREAD instruction	Reads the device data of othe	r station.	0			
WRITE instruction, SWRITE instruction	Writes data to the device of ot	0				
REQ instruction	Issues "remote RUN" and "clo to other stations.	0				
ZNRD instruction	Reads the device data of othe	r station.	0			
ZNWR instruction	Writes data to the device of ot	her station.	0			
UFSET instruction	Turns user-flag which is corresponding to the host on.	-		Change to a sequence program that uses the link relay and link register.		
UFRST instruction	Turns user-flag which is corresponding to the host off.	-		Change to a sequence program that uses the link relay and link register.		
UFOUT instruction	Turns user-flag which is corresponding to the host on/ off.		Change to a sequence program that uses the link relay and link register.			

# (3) Q series dedicated link instruction list

Δ

The table below shows the dedicated link instructions usable in Q series.

For instruction format of dedicated link instruction and precautions, refer to the following manual.

Q corresponding MELSECNET/H Network System Reference Manual (PLC to PLC network)

		Execution station		Target station		
Instruction	truction Name Description QCPU		QCPU	QnA/ QnAS CPU	AnU/ AnUS(H) CPU	
SEND	Data sending	0	SEND:Writes data to the target station (network module) having the target network number. RECV:Reads data sent with SEND to the CPU device.	0	0	×
RECV	Data receiving	0	Channel 2       Logical channel 2 (channel 2)         Logical channel 3 (channel 3)       Logical channel 3 (channel 3)         Channel 4       Logical channel 4 (channel 4)         Channel 5       Logical channel 5 (channel 5)         Channel 6       Channel 7         Channel 8       Logical channel 6 (channel 6)	0	0	×
READ SREAD	Other station word device read	0	Reads the CPU device data (in 16-bit units) from the target station having the target network number.	0	0	x
WRITE SWRITE	Other station word device write	0	Writes data (in 16-bit units) to the CPU device of the target station having the target network number. (SWRITE can turn on the device of the target station.)	0	0	×
REQ	Requesting transient transmission to other stations	0	Issues "remote RUN" and "clock data read/write" requests to other stations.	0	0	×

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		Execution station		Target station		
Instruction	Name	QCPU	Description		QnA/ QnAS CPU	AnU/ AnUS(H) CPU
RECVS	Receive message (completed in 1 scan)	0	Receives the channel data sent with SEND by the interrupt program and immediately reads it to the CPU device. The processing is completed when the instruction is executed.	0	0	×
ZNRD	Other station word device read	0	[A-compatible instruction] Reads the CPU device data from the target station having the target network number.	0	0	O <sup>*1</sup> AnACPU AnNCPU
ZNWR	Other station word device write	0	[A-compatible instruction] Writes data to the CPU device of the target station having the target network number.	0	0	O <sup>*1</sup> AnACPU AnNCPU
RRUN	Remote RUN	0	"Remote RUN" performed for other stations' CPU modules  CPU Network module Channel 1 Channel 2 Channel 3 Channel 4 Channel 5 Channel 6 Channel 7 Channel 8	0	×	×

O : Can be used by both the control and normal stations, × : Cannot be used

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\*1 CPU modules of the following version or later when the target station is the A2UCPU(S1), A3UCPU, A4UCPU, or A2USCPU(S1)

• A2UCPU(S1), A3UCPU, A4UCPU: Version AY (manufactured in July 1995) or later

A2USCPU(S1): Version CP (manufactured in July 1995) or later

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		Execution station		Target station		
Instruction	Name	QCPU	Description		QnA/ QnAS CPU	AnU/ AnUS(H) CPU
RSTOP	Remote STOP	0	"Remote STOP" performed for other stations' CPU modules  CPU Network module Network module CPU Channel 1 Channel 2 Channel 3 Channel 5 Channel 5 Channel 6 Channel 7 Channel 8	0	×	×
RTMRD	Other station clock data read	0	"Read Clock Data" performed for other stations' CPU modules CPU Network module Network module CPU Channel 1 Channel 2 Channel 4 Channel 5 Clock data Channel 8 Clock data	0	×	×
RTMWR	Other station clock data written	0	"Write Clock Data" performed for other stations' CPU modules CPU Network module Network module CPU Channel 1 Channel 3 Channel 4 Channel 5 Channel 8 Channel 8	0	×	×

 $\ensuremath{{\ensuremath{\mathsf{O}}}}$  : Can be used by both the control and normal stations,  $\ensuremath{{\ensuremath{\mathsf{x}}}}$  : Cannot be used

# 4.7 Other Precautions

Δ

# (1) Processing time

The link scan time and link refresh time differ between the A/AnS/QnA/QnAS series and the Q series. For details on processing times, refer to the manual for the respective module.

### (2) A/AnS series replacement precautions

Normal station of MELSECNET/H module requires network parameter setting. For replacement with the QCPU and the MELSECNET/H module, newly set network parameters.

# 5 REPLACEMENT OF THE MELSECNET/10 (REMOTE I/O NETWORK)

# 5.1 Replacing MELSECNET/10 with MELSECNET/H

All stations of the existing A series are replaced with those of the Q series by changing MELSECNET/10 into MELSECNET/H.

# 5.1.1 List of MELSECNET/10 alternative models

### (1) Replacement of the A/AnS series

Network type	Station type	A/AnS series	Q series
		AJ71LP21	QJ71LP21-25
	Remote master station	A1SJ71LP21	QJ7 1LF21-25
		AJ71LP21G	QJ71LP21G
Optical loop		AJ72LP25	
	Remote I/O station	AJ72QLP25	QJ72LP25-25
		A1SJ72QLP25	
		AJ72LP25G	QJ72LP25G
	Remote master station	AJ71LR21	QJ71BR11
	Remote master station	A1SJ71LR21	Q07 IBRT
Coaxial loop		AJ72LR25	
	Remote I/O station	AJ72QLR25	QJ72BR15
		A1SJ72QLR25	
	Remote master station	AJ71BR11	QJ71BR11
Coaxial bus	Remote master station	A1SJ71BR11	Q37 IBRT
		AJ72BR15	
	Remote I/O station	AJ72QBR15	QJ72BR15
		A1SJ72QBR15	

Network type	Station type	QnA/QnAS series	Q series
		AJ71QLP21	QJ71LP21-25
		A1SJ71QLP21	QJ7 1LF21-25
	Remote master station	AJ71QLP21S	QJ71LP21S-25
Ontion loop		A1SJ71QLP21S	QJ71LF213-25
Optical loop		AJ71QLP21G	QJ71LP21G
		AJ72QLP25	QJ72LP25-25
	Remote I/O station	A1SJ72QLP25	QJ72LF25-25
		AJ72QLP25G	QJ72LP25G
	Remote master station	AJ71QLR21	QJ71BR11
Coaxial loop		A1SJ71QLR21	
	Remote I/O station	AJ72QLR25	QJ72BR15
Coaxial bus	Remote master station	AJ71QBR11	QJ71BR11
		A1SJ71QBR11	
	Remote I/O station	AJ72QBR15	QJ72BR15
	Remote I/O Station	A1SJ72QBR15	

Remarks •

System configuration in MELSECNET/10 and MELSECNET/H (remote I/O network) The following table lists CPU modules that can be installed on MELSECNET/10 and MELSECNET/H (remote I/O network). (The table shows in the case using a module for optical loop. The same applies in the case using a module for a coaxial loop/coaxial bus.)

Master stati	on	Remote I/O station				
CPU module	Network module	QJ72LP25-25	QJ72LP25-25 A(1S)J72LP25 A(1S)			
QnUCPU	QJ71LP21-25	O (MELSECNET/H mode)	;	×		
QnA/QnASCPU	A(1S)J71QLP21	O <sup>*1</sup> (MELSECNET/10 mode)	C	)		
AnU/AnUS(H)CPU	A(1S)J71LP21	O <sup>*1</sup> (MELSECNET/10 mode)	C	)		
AnN/AnA/AnSCPU (excluding AnUS(H)CPU)	Master station on the remote I/O network cannot be used.	-		-		

\*1 The module with a serial number (first five digits) of "15012" or later can be used. For replacement using MELSECNET/10 mode, refer to Section 5.2.

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## 5.1.2 Specifications comparisons

5

### (1) Module specifications comparisons

(a) Performance comparison of remote master station

### 1) Comparison of AJ71LP21/A1SJ71LP21/AJ71QLP21/A1SJ71QLP21 and QJ71LP21-25

 $\bigcirc$  : Compatible,  $\bigtriangleup$ : Partial change required, × : Incompatible

			Specifications			
Item		AJ71LP21 A1SJ71LP21	AJ71QLP21 A1SJ71QLP21	QJ71LP21-25	Compatibility	Precautions for replacement
Maximum number	LX/LY	8192 points			0	
of link points per	LB	8192 points		16384 points <sup>*1</sup>	0	
network	LW	8192 points		16384 points <sup>*1</sup>	0	
		<remote <math="" master="" station="">\rightarrow remote I/O station&gt;</remote>	<remote master="" station<="" td=""><td><math>\rightarrow</math> remote I/O station&gt;<sup>*2</sup></td><td></td><td></td></remote>	$\rightarrow$ remote I/O station> <sup>*2</sup>		
Maximum number of link points per station		$\{(LY + LB) \div 8 + (2 \times LW)\} \leq 1600 \text{ bytes} \\ < \text{Remote I/O station} \rightarrow \\ \text{remote master station} \\ \{(LY + LB) \div 8 + (2 \times LW)\} \leq 1600 \text{ bytes} \\ \}$	{(LY + LB) ÷ 8 + (2 × LW	remote master station>*2 } $\leq 1600$ bytes ster station $\rightarrow$ multiplexed on>	0	
Communication spe	eed	10Mbps		25Mbps/10Mbps	0	
Communication me	thod	Token ring method			0	
Synchronous type		Frame synchronization meth	od		0	
Encoding method		NRZI coding (Non Return to	Zero Inverted)		0	
Transmission meth	od	Duplex loop	,		0	
Transmission forma		HDLC standards (frame format)			0	
Maximum number of 255 (Total num		255 (Total number of PLC to PLC networks and remote I/	C to 239 (Total number of PLC to PLC networks and		Δ	Network No.240 to No.250 cannot be set. Alternate them with unused network No.
Number of stations in one network			ion: 64) <sup>*3</sup>	0		
Applicable cable		SI optical cable, H-PCF optical cable, Broad-band H-PCF optical cable, and QSI optical cable		0		
Overall distance	e 30km		0			
Distance between stations		SI optical cable: 500m, H-PCF optical cable: 1km, Broad-band H-PCF optical cable: 1km, and QSI optical cable: 1km		<10Mbps> SI optical cable: 500m, H-PCF optical cable: 1km, Broad-band H- PCF optical cable: 1km, and QSI optical cable: 1km	0	
				<25Mbps> SI optical cable: 200m, H-PCF optical cable: 400m, Broad-band H- PCF optical cable: 1km, and QSI optical cable: 1km	Δ	Use 10 Mbps when using SI optical cable and HPCF optical cable.
Error control syster	n	CRC (X <sup>16</sup> +X <sup>12</sup> +X <sup>5</sup> +1) and retry by a time over		0		
RAS function		<ul> <li>Loop-back function due to error detection or broken cable</li> <li>Diagnostic function for checking local link lines</li> <li>Abnormal detection using link special relays and link special registers</li> <li>Network monitoring and various diagnostic functions</li> </ul>		0		
• Monitor, program up/download with peripheral device       • 1:1         Transient transmission       • Dedicated link instruction       do         • Available for Intelligent function module (only       • Dedicated link instruction       • Dedicated link instruction		<ul> <li>1:1 communication (Monitor, program up/ download)</li> <li>Dedicated link instruction</li> </ul>	Δ	For comparison of dedicated link instruction, refer to Section 5.1.7.		
Number of occupie points	d I/O	32 points per slot (I/O assign	ment: special 32 points)	32 points per slot (I/O assignment: intelli. 32 points)	0	

- \*1 Remote master station → remote sub-master station, remote I/O station: 8192 points Remote sub-master station, remote I/O station → remote master station: 8192 points
- \*2 The remote master station includes the multiplexed remote master station and multiplexed remote sub-master station.
- \*3 For the multiplexed remote I/O network, one station in 64 stations of the remote I/O station is used for the multiplexed remote sub-master station.

### 2) Comparison of AJ71QLP21S/A1SJ71QLP21S and QJ71LP21S-25

 $\bigcirc$  : Compatible,  $\bigtriangleup$ : Partial change required, × : Incompatible

			cations	Compati-		
Item LX/LY		AJ71QLP21S QJ71LP21S-25			Precautions for replacement	
		8192 points		0		
Maximum number of	LB	8192 points	16384 points <sup>*1</sup>	0		
nk points per network	LW	8192 points	16384 points <sup>*1</sup>	0		
Maximum number of link points per station		<remote master="" remote<br="" station="" →="">I/O station&gt; {(LY + LB) ÷ 8 + (2 × LW)}≦ 1600 bytes <remote i="" o="" remote<br="" station="" →="">master station&gt;</remote></remote>	<pre><remote i="" master="" o="" remote="" station="" →=""><sup>*2</sup> {(LY + LB) <math>\div</math> 8 + (2 × LW)} ≦1600 bytes <remote i="" master="" o="" remote="" station="" →=""><sup>*2</sup> {(LY + LB) <math>\div</math> 8 + (2 × LW)}≦1600 bytes</remote></remote></pre>	0		
		{(LY + LB) ÷ 8 + (2 × LW)}≦ 1600 bytes	<pre></pre> Aultiplexed remote master station $\leftarrow \rightarrow$ multiplexed remote sub-master station> {(LY + LB) $\div$ 8 + (2 × LW)} $\leq$ 2000 bytes			
Communication speed		10Mbps	25Mbps/10Mbps	0		
Communication metho	d	Token ring method		0		
Synchronous type		Frame synchronization method				
Encoding method		NRZI coding (Non Return to Zero Inverted)				
Transmission method		Duplex loop		0		
Transmission format		HDLC standards (frame format)		0		
Maximum number of networks		239 (Total number of PLC to PLC r	networks and remote I/O networks)	0		
Number of stations connected in one network		65 stations (Remote master station: 1, remote I/O station: 64)*3		0		
Applicable cable		SI optical cable, H-PCF optical cable, Broad-band H-PCF optical cable, and QSI optical cable				
Overall distance		30km		0		
Distance between stations		SI optical cable: 500m, H-PCF optical cable: 1km, Broad-band H-	<10Mbps> SI optical cable: 500m, H-PCF optical cable: 1km, Broad-band H- PCF optical cable: 1km, and QSI optical cable: 1km	0		
		PCF optical cable: 1km, and QSI optical cable: 1km	<25Mbps> SI optical cable: 200m, H-PCF optical cable: 400m, Broad-band H-PCF optical cable: 1km, and QSI optical cable: 1km	Δ	Use 10 Mbps when using SI optical cable and HPCF optical cable.	
Error control system		CRC ( $X^{16}+X^{12}+X^5+1$ ) and retry by		0		
RAS function		<ul> <li>Loop-back function due to error detection or broken cable</li> <li>Diagnostic function for checking local link lines</li> <li>Abnormal detection using link special relays and link special registers</li> <li>Network monitoring and various diagnostic functions</li> </ul>		0		
Transient transmission		Monitor, program up/download with peripheral device     Available for Intelligent function module     Dedicated link instruction		Δ	For comparison of dedicated link instruction, refer to Section 5.1.7.	
	Voltage	20.4VDC to 31.2VDC		0		
External power supply	Current	0.2A		0		
	Applicable cable size	0.75 to 2mm <sup>2</sup>	0.3 to 1.25mm <sup>2</sup>	Δ	Cables of 1.25mm <sup>2</sup> or more should b replaced with cables of 0.3 to 1.25mr	

# REPLACEMENT OF THE MELSECNET/10 (REMOTE I/O NETWORK)

# MELSEC

	Specifi	cations	Compati-		
Item	AJ71QLP21S A1SJ71QLP21S	QJ71LP21S-25	bility	Precautions for replacement	
Number of occupied I/O points	A1SJ71QLP21S: 48 points 2 slots (I/O assignment:	48 points 2 slots (I/O assignment: first half empty 16 points, second half intelli. 32 points)	Δ	When the AJ71QLP21S is replaced, set the [Empty 16 points] of first half to the [Empty 0 point] with I/O assignment.	

\*1 Remote master station → remote sub-master station, remote I/O station: 8192 points Remote sub-master station, remote I/O station → remote master station: 8192 points

\*2 The remote master station includes the multiplexed remote master station and multiplexed remote sub-master station.

\*3 For the multiplexed remote I/O network, one station in 64 stations of the remote I/O station is used for the multiplexed remote sub-master station.

### 3) Comparison of AJ71LP21G/AJ71QLP21G and QJ71LP21G

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

Itom			Specifications		0 4 <sup>1</sup> h 11 <sup>1</sup> h	Processions for replacement
Item		AJ71LP21G	AJ71QLP21G	QJ71LP21G	Compatibility	Precautions for replacement
Maximum number	LX/LY	8192 points			0	
of link points per	LB	8192 points		16384 points <sup>*1</sup>	0	
network	LW	8192 points		16384 points <sup>*1</sup>	0	
Maximum number of link points per station		$ \begin{array}{l} < & \text{Remote master station} \rightarrow \\ & \text{remote I/O station} \\ & \{(LY + LB) \div 8 + (2 \times LW)\} \leq \\ & 1600 \text{ bytes} \\ < & \text{Remote I/O station} \rightarrow \\ & \text{remote master station} \\ & \{(LY + LB) \div 8 + (2 \times LW)\} \leq \\ & 1600 \text{ bytes} \end{array} $	<remote <math="" master="" station="">\rightarrow remote I/O station&gt;<sup>*2</sup> {(LY + LB) <math>\div</math> 8 + (2 × LW)}<math>\leq</math> 1600 bytes <remote <math="" i="" o="" station="">\rightarrow remote master station&gt;<sup>*2</sup> {(LY + LB) <math>\div</math> 8 + (2 × LW)}<math>\leq</math> 1600 bytes <multiplexed <math="" master="" remote="" station="">\rightarrow multiplexed remote sub-master station&gt; {(LY + LB) <math>\div</math> 8 + (2 × LW)}<math>\leq</math> 2000 bytes</multiplexed></remote></remote>		0	
Communication spe	eed	10Mbps			0	
Communication me	thod	Token ring method			0	
Synchronous type		Frame synchronization method			0	
Encoding method	coding method NRZI coding (Non Return to Zero Inverted)			0		
Transmission method		Duplex loop			0	
Transmission format HDLC sta		HDLC standards (frame form	nat)		0	
Maximum number of networks		255 (Total number of PLC to PLC networks and remote I/ O networks)	230 (Total number of PLC to PLC networks and		Δ	Network No.240 to No.250 cannot be set. Alternate them with unused network No.
Number of stations in one network	connected	65 stations (Remote master station: 1, remote I/O station: 64) <sup>*3</sup>			0	
Applicable cable		GI optical cable			0	
Overall distance		30km			0	
Distance between s	stations	GI optical cable: 2km			0	
Error control system	ror control system CRC (X <sup>16</sup> +X <sup>12</sup> +X <sup>5</sup> +1) and retry by a time over			0		
RAS function		<ul> <li>Loop-back function due to error detection or broken cable</li> <li>Diagnostic function for checking local link lines</li> <li>Abnormal detection using link special relays and link special registers</li> <li>Network monitoring and various diagnostic functions</li> </ul>		0		
Transient transmission		<ul> <li>Monitor, program up/down device</li> <li>Dedicated link instruction</li> <li>Available for Intelligent fun AJ71QLP21G)</li> </ul>	uction (Monitor, program up/ download)		Δ	For comparison of dedicated link instruction, refer to Section 5.1.7.
Number of occupied I/O		32 points per slot (I/O assign	ment: special 32 points)	32 points per slot (I/O assignment: intelli. 32 points)	0	

\*1 Remote master station → remote sub-master station, remote I/O station: 8192 points Remote sub-master station, remote I/O station → remote master station: 8192 points

\*2 The remote master station includes the multiplexed remote master station and multiplexed remote sub-master station.

\*3 For the multiplexed remote I/O network, one station in 32 stations of the remote I/O station is used for the multiplexed remote sub-master station.

### 4) Comparison of AJ71LR21/A1SJ71LR21/AJ71QLR21/A1SJ71QLR21 and QJ71BR11

 $\bigcirc$  : Compatible,  $\bigtriangleup$ : Partial change required, × : Incompatible

ltem		Specifications				
		AJ71LR21 AJ71QLR21 A1SJ71LR21 A1SJ71QLR21		QJ71BR11	Compatibility	Precautions for replacement
Maximum number	LX/LY	/ 8192 points			0	
of link points per	LB	8192 points		16384 points <sup>*1</sup>	0	
network	LW	8192 points		16384 points <sup>*1</sup>	0	
Maximum number of link points per station		<remote master<br="">station → remote I/O station&gt; {(LY + LB) <math>\div</math> 8 + (2 × LW)}≦ 1600 bytes <remote i="" o="" station<br="">→ remote master station&gt; {(LY + LB) <math>\div</math> 8 + (2 × LW)}≦ 1600 bytes</remote></remote>	<remote <math="" master="" station="">\rightarrow remote I/O station&gt;<sup>*2</sup> {(LY + LB) <math>\div</math> 8 + (2 × LW)}<math>\leq</math> 1600 bytes <remote <math="" i="" o="" station="">\rightarrow remote master station&gt;<sup>*2</sup> {(LY + LB) <math>\div</math> 8 + (2 × LW)}<math>\leq</math> 1600 bytes <multiplexed <math="" master="" remote="" station="">\rightarrow multiplexed remote sub-master station&gt; {(LY + LB) <math>\div</math> 8 + (2 × LW)}<math>\leq</math> 2000 bytes</multiplexed></remote></remote>		0	
Communication sp	eed	10Mbps			0	
Communication me	ethod	Token ring method		Token bus method	Δ	Nothing to be noted though the communication method differs.
Synchronous type		Frame synchronization	method	•	0	
Encoding method		Manchester code			0	
Transmission method		Duplex loop		Single bus	Δ	The loopback function and multiplex transmission function cannot be used on a coaxial bus system. To use the functions, using an optical loop system is recommended.
Transmission format		HDLC standards (frame format)		•	0	
Maximum number of networks		255 (Total number of PLC to PLC networks and remote I/O networks)	239 (Total number of P remote I/O networks)	LC to PLC networks and	Δ	Network No.240 to No.250 cannot be set. Alternate them with unused network No.
Number of stations connected in one network		65 stations (Remote master station: 1, remote I/O station: 64)		33 stations (Remote master station: 1, remote I/O station: 32) <sup>*3</sup>	Δ	Normal stations up to 32 stations can be used on a coaxial bus system. To use 33 normal stations or more, using an optical loop system is recommended.
Applicable cable		3C-2V, 5C-2V, 5C-FB			0	
Overall distance		3C-2V: 19.2km 5C-2V, 5C-FB: 30km		3C-2V: 300m 5C-2V, 5C-FB: 500m	Δ	Either use an A6BR10/A6BR10- DC type repeater unit, or use an optical loop system.
Distance between s	istance between stations 3C-2V: 300m 5C-2V, 5C-FB: 500m			0		
Error control syster				0		
RAS function		<ul> <li>Loop-back function due to error detection or broken cable</li> <li>Diagnostic function for checking local link lines</li> <li>Abnormal detection using link special relays and link special registers</li> <li>Network monitoring and various diagnostic functions</li> </ul>		<ul> <li>Diagnostic function for checking local link lines</li> <li>Abnormal detection using link special relays and link special registers</li> <li>Network monitoring and various diagnostic functions</li> </ul>	Δ	The loopback function cannot be used on a coaxial bus system. To use the loopback function, using an optical loop system is recommended.
Transient transmission		<ul> <li>functions</li> <li>Monitor, program up/download with peripheral device</li> <li>Dedicated link instruction</li> <li>Available for Intelligent function module (only AJ71QLR21/A1SJ71QLR21)</li> </ul>		<ul> <li>1:1 communication (Monitor, program up/ download)</li> <li>Dedicated link instruction</li> </ul>	Δ	For comparison of dedicated link instruction, refer to Section 5.1.7.
Number of occupie points	d I/O	32 points per slot (I/O a points)	assignment: special 32	32 points per slot (I/O assignment: intelli. 32 points)	0	

\*1 Remote master station  $\rightarrow$  remote sub-master station, remote I/O station: 8192 points Remote sub-master station, remote I/O station  $\rightarrow$  remote master station: 8192 points

- \*2 The remote master station includes the multiplexed remote master station and multiplexed remote sub-master station.
- \*3 For the multiplexed remote I/O network, one station in 32 stations of the remote I/O station is used for the multiplexed remote sub-master station.

## 5) Comparison of AJ71BR11/A1SJ71BR11/AJ71QBR11/A1SJ71QBR11 and QJ71BR11

	O: Compatible,	∆: Partial change	required, ×	Incompatible
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Item		Specifications			Ì	
				Compatibility	Precautions for replacement	
Maximum number	LX/LY	8192 points			0	
of link points per	LB	8192 points		16384 points <sup>*1</sup>	0	
network	LW	8192 points		16384 points <sup>*1</sup>	0	
		<remote master<br="">station → remote I/O station&gt;</remote>		$n \rightarrow remote I/O station>^{*2}$		
Maximum number of link points per station		$\begin{array}{l} \{(LY + LB) \div 8 + (2 \times LW)\} &\leq 1600 \text{ bytes} \\ < \text{Remote I/O station} \\ \rightarrow \text{ remote master} \\ \text{station>} \\ \{(LY + LB) \div 8 + (2 \times LW)\} &\leq 1600 \text{ bytes} \end{array}$	{(LY + LB) ÷ 8 + (2 × L\	remote master station> <sup>*2</sup> N)}≦ 1600 bytes laster station → multiplexed tion>	0	
Communication spe	eed	10Mbps			0	
Communication me	ommunication method Token bus method			0		
Synchronous type	ynchronous type Frame synchronization method		0			
Encoding method	Encoding method Manchester code			0		
Transmission method		Single bus			0	
Transmission format		HDLC standards (fram	e format)		0	
Maximum number of networks		255 (Total number of PLC to PLC networks and remote I/O networks)	239 (Total number of PLC to PLC networks and remote I/O networks)		Δ	Network No.240 to No.250 cannot be set. Alternate them with unused network No.
Number of stations connected in one network		33 stations (Remote master station: 1, remote I/O station: 32)*3			0	
Applicable cable		3C-2V, 5C-2V, 5C-FB			0	
Overall distance	erall distance 3C-2V: 300m 5C-2V, 5C-FB: 500m			0		
Distance between s	stations	3C-2V: 300m 5C-2V, 5C-FB: 500m			0	
Error control syster	n	$CRC(X^{16} + X^{12} + X^5 + 1)$ and retry by a time over			0	
Diagnostic function for checking local link lines     Abnormal detection using link special relays and link special registers     Network monitoring and various diagnostic functions		and link special registers	0			
Transient transmission		<ul> <li>Monitor, program up peripheral device</li> <li>Dedicated link instru</li> <li>Available for Intellige (only AJ71QBR11/A</li> </ul>	<ul> <li>The communication</li> <li>The communication</li> <li>(Monitor, program up/ download)</li> <li>Dedicated link instruction</li> </ul>		Δ	For comparison of dedicated link instruction, refer to Section 5.1.7.
Number of occupie points	d I/O	32 points per slot (I/O a points)	assignment: special 32	32 points per slot (I/O assignment: intelli. 32 points)	0	

\*1 Remote master station  $\rightarrow$  remote sub-master station, remote I/O station: 8192 points

Remote sub-master station, remote I/O station  $\rightarrow$  remote master station: 8192 points

\*2 The remote master station includes the multiplexed remote master station and multiplexed remote sub-master station.

