MELSEC-L High-Speed Counter Module Sample Ladder Reference Manual

Applicable modules:
LD62, LD62D

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Reference Manual Revision History

Reference Manual Number	Date	Description
LDM-M021-A	2011/09/26	First edition

1. Overview

Overview of the Sample Ladder Programs

The sample ladder programs support a system that uses the MELSEC-L LD62(D) high-speed counter module.

Sample Ladder Program Functions

The programs have the following functions.

(1) When Using the Module in Standard System Configuration (When Using Intelligent Function Module Parameters)

No.	Project name	Program name	Item	Description	Version
1	LD-LD62_PRM_V100A_E	01CntDis	Count disable function	Uses the count disable function of the high-speed counter module.	1.00A
2		02Latch	Latch counter function	Uses the latch counter function of the high-speed counter module.	1.00A
3		03SplCnt	Sampling counter function	Uses the sampling counter function of the high-speed counter module.	1.00A
4		04CycPls	Periodic pulse counter function	Uses the periodic pulse counter function of the high-speed counter module.	1.00A

(2) When Using the Module in Standard System Configuration (When Not Using Intelligent Function Module Parameters)

No.	Project name	Program name	Item	Description	Version
1	LD-LD62_NPM_V100A_E	01CntDis	Count disable function	Uses the count disable function of the high-speed counter module.	1.00A
2		02Latch	Latch counter function	Uses the latch counter function of the high-speed counter module.	1.00A
3		03SplCnt	Sampling counter function	Uses the sampling counter function of the high-speed counter module.	1.00A
4		04CycPls	Periodic pulse counter function	Uses the periodic pulse counter function of the high-speed counter module.	1.00A

(3) When Connecting the Module to the Head Module

No.	Project name	Program name	Item	Description	Version
1	LD-LD62_IEF_V100A_E	01CntDis	Count disable function	Uses the count disable function of the high-speed counter module.	1.00A
2		02Latch	Latch counter function	Uses the latch counter function of the high-speed counter module.	1.00A
3		03SplCnt	Sampling counter function	Uses the sampling counter function of the high-speed counter module.	1.00A
4		04CycPls	Periodic pulse counter function	Uses the periodic pulse counter function of the high-speed counter module.	1.00A

(4) When Using the Coincidence Detection Interrupt Function

No.	Project name	Program name	Item	Description	Version
1	LD-LD62_IRQ_V100A_E	01UseIRQ	Coincidence detection interrupt function	Uses the coincidence detection interrupt program of the high-speed counter module.	1.00A

Relevant Manuals

MELSEC-L High-Speed Counter Module User's Manual

MELSEC-Q CC-Link IE Field Network Master/Local Module User's Manual

MELSEC-L CC-Link IE Field Network Master/Local Module User's Manual

MELSEC-L CC-Link IE Field Network Head Module User's Manual

QCPU User's Manual(Hardware Design, Maintenance and Inspection)

MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection)

GX Works2 Version 1 Operating Manual (Common)

GX Developer Version 8 Operating Manual

Note

This manual describes the functions of the sample ladder programs. It does not include information on restrictions of use such as combination with modules or programmable controller CPUs. Before using any Mitsubishi products, please read all the relevant manuals.

For information on the detailed specifications and operation timings of the sample ladder programs, refer to the MELSEC-L High-Speed Counter Module User's Manual. The descriptions of the sample ladder programs in this manual may be different from the ones found in the MELSEC-L High-Speed Counter Module User's Manual depending on the date created.

2. When Using the Module in Standard System Configuration (When Using Intelligent Function Module Parameters)

2.1 Count Disable Function

Function Overview

This program uses the count disable function.

Program

This function uses the project (program name).

•LD-LD62_PRM_V100A_E(01CntDis)

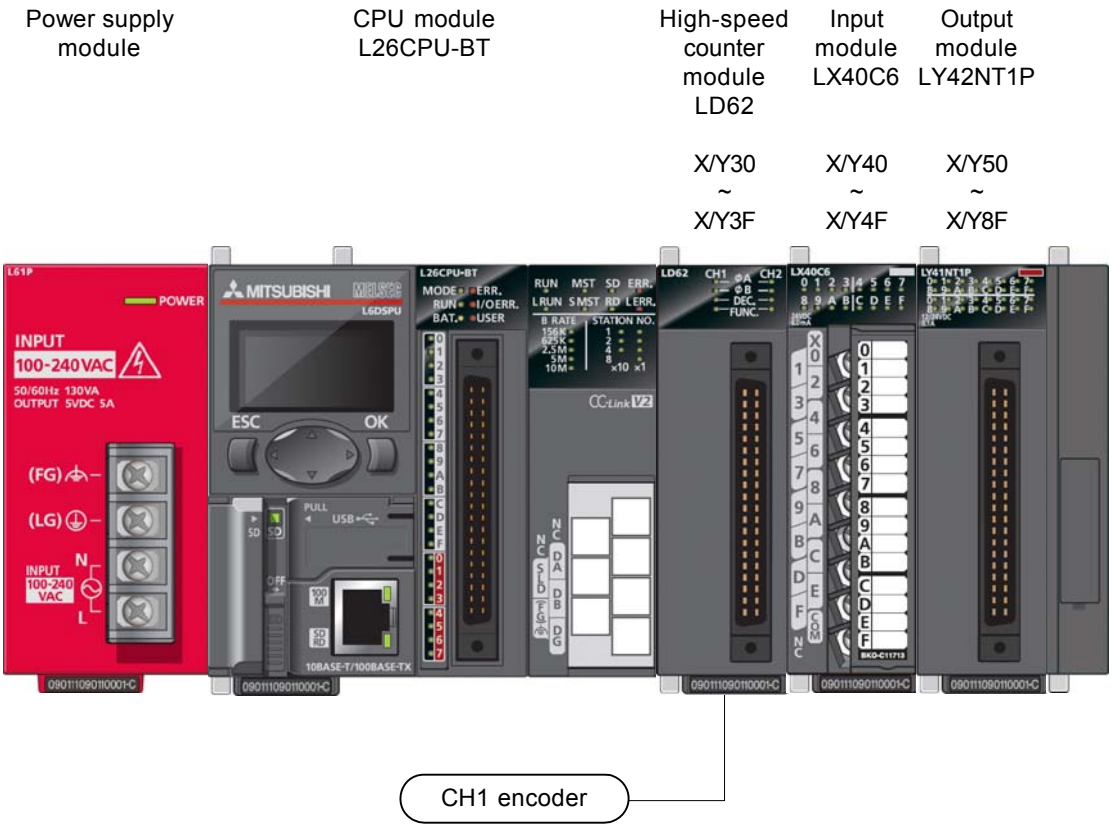
Applicable Hardware and Software

The following are the hardware and software applicable to the sample ladder programs.

<table>
<tr><th>Model</th><th>Description</th></tr>
<tr><td>High-speed counter module</td><td>LD62(D)</td></tr>
<tr><td>CPU module</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC-L series</td><td>LCPU</td></tr></table></td></tr>
<tr><td>Input Module</td><td>MELSEC-L series input module</td></tr>
<tr><td>Output Module</td><td>MELSEC-L series output module</td></tr>
<tr><td>Compatible software</td><td>GX Works2, GX Developer *1 *2
*1 For software versions applicable to the module used, refer to "Relevant manuals".
*2 When using GX Developer, use GX Configurator-CT to set the intelligent function module parameters.</td></tr>
</table>

System Configuration

The following system configuration is used for the sample ladder programs.



This program uses the following devices.

No.	Device	Data Type	Application	Remarks
1	X30	Bit	Module READY	-
2	X32	Bit	CH1 Counter value coincidence (point No.1)	-
3	X40	Bit	Count start signal	-
4	X42	Bit	Coincidence output data setting signal	-
5	X43	Bit	Preset command signal	-
6	X44	Bit	Count stop signal	-
7	X45	Bit	Coincidence LED clear signal	-
8	X46	Bit	Counter function start signal	Starts the execution of the selected counter function.
9	X47	Bit	Counter function stop signal	Stops the execution of the selected counter function.
10	Y30	Bit	CH1 Coincidence signal No.1 reset command	-
11	Y31	Bit	CH1 Preset command	-
12	Y32	Bit	CH1 Coincidence signal enable command	-
13	Y34	Bit	CH1 Count enable command	-
14	Y36	Bit	CH1 Counter function selection start command	-
15	Y50	Bit	Coincidence confirmation LED signal	-

Conditions for Using Sample Ladder Programs

●Parameter settings for the High-Speed Counter Module

The following explains the settings for the LD62 high-speed counter module that the programs use.

(1) Switch Setting

a) Set the pulse input mode, counting speed setting, and counter format as follows.

Project window→[Intelligent Function Module]→Module name→[Switch Setting]

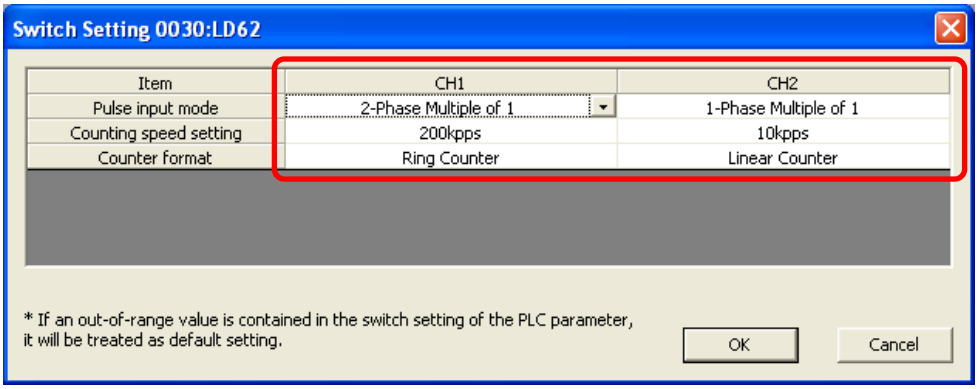


Table 2-1 Switch setting

	CH1	CH2
Pulse input mode	2-Phase Multiple of 1	1-Phase Multiple of 1
Counting speed setting	200 kpps	10 kpps
Counter format	Ring Counter	Linear Counter

(2) Parameter Setting

a) Open the parameter setting screen and configure the setting as follows.

Project window→[Intelligent Function Module]→Module name→[Parameter]

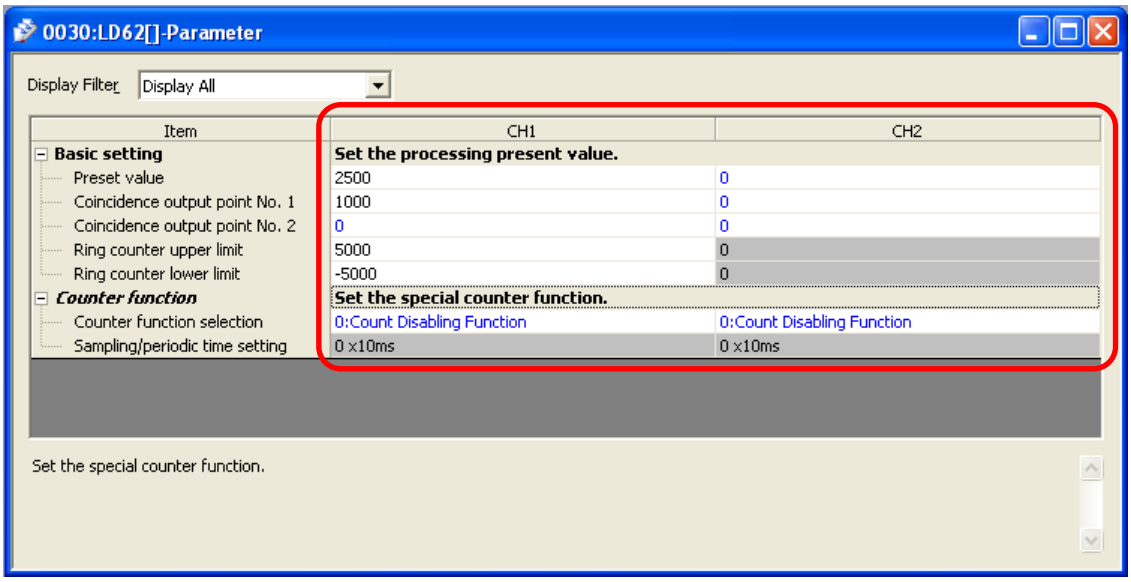


Table 2-2 Parameter setting

		CH1	CH2
Basic setting	Preset value	2500	0
	Coincidence output point No.1	1000	0
	Coincidence output point No.2	0	0
	Ring counter upper limit	5000	
	Ring counter lower limit	-5000	
Counter function	Counter function selection	Refer to the following table (Table 2-3 Counter function setting)	0: Count Disable Function
	Sampling/periodic time setting		

Table 2-3 Counter function setting

		Sampling/periodic time setting
Counter function selection	0: Count Disable Function	
	1: Latch Counter Function	
	2: Sampling Counter Function	1000×10 ms
	3: Periodic Pulse Counter Function	500×10 ms

(3) Auto Refresh Setting

a) Open the auto refresh setting screen and configure the setting as follows.

Project window→[Intelligent Function Module]→Module name→[Auto Refresh]

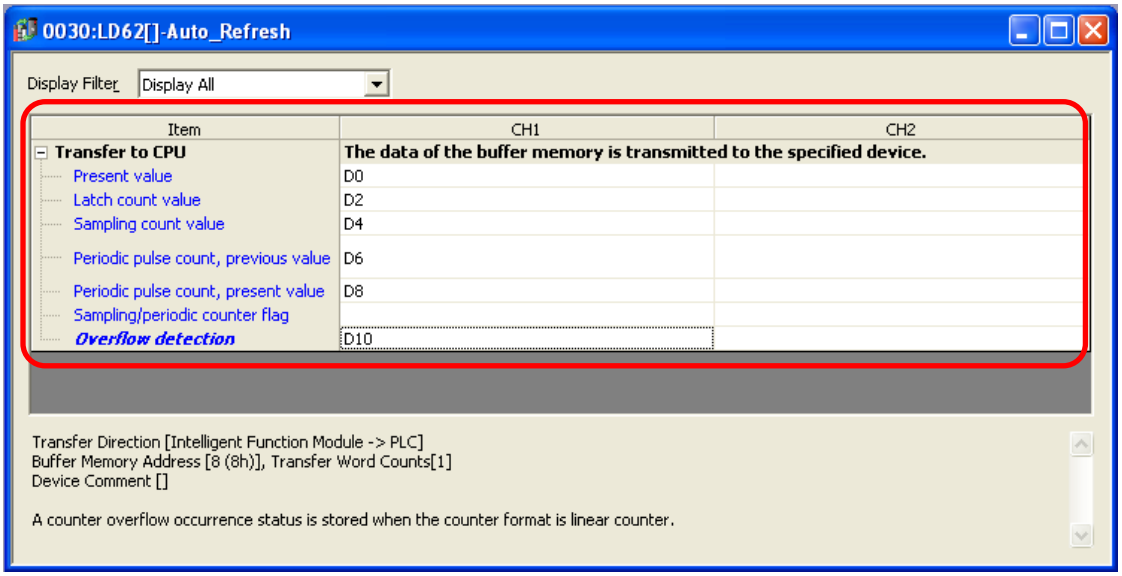


Table 2-4 Auto refresh setting

		CH1	CH2
Transfer to CPU	Present value	D0	-
	Latch count value	D2	-
	Sampling count value	D4	-
	Periodic pulse count, previous value	D6	-
	Periodic pulse count, present value	D8	-
	Sampling/periodic counter flag	-	-
	Overflow detection	D10	-

Devices

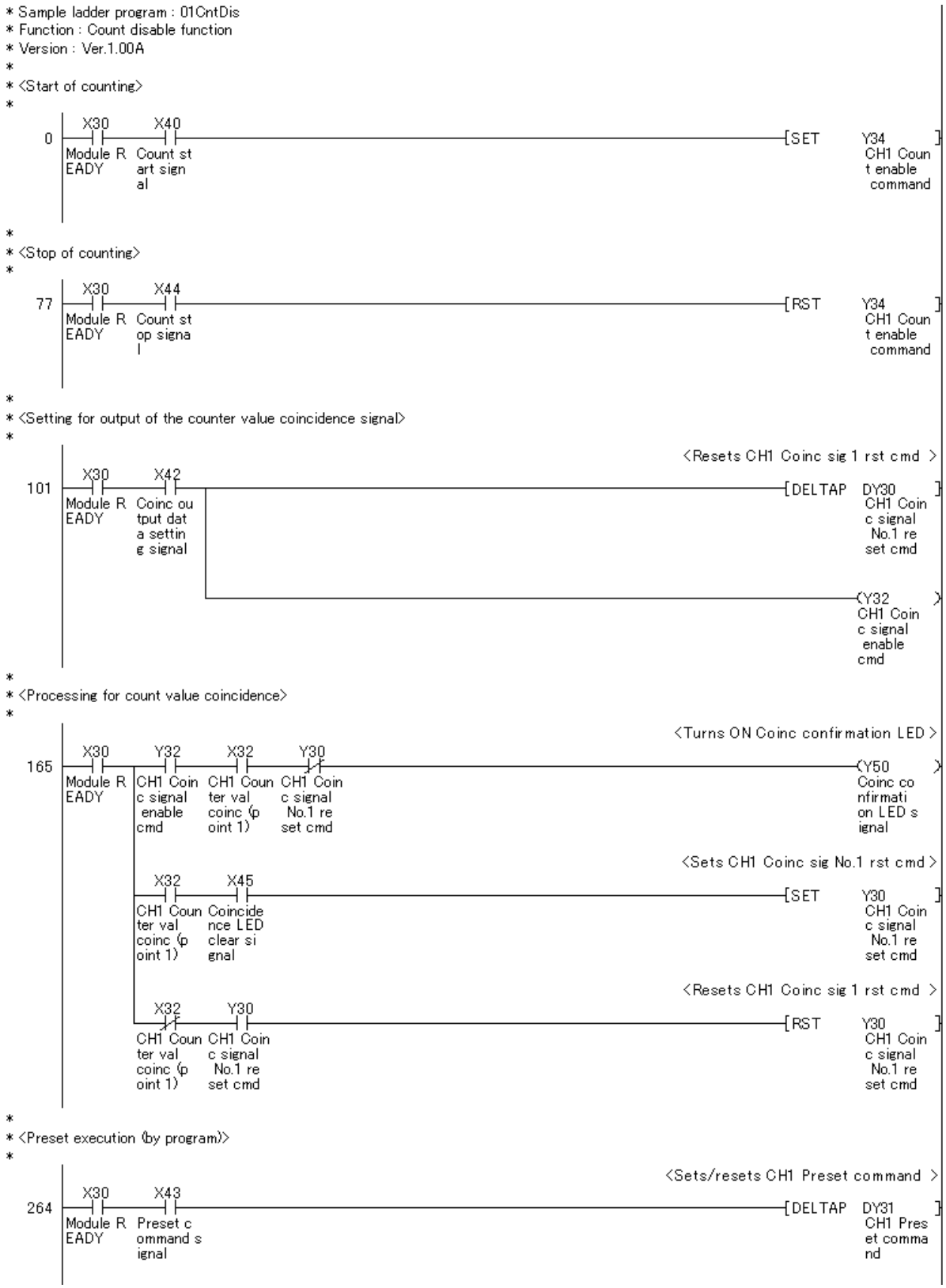
This program uses the following devices.

No.	Device	Data Type	Application	Remarks
1	X30	Bit	Module READY	-
2	X32	Bit	CH1 Counter value coincidence (point No.1)	-
3	X40	Bit	Count start signal	-
4	X42	Bit	Coincidence output data setting signal	-
5	X43	Bit	Preset command signal	-
6	X44	Bit	Count stop signal	-
7	X45	Bit	Coincidence LED clear signal	-
8	X46	Bit	Counter function start signal	Starts the execution of the selected counter function.
9	X47	Bit	Counter function stop signal	Stops the execution of the selected counter function.
10	Y30	Bit	CH1 Coincidence signal No.1 reset command	-
11	Y31	Bit	CH1 Preset command	-
12	Y32	Bit	CH1 Coincidence signal enable command	-
13	Y34	Bit	CH1 Count enable command	-
14	Y36	Bit	CH1 Counter function selection start command	-
15	Y50	Bit	Coincidence confirmation LED signal	-

Version Upgrade History

Version	Date	Description
1.00A	2011/09/26	First edition

Program



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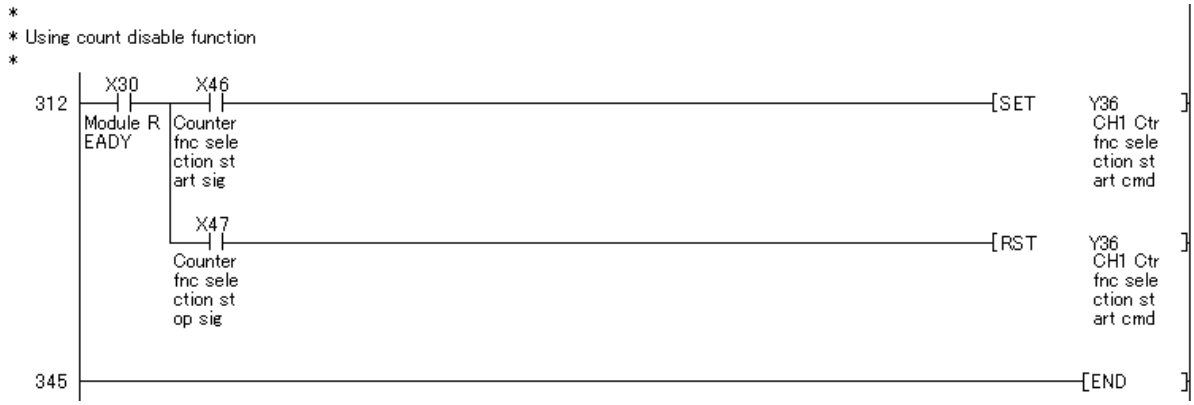

*
* Using count disable function
*
312
X30
Module R
EADY
X46
Counter
fnc sele
ction st
art sig
[SET
Y36
CH1 Ctr
fnc sele
ction st
art cmd
X47
Counter
fnc sele
ction st
op sig
[RST
Y36
CH1 Ctr
fnc sele
ction st
art cmd
345
[END

2.2 Latch Counter Function

Function Overview

This program uses the latch counter function.

Program

This function uses the project (program name).

•LD-LD62_PRM_V100A_E(02Latch)

Applicable Hardware and Software

It is the same as "Applicable Hardware and Software" of "2.1 Count Disable Function".

System Configuration

It is the same as "System Configuration" of "2.1 Count Disable Function".

This program uses the following devices.

No.	Device	Data Type	Application	Remarks
1	X30	Bit	Module READY	-
2	X32	Bit	CH1 Counter value coincidence (point No.1)	-
3	X40	Bit	Count start signal	-
4	X42	Bit	Coincidence output data setting signal	-
5	X43	Bit	Preset command signal	-
6	X44	Bit	Count stop signal	-
7	X45	Bit	Coincidence LED clear signal	-
8	X49	Bit	Latch execution signal	-
9	Y30	Bit	CH1 Coincidence signal No.1 reset command	-
10	Y31	Bit	CH1 Preset command	-
11	Y32	Bit	CH1 Coincidence signal enable command	-
12	Y34	Bit	CH1 Count enable command	-
13	Y36	Bit	CH1 Counter function selection start command	-
14	Y50	Bit	Coincidence confirmation LED signal	-

Conditions for Using Sample Ladder Programs

It is the same as "Conditions for Using Sample Ladder Programs" of "2.1 Count Disable Function".

