

# TECHNICAL BULLETIN

**[Issue No.]** T99-0049-D

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**[Title]** Production discontinuation of MELSECNET(II) and /B data link systems

**[Date of Issue]** Sep., '05

**[Relevant Models]** MELSECNET(II) and /B data link modules (A1SJ71AP21, A1SJ71AR21, A1SJ71AT21B are not included in the discontinuation target.)

Thank you for your continued support of Mitsubishi programmable logic controllers.

Thank you for your continued support of Mitsubishi programmable logic controllers, MELSEC-A/QnA series. MELSEC-A and QnA series have been used in many production sites with rise of Japanese production business for about 20 years since they were released in 1985.

However, unfortunately, we are now unable to continue the production of them and have decided to discontinue the MELSECNET(II), /B data link modules.

This technical bulletin is to provide the information regarding this production discontinuation.

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## 1. Models to be discontinued

(1) A series data link modules

Product name		Model	Product Discontinuation Date	Remark (Spare Parts*1)
MELSECNET (II)	Data link module	AJ71AP21	Through September, 2006	Continue production through September, 2008
		AJ71AP21-S3		—
		AJ71P22-S3		
		AJ71AP22-S3		
		AJ71AR21		Continue production through September, 2008
		AJ72P25		
		AJ72P25-S1		—
		AJ72P25-S3		
		AJ72R25		Continue production through September, 2008
		AJ72R25-S1	—	
MELSECNET/B	Data link module	AJ71AT21B	Through September, 2006	Continue production through September, 2008
		AJ72T25B		

\*1 We will continue production for 6 models for spare parts usage after product discontinuation (October 1<sup>st</sup>, 2006 to through September, 2008).

### Remarks

As for CPU modules with link functions (AnNCPUP21/R21, AnACPUP21/R21 and others), these modules will also be discontinued on September, 2006. For more information, please refer to Technical Bulletin No. T99-050.

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(2) AnS series data link modules, PC interface boards

Product name		Model	Product Discontinuation Date	Remarks (Models not subject to product discontinuation)
MELSECNET (II)	Data link module	A1SJ71AP21-S3	Through September, 2008	Continued production for A1SJ71AP21, A1SJ71AR21
	Interface board	A70BD-J71AP23		—
		A7BDE-J71AP21		—
		A7BDE-J71AP21-S3		—
	A98BD-J71AP23	—		
	A7BDE-J71AR21	—		
MELSECNET/B	Data link module	A1SJ72T25B	Continued production for A1SJ71AT21B	
	Interface board	A98BD-J71AT23B	—	

**Point**

**For Customers using AnS series MELSECNET(II)/B data link modules**

We will continue production for the A1SJ71AP21 (Master/local module supporting optical data link systems SI cables), A1SJ71AR21 (Master/local module supporting coaxial data link systems), and A1SJ71AT21B (Master/local module supporting twisted pair shielded data link systems), so **AnS Series MELSECNET(II)/B master/local station systems, can be continuously used.**

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## 2. Production discontinuation

We will stop producing the products stated in Section 1 with the schedule shown below. With reference of the schedule, please notify us and order the number of the products necessary.

### (1) A series data link modules

- Transition to "made-to-order" : October 1, 2005
- Order acceptance : Through August, 2006
- Final production : Through September, 2006

For products we will continue production for spare parts usage is as following:

- Start of order acceptance : September 1, 2006
- Order acceptance : Through August, 2008
- Final production : Through September, 2008

### (2) AnS series data link modules, PC interface boards

- Transition to "made-to-order" : October 1, 2007
- Order acceptance : Through August, 2008
- Final production : Through September, 2008

## 3. Reasons for discontinuing production

Conventional main electronic components of the relevant PLC models, i.e., semiconductor components (micro computer, memory, ASIC, etc.) are now absolutely difficult to obtain, as they are produced based on the stricter process rules and the contributions to environmental conservation, such as lead-free, compliance to RoHS directives are required. We have been producing A/QnA series products by securing the stock of these obsolete components. However, the stock is about to run out, and we have extreme difficulty to maintain the production system and product quality.