\*3 For the multiplexed remote I/O network, one station in 32 stations of the remote I/O station is used for the multiplexed remote sub-master station.

# (b) Performance comparison of remote I/O stations

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### 1) Comparison between AJ72LP25/AJ72QLP25/A1SJ72QLP25 and QJ72LP25-25

		Specifications				
ltem		AJ72LP25	AJ72QLP25 A1SJ72QLP25	QJ72LP25-25	Compatibility	Precautions for replacement
Maximum number	LX/LY	8192 points			0	
of link points per	LB	8192 points		16384 points <sup>*1</sup>	0	
network	LW	8192 points		16384 points <sup>*1</sup>	0	
Maximum number of points per station	of link	<remote <math="" master="" station="">\rightarrow remote I/O station&gt; {(LY + LB) <math>\div</math> 8 + (2 × LW)}<math>\leq</math> 1600 bytes <remote <math="" i="" o="" station="">\rightarrow remote master station&gt; {(LY + LB) <math>\div</math> 8 + (2 × LW)}<math>\leq</math> 1600 bytes</remote></remote>	mote I/O station> $(Y + LB) \div 8 + (2 \times LW) \le $ $(LY + LB) \div 8 + (2 \times LW) \le $ Remote I/O station $\rightarrow$ mote master station> $(LY + LB) \div 8 + (2 \times LW) \le $ $(LY + LB) \div 8 + (2 \times LW) \le $ $(U \times + LB) \div 8 + (2 \times LW) = $ $(U \times + LB) \div 8 + (2 \times LW) = $ $(U \times + LB) \div 8 + (2 \times LW) = $ $(U \times + LB) \div 8 + (2 \times LW) = $ $(U \times + LB) \div 8 + (2 \times LW) = $ $(U \times + LB) \div 8 + (2 \times LW) = $ $(U \times + LB) \div 8 + (2 \times LW) = $		0	
Maximum number of points per remote I/		$X + Y \leq 2048$ points	$X + Y \leq 2048 \text{ points}^{*4}$	$X + Y \leq 4096 \text{ points}^{*3}$	Δ	
Communication spe	eed	10Mbps		25Mbps/10Mbps	0	
Communication me	thod	Token ring method			0	
Synchronous type		Frame synchronization meth	od		0	
Encoding method		NRZI coding (Non Return to	Zero Inverted)		0	
Transmission metho	od	Duplex loop			0	
Transmission forma	at	HDLC standards (frame form		0		
Maximum number of networks		255 (Total number of PLC to PLC networks and remote I/ O networks) 239 (Total number of PLC remote I/O networks)		C to PLC networks and	Δ	Network No.240 to No.250 cannot be set. Alternate them with unused network No.
Number of stations of in one network	connected	65 stations (Remote master			0	
Applicable cable		SI optical cable, H-PCF optical cable, Broad-band H-PCF optical cable, and QSI optical cable		0		
Overall distance		30km			0	
Distance between stations		SI optical cable: 500m, H-PCF optical cable: 1km, Broad-band H-PCF optical cable: 1km, and QSI optical cable: 1km		<10Mbps> SI optical cable: 500m, H-PCF optical cable: 1km, Broad-band H- PCF optical cable: 1km, and QSI optical cable: 1km	0	
				<25Mbps> SI optical cable: 200m, H-PCF optical cable: 400m, Broad-band H- PCF optical cable: 1km, and QSI optical cable: 1km	Δ	Use 10 Mbps when using SI optical cable and HPCF optical cable.
Error control system	n	CRC (X <sup>16</sup> +X <sup>12</sup> +X <sup>5</sup> +1) and retry by a time over			0	
RAS function	<ul> <li>Loop-back function due to error detection or broken cable</li> <li>Diagnostic function for checking local link lines</li> <li>Abnormal detection using link special relays and link special registers</li> <li>Network monitoring and various diagnostic functions</li> </ul>		0			
Network monitoring and various diagnostic function     Monitor, program up/download with peripheral     device     Dedicated link instruction     Available for Intelligent function module (only     AJ72QLP25/A1SJ72QLP25)		<ul> <li>1:1 communication (Monitor, program up/ download)</li> <li>Dedicated link instruction</li> </ul>	Δ	For comparison of dedicated link instruction, refer to Section 5.1.7.		

- \*1 Remote master station  $\rightarrow$  remote sub-master station, remote I/O station: 8192 points Remote sub-master station, remote I/O station  $\rightarrow$  remote master station: 8192 points
- \*2 The remote master station includes the multiplexed remote master station and multiplexed remote sub-master station.
- \*3 When the X/Y numbers are duplicate, one side only is taken into consideration.
- \*4 For the A1SJ72QLP25, the maximum number of I/O points per remote I/O station is "X + Y  $\leq$  1024 points".
- \*5 For the multiplexed remote I/O network, one station in 64 stations of the remote I/O station is used for the multiplexed remote sub-master station.

### 2) Comparison of AJ72LP25G/AJ72QLP25G and QJ72LP25G

O : Compatible, △: Partial change required, × : Incompatible

ltem		Specifications			Competibility	Precautions for replacement
		AJ72LP25 AJ72QLP25G QJ72LP25G			Compatibility	Precautions for replacement
Maximum number	LX/LY	8192 points			0	
of link points per	LB	8192 points		16384 points <sup>*1</sup>	0	
network	LW	8192 points		16384 points <sup>*1</sup>	0	
Maximum number of link points per station		<remote <math="" master="" station="">\rightarrow re {(LY + LB) <math>\div</math> 8 + (2 × LW)} <remote <math="" i="" o="" station="">\rightarrow remote {(LY + LB) <math>\div</math> 8 + (2 × LW)}</remote></remote>	1600 bytes te master station> <sup>*2</sup>		0	
Maximum number points per remote I		$X + Y \leq 2048$ points		$X + Y \leq 4096 \text{ points}^{*3}$	Δ	
Communication sp	eed	10Mbps			0	
Communication me	ethod	Token ring method			0	
Synchronous type	Synchronous type Frame synchronization method				0	
ncoding method NRZI coding (Non Return to Zero Inverted)				0		
ransmission method Duplex loop			0			
Transmission forma	at	HDLC standards (frame form	at)	0		
Maximum number networks	Maximum number of PLC to PLC networks and remote I/ networks O networks) 255 (Total number of PLC to PLC networks and remote I/ O networks)		C to PLC networks and	Δ	Network No.240 to No.250 cannot be set. Alternate them with unused network No.	
Number of stations connected in one network 65 stations (Remo		65 stations (Remote master s	mote master station: 1, remote I/O station: 64)*4		0	
Applicable cable		GI optical cable			0	
Overall distance		30km			0	
Distance between	stations	GI optical cable: 2km			0	
Error control syster	n	CRC (X <sup>16</sup> +X <sup>12</sup> +X <sup>5</sup> +1) and re	try by a time over	0		
RAS function		<ul> <li>Loop-back function due to error detection or broken cable</li> <li>Diagnostic function for checking local link lines</li> <li>Abnormal detection using link special relays and link special registers</li> <li>Network monitoring and various diagnostic functions</li> </ul>		0		
device Transient transmission • Dedicated link instru		Dedicated link instruction     Available for Intelligent function		<ul> <li>1:1 communication (Monitor, program up/ download)</li> <li>Dedicated link instruction</li> </ul>	Δ	For comparison of dedicated link instruction, refer to Section 5.1.7.

\*1 Remote master station  $\rightarrow$  remote sub-master station, remote I/O station: 8192 points

Remote sub-master station, remote I/O station  $\rightarrow$  remote master station: 8192 points

\*2 The remote master station includes the multiplexed remote master station and multiplexed remote sub-master station.

\*3 When the X/Y numbers are duplicate, one side only is taken into consideration.

\*4 For the multiplexed remote I/O network, one station in 64 stations of the remote I/O station is used for the multiplexed remote sub-master station.

### 3) Comparison of AJ72LR25/AJ72QLR25/A1SJ72QLR25 and QJ72BR15

 $\bigcirc$  : Compatible,  $\triangle$ : Partial change required, × : Incompatible

Item		Specifications					
		AJ72LR25 AJ72LR25 A1SJ72QLR25		QJ72BR15	Compatibility	Precautions for replacement	
Maximum number	LX/LY	8192 points			0		
of link points per	LB	8192 points		16384 points <sup>*1</sup>	0		
network	LW	8192 points		16384 points <sup>*1</sup>	0		
		<remote i="" master="" o="" remote="" station="" →="">*2</remote>					
Maximum number	of link	{(LY + LB) ÷ 8 + (2 × LW)}≦ 1600 bytes					
points per station		<remote <math="" i="" o="" station="">\rightarrow remote master station&gt;<sup>*2</sup></remote>			0		
		{(LY + LB) ÷ 8 + (2 × LW)}≦ 1600 bytes					
Maximum number o points per remote l		$X + Y \leq 2048 \text{ points}$ $X + Y \leq 2048 \text{ points}^{*4} X + Y \leq 2048 \text{ points}^{*4}$		$X + Y \leq 4096 \text{ points}^{*3}$	Δ		
Communication sp	eed	10Mbps	·	·	0		
Communication me	ethod	Token ring method		Token bus method	Δ	Nothing to be noted though the communication method differs.	
Synchronous type		Frame synchronization	method	•	0		
Encoding method		Manchester code			0		
Transmission method		Duplex loop		Single bus	Δ	The loopback function and multiplex transmission function cannot be used on a coaxial bus system. To use the functions, using an optical loop system is recommended.	
Transmission format		HDLC standards (frame format)			0		
Maximum number of networks		255 (Total number of PLC to PLC networks 239 (Total number of PLC to PLC and remote I/O remote I/O networks) networks)		LC to PLC networks and	Δ	Network No.240 to No.250 cannot be set. Alternate them with unused network No.	
Number of stations connected in one network		1/O station: 64)*5		33 stations (Remote master station: 1, remote I/O station: 32) <sup>*6</sup>	Δ	Remote I/O stations up to 32 stations can be used on a coaxial bus system. To use 33 remote I/O stations or more, using an optical loop system is recommended.	
Applicable cable		3C-2V, 5C-2V, 5C-FB			0		
Overall distance		3C-2V: 19.2km 5C-2V, 5C-FB: 30km		3C-2V: 300m 5C-2V, 5C-FB: 500m	Δ	Either use an A6BR10/A6BR10- DC type repeater unit, or use an optical loop system.	
Distance between s	stations	3C-2V: 300m 5C-2V, 5C-FB: 500m			0		
Error control syster	n	$CRC(X^{16} + X^{12} + X^5 +$	1) and retry by a time o	ver	0		
RAS function		<ul> <li>Loop-back function due to error detection or broken cable</li> <li>Diagnostic function for checking local link lines</li> <li>Abnormal detection using link special relays and link special registers</li> <li>Network monitoring and various diagnostic functions</li> </ul>		<ul> <li>Diagnostic function for checking local link lines</li> <li>Abnormal detection using link special relays and link special registers</li> <li>Network monitoring and various diagnostic functions</li> </ul>	Δ	The loopback function cannot be used on a coaxial bus system. To use the loopback function, using an optical loop system is recommended.	
Transient transmission		Monitor, program up/download with peripheral device     Dedicated link instruction		<ul> <li>1:1 communication (Monitor, program up/ download)</li> <li>Dedicated link instruction</li> </ul>	Δ	For comparison of dedicated link instruction, refer to Section 5.1.7.	

\*1 Remote master station → remote sub-master station, remote I/O station: 8192 points Remote sub-master station, remote I/O station → remote master station: 8192 points

\*2 The remote master station includes the multiplexed remote master station and multiplexed remote sub-master station.

\*3 When the X/Y numbers are duplicate, one side only is taken into consideration.

\*4 For the A1SJ72QLP25, the maximum number of I/O points per remote I/O station is "X + Y  $\leq$  1024 points".

\*5 For the multiplexed remote I/O network, one station in 64 stations of the remote I/O station is used for the multiplexed remote sub-master station.

\*6 For the multiplexed remote I/O network, one station in 32 stations of the remote I/O station is used for the multiplexed remote sub-master station.

#### 4) Comparison of AJ72BR15/AJ72QBR15/A1SJ72QBR15 and QJ72BR15

O · Compatible	A · Dortiol obong	required y	· · Incompatible
	$\Delta$ : Partial change	e required, *	

Item			Specifications			
		AJ72BR15 AJ72QBR15 QJ72BR15 A1SJ72QBR15		Compatibility	Precautions for replacement	
Maximum number	LX/LY	8192 points		0		
of link points per	LB	8192 points 16		16384 points <sup>*1</sup>	0	
network	LW	8192 points		16384 points <sup>*1</sup>	0	
		<remote master="" statio<="" td=""><td><math>n \rightarrow remote I/O station&gt;</math></td><td>*2</td><td></td><td></td></remote>	$n \rightarrow remote I/O station>$	*2		
Maximum number	of link	{(LY + LB) ÷ 8 + (2 × L\		_		
points per station			remote master station>	*2	0	
		$\{(LY + LB) \div 8 + (2 \times L)\}$				
Maximum number points per remote I			$X + Y \leq 2048 \text{ points}^{*4}$	$X + Y \leq 4096 \text{ points}^{*3}$	Δ	
Communication sp	eed	10Mbps	I.	I	0	
Communication me	ethod	Token bus method			0	
Synchronous type		Frame synchronization method			0	
Encoding method		Manchester code			0	
Transmission meth	od	Single bus			0	
Transmission formation	at	HDLC standards (frame format)			0	
Maximum number of networks		255 (Total number of PLC to PLC networks and remote I/O networks)	LC networks 239 (Total number of PLC to PLC networks and ote I/O remote I/O networks)		Δ	Network No.240 to No.250 cannot be set. Alternate them with unused network No.
Number of stations in one network	connected	33 stations (Remote master station: 1, remote I/O station: 32)*5			0	
Applicable cable		3C-2V, 5C-2V, 5C-FB			0	
Overall distance		3C-2V: 300m 5C-2V, 5C-FB: 500m			0	
Distance between	stations	3C-2V: 300m 5C-2V, 5C-FB: 500m			0	
Error control system	m	CRC (X <sup>16</sup> +X <sup>12</sup> +X <sup>5</sup> +1) and retry by a time over			0	
RAS function		<ul> <li>Loop-back function due to error detection or broken cable</li> <li>Diagnostic function for checking local link lines</li> <li>Abnormal detection using link special relays and link special registers</li> <li>Network monitoring and various diagnostic functions</li> </ul>		0		
Transient transmission		<ul> <li>Monitor, program up, peripheral device</li> <li>Dedicated link instru</li> <li>Available for Intellige (only AJ71QBR15/A)</li> </ul>	ction nt function module	<ul> <li>1:1 communication (Monitor, program up/ download)</li> <li>Dedicated link instruction</li> </ul>	Δ	For comparison of dedicated link instruction, refer to Section 5.1.7.

\*1 Remote master station  $\rightarrow$  remote sub-master station, remote I/O station: 8192 points

Remote sub-master station, remote I/O station  $\rightarrow$  remote master station: 8192 points

\*2 The remote master station includes the multiplexed remote master station and multiplexed remote sub-master station.

\*3 When the X/Y numbers are duplicate, one side only is taken into consideration.

\*4 For the A1SJ72QBR15, the maximum number of I/O points per remote I/O station is "X + Y  $\leq$  1024 points".

\*5 For the multiplexed remote I/O network, one station in 32 stations of the remote I/O station is used for the multiplexed remote sub-master station.

## (2) Cable performance comparisons

### (a) Optical fiber cable

### 1) Overall distance

The overall distance (30km) does not differ according to the optical fiber cable.

### 2) Distance between stations

• SI optical fiber cable

 $\bigcirc$  : Compatible,  $\triangle$ : Partial change required, × : Incompatible

	Specifications					
	A/AnS/QnA/QnAS	Q series MELSECNET/H module (optical loop)		Compat	Precautions for	
Туре	series			ibility		
	MELSECNET/10 module				replacement	
	(optical loop)	10Mpbs	10Mpbs 25Mbps			
SI optical fiber cable	500m	500m	200m	Δ	Refer to <sup>*1</sup> below.	
H-PCF optical fiber cable	1km	1km	400m	Δ	Refer to <sup>*1</sup> below.	
Broad-band H-PCF optical	1km	1km		0		
fiber cable				0		

\*1 When the distance between stations do not satisfy with specifications of MELSECNET/H, use at 10 Mbps of communication speed, change the type of optical fiber cable or set the gateway station on the existing cable.

GI optical fiber cable

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

	Specific			
Turne	A/AnS/QnA/QnAS series	Q series	Compat-	Precautions for
Туре	MELSECNET/10 module	MELSECNET/H module	ibility	replacement
	(optical loop)	(optical loop)		
GI optical fiber cable	2km	2km	0	

## (3) Coaxial cable

### (a) Overall distance

O : Compatible,  $\bigtriangleup$  : Partial change required,  $\times$  : Incompatible

	Specifications				
Tuno	A/AnS/QnA/QnAS series		Q series	Compat-	<b>Precautions for</b>
Туре	MELSECNET/10 module		MELSECNET/H module	ibility	replacement
	Coaxial bus	Coaxial loop	(Coaxial bus)		
3C-2V	300m	19.2km	300m	Δ	Refer to <sup>*1</sup> below.
5C-2V	500m	30km	500m	Δ	Refer to <sup>*1</sup> below.
5C-FB	500m	30km	500m	Δ	Refer to <sup>*1</sup> below.

\*1 When the overall distance does not satisfy the MELSECNET/H specifications, either use an A6BR10/A6BR10-DC type repeater unit in the network, or configure a separate network.

### (b) Distance between stations

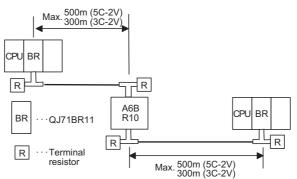
 $\bigcirc$ : Compatible,  $\triangle$ : Partial change required, × : Incompatible

	Specifications				
Turne	A/AnS/QnA/	QnAS series	Q series	Compat-	Precautions for
Туре	MELSECNET/10 module		MELSECNET/H module	ibility	replacement
	Coaxial bus	Coaxial loop	(Coaxial bus)		
3C-2V	300m	300m	300m	0	
5C-2V	500m	500m	500m	0	
5C-FB	500m	500m	500m	0	

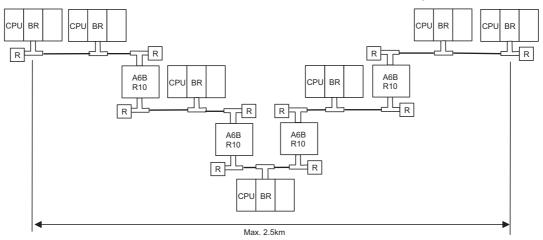
The following shows the extension method when a repeater unit for the A6BR10/A6BR10-DC type MELSECNET/10 coaxial bus system is used.

For details, refer to the Repeater Unit for the MELSECNET/10 Coaxial Bus System type A6BR10/ A6BR10-DC User's Manual (IB-66499).

(1) The distance between stations of 500m (5C-2V) and 300m (3C-2V) can be extended.



(2) Up to four repeater units can be used in a single network.<sup>\*2</sup> The overall distance can be extended to a maximum distance of 2.5 km.



\*2 It is necessary to add terminal resistor A6RCON-R75 (sold separately).

# 5.1.3 Functional Comparisons

# (1) A/AnS series

5

		Description		
ltem		A/AnS series Q series MELSECNET/10 module <sup>*1</sup> MELSECNET/H module <sup>*2</sup>	Compat- ibility	Precautions for replacement
nction	Communicating with I/O module	Performs communications with the I/O module of the emote I/O station using X/Y (LX/LY).		
Cyclic transfer function	Communicating with special function module	Performs communications with the special function module of the remote I/O station using X/Y (LX/LY) and B/W (LB/LW).	0	
Cyclic	Data link stop/restart function	Stops cyclic transmission temporarily with GX Works2 or GX Developer.	0	
nission function	Log tog set         N:N communication function         Communicates only when communication requests are issued between each stations. (Communication using dedicated link instruction and GX Works2/GX Developer.)		Δ	ZNFR instruction and ZNTO instruction cannot be used. Change them to REMFR instruction and REMTO instruction.
Transient transmission function	Routing function	Performs transient transmission to other stations of which network No. are different.	0	
Res	erved station function	Treats the stations, which are to be connected in the future, as reserved stations. By specifying the stations, which are not connected, as reserved stations, communication error does not occur.	0	
I/O	assignment function	Sets the module configuration of the remote I/O station.	Δ	Set the function with the PLC parameter of the remote I/O module.
	Constant link scan function	Keeps link scan time constant.	0	
S	Multiplex transmission function	Performs high-speed communication using duplex transmission path (forward loop/reverse loop).	0	
n functions	Return sequence station number setting function	Sets the number of stations that can return to system during one link scan.	0	
Extension fu	ZNFR/ZNTO instruction access number setting function	Sets the number of transient transmissions (a total of entire one network) that can be executed during one link scan.	Δ	The number of transient transmissions differs depending on the total number of slave stations. The number of transient transmissions per slave station is equal.

 $\bigcirc$  : Compatible,  $\bigtriangleup$ : Partial change required, × : Incompatible

\*1 Use GX Developer.

\*2 Use GX Works2 or GX Developer.

(To next page)

			O : Compa	atible, ∆: Pa	rtial change required, × : Incompatible
		Descr	iption	Compat-	
	Item	A/AnS series	Q series	ibility	Precautions for replacement
	Automatic return function Loopback function	MELSECNET/10 module Returns the station disconne system when it goes to norm link. Keeps normal operation betw disconnecting faulty area at e cable break.	al status and restarts data	0	
RAS function	Station detach function	Keeps normal operation betv except faulty stations and sta	•	0	
	Diagnostic function	Checks line conditions of the conditions of the		Δ	<ul> <li>Substitute the forward loop/ reverse loop test for the station-to-station test.</li> <li>Set diagnostic items for station-to-station test and forward loop/reverse loop test in GX Works2 or GX Developer network parameters.</li> </ul>
	Blown fuse error and input/output verification error check disabled function	Sets the error check of the bl output verification error.	own fuse error and the input/	Δ	Set the function with the PLC parameter of the remote I/O module.

# (2) Comparison with QnA/QnAS series

5

O : Compatible,  $\bigtriangleup$  : Partial change required,  $\times$  : Incompatible

		Descr	iption	0	
Item		QnA/QnAS series	Q series	Compat-	Precautions for replacement
		MELSECNET/10 module <sup>*1</sup>	MELSECNET/H module <sup>*2</sup>	ibility	
	Communicating with	Performs communications w	ith the I/O module of the	0	
	I/O module	remote I/O station using X/Y	(LX/LY).	0	
on	Communicating with	Performs communications w	Performs communications with the special function		
function	special function module of the remote I/O station using X/Y (LX/LY) and		0		
	module	B/W (LB/LW).	B/W (LB/LW).		
transfer	Cyclic transmission	Stops cyclic transmission ten	nporarily with GX Works2 or	0	
	stop/restart	GX Developer.		0	
c]iC	Direct access to the link devices to the module on the sequence program.		link device of the network	0	
Š			0		
	Default of network	Eliminates the refresh param	eters setting by using	0	
	refresh parameter	default values of refresh para	ameters.	0	

(To next page)

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O : Compatible, ∆: Partial change required, × : Incompatible				
	ltem	Description           QnA/QnAS series         Q series           MELSECNET/10 module <sup>*1</sup> MELSECNET/H module <sup>*2</sup>	Compat- ibility	Precautions for replacement
_	Transient transmission function	Communicates only when communication requests are issued between each stations. (Communication using dedicated link instruction and GX Works2/GX Developer.)	0	
Inction	Routing function	Performs transient transmission to other stations of which network No. are different.	0	
Transient transmission function	Dedicated link instruction	Dedicated link Performs communications with other station at desired		ZNFR instruction and ZNTO instruction cannot be used. Change them to REMFR instruction and REMTO instruction.
ransie	Specification of default network	Processes the requests that cannot specify network No. of access path.	0	
F	Clock setup for stations on network with peripheral device	Performs clock setup to CPU modules connected to the network with GX Works2 or GX Developer.	0	
	tiplex transmission	Performs high-speed communication using duplex transmission path (forward loop/reverse loop).	0	
Reserved station function		Treats the stations, which are to be connected in the future, as reserved stations. By specifying the stations, which are not connected, as reserved stations, communication error does not occur.	0	
Multiplex master system		Allows the remote sub-master station to automatically control the remote I/O stations in the case of the multiplexed remote master station failure.	Δ	<ul> <li>The function is available only when mounted on Q12PH/ Q25PH/Q12PRH/Q25PRH CPU.</li> <li>The multiplexed remote master station and the multiplexed remote sub- master station cannot be mounted on the same programmable controller CPU.</li> <li>Mount on separate programmable controller CPU.</li> </ul>
Para	allel master system	Sets two remote master stations in the same network.	Δ	Cannot be configured on the remote I/O network of MELSECNET/H. Configure two networks.
Settings of remote I/O station output status in the case of system failure with programmable controller CPU error		Retains the output status of the remote I/O station in the case of the remote master station error.	Δ	Set the function with the PLC parameter of the remote I/O module.

 $\bigcirc$  : Compatible,  $\triangle$ : Partial change required, × : Incompatible

5

# MELSEC

		Descr	iption		
Item		QnA/QnAS series	Q series	Compat- ibility	Precautions for replacement
		MELSECNET/10 module*1	MELSECNET/H module <sup>*2</sup>	IDIIITY	
	Automatic return function	Returns the station disconne system when it goes to norm link.		0	
	Loopback function	Keeps normal operation betw disconnecting faulty area at o cable break.		0	
	Station detach function	Keeps normal operation betw except faulty stations and sta		0	
	Transient transmission available even if programmable controller CPU is in error	Checks the errors for CPU m occurs, via network from GX		0	
RAS function	Checking the transient transmission abnormal detection time	Checks error completion time network number and abnorm of transient transmission.		0	
	Diagnostic function	Checks line conditions of the conditions of the conditions of the module.	e network and setting	Δ	<ul> <li>Substitute the forward loop/ reverse loop test for the station-to-station test.</li> <li>Set diagnostic items for station-to-station test and forward loop/reverse loop test in GX Works2 or GX Developer network parameters.</li> </ul>
	Blown fuse error and input/output verification error check disabled function	Sets the error check of the blown fuse error and the input/ output verification error.			Set the function with the PLC parameter of the remote I/O module.