Devices

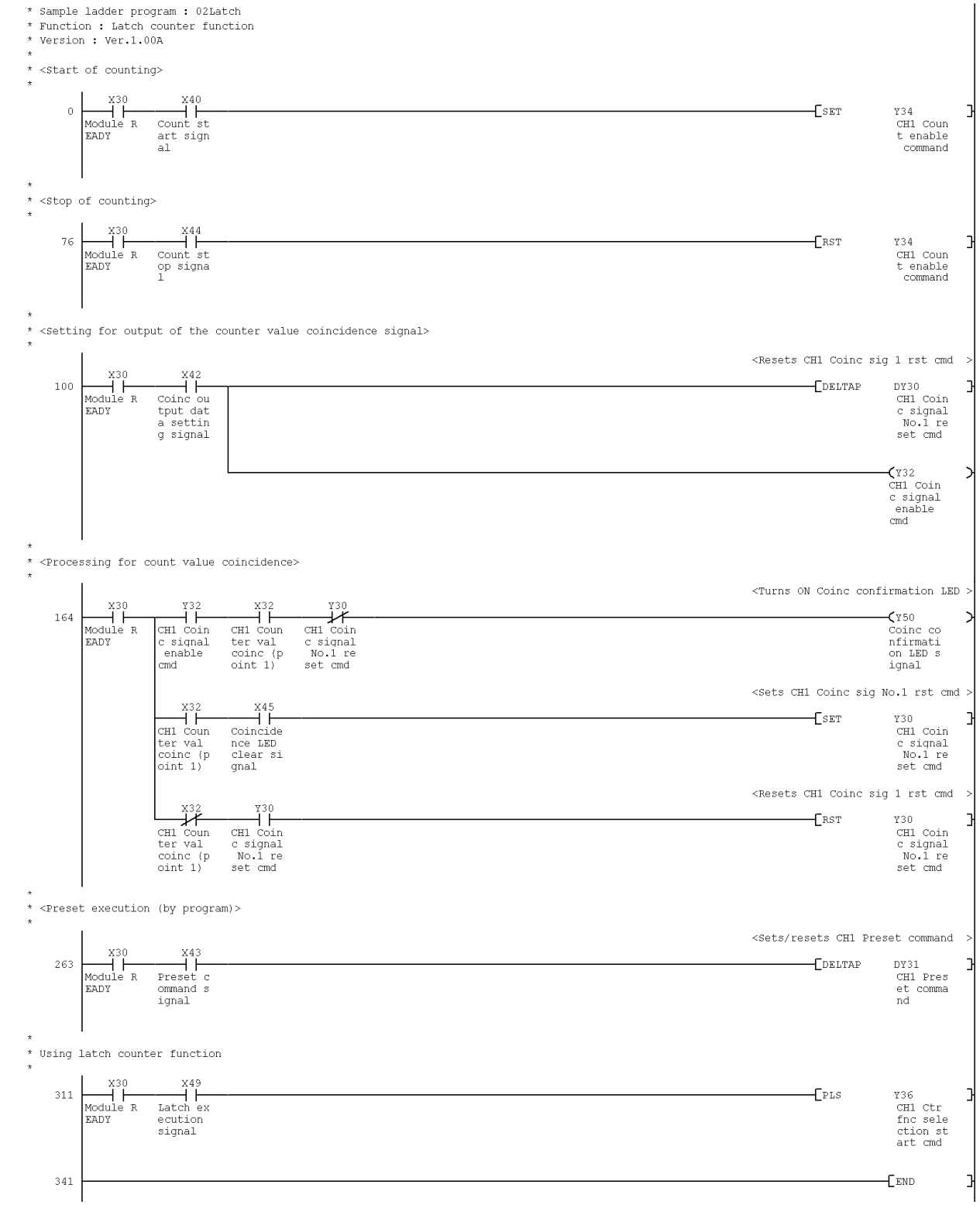
This program uses the following devices.

No.	Device	Data Type	Application	Remarks
1	X30	Bit	Module READY	-
2	X32	Bit	CH1 Counter value coincidence (point No.1)	-
3	X40	Bit	Count start signal	-
4	X42	Bit	Coincidence output data setting signal	-
5	X43	Bit	Preset command signal	-
6	X44	Bit	Count stop signal	-
7	X45	Bit	Coincidence LED clear signal	-
8	X49	Bit	Latch execution signal	-
9	Y30	Bit	CH1 Coincidence signal No.1 reset command	-
10	Y31	Bit	CH1 Preset command	-
11	Y32	Bit	CH1 Coincidence signal enable command	-
12	Y34	Bit	CH1 Count enable command	-
13	Y36	Bit	CH1 Counter function selection start command	-
14	Y50	Bit	Coincidence confirmation LED signal	-

Version Upgrade History

Version	Date	Description
1.00A	2011/09/26	First edition

Program


* Sample ladder program : 02Latch
* Function : Latch counter function
* Version : Ver.1.00A
* <Start of counting>
0 X30 Module R EADY
X40 Count st art sign al
SET Y34 CH1 Coun t enable command
* <Stop of counting>
76 X30 Module R EADY
X44 Count st op signa l
RST Y34 CH1 Coun t enable command
* <Setting for output of the counter value coincidence signal>
<Resets CH1 Coinc sig 1 rst cmd >
100 X30 Module R EADY
X42 Coinc ou tput dat a settin g signal
DELTAP DY30 CH1 Coin c signal No.1 re set cmd
Y32 CH1 Coin c signal enable cmd
* <Processing for count value coincidence>
<Turns ON Coinc confirmation LED >
164 X30 Module R EADY
Y32 CH1 Coin c signal enable cmd
X32 CH1 Coun ter val coinc (p oint 1)
Y30 CH1 Coin c signal No.1 re set cmd
Y50 Coinc co nfirmati on LED s ignal
<Sets CH1 Coinc sig No.1 rst cmd >
X32 CH1 Coun ter val coinc (p oint 1)
X45 Coincide nce LED clear si gnal
SET Y30 CH1 Coin c signal No.1 re set cmd
<Resets CH1 Coinc sig 1 rst cmd >
X32 CH1 Coun ter val coinc (p oint 1)
Y30 CH1 Coin c signal No.1 re set cmd
RST Y30 CH1 Coin c signal No.1 re set cmd
* <Preset execution (by program)>
<Sets/resets CH1 Preset command >
263 X30 Module R EADY
X43 Preset c ommand s ignal
DELTAP DY31 CH1 Pres et comma nd
* Using latch counter function
311 X30 Module R EADY
X49 Latch ex ecution signal
PLS Y36 CH1 Ctr fnc sele ction st art cmd
341 END

2.3 Sampling Counter Function

Function Overview

This program uses the sampling counter function.

Program

This function uses the project (program name).

•LD-LD62_PRM_V100A_E(03SplCnt)

Applicable Hardware and Software

It is the same as "Applicable Hardware and Software" of "2.1 Count Disable Function".

System Configuration

It is the same as "System Configuration" of "2.1 Count Disable Function".

This program uses the following devices.

No.	Device	Data Type	Application	Remarks
1	X30	Bit	Module READY	-
2	X32	Bit	CH1 Counter value coincidence (point No.1)	-
3	X40	Bit	Count start signal	-
4	X42	Bit	Coincidence output data setting signal	-
5	X43	Bit	Preset command signal	-
6	X44	Bit	Count stop signal	-
7	X45	Bit	Coincidence LED clear signal	-
8	X4B	Bit	Sampling count start signal	-
9	Y30	Bit	CH1 Coincidence signal No.1 reset command	-
10	Y31	Bit	CH1 Preset command	-
11	Y32	Bit	CH1 Coincidence signal enable command	-
12	Y34	Bit	CH1 Count enable command	-
13	Y36	Bit	CH1 Counter function selection start command	-
14	Y50	Bit	Coincidence confirmation LED signal	-

Conditions for Using Sample Ladder Programs

It is the same as "Conditions for Using Sample Ladder Programs" of "2.1 Count Disable Function".

Devices

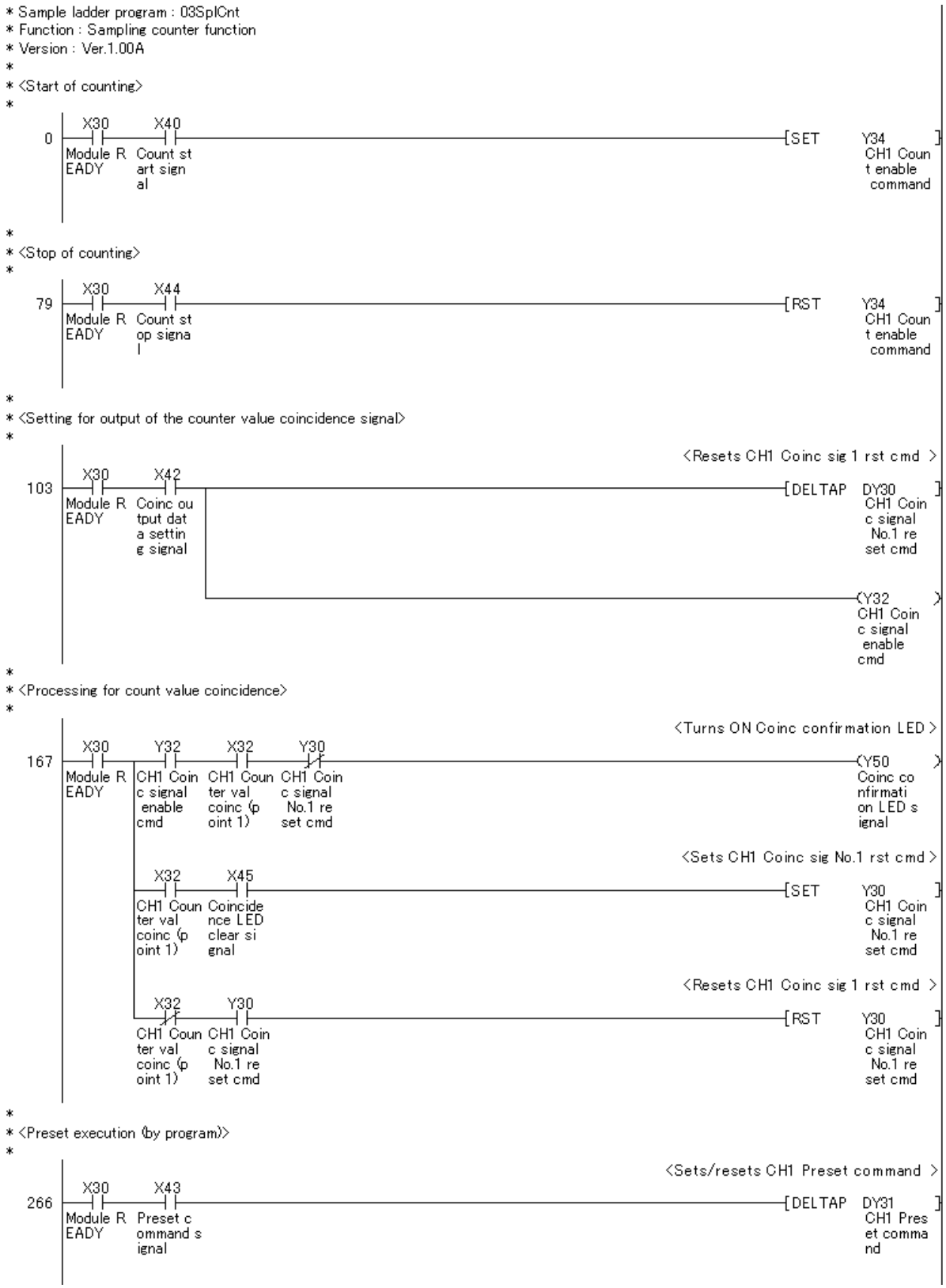
This program uses the following devices.

No.	Device	Data Type	Application	Remarks
1	X30	Bit	Module READY	-
2	X32	Bit	CH1 Counter value coincidence (point No.1)	-
3	X40	Bit	Count start signal	-
4	X42	Bit	Coincidence output data setting signal	-
5	X43	Bit	Preset command signal	-
6	X44	Bit	Count stop signal	-
7	X45	Bit	Coincidence LED clear signal	-
8	X4B	Bit	Sampling count start signal	-
9	Y30	Bit	CH1 Coincidence signal No.1 reset command	-
10	Y31	Bit	CH1 Preset command	-
11	Y32	Bit	CH1 Coincidence signal enable command	-
12	Y34	Bit	CH1 Count enable command	-
13	Y36	Bit	CH1 Counter function selection start command	-
14	Y50	Bit	Coincidence confirmation LED signal	-

Version Upgrade History

Version	Date	Description
1.00A	2011/09/26	First edition

Program



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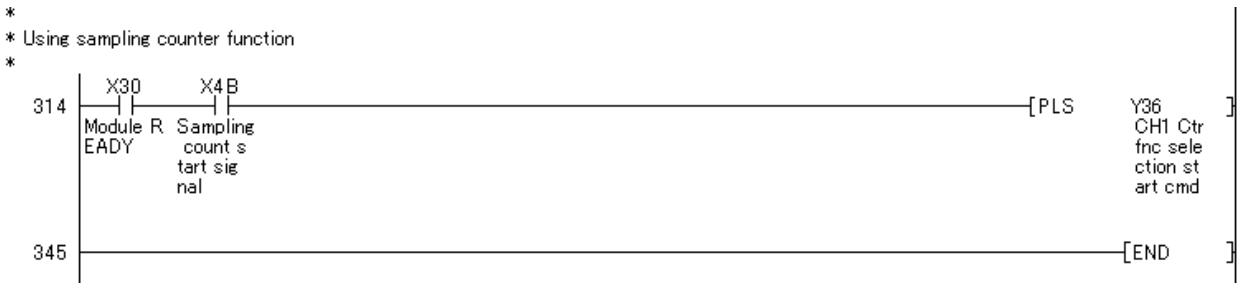

*
* Using sampling counter function
*
314
X30
Module R
EADY
X4B
Sampling
count s
tart sig
nal
PLS
Y36
CH1 Ctr
fnc sele
ction st
art cmd
345
END

2.4 Periodic Pulse Counter Function

Function Overview

This program uses the periodic pulse counter function.

Program

This function uses the project (program name).

•LD-LD62_PRM_V100A_E(04CycPls)

Applicable Hardware and Software

It is the same as "Applicable Hardware and Software" of "2.1 Count Disable Function".

System Configuration

It is the same as "System Configuration" of "2.1 Count Disable Function".

This program uses the following devices.

No.	Device	Data Type	Application	Remarks
1	X30	Bit	Module READY	-
2	X32	Bit	CH1 Counter value coincidence (point No.1)	-
3	X40	Bit	Count start signal	-
4	X42	Bit	Coincidence output data setting signal	-
5	X43	Bit	Preset command signal	-
6	X44	Bit	Count stop signal	-
7	X45	Bit	Coincidence LED clear signal	-
8	X4D	Bit	Periodic pulse count start signal	-
9	Y30	Bit	CH1 Coincidence signal No.1 reset command	-
10	Y31	Bit	CH1 Preset command	-
11	Y32	Bit	CH1 Coincidence signal enable command	-
12	Y34	Bit	CH1 Count enable command	-
13	Y36	Bit	CH1 Counter function selection start command	-
14	Y50	Bit	Coincidence confirmation LED signal	-

Conditions for Using Sample Ladder Programs

It is the same as "Conditions for Using Sample Ladder Programs" of "2.1 Count Disable Function".

Devices

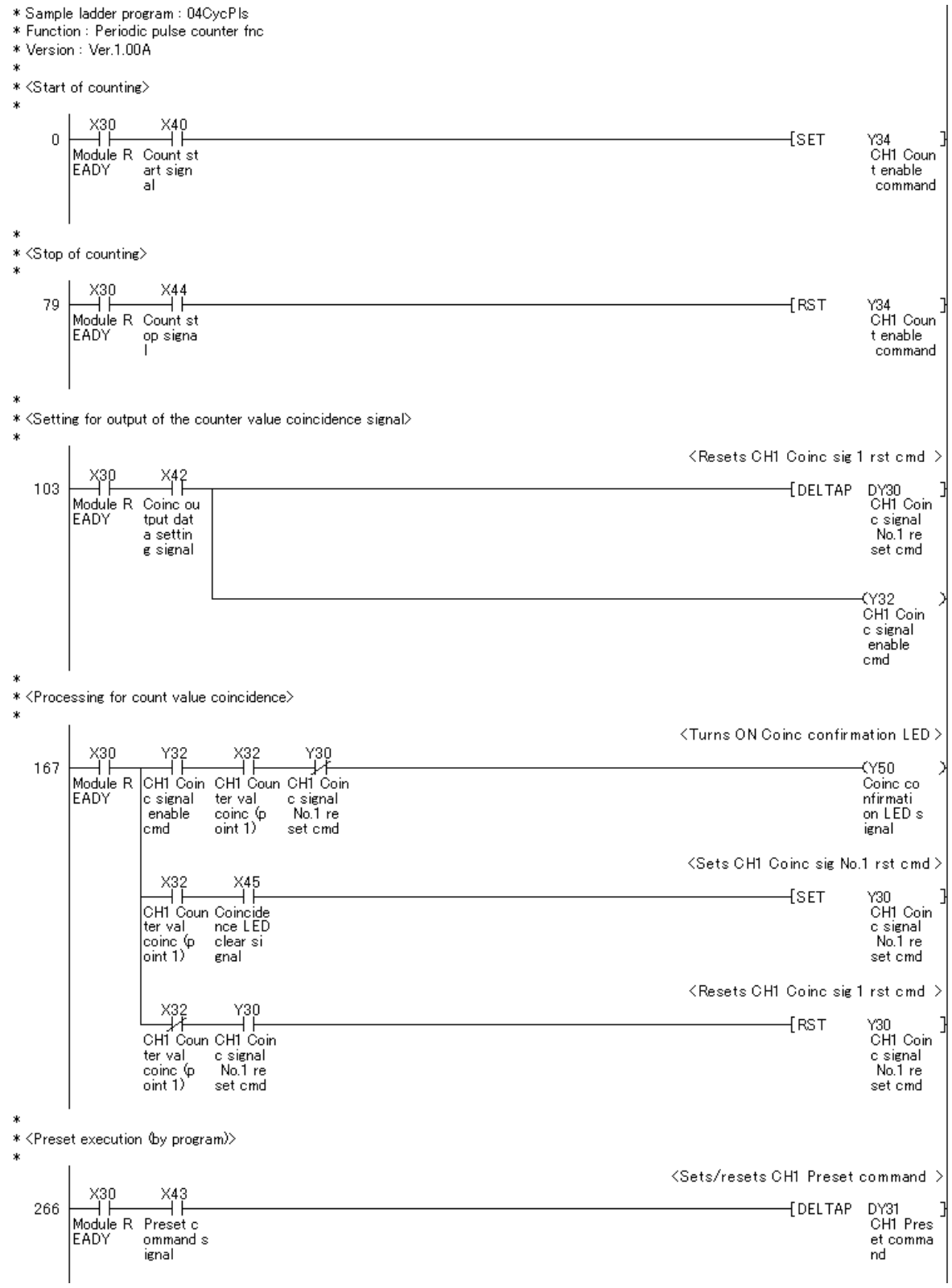
This program uses the following devices.

No.	Device	Data Type	Application	Remarks
1	X30	Bit	Module READY	-
2	X32	Bit	CH1 Counter value coincidence (point No.1)	-
3	X40	Bit	Count start signal	-
4	X42	Bit	Coincidence output data setting signal	-
5	X43	Bit	Preset command signal	-
6	X44	Bit	Count stop signal	-
7	X45	Bit	Coincidence LED clear signal	-
8	X4D	Bit	Periodic pulse count start signal	-
9	Y30	Bit	CH1 Coincidence signal No.1 reset command	-
10	Y31	Bit	CH1 Preset command	-
11	Y32	Bit	CH1 Coincidence signal enable command	-
12	Y34	Bit	CH1 Count enable command	-
13	Y36	Bit	CH1 Counter function selection start command	-
14	Y50	Bit	Coincidence confirmation LED signal	-

Version Upgrade History

Version	Date	Description
1.00A	2011/09/26	First edition

Program



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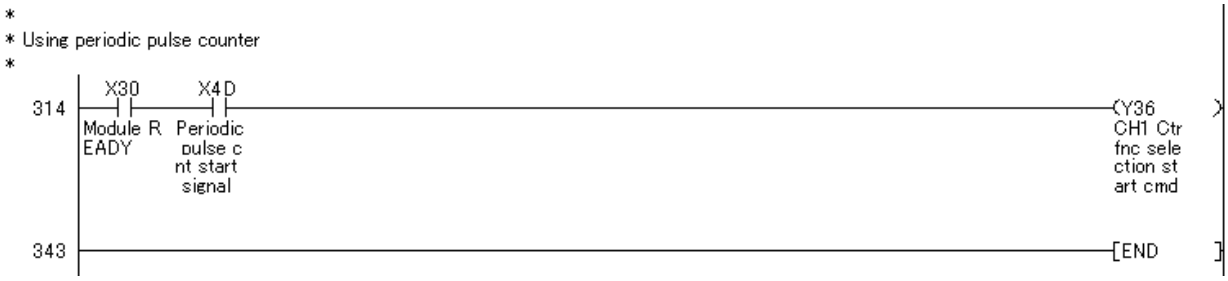
*
* Using periodic pulse counter
*
X30
X4D
314
Module R EADY
Periodic pulse cnt start signal
(Y36
CH1 Ctr fnc selection start cmd
343
[END

3. When Using the Module in Standard System Configuration (When Not Using Intelligent Function Module Parameters)

3.1 Count Disable Function

Function Overview

This program uses the count disable function.

Program

This function uses the project (program name).

•LD-LD62_NPM_V100A_E(01CntDis)

Applicable Hardware and Software

The following are the hardware and software applicable to the sample ladder programs.

<table>
<tr><th>Model</th><th>Description</th></tr>
<tr><td>High-speed counter module</td><td>LD62(D)</td></tr>
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<tr><td>Input Module</td><td>MELSEC-L series input module</td></tr>
<tr><td>Output Module</td><td>MELSEC-L series output module</td></tr>
<tr><td>Compatible software</td><td>GX Works2, GX Developer *1
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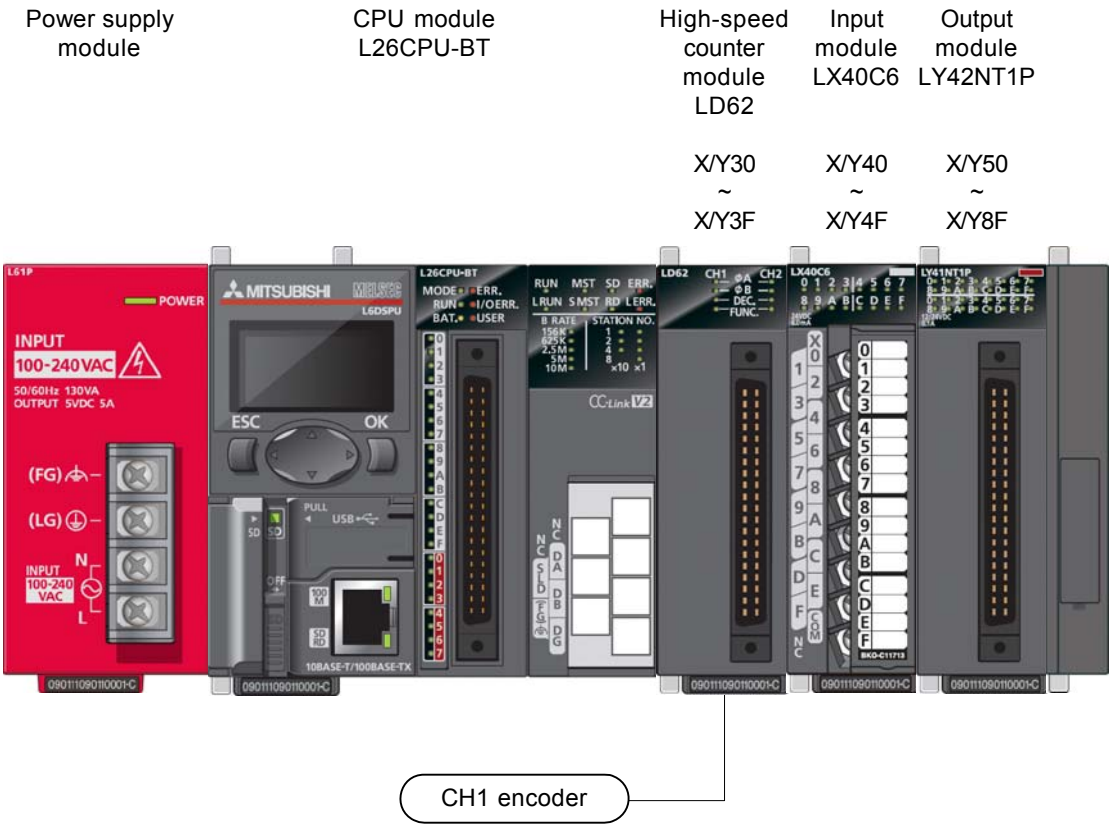
</table>

System Configuration

The following system configuration is used for the sample ladder programs.