## 4. Spare parts correspondence

### (1) A series data link modules

- Repair acceptance : Through September, 2013 (For 7 years after production discontinuation)]  
\*For products we will continue production for spare parts usage, we will accept repair till the end of September, 2015.

### (2) AnS series data link modules, PC interface boards

- Repair acceptance : Through September, 2015 (For 7 years after production discontinuation)



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## 5. Recommendable proposals

Regarding the MELSECNET(II)/B data link module production discontinuation, we propose the following for "Maintenance, Additions/modifications, and transition from MELSECNET(II)/B to MELSECNET/10(H)".

<u>Maintenance</u>	
Preparation of exchange modules for module failure	
1) Preparation of spare parts .....	Refer 5.1-(1)
2) Utilizing "A1S conversion adapter and A1S series modules" .....	Refer 5.1-(2)
<u>Additions/modifications</u>	
Correspondence to adding local stations to a MELSECNET(II)/B data link system	
1) Adding Q series(Q-mode) local stations .....	Refer 5.2.1
2) Adding AnS series local stations .....	Refer 5.2.2
<u>Transition from MELSECNET(II)/B to MELSECNET/10(H)</u>	
Transition from an existing MELSECNET(II)/B data link system to Q series MELSECNET/10(H)	
1) Changing the system at one time .....	Refer 5.3.1
2) Changing the system gradually .....	Refer 5.3.2

### 5.1 Correspondence for maintenance

- (1) Please purchase spare parts before order deadline. We will discontinue production as listed in Section 2., but we will continue production for spare parts usage for 2 years (until September, 2008) for the main MELSEC-A/QnA (Large type) models (refer to Section 1.(1)).
- (2) We are planning to release an A-A1S conversion adapter for machinery/line modifications. Mainly for usage in machinery/line modifications, we will propose usage of our A-A1S conversion adapter and A1S modules. (For explanation of the A-A1S conversion adapter, please refer to Technical bulletin T99-0050) As for modules that can be used with this adapter, we will notify later around July, 2005. As for the release date of the A-A1S conversion adapter, we will notify you later.

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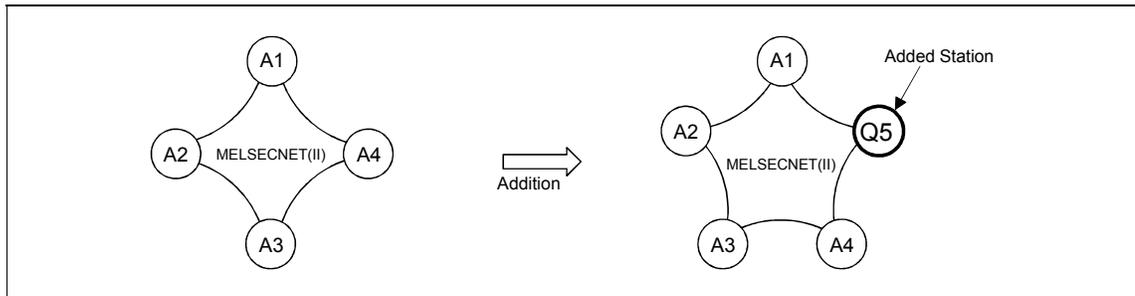
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## 5.2 Additions/modifications for existing MELSECNET(II), /B systems

We propose additions/modifications using the "Q series(Q mode) and AnS series"



