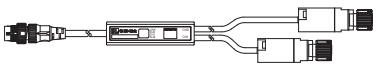
AnyWireASLINK System Product Guide

Ver.1.1

Smartclick

ASLINKER [IO-Link Master LINKER]

BL2N87SW-J2IL-2D220



Smartclick is a registered trademark of OMRON Corporation.

■ Notes on use ⇒ A separate Address Writer is required to set addresses and other data.
＊For more information, refer to [Various Settings] on page 9.
A dedicated setup tool (IO-Link Master LINKER setup tool) is required to set up the IO-Link Master LINKER and IO-Link devices.

[Table of Contents]

[Notes on Safety]

Precautions that must be observed in order to use this system safely are indicated as shown below.
You must observe these precautions.

⚠WARNING A WARNING indicates a potentially hazardous situation which, if not handled correctly, could result in death or serious injury.

⚠CAUTION A CAUTION indicates a potentially hazardous situation which, if not handled correctly, may result in personal injury or property damage.

⚠WARNING

- ○ System Safety
  This system is intended for general industrial applications. It does not have functions for supporting applications requiring higher levels of safety such as safety-related devices or accident prevention systems. The product must not be used for these purposes.
- ○ Always turn off the power in installing or replacing the system.
- ○ Prolonged continuous flow of a rated load current or higher or a transit current due to load short-circuit, etc., in the hybrid unit including the output unit and the output circuit may result in smoking or firing. An external safety device such as a fuse must be installed.

⚠CAUTION

- ○ System power supply
  Use a stable, 24V DC power supply. Use of an unstable power supply may cause problems with the system.
- ○ Separately route high-voltage and power cables
  Although the AnyWireASLINK has a high noise margin, install the transmission line and I/O cables away from high-voltage and power cables.
- ○ Connectors and terminals
  - Pay careful attention to the length and installation of cable wiring to ensure that connectors and cables are neither overloaded nor disconnected.
  - Make sure to prevent any metal objects from getting inside the connectors or the terminal blocks.
  - Short-circuits caused by metal objects or mis-wiring are likely to damage the device.
- ○ Do not impose any external loads on the device. Doing so may cause a failure.
- ○ Do not disconnect or reconnect between the transmission line and remote units when the transmission line is active. A malfunction may occur.
- ○ Use the AnyWireASLINK within the range of the specifications and conditions shown below.

[Warranty]

■ Warranty period
The warranty on the delivered Product shall continue to be effective for one (1) year after the delivery thereof to a location as designated by the original owner.

■ Scope of warranty
If a fault occurs with the product under the normal operating conditions assumed in the product specifications and according to the instructions of this manual within the above warranty period, faulty parts shall be replaced or repaired free of charge.
Note: The following cases are exempted from the scope of warranty:
(1) User's improper handling or use of the product
(2) When the fault is caused by any factor other than the delivered product
(3) When the fault is caused by modification or repair of the product by any person other than the supplier
(4) When the fault is caused by a natural disaster or other factor which is not attributable to the supplier
The term "Warranty" mentioned here means warranty of the delivered product only. We shall not be liable for incidental damage resulting from a fault of the delivered product.

■ Repair at user's cost
Investigations and repairs after elapse of the warranty period shall be conducted at user's cost.
Even in the warranty period, we shall accept order of repair of a fault or investigation of a cause of a fault beyond the above scope of warranty at user's cost.

■ Changes in the product specifications and the descriptions in the manual
The descriptions in this manual may be subject to change without notice.

[About Pictogram*1]

	Ver. 1.0*2		Compatible with Ver. 1.1*3

*1 The pictogram may not be marked (or stuck) depending on the product.
*2 AnyWireASLINK device not compatible with Ver. 1.1 (word transmission and single unit simplified replacement functions)
Some products, not marked with the Ver. 1.1 pictogram, are compatible with the functions included in Ver. 1.1. Refer to the lot No. and the product guide for ultimate confirmation.
*3 For details of Ver. 1.1, refer to the subsequent pages.

[About AnyWireASLINK Ver. 1.1]

New functions have been added to AnyWireASLINK products in May 2019 onward. Also, for the purpose of differentiation of compatible functions, indication of product lot number (lot No.) has been changed.

Compatible functions vary depending on lot No. Please understand the following description thoroughly to use each product.

Functions added to Ver. 1.1 are as follows:

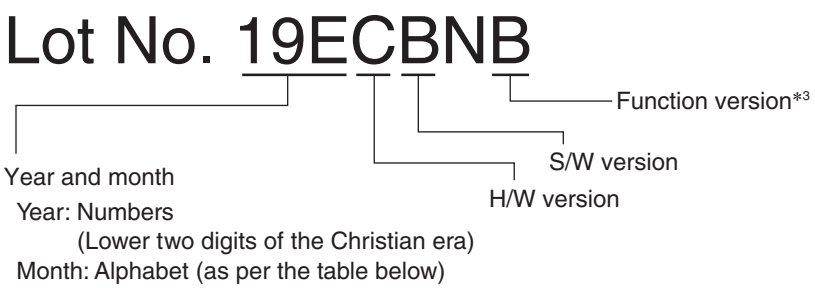
Functions available with Ver. 1.1	Word transmission*1*2
	Single unit simplified replacement*1

*1 To use these functions, a master unit compatible with each function is required.
For details, refer to this manual together with the manual for the master unit.
*2 You can use this function with the word-transmission AnyWireASLINK unit connected.
To handle word data, word address settings are required for remote units.
It depends on remote units whether word address setting is enabled or not.

[About Lot No.]

As a result of the addition of functions, indication of lot No. has been changed from 3 digits (conventional format: year and month only) to 6 digits or 7 digits.

Example:



Alphabet	A	B	C	D	E	F	G	H	I	J	K	L
Month	1	2	3	4	5	6	7	8	9	10	11	12

“19E” means May 2019.

*3 Some products have no indication of function version.

[About Word Transmission]

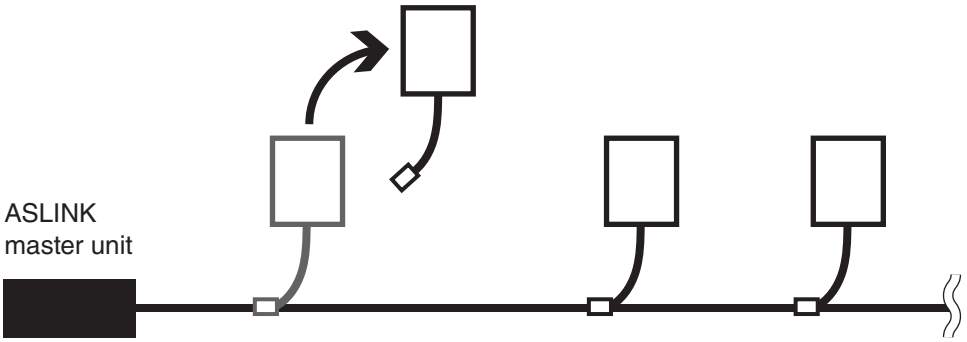
The master unit compatible with the word transmission function provides areas for transmission and receiving of word data (numerical information) such as analog data and sensing level data.
Using this function enables reduction of occupancy of bit information area by word data.
To enable word transmission, it is necessary that the system should be configured only with remote units compatible with the word transmission function.
A remote unit incompatible with the word transmission function cannot be connected to the AnyWireASLINK system to conduct word transmission.
For remote units that handle word data, word address settings are required.

[About Single Unit Simplified Replacement]

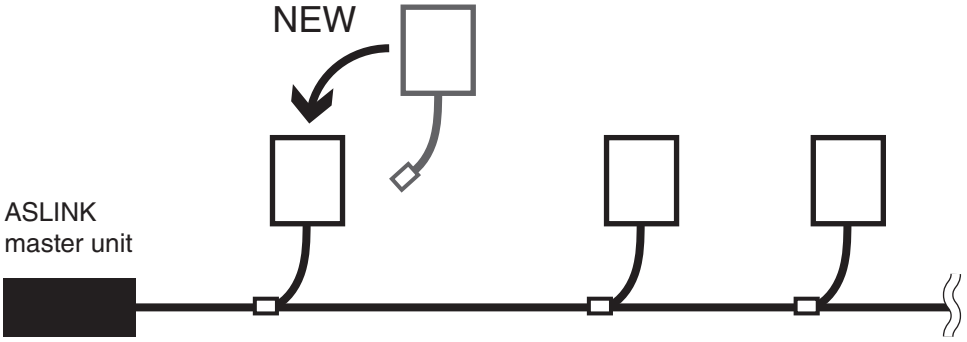
During replacement of a remote unit, this function enables automatic settings of address and parameters of the existing remote unit into a new remote unit. (After replacement of the remote unit, address and parameter setting procedure using the address writer is not required.)

■ Step 1 Turn OFF the 24V DC power supply for the master unit.

■ Step 2 Disconnect a remote unit to be replaced.



■ Step 3 Connect a new remote unit.



■ Step 4 Turn ON the 24V DC power supply to the master unit.

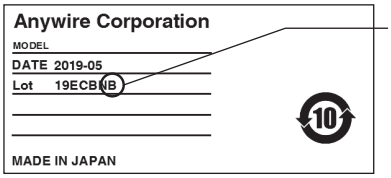
⚠CAUTION

- It is necessary that both the master unit and remote unit should be compatible with the single unit simplified replacement function.
- Before disconnection and connection of the remote unit, be sure to turn OFF the power supply.
- For compatibility of a remote unit with the single unit simplified replacement function, see the lot No. and the manual for the remote unit.
- When a remote unit of a new function version is replaced with that of an old function version, the single unit simplified replacement function cannot be used.
- Operation is enabled in the case where the model of the remote unit before replacement is the same as that after replacement.
- If the model of the remote unit before replacement is different from that after replacement, a model mismatching error occurs, disabling address and parameter settings.
- Operation is enabled in the case where the address of the remote unit for replacement is the factory-set address (bit address 511).
- Several remote units cannot be simultaneously replaced. For replacement of several remote units, conduct the replacement procedure for each unit one by one.
- For a remote unit incompatible with the single unit simplified replacement function, set an address and parameters by using the address writer as in the conventional manner.
- For details of the single unit simplified replacement function (limitations, conditions, etc.), refer to the manual for the master unit.

■ Identification of function version

Function version information is given on the lot label.

∗ The design and contents of the lot label may vary depending on the product model and lot No.



Function version:
When an equipment parameter is changed due to functional upgrading, etc., the function version will be updated (for example: A→B→C).
When a remote unit of a new function version is replaced with that of an old function version, the single unit simplified replacement function cannot be used.