This program uses the following devices.

No.	Device	Data Type	Application	Remarks
1	X30	Bit	Module READY	-
2	X32	Bit	CH1 Counter value coincidence (point No.1)	-
3	X40	Bit	Count start signal	-
4	X41	Bit	Present value read signal	-
5	X42	Bit	Coincidence output data setting signal	-
6	X43	Bit	Preset command signal	-
7	X44	Bit	Count stop signal	-
8	X45	Bit	Coincidence LED clear signal	-
9	X46	Bit	Counter function start signal	Starts the execution of the selected counter function.
10	X47	Bit	Counter function stop signal	Stops the execution of the selected counter function.
11	Y30	Bit	CH1 Coincidence signal No.1 reset command	-
12	Y31	Bit	CH1 Preset command	-
13	Y32	Bit	CH1 Coincidence signal enable command	-
14	Y34	Bit	CH1 Count enable command	-
15	Y36	Bit	CH1 Counter function selection start command	-
16	Y50	Bit	Coincidence confirmation LED signal	-

Conditions for Using Sample Ladder Programs

●Parameter settings for the High-Speed Counter Module

The following explains the settings for the LD62 high-speed counter module that the programs use.

(1) Switch Setting

a) Set the pulse input mode, counting speed setting, and counter format as follows.

Project window→[Intelligent Function Module]→Module name→[Switch Setting]

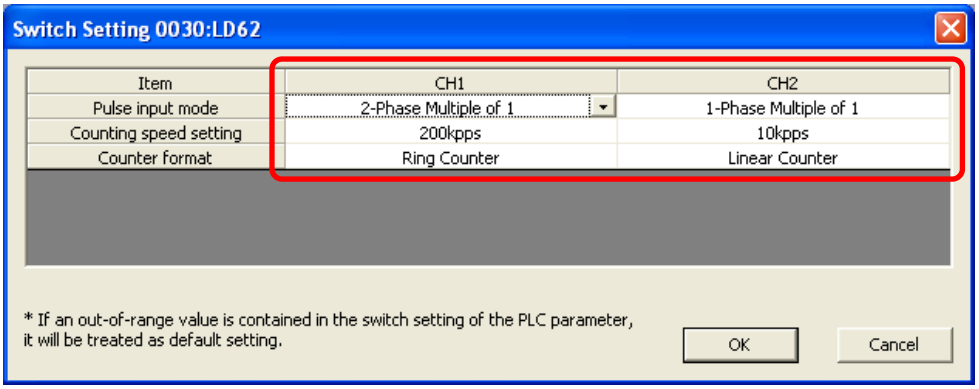


Table 3-1 Switch setting

	CH1	CH2
Pulse input mode	2-Phase Multiple of 1	1-Phase Multiple of 1
Counting speed setting	200 kpps	10 kpps
Counter format	Ring Counter	Linear Counter

Devices

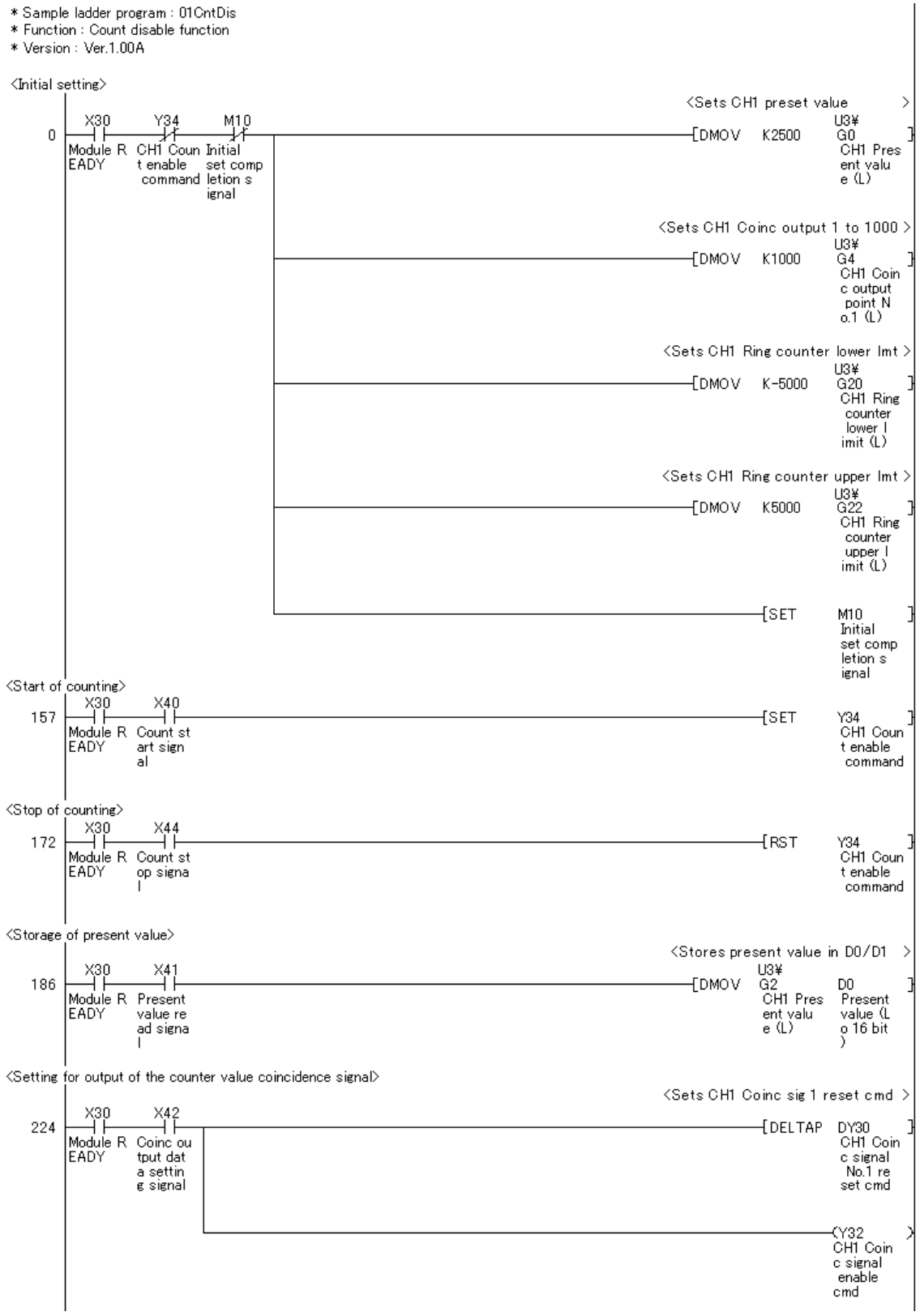
This program uses the following devices.

No.	Device	Data Type	Application	Remarks
1	X30	Bit	Module READY	-
2	X32	Bit	CH1 Counter value coincidence (point No.1)	-
3	X40	Bit	Count start signal	-
4	X41	Bit	Present value read signal	-
5	X42	Bit	Coincidence output data setting signal	-
6	X43	Bit	Preset command signal	-
7	X44	Bit	Count stop signal	-
8	X45	Bit	Coincidence LED clear signal	-
9	X46	Bit	Counter function start signal	Starts the execution of the selected counter function.
10	X47	Bit	Counter function stop signal	Stops the execution of the selected counter function.
11	Y30	Bit	CH1 Coincidence signal No.1 reset command	-
12	Y31	Bit	CH1 Preset command	-
13	Y32	Bit	CH1 Coincidence signal enable command	-
14	Y34	Bit	CH1 Count enable command	-
15	Y36	Bit	CH1 Counter function selection start command	-
16	Y50	Bit	Coincidence confirmation LED signal	-
17	M10	Bit	Initial setting completion signal	-
18	D0	Word (Binary)	Present value (Lo 16 bit)	-
19	D1	Word (Binary)	Present value (Hi 16 bit)	-

Version Upgrade History

Version	Date	Description
1.00A	2011/09/26	First edition

Program



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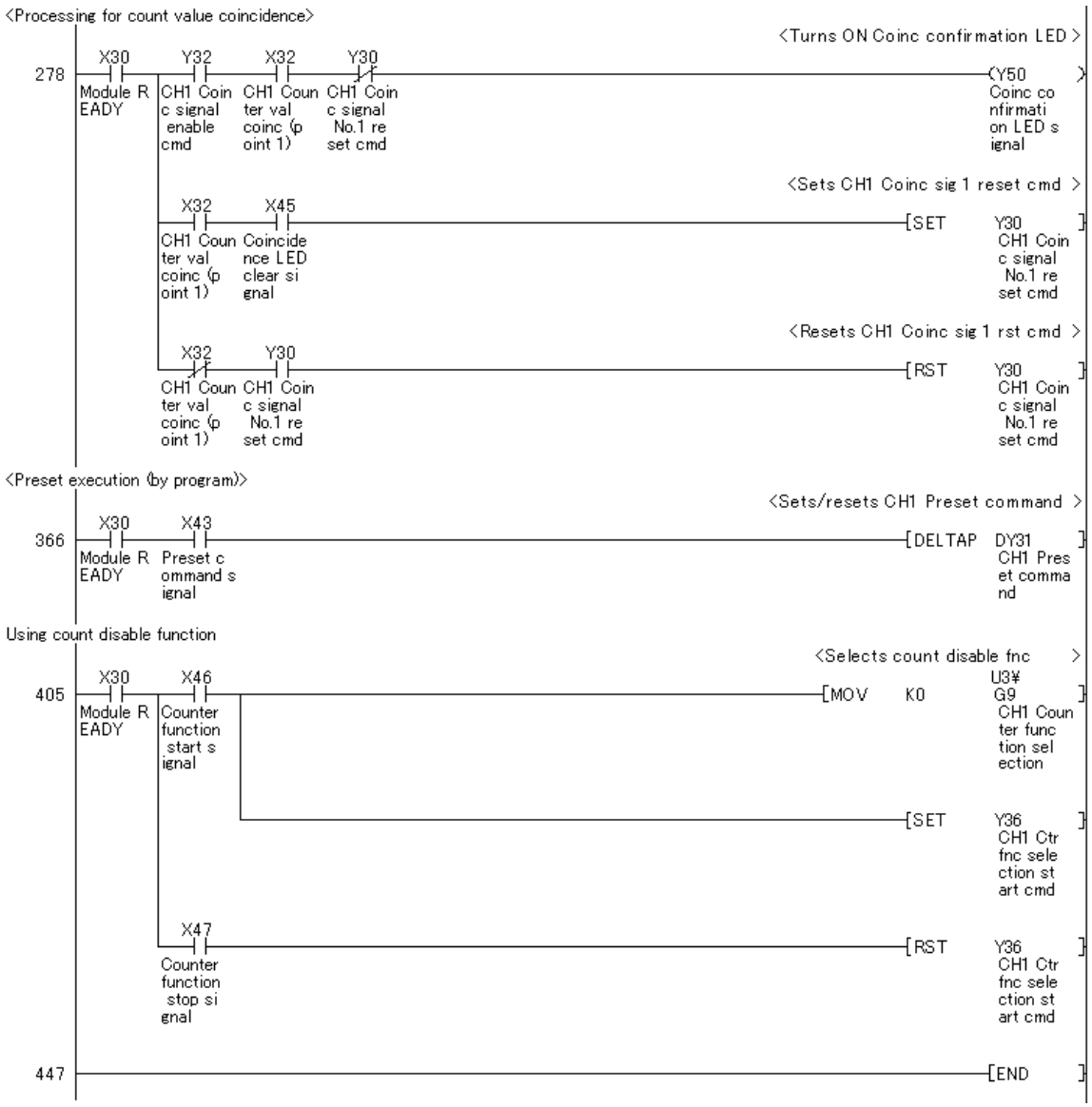

<Processing for count value coincidence>
<Turns ON Coinc confirmation LED >
278
X30
Module READY
Y32
CH1 Coinc signal enable cmd
X32
CH1 Counter val coinc (point 1)
Y30
CH1 Coinc signal No.1 reset cmd
Y50
Coinc confirmation LED signal
<Sets CH1 Coinc sig 1 reset cmd >
X32
CH1 Counter val coinc (point 1)
X45
Coincidence LED clear signal
SET
Y30
CH1 Coinc signal No.1 reset cmd
<Resets CH1 Coinc sig 1 rst cmd >
X32
CH1 Counter val coinc (point 1)
Y30
CH1 Coinc signal No.1 reset cmd
RST
Y30
CH1 Coinc signal No.1 reset cmd
<Preset execution (by program)>
<Sets/resets CH1 Preset command >
366
X30
Module READY
X43
Preset command signal
DELTAP
DY31
CH1 Preset command
Using count disable function
<Selects count disable fnc >
405
X30
Module READY
X46
Counter function start signal
MOV
K0
U3¥G9
CH1 Counter function selection
SET
Y36
CH1 Ctr fnc selection start cmd
X47
Counter function stop signal
RST
Y36
CH1 Ctr fnc selection start cmd
447
END

3.2 Latch Counter Function

Function Overview

This program uses the latch counter function.

Program

This function uses the project (program name).

•LD-LD62_NPM_V100A_E(02Latch)

Applicable Hardware and Software

It is the same as "Applicable Hardware and Software" of "3.1 Count Disable Function".

System Configuration

It is the same as "System Configuration" of "3.1 Count Disable Function".

This program uses the following devices.

No.	Device	Data Type	Application	Remarks
1	X30	Bit	Module READY	-
2	X32	Bit	CH1 Counter value coincidence (point No.1)	-
3	X40	Bit	Count start signal	-
4	X41	Bit	Present value read signal	-
5	X42	Bit	Coincidence output data setting signal	-
6	X43	Bit	Preset command signal	-
7	X44	Bit	Count stop signal	-
8	X45	Bit	Coincidence LED clear signal	-
9	X48	Bit	Latch count data read signal	-
10	X49	Bit	Latch execution signal	-
11	Y30	Bit	CH1 Coincidence signal No.1 reset command	-
12	Y31	Bit	CH1 Preset command	-
13	Y32	Bit	CH1 Coincidence signal enable command	-
14	Y34	Bit	CH1 Count enable command	-
15	Y36	Bit	CH1 Counter function selection start command	-
16	Y50	Bit	Coincidence confirmation LED signal	-
17	M10	Bit	Initial setting completion signal	-

Conditions for Using Sample Ladder Programs

It is the same as "Conditions for Using Sample Ladder Programs" of "3.1 Count Disable Function".

Devices

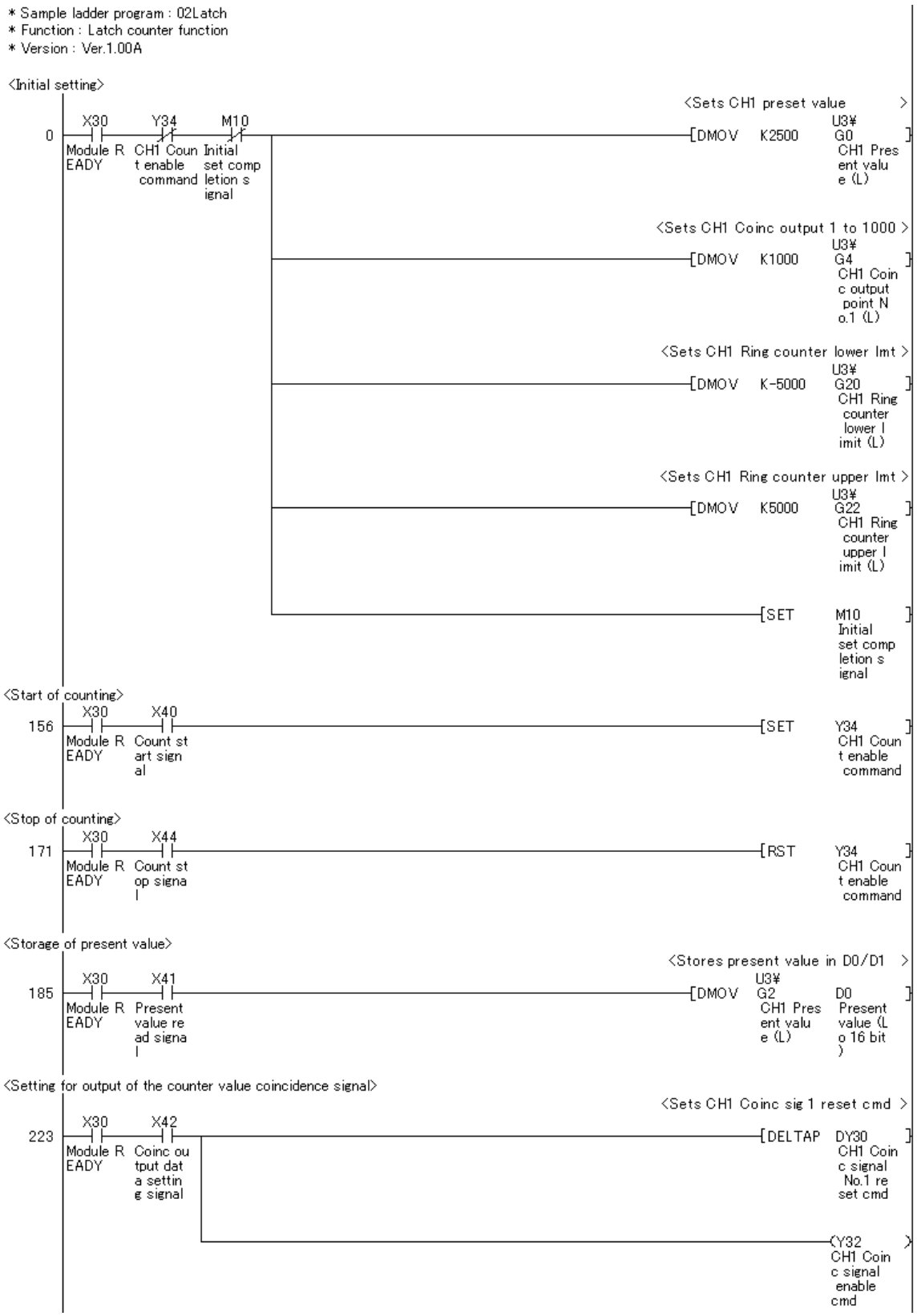
This program uses the following devices.

No.	Device	Data Type	Application	Remarks
1	X30	Bit	Module READY	-
2	X32	Bit	CH1 Counter value coincidence (point No.1)	-
3	X40	Bit	Count start signal	-
4	X41	Bit	Present value read signal	-
5	X42	Bit	Coincidence output data setting signal	-
6	X43	Bit	Preset command signal	-
7	X44	Bit	Count stop signal	-
8	X45	Bit	Coincidence LED clear signal	-
9	X48	Bit	Latch count data read signal	-
10	X49	Bit	Latch execution signal	-
11	Y30	Bit	CH1 Coincidence signal No.1 reset command	-
12	Y31	Bit	CH1 Preset command	-
13	Y32	Bit	CH1 Coincidence signal enable command	-
14	Y34	Bit	CH1 Count enable command	-
15	Y36	Bit	CH1 Counter function selection start command	-
16	Y50	Bit	Coincidence confirmation LED signal	-
17	M10	Bit	Initial setting completion signal	-
18	D0	Word (Binary)	Present value (Lo 16 bit)	-
19	D1	Word (Binary)	Present value (Hi 16 bit)	-
20	D2	Word (Binary)	Latch cnt val (Lo 16 bit)	-
21	D3	Word (Binary)	Latch cnt val (Hi 16 bit)	-

Version Upgrade History

Version	Date	Description
1.00A	2011/09/26	First edition

Program



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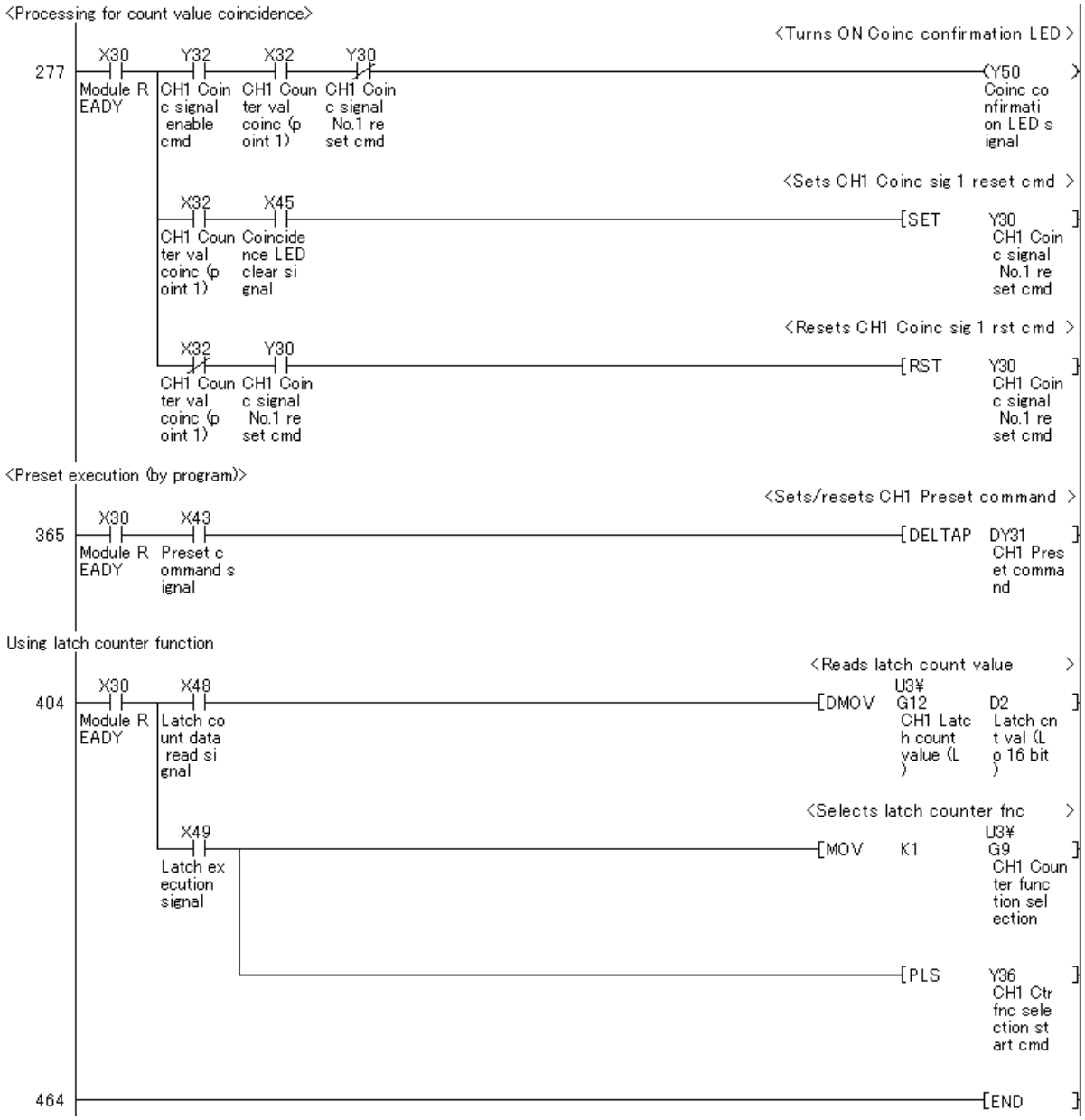

<Processing for count value coincidence>
<Turns ON Coinc confirmation LED >
277
X30
Module READY
Y32
CH1 Coinc signal enable cmd
X32
CH1 Counter val coinc (point 1)
Y30
CH1 Coinc signal No.1 reset cmd
Y50
Coinc confirmation LED signal
<Sets CH1 Coinc sig 1 reset cmd >
X32
CH1 Counter val coinc (point 1)
X45
Coincidence LED clear signal
SET
Y30
CH1 Coinc signal No.1 reset cmd
<Resets CH1 Coinc sig 1 rst cmd >
X32
CH1 Counter val coinc (point 1)
Y30
CH1 Coinc signal No.1 reset cmd
RST
Y30
CH1 Coinc signal No.1 reset cmd
<Preset execution (by program)>
<Sets/resets CH1 Preset command >
365
X30
Module READY
X43
Preset command signal
DELTAP
DY31
CH1 Preset command
Using latch counter function
<Reads latch count value >
404
X30
Module READY
X48
Latch count data read signal
DMOV
U3¥G12
CH1 Latch count value (L)
D2
Latch cnt val (Lo 16 bit)
<Selects latch counter fnc >
X49
Latch execution signal
MOV
K1
U3¥G9
CH1 Counter function selection
PLS
Y36
CH1 Ctr fnc selection start cmd
464
END

3.3 Sampling Counter Function

Function Overview

This program uses the sampling counter function.