\*1 Use GX Developer.

\*2 Use GX Works2 or GX Developer.

# 5.1.4 Switch setting comparisons

5

#### (1) Switch settings comparisons of remote master station

<ul> <li>Compatible,</li> </ul>	∆: Partial change	required, × :	Incompatible

	Desc	ription	Compat-		
Switch name			ibility	Precautions for replacement	
	MELSECNET/10 module	MELSECNET/H module	isinty		
Network No. setting switch	Sets the network No.	-	Δ	<ul> <li>Set in GX Works2 or GX Developer network parameters.</li> <li>Network No.240 to No.255 cannot be set. Alternate them with unused network Nos.</li> </ul>	
		[Using QJ71LP21-25 and			
		QJ71LP21S-25]			
		Sets the mode.			
	Sets the mode.	<setting range=""></setting>			
	<setting range=""></setting>	0: Online (10Mbps)			
	0: Online	1: Self-loopback test (10Mbps)			
	2: Offline	2: Internal self-loopback test		<ul> <li>Set offline and loop test in GX</li> </ul>	
	3: Loop test (forward loop)	(10Mbps)		Works2 or GX Developer	
	4: Loop test (reverse loop)	3: Hardware test (10Mbps)		network parameters.	
		4: Online (25Mbps)		<ul> <li>Substitute the forward loop/</li> </ul>	
Mode setting	(master station)	5: Self-loopback test (25Mbps)	Δ	reverse loop test for the station-	
switch	6: Station-to-station test	6: Internal self-loopback test		to-station test.	
	(slave station)	(25Mbps)		Check network No., group No.	
	7: Self-loopback test	7: Hardware test (25Mbps)	-	and station No. in GX Works2 or	
	8: Internal self-loopback test	[Using QJ71LP21G and		GX Developer network	
	9: H/W test	QJ71BR11]		diagnostics (host information).	
	D: Network No. check	Sets the mode.			
	E: Group No. check <sup>*1</sup>	<setting range=""></setting>			
	F: Station No. check	0: Online			
		1: Self-loopback test			
		2: Internal self-loopback test			
Q		3: Hardware test			
Condition	Sets the operation conditions.	-	Δ	Set in GX Works2 or GX	
setting switch	<u> </u>			Developer network parameters.	

\*1 Group No. check is not used on the remote I/O network.

# (2) Remote I/O station switch settings comparisons

 $\bigcirc$  : Compatible,  $\bigtriangleup$ : Partial change required, × : Incompatible

\*1 Modules with a serial number (first five digits) of "15012" or later supports Online (MELSECNET/10 mode).

# 5.1.5 Parameter comparisons

5

# (1) Parameter of remote master station

Paramotor	Description				Compat-	
Parameter name	A/AnS/QnA/QnAS series		Q series		ibility	Precautions for replacement
name	MELSECNE	T/10 module	MELSECNET/H module		ionity	
	Network type		Network type		0	
	Starting I/O No.		Starting I/O No.		0	
	Network No.		Network No.		0	
	Total number of	(slave) stations	Total number of	(slave) stations	0	
		_	Mode			Set the mode in GX Works2 or GX
		-	Mode		Δ	Developer network parameters.
		Monitoring time		Monitoring time	0	
		BW setting		BW setting	0	
		XY setting		XY setting	0	
Network	Network range	Reserved	Network range	Reserved		
parameter	assignment	station	assignment	station	0	
	(common	designation	(common	designation		
	parameter)	I/O assignment	parameter)	_		Set with the PLC parameter of
		setting				each remote I/O station.
		Supplemental		Supplemental	0	
		settings		settings	0	
	Refresh parameters		Refresh parameters		0	
	Routing parame	ters	Routing parame	eters	0	
	Valid module du	ring other	Valid module du	iring other	0	
	station access		station access		0	

# (2) Parameter of multiplexed remote master station<sup>\*1</sup>

5

$O$ : Compatible, $\bigtriangleup$ : Partial change required, ${\sf x}$ : Incompatible
Compat-

Parameter		Desci	ription		Compat-	
name	QnA/QnAS series MELSECNET/10 module			Q series MELSECNET/H module		Precautions for replacement
	Network type		Network type		0	
	Starting I/O No.		Starting I/O No.		0	
	Network No.		Network No.		0	
	Total number of	(slave) stations	Total number of	(slave) stations	0	
		-		Group No.		The group No. is not used in the remote I/O network. Set to [0].
	-		Mode		Δ	Set the mode in GX Works2 or GX Developer network parameters.
	Network range assignment (common parameter)	Monitoring time	Network range assignment (common parameter)	Monitoring time	0	
		BW setting		BW setting	0	
Network		XY setting		XY setting	0	
parameter		Reserved station designation		Reserved station designation	0	
		Remote sub- master station specification		Remote sub- master station specification	0	
		I/O assignment setting		-	Δ	Set with the PLC parameter of each remote I/O station.
		Supplemental settings		Supplemental settings	0	
	Refresh parame	eters	Refresh parame	eters	0	
	Routing parame	ters	Routing parame	ters	0	

\*1 The multiplexed remote master station is the station type of the multiplex master system.

Only the following CPU modules support the multiplex master system.

Process CPU

Redundant CPU

# (3) Parameter of multiplexed remote sub-master station<sup>\*1</sup>

	1		() : Co	mpatible, $\triangle$	: Partial change required, × : Incompatib
Parameter name	Des QnA/QnAS series MELSECNET/10 module			Compat- ibility	Precautions for replacement
	Network type	Network type			
	Starting I/O No.	Starting I/O No.		0	
	Network No.	Network No.		0	
	-	Total number of (slave) stations Group No. Mode		Δ	New parameter of MELSECNET/H (To enable the multiplexed remote sub-master station to control the remote I/O station, the setting is required.)
	-			Δ	The group No. is not used in the remote I/O network. Set to [0].
	-			Δ	Set the mode in GX Works2 or G> Developer network parameters.
Network			Monitoring time	Δ	
parameter			BW setting	Δ	
			XY setting	Δ	
	- ass (cc	Network range assignment	Reserved station designation	Δ	New parameter of MELSECNE (To enable the multiplexed remo- sub-master station to control the
		(common parameter)	Remote sub- master station specification	Δ	remote I/O station, the setting is required.)
			Supplemental settings	Δ	
	Refresh parameters	Refresh parame	eters	0	
	Routing parameters	Routing parame	ters	0	
	Valid module during other station access	Valid module during other station access		0	

\*1 The multiplexed remote sub-master station is the station type of the multiplex master system. Only the following CPU modules support the multiplex master system.

Process CPU

Redundant CPU

5

# (4) Parameter of parallel remote master station

5

		Descri	iption		
Parameter name		AS series T/10 module	Q series MELSECNET/H module	Compat- ibility	Precautions for replacement
	Network type			Δ	
	Starting I/O No.			Δ	
	Network No.			Δ	
	Total number of	(slave) stations		Δ	
		Monitoring time		Δ	
		BW setting		Δ	
		XY setting		Δ	
	Network range assignment (common parameter)	Sub-BW setting		Δ	
		Sub-XY setting		Δ	Cannot be configured on the remote I/O network of
		Remote sub-		Δ	
Network		master station			
parameter		specification	-		MELSECNET/H.
		Reserved			Configure two networks.
		station			
		designation			
		I/O assignment			
		setting			
		Supplemental		Δ	
		settings			
	Refresh parame			Δ	
	Routing parame			Δ	
	Valid module du	iring other		Δ	
	station access				

 $\bigcirc$  : Compatible,  $\bigtriangleup$ : Partial change required, × : Incompatible

# (5) Parameter of parallel remote sub-master station

	${\sf O}$ : Compatible, ${\vartriangle}$ : Partial change required, × : Incompa							
Parameter	Descr	iption	Compat-					
name	QnA/QnAS series	Q series	ibility	Precautions for replacement				
namo	MELSECNET/10 module	MELSECNET/H module	ionity					
	Network type		Δ					
	Starting I/O No.		Δ	Cannot be configured on the				
Network	Network No.		Δ	remote I/O network of				
parameter	Refresh parameters	-	Δ	MELSECNET/H.				
parameter	Routing parameters	Δ		Configure two networks.				
	Valid module during other			Comgure two networks.				
	station access		Δ					

# (6) Parameter of remote I/O station

When mounting the intelligent function module on the remote I/O station, set the parameter. When mounting only I/O modules, the operation is available even if the parameter is not set. (It is operated with default value.)

O : Compatible, △: Partial change require	d, ×	: Incompatible
---	------	----------------

Parameter	Desci	ription	Compat-	Precautions for replacement	
name	A/AnS/QnA/QnAS series MELSECNET/10 module	Q series MELSECNET/H module	ibility		
				New parameter of MELSECNET/H	
	-	PLC system setting		(The number of empty slots, etc. is set.)	
				New parameter of MELSECNET/H	
	-	PLC RAS setting	$\bigtriangleup$	(The operation mode and error	
PLC				check at an error are set.)	
parameters				New parameter of MELSECNET/H	
	-	Operation setting	Δ	(The parameters for transmitting between devices are set.)	
		I/O assignment setting	Δ	New parameter of MELSECNET/H	
	-			(The I/O assignment of remote I/O	
				station, etc. is set.)	
		Ethernet	Δ	New parameter of MELSECNET/H	
				(The network parameter of	
				Ethernet module mounted on the	
Network	-			remote I/O station is set.)	
parameter		CC-Link		New parameter of MELSECNET/H	
				(The network parameter of CC-	
				Link module mounted on the	
				remote I/O station is set.)	
				New parameter of MELSECNET/H	
Remote				(The remote password of Ethernet	
password	-	Remote password setting	$\bigtriangleup$	module and serial communication	
pucchoru				module, etc. mounted on the	
				remote I/O station is set.)	

# 5.1.6 Program comparisons

#### (1) Comparison of link special relay (SB)/link special register (SW)

The table below shows only link special relay (SB) and link special register (SW) to be used in interlock program.

The following device name and device No. are described in link device of internal MELSECNET/10 or MELSECNET/H module.

Changing sequence program should be performed after checking the refreshed device of link device in refresh parameters.

#### (a) Link special relay (SB)

#### $\bigcirc$ : Compatible, $\bigtriangleup$ : Partial change required, × : Incompatible

	Nun	Compat-	Precautions for	
Item	A/AnS/QnA/QnAS series MELSECNET/10 module	Q series MELSECNET/H module	ibility	replacement
Module status	SB0020	SB0020	0	
Baton pass status (host)	SB0047	SB0047	0	
Data link status of each station	SB0049	SB0049	0	
Baton pass status of each station	SB0070	SB0070	0	
Cyclic transmission status of each station	SB0074	SB0074	0	

#### (b) Link special register (SW)

O : Compatible, △: Partial change required, × : Incompatible

	Nun	Compat-	Precautions for		
Item	A/AnS/QnA/QnAS series MELSECNET/10 module	Q series MELSECNET/H module	ibility	replacement	
Baton pass status of each station	SW0070 to SW0073	SW0070 to SW0073	0		
Cyclic transmission status of each station	SW0074 to SW0077	SW0074 to SW0077	0		

For link special relay (SB) and link special register (SW) that are not described in this section, refer to each manual.

# 5.1.7 Comparison of dedicated instruction

# (1) A/AnS series

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	$\bigcirc$ : Compatible, $\triangle$ : Partial change required, × : Incompatib								
	Desci	Description							
Instruction name	A/AnS series	Q series	Compat- ibility	Precautions for replacement					
	MELSECNET/10 module	MELSECNET/H module	ionity	replacement					
	Reads data from the buffer	Reads data from the buffer	Δ	ZNFR instruction cannot					
ZNFR instruction	memory of special function	memory of the intelligent		be used.					
	module in the target remote I/O	function module in the target		Change it to REMFR					
	station.	remote I/O station.		instruction.					
ZNTO instruction	Writes data to the buffer	Writes data to the buffer		ZNTO instruction cannot					
	memory of special function	memory of the intelligent	Δ	be used.					
	module in the target remote I/O	function module in the target		Change it to REMFR					
	station.	remote I/O station.		instruction.					

# (2) QnA/QnAS series

 $\bigcirc$  : Compatible,  $\bigtriangleup$  : Partial change required,  $\times$  : Incompatible

	Description			Precautions for	
Instruction name	QnA/QnAS series	Q series	Compat- ibility	replacement	
	MELSECNET/10 module	MELSECNET/H module	ionity	replacement	
	Reads data from the buffer	Reads data from the buffer		ZNFR instruction cannot	
ZNFR instruction	memory of special function	memory of the intelligent		be used.	
	module in the target remote I/O	function module in the target	Δ	Change it to REMFR	
	station.	remote I/O station.		instruction.	
	Writes data to the buffer	Writes data to the buffer		ZNTO instruction cannot	
ZNTO instruction	memory of special function	memory of the intelligent		be used.	
	module in the target remote I/O	function module in the target	Δ	Change it to REMFR	
	station.	remote I/O station.		instruction.	
SEND instruction	Sends data to target station.	0			
RECV instruction	Reads data sent by SEND instru	uction to device of CPU module.	0		
READ instruction,	Reads the device data of other s	station			
SREAD instruction			0		
WRITE instruction,	Writes data to the device of othe	ar station			
SWRITE instruction			0		
REQ instruction	Issues "remote RUN/STOP" and "clock data read/write"				
	requests to other stations.				
ZNRD instruction	Reads the device data of other s	station.	0		
ZNWR instruction	Writes data to the device of othe	er station.	0		

## (3) Q series dedicated link instruction list

The table below shows the dedicated link instructions usable in Q series.

For instruction format of dedicated link instruction and precautions, refer to the following manual.

- Q corresponding MELSECNET/H Network System Reference Manual (Remote I/O network)
- Q corresponding MELSECNET/H Network System Reference Manual (PLC to PLC network)

#### (a) For remote I/O station

Execution Target station Instruction Name station Description QCPU Remote I/O module Reads data from the remote I/O station intelligent function module buffer memory. Intelligent function module Remote I/O Master module CPU module Read remote I/O Buffer memory Channel 1 station intelligent H-[REMFR] Channel 2 REMFR 0 0 function module Channel 3 Channel 4 221 buffer memory Word device Channel 5 221 Channel 6 Channel 7 Channel 8 Writes data to object remote I/O station intelligent function module buffer memory. (Not processed at the execution from multiplexed remote sub-master station.) Intelligent function module Remote I/O module Write remote I/O CPU Master module station intelligent Buffer memory Channel 1 REMTO 0 Ο function module Channel 2 Channel 3 buffer memory **⊢**[REMTO] Channel 4 754 Channel 5 Channel 6 Channel 7 Channel 8 Reads remote I/O station device data for object network number. (in 16-bit units) Remote I/O CPU Master module module Read other Word device Channel 1 READ station word 0 HE [ READ ] Channel 2 Ο Channel 3 device 2594 Channel 4 Word device Channel 5 2594 Channel 6 Channel 7 Channel 8 Writes device to object network number remote I/O station. (in 16-bit units) Remote I/O Master module CPU module Write other Channel 1 Word device WRITE station word 0 Ο Channel 2 Channel 3 device Channel 4 361 Channel 5 Channel 6 Channel 7 Channel 8

O : Can be used. × : Cannot be used

#### (b) For multiplexed remote master station and multiplexed remote sub-master station

Execution Target station station Multiplexed Multiplexed Instruction Name Description QnPH QnPRH remote remote CPU CPU master sub-master station station SEND:Writes data to the target station (network module) of the target network No RECV:Reads the data sent by SEND to the CPU device. SEND Data sending 0 × CPU Network module Network module CPU Logical channel 1 (Channel 1) Channel 1 Logical channel 2 (Channel 2) Ο Ο Channel 2 HH-[ SEND ] HHE RECV ] Channel 3 Logical channel 3 (Channel 3) ogical channel 4 (Channel 4) Channel 4 Channel 5 Logical channel 5 (Channel 5) Logical channel 6 (Channel Channel ( RECV Data receiving 0 × Channel 7 Logical channel 7 (Channel 7) Logical channel 8 (Channel 8) Channel 8 Reads the CPU device data of the target station of the target network No. (in 16-bit units). CPU Network module Network module CPU Word device Channel 1 Other station READ HH [READ ] Channel 2 word device 0 0 0 0 Channel 3 SREAD read 2594 Channel 4 Word device Channel 5 2594 Channel 6 L Channel 7 Channel 8 Writes data to the CPU device of the target station of the target network No. (in 16-bit units) (SWRITE can turn ON the device of the target station.) CPU CPU Network module Network module Word device Other station Channel 1 WRITE Channel 2 word device 0 Ο Ο Ο SWRITE Channel 3 write Channel 4 361 Channel 5 Channel 6 Channel 7 Channel 8 Issues "remote RUN" and "clock data read/write" requests to other stations. CPU CPU Network module Network module Requesting Channel 1 transient Channel 2 REQ 0 Ο Ο Ο Channel 3 transmission to STOP H⊢ Channel 4 other stations Channel 5 Channel 6 Channel 7 Channel 8

O : Can be used, × : Cannot be used

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# MELSEC

Execution Target station station Multiplexed Multiplexed Description Instruction Name QnPH QnPRH remote remote CPU CPU master sub-master station station Receives the channel data, which was sent by SEND, within an interrupt program and reads that data to the CPU device immediately. Processing is completed when the instruction is executed. Receive CPU CPU Network module Network module message RECVS Channel 1 × Logical channel 1 (Channel 1) 0 0 Ο (completed in Channel 2 Logical channel 2 (Channel 2) H-[ SEND ] 1 scan) Channel 3 Logical channel 3 (Channel 3) Channel 4 Logical channel 4 (Channel 4) Interrupt program Channel 5 Logical channel 5 (Channel 5) 110 HH RECVS Channel 6 Logical channel 6 (Channel 6) Channel 1 Logical channel 7 (Channel 7) hannel 8 Logical channel 8 (Channel 8) [A-compatible instruction] Reads the CPU device data of the target station of the target network No. CPU Network module Network module CPU Other station Channel 1 Word device HH [ ZNRD ] ZNRD \* Fixed word device Ο Ο Ο Ο read 2594 Word device 2594 [A-compatible instruction] Writes data to the CPU device of the target station of the target network No. CPU CPU Network module Network module Word device Other station ZNWR Channel 2 word device 0 0 0 0 \* Fixed write H [ ZNWR ] 361 Performs "remote RUN" to the CPU module of the other station. CPU Network module Network module CPU Channel 1 Channel 2 Channel 3 RRUN Remote RUN Ο Ο Ο Ο H-[RRUN] RUN Channel 4 Channel 5 Channel 6 Channel 7 Channel 8

O : Can be used, × : Cannot be used

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# MELSEC

			cution ation		Target	station
Instruction	Name		QnPRH CPU	Description	Multiplexed remote master station	Multiplexed remote sub-master station
RSTOP	Remote STOP	0	0	Performs "remote STOP" to the CPU module of the other station. CPU Network module Network module CPU Channel 1 Channel 2 Channel 3 Channel 4 Channel 6 Channel 7 Channel 8	0	0
RTMRD	Other station clock data read	0	0	Performs "clock data read" to the CPU module of the other station.  CPU Network module Network module CPU Channel 1 Channel 2 Channel 4 Word device Channel 5 Channel 6 Clock data Channel 8	0	0
RTMWR	Other station clock data written	0	0	"Write clock data" to the CPU module of other station. CPU Network module Network module CPU Channel 1 Channel 2 Channel 3 Channel 4 Channel 5 Channel 5 Channel 6 Channel 7 Channel 8	0	0

 $\bigcirc$  : Can be used,  $\times$  : Cannot be used

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# 5.1.8 Other precautions

#### (1) Remote I/O network replacement precautions

Replace all remote I/O stations with Q series MELSECNET/H modules when the CPU module on the remote master station is replaced with a Q series CPU module

On the MELSECNET/H remote I/O network, the A/AnS/QnA/QnAS series MELSECNET/10 module and the Q series MELSECNET/H module cannot be used in combination.

For the method of replacing some remote I/O stations with a Q series module without changing the remote master station using the A/AnS/QnA/QnAS series, refer to Section 5.2.

#### (2) Processing time

The link scan time and link refresh time differ between the A/AnS/QnA/QnAS series and the Q series. For details on processing time, refer to the manual for the respective module.

#### (3) Interface of remote I/O station

The interface to connect programming tools such as GX Works2 or GX Developer differs between the A/ AnS/QnA/QnAS series and the Q series.

- A/AnS/QnA/QnAS series:RS-422 interface
- Q series:RS-232 interface

When connecting to the Q series, use the following RS-232 cable.

RS-232 cable: QC30R2

#### (4) Precautions for replacement of QnA/QnAS series

#### (a) Parallel master system

The parallel master system cannot be configured in the MELSECNET/H. Configure two networks.

MELSECNET/10	MELSECNET/H	System configuration precautions
IPMR Parallel remote master station PSMRD Parallel remote sub-master station Remote I/O station Network No. Station No.	1R2       2R4         Network No.1       1MR/2MR Network No.2         1R3       2R5         •MR       Remote master station         •RD       Remote I/O station         • Network No.       Station No.	<ol> <li>Divide into two networks of which the network No. differs.</li> <li>Set the station that is not used after dividing the network as the reserved station.</li> <li>Use the inter-link data transfer function for data communication between the remote master stations.</li> </ol>

#### (b) Multiplex master system

- 1) MELSECNET/H can establish the system only when mounting on the following CPU.
  - Process CPU (Q12PHCPU, Q25PHCPU)
  - Redundant CPU (Q12PRHCPU, Q25PRHCPU)
- For the MELSECNET/H, the multiplexed remote master station and the multiplexed remote submaster station cannot be mounted on the same CPU.

Mount the multiplexed remote master station and the multiplexed remote sub-master station on separate CPUs.

# 5.2 Gradually replacing A series remote I/O stations with Q series remote I/O stations

Use the existing A/AnS/QnA/QnAS series master stations without any change, and gradually replace the existing remote I/O stations with Q series stations by each station.

For network, MELSECNET/10 can be continuously used by utilizing Q series MELSECNET/H modules in MELSECNET/10 mode, and thus Q series remote I/O stations can be used together with remaining A/ AnS/QnA/QnAS remote I/O stations.

# 5.2.1 List of MELSECNET/10 modules and the alternative modules

Network type	Station type	A/AnS series	Q series (alternative module)
	Remote master	AJ71LP21	
	station	A1SJ71LP21	Replacement not required
	station	AJ71LP21G	
		AJ72LP25	QJ72LP25-25 (MELSECNET/10
Optical loop		AJ72QLP25	,
	Remote I/O station	A1SJ72QLP25	mode) <sup>*1</sup>
			QJ72LP25G (MELSECNET/10
		AJ72LP25G	mode) <sup>*1</sup>
	Remote master	AJ71LR21	The step-by-step replacement o
	station	A1SJ71LR21	the coaxial loop system is not
0		AJ72LR25	possible.
Coaxial loop	Demoste I/O etetion	AJ72QLR25	Consider the replacement of the
	Remote I/O station		coaxial loop system with the
		A1SJ72QLR25	coaxial bus system.
	Remote master	AJ71BR11	
	station	A1SJ71BR11	— Replacement not required
Coaxial bus		AJ72BR15	QJ72BR15 (MELSECNET/10
	Remote I/O station	AJ72QBR15	
		A1SJ72QBR15	mode) <sup>*1</sup>

#### (1) Replacement of the A/AnS series

\*1 Modules with a serial number (first five digits) of "15012" or later

(2)	Replacement of the QnA/QnAS series	
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Network type	Station type	QnA/QnAS series	Q series (alternative module)
		AJ71QLP21	
	Remote master	A1SJ71QLP21	
	station	AJ71QLP21S	Replacement not required
	Station	A1SJ71QLP21S	
Optical loop		AJ71QLP21G	
		AJ72QLP25	QJ72LP25-25 (MELSECNET/10
	Remote I/O station	A1SJ72QLP25	mode) <sup>*1</sup>
	Remote I/O station		QJ72LP25G (MELSECNET/10
		AJ72LP25G	mode) <sup>*1</sup>
	Remote master	AJ71QLR21	The step-by-step replacement of
	station	A1SJ71QLR21	the coaxial loop system is not
0		AJ72QLR25	possible.
Coaxial loop			Consider the replacement of the
	Remote I/O station	A1SJ72QLR25	coaxial loop system with the
			coaxial bus system.
0	Remote master	AJ71QBR11	Deplecement net required
	station	A1SJ71QBR11	Replacement not required
Coaxial bus	Demete I/O station	AJ72QBR15	QJ72BR15 (MELSECNET/10
	Remote I/O station	A1SJ72QBR15	mode) <sup>*1</sup>

\*1 Modules with a serial number (first five digits) of "15012" or later

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# 5.2.2 Module performance specifications comparisons

(1) Comparison of AJ72LP25/AJ72QLP25/A1SJ72QLP25 and QJ72LP25-25 (MELSECNET/10 mode)

 $\bigcirc$ : Compatible,  $\triangle$ : Partial change required, ×: Incompatible

			Specifications			
Item		AJ72LP25	AJ72QLP25 A1SJ72QLP25	QJ72LP25-25 (MELSECNET/10 mode)	Compatibility	Precautions for replacement
Maximum number	LX/LY	8192 points			0	
of link points per	LB	8192 points			0	
network	LW	8192 points			0	
		<remote master="" station<="" td=""><td><math>\rightarrow</math> remote I/O station&gt;</td><td></td><td></td><td></td></remote>	$\rightarrow$ remote I/O station>			
Maximum number points per station	of link	{(LY + LB) $\div$ 8 + (2 × LW) <remote <math="" i="" o="" station="">\rightarrow r</remote>			0	
		(LY + LB) ÷ 8 + (2 × LW)]	$\leq$ 1600 bytes			
Maximum number points per remote I		$X + Y \leq 2048$ points	$X + Y \leq 2048 \text{ points}^{*1}$	$X + Y \leq 2048$ points	0	
Communication sp	eed	10Mbps	•	•	0	
Communication me	ethod	Token ring method			0	
Synchronous type		Frame synchronization m	nethod	0		
Encoding method		NRZI coding (Non Return	n to Zero Inverted)	0		
Transmission meth	od	Duplex loop			0	
Transmission forma	at	HDLC standards (frame	format)	0		
Maximum number of networks		255 (Total number of PLC to PLC networks and remote I/O networks)	nd (Total number of PLC to PLC networks and remote			Network No.240 to No.250 cannot be set. Replace them with unused network No.
Number of stations in one network	connected	65 stations (Remote master station: 1, remote I/O station: 64)			0	
Applicable cable		SI optical cable, H-PCF optical cable, broad-band H-PCF optical cable, QSI optical cable			0	
Overall distance		30km		0		
Distance between stations		SI optical cable: 500m, H-PCF optical cable: 1km Broad-band H-PCF optical cable: 1km, QSI optical cable: 1km			0	
Error control system		CRC ( $X^{16} + X^{12} + X^5 + 1$ ) and retry by a time over			0	
RAS function		Loop-back function due to error detection or disconnection of a cable Diagnostic function for checking local link lines Abnormal detection using the link special relay and link special register Network monitoring and various diagnostic functions			0	
Transient transmiss	sion	Monitoring, program up/o Dedicated link instructior		al device	Δ	For comparison of dedicated link instructions, refer to Section 5.1.7

\*1 For the A1SJ72QLP25, the maximum number of I/O points per remote I/O station is "X + Y  $\leq$  1024 points".