[Functions]

■ Function list

Model	Specifications	Connection targets	Functions						Address	
			Bit transmission	Word transmission *1*2	Single unit simplified replacement *1*2*3	Remote address change *1*2	Detection of sensor cable disconnection	1024 points *4	Bit address setting	Word address setting
IO-Link Master LINKER 4-wire (isolated) M12 connector type Conforming to IP67	IO-Link mode Digital input mode (PNP) PIN2 input (PNP)	IO-Link sensor General-purpose sensors, switches	○	○	○	○	○	○	○	○

*1 This unit can be used in connection to the AnyWireASLINK system for word transmission. To handle word data, set the word address on this unit.
*2 To use these functions, a master unit compatible with each function is required. For details, refer to the manual for the master unit together with this manual.
*3 Note that the data written in simplified replacement are addresses only. Equipment parameters will not be reflected.
*4 It is possible to use this unit by connecting it to the AnyWireASLINK system of 1024-point mode. For further information on the 1024-point mode, refer to the manual for the master unit.

■ Detecting functions (Status details)

Functions						
Remote unit voltage drop	Sensing level drop	I/O disconnection	I/O short-circuit	I/O power supply drop	Unit error	IO-Link error
○	×	○	×	○	○	○

[Function Compatibility by Lot No.]

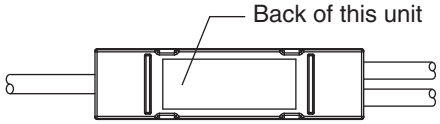
This unit has undergone addition of functions and change of specifications according to version upgrading.
Available functions and specifications of the unit vary depending on lot No.

Function	Lot No.
Word transmission*5*6	Available with S/W version “A” or later version
Single unit simplified replacement*5*6*7	
Remote address change	

*5 This unit can be used in connection to the AnyWireASLINK system for word transmission. To handle word data, set the word address on this unit.
*6 To use these functions, a master unit compatible with each function is required. For details, refer to the manual for the master unit together with this manual.
*7 Note that the data written in simplified replacement are addresses only. Equipment parameters will not be reflected.

■ How to check

Lot No. is indicated on the lot label.



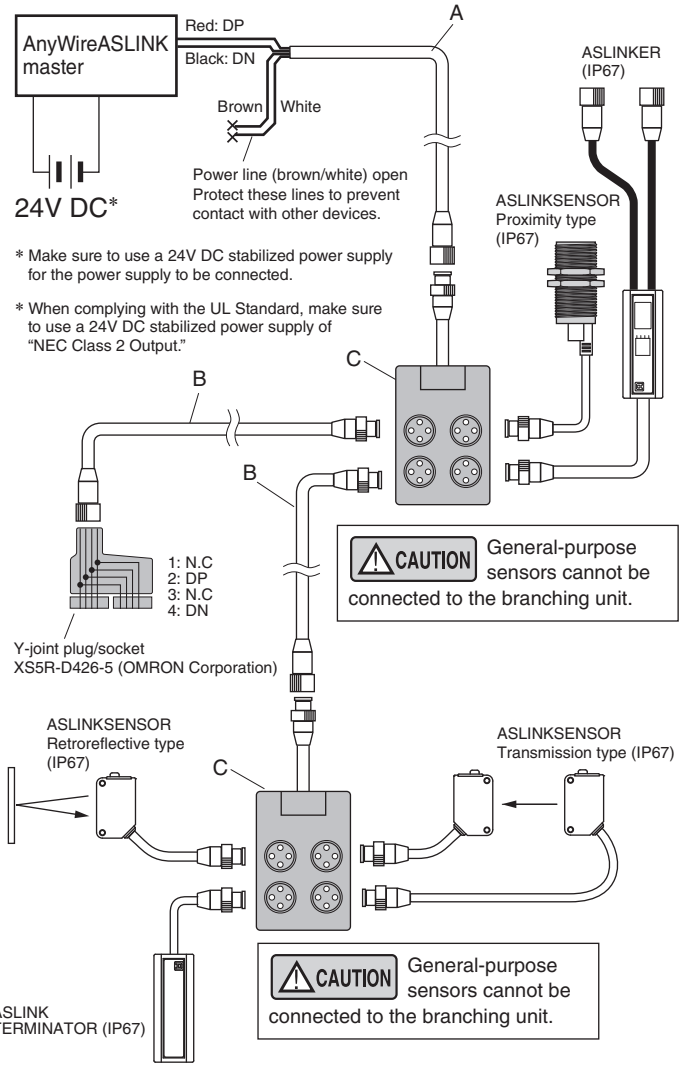
Example:

[How to Connect AnyWireASLINK]

The AnyWireASLINK can employ a two-wire or four-wire terminal selectively depending on the load current.
If the load current is small, using a two-wire (non-isolated) terminal allows for achieving simplified wiring without local power supply.
In the case of prioritizing the sites of concentrated loads and/or the number of connections, hybridization with a four-wire (isolated) terminal, which supports local power supply, is also possible.
Make sure to use a four-wire (isolated) terminal in the case of input and load driving using an external power supply.

[System Configuration Example]

■Connection with 2-wire (non-insulated) terminals only



* Make sure to use a 24V DC stabilized power supply for the power supply to be connected.

* When complying with the UL Standard, make sure to use a 24V DC stabilized power supply of "NEC Class 2 Output."

A Waterproof trunk cable (1.25mm²)

Model	Description
BL2-0C1S-3K	Loose wires on one end, straight M12, 3m

B Waterproof trunk cable (1.25mm²)

Model	Description
BL2-1S1P-3K	Straight M12 on both ends, 3.0m
BL2-1S1P-5K	Straight M12 on both ends, 5.0m
BL2-1S1P-10K	Straight M12 on both ends, 10m

C Waterproof branching unit

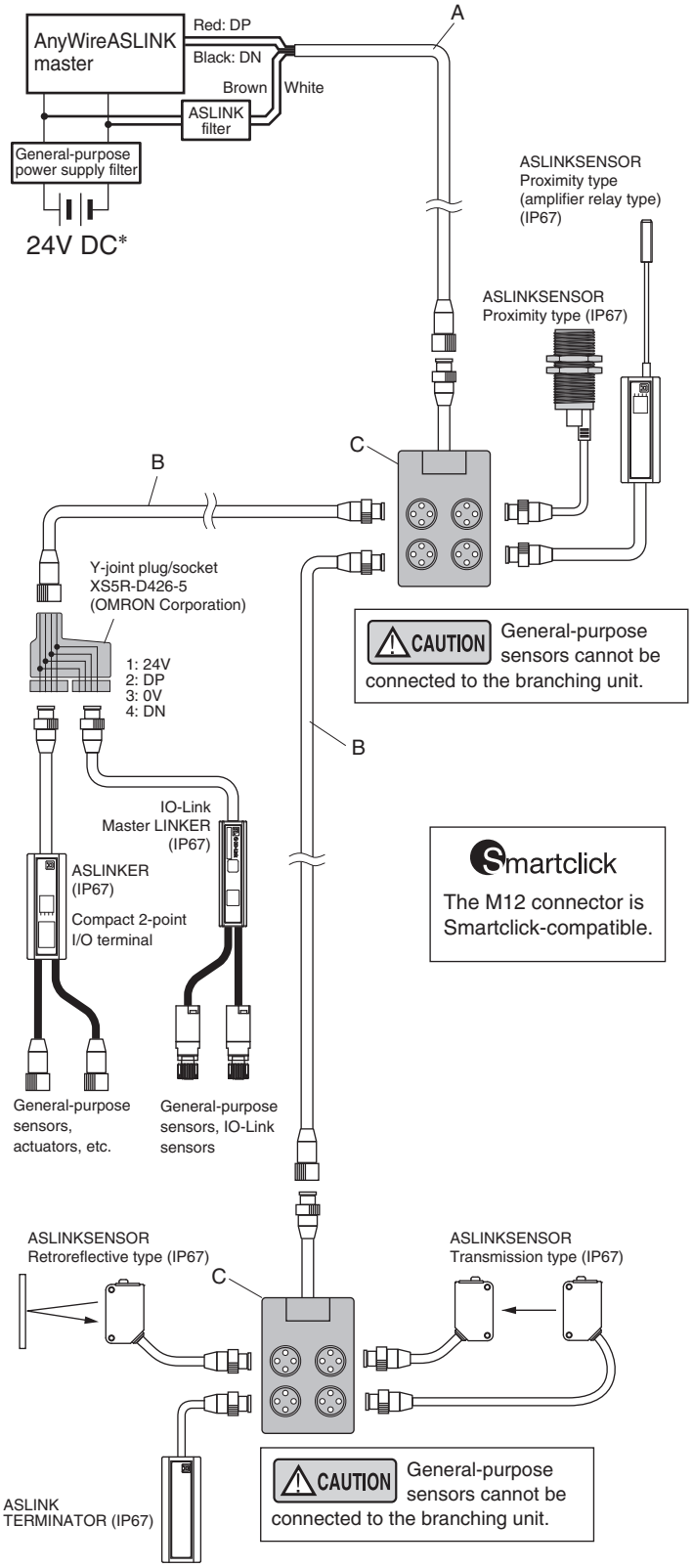
Model	Description
BL2109-04-22	4 ports
BL2109-08-22	8 ports

■Relationship between the size and length of the transmission line and the supply current (Table 1)

Size of the transmission line (DP, DN)	Supply current on the transmission line (DP, DN)		
	Total length: 50m or less	Total length: Over 50m, no longer than 100m	Total length: Over 100m, no longer than 200m
1.25mm²	MAX 2A	MAX 1A	MAX 0.5A
0.75mm²	MAX 1.2A	MAX 0.6A	MAX 0.3A
0.5mm²	MAX 0.8A	MAX 0.4A	MAX 0.2A

CAUTION
- Refer to Table 1 so that the size and length of the transmission line and the allowable supply current lie within an appropriate range.
- Connect the same symbols (DP, DN) correctly between the AnyWireASLINK master unit and each device.
- The branching length or branch number has no limitation.
- Include the length of the cable provided with the terminal in the "total line length."
- Connect the terminator (with polarity) on the transmission line terminal farthest from the AnyWireASLINK master unit.

■Example of mixed installation with 2-wire (non-isolated) and 4-wire (isolated) terminals



A Waterproof trunk cable (1.25mm²)

Model	Description
BL2-0C1S-3K	Loose wires on one end, straight M12, 3m

B Waterproof trunk cable (1.25mm²)

Model	Description
BL2-1S1P-3K	Straight M12 on both ends, 3.0m
BL2-1S1P-5K	Straight M12 on both ends, 5.0m
BL2-1S1P-10K	Straight M12 on both ends, 10m

C Waterproof branching unit

Model	Description
BL2109-04-22	4 ports
BL2109-08-22	8 ports

CAUTION To connect loads (e.g. I/O ports) that are controlled with a power supply other than the one used for the AnyWireASLINK system, always use a 4-wire (isolated) terminal.
Otherwise, malfunction may be caused.