Program

This function uses the project (program name).

•LD-LD62_NPM_V100A_E(03SplCnt)

Applicable Hardware and Software

It is the same as "Applicable Hardware and Software" of "3.1 Count Disable Function".

System Configuration

It is the same as "System Configuration" of "3.1 Count Disable Function".

This program uses the following devices.

No.	Device	Data Type	Application	Remarks
1	X30	Bit	Module READY	-
2	X32	Bit	CH1 Counter value coincidence (point No.1)	-
3	X40	Bit	Count start signal	-
4	X41	Bit	Present value read signal	-
5	X42	Bit	Coincidence output data setting signal	-
6	X43	Bit	Preset command signal	-
7	X44	Bit	Count stop signal	-
8	X45	Bit	Coincidence LED clear signal	-
9	X4A	Bit	Sampling count data read signal	-
10	X4B	Bit	Sampling count start signal	-
11	Y30	Bit	CH1 Coincidence signal No.1 reset command	-
12	Y31	Bit	CH1 Preset command	-
13	Y32	Bit	CH1 Coincidence signal enable command	-
14	Y34	Bit	CH1 Count enable command	-
15	Y36	Bit	CH1 Counter function selection start command	-
16	Y50	Bit	Coincidence confirmation LED signal	-

Conditions for Using Sample Ladder Programs

It is the same as "Conditions for Using Sample Ladder Programs" of "3.1 Count Disable Function".

Devices

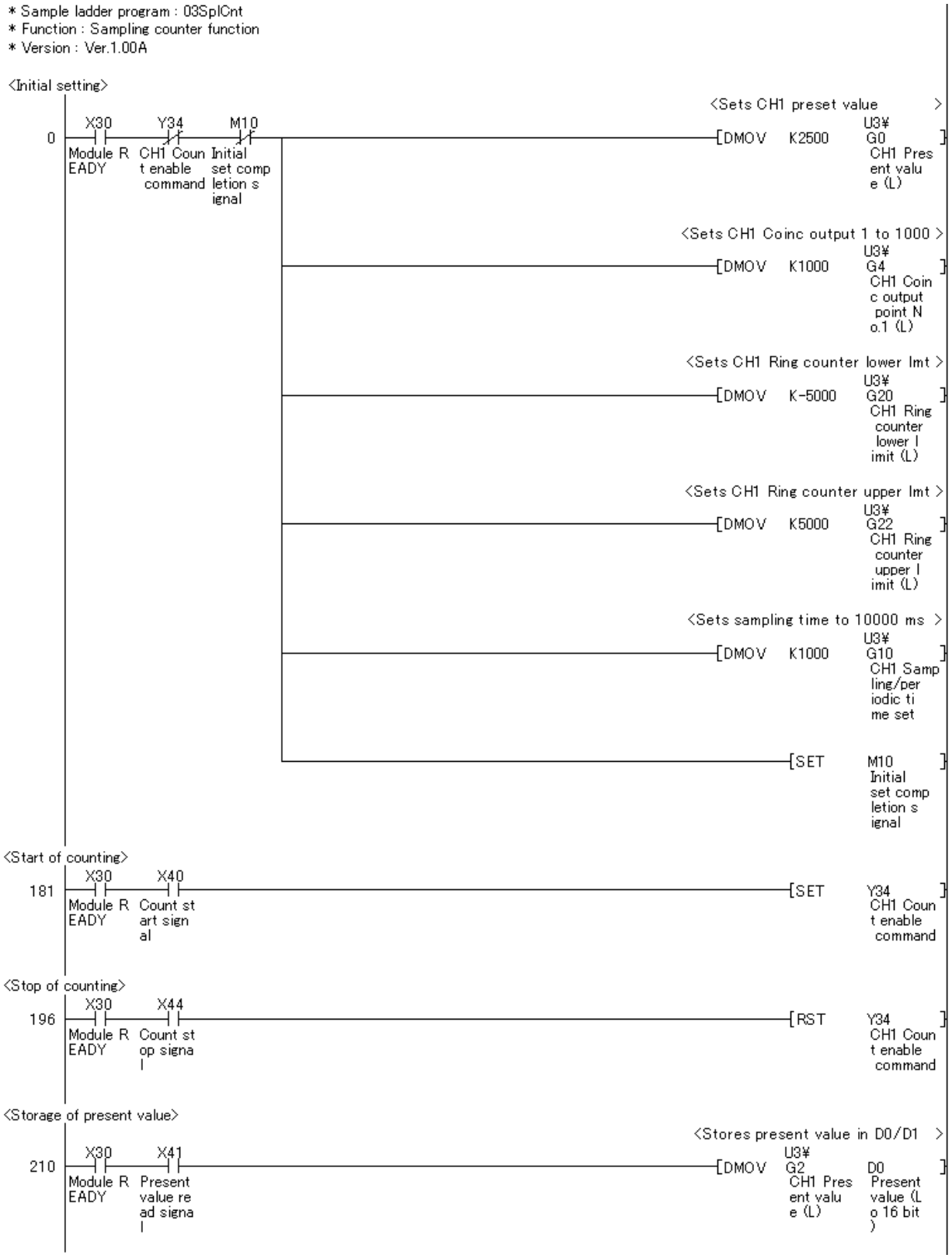
This program uses the following devices.

No.	Device	Data Type	Application	Remarks
1	X30	Bit	Module READY	-
2	X32	Bit	CH1 Counter value coincidence (point No.1)	-
3	X40	Bit	Count start signal	-
4	X41	Bit	Present value read signal	-
5	X42	Bit	Coincidence output data setting signal	-
6	X43	Bit	Preset command signal	-
7	X44	Bit	Count stop signal	-
8	X45	Bit	Coincidence LED clear signal	-
9	X4A	Bit	Sampling count data read signal	-
10	X4B	Bit	Sampling count start signal	-
11	Y30	Bit	CH1 Coincidence signal No.1 reset command	-
12	Y31	Bit	CH1 Preset command	-
13	Y32	Bit	CH1 Coincidence signal enable command	-
14	Y34	Bit	CH1 Count enable command	-
15	Y36	Bit	CH1 Counter function selection start command	-
16	Y50	Bit	Coincidence confirmation LED signal	-
17	M10	Bit	Initial setting completion signal	-
18	D0	Word (Binary)	Present value (Lo 16 bit)	-
19	D1	Word (Binary)	Present value (Hi 16 bit)	-
20	D4	Word (Binary)	Sampling cnt val (Lo 16 bit)	-
21	D5	Word (Binary)	Sampling cnt val (Hi 16 bit)	-

Version Upgrade History

Version	Date	Description
1.00A	2011/09/26	First edition

Program



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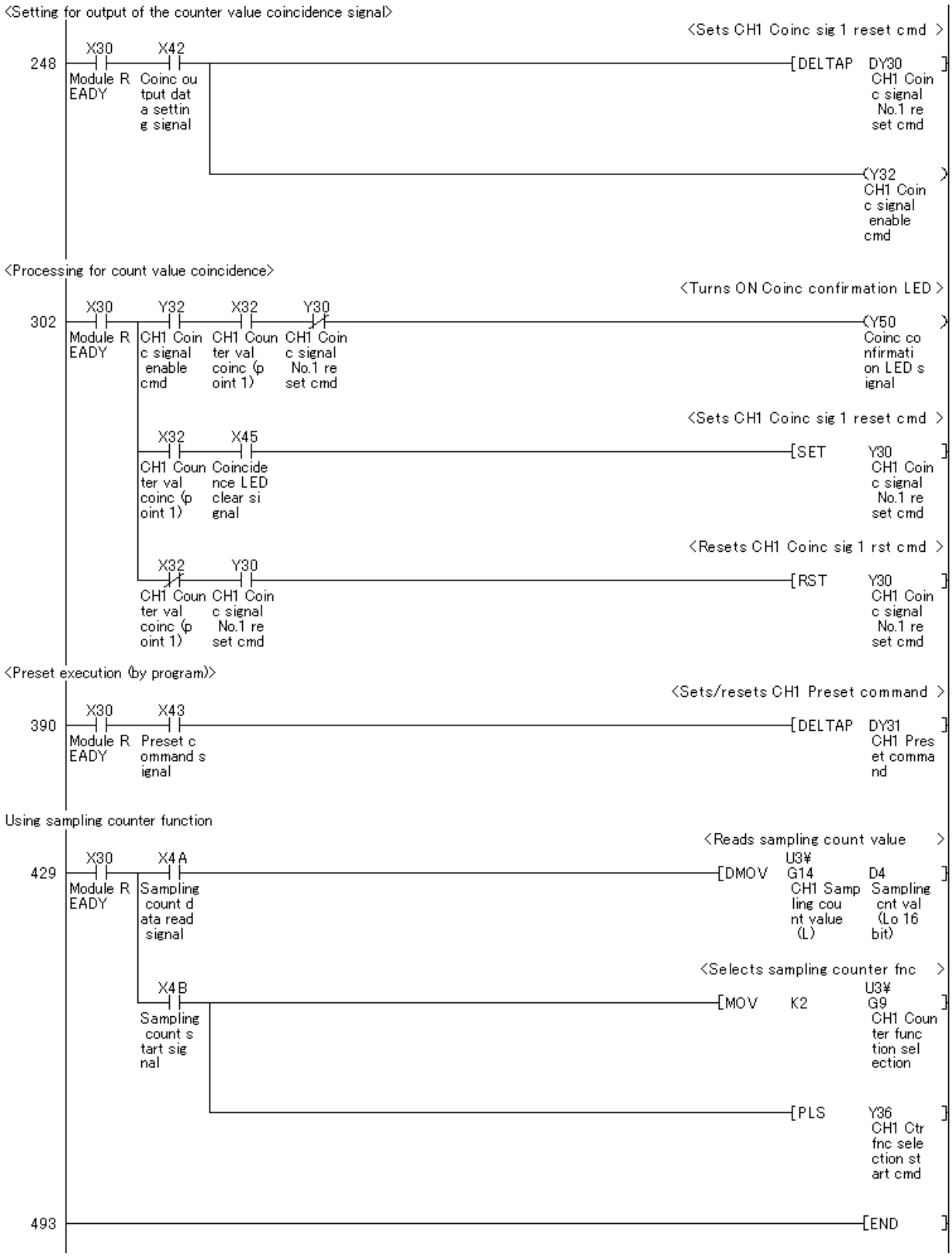

<Setting for output of the counter value coincidence signal>
<Sets CH1 Coinc sig 1 reset cmd >
248
X30
Module READY
X42
Coinc output data setting signal
[DELTAP DY30 CH1 Coinc signal No.1 reset cmd]
(Y32 CH1 Coinc signal enable cmd)
<Processing for count value coincidence>
<Turns ON Coinc confirmation LED >
302
X30
Module READY
Y32
CH1 Coinc signal enable cmd
X32
CH1 Counter val coinc (point 1)
Y30
CH1 Coinc signal No.1 reset cmd
(Y50 Coinc confirmation LED signal)
<Sets CH1 Coinc sig 1 reset cmd >
X32
CH1 Counter val coinc (point 1)
X45
Coincidence LED clear signal
[SET Y30 CH1 Coinc signal No.1 reset cmd]
<Resets CH1 Coinc sig 1 rst cmd >
X32
CH1 Counter val coinc (point 1)
Y30
CH1 Coinc signal No.1 reset cmd
[RST Y30 CH1 Coinc signal No.1 reset cmd]
<Preset execution (by program)>
<Sets/resets CH1 Preset command >
390
X30
Module READY
X43
Preset command signal
[DELTAP DY31 CH1 Preset command]
Using sampling counter function
<Reads sampling count value >
429
X30
Module READY
X4A
Sampling count data read signal
[DMOV U3¥G14 CH1 Sampling count value (L) D4 Sampling cnt val (Lo 16 bit)]
<Selects sampling counter fnc >
X4B
Sampling count start signal
[MOV K2 U3¥G9 CH1 Counter function selection]
[PLS Y36 CH1 Ctr fnc selection start cmd]
493
[END]

3.4 Periodic Pulse Counter Function

Function Overview

This program uses the periodic pulse counter function.

Program

This function uses the project (program name).

•LD-LD62_NPM_V100A_E(04CycPls)

Applicable Hardware and Software

It is the same as "Applicable Hardware and Software" of "3.1 Count Disable Function".

System Configuration

It is the same as "System Configuration" of "3.1 Count Disable Function".

This program uses the following devices.

No.	Device	Data Type	Application	Remarks
1	X30	Bit	Module READY	-
2	X32	Bit	CH1 Counter value coincidence (point No.1)	-
3	X40	Bit	Count start signal	-
4	X41	Bit	Present value read signal	-
5	X42	Bit	Coincidence output data setting signal	-
6	X43	Bit	Preset command signal	-
7	X44	Bit	Count stop signal	-
8	X45	Bit	Coincidence LED clear signal	-
9	X4C	Bit	Periodic pulse count data read signal	-
10	X4D	Bit	Periodic pulse count start signal	-
11	Y30	Bit	CH1 Coincidence signal No.1 reset command	-
12	Y31	Bit	CH1 Preset command	-
13	Y32	Bit	CH1 Coincidence signal enable command	-
14	Y34	Bit	CH1 Count enable command	-
15	Y36	Bit	CH1 Counter function selection start command	-
16	Y50	Bit	Coincidence confirmation LED signal	-

Conditions for Using Sample Ladder Programs

It is the same as "Conditions for Using Sample Ladder Programs" of "3.1 Count Disable Function".

Devices

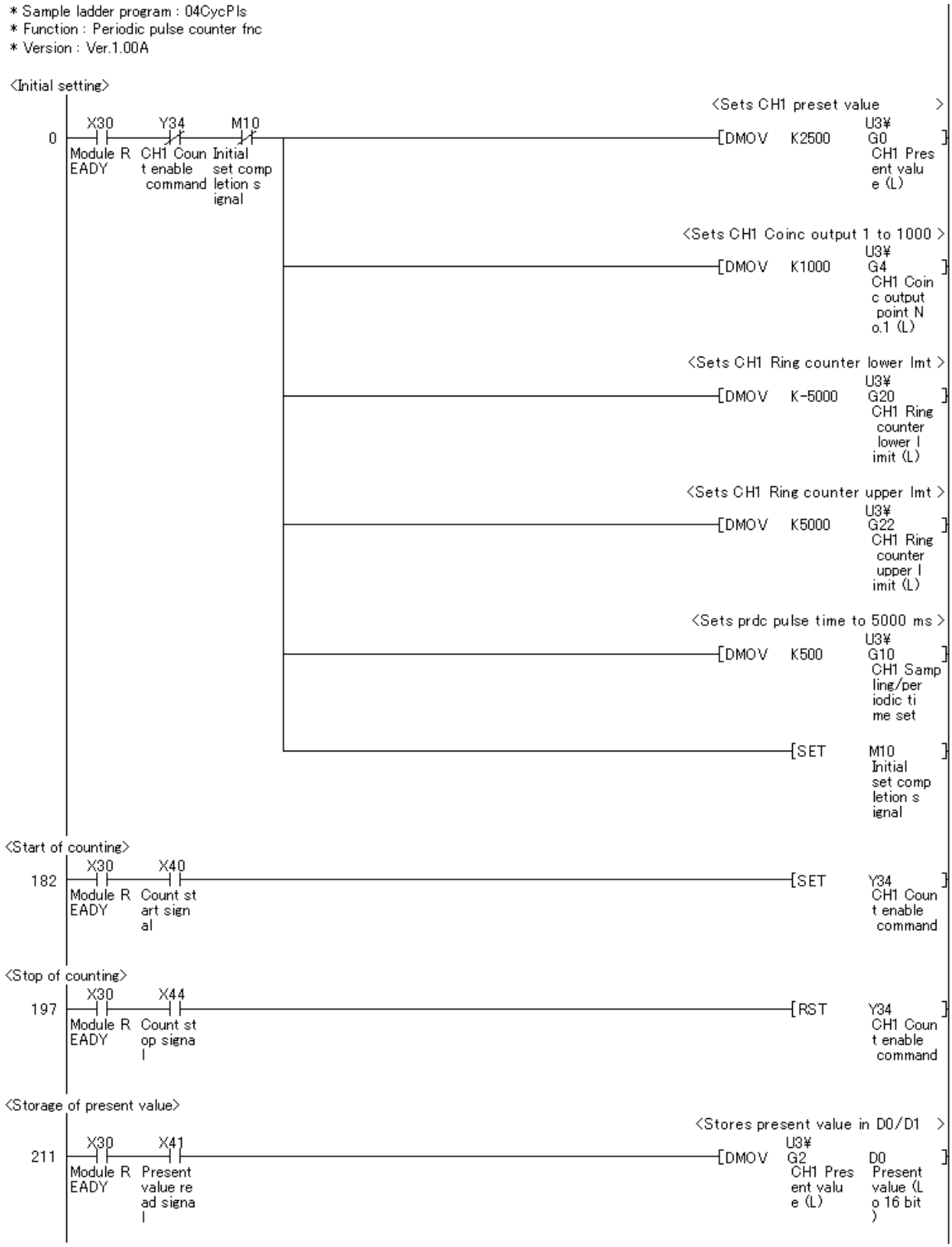
This program uses the following devices.

No.	Device	Data Type	Application	Remarks
1	X30	Bit	Module READY	-
2	X32	Bit	CH1 Counter value coincidence (point No.1)	-
3	X40	Bit	Count start signal	-
4	X41	Bit	Present value read signal	-
5	X42	Bit	Coincidence output data setting signal	-
6	X43	Bit	Preset command signal	-
7	X44	Bit	Count stop signal	-
8	X45	Bit	Coincidence LED clear signal	-
9	X4C	Bit	Periodic pulse count data read signal	-
10	X4D	Bit	Periodic pulse count start signal	-
11	Y30	Bit	CH1 Coincidence signal No.1 reset command	-
12	Y31	Bit	CH1 Preset command	-
13	Y32	Bit	CH1 Coincidence signal enable command	-
14	Y34	Bit	CH1 Count enable command	-
15	Y36	Bit	CH1 Counter function selection start command	-
16	Y50	Bit	Coincidence confirmation LED signal	-
17	M10	Bit	Initial setting completion signal	-
18	D0	Word (Binary)	Present value (Lo 16 bit)	-
19	D1	Word (Binary)	Present value (Hi 16 bit)	-
20	D6	Word (Binary)	Periodic pulse count, previous value (Lo 16 bit)	-
21	D7	Word (Binary)	Periodic pulse count, previous value (Hi 16 bit)	-
22	D8	Word (Binary)	Periodic pulse count, Present value (Lo 16 bit)	-
23	D9	Word (Binary)	Periodic pulse count, Present value (Hi 16 bit)	-

Version Upgrade History

Version	Date	Description
1.00A	2011/09/26	First edition

Program



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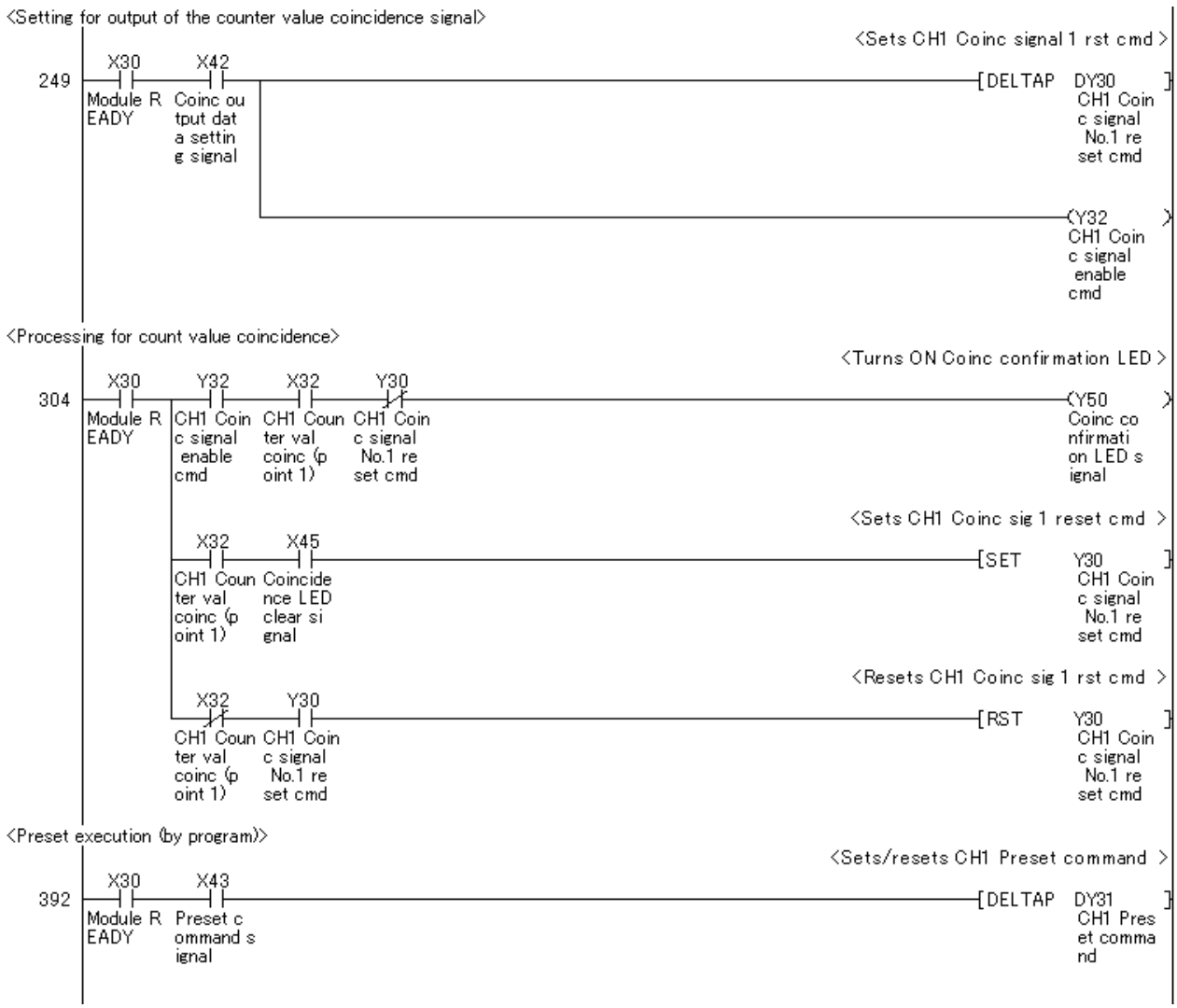