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# (2) Comparison of AJ72LP25G/AJ72QLP25G and QJ72LP25G (MELSECNET/10 mode)

			Specifications			
Item		AJ72LP25G	AJ72QLP25G	QJ72LP25G (MELSECNET/10 mode)	Compatibility	Precautions for replacement
Maximum number	LX/LY	8192 points			0	
of link points per	LB	8192 points			0	
network	LW	8192 points			0	
Maximum number points per station	of link	<pre><remote +="" <math="" lb)="" master="" station="" {(ly="">\div 8 + (2 × LW) <remote <math="" i="" o="" station="">\rightarrow reference in the station <math>\rightarrow</math> reference in the stati</remote></remote></pre>	$\geq 1600$ bytes		0	
		{(LY + LB) ÷ 8 + (2 × LW)	$\geq 1600$ bytes			
Maximum number points per remote I		$X + Y \leq 2048$ points		$X + Y \leq 2048$ points	0	
Communication sp	eed	10Mbps			0	
Communication me	ethod	Token ring method		0		
Synchronous type		Frame synchronization m	nethod	0		
Encoding method		NRZI coding (Non Return to Zero Inverted)			0	
Transmission meth	lod	Duplex loop		0		
Transmission formation	at	HDLC standards (frame t	format)	0		
Maximum number networks	of	255 (Total number of PLC to PLC networks and remote I/O networks)	239 (Total number of PLC to I/O networks)	PLC networks and remote	Δ	Network No.240 to No.250 cannot be set. Replace them with unused network No.
Number of stations in one network	connected	65 stations (Master station: 1, remote I/O station: 64)			0	
Applicable cable		GI optical cable			0	
Overall distance		30km		0		
Distance between stations		GI optical cable: 2km			0	
Error control system		CRC ( $X^{16} + X^{12} + X^5 + 1$ ) and retry by a time over			0	
RAS function		Loop-back function due to error detection or disconnection of a cable Diagnostic function for checking local link lines Abnormal detection using the link special relay and link special register Network monitoring and various diagnostic functions			0	
Transient transmis	sion	Monitoring, program up/c Dedicated link instruction		al device	Δ	For comparison of dedicated link instructions, refer to Section 5.1.7.

 $\bigcirc$  : Compatible,  $\bigtriangleup$  : Partial change required,  $\times$  : Incompatible

# (3) Comparison of AJ72BR15/AJ72QBR15/A1SJ72QBR15 and QJ72BR15 (MELSECNET/10 mode)

			Specifications			
ltem		AJ72BR15	AJ72QBR15 A1SJ72QBR15	QJ72BR15 (MELSECNET/10 mode)	Compatibility	Precautions for replacement
Maximum number	LX/LY	8192 points			0	
of link points per	LB	8192 points			0	
network	LW	8192 points			0	
		<remote master="" station<="" td=""><td><math>\rightarrow</math> remote I/O station&gt;</td><td></td><td></td><td></td></remote>	$\rightarrow$ remote I/O station>			
Maximum number of points per station	of link	{(LY + LB) $\div$ 8 + (2 × LW) <remote <math="" i="" o="" station="">\rightarrow r</remote>	emote master station>		0	
		$\{(LY + LB) \div 8 + (2 \times LW)\}$	)} ≦ 1600 bytes			
Maximum number of points per remote I		X + Y $\leq$ 2048 points	$X + Y \leq 2048 \text{ points}^{*1}$	$X + Y \leq 2048$ points	0	
Communication spe	eed	10Mbps			0	
Communication me	ethod	Token bus method			0	
Synchronous type		Frame synchronization n	nethod	0		
Encoding method		Manchester code		0		
Transmission meth	od	Single bus		0		
Transmission forma	at	HDLC standards (frame	format)	0		
255 Maximum number of (Total number of PLC to PLC networks and remote I/O networks)		239 (Total number of PLC to PLC networks and remote I/O networks)		Δ	Network No.240 to No.250 cannot be set. Replace them with unused network No.	
Number of stations in one network	Number of stations connected in one network 33		33 stations (Master station: 1, remote I/O station: 32)			
Applicable cable		3C-2V, 5C-2V, 5C-FB			0	
Overall distance		30km			0	
Distance between s	Distance between stations 3C-2V: 300m 5C-2V, 5C-FB: 500m			0		
Error control syster	Error control system CRC ( $X^{16} + X^{12} + X^5 + 1$ ) and retry by a time over		0			
RAS function		Loop-back function due to error detection or disconnection of a cable Diagnostic function for checking local link lines Abnormal detection using the link special relay and link special register Network monitoring and various diagnostic functions		0		
Transient transmiss	sion	Monitoring, program up/o Dedicated link instruction	download with a periphera າ	al device	Δ	For comparison of dedicated link instructions, refer to Section 5.1.7

\*1 For the A1SJ72QBR15, the maximum number of I/O points per remote I/O station is "X + Y  $\leq$  1024 points".

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# 5.2.3 Functional comparisons

To use a MELSECNET/H remote I/O module (MELSECNET/10 mode), the CPU module on the master station must be an AnU/AnUS/QnA/QnAS series module. For details on functions of a remote I/O module, refer to a manual for the CPU module used on the master station because the functions differ depending on which CPU module is used on the master station.

ltem	Description A/AnS/QnA/QnAS series Q series MELSECNET/H module MELSECNET/10 module (MELSECNET/10 mode)	Compatibility	Precautions for replacement
Communicating with a special function module (Cyclic transfer function)	Performs communications with each module on the remote I/O station using X/Y (LX/LY) and B/W (LB/LW).	0	
Dedicated link instruction	Reads or writes data from/to the buffer memory of the special function module on the remote I/O station.		Check and modify a program because buffer memory addresses of intelligent function modules differ between A/AnS/ QnA/QnAS series and Q series.
I/O assignment function	Sets the module configuration of the remote I/O station.	Δ	Set the configuration with the PLC parameter of the remote I/O module. <sup>*1</sup>
ZNFR/ZNTO instruction access number setting function	Sets the number of transient transmissions that can be executed during one link scan (a total of entire one network).	Δ	The number of transient transmissions executed during one link scan differs depending on the total number of slave stations. The number of transient transmissions executed for one station is the same, though.
Blown fuse error and input/output verification error check disabled function	Sets whether to enable or disable the error check of a blown fuse error and an input/output verification error.	Δ	Set whether to enable or disable the error check with the PLC parameter of the remote I/O module.
Operation mode at an error	Sets an operation mode to be used when a blown fuse error or an input/output verification error occurs.	Δ	Set an operation mode with the PLC parameter of the remote I/O module.

The following table lists function differences among module series.

\*1 Change the network parameter of the master station as well. For details, refer to Section 5.2.6.

# 5.2.4 Switch setting comparisons

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#### (1) Switch setting comparisons of remote master stations

The switch setting change is not required because the remote master station is not replaced.

#### (2) Switch setting comparisons of remote I/O stations

	Des	cription		
Switch name	A/AnS/QnA/QnAS series MELSECNET/10 module	Q series MELSECNET/H module (MELSECNET/10 mode)	Compatibility	Precautions for replacement
Mode setting switch	Sets the mode. <setting range=""> 0: Online 2: Offline 3: Loop test (forward loop)*2 4: Loop test (reverse loop)*2 5: Station-to-station test (master station) 6: Station-to-station test (slave station) 7: Self-loopback test 8: Internal self-loopback test 9: H/W test F: Station No. check</setting>	[Using QJ72LP25-25] Sets the mode. <setting range=""> 0: Online (10Mbps) 1: Self-loopback test (10Mbps) 2: Internal self-loopback test (10Mbps) 3: Hardware test (10Mbps) 4: Online (25Mbps) 5: Self-loopback test (25Mbps) 6: Internal self-loopback test (25Mbps) 7: Hardware test (25Mbps) 8: Online (MELSECNET/10 mode)*1</setting>	Δ	<ul> <li>When using a MELSECNET/H module in MELSECNET/10 mode, set the mode to "8".</li> <li>Set offline and loop test in GX Works2 or GX Developer network parameters.</li> <li>Substitute the forward loop/reverse loop test for the station-to-station test.</li> <li>Check network No., group No. and station No. in GX Works2 or GX Developer network diagnostics (host information).</li> </ul>

\*1 This mode (8; Online (MELSECNET/10 mode)) is added to a module with a serial number (first five digits) of "15012" or later.

\*2 This mode is not used for the coaxial bus system.

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## 5.2.5 Parameter comparisons

#### (1) Parameters of remote master station

Basically, the parameter change is not required because A/AnS/QnA/QnAS series modules are continuously used for the remote master station.

However, for a Q series MELSECNET/H remote I/O module (MELSECNET/10 mode), some parameters must be set at the remote I/O station instead of at the master station, and therefore the setting change of an existing module at the master station is required. For details, refer to Section 5.2.6.

#### (2) Parameters of remote I/O station

When mounting an intelligent function module on a remote I/O station, set parameters. When the remote I/O station consists of only I/O modules, the modules operate without parameter settings. (In such a case, the modules operate with the default values.)

	Descri	ption				
Parameter name	A/AnS/QnA/QnAS series MELSECNET/10 module	Q series MELSECNET/H module (MELSECNET/10 mode)	Compatibility	Precautions for replacement		
	-	PLC system setting	Δ	<ul> <li>New parameter of MELSECNET/H (The number of empty slots is set.)</li> <li>For an A/AnS/QnA/QnAS series module, the number is set in I/O assignments of the network parameter at the master station.</li> </ul>		
	-	PLC RAS setting		<ul> <li>New parameter of MELSECNET/H (The operation mode to be used or whether to enable the error check at an error are set.)</li> <li>For an A/AnS/QnA/QnAS series module, the PLC RAS setting of PLC parameter at the master station is relected to the remote I/O network.</li> </ul>		
PLC parameter	-	Operation setting	-	New parameter of MELSECNET/H (The parameters for data transmission between devices are set.)		
	-	I/O assignment setting	Δ	<ul> <li>New parameter of MELSECNET/H (The I/O assignments of the remote I/O station are set.)</li> <li>For an A/AnS/QnA/QnAS series module, the I/O assignments are set in I/O assignments of the network parameter at the master station.</li> <li>Therefore, at the replacement, if the I/O assignments are already set at the A/AnS/QnA/QnAS series module on the master station, the setting change is required.</li> <li>To mount an intelligent function module on a remote I/O station, the switch setting is required for the I/O assignments.</li> </ul>		
Network		Ethernet	-	<ul> <li>New parameter of MELSECNET/H</li> <li>(The network parameter of an Ethernet module mounted on the remote I/O station is set.)</li> </ul>		
parameter	-	CC-Link	-	New parameter of MELSECNET/H (The network parameter of a CC-Link module mounted on the remote I/O station is set.)		
Remote password	-	Remote password setting	-	New parameter of MELSECNET/H (The remote password of a module (such as an Ethernet module or a serial communication module) mounted on the remote I/O station is set.)		

 $\bigcirc$  : Compatible,  $\bigtriangleup$  : Partial change required, × : Incompatible

## 5.2.6 Program comparisons

This section describes how to modify the existing programs when replacing MELSECNET/10 remote I/O stations with MELSECNET/H (MELSECNET/10 mode) remote I/O stations.

#### (1) Link special relay (SB)/link special register

Program modifications related to link special relay (SB) and link special register (SW) are not required because the link special relay (SB) and link special register (SW) of the CPU module on the master station are used.

For details, refer to either of following manuals according to the CPU module used on the master station.

Type MELSECNET/10 Network System (Remote I/O network) Reference Manual For QnA/Q4AR MELSECNET/10 Network System Reference Manual

#### (2) Network parameters

#### (a) Master station

The items specific to remote I/O stations (such as I/O assignments of a remote I/O station) must be set at the remote I/O station. Therefore, delete these items from the network parameter of the master station. For details on the items set at the remote I/O station, refer to Section 5.2.5.

#### (b) Remote I/O station

Set the necessary parameters (refer to Section 5.2.5) at the remote I/O station. If the parameters are not set, modules operate with the default settings and these operations may differ from the desired ones.

When mounting an intelligent function module, configure the switch setting for I/O assignments.

The figures below show the setting example of I/O assignments on the following conditions; the system has one remote I/O station, the system configurations before and after the replacement are the same, and an intelligent function module is mounted on the remote I/O station.

I/O assignments of the remote I/O station (set in the network parameter at the existing master station)

	StationNo	Slot	Туре	Model name	Points 🔺
0	1	0(0-0)	Special 👻		32points 🔪
1	1	1(0-1)	Input 🚽 👻		32points 🚽
2	1	2(0-2)	Sutout 🔻		32pointe 🗸 🗸

Delete the parameters to set them on the remote I/O station side.

#### I/O assignments of the remote I/O station (set in the network parameter at the remote I/O station after the replacement)

The address change is not required when the number of occupied points and start XY address are set on the remote I/O station side. -1/0 44

No.	Slot	Туре		Model Name		Points		Start XY 🔺	Switch	Settin
0	Remote I/O Stat	Remote I/O Station		QJ72LP25-25			•			<u> </u>
1	0(*-0)	Intelligent	-	Q62DAN		32Points	-	0000	Detaile	Setti
2	1(*-1)	Input	+	QX41	(	16Points	-	0020		
3	2(*-2)	Output	-	QY41P	- <	16Points	-	0040	Select	.C ty
4	3(*-3)		-				-		New	lodule
5	4(*-4)		•				-		- INCAN	
6	5(*-5)		-				-			
7	6(*-6)		-				-	•		

Assigning the I/O address is not necessary as the CPU does it automatically. Leaving this setting blank will not cause an error to occur.

The switch setting is required when an intelligent function module is used.

#### Switch setting example

5

÷ 0 Switch2 Switch3 h4 Switch5 🔺 itch1 emote I/O Stat Remote I/O Station QJ72LP25-25 1 0(\*-0) 2 1(\*-1) 3 2(\*-2) Q62DAN QX41 0044 0000 0000 0000 ligent Input QY41P utpu

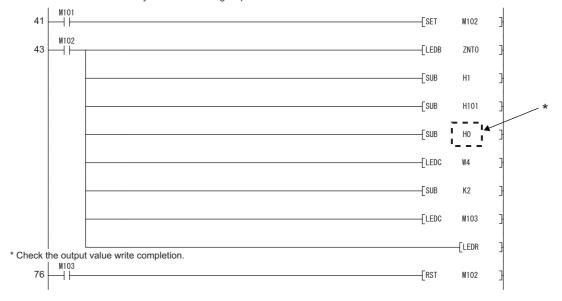
## (3) Utilizing existing programs

If the system configurations before and after the replacement are the same, program modifications are not required.

When an intelligent function module is mounted on the remote I/O station, the buffer memory read or write functions using the dedicated link instruction of the CPU module on the master station. In such a case, if the specifications such as I/O signals or buffer memory addresses are different between the modules before and after the replacement, a program modification is required.

The figure below shows the example of modifying the program related to the dedicated link instruction when the CPU module on the master station is the AnUCPU and the A62DA (analog output module) is replaced with the Q62DAN.

Program related to the dedicated link instruction of the existing AnUCPU



\* Write data to the buffer memory area in the analog output side.

\* Change SUB H0 into SUB H1 because the buffer memory address for writing the analog output value of the Q62DAN changes H1.

For details on replacements of intelligent function modules, refer to the following.

Transition from MELSEC-A/QnA (Large Type) Series to Q Series Handbook (Intelligent Function Modules)

Transition from MELSEC-AnS/QnAS (Small Type) Series to Q Series Handbook (Intelligent Function Modules)

# 5.2.7 Last stage of the replacement

This section describes the last stage of the step-by-step replacement of the MELSECNET/10 remote I/O stations with the MELSECNET/H remote I/O stations. The replacement is conducted by using the MELSECNET/10 mode of MELSECNET/H remote I/O modules.

## (1) Last stage of the replacement

A MELSECNET/H remote I/O module (MELSECNET/10 mode) can be used when the CPU module on the master station is A/AnS/QnA/QnAS series.

When replacing the CPU module on the master station with a Q series module, replace the network as well (from MELSECNET/10 remote I/O to MELSECNET/H remote I/O). In this case, Q series modules are used for all remote I/O stations.

The last stage of the step-by-step replacement of the MELSECNET/10 remote I/O network is when the CPU module on the master station is replaced with a Q series module.

#### (2) How to replace the master station

Replace the master station in the same way as the MELSECNET/10 remote I/O is collectively replaced. For details, refer to Section 5.1.

## (3) How to replace remote I/O stations

For MELSECNET/H remote I/O modules at the step-by-step replacement, the mode setting switches are set to MELSECNET/10 mode "8".

At the last stage of the replacement where the network is replaced with the MELSECNET/H remote I/O, if the mode setting switches are changed to Online (MELSECNET/H mode) "0" or "4", all of the modules on the stations can be used as they are.

Note that to use the buffer memory read or write of an intelligent function module, program checks and modifications are required for the dedicated link instructions (from the A series instructions to the Q series instructions).

# 6 REPLACEMENT OF CC-LINK

# 6.1 List of CC-Link Alternative Models

#### (1) Replacement of the A/AnS series

A/AnS series	Alternative models
AJ61BT11	QJ61BT11N <sup>*1</sup>
A1SJ61BT11	

#### (2) Replacement of the QnA/QnAS series

QnA/QnAS series	Alternative models
AJ61QBT11	QJ61BT11N <sup>*1</sup>
A1SJ61QBT11	

\*1 The number of mountable CC-Link modules depending on Q series CPU module type is as follows: Universal model QCPU: 64

Up to eight modules can be set using parameters of GX Works2 or GX Developer. To use more than eight modules, set the parameters using dedicated instructions.

For details, refer to the CC-Link System Master/Local Module User's Manual.

# 6.2 Specifications Comparisons

# 6.2.1 Module specifications comparisons

# (1) A/AnS series

	$\bigcirc$ : Compatible, $\triangle$ : Partial change required, × : Incompatible				
Item	Specifications AJ61BT11/A1SJ61BT11 QJ61BT11N			Precautions for replacement	
Transmission speed	Can be selected from 156kbps/625kbps/2.5Mbps/5Mbps/ 10Mbps.				
Max. cable overall distance (Max. transmission distance)	Differs depending on the transmission speed. (Refer to the manual.)				
	64 stations Note that it has to be satisfied with the following conditions.				
Max. number of stations	$\{(1 \times a) + (2 \times b) + (3 \times c) + (4 \times d)\} \le 64$ a: Number of 1-station occupied modules b: Number of 2-station occupied modules c: Number of 3-station occupied modules				
(For master station)	d: Number of 4-station occupied modules				
	$\{(16 \times A) + (54 \times B) + (88 \times C)\} \le 2304$ A: Number of remote I/O stations $\le 64$ stations B: Number of remote device stations $\le 42$ stations C: Number of local stations, standby master stations and intelligent device stations $\le 26$ stations				
Number of occupied stations (For local station)	1 to 4 stations (Switched with DIP switch)	1 to 4 stations (Switched with GX Works2 or GX Developer parameter settings)	0	GX Works2 or GX Developer parameter settings are required.	
Maximum number of link points per system	Remote I/O (RX, RY) : 2048 points Remote register (RWw) : 256 points Remote register (RWr) : 256 points		0		
Remote station/local station Link points per station	Remote I/O (RX, RY) : 32 points (Local station: 30 points) Remote register (RWw) : 4 points Remote register (RWr) : 4 points		0		
Communication method	Broad cast polling method		0		
Synchronous type	Frame synchronization method	Flag synchronization method	Δ	Nothing to be noted though the methods are different.	
Encoding method	NRZI method		0		
Transmission method	Bus (RS-485)		0		
Transmission format		tandards	0		
Error control system Connection cable	$CRC (X^{16} + X^{12} + X^5 + 1)$ CC-Link dedicated cable/CC-Link dedicated high-performance cable/Ver.1.10 compatible CC-Link dedicated cable		0	Refer to Section 6.2.2.	
RAS function	Automatic return function     Slave station detach function     Error detection with link special relay/register		0		
Number of parameter registrations to E <sup>2</sup> PROM	10,000 times	-	Δ	GX Works2 or GX Developer parameter settings are performed instead of the parameter registration to E <sup>2</sup> PROM.	
Number of occupied I/O points	32 points (I/O assignment: special 32 points)	32 points (I/O assignment: intelli 32 points)	0		

# (2) QnA/QnAS series

Item	Specifications			Precautions for
nem	AJ61QBT11/A1SJ61QBT11	QJ61BT11N	ibility	replacement
Transmission speed	Can be selected		0	
	from 156kbps/625kbps/2.5Mbps	/5Mbps/10Mbps.		
Max. cable overall				
distance		ne transmission speed.	0	
(Max. transmission	(Refer to the manual.)			
distance)	64 stations			
	Note that it has to be satisfied with the following conditions.			
	$\{(1 \times a) + (2 \times b) + (3 \times c) + (4 \times d)\} \le 64$			
	a: Number of 1-station occupied modules			
	b: Number of 2-station occupied modules			
Max. number of stations	c: Number of 3-station occupied modules			
For master station)	d: Number of 4-station occupied modules		0	
	{(16 × A) + (54 × B) + (88 × C)} :	≦ 2304		
	A: Number of remote I/O station	s $\leq$ 64 stations		
	B: Number of remote device stat	tions $\leq$ 42 stations		
	C: Number of local stations, star			
	intelligent device stations $\leq 26$ stations			
Number of occupied		1 to 4 stations (Switched with		GX Works2 or GX
stations	1 to 4 stations (Switched with	GX Works2 or GX Developer		Developer parameter
(For local station)	DIP switch)	parameter settings)		settings are required.
Maximum number of link	Remote I/O (RX, RY) : 2048 poir	nts		
points per system	Remote register (RWw) : 256 points		0	
	Remote register (RWr) : 256 points			
Remote station/local	Remote I/O(RX, RY) : 32 points			
station	Remote register (RWw) : 4 points		0	
Link points per station	Remote register (RWr) : 4 points		0	
Communication method	Broad cast p	Broad cast polling method		
Synchronous type	Frame synchronization method	Flag synchronization method		Nothing to be noted though the methods are
		Flag synchronization method		different.
Encoding method	NRZI method		0	
Transmission method	Bus (RS-485)		0	
Transmission format		tandards	0	
Error control system	$CRC (X^{16} + X^{12} + X^5 + 1)$		0	
	CC-Link dedicated cable/CC-Link dedicated high-performance		0	
Connection cable	cable/Ver.1.10 compatible CC-Link dedicated cable		0	Refer to Section 6.2.2.
	Automatic return function		0	
RAS function	Slave station detach function			
	<ul> <li>Error detection with link special relay/register</li> </ul>			
		-	Δ	GX Works2 or GX
Number of parameter				Developer parameter
egistrations to	10,000 times			settings are performed
E <sup>2</sup> PROM				instead of the parameter
				registration to E <sup>2</sup> PROM.
Number of occupied I/O	32 points (I/O assignment:	32 points (I/O assignment:	0	
points	special 32 points) intelli 32 points)			

 $\bigcirc$  : Compatible,  $\bigtriangleup$  : Partial change required,  $\times$  : Incompatible

# 6.2.2 Cable performance comparisons

CC-Link dedicated cable used on the A/AnS/QnA/QnAS series can be also used on the Q series. For specifications of CC-Link dedicated cable, refer to CC-Link Partner Association home page: www.cc-link.org

# 6.3 Functional Comparisons

# (1) A/AnS series

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Item	Specifica		Compat-	
O	AJ61BT11/A1SJ61BT11	QJ61BT11N	ibility	replacement
Communication between master station and remote I/O station	The communication of ON/OFF information with remote I/O station is performed.		0	
Communication between master and remote device stations	The communication of ON/OFF information and numerical data with remote device station is performed.		0	
Communication between master station and local station	The communication of ON/OFF information and numerical data with local station is performed.		0	
Communication between master and intelligent device stations	The communication is performed with intelligent device station using cyclic transmission and transient transmission.		0	
Reserved station function	By setting remote station and local station, which are to be connected in the future, as reserved stations, these stations are not treated as data link faulty stations. If a connected module is specified, no data link is available.		0	
Error invalid station function	Remote station and local station that cannot perform data link due to the power supply off, etc. will not be treated as data link faulty stations with this function.		0	
Data link status setting at master station programmable controller CPU error	The data link status when operation continuation error occurs on the master station programmable controller CPU can be set.		0	
Parameter registration to E <sup>2</sup> PROM	Parameter writing is not required at each startup of master module by registering parameters to E <sup>2</sup> PROM of master module.	-	Δ	GX Works2 or GX Developer parameter settings are performed instead of the parameter registration to E <sup>2</sup> PROM.
Data link faulty station input data status setting	The input (received) data status (cleared/hold) from the station that has data link error caused by the power supply off, etc. can be set.		0	
Module reset function by sequence program	Resetting can be performed by the sequence program without resetting programmable controller CPU in the case the switch setting is changed or an error has occurred in a module.	-	x	When the switch setting is changed, turn the power supply of programmable controller system OFF $\rightarrow$ ON or reset the programmable controller CPU.
Data link stop/restart	The stop and restart of data link is execution.	available during the data link	0	
Automatic return function	The module disconnected from data link by the power supply off, etc. can automatically return to data link, when restored to the normal status.		0	
Slave station detach function	The module that cannot perform data link due to the power supply off, etc. is disconnected and data link is kept with normal modules only.		0	
Data link status check (SB/SW)	Data link status can be checked. This check can be used for the inte program.	erlock etc. of sequence	0	

 $\bigcirc$  : Compatible,  $\triangle$ : Partial change required, × : Incompatible

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Item	Specifications			Precautions for	
Item	AJ61BT11/A1SJ61BT11	QJ61BT11N	ibility	replacement	
Offline test	The following tests can be       The following tests can be         performed.       The following tests can be         • Hardware test:       performed.         Standalone module operation       • Hardware test:         check       Standalone module operation         • Line test:       check         Module connection status       • Line test:         check       Module connection status         • Parameter check test:       check         Parameter setting check       check		Δ	The specification method of hardware test/line test differs. For details on the specification method, refer to the manual. Check the set parameter in GX Works2 or GX Developer network parameters.	
Parameter registration function	The following two types of parameters are set using the sequence program (TO instruction) or dedicated instructions.The following two types of parameters are set using GX Works2 or GX Developer. • Network parameter • Automatic refresh parameter		Δ	Change from the parameter settings in the sequence program (TO instruction) or with dedicated instructions to the parameter settings with GX Works2 or GX Developer.	
Scan synchronous function	Synchronous mode: Data link with scan synchronized with sequence program is available. Asynchronous mode: Data link not synchronized with sequence program is available.				
Standby master function	Data link can be continuously pe standby master station at the ma		0		
Dedicated instruction (RIRD, RIWT, RIRCV, RISEND, RIFR, RITO)	Transient transmission to intelligent device station and local station is available using dedicated instructions.		Δ	Change the sequence program as instruction formats differ.	
Remote I/O net mode	Communication is available for master station and remote I/O station only.		Δ	Delete RRPA instruction and set parameters with GX Works2 or GX Developer.	
Temporary error invalid station specify function	Module replacement is available faulty remote station during onlir		0		