### 5.2.1 Adding Q series (Q mode) local stations

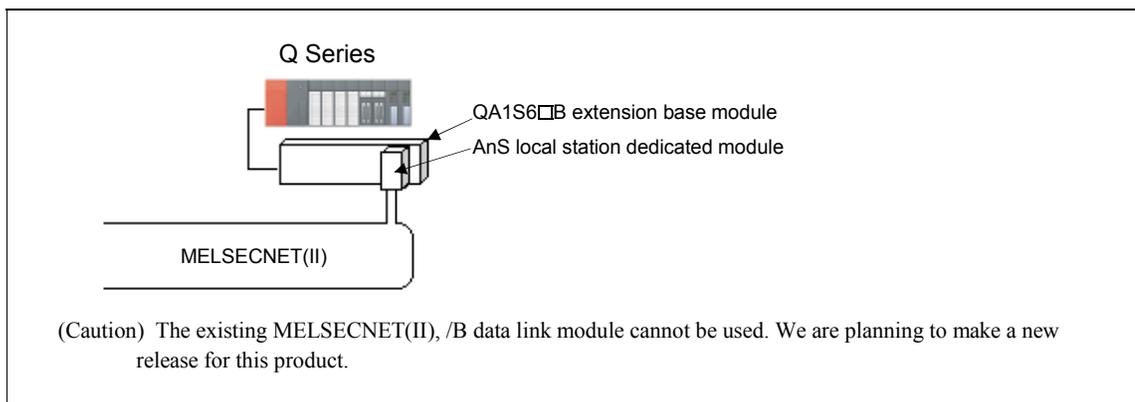
When adding a Q Series (Q mode) local station to an existing MELSECNET(II),/B system there are 2 methods you can select, and we will explain as following:

- Adding by using a AnS local station dedicated module
- Adding by using a relay station

#### (1) Adding by using a AnS local station dedicated module

Attach the AnS local station dedicated module to the Q Series (Q mode) QA1S6□B extension base module, and connect to the MELSECNET(II) system. (Only High performance CPUs can be used on the QA1S6□B extension base module. Basic model CPUs, Process CPU, Redundant CPU cannot be used.)

As for the release date of the AnS local station dedicated module, we will notify you later.



(Caution) The existing MELSECNET(II), /B data link module cannot be used. We are planning to make a new release for this product.

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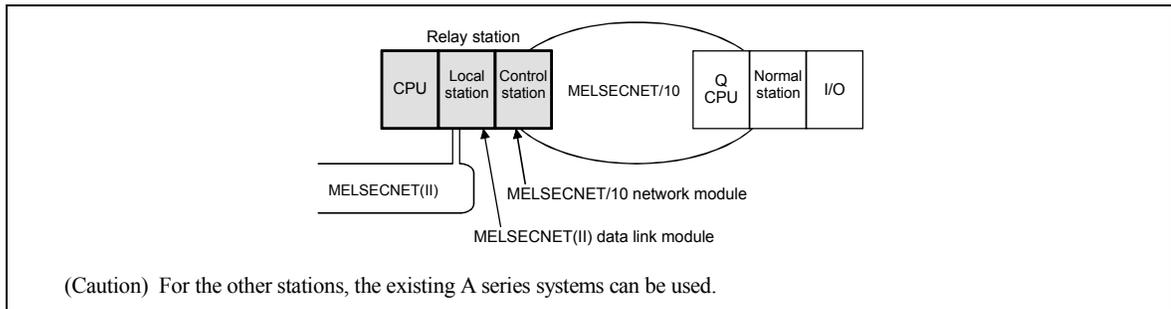
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(2) Adding by using a relay station

Example of when adding a local station and also transition of part of the system from A series PLC to Q series PLC.



## 5.2.2 Additions/renewals by using AnS series

For the MELSECNET(II)/B data link modules for the AnS series(A1SJ71AP21, A1SJ71AR21, A1SJ71AT21B), we will continue production, so please consider system connectivity using the AnS series modules as well.

## 5.3 Replacing MELSECNET(II)/B to MELSECNET/10

For transition from existing MELSECNET(II)/B to Q series MELSECNET/10(H) there are 2 methods you can select, and we will explain as following:

- 1) Changing the system at one time.....Refer 5.3.1
- 2) Changing the system gradually.....Refer 5.3.2

Please note that in 5.3.3 to 5.3.6 we have listed the differences between MELSECNET(II)/B and cautions we would like you to take, so please confirm.