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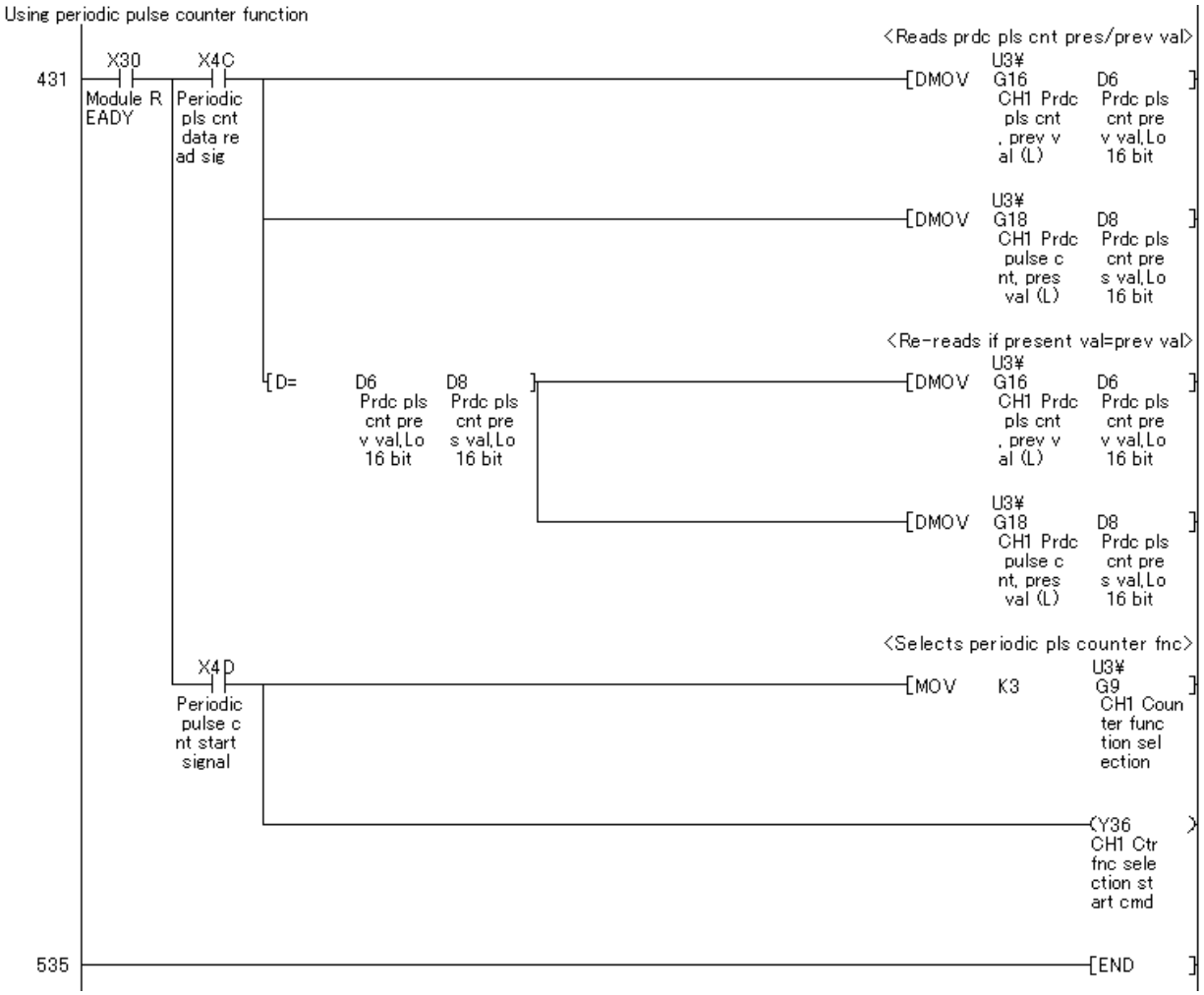

Using periodic pulse counter function
<Reads prdc pls cnt pres/prev val>
431
X30
Module READY
X4C
Periodic pls cnt data read sig
DMOV U3¥G16 D6
CH1 Prdc pls cnt, prev val (L)
Prdc pls cnt prev val,Lo 16 bit
DMOV U3¥G18 D8
CH1 Prdc pulse cnt, pres val (L)
Prdc pls cnt pres val,Lo 16 bit
<Re-reads if present val=prev val>
D= D6 D8
Prdc pls cnt prev val,Lo 16 bit
Prdc pls cnt pres val,Lo 16 bit
DMOV U3¥G16 D6
CH1 Prdc pls cnt, prev val (L)
Prdc pls cnt prev val,Lo 16 bit
DMOV U3¥G18 D8
CH1 Prdc pulse cnt, pres val (L)
Prdc pls cnt pres val,Lo 16 bit
<Selects periodic pls counter fnc>
X4D
Periodic pulse cnt start signal
MOV K3 U3¥G9
CH1 Counter function selection
Y36
CH1 Ctr fnc selection start cmd
535
END

4. When Connecting the Module to the Head Module

4.1 Count Disable Function

Function Overview

This program uses the count disable function.

Program

This function uses the project (program name).

•LD-LD62_IEF_V100A_E(01CntDis)

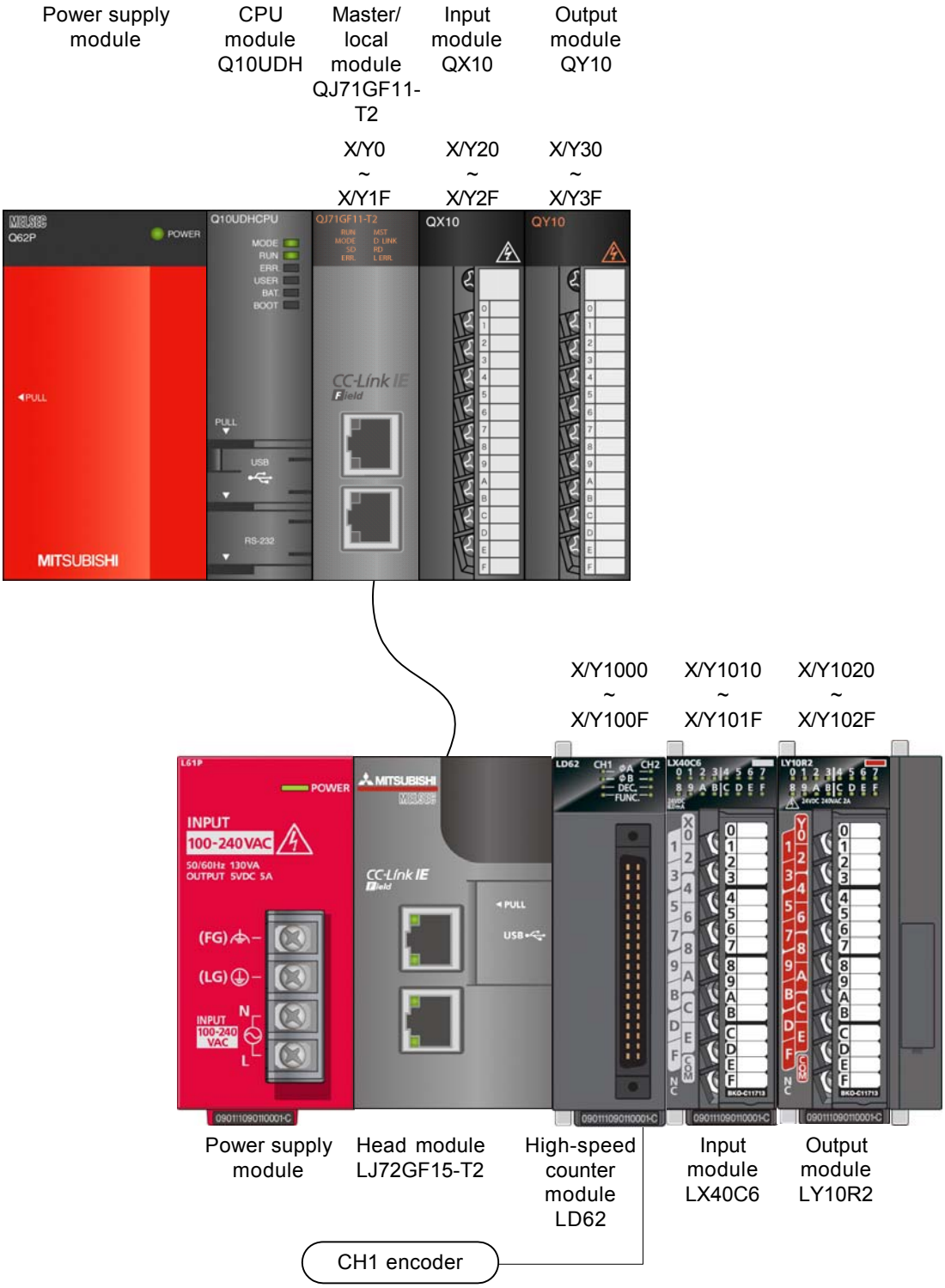
Applicable Hardware and Software

The following are the hardware and software applicable to the sample ladder programs.

<table>
<tr><th>Model</th><th>Description</th></tr>
<tr><td>High-speed counter module</td><td>LD62(D)</td></tr>
<tr><td>CC-Link IE Field Network module</td><td>CC-Link IE Field Network master/local module
CC-Link IE Field Network head module</td></tr>
<tr><td>CPU module</td><td><table><tr><th>Series</th><th>Model</th></tr><tr><td>MELSEC-Q series</td><td>Universal model QCPU *1</td></tr><tr><td>MELSEC-L series</td><td>LCPU *2</td></tr></table>*1 The first five digits of the serial number are "12012" or later.
*2 The first five digits of the serial number are "13012" or later.</td></tr>
<tr><td>Input Module</td><td>MELSEC-Q/L series input module</td></tr>
<tr><td>Output Module</td><td>MELSEC-Q/L series output module</td></tr>
<tr><td>Compatible software</td><td>GX Works2 *1
*1 For software versions applicable to the module used, refer to "Relevant manuals".</td></tr>
</table>

System Configuration

The following system configuration is used for the sample ladder programs.



This program uses the following devices.

No.	Device	Data Type	Application	Remarks
1	X20	Bit	Count start signal	-
2	X22	Bit	Coincidence output data setting signal	-
3	X23	Bit	Preset command signal	-
4	X24	Bit	Count stop signal	-
5	X25	Bit	Coincidence LED clear signal	-
6	X26	Bit	Counter function start signal	-
7	X27	Bit	Counter function stop signal	-
8	X1000	Bit	Module READY	-
9	X1002	Bit	CH1 Counter value coincidence (point No.1)	-
10	Y30	Bit	Coincidence confirmation LED signal	-
11	Y1000	Bit	CH1 Coincidence signal No.1 reset command	-
12	Y1001	Bit	CH1 Preset command	-
13	Y1002	Bit	CH1 Coincidence signal enable command	-
14	Y1004	Bit	CH1 Count enable command	-
15	Y1006	Bit	CH1 Counter function selection start command	-

Conditions for Using Sample Ladder Programs

Use GX Works2 when connecting to the head module.

●Parameter Settings for the High-Speed Counter Module

The following explains the settings for the LD62 high-speed counter module that the programs use.

(1) Settings for the Master Station

a) Configure settings for the master station.

Project window→[Parameter] → [Network Parameter] →[Ethernet/CC IE/MELSECNET]

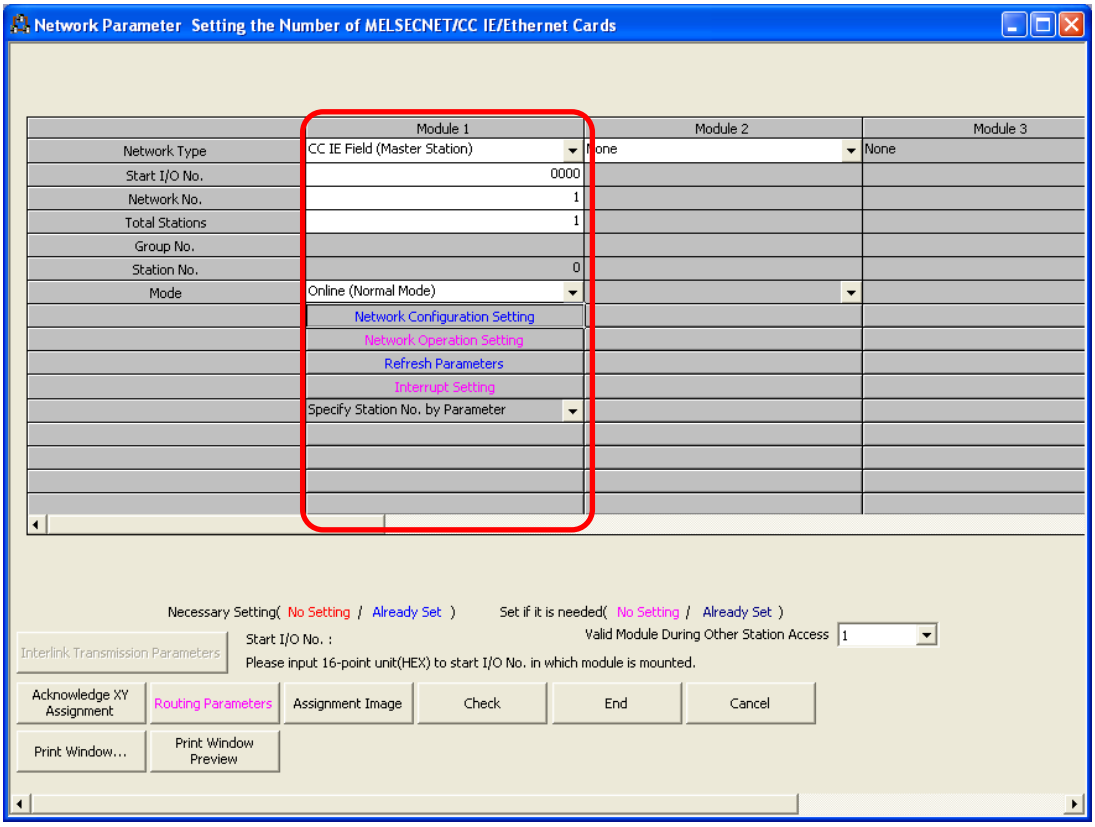


Table 4-1 Network parameter setting

	Module 1
Network Type	CC IE Field (Master Station)
Start I/O No.	0000
Network No.	1
Total Stations	1

b) Open the network configuration setting screen and configure the setting as follows.

Project window→[Parameter]→[Network Parameter]→[Ethernet/CC IE/MELSECNET]→Network Configuration Setting

Number of PLCs	Station No.	Station Type	RX/RY Setting			RWw/RWr Setting		
			Points	Start	End	Points	Start	End
1	1	Intelligent Device Station	256	0000	00FF	256	0000	00FF

Table 4-2 Network configuration setting

	Station No.	Station Type	RX/RY Setting		RWw/RWr Setting	
			Start	End	Start	End
1	1	Intelligent Device Station	0000	00FF	0000	00FF

c) Open the refresh parameter setting screen and configure the setting as follows.

Project window→[Parameter]→[Network Parameter]→[Ethernet/CC IE/MELSECNET]→Refresh Parameters

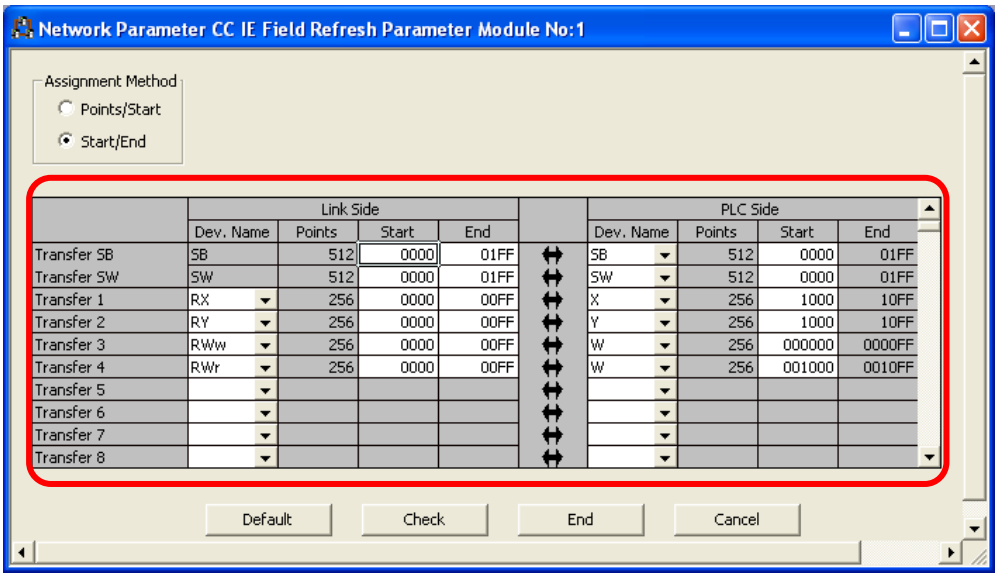


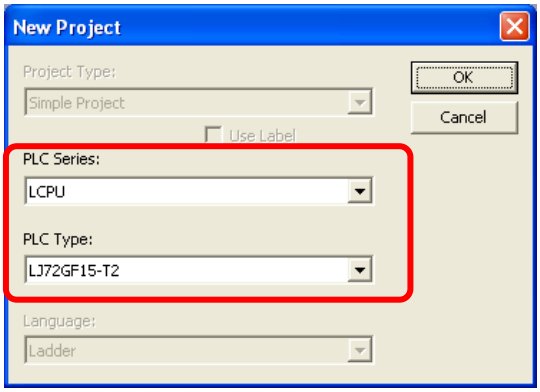
Table 4-3 Refresh parameters setting

Link Side				PLC Side	
Device Name	Start	End		Device Name	Start
SB	0000	01FF	↔	SB	0000
SW	0000	01FF	↔	SW	0000
RX	0000	00FF	↔	X	1000
RY	0000	00FF	↔	Y	1000
RWw	0000	00FF	↔	W	000000
RWr	0000	00FF	↔	W	001000

(2) Settings for the intelligent device station.

a) Select "LCPU" in "PLC Series" and "LJ72GF15-T2" for "PLC Type" and create a project.

[Project]→[New Project]



b) Open the PLC parameter setting screen and configure the setting as follows.

Project window→[Parameter]→[PLC Parameter]→[Communication Head Setting]

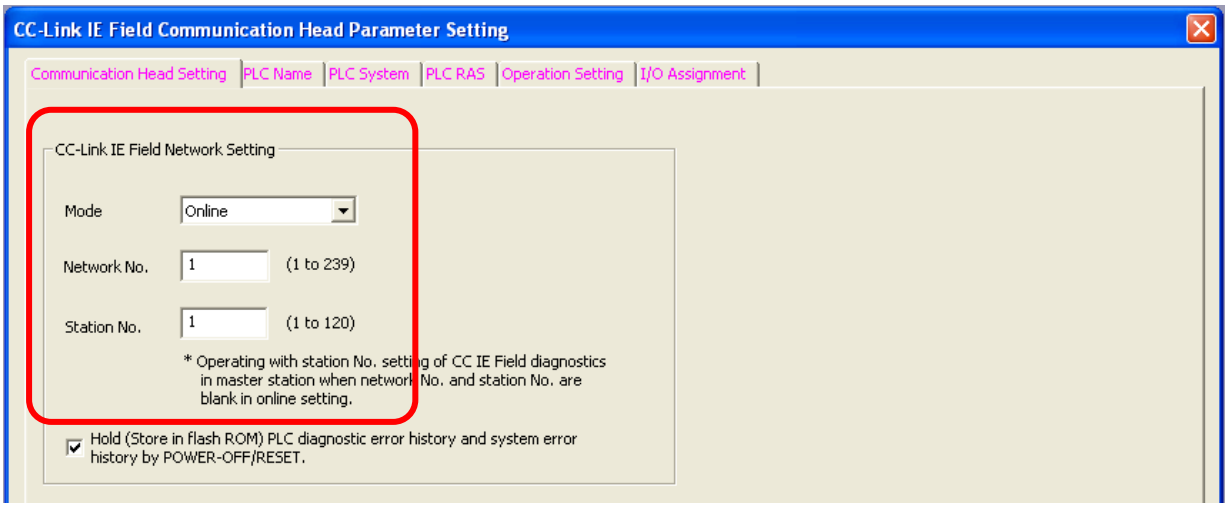
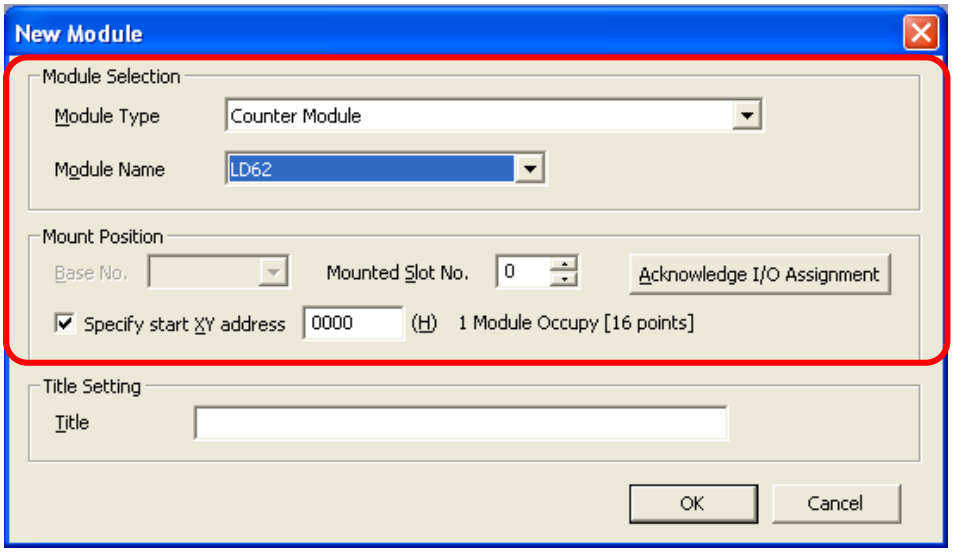


Table 4-4 Communication head setting

	Setting value
Mode	Online
Network No.	1
Station No.	1

c) Open the new module setting screen and configure the setting as follows.

Project window→[Intelligent Function Module]→right-click→[New Module]



d) Open the switch setting screen and configure the setting as follows.