 $\bigcirc$  : Compatible,  $\bigtriangleup$  : Partial change required,  $\times$  : Incompatible

## (2) QnA/QnAS series

14.5.00	Specifications	Compat-	Precautions for
Item	AJ61QBT11/A1SJ61QBT11 QJ61BT11N	ibility	replacement
Communication between master station and remote I/O station	The communication of ON/OFF information with remote I/O station is performed.	0	
Communication between master and remote device stations	The communication of ON/OFF information and numerical data with remote device station is performed.	0	
Communication between master station and local station	The communication of ON/OFF information and numerical data with local station is performed.	0	
Communication between master and intelligent device stations	The communication is performed with intelligent device station using cyclic transmission and transient transmission.	0	
Reserved station function	By setting remote station and local station, which are to be connected in the future, as reserved stations, these stations are not treated as data link faulty stations. If a connected module is specified, no data link is available.	0	
Error invalid station function	Remote station and local station that cannot perform data link due to the power supply off, etc. will not be treated as data link faulty stations with this function.	0	
Data link status setting at master station programmable controller CPU error	The data link status when operation continuation error occurs on the master station programmable controller CPU can be set.	0	
Parameter registration to E <sup>2</sup> PROM	Parameter writing is not required at each startup of master module by registering _ parameters to E <sup>2</sup> PROM of master module.	Δ	GX Works2 or GX Developer parameter settings are performed instead of the parameter registration to E <sup>2</sup> PROM.
Data link faulty station input data status setting	The input (received) data status (cleared/held) from the station that has data link error caused by the power supply off, etc. can be set.	0	
Module reset function by sequence program	Resetting can be performed by the sequence program without resetting programmable controller CPU in the case the switch setting is changed or an error has occurred in a module.	×	When the switch setting is changed, turn the power supply of programmable controller system OFF $\rightarrow$ ON or reset the programmable controller CPU.
Data link stop/restart	The stop and restart of data link is available during the data link execution.	0	
Automatic return function	The module disconnected from data link by the power supply off, etc. can automatically return to data link, when restored to the normal status.		
Slave station detach function	The module that cannot perform data link due to the power supply off, etc. is disconnected and data link is kept with normal modules only.	0	
Data link status check (SB/SW)	Data link status can be checked. This check can be used for the interlock etc.of sequence program.	0	

 $\bigcirc$  : Compatible,  $\bigtriangleup$  : Partial change required, × : Incompatible

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 $\bigcirc$  : Compatible,  $\bigtriangleup$  : Partial change required,  $\times$  : Incompatible

	Specifi	cations	Compat-	Precautions for
ltem	AJ61QBT11/A1SJ61QBT11 <sup>*1</sup>	QJ61BT11N <sup>*2</sup>	ibility	replacement
Offline test	AJ51013111/A1SJ51013111 The following tests can be performed. • Hardware test: Standalone module operation check • Line test: Module connection status check • Parameter check test: Parameter setting check	The following tests can be performed. • Hardware test: Standalone module operation check • Line test: Module connection status check		The specification method of hardware test/line test differs. For details on the specification method, refer to the manual. Check the set parameter in GX Works2 or GX Developer network parameters.
Parameter registration function	The following two types of paran or GX Developer. • Network parameter • Automatic refresh parameter	0	P	
Scan synchronous function	Synchronous mode: Data link with scan synchronized with sequence program is available. Asynchronous mode: Data link not synchronized with sequence program is available.			
Standby master function	Data link can be continuously pe standby master station at the ma		0	
Dedicated instruction (RIRD, RIWT, RIRCV, RISEND, RIFR, RITO)	Transient transmission to intellig station is available using dedicat		Δ	Change the sequence program as instruction formats differ.
Send/receive instruction (SEND, RECV, READ, SREAD, WRITE, SWRITE, REQ)	Data sending/receiving to/from other station on CC-Link is available Data reading/writing from/to other station is also available.		Δ	Replace READ, WRITE instructions with dedicated instructions (RIRD, RIWT). Other instruction cannot be replaced.
Remote I/O net mode	Communication is available for master station and remote I/O station only.		Δ	Set parameters with GX Works2 or GX Developer.
Temporary error invalid	Module replacement is available without detecting error of the		0	
station specify function Online test function	faulty remote station during online. Line test and link start/stop, etc. can be performed with GX Works2 or GX Developer.			
Monitoring and diagnostics	Monitoring and diagnosing can b GX Developer.	e performed from GX Works2 or	0	

\*1 Use GX Developer.

\*2 Use GX Works2 or GX Developer.

## 6.4 Switch Settings Comparisons

## (1) A/AnS series

Quuitab mama	Specifi	cations	Compat-	Precautions for
Switch name	AJ61BT11/A1SJ61BT11	QJ61BT11N	ibility	replacement
Station number setting switch	Sets the station No. of the module. <setting range=""> • For remote net mode Master station: 0 Local station: 1 to 64 Standby master station: 1 to 64 • For remote I/O net mode Master station: 1 to 64 (The last station No. of remote I/O station is set.)</setting>	Sets the station No. of the module. <setting range=""> Master station: 0 Local station: 1 to 64 Standby master station: 1 to 64</setting>	Δ	Sets the last station No. at remote I/O net mode with GX Works2 or GX Developer.
Mode setting switch Transmission speed setting switch	Sets the operation status of the module. Sets the transmission speed of the module.	Sets the transmission speed and operating status of the module.	Δ	The mode setting and the transmission rate setting are performed with one switch. The remote net mode and remote I/O net mode are specified in GX Works2 or GX Developer parameter settings.
Condition setting switch	Sets the operation conditions. <settings> • Station type • Input data status of data link faulty station • Number of occupied stations • Module mode</settings>	-	Δ	The operating conditions are set in the parameter settings of GX Works2 or GX Developer. Module mode setting is not required.

 $\bigcirc$  : Compatible,  $\bigtriangleup$ : Partial change required, × : Incompatible

O : Compatible, △: Partial change required	I, × : Incompatible
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Quuitala marria	Specifi	cations	Compat-	Precautions for
Switch name	AJ61QBT11/A1SJ61QBT11	QJ61BT11N	ibility	replacement
Station number setting switch	Sets the station No. of the module. <setting range=""> • For remote net mode Master station: 0 Local station: 1 to 64 Standby master station: 1 to 64 • For remote I/O net mode Master station: 1 to 64 (The last station No. of remote I/O station is set.)</setting>	Sets the station No. of the module. <setting range=""> Master station: 0 Local station: 1 to 64 Standby master station: 1 to 64</setting>	Δ	Sets the last station No. at remote I/O net mode with GX Works2 or GX Developer.
Mode setting switch	Sets the operation status of the module.			The mode setting and the transmission rate setting
Transmission speed setting switch	Sets the transmission speed of the module.	Sets the transmission speed and operating status of the module.	Δ	are performed with one switch. The remote net mode and remote I/O net mode are specified in GX Works2 or GX Developer parameter settings.
Condition setting switch	Sets the operation conditions. <settings> • Station type • Input data status of data link faulty station • Number of occupied stations</settings>	-	Δ	The operating conditions are set in the parameter settings of GX Works2 or GX Developer.

## 6.5 Parameter Comparisons

#### (1) A/AnS series

Baramatar nama	Specifi	cations	Compat-	Precautions for
Parameter name	AJ61BT11/A1SJ61BT11	QJ61BT11N	ibility	replacement
Network parameter	Set this parameter with the sequence program (TO instruction) or with dedicated instruction (RLPA instruction).	Set this parameter with GX Works2/GX Developer or with dedicated instruction (RLPASET instruction).	Δ	Newly set the parameter with GX Works2/GX Developer or the dedicated instruction (RLPASET instruction). <sup>*1 *2</sup> Specify [Remote net Ver.1 mode] or [Remote I/O net mode] for the mode.
Automatic refresh parameter	Read/write cyclic data with FROM/TO instruction or set this parameter with dedicated instruction (RRPA instruction).	Perform the automatic refresh setting with GX Works2/GX Developer or read/write cyclic data with FROM/TO instruction.	Δ	Perform the automatic refresh setting with GX Works2/GX Developer or read/write cyclic data with FROM/TO instruction. When setting the network parameter with dedicated instruction (RLPASET instruction), read/write cyclic data with FROM/TO instruction.

#### (2) QnA/QnAS series

 $\bigcirc$  : Compatible,  $\bigtriangleup$  : Partial change required, × : Incompatible

 $\bigcirc$  : Compatible,  $\triangle$ : Partial change required, × : Incompatible

Deveneter	Specifi	cations	Compat-	Precautions for
Parameter name	AJ61QBT11/A1SJ61QBT11	QJ61BT11N	ibility	replacement
Network parameter	Set this parameter with GX Developer or sequence program (TO instruction).	Set this parameter with GX Works2/GX Developer or with dedicated instruction (RLPASET instruction).	Δ	Newly set the parameter with GX Works2/GX Developer or the dedicated instruction (RLPASET instruction). <sup>*1 *2</sup> Specify [Remote net Ver.1 mode] or [Remote I/O net mode] for the mode.
Automatic refresh parameter	Perform the automatic refresh setting with GX Developer or read/write cyclic data with FROM/TO instruction.	Perform the automatic refresh setting with GX Works2/GX Developer or read/write cyclic data with FROM/TO instruction.	Δ	Set the automatic refresh with GX Works2/GX Developer or read/write cyclic data with FROM/TO instruction. When setting the network parameter with dedicated instruction (RLPASET instruction), read/write cyclic data with FROM/TO instruction.

\*1 Parameter setting of Q series CC-Link modules Parameters can be set on up to eight modules using GX Works2 or GX Developer. For the settings of the 9th module or later, use the dedicated instruction.

For details, refer to the CC-Link System Master/Local Module User's Manual.

\*2 Delete the program for the network parameter setting of the existing module.

## 6.6 Program Comparisons

## 6.6.1 Comparison of I/O signals

#### (1) A/AnS series

(a) Input signal

	Signa	al name	Compat-		
Input signal	AJ61BT11/A1SJ61BT11	QJ61BT11N	ibility	Precautions for replacement	
Xn0	Module error	Module error	0		
Xn1	Data link status at host station	Data link status at host station	0		
,			0	Delete the sequence program of the section	
Xn2	Parameter setting status	Prohibited to use		corresponding to the function, and check with SB006D (Parameter setting status).	
Xn3	Data link status of other station	Data link status of other station	0		
Xn4	Module reset acceptance complete	Prohibited to use	×	Delete the sequence program of the section corresponding to the function. When the switch setting is changed, turn the power supply of programmable controller system OFF $\rightarrow$ ON or reset the programmable controller CPU.	
Xn5	Prohibited to use	Prohibited to use	0		
Xn6	Data link startup by buffer memory parameter normal completion Data link startup by buffer	_			
Xn7	memory parameter error completion	-	Δ	Delete the sequence program of the section	
Xn8	Data link startup by E <sup>2</sup> PROM parameter normal completion	Prohibited to use		△ with GX Works2	corresponding to the function, and set parameters with GX Works2/GX Developer or with dedicated
Xn9	Data link startup by E <sup>2</sup> PROM parameter error completion				instruction (RLPASET instruction
XnA	Parameter registration to E <sup>2</sup> PROM normal completion				
XnB	Parameter registration to E <sup>2</sup> PROM error completion				
XnC	Prohibited to use	Prohibited to use	0		
XnD	E <sup>2</sup> PROM erasure normal completion	Prohibited to use		Delete the sequence program of the section corresponding to the function, and set parameters	
XnE	E <sup>2</sup> PROM erasure abnormal completion			with GX Works2/GX Developer or with dedicated instruction (RLPASET instruction).	
XnF	Module ready	Module ready	0		
X(n+1)0					
X(n+1)1					
X(n+1)2					
X(n+1)3	-				
X(n+1)4					
X(n+1)5	-				
X(n+1)6					
X(n+1)7	Prohibited to use	0			
X(n+1)8					
X(n+1)9					
X(n+1)A					
X(n+1)B					
X(n+1)C					
X(n+1)D					
X(n+1)E					
X(n+1)F					

 ${\sf O}$  : Compatible,  $\bigtriangleup$  : Partial change required,  ${\sf x}$  : Incompatible

## (b) Output signal

	Signal	name	Compat-	
Output signal	AJ61BT11/A1SJ61BT11	QJ61BT11N	ibility	Precautions for replacement
Yn0	Refresh specification	Prohibited to use	Δ	Refreshed automatically. Delete the sequence program of the section corresponding to the function.
Yn1				
Yn2	Prohibited to use	Prohibited to use	0	
Yn3 Yn4	Module reset request	Prohibited to use	×	Delete the sequence program of the section corresponding to the function. When the switch setting is changed, turn the power supply of programmable controller system OFF $\rightarrow$ ON or reset the programmable controller CPU.
Yn5	Prohibited to use	Prohibited to use	0	
Yn6	Data link startup request from buffer memory parameters	Prohibited to use	Δ	Delete the sequence program of the section corresponding to the function, and set parameters with GX Works2/GX Developer or with dedicated instruction (RLPASET instruction).
Yn7	Prohibited to use	Prohibited to use	0	
Yn8	Data link startup request from E <sup>2</sup> PROM parameters	Prohibited to use	Δ	Delete the sequence program of the section corresponding to the function, and set parameters with GX Works2/GX Developer or with dedicated instruction (RLPASET instruction).
Yn9	Prohibited to use	Prohibited to use	0	
YnA	Parameter registration request to E <sup>2</sup> PROM	Prohibited to use	Δ	Delete the sequence program of the section corresponding to the function, and set parameters with GX Works2/GX Developer or with dedicated instruction (RLPASET instruction).
YnB	Prohibited to use	Prohibited to use	0	
YnC YnD	E <sup>2</sup> PROM erasure request	Prohibited to use	Δ	Delete the sequence program of the section corresponding to the function, and set parameters with GX Works2/GX Developer or with dedicated instruction (RLPASET instruction).
YnE				
YnF				
Y(n+1)0				
Y(n+1)1				
Y(n+1)2				
Y(n+1)3				
Y(n+1)4	Prohibited to use	Prohibited to use	0	
Y(n+1)5			Ŭ	
Y(n+1)6				
Y(n+1)7				
Y(n+1)8 Y(n+1)9				
Y(n+1)9 Y(n+1)A				
Y(n+1)A Y(n+1)B				
Y(n+1)C	Bank switch specification of			Rank switching is not required (Pofer to Section
Y(n+1)D	buffer memory	Prohibited to use	$\bigtriangleup$	Bank switching is not required. (Refer to Section 6.6.2.)
		1	1	
Y(n+1)E	,			

 $\bigcirc$  : Compatible,  $\bigtriangleup$  : Partial change required,  $\times$  : Incompatible

## (2) QnA/QnAS series

## (a) Input signal

	$\bigcirc$ : Compatible, $\bigtriangleup$ : Partial change required, $\times$ : incompatible				
Input signal		l name	Compat-	Precautions for replacement	
	AJ61QBT11/A1SJ61QBT11	QJ61BT11N	ibility		
Xn0	Module error	Module error	0		
Xn1	Data link status at host station	Data link status at host station	0		
Xn2	Parameter setting status	Prohibited to use	Δ	Delete the sequence program of the section corresponding to the function, and check with SB006D (Parameter setting status).	
Xn3	Data link status of other station	Data link status of other station	0		
Xn4	Module reset acceptance complete	Prohibited to use	×	Delete the sequence program of the section corresponding to the function. When the switch setting is changed, turn the power supply of programmable controller system OFF $\rightarrow$ ON or reset the programmable controller CPU.	
Xn5	Prohibited to use	Prohibited to use	0		
Xn6	Data link startup by buffer memory parameter normal completion				
Xn7	Data link startup by buffer memory parameter error completion	_		Delete the sequence program of the section	
Xn8	Data link startup by E <sup>2</sup> PROM parameter normal completion	Prohibited to use	Δ	corresponding to the function, and set parameters with GX Works2/GX Developer or with dedicated	
Xn9	Data link startup by E <sup>2</sup> PROM parameter error completion			instruction (RLPASET instruction).	
XnA	Parameter registration to E <sup>2</sup> PROM normal completion				
XnB	Parameter registration to E <sup>2</sup> PROM error completion				
XnC	Prohibited to use	Prohibited to use	0		
XnD	E <sup>2</sup> PROM erasure normal completion	Prohibited to use		Delete the sequence program of the section corresponding to the function, and set parameters	
XnE	E <sup>2</sup> PROM erasure abnormal completion	Fromblied to use	Δ	with GX Works2/GX Developer or with dedicated instruction (RLPASET instruction).	
XnF	Module ready	Module ready	0		
X(n+1)0					
X(n+1)1	]				
X(n+1)2					
X(n+1)3					
X(n+1)4					
X(n+1)5					
X(n+1)6					
X(n+1)7	1				
X(n+1)8	Prohibited to use	Prohibited to use	0		
X(n+1)9	1				
X(n+1)A	1				
X(n+1)B	1				
X(n+1)C	1				
X(n+1)D	1				
X(n+1)E	1				
X(n+1)F	1				

## (b) Output signal

o	Signal	I name	Compat-	
Output signal	AJ61QBT11/A1SJ61QBT11	QJ61BT11N	ibility	Precautions for replacement
Yn0	Refresh specification	Prohibited to use	Δ	Refreshed automatically. Delete the sequence program of the section corresponding to the function.
Yn1 Yn2	Prohibited to use	Prohibited to use	0	
Yn3 Yn4	Module reset request	Prohibited to use	×	Delete the sequence program of the section corresponding to the function. When the switch setting is changed, turn the power supply of programmable controller system OFF $\rightarrow$ ON or reset the programmable controller CPU.
Yn5	Prohibited to use	Prohibited to use	0	
Yn6	Data link startup request from buffer memory parameters	Prohibited to use	Δ	Delete the sequence program of the section corresponding to the function, and set parameters with GX Works2/GX Developer or with dedicated instruction (RLPASET instruction).
Yn7	Prohibited to use	Prohibited to use	0	
Yn8	Data link startup request from E <sup>2</sup> PROM parameters	Prohibited to use	Δ	Delete the sequence program of the section corresponding to the function, and set parameters with GX Works2/GX Developer or with dedicated instruction (RLPASET instruction).
Yn9	Prohibited to use	Prohibited to use	0	
YnA	Parameter registration request to E <sup>2</sup> PROM	Prohibited to use	Δ	Delete the sequence program of the section corresponding to the function, and set parameters with GX Works2/GX Developer or with dedicated instruction (RLPASET instruction).
YnB YnC	Prohibited to use	Prohibited to use	0	
YnD	E <sup>2</sup> PROM erasure request	Prohibited to use	Δ	Delete the sequence program of the section corresponding to the function, and set parameters with GX Works2/GX Developer or with dedicated instruction (RLPASET instruction).
YnE				
YnF				
Y(n+1)0				
Y(n+1)1				
Y(n+1)2				
Y(n+1)3				
Y(n+1)4				
Y(n+1)5				
Y(n+1)6	Prohibited to use	Prohibited to use	0	
Y(n+1)7				
Y(n+1)8				
Y(n+1)9				
Y(n+1)A				
Y(n+1)B				
Y(n+1)C				
Y(n+1)D				
Y(n+1)E				
Y(n+1)F	l			

 $\bigcirc$  : Compatible,  $\bigtriangleup$  : Partial change required,  $\times$  : Incompatible

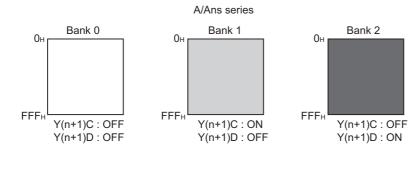
#### 6.6.2 Buffer memory comparisons

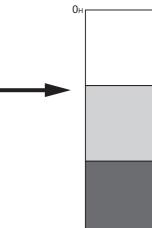
#### (1) A/AnS series

Buffer memory is divided into bank0 to bank2 on the A/AnS series, but it is one area on the Q series. Bank is switched with ON/OFF of Y (n+1)C, Y(n+1)D.

Buffer memory address of the Q series is shown in parenthesis, as buffer memory addresses of communication buffer and automatic updating buffer are different.

				⊖ : Compatible, ∆	: Partial ch	ange required, × : Incompatible
	Buffer memory	address	Buffer me	mory name	Compat-	Precautions for
Bank	Hex.	Dec.	AJ61BT11/A1SJ61BT11	QJ61BT11N	ibility	replacement
	0н to 5Fн	0 to 95	Parameter information area	Parameter information area	0	
	60н to 7Fн	96 to 127	Prohibited to use	Prohibited to use	0	
	80н to CDн	128 to 205	Parameter information area	Parameter information area	0	
	CEn to DFn	206 to 223	Prohibited to use	Parameter information area	Δ	Added with the remote net Ver.2 mode. Replacement is not applied.
	E0н to 15Fн	224 to 351	Remote input (RX)	Remote input (RX)	0	
0	160н to 1DFн	352 to 479	Remote output (RY)	Remote output (RY)	0	
	1E0н to 2DFн	480 to 735	Remote register (RWw)	Remote register (RWw)	0	
	2E0н to 3DFн	736 to 991	Remote register (RWr)	Remote register (RWr)	0	
	3E0н to 5DFн	992 to 1503	Prohibited to use	Slave station offset, size information	Δ	Added with the remote net Ver.2 mode. Replacement is not applied.
	5E0н to 5FFн	1504 to 1535	Link special relay (SB)	Link special relay (SB)	0	
	600н to 7FFн	1536 to 2047	Link special register (SW)	Link special register (SW)	0	
	800н to 9FFн	2048 to 2559	Prohibited to use	Prohibited to use	0	
	A00H to FFFH	2560 to 4095	Random access buffer	Random access buffer	0	
1	0 to FFFн (1000н to 1FFFн)	0 to 4095 (4096 to 8191)	Communication buffer	Communication buffer	Δ	Delete the program for bank switching.
2	0 to FFFн (2000н to 2FFFн)	0 to 4095 (8192 to 12287)	Automatic updating buffer	Automatic updating buffer	Δ	Delete the program for bank switching.
-	- (3000н to 3FFFн)	- (12288 to 16383)		Prohibited to use	-	
-	- (4000н to 53FFн)	- (16384 to 21503)	-	Area for Ver.2	Δ	The function was added to Q series modules.
-	- (5400н to 7FFFн)	- (21504 to 32767)		Prohibited to use	-	





Q series

2FFFн

## (2) QnA/QnAS series

Buffer memo	ory address	Buffer me	mory name	0	
Hex.	Dec.	AJ61QBT11/ A1SJ61QBT11	QJ61BT11N	Compat- ibility	Precautions for replacement
0н to 5Fн	0 to 95	Parameter information area	Parameter information area	0	
60н to 7Fн	96 to 127	Prohibited to use	Prohibited to use	0	
80н to CDн	128 to 205	Parameter information area	Parameter information area	0	
CEH to DFH	206 to 223	Prohibited to use	Parameter information area	Δ	Added with the remote net Ver.2 mode. Replacement is not applied.
E0н to 15Fн	224 to 351	Remote input (RX)	Remote input (RX)	0	
160н to 1DFн	352 to 479	Remote output (RY)	Remote output (RY)	0	
1E0н to 2DFн	480 to 735	Remote register (RWw)	Remote register (RWw)	0	
2E0н to 3DFн	736 to 991	Remote register (RWr)	Remote register (RWr)	0	
3E0н to 5DFн	992 to 1503	Prohibited to use	Slave station offset, size information	Δ	Added with the remote net Ver.2 mode. Replacement is not applied.
5E0н to 5FFн	1504 to 1535	Link special relay (SB)	Link special relay (SB)	0	
600н to 7FFн	1536 to 2047	Link special register (SW)	Link special register (SW)	0	
800н to 9FFн	2048 to 2559	Prohibited to use	Prohibited to use	0	
A00н to FFFн	2560 to 4095	Random access buffer	Random access buffer	0	
1000н to 1FFFн	4096 to 8191	Communication buffer	Communication buffer	0	
2000н to 2FFFн	8192 to 12287	Automatic updating buffer	Automatic updating buffer	0	
- (3000н to 3FFFн)	- (12288 to 16383)		Prohibited to use	-	
- (4000н to 53FFн)	- (16384 to 21503)	-	Area for Ver.2	Δ	The function was added to Q series modules.
- (5400н to 7FFFн)	- (21504 to 32767)		Prohibited to use	-	

 $\bigcirc$  : Compatible,  $\bigtriangleup$ : Partial change required, × : Incompatible

## 6.6.3 Comparison of link special relay (SB)/link special register (SW)

#### (1) A/AnS series

The following table shows SB/SW which have different application on the A series and the Q series.