Point
(1) MELSECNETII communication cables (optical cables and coaxial cables) can be used in MELSECNET/10 also. But, the station-to-station distance is shorter, so please refer to Section 5.3.4, and confirm if your conditions are satisfied.
(2) MELSECNET/B twisted pair cables cannot be used in MELSECNET/10. Please consider transition to an optical loop system or coaxial bus system.

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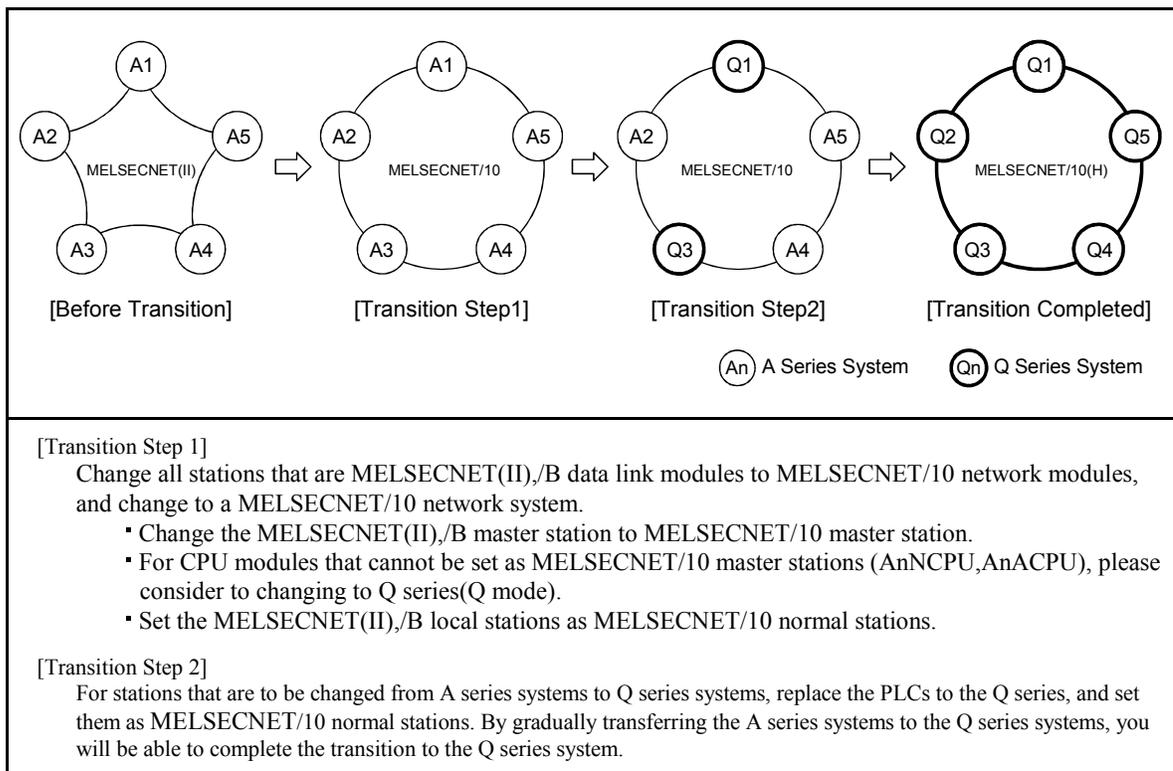
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### 5.3.1 Changing the MELSECNET(II),/B system to the MELSECNET/10 at one time

Use the MELSECNET(II),/B system wiring, and change at one time to the MELSECNET/10 system.  
After, change the A Series system to the Q series system.