Project window→[Intelligent Function Module]→Module name→[Switch Setting]

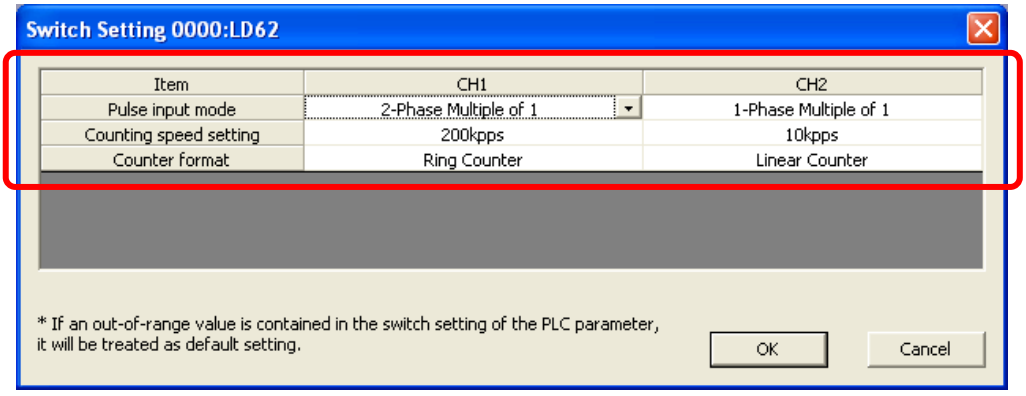


Table 4-5 Switch setting

	CH1	CH2
Pulse input mode	2-Phase Multiple of 1	1-Phase Multiple of 1
Counting speed setting	200 kpps	10 kpps
Counter format	Ring Counter	Linear Counter

e) Open the parameter setting screen and configure the setting as follows.

Project window→[Intelligent Function Module]→Module name→[Parameter]

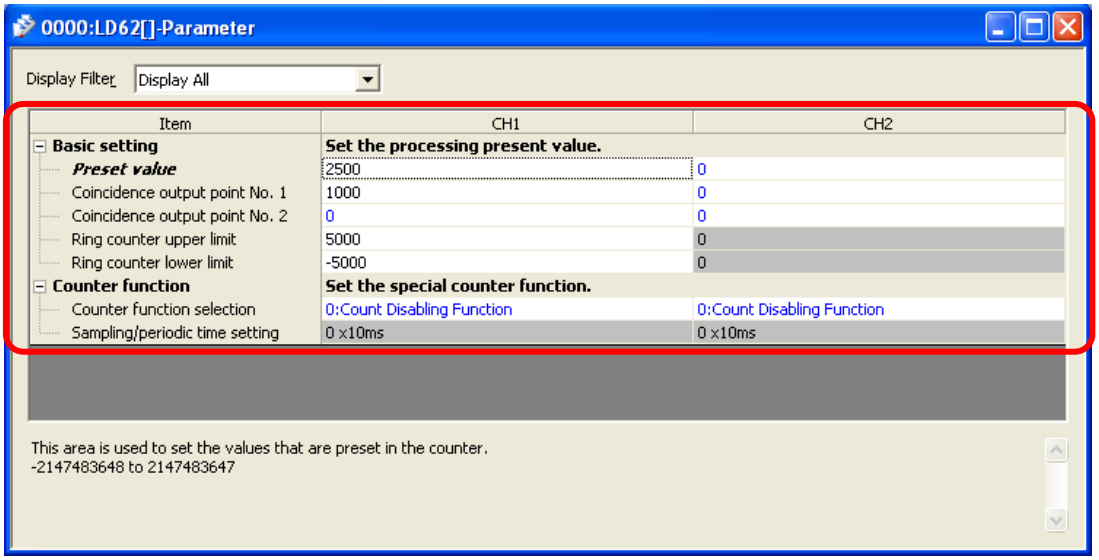


Table 4-6 Parameter setting

		CH1	CH2
Basic setting	Preset value	2500	0
	Coincidence output point No.1	1000	0
	Coincidence output point No.2	0	0
	Ring counter upper limit	5000	
	Ring counter lower limit	-5000	
Counter function	Counter function selection	Refer to the following table (Table 4-7 Counter function setting)	0: Count Disable Function
	Sampling/periodic time setting		

Table 4-7 Counter function setting

		Sampling/periodic time setting
Counter function selection	0: Count Disable Function	
	1: Latch Counter Function	
	2: Sampling Counter Function	1000×10 ms
	3: Periodic Pulse Counter Function	500×10 ms

f) Open the auto refresh setting screen and configure the setting as follows.

Project window→[Intelligent Function Module]→Module name→[Auto Refresh]

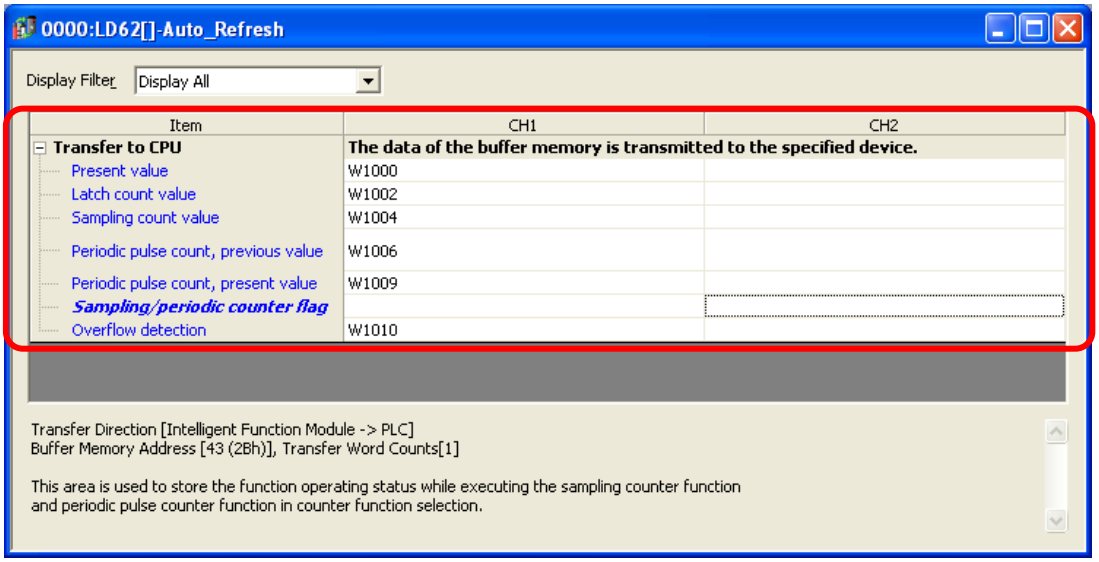


Table 4-8 Auto refresh setting

		CH1	CH2
Transfer to CPU	Present value	W1000	-
	Latch count value	W1002	-
	Sampling count value	W1004	-
	Periodic pulse count, previous value	W1006	-
	Periodic pulse count, present value	W1008	-
	Sampling/periodic counter flag	-	-
	Overflow detection	W1010	-

Devices

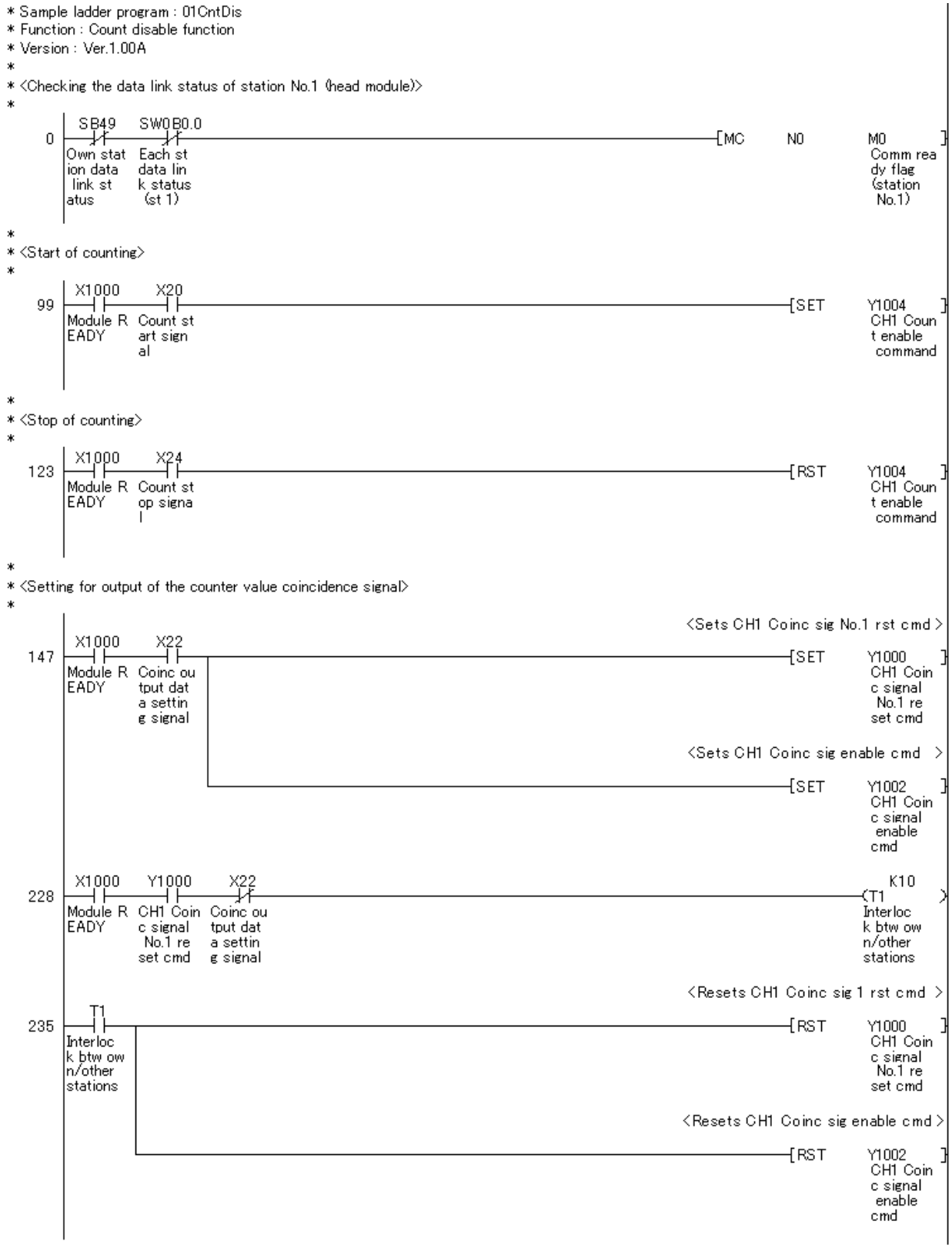
This program uses the following devices.

No.	Device	Data Type	Application	Remarks
1	SB49	Bit	Data link status of the own station	-
2	SW0B0.0	Bit	Data link status of each station (station No.1)	-
3	X20	Bit	Count start signal	-
4	X22	Bit	Coincidence output data setting signal	-
5	X23	Bit	Preset command signal	-
6	X24	Bit	Count stop signal	-
7	X25	Bit	Coincidence LED clear signal	-
8	X26	Bit	Counter function start signal	-
9	X27	Bit	Counter function stop signal	-
10	X1000	Bit	Module READY	-
11	X1002	Bit	CH1 Counter value coincidence (point No.1)	-
12	Y30	Bit	Coincidence confirmation LED signal	-
13	Y1000	Bit	CH1 Coincidence signal No.1 reset command	-
14	Y1001	Bit	CH1 Preset command	-
15	Y1002	Bit	CH1 Coincidence signal enable command	-
16	Y1004	Bit	CH1 Count enable command	-
17	Y1006	Bit	CH1 Counter function selection start command	-
18	M0	Bit	Communication ready flag (station No.1)	-
19	T1	Bit	Interlock between own and other stations	-
20	T2	Bit	Interlock between own and other stations	-

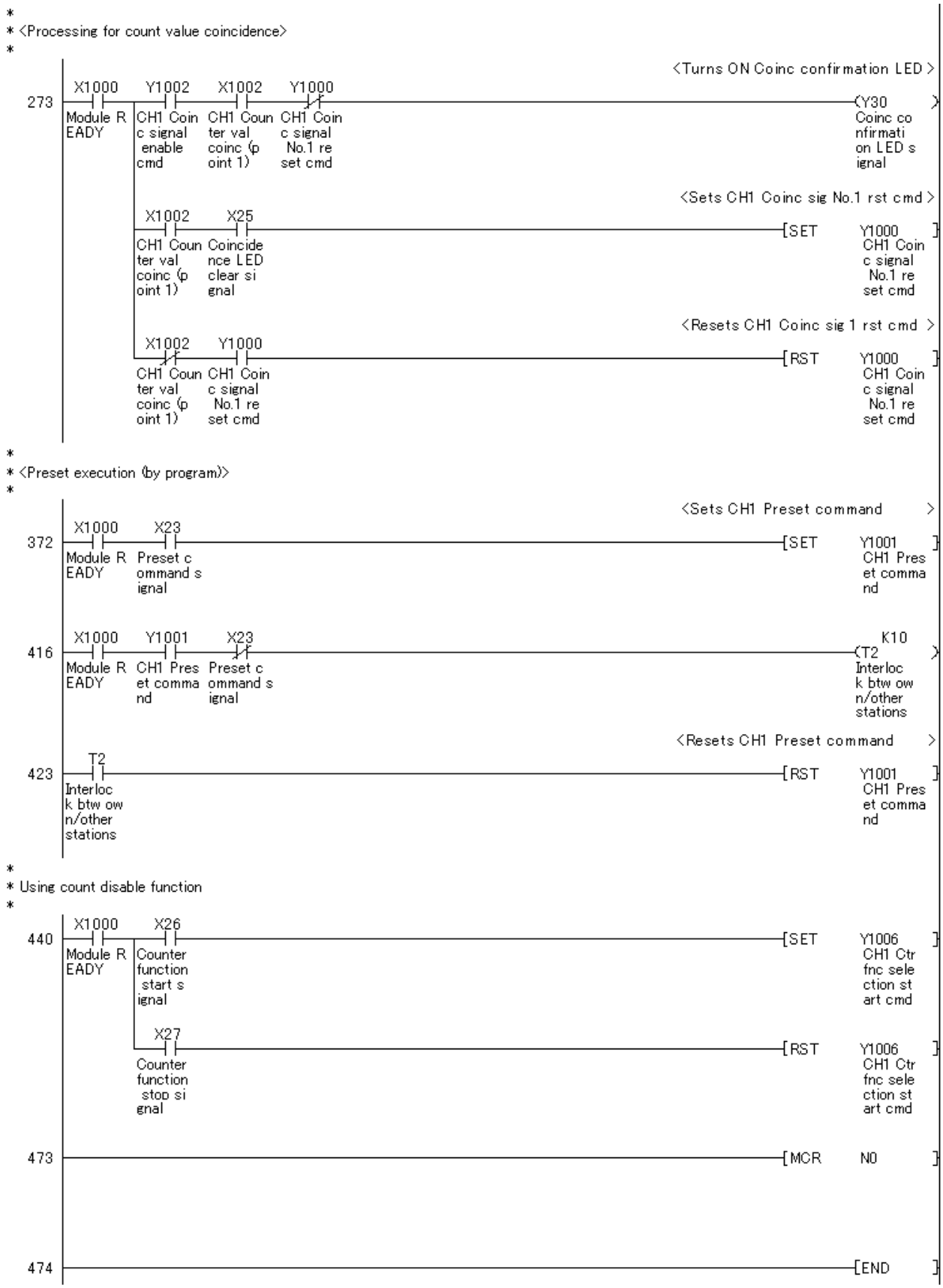
Version Upgrade History

Version	Date	Description
1.00A	2011/09/26	First edition

Program



Continues on next page.



Continues on next page.

4.2 Latch Counter Function

Function Overview

This program uses the latch counter function.

Program

This function uses the project (program name).

•LD-LD62_IEF_V100A_E(02Latch)

Applicable Hardware and Software

It is the same as "Applicable Hardware and Software" of "4.1 Count Disable Function".

System Configuration

It is the same as "System Configuration" of "4.1 Count Disable Function".

This program uses the following devices.

No.	Device	Data Type	Application	Remarks
1	X20	Bit	Count start signal	-
2	X22	Bit	Coincidence output data setting signal	-
3	X23	Bit	Preset command signal	-
4	X24	Bit	Count stop signal	-
5	X25	Bit	Coincidence LED clear signal	-
6	X29	Bit	Latch execution signal	-
7	X1000	Bit	Module READY	-
8	X1002	Bit	CH1 Counter value coincidence (point No.1)	-
9	Y30	Bit	Coincidence confirmation LED signal	-
10	Y1000	Bit	CH1 Coincidence signal No.1 reset command	-
11	Y1001	Bit	CH1 Preset command	-
12	Y1002	Bit	CH1 Coincidence signal enable command	-
13	Y1004	Bit	CH1 Count enable command	-
14	Y1006	Bit	CH1 Counter function selection start command	-

Conditions for Using Sample Ladder Programs

It is the same as "Conditions for Using Sample Ladder Programs" of "4.1 Count Disable Function".

Devices

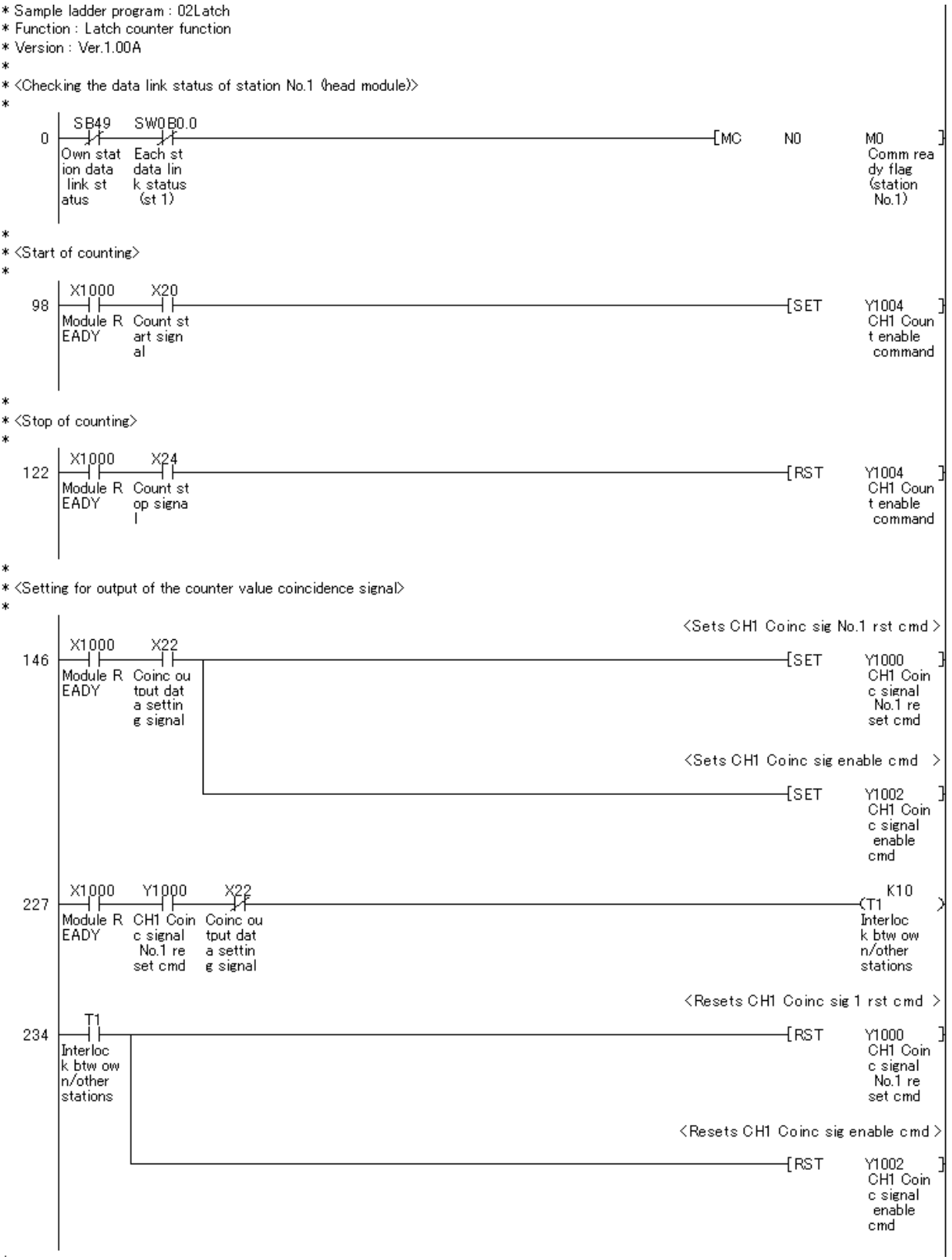
This program uses the following devices.