[Notes on Use of Four-Wire (Isolated) Terminal]

If the total length of the sections where all the DP, DN, 24V, and 0V lines run in parallel in the power supply system is more than 50m, connect an ASLINK filter (Type ANF-01) or a filter manufactured by COSEL Co., Ltd. (Type EAC-06-472) in series to the 24V and 0V lines at a position where these four lines start running in parallel.
This will improve noise resistance, suppress the adverse effects of crosstalk caused by transmitted signals, and stabilize signals.
The above filters must be inserted regardless of whether power is supplied to all terminals collectively from the power supply for the master or power is supplied to each terminal individually from their local power supply.

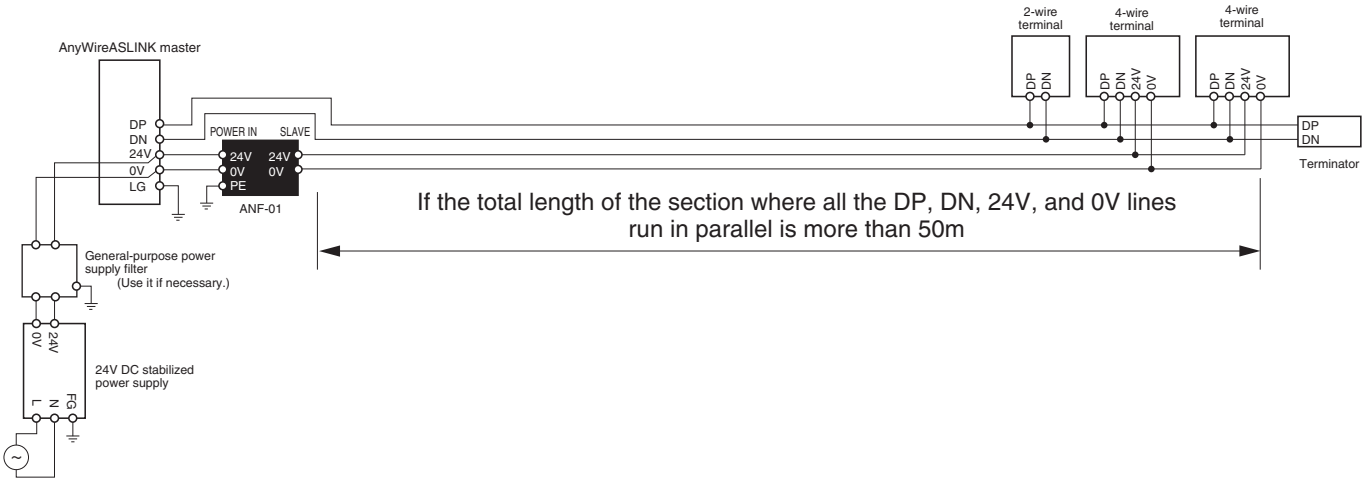
Insert the “ASLINK filter [Type ANF-01]” regardless of installation method and distance when complying with CE Standard.

■ Filter allowable current

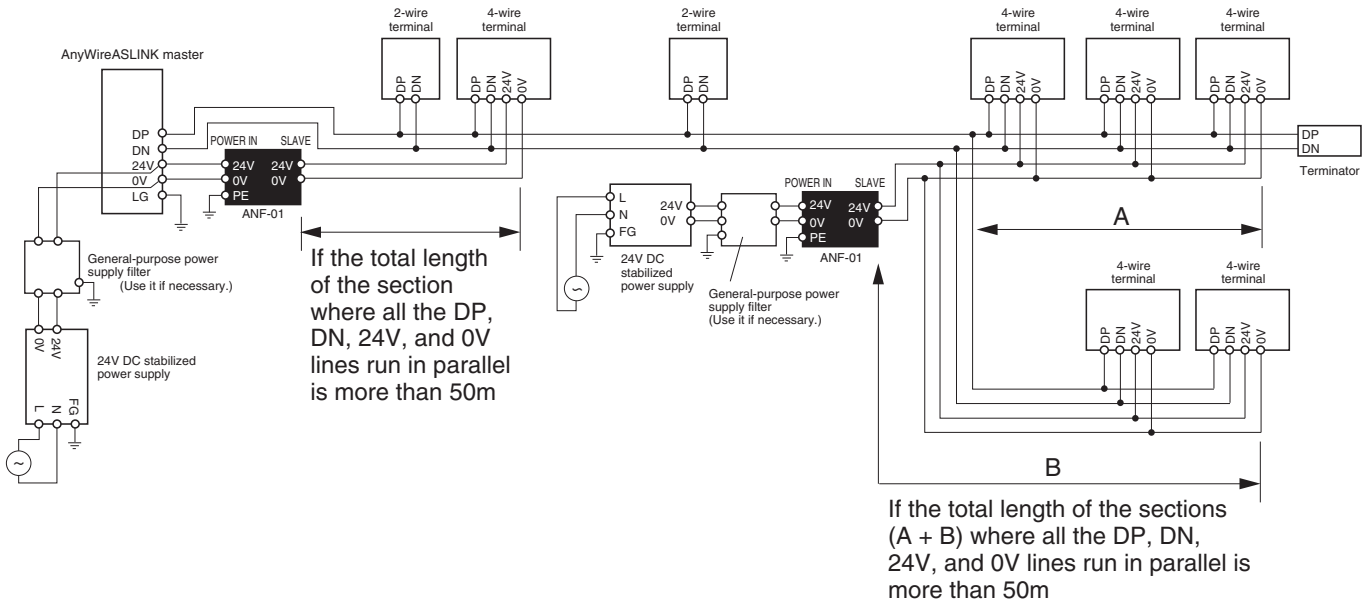
Product	Type	Allowable power current
ASLINK filter	ANF-01	MAX 5A/24V DC
Filter of COSEL Co., Ltd.	EAC-06-472	MAX 6A/24V DC