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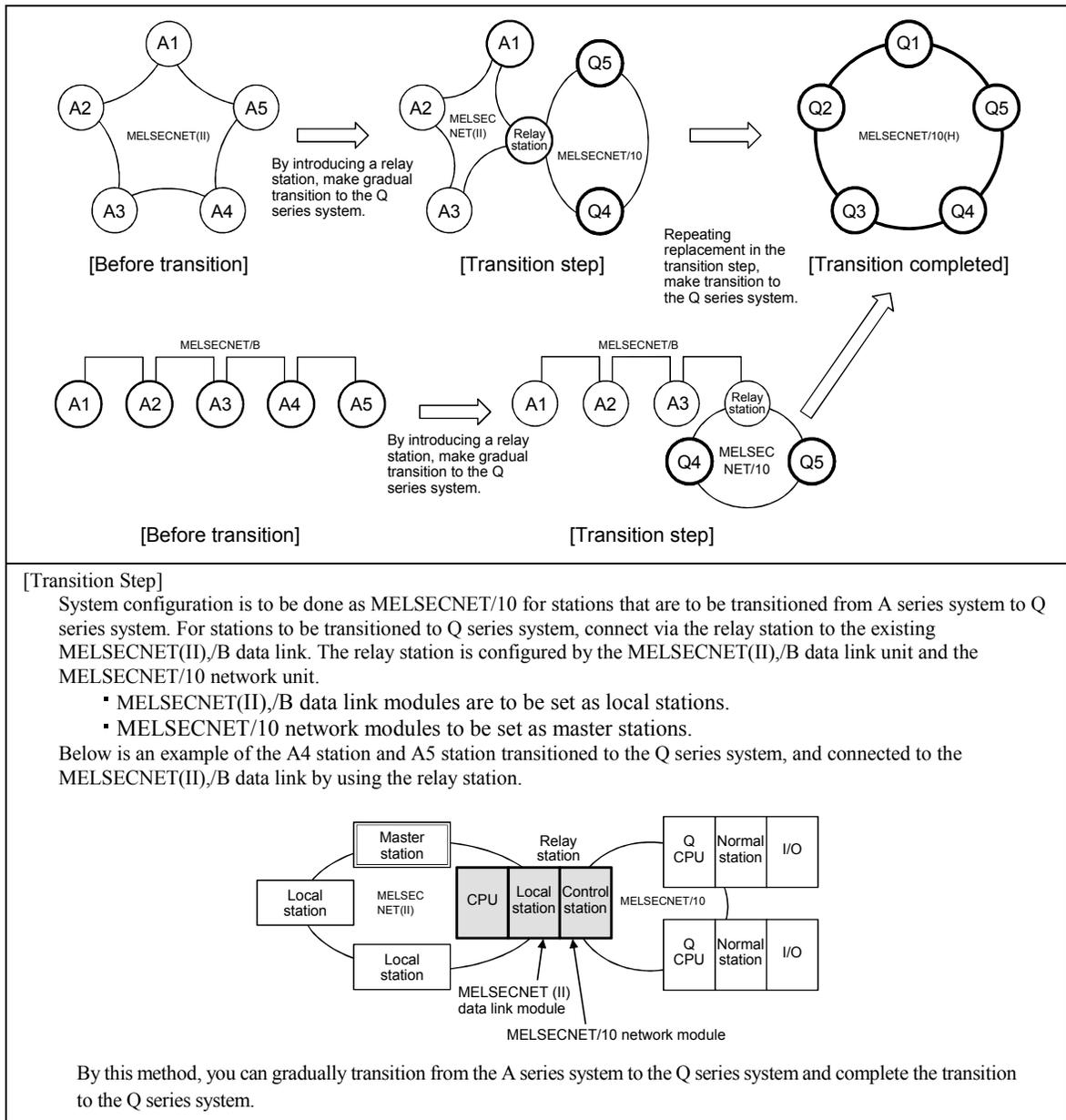
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### 5.3.2 Changing the MELSECNET(II)/B system to the MELSECNET/10 gradually

Use the MELSECNET(II)/B system wiring, and change gradually to the MELSECNET/10 system, station by station. After, change the MELSECNET(II)/B system to the MELSECNET/10(H) series system.