#### (a) Link special relay (SB)

○ : Compatible.	∆: Partial change	required. × :	Incompatible

Number	Na AJ61BT11/A1SJ61BT11	me QJ61BT11N	Compat- ibility	Precautions for replacement		
SB0001	Master station switching data link start	Refresh instruction at standby master switching	0	The specifications of A/AnS series and Q series are the same.		
SB0003		Refresh instruction when changing parameters by the dedicated instruction	Δ	Use for setting network parameters with RLPASET instruction.		
SB0007	_	Master station duplication error canceling request				
SB000B	-	Transmission speed test request	Δ	Added on the Q series and		
SB000C	-	Forced master switching		replacement is not applied.		
SB000D		Remote device station initialization procedure registration instruction				
SB0042	Master station switch data link start acceptance	Refresh instruction acknowledgement status at standby master switching				
SB0043	Master station switch data link start complete	Refresh instruction complete status at standby master switching	Δ	Added on the Q series and replacement is not applied.		
SB0046	-	Forced master switching executable status				
SB004E	Parameter setting test acceptance status	Parameter information read acknowledgement status		The functions of A/AnS series are different from those of Q		
SB004F	Parameter setting test complete status	Parameter information read completion status	×	series. Since the parameter setting test function is not required for the Q series, delete the sequence program for the corresponding function.		
SB0057		Master station duplication error				
	-	canceling acknowledgement Master station duplication error				
SB0058		canceling complete				
SB005A		Master switching request acknowledgement				
SB005B	_	Master switching request complete				
SB005C	-	Forced master switching request acknowledgement	Δ	Added on the Q series and replacement is not applied.		
SB005D	_	Forced master switching request complete				
SB005E		Execution status of remote device station initialization procedure				
SB005F		Completion status of remote device station initialization procedure				

		O : Compa	atible, $\triangle$ : Pa	rtial change required, × : Incompatible
Number	Na	Compat-	Precautions for replacement	
Number	AJ61BT11/A1SJ61BT11	QJ61BT11N	ibility	Frecautions for replacement
SB0069	Module mode	-	Δ	The mode is set on the Q series using the network parameters. (The setting can be checked in SW0060.)
SB006F	-	Setting status of block guarantee of cyclic data per station	Δ	Added on the Q series and replacement is not applied.
SB0079		Master station return specification information		
SB007B		Host master/standby master operation status		
SB007C		Slave station refresh/ compulsory clear setting status in case of programmable controller CPU STOP		Added on the Q series and
SB00B4		Standby master station test result		replacement is not applied.
SB0184		Transmission speed test result for standby master station		
SB0185	]	Transmission speed test accept status		
SB0186	]	Transmission speed test completion status		

## (b) Link special register (SW)

	Na	Compat-	Descentions for male second			
Number	AJ61BT11/A1SJ61BT11	QJ61BT11N	ibility	Precautions for replacement		
SW000B		Dedicated instruction retry				
3000000		count setting		Added on the Q series and		
SW0014 to SW0017	_	Specification of remote device		replacement is not applied.		
0110014100110011		station to be initialized.				
	Master station switch data link	Refresh instruction at standby		The specifications of A/AnS		
SW0043	start result	master switching result	0	series and Q series are the		
				same.		
SW0052		Automatic CC-Link startup				
		execution result				
SW0058		Detailed LED display status				
SW0059		Transmission rate setting		Added on the Q series and		
SW005D	-	Forced master switching	Δ	replacement is not applied.		
	-	instruction result	-			
014/0055		Remote device station				
SW005F		initialization procedure				
		registration instruction result				
SW0062	Condition setting switch status	Module operating status	Δ	On the Q series, parameter		
				setting status is stored.		
SW00B9	E <sup>2</sup> PROM registration status	-				
SW00BA	E <sup>2</sup> PROM erasure result			No E <sup>2</sup> PROM (Refer to Section		
	Number of times when	-	Δ	6.7.)		
SW00BB	parameters can be registered			0.1.)		
	to E <sup>2</sup> PROM					
		Remote device station				
		initialization procedure				
SW0110 to SW011F		registration execution				
		individual information (target 1				
		to 16)				
SW0140 to SW0143		Compatible CC-Link Ver.				
		information		Added on the Q series and		
	-	CC-Link Ver.	Δ	replacement is not applied.		
SW0144 to SW0147		installation/parameter		replacement is not applied.		
		matching status				
SW0148		Parameter mode				
SW0149		Host parameter mode				
SW0183		Transmission speed test result				
SW0184 to SW0187		Transmission speed test result				
		for each station				

#### (2) QnA/QnAS series

The following table shows SB/SW that have different applications on the QnA/QnAS series and the Q series.

#### (a) Link special relay (SB)

 $\bigcirc$  : Compatible,  $\bigtriangleup$ : Partial change required, × : Incompatible

	Na	Compat-			
Number	AJ61QBT11/A1SJ61QBT11	QJ61BT11N	ibility	Precautions for replacement	
SB0001	Master station switching data link start	Refresh instruction at standby master switching	0	The specifications of A/AnS series and Q series are the same.	
SB0003		Refresh instruction when changing parameters by the dedicated instruction			
SB0007	1	Master station duplication error canceling request			
SB000B	-	Transmission speed test request		Added on the Q series and replacement is not applied.	
SB000C		Forced master switching			
SB000D		Remote device station initialization procedure registration instruction			
SB0030	Communication command (1) acceptance			Not used on the Q series.	
SB0031	Communication command (1) complete		Δ	Delete the sequence program of the section corresponding to the function, and replace READ, WRITE instructions with	
SB0032	Communication command (2) acceptance				
SB0033	Communication command (2) complete			RIRD, RIWT instructions.	
SB0046		Forced master switching executable status			
SB0057		Master station duplication error canceling acknowledgement			
SB0058		Master station duplication error canceling complete			
SB005A		Master switching request acknowledgement			
SB005B		Master switching request complete		Added on the Q series and	
SB005C		Forced master switching request acknowledgement		replacement is not applied.	
SB005D		Forced master switching request complete			
SB005E		Execution status of remote device station initialization procedure			
SB005F		Completion status of remote device station initialization procedure			

(To next page)

6

 $\bigcirc$  : Compatible,  $\bigtriangleup$ : Partial change required, × : Incompatible

Normala a re	Na	me	Compat-	Precautions for replacement	
Number	AJ61QBT11/A1SJ61QBT11	QJ61BT11N	ibility		
SB0069	Module mode	-	Δ	The mode is set on the Q series using the network parameters. (The setting can be checked in SW0060.)	
SB006F		Setting status of block guarantee of cyclic data per station			
SB0079		Master station return specification information		Added on the Q series and	
SB007B	-	Host master/standby master operation status	Δ	replacement is not applied.	
SB007C		Slave station refresh/ compulsory clear setting status in case of programmable controller CPU STOP			
SB00A0	RECV instruction (1) execution request flag			Not used on the Q series. Delete the sequence program	
SB00A1	RECV instruction (2) execution request flag	-		of the section corresponding to the function.	
SB00B4		Standby master station test result			
SB0184		Transmission speed test result for standby master station		Added on the Q series and	
SB0185		Transmission speed test accept status		replacement is not applied.	
SB0186	]	Transmission speed test completion status			

## (b) Link special register (SW)

 $\bigcirc$  : Compatible,  $\bigtriangleup$  : Partial change required,  $\times$  : Incompatible

Number	Na	Compat-				
Number	AJ61QBT11/A1SJ61QBT11	QJ61BT11N	ibility	Precautions for replacement		
SW000B		Dedicated instruction retry				
30000B		count setting				
SW0014 to SW0017		Specification of remote device				
500014 10 500017		station to be initialized.				
SW0052		Automatic CC-Link startup				
300032		execution result		Added on the Q series and		
SW0058	-	Detailed LED display status	Δ	replacement is not applied.		
SW0059		Transmission rate setting		replacement is not applied.		
SW005D		Forced master switching				
GW003D		instruction result				
		Remote device station				
SW005F		initialization procedure				
		registration instruction result				
SW0062	Condition setting switch status	Module operating status		On the Q series, parameter		
	Condition Setting Switch Status			setting status is stored.		
SW00B9	E <sup>2</sup> PROM registration status		Δ			
SW00BA	E <sup>2</sup> PROM erasure result		Δ	No E <sup>2</sup> PROM (Refer to Section		
	Number of times when	-		6.7.)		
SW00BB	parameters can be registered	stered		0.7.)		
	to E <sup>2</sup> PROM					
		Remote device station				
		initialization procedure				
SW0110 to SW011F		registration execution				
		individual information (target 1				
		to 16)				
SW0140 to SW0143		Compatible CC-Link Ver.				
300140 10 300143		information		Added on the Q series and		
	-	CC-Link Ver.	Δ	replacement is not applied.		
SW0144 to SW0147		installation/parameter		replacement is not applied.		
		matching status				
SW0148		Parameter mode				
SW0149		Host parameter mode				
SW0183		Transmission speed test result				
SW0184 to SW0187		Transmission speed test result				
00010410000107		for each station				

## 6.7 Other Precautions

This section describes other precautions.

#### (1) Peripheral device connection module

When AJ65BT-G4 type peripheral connection module is used on the A/AnS/QnA/QnAS series, replace it with AJ65BT-G4-S3 type peripheral connection module. AJ65BT-G4 type peripheral connection module cannot be used on the Q series.

#### (2) Processing time

The link scan time and link refresh time differ between the A/AnS/QnA/QnAS series and the Q series. For details on processing times, refer to the manual for the respective module.

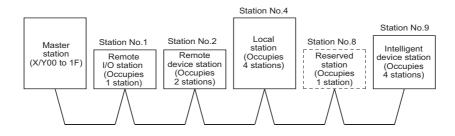
#### (3) Parameter registration to E<sup>2</sup>PROM

As the Q series CC-Link system master/local module does not have  $E^2$ PROM, delete the sequence program of the section corresponding to the parameter registration to  $E^2$ PROM. On the Q series CC-Link system master/local module, set the GX Works2 or GX Developer network parameters to register parameters to the programmable controller CPU.

## 6.8 Parameter Setting Example

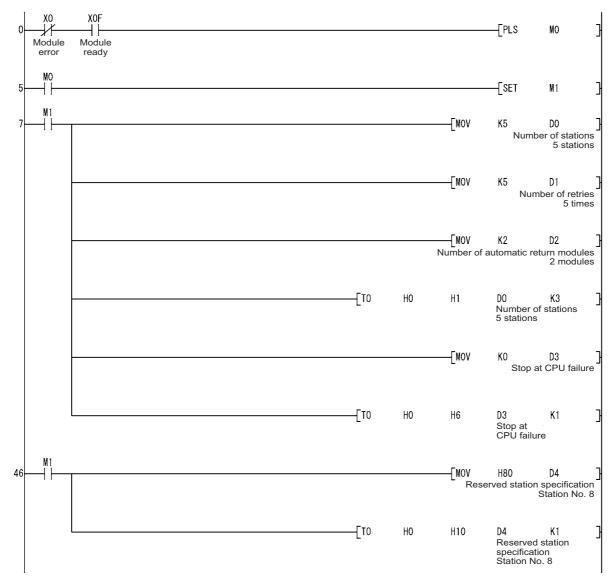
The following describes an example how to replace the system in which parameters were set using sequence program (TO instruction) on the A/AnS series with the system in which parameters are set using GX Works2 or GX Developer on the Q series.

This section explains the above using the following system configuration example.



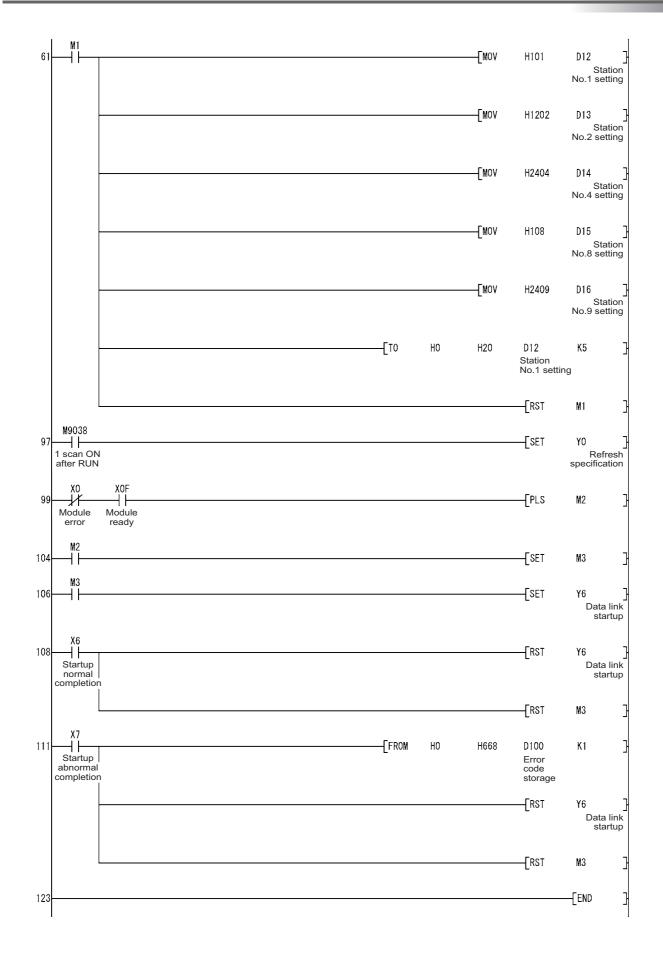
#### 6.8.1 Parameter setting example on the A/AnS series

The following shows a program example of parameter setting using the sequence program (TO instruction).



# MELSEC

6



## 6.8.2 Parameter setting example on the Q series

The following shows an example of parameter setting using GX Works2.

	1		2	3	4
Start I/O No.		0000			
Operation Setting	Operation Setting				
Туре	Master Station	<b>*</b>	•	•	
Master Station Data Link Type	PLC Parameter Auto Start	-	•	•	
Mode	Remote Net(Ver. 1 Mode)	-	•	<b>•</b>	
Total Module Connected		5			
Remote input(RX)					
Remote output(RY)					
Remote register(RWr)					
Remote register(RWw)					
Ver.2 Remote input(RX)					
Ver.2 Remote output(RY)					
Ver.2 Remote register(RWr)					
Ver.2 Remote register(RWw)					
Special relay(SB)					
Special register(SW)					
Retry Count		5			
Automatic Reconnection Station Count		2			
Standby Master Station No.					
PLC Down Select	Stop	<b>•</b>	*	*	
Scan Mode Setting	Asynchronous	<b>T</b>	*	•	
Delay Time Setting		0			
Station Information Setting	Station Information				
Remote Device Station Initial Setting	Initial Setting				
Interrupt Settings	Interrupt Settings				

ion Information Module 1											
	_	Expanded Cyd	lic	Number of	Remote Station	_	Reserve/Invalio	1	Intellige	nt Buffer Selec	t(Word)
Station Type		Setting		Occupied Stations	Points		Station Select		Send	Receive	Automatic
Remote I/O Station	-	Single	-	Occupied Station 1 📼	32Points	-	No Setting	•			
Remote Device Station	-	Single	-	Occupied Stations 2 📼	64Points	-	No Setting	•			
Intelligent Device Station	-	Single	-	Occupied Stations 4 📼	128Points	-	No Setting	+	64	64	128
Remote I/O Station	-	Single	-	Occupied Station 1 📼	32Points	-	Reserved Station	•			
Intelligent Device Station	-	Single	-	Occupied Stations 4 🔻	128Points	-	No Setting	-	64	64	128
	Station Type Remote I/O Station Remote Device Station Intelligent Device Station Remote I/O Station	Station Type Remote I/O Station Remote Device Station Thelligent Device Station Remote I/O Station	Station Type         Expanded Cyc           Remote I/O Station         V         Single           Remote Device Station         Single           Intelligent Device Station         V         Single           Remote I/O Station         V         Single	Station Type         Expanded Cyclic Setting           Remote I/O Station         V         Single         V           Remote Device Station         Single         V         Single         V           Intelligent Device Station         V         Single         V         Single         V           Remote I/O Station         V         Single         V         Single         V         V	Expanded Cyclic         Number of Occupied Stations           Remote I/O Station         V         Single         V         Occupied Stations           Remote EVC         Single         V         Occupied Stations         V           Intelligent Device Station         V         Single         V         Occupied Stations         V           Remote I/O Station         V         Single         V         Occupied Stations         V           Remote I/O Station         V         Single         V         Occupied Stations         V	Expanded Cyclic Setting         Number of Occupied Stations         Remote Station Points           Remote I/O Station              Single               Occupied Stations 2               32Points            Remote I/O Station              Single               Occupied Station 1               32Points            Intelligent Device Station              Single               Occupied Stations 2               64Points            Remote I/O Station              Single               Occupied Stations 1               128Points            Remote I/O Station              Single               Occupied Station 1               32Points	Expanded Cyclic         Number of Occupied Station         Remote Station           Remote I/O Station              Single               Occupied Station 1               32Points               v               32Points            Remote I/O Station              Single               Occupied Station 1               32Points               v               strain 1            Intelligent Device Station              Single               Occupied Station 1               128Points               v               v               station 2               station 2	Expanded Cyclic Station Type         Expanded Cyclic Setting         Number of Occupied Stations         Remote Station Points         Reserve/Invalid Station Select           Remote I/O Station           Single           Occupied Stations              Points         Station Select           Remote I/O Station           Single              Occupied Stations 2              4Points              No Setting           Intelligent Device Station              Single              Occupied Stations 4              128Points              No Setting           Remote I/O Station              Single              Occupied Station 1              32Points              No Setting	Expanded Cyclic         Number of Occupied Stations         Remote Station Points         Reserve/Invalid Station Select           Remote I/O Station              Single               Occupied Stations 2               32Points               No Setting               No Setting            Remote I/O Station             V Single             V Occupied Station 1             V 32Points             V             Reserved Station               Reserved Station               Reserved Station	Expanded Cyclic         Number of Occupied Stations         Remote Station Points         Reserve/Invalid         Intellige           Remote I/O Station         V Single         Occupied Stations         V         32Points         No Setting         V           Remote I/O Station         V Single         Occupied Stations 2         64Points         No Setting         V           Intelligent Device Station         V Single         Occupied Stations 2         64Points         No Setting         V           Intelligent Device Station         V Single         Occupied Stations 4         128Points         No Setting         V           Remote I/O Station         V Single         Occupied Stations 1         V 32Points         No Setting         64	Expanded Cyclic         Number of Occupied Stations         Remote Station Points         Reserve/Invalid Station Select         Intelligent Buffer Select           Remote I/O Station         \$ Single         Occupied Stations         * 0/2         No Setting          Send         Receive           Remote I/O Station         \$ Single         Occupied Stations 2         • 64Points         No Setting             Intelligent Device Station         \$ Single         Occupied Stations 2         • 64Points         No Setting             Intelligent Device Station         \$ Single         Occupied Stations 1         • 32Points         • No Setting             Remote I/O Station         \$ Single         • Occupied Stations 1         • 32Points         • No Setting         • 64         64

## 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 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

- (2) Store in a place avoiding direct sunlight.
- (3) Store under a condition with no dust or corrosive gas.
- (4) The capacity of the batteries (such as an A6BAT battery and an A8BAT battery) or a lithium-coin battery (commercially available) for memory card is decreased by its self-discharging even when it is not used. Replace it with new one in 5 years as a guideline.
- (5) For a power supply module, CPU module with built-in power supply, or analog module that uses 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
	A1NCPU, A1NCPUP21, A1NCPUR21, A1NCPUP21-S3, A2CCPU
CPU module	A2CCPUP21, A2CCPUR21, A2CCPUC24, A2CCPUC24-PRF
(Power supply built-in type)	A2CJCPU-S3
	A1SJHCPU
	A61P, A61PEU, A61P-UL, A62P, A62PEU, A63P, A68P, A61RP, A67RP
Power supply module	A2CJ66P
	A1S61PN, A1S62PN, A1S63P
	A62DA, A62DA-S1
Analog module	A1S64AD, A1S68AD, A1S62DA, A1S68DAI, A1S68DAV,
	A1S63ADA, A1S66ADA

[Countermeasures for preventing aluminum electrolytic capacitor characteristics deterioration] Apply the rated voltage to the aluminum electrolytic capacitor for several hours to activate it. Or, rotate products at the periodic inspection (in every 1 to 2 years).

#### [Reference]

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 Replacement using spare parts

This section describes replacement methods using spare parts of discontinued models.

# Appendix 3.1 Replacement using A/AnS/QnA/QnAS series MELSECNET/10 network modules

A/QnA series MELSECNET/10 network modules have been discontinued at the end of September 2014. AnS/QnAS series MELSECNET/10 network modules have been discontinued at the end of March 2019. For details, refer to the technical bulletins (FA-A-0141 and FA-A-0260).

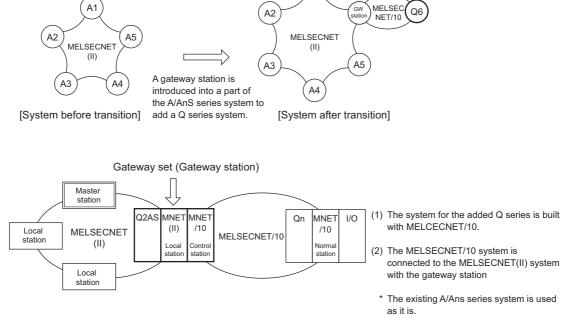
When adding QCPU to the existing MELSECNET(II) network system or replacing some programmable controller CPUs in the system with QCPUs, data will be shared by installing a gateway station, which relays cyclic communication data, between MELSECNET/10 and MELSECNET(II). This chapter describes the method to perform cyclic communication data relay between the existing MELSECNET(II) network system and the new MELSECNET/10 network system using a gateway set.

A1

#### (1) Application of gateway station

A gateway station exchanges the link data between MELSECNET(II) and MELSECNET/10.

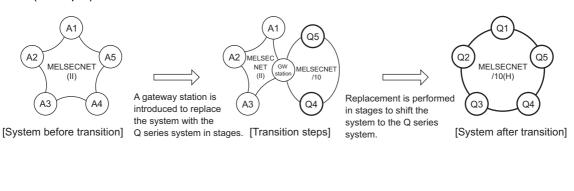
# (a) Adding QCPU to the existing MELSECNET(II) network system (Example)

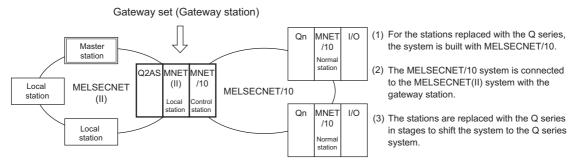


Since QCPUs are incompatible with MELSECNET(II), the network system is built in MELSECNET/10 by adding a gateway station to the existing MELSECNET(II) network system. The gateway station passes and shares the link data between MELSECNET(II) and MELSECNET/10 by inter-link data transfer parameter or sequence program.

#### (b) Replacing CPU in existing MELSECNET(II) with QCPU in stages

(Example)





The system is shifted to the MELSECNET/H(10) network system by replacing A/AnS/QnA/ QnASCPUs in the existing MELSECNET(II) network system with QCPUs in stages until all CPUs are replaced by QCPUs.

When the existing network is the remote I/O network or the network comprising local stations and remote I/O stations, the remote I/O stations must be replaced all at once.

Mount two modules for PLC to PLC network control station or normal station and remote I/O network master station to the replaced QCPU, and then replace remote I/O stations all at once.

## ⊠Point

- (1) Parameter settings when the gateway station CPU does not have a control program When data transmission/reception between the gateway station CPU and network module is not necessary, data can be relayed only by setting network parameters and inter-link data transfer parameters. (Refer to Appendix 3.1 (4))
- (2) Parameter settings when the cyclic transmission data is read to the gateway station CPU When the cyclic transmission data is read to the gateway station CPU, the network parameter and inter-link data transfer parameter, depending on the setting contents, sometimes do not match with the link refresh parameter. In this case, perform cyclic transmission data relay between MELSECNET(II) and MELSECNET/10 by sequence program. (Refer to Appendix 3.1 (5))
- (3) Number of B/W points assigned to one station Maximum points can be relayed are 1k bytes (first half)/1k bytes (second half) for MELSECNET(II) and 2000 bytes for MELSECNET/10. For this reason, cyclic data of entire network may not be relayed. It is necessary to narrow down the range of cyclic data to be relayed by setting priorities.

## MELSEC

#### (2) List of A/AnS/QnA/QnAS series MELSECNET/10 network modules

For A/AnS/QnA/QnAS series MELSECNET/10 network modules which can be used as a gateway station, refer to Section 4.1.

#### (3) Precautions using a gateway station

#### (a) Link data and function

The following shows link data and function.

Item	Detailed description
Number of the last of *1	MELSECNET(II) to MELSECNET/10: 2000 bytes
Number of link data <sup>*1</sup>	MELSECNET/10 to MELSECNET(II): first half 1024 bytes, second half 1024 bytes
Link data	Cyclic data (LB/LW)
LINK Gala	(Cyclic data (LX/LY), link special relay/register, and transient transmission cannot be relayed.)
Network diagnostics <sup>*2</sup>	Diagnostics are required in the MELSECNET(II) and MELSECNET/10 respectively.

\*1 The number of B/W points assigned to one station is limited.

Since all data cannot be relayed, narrow down the data to be relayed by setting priorities.

\*2 Both network diagnostics can be performed by connecting GX Developer to the gateway station.

#### (b) Cyclic data transmission delay

Transmission delay shall be the time that relay processing delay time is added to each cyclic transmission delay time in the MELSECNET(II) system and the MELSECNET/10 system. Confirm that the delay does not affect the control on modules.

#### (c) Restrictions on system configuration

 Set the MELSECNET(II) side of gateway station as local station in the second tier. According to the MELSECNET(II) specifications, local station cannot be mounted as a gateway station on one CPU because of the local station in the second tier and master station for the third tier combination restriction.

When the existing master station is AnU/AnUS(H)CPU or QnA/QnASCPU and the MELSECNET/ 10 module is added as a gateway station with the existing MELSECNET(II) configured as is, there are no restrictions.

2) At the gateway station, elongation and variation of the scan time may occur due to link refreshes of both MELSECNET(II) and MELSECNET/10.

It is recommended that the gateway station only shall relay the link data and avoid control program.

[Common precautions]

• For a relay station, use the AnU/AnUS(H)/QnA/QnASCPU that supports MELSECNET(II) and MELSECNET/10 modules.

Modules other than those cannot serve as a relay station.

• Due to link refresh among the CPU module, MELSECNET(II) module, and MELSECNET/10 module on the relay station, the scan time may be delayed or varied.

Using the CPU module only for link refresh processing is recommended.

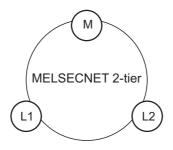
# (4) Communications between existing ACPU (MELSECNET(II)) and added QCPU (MELSECNET/10) (Inter-link data transfer)

This section describes the method to perform data transmission/reception between existing A/AnSCPU in MELSECNET(II) and added QCPU by inter-link data transfer using a gateway station.

#### (a) System configuration example

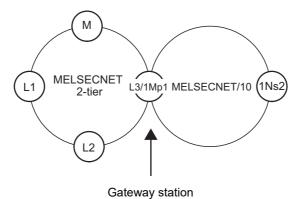
#### 1) Configuration of the existing MELSECNET(II)

An example of the existing system configuration is as follows: master station (M: A3ACPU), local station 1 (L1: A2ACPU), and local station 2 (L2: A1SHCPU).



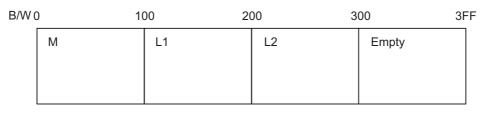
#### 2) Configuration after QCPU addition

By newly adding the gateway station (Q2ASCPU: L3/1Mp1) to the above configuration 1) and connecting it to the QCPU (1Ns2) in MELSECNET/10, link data relay is performed between MELSECNET(II) and MELSECNET/10.



#### (b) Network range assignment for MELSECNET(II)

#### 1) Existing B/W network range assignment



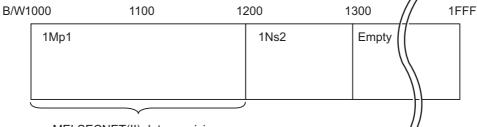
#### 2) B/W network range assignment after addition of the gateway station (L3/1Mp1)

B/W (	0 10		00 200		00	3	00	3FF
	м		L1		L2		L3	
			•					

MELSECNET/10 data receiving area by inter-link data transfer

When the data is transferred from MELSECNET/10 to MELSECNET(II), B/W300 to 3FF shall be the transfer area.