■ AnyWire Type: ANF-01 Connection example

① Power supply to the entire system

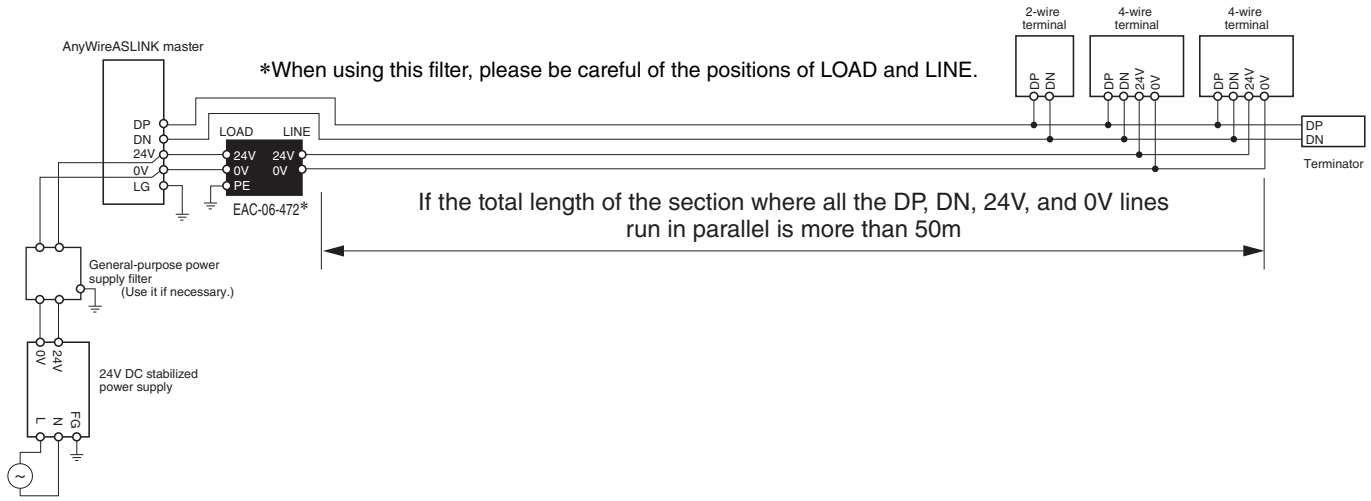


② Local power supply/branching

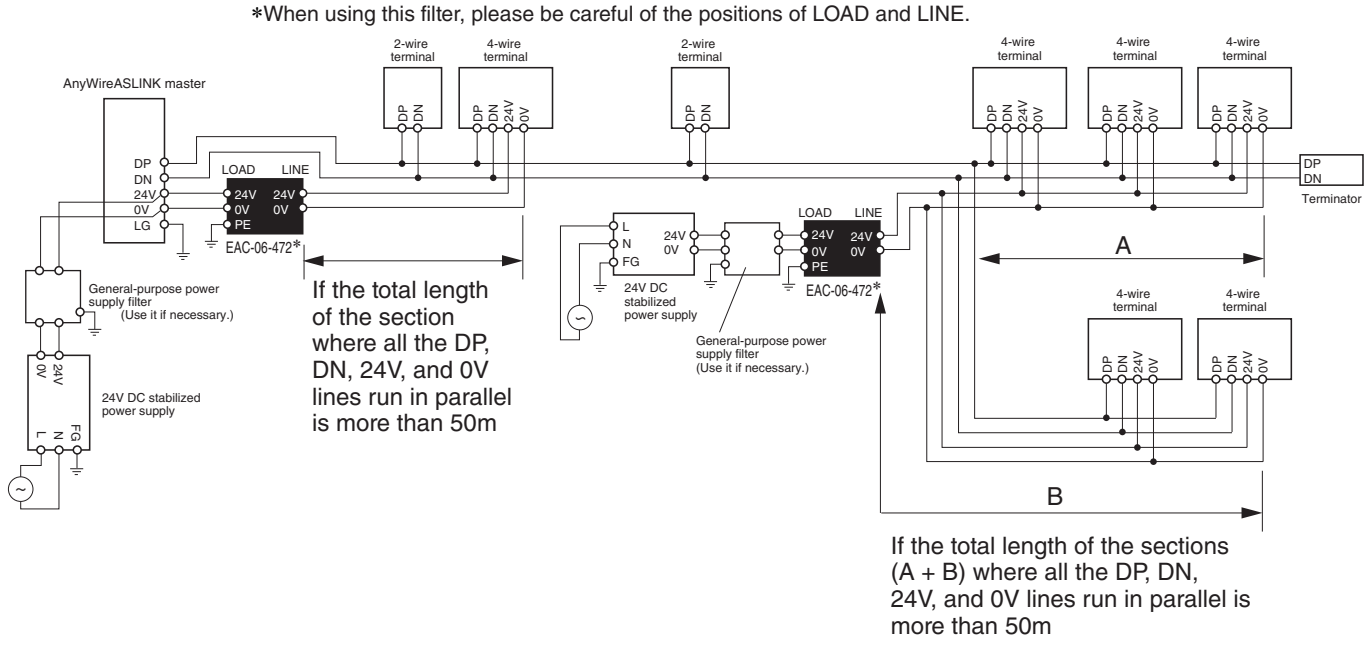


■COSEL Co., Ltd. Type: EAC-06-472 Connection example

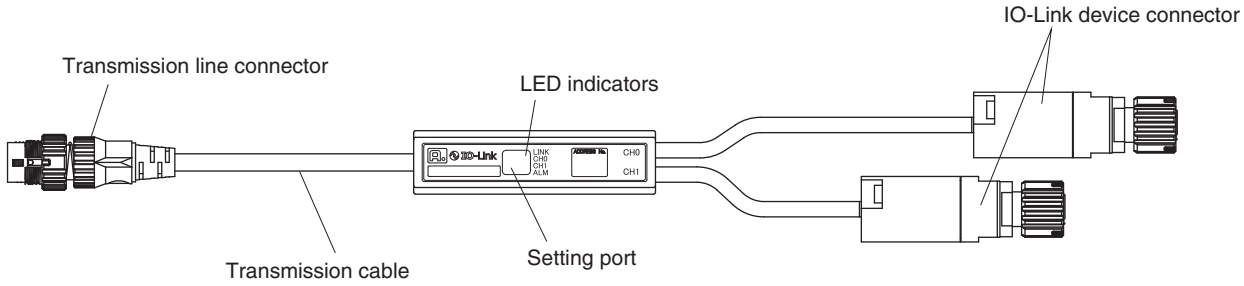
①Power supply to the entire system



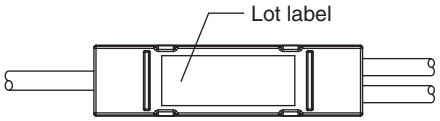
②Local power supply/branching



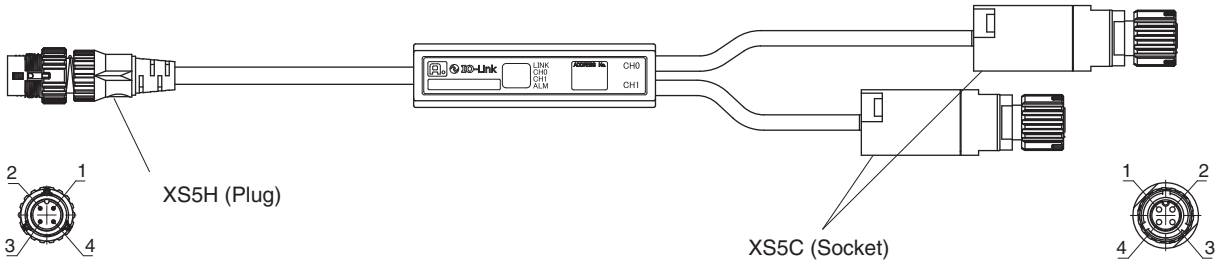
[Name of Each Part]



＜Back of this unit＞



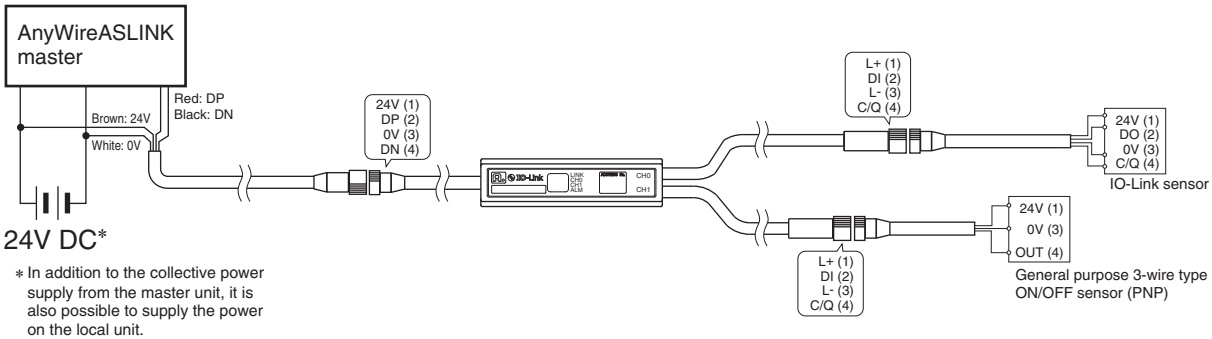
[Pin Assignment]



1	24V
2	DP
3	0V
4	DN

1	L+ (Sensor power +)
2	DI (PIN2 digital signal)
3	L- (Sensor power -)
4	C/Q (IO-Link and SIO signals)

[Example of Connections]



* In addition to the collective power supply from the master unit, it is also possible to supply the power on the local unit.

CAUTION Limit the distance between this unit and the sensor connected to it to 20m including the cable attached to the unit.

[Various Settings]

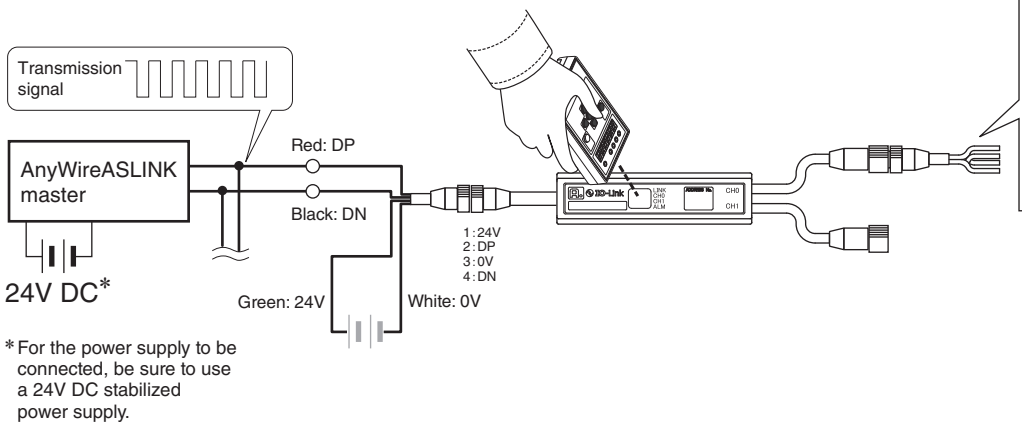
Address setting | Parameter setting

* Note that this unit does not support writing and reading parameters using an address writer.

■Common procedure for address writer operation

Be sure to connect to the AnyWireASLINK master unit to use.
ARW-04 (address writer) of Rev. (Ver.) 2.01 or later version is required for word address setting.
ARW-04 of Rev. (Ver.) 1.01 or later version may be used for bit address setting.
For the details of the operating method, refer to the product guide of ARW-04.

Connect this unit to the AnyWireASLINK master unit.
Set an address with the address writer with the transmission signals (DP/DN) and power supply (24V/0V) being connected.



* For the power supply to be connected, be sure to use a 24V DC stabilized power supply.

⚠CAUTION

BL2N87SW-J2IL-2D220 ┌ 1: 24V
└ 3: 0V

While power is supplied, make sure that the above lines are not short-circuited.
Short-circuiting the lines may cause a fault of the unit.

Address setting

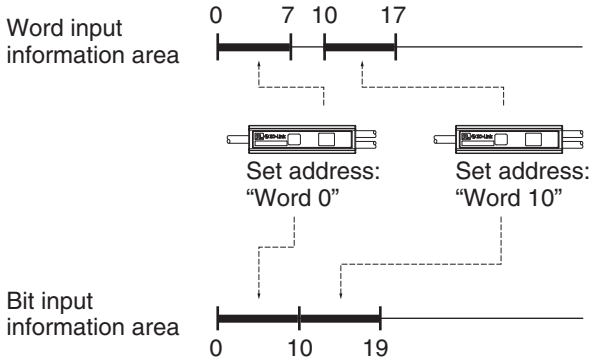
An address number is set as a beginning number from which part of the transmission frame is occupied to the terminal.
This unit supports the bit address and word address settings.
Pay attention to the occupied area because its size depends on the address being set.

- Set the address number so that the area occupied by the terminal does not exceed the transmission points of the master unit.
- Make sure that the address number setting is not duplicated.
- Also, use the address writer to read an address number that has been written in the terminal.

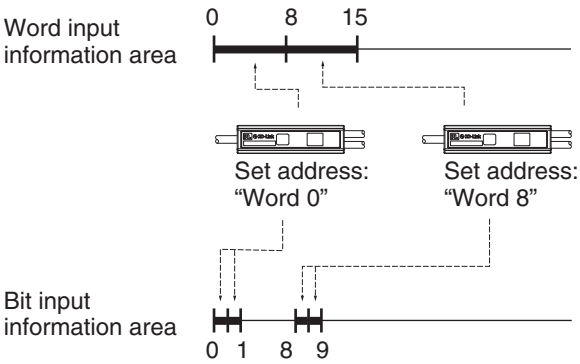
In the case where the unit is used with word address setting

The process data (PD) will be sent by occupying eight words of word input information area (four words per channel) starting with the preset address number. * Four words from the head of PD sent by the connected IO-Link sensor (fixed)
At the same time, it is also possible to send arbitrary bits (four points max.) in the process data and one of PIN2 digital signals, i.e. the maximum of five ON/OFF signals, to the bit input information area. * A total of ten points max. for two channels
By setting up the word address, an occupied space will be defined in the word input information area and, at the same time, an occupied space in the bit input information area will be defined automatically.
It is not allowed to set up the word address and bit address independently.
The relationship between the occupied space in the word input information area defined by the word address being set and the occupied space in the bit input information area is shown in the illustration below.

■ An example of using eight words of word input information area (fixed) and ten points of bit input information area (five points in each channel)



■ An example of using eight words of word input information area (fixed) and two points of bit input information area (one point in each channel)



⚠CAUTION

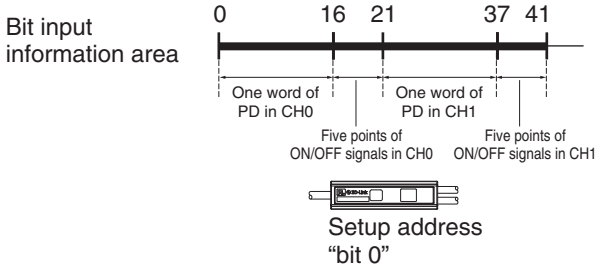
Each channel can handle four words of PD.
It is not possible to handle the PD from 5th word onward even if an IO-Link sensor with PD exceeding five words is connected.
Complete the setting so that the bit input information that is occupied at the same time as the word input information area is set would not overlap with areas occupied by other remote units.
The factory-set address is “bit address 511,” which indicates that an address has not been set.
Input and output operations are disabled with the factory-set address.