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### 5.3.3 Considering replacement method by system configuration

Differences in network configurations of MELSECNET (II), /B and MELSECNET/10 are explained below.

MELSECNET (II), /B	MELSECNET/10
<p>Local station system</p>	<p>Configure a MELSECNET/10 PLC to PLC network.</p>
<p>Remote I/O system</p>	<p>Configure a MELSECNET/10 remote I/O network.</p>
<p>Local and remote I/O system</p>	<p>Configure separate networks for local stations and remote I/O stations.</p>
<p>3-tier system</p>	<p>Mount 2 MELSECNET/10 modules to the 3-tier master station to configure 2 networks.</p>

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### 5.3.4 Considering replacement method by the station-to-station and overall cable distances

Communication cable for MELSECNET II (optical cable and/or coaxial cable) can be used with MELSECNET/10. As the distance between stations is shortened, confirm whether or not the condition to use is satisfied to the following information.

#### (1) Allowable station-to-station and overall distances for communication cables

Item	MELSECNET (II)				MELSECNET/B	MELSECNET/10 (In MELSECNET/10 mode of the Q series)				
	Optical loop		Coaxial loop		Twisted pair shielded (bus topology)	Optical loop			Coaxial bus	
	SI*1	GI	3C-2V	5C-2V		SI*1	QSI	GI	3C-2V	5C-2V
Station-to-station distance	1km	2km	500m		125kBPS: 1200m 250kBPS: 600m 500kBPS: 400m 1MBPS: 200m	500m	1km	2km	300m	500m
Overall cable distance	10km	10km	10km			30km	30km	30km		

\*1 Some optical cables used in MELSECNET (II) provide shorter connection length than do optical cables for MELSECNET/10. Confirm the cable installation in the existing system to know whether or not the condition to use is satisfied to the following information.

Optical cable (Note)			Station-to-station distance	
Product name	Type	Loss	MELSECNET (II)	MELSECNET/10
AS-**	H-PCF	6dB/km	1000m	1000m
AN-**, A-**	SI	12dB/km	1000m	500m
A-**	SI	24dB/km	500m	250m

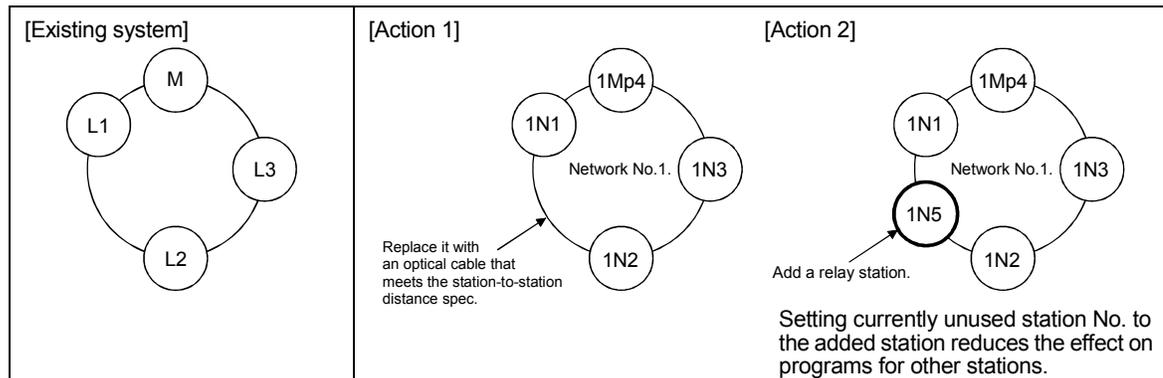
(Note) For more details on optical cables, contact your nearest sales office.

#### (2) Actions to be taken when the optical cable length exceeds the allowable MELSECNET/10 station-to-station distance

Take either of the following actions:

Action 1: Replace it with an optical cable that meets the station-to-station distance specification.

Action 2: Add a relay station.



