

TECHNICAL BULLETIN

[Issue No.] FA-A-0041

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[Title] Solutions to the LINK PARA. ERROR (error code: 3101) occurred when no MELSECNET/H refresh parameter is set

[Date of Issue] December 2008

[Relevant Models] MELSEC-Q series (High Performance model QCPU, Process CPU, Redundant CPU, Basic model QCPU, and Universal model QCPU) and MELSEC-QS series (safety CPU)

Thank you for your continued support of Mitsubishi programmable controllers, MELSEC-Q series.

When no MELSECNET/H parameter is set, changing the device point value of B (Link relay) or W (Link register) to less than 8K points* in the Device tab of the PLC parameter dialog box may cause the LINK PARA. ERROR (error code: 3101).

*: Less than 2K points for the Basic model QCPU and safety CPU.

1. Relevant models

This information applies to the models of the High Performance model QCPU, Process CPU, Redundant CPU, Basic model QCPU, Universal model QCPU, and safety CPU.

Table 1. List of the relevant models

No.	Product name	Model
1	High Performance model QCPU	Q02CPU, Q02HCPU, Q06HCPU, Q12HCPU, Q25HCPU
2	Process CPU	Q02PHCPU, Q06PHCPU, Q12PHCPU, Q25PHCPU
3	Redundant CPU	Q12PRHCPU, Q25PRHCPU
4	Basic model QCPU	Q00JCPU, Q00CPU, Q01CPU
5	Universal model QCPU	Q00UJCPU, Q00UCPU, Q01UCPU, Q02UCPU, Q03UDCPU, Q03UDECPU, Q04UDHCPU, Q04UDEHCPU, Q06UDHCPU, Q06UDEHCPU, Q10UDHCPU, Q10UDEHCPU, Q13UDHCPU, Q13UDEHCPU, Q20UDHCPU, Q20UDEHCPU, Q26UDHCPU, Q26UDEHCPU
6	Safety CPU	QS001CPU

2. Cause

When no MELSECNET/H refresh parameter is set, a CPU module listed in Table 1 refreshes the points of data shown in Table 2.

Since the B and W points set in the Device tab of the PLC parameter dialog box must be consistent with the points of data to be refreshed, each CPU module listed in Table 1 checks for consistency.

If the B or W point value in the Device tab is changed to a value less than the points shown in Table 2, the setting does not match the device points to be refreshed and the LINK PARA. ERROR (error code: 3101) will occur.

Table 2. Points for B/W refresh in the case of no parameter setting

Number of MELSECNET/H modules	Device points that is refreshed	
	B	W
1	8K points (2K points)	8K points (2K points)
2	8K points	8K points
3	6K points	6K points
4	8K points	8K points

The value in parentheses shows the number of points for the Basic model QCPU or safety CPU.

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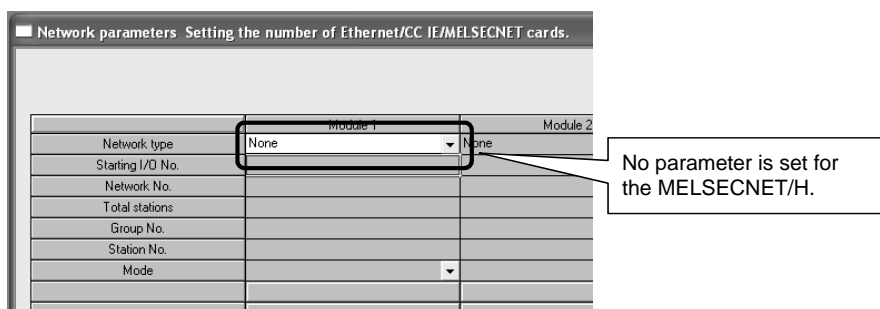
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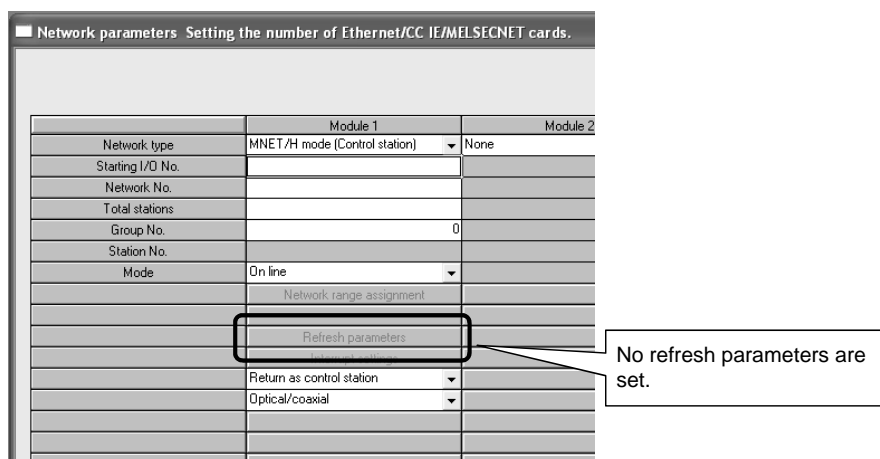
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No MELSECNET/H refresh parameters are set in either of the following cases.