In the case where the unit is used with bit address setting

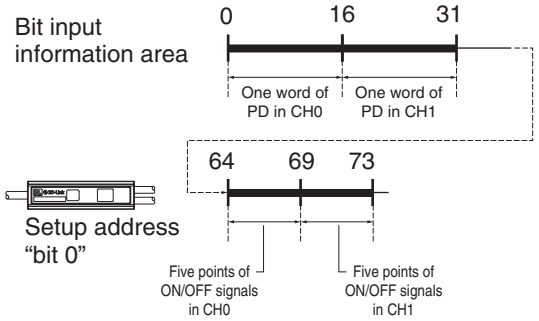
The PD is sent by occupying 32 points in the bit input information area (16 points per CH) starting at the address number set.
∗ One word selected by the setup tool∗1 from the four words from the head of PD sent by the IO-Link sensor connected
At the same time, it is also possible to send arbitrary bits (four points max.) in the PD and the maximum of five ON/OFF signals among the PIN2 digital signals to the bit input information area. ∗ A total of ten points max. for two channels
These ON/OFF signals (five points max.) can be sent to a position adjacent to the PD or the latter half of transmission area by selecting with the setup tool∗1. (Equipment parameter 2)

∗1 For details, refer to the manual of the setup tool.

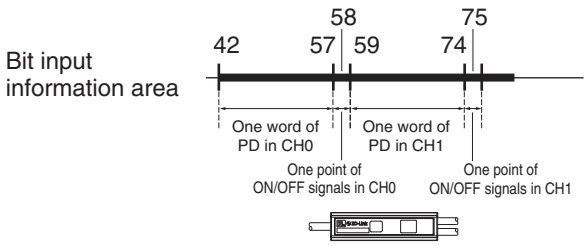
■ For sending ON/OFF signals to the position adjacent to the PD with the setting of using ten points of ON/OFF signals (five points in each CH)



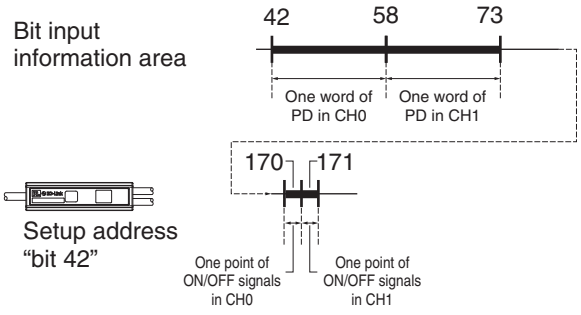
■ For sending ON/OFF signals to the latter half of transmission area with the setting of using ten points of ON/OFF signals (five points in each CH)
∗ An example with the setting of 256-point transmission (128 inputs/128 outputs)



■ For sending ON/OFF signals to the position adjacent to the PD with the setting of using two points of ON/OFF signals (one point in each CH)



■ For sending ON/OFF signals to the latter half of transmission area with the setting of using two points of ON/OFF signals (one point in each CH)
∗ An example with the setting of 512-point transmission (256 inputs/256 outputs)



⚠CAUTION

Each channel can handle one word of PD.
∗ The single word selected using the setup tool among the four words from the head of PD sent by the IO-Link sensor.
It is not possible to handle the PD from 5th word onward even if an IO-Link sensor with PD exceeding five words is connected.
The factory-set address is “bit address 511,” which indicates that an address has not been set.
Input and output operations are disabled with the factory-set address.

CAUTION This unit does not support reading and writing equipment parameters using an address writer. While it is possible to read and write data by programming, it is recommended to use the "IO-Link Master LINKER setup tool*."
* For details, refer to the manual of the "IO-Link Master LINKER setup tool."

◆Equipment parameter 1

◇Operation mode CH0 Bit 0 to 2
◇Operation mode CH1 Bit 3 to 5
◇Filtering time setting with digital input CH0 Bit 6 to 9
◇Filtering time setting with digital input CH1 Bit 10 to 13
◇Sensing level indication CH setting Bit 14

CAUTION Note that the equipment parameter 1 includes multiple elements. It is not possible to read and write each element independently. Especially in the writing operation, it is necessary to write the equipment parameter 1 by considering all elements included in the parameter in addition to the element of target.

Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Equipment parameter 1	Spare	CH setting	Filtering time setting with digital input CH1				Filtering time setting with digital input CH0				Operation mode CH1			Operation mode CH0		

Sensing level indication CH setting

Factory setting: 0

◇Operation mode (CH0: Bit 0 to 2, CH1: Bit 3 to 5)
Set up the operation mode in each CH.

Bit operation value		Mode	Description
CH0	CH1		
0	0	COM	IO-Link mode enabled
1	8	SIO(DI)	Digital input mode enabled
2	16	–	Setup not allowed
3	24	PIN2	Dedicated digital input port enabled
4	32	COM&PIN2	IO-Link mode and dedicated digital input port enabled
5	40	Disabled	Used if no device is connected.

▽Relationship between the bit operation value and ON/OFF of bits (CH0)

Bit operation value	Bit		
	2	1	0
0	0	0	0
1	0	0	1
2	0	1	0
3	0	1	1
4	1	0	0
5	1	0	1

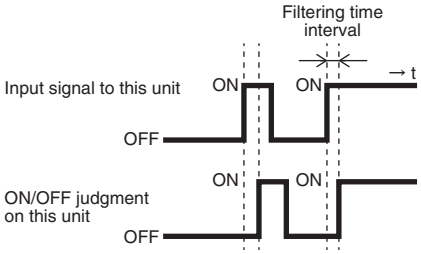
▽Relationship between the bit operation value and ON/OFF of bits (CH1)

Bit operation value	Bit		
	5	4	3
0	0	0	0
8	0	0	1
16	0	1	0
24	0	1	1
32	1	0	0
40	1	0	1

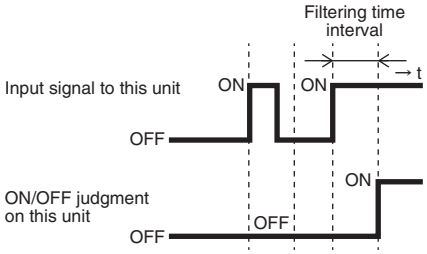
◇Filtering time setting with digital input (CH0: Bit 6 to 9, CH1: Bit 10 to 13)
It is possible to set up the filtering time for the digital input signals in the SIO (DI) mode and PIN2 mode.

Bit operation value		Description
CH0	CH1	
0	0	None
64	1024	1.0ms
128	2048	1.5ms
192	3072	5ms
256	4096	10ms
320	5120	20ms
384	6144	70ms

With a shorter filtering time setting



With a longer filtering time setting



Changes shorter than the time setting will be disregarded.

▽Relationship between the bit operation value and ON/OFF of bits (CH0)

Bit operation value	Bit			
	9	8	7	6
0	0	0	0	0
64	0	0	0	1
128	0	0	1	0
192	0	0	1	1
256	0	1	0	0
320	0	1	0	1
384	0	1	1	0

▽Relationship between the bit operation value and ON/OFF of bits (CH1)

Bit operation value	Bit			
	13	12	11	10
0	0	0	0	0
1024	0	0	0	1
2048	0	0	1	0
3072	0	0	1	1
4096	0	1	0	0
5120	0	1	0	1
6144	0	1	1	0

◇Sensing level indication setting (Bit 14)
Select the CH to be output as the sensing level of this unit.

Bit operation value	Description
0	Output CH0 as the sensing level.
16384	Output CH1 as the sensing level.

▽Relationship between the bit operation value and ON/OFF of bits

Bit operation value	Bit
	14
0	0
16384	1

<Example of reading>

If the reading of equipment parameter 1 is “3080,” what are the elements being set up.

Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Setting format	Spare	CH setting	Filtering time setting with digital input CH1				Filtering time setting with digital input CH0				Operation mode CH1			Operation mode CH0		
Reading of “3080”	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0

Sensing level indication CH setting: CH0

Filtering time setting with digital input CH1: 5ms

Filtering time setting with digital input CH0: None

Operation mode CH1: SIO(DI) mode

Operation mode CH0: COM mode

> **CAUTION** It is not possible to read and write each element included in the equipment parameter independently.
> Especially in the writing operation, note that it is necessary to consider all elements included in the equipment parameter.

For example:
To switch the CH0 operation mode setting to the COM&PIN2 mode from the condition of above <example of reading>
While the bit operation value for setting the CH0 operation mode to COM&PIN2 mode is “4,” the setting will be as follows if the value “4” is written.

Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Setting format	Spare	CH setting	Filtering time setting with digital input CH1				Filtering time setting with digital input CH0				Operation mode CH1			Operation mode CH0		
Value written “4”	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0

Sensing level indication CH setting: CH0

Filtering time setting with digital input CH1: None

Filtering time setting with digital input CH0: None

Operation mode CH1: COM mode

Operation mode CH0: COM&PIN2 mode

While the CH0 operation mode is switched to the COM&PIN2 mode, it is shown that other elements will change at the same time.
Set up a value to be written by considering all setting elements included in the relevant equipment parameter.

> **CAUTION** To reflect the value to be written after changing the equipment parameter, it is necessary to turn ON the “parameter change request flag” at bit 13 of equipment parameter 18.

◆Equipment parameter 2

◇Transfer data size Bit 0 to 7
◇Channel used Bit 8 to 9
◇Input data enable flag CH0 Bit 10
◇Input data enable flag CH1 Bit 11
◇Parameter change status Bit 12
◇Single command status Bit 13
◇Overall status of split command Bit 14
◇PD (bit input information area) transmission method Bit 15

> **CAUTION** Note that the equipment parameter 2 includes multiple elements. It is not possible to read and write each element independently. Especially in the writing operation, it is necessary to write the equipment parameter 2 by considering all elements included in the parameter in addition to the element of target.

Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Equipment parameter 2	Transmission method	Split condition	Single condition	Parameter condition	CH1 flag	CH0 flag	Channel used		Total transfer data size (Unit: Byte)							

Input data enable flag CH0
Input data enable flag CH1
Parameter change status
Single command status
Overall status of split command
PD (bit input information area) transmission method

Factory setting: 0

◇Total transfer data size (Bit 0 to 7)
Specifies the size of data handled when the following operations are executed using the transfer data area (equipment parameters 5 to 15).
- On request data (OD) acquisition
- On request data (OD) setting

Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Equipment parameter 2	Transmission method	Split condition	Single condition	Parameter condition	CH1 flag	CH0 flag	Channel used		Total transfer data size (Unit: Byte)							

Setting range: 0 to 232

◇Channel used (Bit 8 to 9)
Sets up the channel(s) to be used.

Bit operation value	Description
0	Both CH0 and CH1 are used.
256	Only CH0 is used.
512	Only CH1 is used.

◇Input data enable flag CH0 (Bit 10)
Indicates the communication status between this unit and the IO-Link device when the CH0 operation mode is COM or COM&PIN2 mode.

Bit operation value	Description
0	The IO-Link communication is not established.
1024	The IO-Link communication is established.

◇Input data enable flag CH1 (Bit 11)
Indicates the communication status between this unit and the IO-Link device when the CH1 operation mode is COM or COM&PIN2 mode.

Bit operation value	Description
0	The IO-Link communication is not established.
2048	The IO-Link communication is established.