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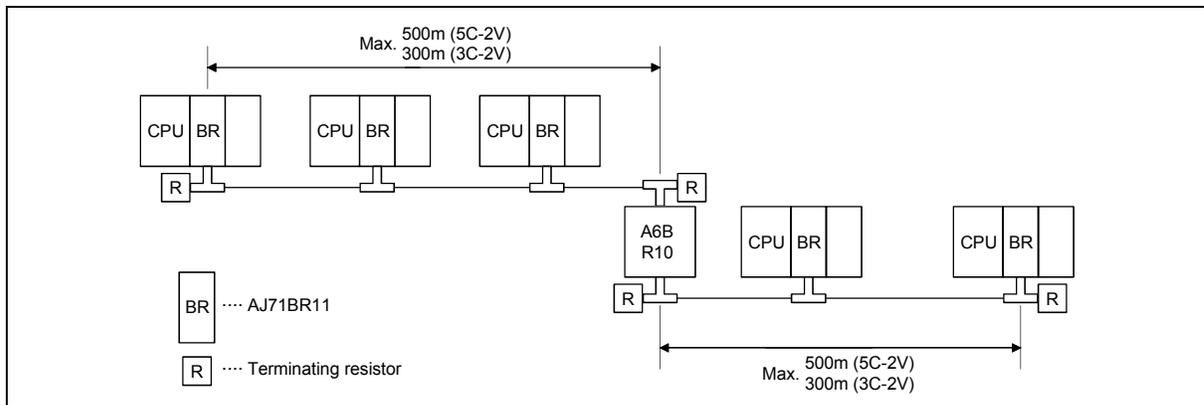
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**(3) Actions to be taken when the coaxial cable length exceeds the allowable station-to-station or overall distance**

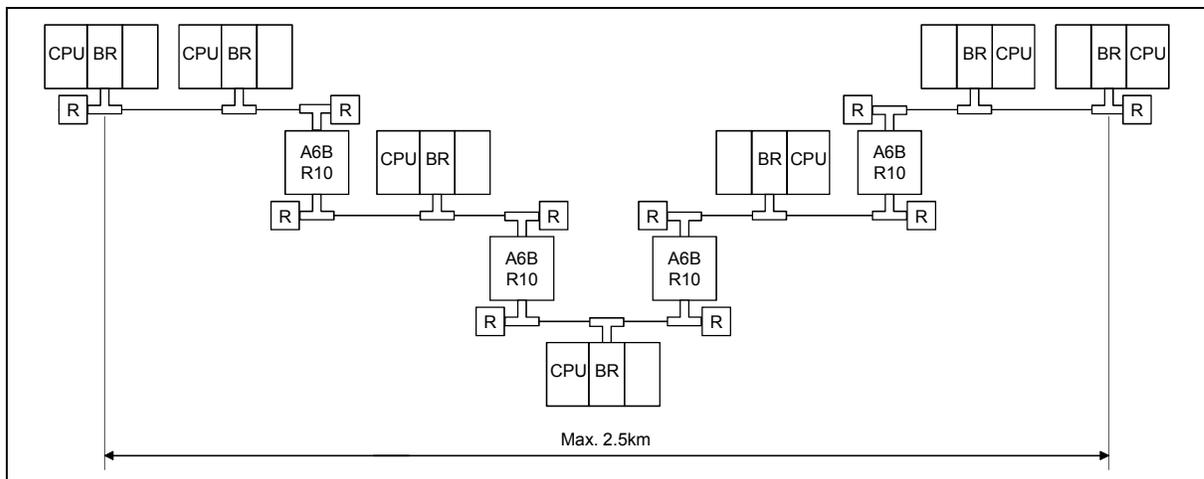
Additionally use the A6BR10/A6BR10-DC repeater unit for the MELSECNET/10 coaxial bus system. For details, refer to Repeater Unit for the MELSECNET/10 Coaxial Bus System type A6BR10/A6BR10-DC User's Manual (IB-66499-A).