(1) No parameter is set for the MELSECNET/H.



(2) No refresh parameters are set although MELSECNET/H parameters are set.



Note that the following CPU module versions do not have the consistency check function in the case of no MELSECNET/H refresh parameter setting. Therefore, please check for the consistency of the device points manually. (Refer to “3. Solutions”.)

Failure to do so may cause incorrect refreshing to other devices.

Table 3. Versions that do not have the consistency check function

No.	Product name	Version (first 5 digits of serial No.)
1	High Performance model QCPU	09011 or earlier
2	Process CPU	
3	Redundant CPU	
4	Basic model QCPU	10051 or earlier

*: The Universal model QCPU and safety CPU have the checking function from the first version.

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3. Solutions

By either of the following methods, correct the parameter settings so that the B and W points set in the Device tab of the PLC parameter dialog box will be consistent with the points of the devices to be refreshed.

- (1) Set MELSECNET/H parameters, and in the MELSECNET/H refresh parameter setting window, set LB and LW values within the B and W points set in the Device tab.

	Link side					PLC side			
	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				↔				
Random cyclic	LW				↔				
Transfer1	LB	1024	0000	03FF	↔	B	1024	0000	03FF
Transfer2	LW	2048	0000	07FF	↔	LW	2048	000000	0007FF
Transfer3					↔				
Transfer4					↔				
Transfer5					↔				
Transfer6					↔				

Set the LB and LW values to the B and W values or less.

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(2) In the Device tab of the PLC parameter dialog box, set 8K or more points for B and W.

The screenshot shows the 'Q parameter setting' dialog box with the 'Device' tab selected. The main table lists various device types and their parameters. Two callouts are present:

- Callout 1: "1) Set 8K points* or more for B." points to the 'Link relay' row (Sym: B, Dig: 16, Dev. point: 8K).
- Callout 2: "2) Set 8K points* or more for W." points to the 'Link register' row (Sym: W, Dig: 16, Dev. point: 8K).

Below the table, the 'Device total' is set to 28.8 K words, 'Word device' to 25.0 K words, and 'Bit device' to 44.0 K bits. The 'File register extended setting' section shows 'Capacity' as 0 K points. The '32 bit Indexing' section has 'Use Z' selected.

	Sym.	Dig.	Dev. point	Latch(1) start	Latch(1) end	Latch(2) start	Latch(2) end	Local dev. start	Local dev. end
Input relay	X	16	8K						
Output relay	Y	16	8K						
Internal relay	M	10	8K						
Latch relay	L	10	8K						
Link relay	B	16	8K						
Annunciator	F	10	2K						
Link special	SB	16	2K						
Edge relay	V	10	2K						
Step relay	S	10	8K						
Timer	T	10	2K						
Retentive timer	ST	10	0K						
Counter	C	10	1K						
Data register	D	10	12K						
Link register	W	16	8K						
Link special	SW	16	2K						
Index	Z	10	20						

*: 2K points or more for the Basic model QCPU and safety CPU.

For further information, please consult your local Mitsubishi representative.