◇Parameter change status (Bit 12)
Indicates the condition of processing the parameter change performed by using the parameter change request flag.

Bit operation value	Description
0	Idle/Processing complete
4096	Processing in progress

◇Single command status (Bit 13)
Indicates the status of command using the command execution request flag.
For a split command, the status changes from “processing in progress” to “processing completed” each time.

Bit operation value	Description
0	Idle/Processing complete
8192	Processing in progress

◇Overall status of split command (Bit 14)
Indicates the status from the start of first split command to the completion of final split command.
The status of one split command can be checked on the single command status (bit 13).

Bit operation value	Description
0	Idle/Processing complete
16384	Processing in progress

◇PD (bit input information area) transmission method (Bit 15)
Can select the destination of ON/OFF bit output, which can be selected arbitrarily from the PD (bit input information area).

Bit operation value	Description
0	Continuous position
32768	Isolated position

◆Equipment parameter 3

◇Data number 1 Bit 0 to 15

Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Equipment parameter 3	Data number 1															

Factory setting: 0

◇Data number 1 (Bit 0 to 15)
Specifies the index number for executing the command OD acquisition/OD setting.

Range: 0000 to FFFF

◆Equipment parameter 4

◇Data number 2 Bit 0 to 7
◇Device verification setting CH0 Bit 8 to 10
◇Device verification setting CH1 Bit 11 to 13
◇Device verification result CH0 Bit 14
◇Device verification result CH1 Bit 15

CAUTION Note that the equipment parameter 4 includes multiple elements. It is not possible to read and write each element independently. Especially in the writing operation, it is necessary to write the equipment parameter 4 by considering all elements included in the parameter in addition to the element of target.

Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Equipment parameter 4	Result CH1	Result CH0	Device verification setting CH1			Device verification setting CH0			Data number 2							

Factory setting: 0

◇Data number 2 (Bit 0 to 7)
Specifies the sub index number for executing the command OD acquisition/OD setting.

Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Equipment parameter 4	Result CH1	Result CH0	Device verification setting CH1			Device verification setting CH0			Data number 2							

Setting range: 0 to FF

◇Device verification setting (CH0: Bit 8 to 10, CH1: 11 to 13)
Sets up the verification operation with IO-Link devices connected in using the COM and COM&PIN2 modes.

Bit operation value		Description	Verification target
CH0	CH1		
0	0	Not verified	–
256	2048	Compatibility verification	Vendor ID, Device ID
512	4096	Identity verification	Vendor ID, Device ID, Serial Number

▽Relationship between the bit operation value and ON/OFF of bits (CH0)

Bit operation value	Bit		
	10	9	8
0	0	0	0
256	0	0	1
512	0	1	0

▽Relationship between the bit operation value and ON/OFF of bits (CH1)

Bit operation value	Bit		
	13	12	11
0	0	0	0
2048	0	0	1
4096	0	1	0

◇Device verification result (CH0: Bit 14, CH1: 15)
Indicates the device verification result.

Bit operation value		Description
CH0	CH1	
0	0	OK
8192	16384	NG

▽Relationship between the bit operation value and ON/OFF of bits (CH0)

Bit operation value	Bit
	14
0	0
8192	1

▽Relationship between the bit operation value and ON/OFF of bits (CH1)

Bit operation value	Bit
	15
0	0
16384	1

◆Equipment parameters 5 to 15

◇Transfer data area

This is the format for requesting for or responding to a command.
The data depend on the command to be used.
＊For further information, refer to the section “Storing Values in the Equipment Parameters in Setting Up Commands” on pages 28 to 49.

Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Equipment parameter 5	Transfer data area															
Equipment parameter 6	Transfer data area															
Equipment parameter 7	Transfer data area															
Equipment parameter 8	Transfer data area															
Equipment parameter 9	Transfer data area															
Equipment parameter 10	Transfer data area															
Equipment parameter 11	Transfer data area															
Equipment parameter 12	Transfer data area															
Equipment parameter 13	Transfer data area															
Equipment parameter 14	Transfer data area															
Equipment parameter 15	Transfer data area															

Factory setting: 0

◆Equipment parameter 16

◇The most recent error code

The most recent error code issued is stored here. It will not be cleared even if the problem is resolved.
＊For the Error Code List, refer to page 50.

Level	Own unit error	Communication error	Error code range
Serious	●	—	0001H to 0FFFH
Intermediate	●	—	1000H to 1FFFH
Minor	●	●	2000H to 2FFFH

Factory setting: 0

◆Equipment parameter 17

◇Command Bit 0 to 7
◇Head of split command data Bit 8
◇Split data size Bit 9 to 13
◇MSByte & LSByte switch (endian setting) CH0 Bit 14
◇MSByte & LSByte switch (endian setting) CH1 Bit 15

> **CAUTION** Note that the equipment parameter 17 includes multiple elements. It is not possible to read and write each element independently. Especially in the writing operation, it is necessary to write the equipment parameter 17 by considering all elements included in the parameter in addition to the element of target.

Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Equipment parameter 17	Switch CH1	Switch CH0	Split data size					Command	Command							

MSByte & LSByte switch (endian setting) CH1
MSByte & LSByte switch (endian setting) CH0
Head of split command data

Factory setting: 0

◇Command (Bit 0 to 7)
Specifies the command to be executed in executing a command.

Command for CH0	Command for CH1	Description	Write/Read
0x00	0x00	No command	–
0x01	0x31	OD acquisition	Read
0x02	0x32	OD setting	Write
0x03	0x33	Event acquisition	Read
0x07	0x37	CH LED setting	Write
0x09	0x39	PD ON/OFF position 1 setting	Write
0x0A	0x3A	PD ON/OFF position 2 setting	Write
0x0B	0x3B	PD ON/OFF position 3 setting	Write
0x0C	0x3C	PD ON/OFF position 4 setting	Write
0x0E	0x3E	PD raw data start/end position setting (word data)	Write
0x0F	0x3F	PD raw data start/end position setting (bit data)	Write
0x10	0x40	Upload request	Write
0x11	0x41	CH LED setting	Read
0x13	0x43	PD ON/OFF position 1 setting	Read
0x14	0x44	PD ON/OFF position 2 setting	Read
0x15	0x45	PD ON/OFF position 3 setting	Read
0x16	0x46	PD ON/OFF position 4 setting	Read
0x18	0x48	PD raw data start/end position setting (word data)	Read
0x19	0x49	PD raw data start/end position setting (bit data)	Read

◇Head of split command data (Bit 8)
If the transfer data size exceeds 20 bytes in performing the OD acquisition or OD setting, the data can be handled by splitting it and performing multiple operations.
By turning ON this bit, it indicates that the data is the first part of data handled by splitting.
* To handle the data by splitting it in the OD acquisition and OD setting, ensure to turn this bit ON to execute the command for the first time.

Bit operation value	Description
0	Second execution of split command and thereafter, single command
256	First execution of split command

▽Relationship between the bit operation value and ON/OFF of bits

Bit operation value	Bit
	8
0	0
256	1

◇Split data size (Bit 9 to 13)

If the transfer data size exceeds 20 bytes in performing the OD acquisition or OD setting, the data can be handled by splitting it and performing multiple operations.

In handling data by splitting it into multiple parts, it is necessary to set the data size here each time.

＊Set the value of “0” in cases other than handling data in multiple parts.

Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Equipment parameter 17	Byte switch 1	Byte switch 0	Split data size					Head of split data	Command							

Setting range: 0 to 20 (Unit: Byte)

◇MSByte & LSByte switch (endian setting) (CH0: Bit 14, CH1: 15)

It is possible to switch the MSByte and LSByte of PD received from the IO-Link device.

Bit operation value		Description
CH0	CH1	
0	0	Switch (little endian)
16384	32768	Do not switch (big endian)

▽Relationship between the bit operation value and ON/OFF of bits (CH0)

Bit operation value	Bit
	14
0	0
16384	1

▽Relationship between the bit operation value and ON/OFF of bits (CH1)

Bit operation value	Bit
	15
0	0
32768	1

◆Equipment parameter 18

◇Input OFF delay CH0 Bit 0 to 5
◇Input OFF delay CH1 Bit 6 to 11
◇Command execution request flag Bit 12
◇Parameter change request flag Bit 13
◇Device replacement flag Bit 14 to 15

CAUTION Note that the equipment parameter 18 includes multiple elements. It is not possible to read and write each element independently. Especially in the writing operation, it is necessary to write the equipment parameter 18 by considering all elements included in the parameter in addition to the element of target.

Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Equipment parameter 18	Device replacement flag		Parameter	Command	Input signal OFF delay CH1						Input signal OFF delay CH0					

Factory setting: 0

Command execution request flag
Parameter change request flag

◇Input OFF delay (CH0: Bit 0 to 5, CH1: 6 to 11)
It is possible to set the OFF delay in using this unit in the operation mode of SIO.
＊The value to be set should be larger than the bit transmission cycle time.

Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Equipment parameter 18	Device replacement flag		Parameter	Command	Input signal OFF delay CH1						Input signal OFF delay CH0					

Bit operation value		Description
CH0	CH1	
0	0	0ms (No OFF delay)
1	64	10ms
2	128	20ms
:	:	:
61	3904	610ms
62	3968	620ms
63	4032	630ms

▽Relationship between the bit operation value and ON/OFF of bits (CH0)

Bit operation value	Bit					
	5	4	3	2	1	0
0	0	0	0	0	0	0
1	0	0	0	0	0	1
2	0	0	0	0	1	0
:	:					
61	1	1	1	1	0	1
62	1	1	1	1	1	0
63	1	1	1	1	1	1

▽Relationship between the bit operation value and ON/OFF of bits (CH1)

Bit operation value	Bit					
	11	10	9	8	7	6
0	0	0	0	0	0	0
64	0	0	0	0	0	1
128	0	0	0	0	1	0
:	:					
3904	1	1	1	1	0	1
3968	1	1	1	1	1	0
4032	1	1	1	1	1	1

◇Command execution request flag (Bit 12)

Turns ON this bit to execute a command.

By turning ON this flag, the command condition is referenced and the processing of command will start.

Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Equipment parameter 18	Device replacement flag		Parameter	Command	Input signal OFF delay CH1						Input signal OFF delay CH0					

Command execution request flag

Bit operation value	Description
0	OFF
4096	Execute command

▽Relationship between the bit operation value and ON/OFF of bits

Bit operation value	Bit
	12
0	0
4096	1

◇Parameter change request flag (Bit 13)

Turns ON this bit to change the equipment parameter.

By turning ON this flag, all data in the new equipment parameter will be reflected.

Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Equipment parameter 18	Device replacement flag		Parameter	Command	Input signal OFF delay CH1						Input signal OFF delay CH0					

Parameter change request flag

Bit operation value	Description
0	OFF
8192	Execute command

▽Relationship between the bit operation value and ON/OFF of bits

Bit operation value	Bit
	13
0	0
8192	1

◇Device replacement flag (Bit 14 to 15)

Turns ON this bit to replace the IO-Link device connected to this unit.
This will disable the detection of I/O disconnection (an alarm on the AnyWireASLINK system).
However, events on the IO-Link device will be detected.