No.	Device	Data Type	Application	Remarks
1	SB49	Bit	Data link status of the own station	-
2	SW0B0.0	Bit	Data link status of each station (station No.1)	-
3	X20	Bit	Count start signal	-
4	X22	Bit	Coincidence output data setting signal	-
5	X23	Bit	Preset command signal	-
6	X24	Bit	Count stop signal	-
7	X25	Bit	Coincidence LED clear signal	-
8	X29	Bit	Latch execution signal	-
9	X1000	Bit	Module READY	-
10	X1002	Bit	CH1 Counter value coincidence (point No.1)	-
11	Y30	Bit	Coincidence confirmation LED signal	-
12	Y1000	Bit	CH1 Coincidence signal No.1 reset command	-
13	Y1001	Bit	CH1 Preset command	-
14	Y1002	Bit	CH1 Coincidence signal enable command	-
15	Y1004	Bit	CH1 Count enable command	-
16	Y1006	Bit	CH1 Counter function selection start command	-
17	M0	Bit	Communication ready flag (station No.1)	-
18	T1	Bit	Interlock between own and other stations	-
19	T2	Bit	Interlock between own and other stations	-
20	T3	Bit	Interlock between own and other stations	-

Version Upgrade History

Version	Date	Description
1.00A	2011/09/26	First edition

Program



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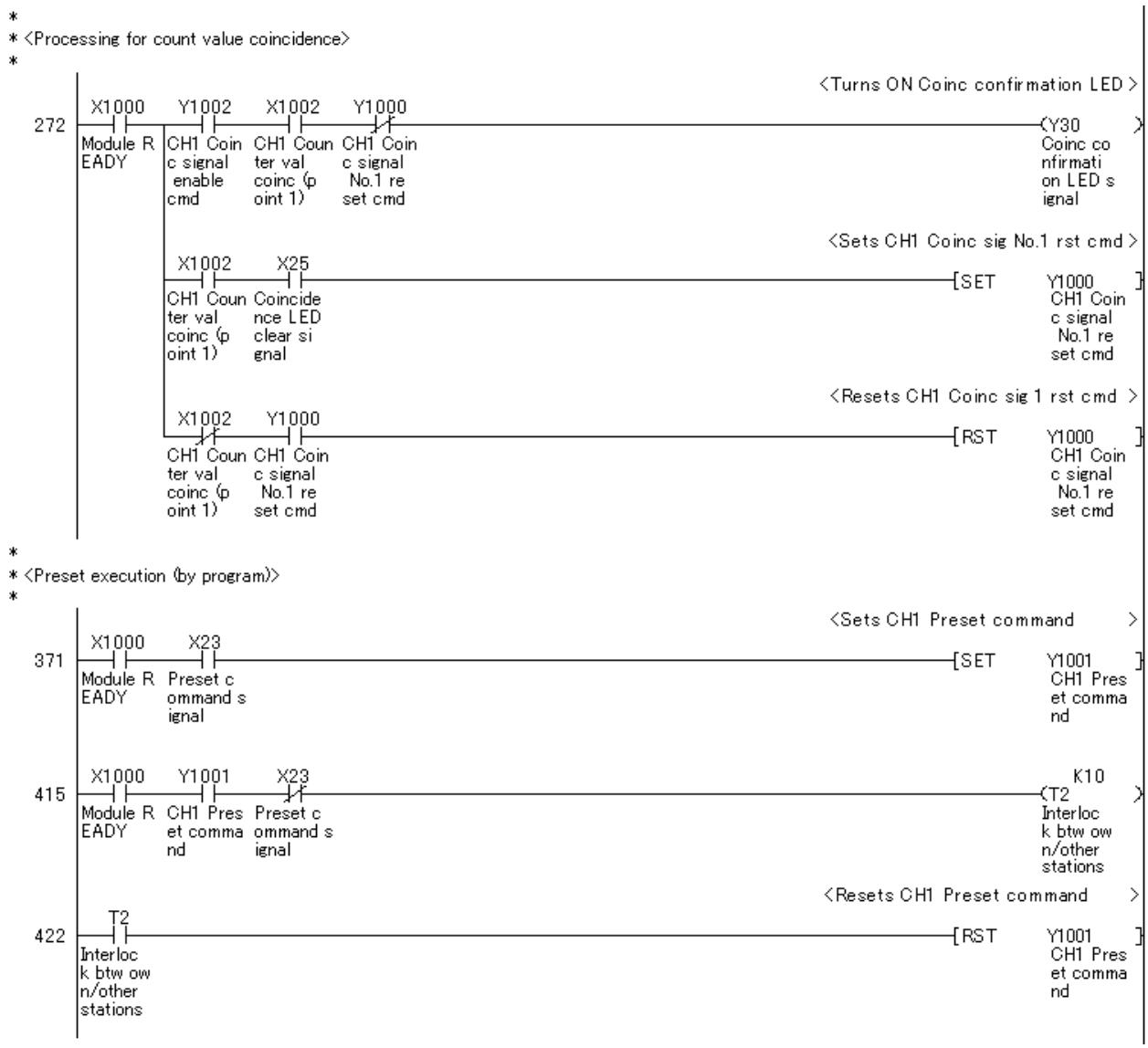

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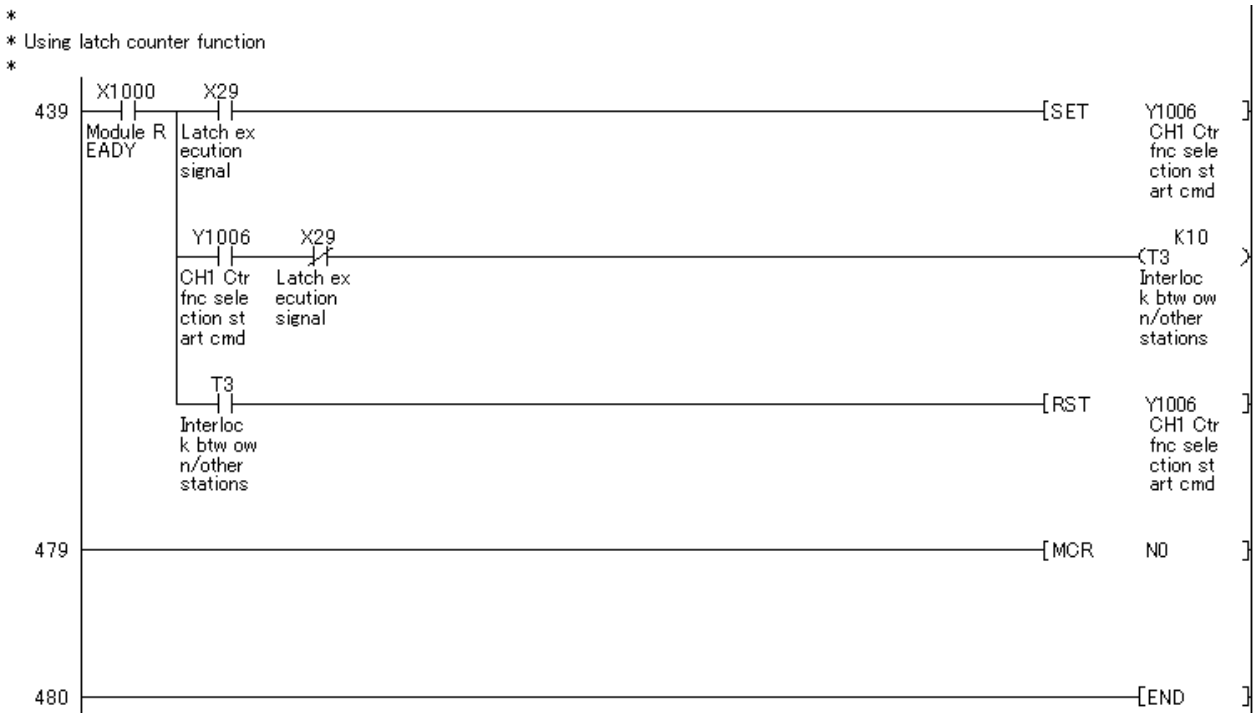

*
* Using latch counter function
*
439
X1000
Module R
EADY
X29
Latch ex
ecution
signal
SET
Y1006
CH1 Ctr
fnc sele
ction st
art cmd
Y1006
CH1 Ctr
fnc sele
ction st
art cmd
X29
Latch ex
ecution
signal
K10
T3
Interloc
k btw ow
n/other
stations
T3
Interloc
k btw ow
n/other
stations
RST
Y1006
CH1 Ctr
fnc sele
ction st
art cmd
479
MCR
N0
480
END

4.3 Sampling Counter Function

Function Overview

This program uses the sampling counter function.

Program

This function uses the project (program name).

•LD-LD62_IEF_V100A_E(03SplCnt)

Applicable Hardware and Software

It is the same as "Applicable Hardware and Software" of "".

System Configuration

It is the same as "System Configuration" of "4.1 Count Disable Function".

This program uses the following devices.

No.	Device	Data Type	Application	Remarks
1	X20	Bit	Count start signal	-
2	X22	Bit	Coincidence output data setting signal	-
3	X23	Bit	Preset command signal	-
4	X24	Bit	Count stop signal	-
5	X25	Bit	Coincidence LED clear signal	-
6	X2B	Bit	Sampling count start signal	-
7	X1000	Bit	Module READY	-
8	X1002	Bit	CH1 Counter value coincidence (point No.1)	-
9	Y30	Bit	Coincidence confirmation LED signal	-
10	Y1000	Bit	CH1 Coincidence signal No.1 reset command	-
11	Y1001	Bit	CH1 Preset command	-
12	Y1002	Bit	CH1 Coincidence signal enable command	-
13	Y1004	Bit	CH1 Count enable command	-
14	Y1006	Bit	CH1 Counter function selection start command	-

Conditions for Using Sample Ladder Programs

It is the same as "Conditions for Using Sample Ladder Programs" of "4.1 Count Disable Function".

Devices

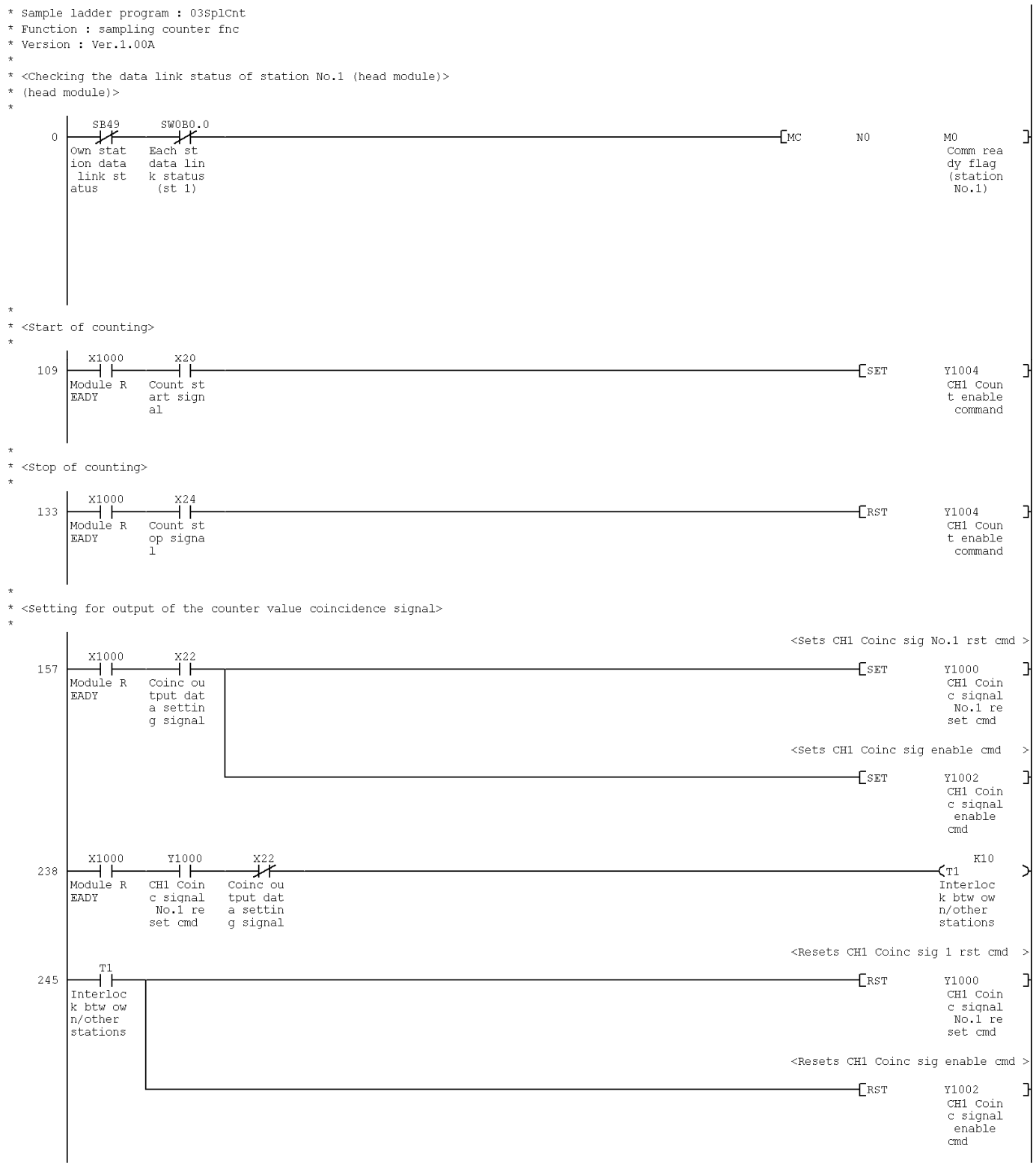
This program uses the following devices.

No.	Device	Data Type	Application	Remarks
1	SB49	Bit	Data link status of the own station	-
2	SW0B0.0	Bit	Data link status of each station (station No.1)	-
3	X20	Bit	Count start signal	-
4	X22	Bit	Coincidence output data setting signal	-
5	X23	Bit	Preset command signal	-
6	X24	Bit	Count stop signal	-
7	X25	Bit	Coincidence LED clear signal	-
8	X2B	Bit	Sampling count start signal	-
9	X1000	Bit	Module READY	-
10	X1002	Bit	CH1 Counter value coincidence (point No.1)	-
11	Y30	Bit	Coincidence confirmation LED signal	-
12	Y1000	Bit	CH1 Coincidence signal No.1 reset command	-
13	Y1001	Bit	CH1 Preset command	-
14	Y1002	Bit	CH1 Coincidence signal enable command	-
15	Y1004	Bit	CH1 Count enable command	-
16	Y1006	Bit	CH1 Counter function selection start command	-
17	M0	Bit	Communication ready flag (station No.1)	-
18	T1	Bit	Interlock between own and other stations	-
19	T2	Bit	Interlock between own and other stations	-
20	T4	Bit	Interlock between own and other stations	-

Version Upgrade History

Version	Date	Description
1.00A	2011/09/26	First edition

Program



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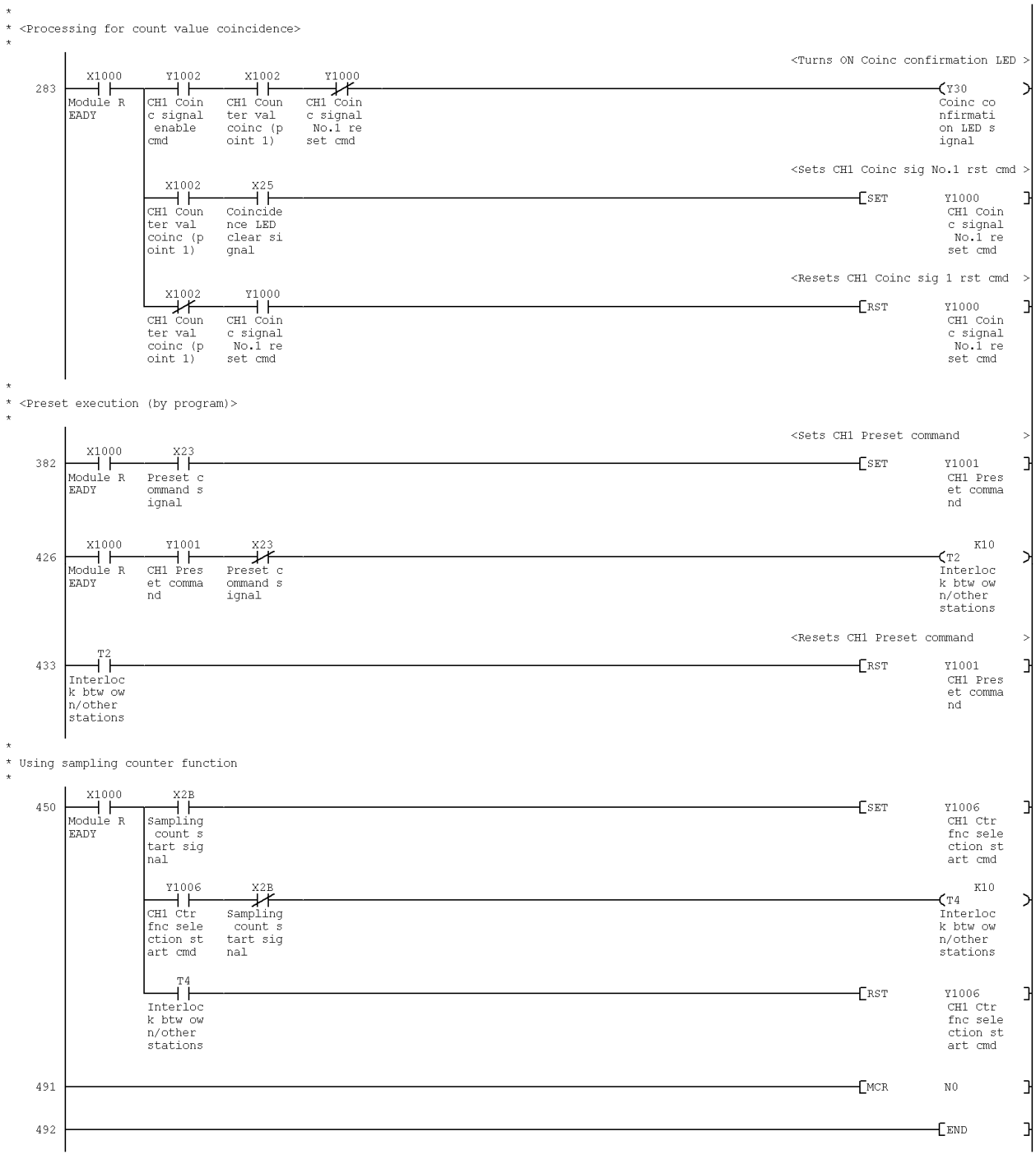

* <Processing for count value coincidence>
<Turns ON Coinc confirmation LED >
283
X1000 Module READY
Y1002 CH1 Coinc signal enable cmd
X1002 CH1 Counter val coinc (point 1)
Y1000 CH1 Coinc signal No.1 reset cmd
Y30 Coinc confirmation LED signal
<Sets CH1 Coinc sig No.1 rst cmd >
X1002 CH1 Counter val coinc (point 1)
X25 Coincidence LED clear signal
SET Y1000 CH1 Coinc signal No.1 reset cmd
<Resets CH1 Coinc sig 1 rst cmd >
X1002 CH1 Counter val coinc (point 1)
Y1000 CH1 Coinc signal No.1 reset cmd
RST Y1000 CH1 Coinc signal No.1 reset cmd
* <Preset execution (by program)>
<Sets CH1 Preset command >
382
X1000 Module READY
X23 Preset command signal
SET Y1001 CH1 Preset command
426
X1000 Module READY
Y1001 CH1 Preset command
X23 Preset command signal
K10
T2 Interlock btw own/other stations
<Resets CH1 Preset command >
433
T2 Interlock btw own/other stations
RST Y1001 CH1 Preset command
* Using sampling counter function
450
X1000 Module READY
X2B Sampling count start signal
SET Y1006 CH1 Ctr fnc selection start cmd
Y1006 CH1 Ctr fnc selection start cmd
X2B Sampling count start signal
K10
T4 Interlock btw own/other stations
T4 Interlock btw own/other stations
RST Y1006 CH1 Ctr fnc selection start cmd
491
MCR N0
492
END

4.4 Periodic Pulse Counter Function

Function Overview

This program uses the periodic pulse counter function.

Program

This function uses the project (program name).

•LD-LD62_IEF_V100A_E(04CycPls)

Applicable Hardware and Software

It is the same as "Applicable Hardware and Software" of "4.1 Count Disable Function".

System Configuration

It is the same as "System Configuration" of "4.1 Count Disable Function".

This program uses the following devices.

No.	Device	Data Type	Application	Remarks
1	X20	Bit	Count start signal	-
2	X22	Bit	Coincidence output data setting signal	-
3	X23	Bit	Preset command signal	-
4	X24	Bit	Count stop signal	-
5	X25	Bit	Coincidence LED clear signal	-
6	X2D	Bit	Periodic pulse count start signal	-
7	X1000	Bit	Module READY	-
8	X1002	Bit	CH1 Counter value coincidence (point No.1)	-
9	Y30	Bit	Coincidence confirmation LED signal	-
10	Y1000	Bit	CH1 Coincidence signal No.1 reset command	-
11	Y1001	Bit	CH1 Preset command	-
12	Y1002	Bit	CH1 Coincidence signal enable command	-
13	Y1004	Bit	CH1 Count enable command	-
14	Y1006	Bit	CH1 Counter function selection start command	-

Conditions for Using Sample Ladder Programs

It is the same as "Conditions for Using Sample Ladder Programs" of "4.1 Count Disable Function".

Devices

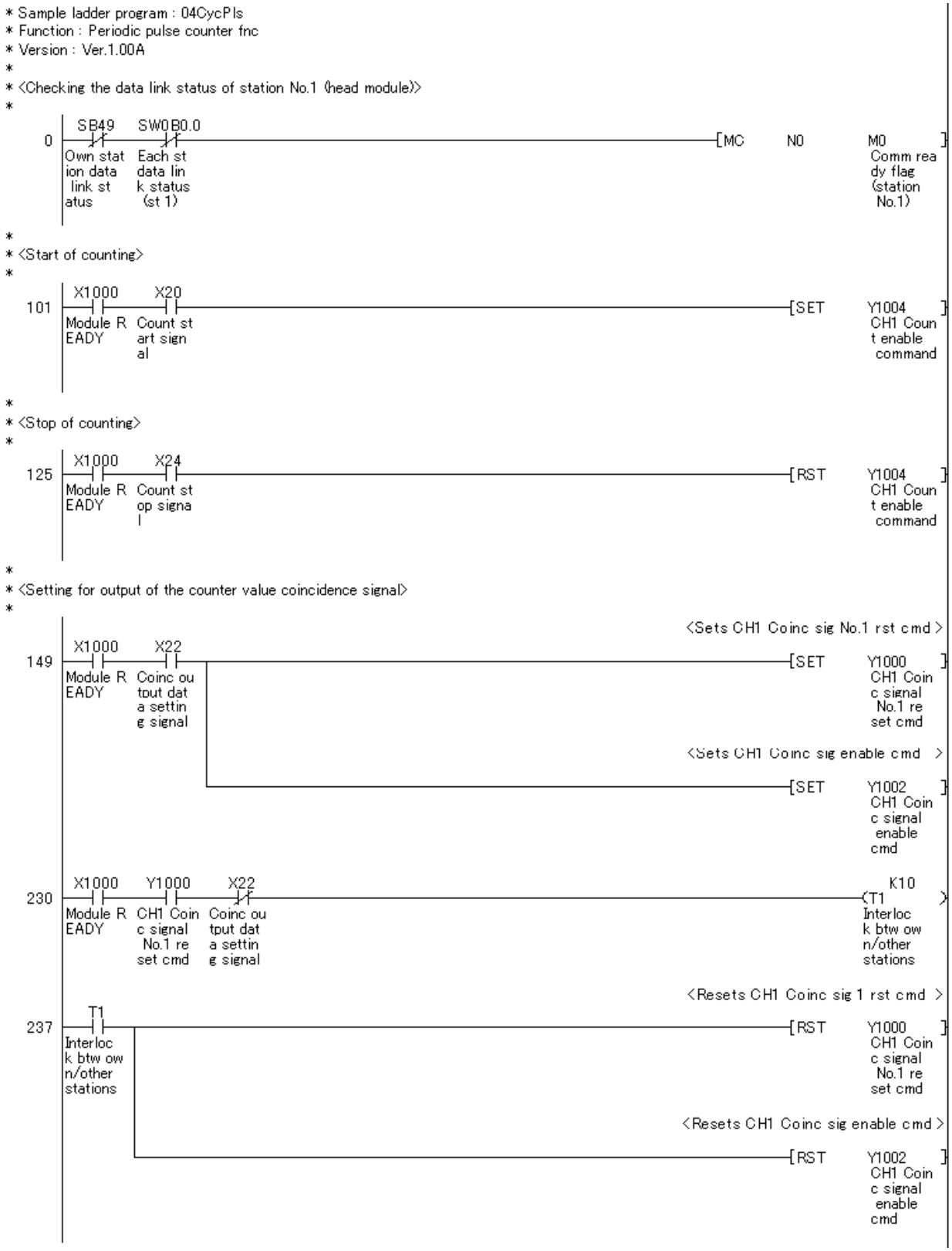
This program uses the following devices.