#### (c) Network range assignment for MELSECNET/10



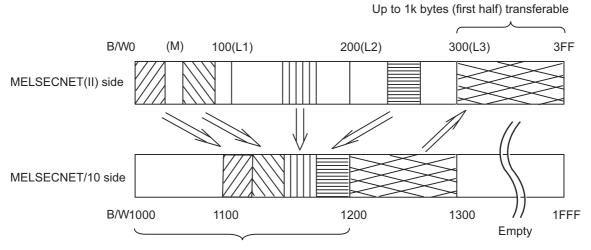
MELSECNET(II) data receiving area by inter-link data transfer

When the data is transferred from MELSECNET(II) to MELSECNET/10, B/W1000 to 11FF shall be the transfer area.

Since all points cannot be transferred from MELSECNET(II) to MELSECNET/10, narrow down the data to be relayed by setting priorities.

Set the data to be transferred at the inter-link data transfer.

#### (d) Example of inter-link data transfer



#### Up to 2000 bytes transferable

#### (e) Network parameter settings

#### 1) MELSECNET master station

The following shows the network parameter settings of the MELSECNET master station (A3ACPU).

#### Network parameter settings (A3ACPU: MELSECNET master station)

	Module No.1	Module No.2	Module No.3	Module No.4
Network type				None -
			TROITE V	*
Start I/O No.				
Network No.				
Total stations	3			
Group No.				
Station No.				
	Network range assignment			
				<b>_</b>
Necessary setting(		eded( Nosetting <mark>/ Alreadyset )</mark> Valid module		
Interlink transmission parame	Start I/O No.: ters Input the start I/O No. installed in th	during other stati	on access 1	
Acknowledge XY assignme	nt Routing parameters Che	eck End	Cancel	

#### • Network range assignment LB/LW settings (A3ACPU: MELSECNET master station)

Assignment m	ethod	٦											
C Points/S	tart	nitoring time	200	×10ms									
Start/En	d		al slave ions	3		Swito	h screens	LB/LW	/ settings	•	•		
	Send range for each station Send range for each station M station -> R station					ation	M station <- R statio						
L/R		LB		LW LW					LW				
station No.	Points	Start	End	Points	Start	End	Points	Start	End	Points	Start	End	I
мо	256	0000	00FF	256	0000	OOFF							I
L 1	256	0100	01FF	256	0100	01FF							1
L 2	256	0200	02FF	256	0200	02FF							1
L 3	256	0300	03FF	256	0300	03FF							-

#### 2) Gateway station (Q2ASCPU: L3/1Mp1)

The following shows the network parameter settings of the gateway station (Q2ASCPU: L3/1Mp1).

#### Network parameter settings (Q2ASCPU: L3/1Mp1)

	Module No.1	Module No.2	Module No.3	Module No.4 🔺
Network type	MNET (Local station) 🗸 🗸	MNET/10(Controlling station)	None 👻	None 🚽
Start I/O No.	0000	0020		
Network No.		1		
Total stations		2		
Group No.				
Station No.				
IP addressDEC				
		Network range assignment		
	Refresh parameters	Refresh parameters		
•				
Necessary setting(	Nosetting / Alreadyset ) Set if it is ne	eded( Nosetting / Alreadyset )		
	Start I/O No.:	Valid module		
Interlink transmission paramet	I a construction of the second s	during other stati e module in 16-point unit.	ion access 1	
Acknowledge XY assignme	nt Routing parameters Che	eck End	Cancel	

#### • Network range assignment BW settings (Q2ASCPU: L3/1Mp1)

Setup common a Assignment method		inherent pa Monitorir		200 ×1	Oms	Parameter	name						
Start/End		Total sla stations	ve	2		Switch scr	eens [	BW setting		•			
	Sendira	ange for ea	ach station	Send r	ange for ea	ach station							Ŀ
StationNo.		В			W								
	Points	Start	End	Points	Start	End	Points	Start	End	Points	Start	End	
1	512	1000	11FF	512	1000	11FF							
2	256	1200	12FF	256	1200	12FF							

#### Module 1 (MNET local station) refresh parameter

<ul> <li>Points/Start</li> <li>Start/End</li> </ul>			<ul> <li>Overwrit</li> </ul>		ror history statu: fold	`		
		Link side				PLC side		
					Defete	Cheve	End	
	Points	Start	End		Points	Start	E nu	
B transmission	Points	Start	End	+	Points	Statt	Enu	-
B transmission W transmission	Points	Start	End	#		Start	End	-

#### 3) Module 2 (MNET/10 control station) refresh parameter

Assignment method C Points/Start C Start/End			Transient tran Overwrit		ror history statu Iold	\$		
		Link side				PLC side		
	Points	Start	End	1	Points	Start	End	
B transmission				+				
W transmission				i ₩				
X transmission				i i i i i i i i i i i i i i i i i i i				
Y transmission				<b>4</b>				<b>-</b> -

#### 4) Inter-link data transfer module 1

Since all points cannot be transferred from MELSECNET(II) to MELSECNET/10, narrow down the data to be relayed by setting priorities.

0 @	Points Start/I		→1										
Г				В						W			<b>^</b>
ſ			Transfer from	-		Transfer to			Transfer from			Transfer to	
	No.	MNET (Loc	al station)	- 1	MNET/10(C	ontrolling sta		MNET (Loc	al station)	n		Controlling stat	ion)
	No.	MNET (Loc Points	al station) Start	End	MNET/10(C Points	Controlling sta Start	End	Points	al station) Start	n End	Points	Controlling stat Start	ion) End
	1	MNET (Loc- Points 128	al station) Start 0000	End 007F	MNET/10(C Points 128	Controlling sta Start 1000	End 107F	Points 128	al station) Start 0000	n End 007F	Points 128	Controlling stat Start 1000	ion) End 107F
	No.	MNET (Loc Points	al station) Start	End 007F	MNET/10(C Points	Controlling sta Start	End 107F	Points	al station) Start	n End 007F	Points	Controlling stat Start	ion) End
	1	MNET (Loc- Points 128	al station) Start 0000	End 007F 00DF	MNET/10(C Points 128 64	Controlling sta Start 1000	End 107F 10BF	Points 128	al station) Start 0000	n End 007F 00DF	Points 128	Controlling stat Start 1000	ion) End 107F
	1	MNET (Loc Points 128 64	al station) Start 0000 00A0	End 007F 00DF 017F	MNET/10(C Points 128 64	Controlling sta Start 1000 1080	End 107F 10BF 113F	Points 128 64	al station) Start 0000 00A0	End 007F 00DF 017F	Points 128 64	Controlling stat Start 1000 1080	ion) End 107F 10BF
	1 2 3	MNET (Loc Points 128 64 128	al station) Start 0000 00A0 0100	End 007F 00DF 017F	MNET/10(C Points 128 64 128	Controlling sta Start 1000 1080 10C0	End 107F 10BF 113F 117F	Points 128 64 128 64	al station) Start 0000 00A0 0100	End 007F 00DF 017F	Points 128 64 128	Controlling stat Start 1000 1080 10C0	ion) End 107F 10BF 113F
	1 2 3 4	MNET (Loc Points 128 64 128 64	al station) Start 0000 0040 0100 0140	End 007F 00DF 017F 01DF	MNET/10(C Points 128 64 128 64	Controlling sta Start 1000 1080 10C0 1140	End 107F 10BF 113F 117F	Points 128 64 128 64	al station) Start 0000 00A0 0100 01A0	End 007F 00DF 017F 01DF	Points 128 64 128 64	Controlling stat Start 1000 1080 10C0 1140	ion) End 107F 10BF 113F 117F

#### • From MELSECNET/10 to MELSECNET(II)

0	Points Start/		 ⇒1											
				В						W				<b></b>
			Transfer from	n		Transfer to			Transfer from					
	No.	MNET/10(0	Controlling sta	ation)	MNET (Loc	al station)		MNET/10(Controlling station)		ition)	MNET (Local station)			
		Points	Start	End	Points	Start	End	Points	Start	End	Points	Start	End	
	1	256	1200	12FF	256	0300	03FF	256	1200	12FF	256	0300	03FF	
	2													

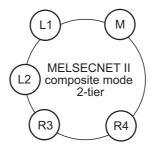
# (5) Communications between existing ACPU in MELSECNET(II) and added QCPU (data transmission/reception by sequence program)

This section describes the method to perform data transmission/reception between existing A/AnSCPU in MELSECNET(II) and added QCPU by sequence program using a gateway station. This method is useful when the link refresh parameter in the inter-link data transfer cannot be set because the transmission range of MELSECNET(II) is located in the middle.

#### (a) System configuration example

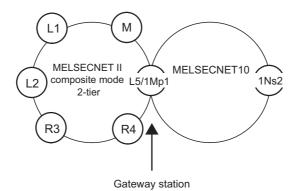
#### 1) Configuration of the existing MELSECNET(II)

An example of the existing system configuration is as follows: master station (M: A3ACPU), local station 1 (L1: A2ACPU), local station 2 (L2: A1SHCPU), remote I/O station 3 (R3), and remote I/O station 4 (R4).



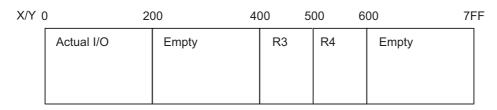
#### 2) Configuration after QCPU addition

By newly adding the gateway station (Q2ASCPU: L5/1Mp1) to the above configuration 1) and connecting it to the QCPU (1Ns2) in MELSECNET/10, link data relay is performed between MELSECNET(II) and MELSECNET/10.



#### (b) Network range assignment for MELSECNET(II)

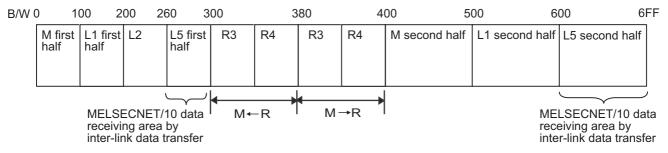
#### 1) LX/LY network range assignment



2) BW network range assignment before addition of the gateway station (L5/1Mp1) (Assignment in the area of 200 to 3FF is W only.)

B/W(	) 10	00 2	00 2	60 3	00	3	80	40	00	500	5FF
	M first half	L1 first half	L2	Empty	R3	R4	R3	R4	M second half	L1 second ha	f
					<b>▲</b> M≁	-R	M -	→R			

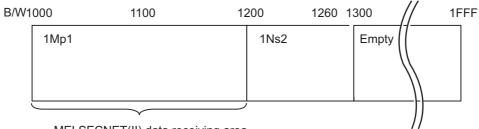
# 3) BW network range assignment after addition of the gateway station (L5/1Mp1) (Assignment in the area of 200 to 3FF is W only.)



When the data is transferred from MELSECNET/10 to MELSECNET(II), B/W260 to 3FF shall be the transfer area.

Note that only the data required for QCPU(1Ns2) are transferred to MELSECNET(II).

#### (c) Network range assignment for MELSECNET/10



MELSECNET(II) data receiving area by inter-link data transfer

When the data is transferred from MELSECNET(II) to MELSECNET/10, B/W1000 to 11FF shall be the transfer area.

Since all points cannot be transferred from MELSECNET(II) to MELSECNET/10, narrow down the data to be transferred by setting priorities.

## MELSEC

#### (d) Network parameter settings

#### 1) MELSECNET II composite master station

The following shows the network parameter settings of the MELSECNET II composite master station (A3ACPU).

• Network parameter settings (A3ACPU: MELSECNET II composite master station)

	Module No.1	Module No.2	Module No.3	Module No.4
Network type	MNET II comp. (Master station) 🛛 🗸	None 👻	None 🗸	None 🚽 📃
Start I/O No.				
Network No.				
Total stations	5			
Group No.				
Station No.				
	Network range assignment			
				<b>•</b>
4				
Necessary setting(	Nosetting / Alreadyset ) Set if it is ne	eded( Nosetting / Alreadyset )		
Interlink transmission parame	Start I/O No.: Input the start I/O No. installed in th	Valid module during other stati ne module in 16-point unit.	on access	
Acknowledge XY assignme	nt Routing parameters Che	eck End	Cancel	

Network range assignment LX/LY (A3ACPU: MELSECNET II composite master station)

Assignment m O Points/S O Start/En	tart	Tot	nitoring time al slave ions	e 200	× 10ms	Swite	ch screens	LX/LY	settings		•		
		M station -> L/R station						M station <- L/R station					
L/R		LY			LX/LY		LX.			LY/LX			
station No.	Points	Start	End	Points	Start	End	Points	Start	End	Points	Start	End	
MO													
IL 1													
L 2													
R 3	256	0400	04FF	256	0000	OOFF	256	0400	04FF	256	0000	OOFF	
R 4	256	0500	05FF	256	0000	OOFF	256	0500	05FF	256	0000	OOFF	
IL 5													

• Network range assignment first half LB/LW settings (A3ACPU: MELSECNET II composite master station)

Assignment me Points/St Start/Enc	art	Tot	nitoring time al slave ions	e 200	× 10ms	Swite	h screens	First h	alf LB/LW	setting _	•	
	Sendira	ange for ea	ach station	Send ra	ange for ea	ach station	M stati	ion -> R st	ation	M stati	ion <- Rista	ation
L/R		First half L	.B	First half LW			LW			LW		
station No.	Points	Start	End	Points	Start	End	Points	Start	End	Points	Start	End
М О	256	0000	OOFF	256	0000	OOFF						
∥L 1	256	0100	01FF	256	0100	01FF						
L 2	96	0200	025F	96	0200	025F						
R 3							64	0300	033F	64	0380	03BF
B 4							64	0340	037F	64	03C0	03FF
II 4					0260	02FF						

• Network range assignment first half LB/LW settings (A3ACPU: MELSECNET II composite master station)

Assignment me	ethod	Ma	oitorina tim	200	×10ms							
O Points/SI	art	Monitoring time										
Start/End	ł		al slave ions	5		Swite	h screens:	Secon	id half LB/I	LW settin	•	
	Sendra	ange for ea	ach station	Sendra	ange for ea	ach station						
L/R		Second h	nalf LB		Second h	alf LW						
station No.	Points	Start	End	Points	Start	End	Points	Start	End	Points	Start	End
М 0	256	0400	04FF	256	0400	04FF						
∥L 1	256	0500	05FF	256	0500	05FF						
L 2												
R 3												
R 4												
IL 5	256	0600	06FF	256	0600	06FF						

#### 2) Gateway station (Q2ASCPU: L5/1Mp1)

The following shows the network parameter settings of the gateway station (Q2ASCPU: L5/ 1Mp1).

#### • Network parameter settings (Q2ASCPU: L5/1Mp1)

	Module No.1	Module No.2	Module No.3	Module No.4	
Network type	MNET II comp. (Local station) 🛛 🗸	MNET/10(Controlling station)	None 🗸	None 🗸	
Start I/O No.	0000	0020			
Network No.		1			
Total stations		2			
Group No.					
Station No.					
IP addressDEC					
		Network range assignment			
					i I
	Refresh parameters	Refresh parameters			-
•				۱.	
Necessary setting(	Start I/O No.:	eded( No setting / Already set ) Valid module during other stati ne module in 16-point unit.	on access 1		
Acknowledge XY assignme	nt Routing parameters Che	eck End	Cancel		

#### • Network range assignment BW settings (Q2ASCPU: L5/1Mp1)

Assignment method		Monitorin	ig time 🛛	200 × 1	Oms	Parameter	name					
Start/End		Total sla stations	ve [	2		Switch sci	eens [	BW setting		-		
	Sendira	ange for ea	ch station	Sendra	ange for ea	ach station						
StationNo.		В			W							
	Points	Start	End	Points	Start	End	Points	Start	End	Points	Start	End
1	512	1000	11FF	512	1000	11FF						
2	256	1200	12FF	256	1200	12FF						

Module 1 (MELSECNET local station) refresh parameter

<ul> <li>Points/Start</li> <li>Start/End</li> </ul>	Transient transmission error history status						
		Link side				PLC side	-
	Points	Link side Start	End		Points	PLC side Start	End
B transmission	Points 1792		End 06FF	+	Points 1792		
B transmission W transmission		Start		##		Start	

## Module 2 (MELSECNET/10 control station) refresh parameter

Assignment method Points/Start Start/End			<ul> <li>Transient tran</li> <li>Overwrite</li> </ul>		ror history status łold				
		Link side			PLC side				
	Points	Start	End		Points	Start	End		
B transmission	768	1000	12FF	+	768	1000	12FF		
W transmission	768	1000	12FF	- <del>``</del>	768	1000	12FF		
				- <del>()</del>					
X transmission									

## (e) How to transfer data

## 1) Transfer from MELSECNET(II) to MELSECNET/10

Write the data of MELSECNET(II) into the host station range of the gateway station (1Mp1) using the BMOV instruction.

Since all points cannot be transferred from MELSECNET(II) to MELSECNET/10, narrow down the data to be relayed by setting priorities.

## 2) Transfer from MELSECNET/10 to MELSECNET(II)

Write all data of MELSECNET/10 into the host station range of the gateway station (L5) using the BMOV instruction.

Write all data to be used in the master station (M: A3ACPU), local station 1 (L1: A2ACPU), and local station 2 (L2: A1SHCPU) into the first half LB/LW of L5.

Data cannot be used in the local station 2 (L2: A1SHCPU), which is incompatible with MELSECNET II, can be transferred using the second half LB/LW of L5.

NET(II) -> NET/10 First Half W Transmission SM400 -[BMOV W1000 K160 0 ωO BMOV W100 W10A0 к160 -[BMOV W200 W1140 к96 NET(II) -> NET/10 Second Half W Transmission SM400 37 -[BMOV w400 W11AO K160 -[BMOV W200 W1240 K160 NET(II) -> NET/10 First Half B Transmission SM400 70 -[BMOV к4вО K4B1000 к10  $\dashv \vdash$ K4B10A0 -BMOV к4в100 к10 -[BMOV к4в200 к4в1140 К6 NET(II) -> NET/10 Second Half B Transmission SM400 107 -[BMOV к4в400  $\dashv$   $\vdash$ K4B11AO к10 -[BMOV к4в500 к4в1240 к10 NET/10 -> NET(II) First Half / Second half W Transmission SM400 -[BMOV W1200 140  $\dashv$   $\vdash$ W2 60 K160 -[BMOV W12AO W200 K96 NET/10 -> NET(II) First Half / Second half B Transmission SM400 180 + + -BMOV к4в1200 к4в260 к10 ---[BMOV K4B12AO K4B500 К6 END 220

# **APPX** - 16

Sample program

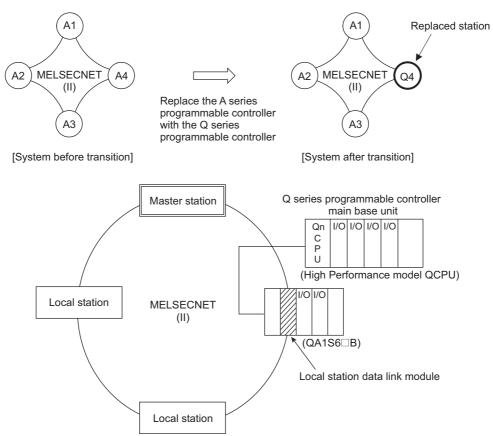
# Appendix 3.2 Replacement using MELSECNET local station data link modules

 Notice
 MELSECNET local station data link modules have been discontinued at the end of December 2017.

 For details, refer to the technical bulletin (FA-A-0249).

# (1) Application that connects the QCPU as the local station

(a) Replacing a module with the QCPU without changing the existing network (Example)



By mounting the local station data link module, the QCPU replaced by the A/AnSCPU can communicate as the local station without changing the existing network link assignment even after CPU replacement.

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# (b) Adding the QCPU to the existing network

(Example)

Added station A1 A1 A2 Q5 MELSECNET MELSECNET A2 A4 (II)(II) Adding the Q series programmable controller to the A series A3 A3 A4 programmable controllers [System before transition] [System after transition] Q series programmable controller Master station main base unit Qn I/O I/O I/O I/O С P U (High Performance model QCPU) 1/0 1/0 Local station MELSECNET (II)(QA1S6□B) Local station data link module Local station Local station

When the QCPU is added to the existing network, it can communicate as the local station using the existing network link assignment by mounting the local station data link module.

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# (2) List of local station data link module

The following models are available to connect the QCPU with the existing MELSECNET(II), /B. Select a model according to the existing network system.

Model	Product name
A1SJ71AP23Q	MELSECNET(II) local station data link module for optical fiber cable (SI)
A1SJ71AR23Q	MELSECNET(II) local station data link module for coaxial cable
A1S71AT23BQ	MELSECNET/B local station data link module for shielded twisted pair cable

# (3) Precautions for using local station data link module

This section describes precautions for using the local station data link module.

## (a) Precautions for selection

When connecting the QCPU to the MELSECNET(II), /B, the existing data link module cannot be used.

Make sure to select a module from Model list in Appendix 3.2 (2).

## (b) Available CPU modules and mountable base units

For details on QCPUs where a local station data link module can be used and on mountable base units, refer to the following.

• MELSECNET, MELSECNET/B Local Station Data Link Module User's Manual

### (c) Number of mountable modules

Up to six local station data link modules can be mounted to one CPU module. When using the module such as the AD51H, which can be mounted to the "QA1S51B", "QA1S6DB", or "QA6DB" but the number of mountable modules are restricted, the module is included in the number of local station data link modules.

## (d) Precautions for three-tier system

If the replaced station is the master station for the third tier, since the QCPU cannot be the MELSECNET(II) master station, measures such as replacing the MELSECNET/H (10) to the third tier are required.

## (4) Network parameter

This section describes network parameter for local station data link module.

### (a) Setting the number of MELSECNET/Ethernet cards

The local station data link module does not require network parameter setting. After configuring the network, the module performs parameter communications with the master station, and automatically acquires information necessarily for the network such as send range assignment for each station.

## (b) Network refresh parameter

Link refresh is not automatically performed.

Therefore, create the sequence program which sends/receives data using the FROM/TO instructions for data transfer.

For details of I/O signals for program creation and buffer memory address, refer to the following manual.

• MELSECNET, MELSECNET/B Local Station Data Link Module User's Manual

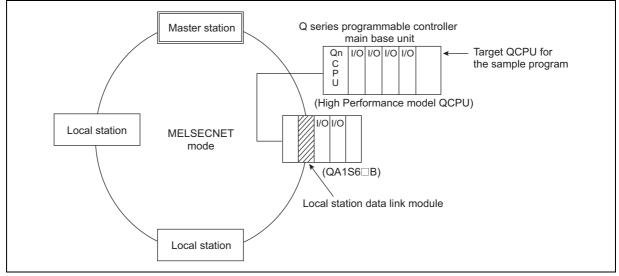
A necessary program for link refresh is offered by the "A/QnA -> Q conversion support tool" as a sample program. By integrating the sample program as the QCPU scan execution type program, creating a program becomes unnecessary.

For "A/QnA to Q conversion support tool", contact your local representative.

## (c) Sample program

The following shows conditions of a sample program for link refresh.

- 1) Condition 1 (Only for the MELSECNET mode and second tier)
  - Number of mounted local station data link modules: 1
  - Module mounting address: X/Y200 to 21F slot
  - Network type: MELSECNET mode
  - Send range for each station setting: Only first half set
  - Master station for the third tier B/W receive program: None
  - Program for receiving LRDP instruction: None
  - Program for receiving LWDP instruction: None
  - X/Y link: None
  - Refresh device (bit): B00 to 3FF
  - Refresh device (word): W00 to 3FF

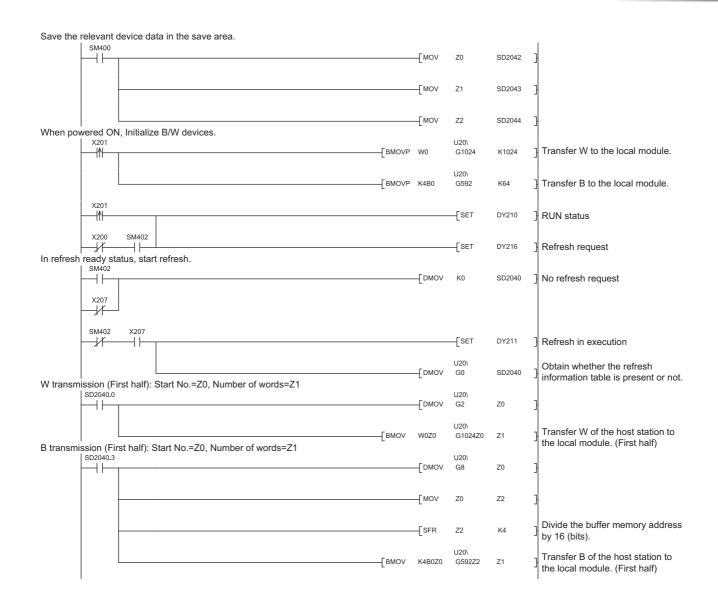


• Setting examples of the A/QnA-Q conversion support tool (Condition setting)

	ELSECNET(II) local station
QCPU(Qmode) new program	
PLC type	
Q03UD -	
I/O No. of A1SJ71AP23Q/A1SJ71AR2	3Q/A1SJ71AT23BQ
200 0FE0	
,	
Network type(mode)	
MELSECNET	MELSECNET II (including MNET II comp. mode)
Sequence program to be created	
Sequence program to be created	
	rams.

(Refresh device setting)

	Link side							PLC side		
	Dev. name	Points	Start	End		Dev. Name	9(*)	Points	Start	End
Transfer SM	SM	16	9240	9255	÷	SM	•	16	1240	1255
Transfer SD	SD	13	9243	9255	$\leftrightarrow$	SD	•	13	1243	1255
Transfer B	В	1024	0000	03FF	$\leftrightarrow$	В	•	1024	0000	03FF
Transfer W	W	1024	0000	03FF	$\Rightarrow$	W	•	1024	0000	03FF
Transfer X/Y	Х	2048	0000	07FF	$\leftrightarrow$		•			
	Y	2048	0000	07FF	$\leftrightarrow$					
)Refreshes all le setting is bl		link side v	vhen a De	v. Name is	s set. TI	hey are not r	efres	shed when		



SD2040.1			—Грмоv	U20\ G4	Z0	
			U20\			Obtain W of the other stations from
	2 (First half): Start No.=Z0, Number of words=Z1	_[вмоу	G1024Z0	W0Z0	Z1 -	the local module. (First half)
SD2040.2			[ рмоу	U20\ G6	Z0	ŀ
		Гвмоv	U20\ G1024Z0	W070	Z1 -	Obtain W of the other stations from
B device reception	I (First half): Start No.=Z0, Number of words=Z1	Lawer	0102420	U20\		the local module. (First half)
			_[DMOV	G10	Z0	ŀ
			_[моv	Z0	Z2 -	}
			-[SFR	Z2	К4	Divide the buffer memory address by 16 (bits).
B device reception 2	2 (First half): Start No.=Z0, Number of words=Z1	_[вмоv	U20\ G592Z2	K4B0Z0	Z1	Obtain B of the other stations from the local module. (First half)
SD2040.5			-[DMOV	U20\ G12	Z0 -	}
			—[моv	Z0	Z2 -	]
			-[SFR	Z2	К4	Divide the buffer memory address by 16 (bits).
Transfer the special rel	ay for link (from M9240) to SM1240.	—[вмоv	U20\ G592Z2	K4B0Z0	Z1 -	Obtain B of the other stations from the local module. (First half)
	jister for link (from D9243) to SD1243.	[вмоv	U20\ G259	K4SM1240	К1	}
		_[вмоv	U20\ G315	SD1243	К13	
×200					-(SM1240	)
Refresh completion				-[rst	DY211	Obtain data of the special relay (for link).
				-[rst	DY216	Obtain data of the special register (for link).
				-[SET	DY216	Turn OFF the refresh in execution.