* Replacement should be performed channel by channel.
  Do not perform replacement on the other channel before completing a replacement.

Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Equipment parameter 18	Device replacement flag		Parameter	Command	Input signal OFF delay CH1						Input signal OFF delay CH0					

Bit operation value	Description
0	No replacement on either CH0 or CH1
16384	Replacement on CH0 only
32768	Replacement on CH1 only
49152	Replacement on both CH0 and CH1

* After turning ON the replacement flag, it will be turned OFF automatically once the replacement is completed.
  This unit will always start up with this flag set to “0” when the power is turned ON.

[Data Configuration]

＜In the case where the unit is used with word address setting＞

Word input information area

When the MSByte & LSByte switch (equipment parameter 17) is set to “switch” on both CH0 and CH1:

Address offset	Description															
	F	E	D	C	B	A	9	8	7	6	5	4	3	2	1	0
n	PD on CH0 (Byte0)								PD on CH0 (Byte1)							
n+1	PD on CH0 (Byte2)								PD on CH0 (Byte3)							
n+2	PD on CH0 (Byte4)								PD on CH0 (Byte5)							
n+3	PD on CH0 (Byte6)								PD on CH0 (Byte7)							
n+4	PD on CH1 (Byte0)								PD on CH1 (Byte1)							
n+5	PD on CH1 (Byte2)								PD on CH1 (Byte3)							
n+6	PD on CH1 (Byte4)								PD on CH1 (Byte5)							
n+7	PD on CH1 (Byte6)								PD on CH1 (Byte7)							

When the MSByte & LSByte switch (equipment parameter 17) is set to “do not switch” on both CH0 and CH1:

Address offset	Description															
	F	E	D	C	B	A	9	8	7	6	5	4	3	2	1	0
n	PD on CH0 (Byte1)								PD on CH0 (Byte0)							
n+1	PD on CH0 (Byte3)								PD on CH0 (Byte2)							
n+2	PD on CH0 (Byte5)								PD on CH0 (Byte4)							
n+3	PD on CH0 (Byte7)								PD on CH0 (Byte6)							
n+4	PD on CH1 (Byte1)								PD on CH1 (Byte0)							
n+5	PD on CH1 (Byte3)								PD on CH1 (Byte2)							
n+6	PD on CH1 (Byte5)								PD on CH1 (Byte4)							
n+7	PD on CH1 (Byte7)								PD on CH1 (Byte6)							

Bit input information area

Address offset	n+9	n+8	n+7	n+6	n+5	n+4	n+3	n+2	n+1	n
Description	I/O data of CH1 PIN2	I/O data of CH1 Input 4	I/O data of CH1 Input 3	I/O data of CH1 Input 2	I/O data of CH1 Input 1	I/O data of CH0 PIN2	I/O data of CH0 Input 4	I/O data of CH0 Input 3	I/O data of CH0 Input 2	I/O data of CH0 Input 1

∗ This explains the condition with both CH0 and CH1 set to the COM&PIN2 mode and four points of I/O data and one PIN2 digital input used, in which case the occupied number of points will be the largest.
The occupied area may be smaller depending on the operation mode and the use of I/O data.

Example: If one point of I/O data is used with CH0 in the SIO mode and CH1 in the COM mode:

Word input information area

When the MSByte & LSByte switch (equipment parameter 17) is set to “switch” on both CH0 and CH1:

Address offset	Description															
	F	E	D	C	B	A	9	8	7	6	5	4	3	2	1	0
n	Empty															
n+1	Empty															
n+2	Empty															
n+3	Empty															
n+4	PD on CH1 (Byte0)								PD on CH1 (Byte1)							
n+5	PD on CH1 (Byte2)								PD on CH1 (Byte3)							
n+6	PD on CH1 (Byte4)								PD on CH1 (Byte5)							
n+7	PD on CH1 (Byte6)								PD on CH1 (Byte7)							

When the MSByte & LSByte switch (equipment parameter 17) is set to “do not switch” on both CH0 and CH1:

Address offset	Description															
	F	E	D	C	B	A	9	8	7	6	5	4	3	2	1	0
n	PD on CH0 (Byte1)								PD on CH0 (Byte0)							
n+1	PD on CH0 (Byte3)								PD on CH0 (Byte2)							
n+2	PD on CH0 (Byte5)								PD on CH0 (Byte4)							
n+3	PD on CH0 (Byte7)								PD on CH0 (Byte6)							
n+4	PD on CH1 (Byte1)								PD on CH1 (Byte0)							
n+5	PD on CH1 (Byte3)								PD on CH1 (Byte2)							
n+6	PD on CH1 (Byte5)								PD on CH1 (Byte4)							
n+7	PD on CH1 (Byte7)								PD on CH1 (Byte6)							

Bit input information area

Address offset	n+9	n+8	n+7	n+6	n+5	n+4	n+3	n+2	n+1	n
Description	Empty	Empty	Empty	Empty	I/O data of CH1 Input 1	Empty	Empty	Empty	Empty	Empty

＜In the case where the unit is used with bit address setting＞

Bit input information area

When the PD transmission method (equipment parameter 2) is set to “continuous arrangement”:

Address offset	n+15	n+14	n+13	n+12	n+11	n+10	n+9	n+8	n+7	n+6	n+5	n+4	n+3	n+2	n+1	n
Description	PD on CH0 (16 bits max.)															

Address offset	n+31	n+30	n+29	n+28	n+27	n+26	n+25	n+24	n+23	n+22	n+21	n+20	n+19	n+18	n+17	n+16
Description	PD on CH1 (16 bits max.)															

Address offset	–	–	–	–	–	–	n+41	n+40	n+39	n+38	n+37	n+36	n+35	n+34	n+33	n+32
Description	–	–	–	–	–	–	PIN2 of CH1	I/O data of CH1 Input 4	I/O data of CH1 Input 3	I/O data of CH1 Input 2	I/O data of CH1 Input 1	PIN2 of CH0	I/O data of CH0 Input 4	I/O data of CH0 Input 3	I/O data of CH0 Input 2	I/O data of CH0 Input 1

∗ This explains the condition with both CH0 and CH1 set to the COM&PIN2 mode and four points of I/O data and one PIN2 digital input used, in which case the occupied number of points will be the largest.
The occupied area may be smaller depending on the operation mode and the use of I/O data and PIN2 digital input.

Example 1: If no I/O data is used on CH0 operating in the COM mode and two points of I/O data are used on CH1 operating in the COM mode:

Address offset	n+15	n+14	n+13	n+12	n+11	n+10	n+9	n+8	n+7	n+6	n+5	n+4	n+3	n+2	n+1	n
Description	PD on CH0 (16 bits)															

Address offset	n+31	n+30	n+29	n+28	n+27	n+26	n+25	n+24	n+23	n+22	n+21	n+20	n+19	n+18	n+17	n+16
Description	PD on CH1 (16 bits)															

Address offset	–	–	–	–	–	–	–	–	–	–	–	–	–	–	n+33	n+32
Description	–	–	–	–	–	–	–	–	–	–	–	–	–	–	I/O data of CH1 Input 2	I/O data of CH1 Input 1

Example 2: If one point of I/O data is used on CH0 operating in the COM mode and CH1 is used in the SIO mode:

Address offset	n+15	n+14	n+13	n+12	n+11	n+10	n+9	n+8	n+7	n+6	n+5	n+4	n+3	n+2	n+1	n
Description	PD on CH0 (16 bits)															

Address offset	–	–	–	–	–	–	–	–	–	–	–	–	–	–	n+17	n+16
Description	–	–	–	–	–	–	–	–	–	–	–	–	–	–	CH1 input	I/O data of CH0 Input 1

When the PD transmission method (equipment parameter 2) is set to “isolated arrangement”:

Address offset	n+15	n+14	n+13	n+12	n+11	n+10	n+9	n+8	n+7	n+6	n+5	n+4	n+3	n+2	n+1	n
Description	PD on CH0 (16 bits)															

Address offset	n+31	n+30	n+29	n+28	n+27	n+26	n+25	n+24	n+23	n+22	n+21	n+20	n+19	n+18	n+17	n+16
Description	PD on CH1 (16 bits)															

Address offset	(Bit input points/2) + n+4	(Bit input points/2) + n+3	(Bit input points/2) + n+2	(Bit input points/2) + n+1	(Bit input points/2) + n
Description	PIN2 of CH0	I/O data of CH0 Input 4	I/O data of CH0 Input 3	I/O data of CH0 Input 2	I/O data of CH0 Input 1

Address offset	(Bit input points/2) + n+9	(Bit input points/2) + n+8	(Bit input points/2) + n+7	(Bit input points/2) + n+6	(Bit input points/2) + n+5
Description	PIN2 of CH1	I/O data of CH1 Input 4	I/O data of CH1 Input 3	I/O data of CH1 Input 2	I/O data of CH1 Input 1

∗ This explains the condition with both CH0 and CH1 set to the COM&PIN2 mode and four points of I/O data and one PIN2 digital input used, in which case the occupied number of points will be the largest.
The occupied area may be smaller depending on the operation mode and the use of I/O data and PIN2 digital input.

Example 1: If no I/O data is used on CH0 operating in the COM mode and two points of I/O data are used on CH1 operating in the COM mode:

Address offset	n+15	n+14	n+13	n+12	n+11	n+10	n+9	n+8	n+7	n+6	n+5	n+4	n+3	n+2	n+1	n
Description	PD on CH0 (16 bits)															

Address offset	n+31	n+30	n+29	n+28	n+27	n+26	n+25	n+24	n+23	n+22	n+21	n+20	n+19	n+18	n+17	n+16
Description	PD on CH1 (16 bits)															

Address offset	(Bit input points/2) + n+1	(Bit input points/2) + n
Description	I/O data of CH1 Input 2	I/O data of CH1 Input 1

Example 2: If one point of I/O data is used on CH0 operating in the COM mode and CH1 is used in the SIO mode:

Address offset	n+15	n+14	n+13	n+12	n+11	n+10	n+9	n+8	n+7	n+6	n+5	n+4	n+3	n+2	n+1	n
Description	PD on CH0 (16 bits)															

Address offset	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	n+16
Description	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	CH1 input

Address offset	(Bit input points/2) + n
Description	I/O data of CH0 Input 1

＜Common for word address setting and bit address setting＞

■Sensing level

This unit is capable of sending a part of PD to the “sensing level area*1” as the sensing level.

Sensing level area on the master unit

Sensing level	A part of PD (data used to specify the range*2 to be handled as the sensing level)

■Status details

The contents of an alarm detected with this unit can be checked with the “status detail area*1” on the master unit.
A bit corresponding to the status detail area turns ON depending on the contents of the alarm.