No.	Device	Data Type	Application	Remarks
1	SB49	Bit	Data link status of the own station	-
2	SW0B0.0	Bit	Data link status of each station (station No.1)	-
3	X20	Bit	Count start signal	-
4	X22	Bit	Coincidence output data setting signal	-
5	X23	Bit	Preset command signal	-
6	X24	Bit	Count stop signal	-
7	X25	Bit	Coincidence LED clear signal	-
8	X2D	Bit	Periodic pulse count start signal	-
9	X1000	Bit	Module READY	-
10	X1002	Bit	CH1 Counter value coincidence (point No.1)	-
11	Y30	Bit	Coincidence confirmation LED signal	-
12	Y1000	Bit	CH1 Coincidence signal No.1 reset command	-
13	Y1001	Bit	CH1 Preset command	-
14	Y1002	Bit	CH1 Coincidence signal enable command	-
15	Y1004	Bit	CH1 Count enable command	-
16	Y1006	Bit	CH1 Counter function selection start command	-
17	M0	Bit	Communication ready flag (station No.1)	-
18	T1	Bit	Interlock between own and other stations	-
19	T2	Bit	Interlock between own and other stations	-
20	T5	Bit	Interlock between own and other stations	-

Version Upgrade History

Version	Date	Description
1.00A	2011/09/26	First edition

Program



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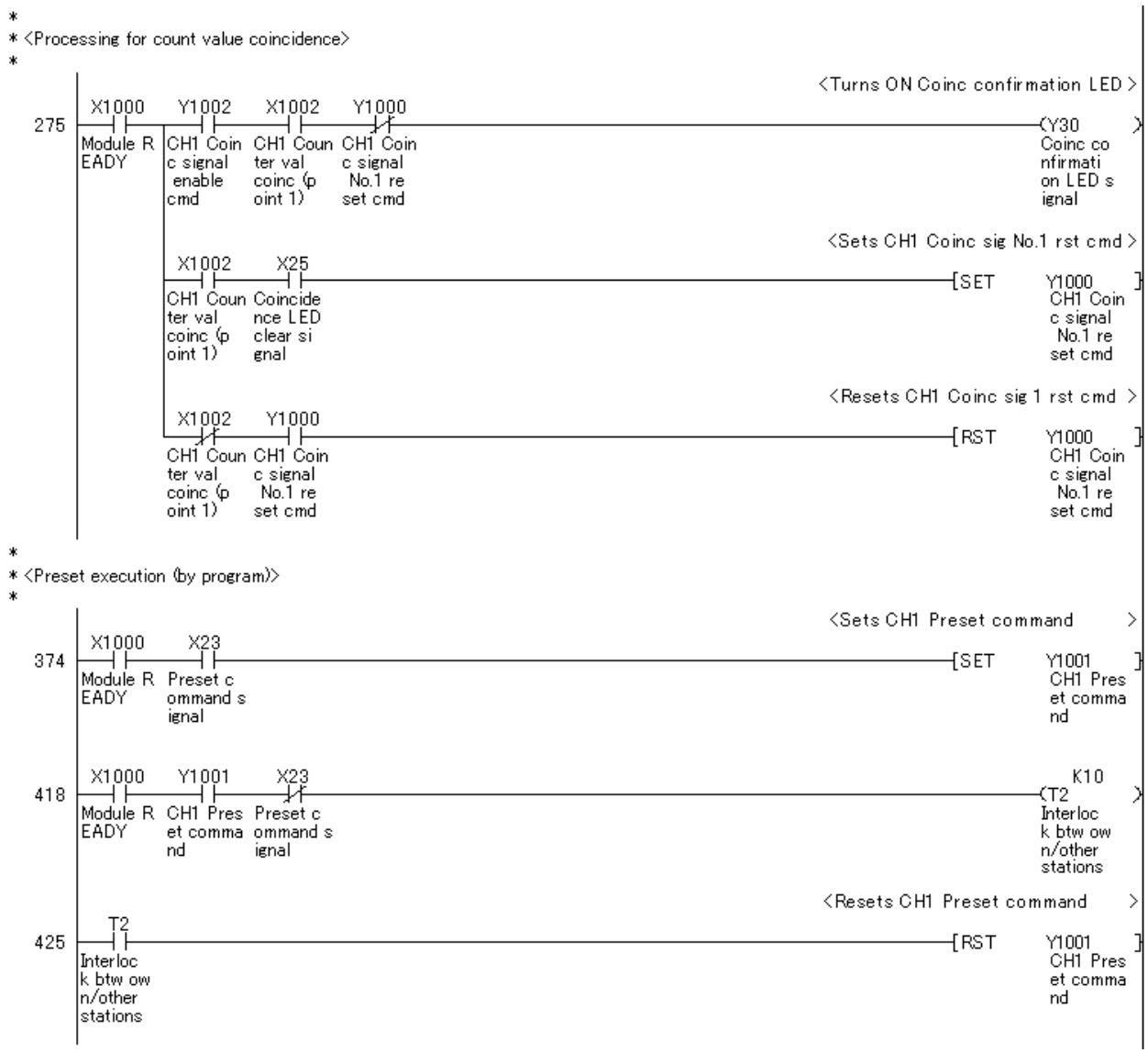

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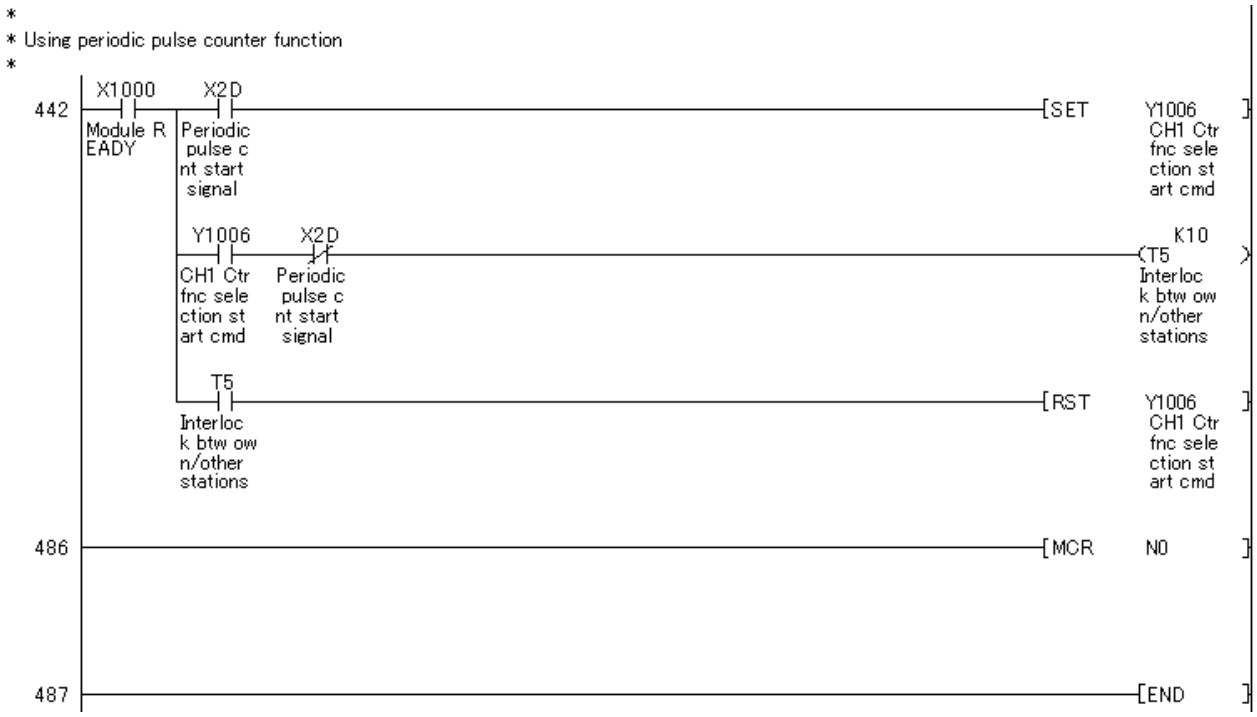

*
* Using periodic pulse counter function
*
442
X1000
Module R
EADY
X2D
Periodic
pulse c
nt start
signal
SET
Y1006
CH1 Ctr
fnc sele
ction st
art cmd
Y1006
CH1 Ctr
fnc sele
ction st
art cmd
X2D
Periodic
pulse c
nt start
signal
K10
T5
Interloc
k btw ow
n/other
stations
T5
Interloc
k btw ow
n/other
stations
RST
Y1006
CH1 Ctr
fnc sele
ction st
art cmd
486
MCR
N0
487
END

5. When Using the Coincidence Detection Interrupt Function

5.1 Coincidence Detection Interrupt Function

Function Overview

This program uses the coincidence detection interrupt function.

Program

This function uses the project (program name).

•LD-LD62_IRQ_V100A_E(01UseIRQ)

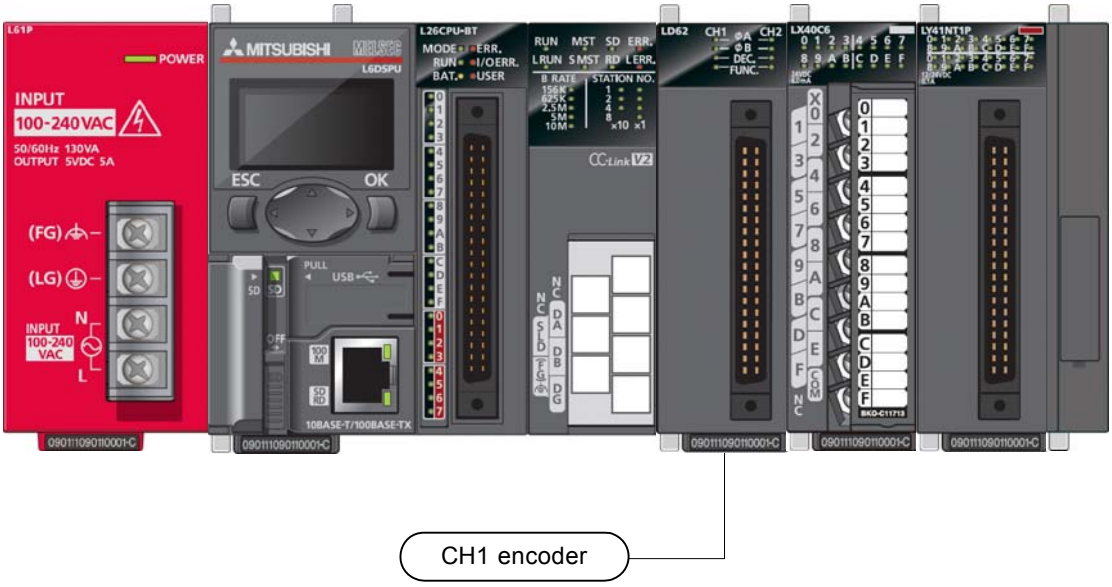
Applicable Hardware and Software

The following are the hardware and software applicable to the sample ladder programs.

<table>
<tr><th>Model</th><th>Description</th></tr>
<tr><td>High-speed counter module</td><td>LD62(D)</td></tr>
<tr><td>CPU module</td><td><table><tr><td>Series</td><td>Model</td></tr><tr><td>MELSEC-L series</td><td>LCPU</td></tr></table></td></tr>
<tr><td>Input Module</td><td>MELSEC-L series input module</td></tr>
<tr><td>Output Module</td><td>MELSEC-L series output module</td></tr>
<tr><td>Compatible software</td><td>GX Works2, GX Developer *1 *2
*1 For software versions applicable to the module used, refer to "Relevant manuals".
*2 When using GX Developer, use GX Configurator-CT to set the intelligent function module parameters.</td></tr>
</table>

System Configuration

The following system configuration is used for the sample ladder program.



Conditions for Using Sample Ladder Programs

●Parameter settings for the High-Speed Counter Module

The following explains the settings for the LD62 high-speed counter module that the program uses.

(1) Switch Setting

Set the pulse input mode, counting speed setting, and counter format as follows.

Project window→[Intelligent Function Module]→Module name→[Switch Setting]

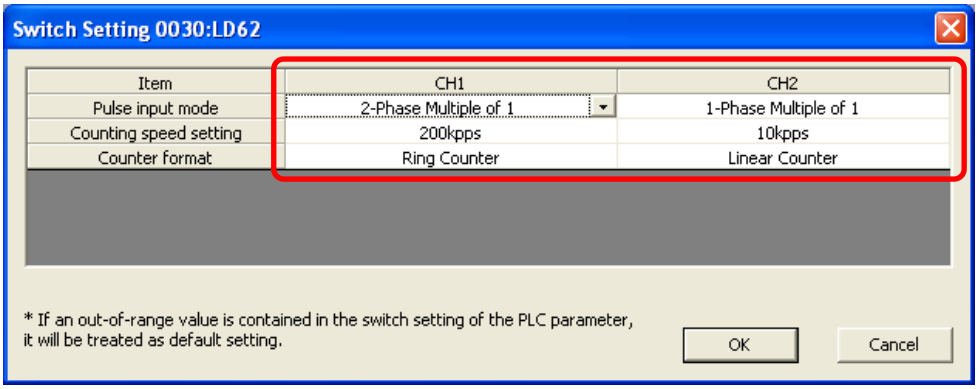


Table 5-1 Switch setting

	CH1	CH2
Pulse input mode	2-Phase Multiple of 1	1-Phase Multiple of 1
Counting speed setting	200 kpps	10 kpps
Counter format	Ring Counter	Linear Counter

(2) Parameter Setting

a) Open the parameter setting screen and configure the setting as follows.

Project window→[Intelligent Function Module]→Module name→[Parameter]

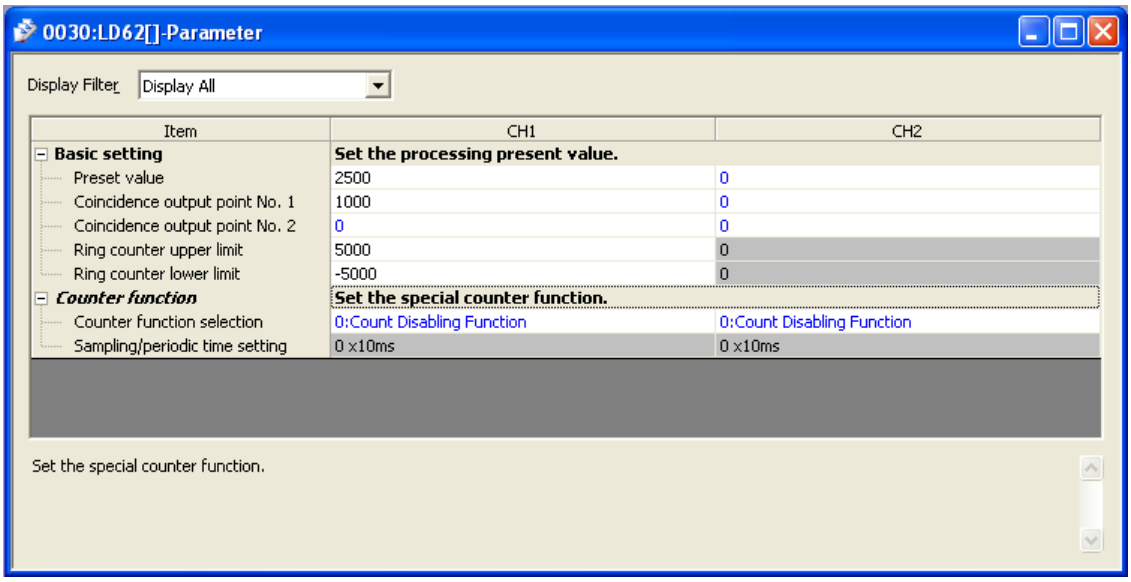


Table 5-2 Parameter setting

		CH1	CH2
Basic setting	Preset value	2500	0
	Coincidence output point No.1	1000	0
	Coincidence output point No.2	0	0
	Ring counter upper limit	5000	
	Ring counter lower limit	-5000	
Counter function	Counter function selection	Refer to the following table (Table 5-3 Counter function setting)	0: Count Disable Function
	Sampling/periodic time setting		

Table 5-3 Counter function setting

		Sampling/periodic time setting
Counter function selection	0: Count Disable Function	
	1: Latch Counter Function	
	2: Sampling Counter Function	1000×10 ms
	3: Periodic Pulse Counter Function	500×10 ms

(3) Auto Refresh Setting

a) Open the auto refresh setting screen and configure the setting as follows.

Project window→[Intelligent Function Module]→Module name→[Auto Refresh]

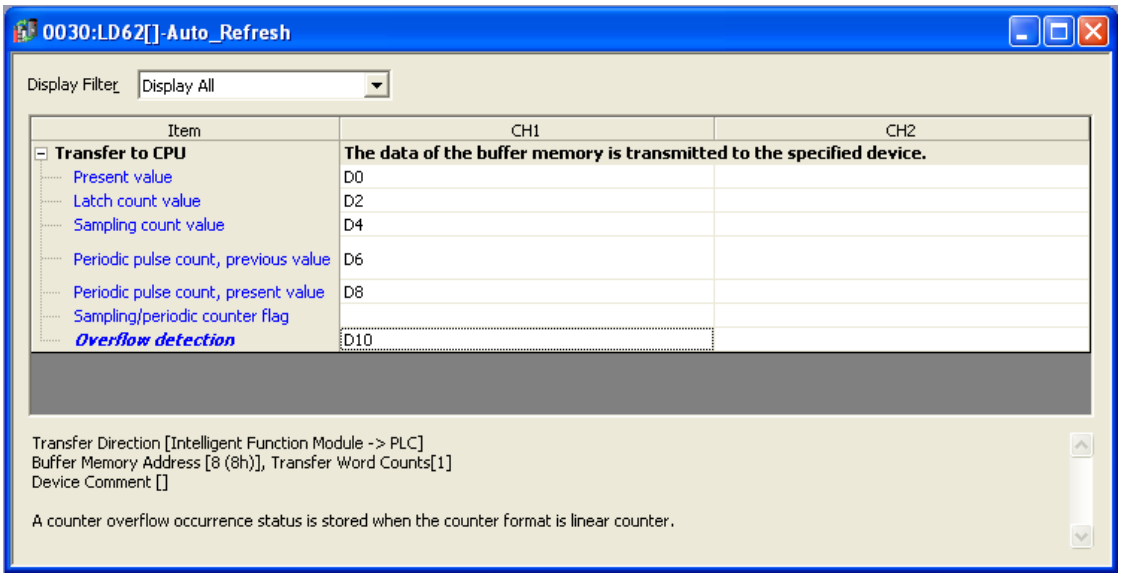


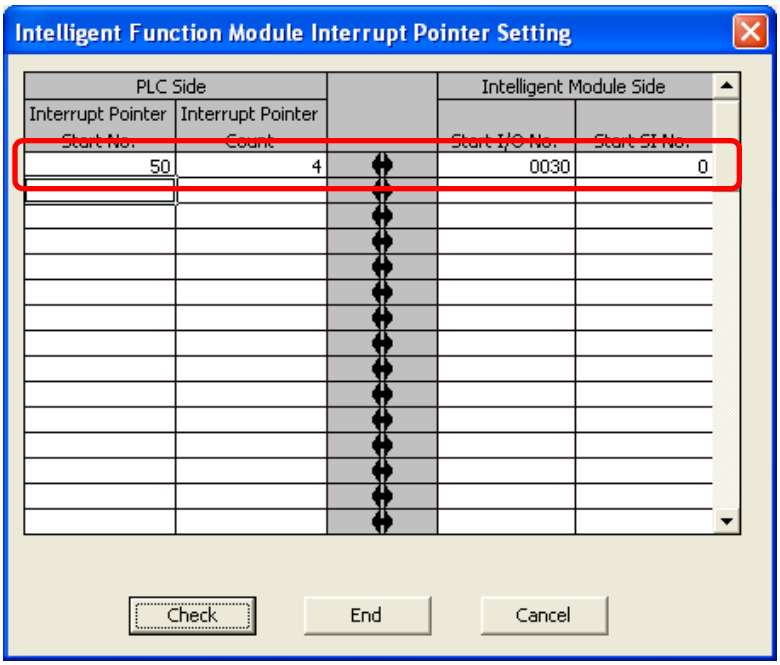
Table 5-4 Auto refresh setting

		CH1	CH2
Transfer to CPU	Present value	D0	-
	Latch count value	D2	-
	Sampling count value	D4	-
	Periodic pulse count, previous value	D6	-
	Periodic pulse count, present value	D8	-
	Sampling/periodic counter flag	-	-
	Overflow detection	D10	-

(4) Interrupt Pointer Setting

Open the interrupt pointer setting screen and configure the setting as follows.

Project window→[Parameter]→[PLC Parameter]→[PLC System]→"Intelligent Function Module Setting"→Interrupt Pointer Setting button



Devices

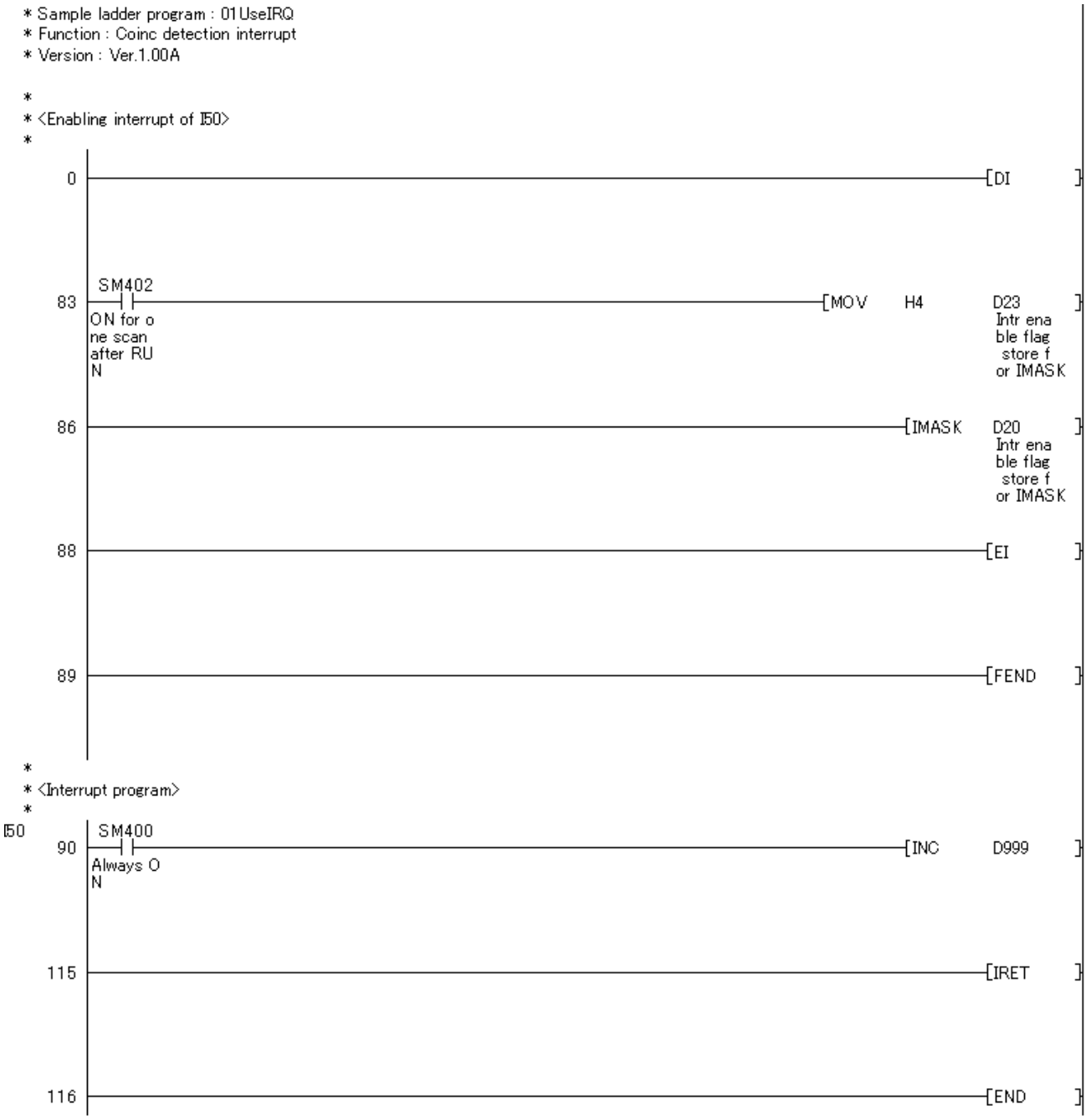
This program uses the following devices.

No.	Device	Data Type	Application	Remarks
1	SM402	Bit	Coincidence detection interrupt function execution trigger	Turns ON for one scan after RUN.
2	D20 to D35	Word	Interrupt enable flag storage for IMASK instruction	-

Version Upgrade History

Version	Date	Description
1.00A	2011/09/26	First edition

Program



*D999 is always incremented during execution of the interrupt program.