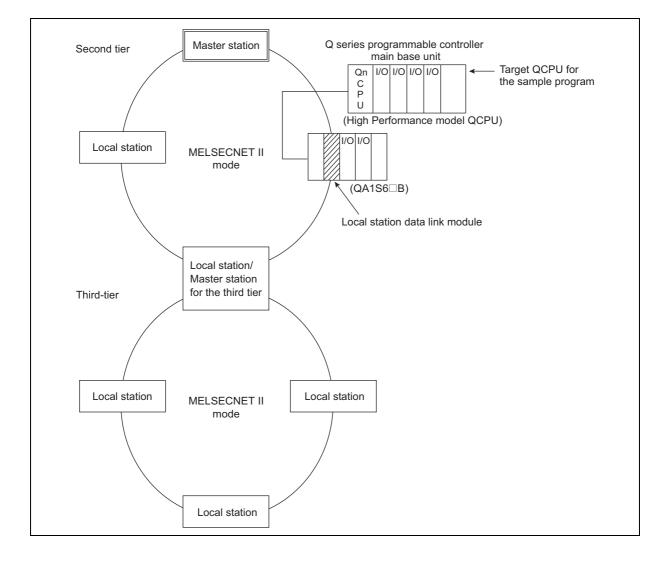
#### W device reception 1 (First half): Start No.=Z0, Number of words=Z1

Restore the relevant device data.



## 2) Condition 2 (Only for the MELSECNET II mode three-tier system)

- Number of mounted local station data link modules: 1
- Module mounting address: X/Y200 to 21F slot
- Network type: MELSECNET II mode
- · Send range for each station setting: Both first half and latter half set
- Master station for the second tier B/W receive program: None (except the local station for the second tier)
- Program for receiving LRDP instruction: Exists
- Program for receiving LWDP instruction: Exists
- X/Y link: Exists
- Refresh device (bit): B00 to FFF
- Refresh device (word): W00 to FFF



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- Setting examples of the A/QnA-Q conversion support tool
- (Condition setting)

PLC type	
Q13UDH -	
/ //////////////////////////////	
200 0FE0	
Network type(mode)	
	LSECNET II (including MNET II comp. mode)
Sequence program to be created	
Sequence program to be created — Creates the checked sequence programs.	
Sequence program to be created Creates the checked sequence programs. F Refresh program	✓ LRDP instruction receive program

# (Refresh device setting)

	Link side					PLC side				
	Dev. name	Points	Start	End		Dev. Name	e(*)	Points	Start	End
Transfer SM	SM	16	9240	9255	ŧ	SM	•	16	1240	1255
Transfer SD	SD	13	9243	9255	$\leftrightarrow$	SD	•	13	1243	1255
Transfer B	В	4096	0000	0FFF	$\leftrightarrow$	В	•	4096	0000	0FFF
Transfer W	W	4096	0000	0FFF	$\Rightarrow$	W	•	4096	0000	0FFF
Transfer X/Y	Х	2048	0000	07FF	$\leftrightarrow$	Х	-	2048	1000	17FF
	Y	2048	0000	07FF	$\leftrightarrow$	Y	•	2048	1000	17FF
("Refreshes all points on the link side when a Dev. Name is set. They are not refreshed when the setting is blank.										

Save the releva	ant device data in the save area.					
SM	400		-[моv	Z0	SD2042	3
			-[моv	Z1	SD2043	3
When powered	ON, Initialize B/W devices.		-[моv	Z2	SD2044	3
	01	-[вмоур	W0	U20\ G1024	K4096	] Turn OFF the refresh request.
		-[вмоур	K4B0	U20\ G592	K256	] Turn ON the refresh request.
				-[SET	DY210	] RUN status
In refresh read	<u> </u>			-[SET	DY216	] Refresh request
	γ status, start refresh. <sup>I02</sup> ⊢		-[DMOV	К0	SD2040	] No refresh request
SM				-[SET	DY211	Refresh in execution
W transmission	(First half): Start No.=Z0, Number of words=Z1		-[dmov	U20\ G0	SD2040	Obtain whether the refresh information table is present or not.
			-[dmov	U20\ G2	ZO	3
		-[вмоv	W0Z0	U20\ G1024Z0	Z1	Transfer W of the host station to the local module. (First half)
	ı (Latter half): Start No.=Z0, Number of words=Z1 <sup>40.8</sup>		_[DMOV	U20\ G20	Z0	3
		-[вмоу	W0Z0	U20\ G1024Z0	Z1	Transfer W of the host station to the local module. (Latter half)

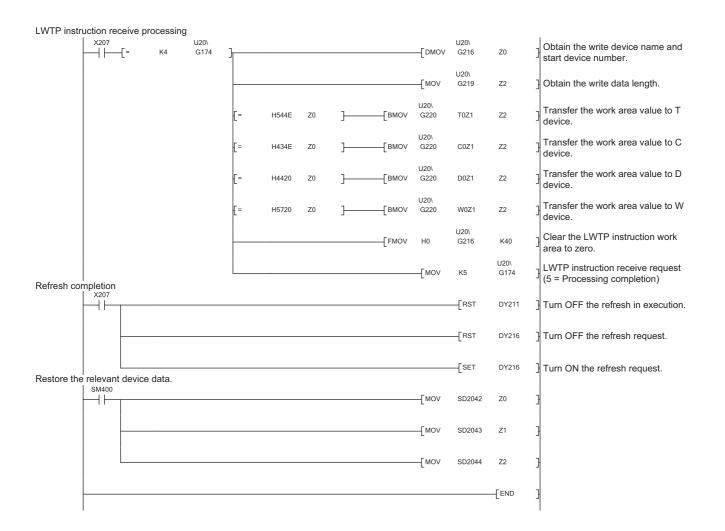
Y device transmission: Start No.=Z0, Number of words=Z1					
SD2040.6		—[рмоу	U20\ G14	Z0	3
		—[моv	Z0	Z2	3
		-SFR	Z2	K4	Divide the buffer memory address by 16 (bits).
B transmission (First half): Start No.=Z0, Number of words=Z1	K4Y10002	ZO	U20\ G464Z2	Z1	Transfer Y of the host station to the local module.
		—[рмоу	U20\ G8	Z0	3
		—[моv	Z0	Z2	3
		-SFR	Z2	K4	Divide the buffer memory address by 16 (bits).
B transmission (Latter half): Start No.=Z0, Number of words=Z1	[вмоv	K4B0Z0	U20\ G592Z2	Z1	Transfer B of the host station to the local module. (First half)
		[DMOV	U20\ G26	ZO	3
		—[моv	Z0	Z2	3
		[SFR	Z2	К4	Divide the buffer memory address by 16 (bits).
W device reception 1 (First half): Start No.=Z0, Number of words=Z1	[вмоv	K4B0Z0	U20\ G592Z2	Z1	Transfer B of the host station to the local module. (Latter half)
		—[рмоу	U20\ G4	ZO	3
W device reception 2 (First half): Start No.=Z0, Number of words=Z1	[вмоv	U20\ G1024Z0	W0Z0	Z1	Obtain W of the other stations from the local module. (First half)
		—[рмоу	U20\ G6	Z0	3
W device reception 1 (Latter half): Start No.=Z0, Number of words=Z1	[вмоv	U20\ G1024Z0	W0Z0	Z1	Obtain W of the other stations from the local module. (First half)
		—[рмоу	U20\ G22	Z0	]
	—[вмоv	U20\ G1024Z0	W0Z0	Z1	Cobtain W of the other stations from the local module. (Latter half)

Second A       [DMCV       GA       20       1         X device reception:       Start No=20, Number of words=Z1       [DMCV       GA       21       1         Second X:       [DMCV       GA       22       21       1       0         B device reception:       1(First half): Start No=20, Number of words=Z1       [DMCV       GA       22       1       0         B device reception 1 (First half): Start No=20, Number of words=Z1       [DMCV       GA       23       22       1       0         B device reception 2 (First half): Start No=20, Number of words=Z1       [DMCV       GA       20       21       1       0         B device reception 2 (First half): Start No=20, Number of words=Z1       [DMCV       GA       20       21       1       0         B device reception 2 (First half): Start No=20, Number of words=Z1       [DMCV       GA       20       21       1       0         B device reception 2 (First half): Start No=20, Number of words=Z1       [DMCV       GA       20       21       1       0         B device reception 2 (First half): Start No=20, Number of words=Z1       [DMCV       GA       20       21       1       0         B device reception 2 (Litter half): Start No=20, Number of words=Z1       [DMCV <td< th=""><th>W device reception</th><th>a 2 (Latter half): Start No.=Z0, Number of words=Z1</th><th></th><th></th><th></th><th></th><th></th></td<>	W device reception	a 2 (Latter half): Start No.=Z0, Number of words=Z1					
Image: Construction of the construc				—[рмоу		Z0	3
Solute 7       [0MOV       G17       20       3         [SFR       22       K4       3       Divide the buffer memory address by 16 (bits).         B device reception 1 (First half): Start No.=Z0, Number of words=Z1       [0MOV       G3822       K44       3         Solute 7       [0MOV       G3822       K410020       20       3         B device reception 1 (First half): Start No.=Z0, Number of words=Z1       [0MOV       G3822       K4820       21       3         B device reception 2 (First half): Start No.=Z0, Number of words=Z1       [0MOV       G3822       K4820       21       3         B device reception 2 (First half): Start No.=Z0, Number of words=Z1       [0MOV       G3822       K4820       21       3         Socue 4       [STR       Z2       K4       3       by16 (bits).         B device reception 2 (First half): Start No.=Z0, Number of words=Z1       [DMOV       G3822       K4820       21       3         Socue 5       [STR       Z2       K4       3       Divide the buffer memory address by 16 (bits).         B device reception 1 (Latter half): Start No.=Z0, Number of words=Z1       [DMOV       G3822       K4820       21       3         Socue 5       [STR       Z2       K4       4       Div			[вмоv		W0Z0	Z1	
B device reception 1 (First half): Start No.=Z0, Number of words=Z1       U201 (BMOV       U201 (GMOV       Z1       Divide the buffer memory address by 16 (bits).         B device reception 1 (First half): Start No.=Z0, Number of words=Z1       (DMOV       C10       Z2       Z1       Divide the buffer memory address         B device reception 2 (First half): Start No.=Z0, Number of words=Z1       (DMOV       C10       Z2       Z1       Divide the buffer memory address         B device reception 1 (Latter half): Start No.=Z0, Number of words=Z1       (DMOV       C10       Z2       Z1       Divide the buffer memory address         B device reception 1 (Latter half): Start No.=Z0, Number of words=Z1       (DMOV       C12       Z0       Divide the buffer memory address         B device reception 1 (Latter half): Start No.=Z0, Number of words=Z1       (DMOV       C20       Z2       Z2       Divide the buffer memory address         B device reception 1 (Latter half): Start No.=Z0, Number of words=Z1       (DMOV       C20       Z2       Divide the buffer memory address         B device reception 1 (Latter half): Start No.=Z0, Number of words=Z1       (DMOV       C20       Z2       Divide the buffer memory address         B device reception 1 (Latter half): Start No.=Z0, Number of words=Z1       (DMOV       C20       Z2       Divide the buffer memory address         B device reception 1 (Latter half): Sta	SD2040.7			[DMOV		Z0	3
B device reception 1 (First half): Start No.=Z0, Number of words=Z1 [BMOV G33822 K4X10020 Z1 ] [MOV G10 Z0 Z2 ] [MOV G10 Z0 Z1 ] [MOV G12 Z0 ] [M				—[моv	Z0	Z2	3
B device reception 1 (First half): Start No.=Z0, Number of words=Z1       [BMOV G336Z2 K4X10020       Z1       Divide the buffer memory address by 16 (bits).         B device reception 2 (First half): Start No.=Z0, Number of words=Z1       [SFR Z2 K4       Divide the buffer memory address by 16 (bits).         B device reception 2 (First half): Start No.=Z0, Number of words=Z1       [BMOV G39Z2 K48020 Z1 J]       Divide the buffer memory address by 16 (bits).         B device reception 2 (First half): Start No.=Z0, Number of words=Z1       [BMOV G12 Z0 J]       Divide the buffer memory address by 16 (bits).         B device reception 1 (Latter half): Start No.=Z0, Number of words=Z1       [BMOV G39Z2 K48020 Z1 J]       Divide the buffer memory address by 16 (bits).         B device reception 1 (Latter half): Start No.=Z0, Number of words=Z1       [BMOV G39Z2 K48020 Z1 J]       Divide the buffer memory address by 16 (bits).         B device reception 1 (Latter half): Start No.=Z0, Number of words=Z1       [BMOV G39Z2 K4802 Z1 J]       Divide the buffer memory address by 16 (bits).         B device reception 1 (Latter half): Start No.=Z0, Number of words=Z1       [BMOV G39Z2 K4802 Z1 J]       Divide the buffer memory address by 16 (bits).         B device reception 1 (Latter half): Start No.=Z0, Number of words=Z1       [BMOV G39Z2 K4802 Z1 J]       Divide the buffer memory address by 16 (bits).         B device reception 1 (Latter half): Start No.=Z0, Number of words=Z1       [BMOV G39Z2 K4802 Z1 J]       Divide the buffer memory address by 16 (bits).				-SFR	Z2	K4	
SD2040.4       [DMOV       G10       Z0       I         [MOV       Z0       Z2       I         [MOV       Z0       Z2       I         [SFR       Z2       K4       I         [SFR       Z2       K4       I         [SCMA.5       [BMOV       G3922       K48020       Z1       I         [SD204.5       [DVide the buffer memory address       by 16 (bits).       Obtain B of the other stations from the local module. (First half)         [SD204.5       [MOV       Z0       Z2       I       I         [SD204.5       [MOV       G12       Z0       I       I         [SD204.5       [MOV       Z0       Z2       I       I         [SD204.5       [MOV       Z0       Z2       I       I         [SD204.5       [SFR       Z2       K4       I       I         [SD204.5       [MOV       G2822       K48020       Z1       I <td< td=""><td></td><td>L</td><td></td><td>K4X10002</td><td>20</td><td>Z1</td><td></td></td<>		L		K4X10002	20	Z1	
B device reception 2 (First half): Start No.=Z0, Number of words=Z1       U20 (BMOV       U20 (G59222       K4B020       Z1       J       Divide the buffer memory address by 16 (bits).         B device reception 2 (First half): Start No.=Z0, Number of words=Z1       (DMOV       G12       Z0       J         Image: Solution 2 (First half): Start No.=Z0, Number of words=Z1       (DMOV       G12       Z0       J         Image: Solution 2 (First half): Start No.=Z0, Number of words=Z1       (DMOV       G12       Z0       J         Image: Solution 2 (First half): Start No.=Z0, Number of words=Z1       (DMOV       G12       Z1       J         Image: Solution 2 (First half): Start No.=Z0, Number of words=Z1       (DMOV       G39222       K4B020       Z1       J         Image: Solution 2 (First half): Start No.=Z0, Number of words=Z1       (DMOV       G39222       K4B020       Z1       J         Obtain B of the other stations from the local module. (First half)       (DMOV       G20       Z2       J         Image: Solution 2 (First half): Start No.=Z0, Number of words=Z1       (DMOV       G20       Z1       J         Obtain B of the other stations from the local module. (First half)       (DMOV       G20       Z2       J         Image: Solution 2 (First half): Start No.=Z0, Number of words=Z1       (DMOV       G20 <td< td=""><td rowspan="2">SD2040.4</td><td>r (First hair). Start No20, Number of Words-21</td><td></td><td>—[рмол</td><td></td><td>Z0</td><td>3</td></td<>	SD2040.4	r (First hair). Start No20, Number of Words-21		—[рмол		Z0	3
B device reception 2 (First half): Start No.=Z0, Number of words=Z1       Image: Constraint of the other stations from the local module. (First half)         B device reception 2 (First half): Start No.=Z0, Number of words=Z1       Image: Constraint of the other stations from the local module. (First half)         Image: Constraint of the other stations from the local module. (First half)       Image: Constraint of the other stations from the local module. (First half)         Image: Constraint of the other stations from the local module. (First half)       Image: Constraint of the other stations from the local module. (First half)         Image: Constraint of the other stations from the local module. (First half)       Image: Constraint of the other stations from the local module. (First half)         Image: Constraint of the other stations from the local module. (First half)       Image: Constraint of the other stations from the local module. (First half)         Image: Constraint of the other stations from the local module. (First half)       Image: Constraint of the other stations from the local module. (First half)         Image: Constraint of the other stations from the local module. (First half)       Image: Constraint of the other stations from the local module. (First half)         Image: Constraint of the other stations from the local module. (First half)       Image: Constraint of the other stations from the local module. (First half)         Image: Constraint of the other stations from the local module. (First half)       Image: Constraint of the other stations from the local module. (First half)         Image: Constraint of				—[моv	Z0	Z2	3
B device reception 2 (First half): Start No.=Z0, Number of words=Z1       [BMOV       G59222       K48020       Z1       1       U20h         B device reception 2 (First half): Start No.=Z0, Number of words=Z1       [DMOV       G12       Z0       ]         MOV       Z0       Z2       ]       Divide the buffer memory address by 16 (bits).         B device reception 1 (Latter half): Start No.=Z0, Number of words=Z1       [BMOV       G59222       K48020       Z1       ]         B device reception 1 (Latter half): Start No.=Z0, Number of words=Z1       [BMOV       G59222       K48020       Z1       ]       Obtain B of the other stations from the local module. (First half)         B device reception 1 (Latter half): Start No.=Z0, Number of words=Z1       [BMOV       G59222       K48020       Z1       ]       Obtain B of the other stations from the local module. (First half)         SD2040.C       [BMOV       G28       Z0       ]				-SFR	Z2	K4	
SD2040.5       [DMOV       G12       Z0       ]         [MOV       Z0       Z2       ]         [MOV       Z0       Z2       ]         [SFR       Z2       K4       ]         [BMOV       G59222       K4B0Z0       Z1       ]         [SD2040.C       [BMOV       G59222       K4B0Z0       Z1       ]         [SD2040.C       [DMOV       G28       Z0       ]       ]         [SD2040.C       [DMOV       G28       Z0       ]       ]         [MOV       G28       Z0       ]       ]       ]         [SD2040.C       [DMOV       G28       Z0       ]       ]         [MOV       Z0       Z2       ]       ]       ]         [MOV       G28       Z0       ]       ]       ]         [MOV       [SSE22       K4B0Z0       Z1	B device reception	2 (First half): Start No =70 Number of words=71	[вмоv		K4B0Z0	Z1	
B device reception 1 (Latter half): Start No.=Z0, Number of words=Z1       [BMOV       U20\ G59222       K4       J       Divide the buffer memory address by 16 (bits).         SD2040.C       [DMOV       G28       Z0       J       Divide the buffer memory address by 16 (bits).         MOV       Z0       Z2       J       Divide the buffer memory address by 16 (bits).         Divide the buffer memory address       [DMOV       G28       Z0       J         [MOV       Z0       Z2       J       Divide the buffer memory address by 16 (bits).         [MOV       G59222       K48020       Z1       J         [MOV       Z0       Z2       J       Divide the buffer memory address by 16 (bits).         [MOV       G59222       K48020       Z1       J         [MOV       G59222       K48020       Z1       Divide the buffer memory address by 16 (bits).	SD2040.5			—[рмоу		Z0	3
B device reception 1 (Latter half): Start No.=Z0, Number of words=Z1  SD2040.C  MOV G28 Z0  SD204 SD2 SD204 SD2				—[моv	Z0	Z2	3
B device reception 1 (Latter half): Start No.=Z0, Number of words=Z1  SD2040.C  MOV G28 Z0				[SFR	Z2	К4	
SD2040.C       U20\ G28       Z0       ]         [MOV       G28       Z0       ]         [MOV       Z0       Z2       ]         [SFR       Z2       K4       ]         Divide the buffer memory address       by 16 (bits).         [BMOV       G59222       K48020       Z1       ]         Obtain B of the other stations from	B device reception	1 (Latter half): Start No.=Z0, Number of words=Z1	Евмоv		K4B0Z0	Z1	
Divide the buffer memory address by 16 (bits).	SD2040.C			[DMOV		Z0	3
L <sup>SFR</sup> Z2 K4 by 16 (bits).				—[моv	Z0	Z2	3
EBMOV G592Z2 K4B0Z0 Z1 DUBLAN B of the other stations from				-SFR	Z2	K4	
			[вмоv		K4B0Z0	Z1	H

W device reception 2 (Latter half): Start No.=Z0, Number of words=Z1

B device reception 2 (Latter half): Start N	o.=Z0, Num	ber of wor	ds=Z1						
SD2040.D						—[ рмоу	U20\ G30	Z0	3
						-[моv	Z0	Z2	3
						-[SFR	Z2	K4	Divide the buffer memory address by 16 (bits).
Transfer the special relay for link (from M9240) Transfer the special register for link (from D924					Евмоv	U20\ G592Z2	K4B0Z0	Z1	Obtain B of the other stations from the local module. (Latter half)
	(0) 10 OD 1240				[вмоv	U20\ G259	K4SM1240	К1	Obtain data of the special relay (for link).
					[вмоv	U20\ G315	SD1243	K13	Obtain data of the special register (for link).
								-(SM1240	>
LRDP instruction receive processing X207 U20, LX07 E= K4 G17.	2					-[DMOV	U20\ G176	Z0	Obtain the read device name and start device number.
						_[моv	U20\ G179	Z2	Obtain the read data length.
					[FMOV	H0	U20\ G176	K40	Clear the LRDP instruction work area to zero.
	[=	H544E	Z0	]	Евмоv	T0Z1	U20\ G180	Z2	Transfer the T device value to the work area.
	£=	H434E	Z0	]	Евмоv	C0Z1	U20\ G180	Z2	Transfer the C device value to the work area.
	£=	H4420	Z0	]	Евмоv	D0Z1	U20\ G180	Z2	Transfer the D device value to the work area.
	[=	H5720	Z0	]	[вмоv	W0Z1	U20\ G180	Z2	Transfer the W device value to the work area.
						—[моv	K5	U20\ G172	LRDP instruction receive request (5 = Processing completion)

# MELSEC



# Appendix 4 Related Manuals

# Appendix 4.1 Replacement handbooks

# (1) Transition guide

No.	Manual name	Manual number	Model code
1	MELSEC-A/QnA Series Transition Guide	L08077E	-
2	MELSEC-AnS/QnAS Series Transition Guide	L08236E	-

# (2) Transition from MELSEC-A/QnA (large type) to Q series handbook

No.	Manual name	Manual number	Model code
1	Transition from MELSEC-A/QnA (Large Type) Series to Q	L08043ENG	
	Series Handbook (Fundamentals)	LUUUHJLING	-
1	Transition from MELSEC-AnS/QnAS (Small Type) Series to Q	L08219ENG	_
	Series Handbook (Fundamentals)	LUOZIJENG	-
	Transition from MELSEC-A/QnA (Large Type) Series to Q	L08046ENG	
2	Series Handbook (Intelligent Function Modules)	LUOU40EING	-
2	Transition from MELSEC-AnS/QnAS (Small Type) Series to Q	L08220ENG	
	Series Handbook (Intelligent Function Modules)	LUOZZUEING	-
3	Transition from MELSEC-A/QnA (Large Type), AnS/QnAS	L08048ENG	
	(Small Type) Series to Q Series Handbook (Network Modules)		-
4	Transition from MELSEC-A/QnA (Large Type), AnS/QnAS	L08050ENG	
4	(Small Type) Series to Q Series Handbook (Communications)		-
5	Transition from MELSEC-A0J2H Series to Q Series Handbook	L08060ENG	-
6	Transition from MELSECNET/MINI-S3, A2C (I/O) to CC-Link	L08061ENG	-
U	Handbook		
7	Transition from MELSEC-I/OLINK to CC-Link/LT Handbook	L08062ENG	-
8	Transition from MELSEC-I/OLINK to AnyWire DB A20	L08263ENG	_
	Handbook	1002001110	-
9	Transition of CPUs in MELSEC Redundant System Handbook	L08117ENG	
	(Transition from Q4ARCPU to QnPRHCPU)		-

# (3) Transition Examples

No.	Manual name	Manual number	Model code
1	MELSEC-A/QnA (Large), AnS/QnAS (Small) Transition Examples	L08121E	-

# (4) Others

No.	Manual name	Manual number	Model code
1	Precautions for replacing A/QnA (large type) series CPU with	FA-A-0068	-
	Universal model QCPU		

# Appendix 4.2 A/AnS series

No.	Manual name	Manual number	Model code
1	Type MELSECNET, MELSECNET/B Data Link System Reference Manual	IB-66350	13JF70
2	Type MELSECNET/10 Network System Reference Manual	IB-66440	1JE33
	(PLC to PLC network)	1D-00440	IJE33
3	Type MELSECNET/10 Network System (Remote I/O network)	SH-3509	13JE72
	Reference Manual		
	CC-Link System Master/Local Module Type AJ61BT11/	IB-66721	13J872
	A1SJ61BT11 User's Manual		

# Appendix 4.3 QnA/QnAS series

No.	Manual name	Manual number	Model code
1	For QnA/Q4AR MELSECNET/10 Network System Reference Manual	IB-66690	13JF78
2	CC-Link System Master/Local Module Type AJ61QBT11/ A1SJ61QBT11 User's Manual	IB-66722	13J873

# Appendix 4.4 Q series

No.	Manual name	Manual number	Model code
1	Q Corresponding MELSECNET/H Network System	SH-080049	13JF92
	Reference Manual(PLC to PLC network)	30-000049	
2	Q Corresponding MELSECNET/H Network System	SH-080124	13JF96
	Reference Manual(Remote I/O network)		
3	Q Corresponding MELSECNET/H Remote I/O Module	SH-081164ENG	13JV30
	Reference Manual (MELSECNET/10 Mode)		
4	CC-Link System Master/Local Module User's Manual	SH-080394E	13JR64
	QJ61BT11N	3H-000394E	
5	MELSEC-Q/L Programming Manual (Common Instruction)	SH-080809ENG	13JW10

# 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.

### [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 to:
- (1) Damages caused by any cause found not to be the responsibility of Mitsubishi.
- (2) Loss in opportunity, lost profits incurred to the user by Failures of Mitsubishi products.
- (3) Special damages and secondary damages whether foreseeable or not, compensation for accidents, and compensation for damages to products other than Mitsubishi products.
- (4) 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.

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