**(a) Use of one repeater unit can increase the distance of 500m (5C-2V) or 300m (3C-2V).**



**(b) Up to 4 repeater units are connectable per network.**

The overall cable distance can be increased to the maximum of 2.5km.



**(4) Twisted pair shielded cable**

Twisted pair shielded cables are not used in the MELSECNET/10. Consider replacing with a system using optical loop or coaxial buses.

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### 5.3.5 Considering transition to the MELSECNET/10 by MELSECNET(II) or /B parameter of the existing system

MELSECNET (II) parameter mode		Local station B/W assignment range when changing to MELSECNET/10			
		AnNCPUP, AnSCPU	AnACPU	AnUCPU, A2USCPU	QnACPU, Q2ASCPU
MELSECNET mode		Not changed.	Not changed.	Not changed. Refresh parameter setting is required.	
MELSECNET composite mode* <sup>1</sup>	First half only	Not changed.	Not changed.	Not changed. Refresh parameter setting is required.	
	First and second halves * <sup>1</sup>	— (Combining the first half with the second half is not available for assignment.)	1) The set range for the first half can be used without change. 2) Setting is not available for the second half.	1) The set range for the first half can be used without change. 2) Setting is not available for the second half. 3) Refresh parameter setting is required.	
MELSECNET (II) mode* <sup>1</sup>	First half only	—	Not changed.	Not changed. Refresh parameter setting is required.	
	First and second halves * <sup>1</sup>	(Connection not available in the MELSECNET II mode.)	1) The set range for the first half can be used without change. 2) Setting is not available for the second half.	1) The set range for the first half can be used without change. 2) Setting is not available for the second half. 3) Refresh parameter setting is required.	

\*1 When the MELSECNET (II) data link parameter has been set being divided into the first half (1024 bytes/station) and the second half (1024 bytes/station), changing the B/W assignment range and program check are required because one consecutive area (2000 bytes/station) is used for the MELSECNET/10 network parameter. To reduce changes on programs, consider section 5.3.2.

### 5.3.6 Cautions on differences in hardware configuration

**(1) When reusing a Data Link CPU module (AnNCPUP21/R21, AnACPUP/R21, etc.)**

In order to use a Data Link CPU module in the MELSECNET/10 network, an additional one slot and 32 I/O points are required for installation of a MELSECNET/10 network module. The Data Link CPU module can be used as it is only by changing the mode select switch to “Offline”.

**(2) When replacing MELSECNET (II) coaxial loop system**

While MELSECNET (II) coaxial cables are used in the duplex loop system, there are no Q series modules compatible with the MELSECNET/H(10) coaxial loop system. When replacing the system with the Q series system, configure either of the optical loop or coaxial bus system.

**(3) When MELSECNET (II) system uses GI cables**

There is no AnSCPU/A2USCPU/Q2ASCPU (compact type) compatible MELSECNET/H(10) network module that supports GI cables.

Therefore, use the following methods:

■ When using the existing GI cables

Replace the existing PLCs with the Q series PLCs that are compatible with MELSECNET/H(10) network modules supporting GI cables.

■ When using the existing PLC CPUs

Use a MELSECNET/10 network module supporting SI cables or coaxial cables.



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#### (4) Refresh time of MELSECNET (II) and MELSECNET/10

Since the link refresh time of the MELSECNET/10 is longer than that of the MELSECNET (II), the sequence scan time (END processing time of CPU) is extended.

However, as the shorter link scan time is taken for the MELSECNET/10 compared with the MELSECNET (II), no problem is identified in the transmission delay time.

For details, refer to the manual of the network module used.

Example) Link refresh time [msec] when total link points for all stations is 4096 for LB/LW each.

CPU module	Link refresh time	
	MELSECNET (II)	MELSECNET/10
A2ACPU (S1)	6.42	18.9
A3ACPU	4.84	18.16
A2UCPU (S1)	6.42	23.06
A3UCPU	4.84	22.76