Status detail area of the master unit

Status details	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0

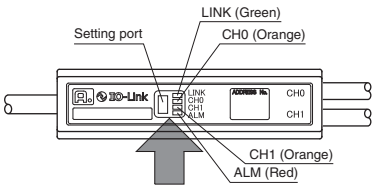
b0: Remote unit voltage drop (DP-DN-side voltage drop)
b2: I/O disconnection*3*4
b3: I/O short-circuit*5*6
b5: I/O power supply drop (24V-0V-side voltage drop)
b6: Unit error detected*7
b8: IO-Link error (event generation) detected*8

*1 This can be used on the master unit having the sensing level and the status detail area.
For details, refer to the manual of the master unit.
*2 For the information on the specification method, refer to the manual of the IO-Link Master LINKER setup tool.
*3 In the operation mode of COM mode or COM&PIN2 mode,
this flag turns ON if there is a disconnection of IO-Link device, a short-circuit between L+ and L- or a short-circuit between CQ and L-.
*4 If the “b2: I/O disconnection” turns ON, the “b8: IO-Link error” will also turn ON.
*5 In the operation mode of COM mode or COM&PIN2 mode,
this may turn ON if there is a short-circuit between L+ and L- or between CQ and L-.
*6 If the “b3: I/O short-circuit” turns ON, the “b8: IO-Link error” will also turn ON.
*7 This flag turns ON if there is an error in which the error code is stored in the equipment parameter 16.
For more information, check the Error Code List on page 50.
*8 This flag turns ON if an event is issued. For more information, check the Event Code List on page 51.

[Monitor Display]

LED name	Indication status	Description
LINK (Green)	Lit	Transmission signal error Model mismatching error*9
	Flashing	Transmission signal received
	Unlit	No transmission signal (disconnection and reverse connection of DP and DN lines included)
ALM (Red)	Lit	I/O cable disconnection*10 I/O power supply drop (24V-0V-side voltage drop)
	Flashing	Remote unit voltage drop (DP-DN-side voltage drop) Model mismatching error*9
	Unlit	No ALM available
LINK ALM	Alternate flashing LINK ALM	ID duplicated*11 or ID unregistered*12
LINK ALM	LINK ALM	Model mismatching error*9
CH (Orange)	Lit	ON*13
	Flashing	I/O cable disconnection*14
	Unlit	OFF

*9 This indication appears when the use of the single unit simplified replacement function fails.
*10 In the operation mode of COM mode or COM&PIN2 mode, this LED turns ON if there is an IO-Link device disconnection, a short-circuit between L+ and L- or a short-circuit between CQ and L-.
*11 If ID duplication occurs during automatic address recognition in the master unit, this indication appears.
*12 When the transmission signal and power supply are normally input and the address of this unit is the factory-set value, this indication appears.
*13 The ON/OFF condition of bit specified in the PD ON/OFF position setting and LED setting will be reflected. For the specification method, refer to the manual of the IO-Link Master LINKER setup tool.
*14 In the operation mode of COM mode or COM&PIN2 mode, this LED blinks if there is an IO-Link device disconnection, a short-circuit between L+ and L- or a short-circuit between CQ and L-.



LED display

If an error is indicated, check a cause of the error with the LED lit/flashing status by referring to the table on the left, and eliminate the cause of error.
Once the cause of the error is eliminated, the error indication will be automatically reset.

[Storing Values in Equipment Parameters in Setting Up Commands]

> **CAUTION** It is not necessary to refer to and operate equipment parameters directly if the IO-Link Master LINKER setup tool is used. If a ladder program is used instead of the setup tool, refer to and consider to create equipment parameters.

1) Equipment parameter 17 (Command): 0x01/0x31 “OD acquisition”

1-1) No splitting

1-1-1) Request format

The transfer data area (equipment parameters 5 to 15) are not used.

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 2 (Total transfer data size)	N.A.								20							
Equipment parameter 3 (Index)	0x0060*1															
Equipment parameter 4 (SubIndex)	N.A.								0x01*1							
Equipment parameter 17 (Data size of split command, head of split command data, command)	N.A.						0	0	CH0: 0x01/CH1: 0x31							
Equipment parameter 18 (Command execution request flag)	N.A.			1	N.A.											

*1 For the index and subindex, enter a value appropriate for the IO-Link device. (The above input values are listed as examples.)

1-1-2) Response format

①In a normal state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	0: Success															
Equipment parameter 6 (Transfer data area)	Read OD Byte1								Read OD Byte0							
Equipment parameter 7 (Transfer data area)	Read OD Byte3								Read OD Byte2							
Equipment parameter 8 (Transfer data area)	Read OD Byte5								Read OD Byte4							
Equipment parameter 9 (Transfer data area)	Read OD Byte7								Read OD Byte6							
Equipment parameter 10 (Transfer data area)	Read OD Byte9								Read OD Byte8							
Equipment parameter 11 (Transfer data area)	Read OD Byte11								Read OD Byte10							
Equipment parameter 12 (Transfer data area)	Read OD Byte13								Read OD Byte12							
Equipment parameter 13 (Transfer data area)	Read OD Byte15								Read OD Byte14							
Equipment parameter 14 (Transfer data area)	Read OD Byte17								Read OD Byte16							
Equipment parameter 15 (Transfer data area)	Read OD Byte19								Read OD Byte18							

②In responding to an error from the IO-Link device

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	Error code*2 (0x280C)															
Equipment parameter 6 (Transfer data area)	ErrorCode*3								AdditionalErrorCode*3							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

*2 For the Error Code List, refer to page 50.
*3 For ErrorCode and AdditionalErrorCode, refer to the IO-Link specifications (V1.1.2).

③In an error state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	Other than “0”: Error code*2															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

1-2) With splitting (first time)

1-2-1) Request format

The transfer data area (equipment parameters 5 to 15) are not used.

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 2 (Total transfer data size)	N.A.								35							
Equipment parameter 3 (Index)	0x0061*1															
Equipment parameter 4 (SubIndex)	N.A.								0x01*1							
Equipment parameter 17 (Data size of split command, head of split command data, command)	N.A.						20	1	CH0: 0x01/CH1: 0x31							
Equipment parameter 18 (Command execution request flag)	N.A.			1	N.A.											

*1 For the index and subindex, enter a value appropriate for the IO-Link device. (The above input values are listed as examples.)

1-2-2) Response format

①In a normal state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	0: Success															
Equipment parameter 6 (Transfer data area)	Read OD Byte1								Read OD Byte0							
Equipment parameter 7 (Transfer data area)	Read OD Byte3								Read OD Byte2							
Equipment parameter 8 (Transfer data area)	Read OD Byte5								Read OD Byte4							
Equipment parameter 9 (Transfer data area)	Read OD Byte7								Read OD Byte6							
Equipment parameter 10 (Transfer data area)	Read OD Byte9								Read OD Byte8							
Equipment parameter 11 (Transfer data area)	Read OD Byte11								Read OD Byte10							
Equipment parameter 12 (Transfer data area)	Read OD Byte13								Read OD Byte12							
Equipment parameter 13 (Transfer data area)	Read OD Byte15								Read OD Byte14							
Equipment parameter 14 (Transfer data area)	Read OD Byte17								Read OD Byte16							
Equipment parameter 15 (Transfer data area)	Read OD Byte19								Read OD Byte18							

②In responding to an error from the IO-Link device

＊Same as the table for “no splitting”

③In an error state

＊Same as the table for “in an error state” in “no splitting”

1-3) With splitting (For the second time onward)

1-3-1) Request format

The transfer data area (equipment parameters 5 to 15) are not used.

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 2 (Total transfer data size)	N.A.								35							
Equipment parameter 3 (Index)	0x0061*1															
Equipment parameter 4 (SubIndex)	N.A.								0x01*1							
Equipment parameter 17 (Data size of split command, head of split command data, command)	N.A.						15	0	CH0: 0x01/CH1: 0x31							
Equipment parameter 18 (Command execution request flag)	N.A.			1	N.A.											

1-3-2) Response format

①In a normal state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	0: Success															
Equipment parameter 6 (Transfer data area)	Read OD Byte21								Read OD Byte20							
Equipment parameter 7 (Transfer data area)	Read OD Byte23								Read OD Byte22							
Equipment parameter 8 (Transfer data area)	Read OD Byte25								Read OD Byte24							
Equipment parameter 9 (Transfer data area)	Read OD Byte27								Read OD Byte26							
Equipment parameter 10 (Transfer data area)	Read OD Byte29								Read OD Byte28							
Equipment parameter 11 (Transfer data area)	Read OD Byte31								Read OD Byte30							
Equipment parameter 12 (Transfer data area)	Read OD Byte33								Read OD Byte32							
Equipment parameter 13 (Transfer data area)	N.A.								Read OD Byte34							
Equipment parameter 14 (Transfer data area)	N.A.															
Equipment parameter 15 (Transfer data area)	N.A.															

②In responding to an error from the IO-Link device

＊Same as the table for “no splitting”

③In an error state

2) Equipment parameter 17 (Command): 0x02/0x32 “OD setting”

2-1) No splitting

2-1-1) Request format

Equipment parameter position Enclosed in parentheses “( )” are descriptions of target data.	Bit position b15 b14 b13 b12 b11 b10 b9 b8	b7 b6 b5 b4 b3 b2 b1 b0
Equipment parameter 2 (Total transfer data size)	N.A.	20
Equipment parameter 3 (Index)	0x0060*1	
Equipment parameter 4 (SubIndex)	N.A.	0x01*1
Equipment parameter 5 (Transfer data area)	OD to be written Byte1	OD to be written Byte0
Equipment parameter 6 (Transfer data area)	OD to be written Byte3	OD to be written Byte2
Equipment parameter 7 (Transfer data area)	OD to be written Byte5	OD to be written Byte4
Equipment parameter 8 (Transfer data area)	OD to be written Byte7	OD to be written Byte6
Equipment parameter 9 (Transfer data area)	OD to be written Byte9	OD to be written Byte8
Equipment parameter 10 (Transfer data area)	OD to be written Byte11	OD to be written Byte10
Equipment parameter 11 (Transfer data area)	OD to be written Byte13	OD to be written Byte12
Equipment parameter 12 (Transfer data area)	OD to be written Byte15	OD to be written Byte14
Equipment parameter 13 (Transfer data area)	OD to be written Byte17	OD to be written Byte16
Equipment parameter 14 (Transfer data area)	OD to be written Byte19	OD to be written Byte18
Equipment parameter 15 (Transfer data area)	N.A.	
Equipment parameter 17 (Data size of split command, head of split command data, command)	N.A. 0 0	CH0: 0x02/CH1: 0x32
Equipment parameter 18 (Command execution request flag)	N.A. 1 N.A.	

*1 For the index and subindex, enter a value appropriate for the IO-Link device. (The above input values are listed as examples.)

2-1-2) Response format

①In a normal state

Equipment parameter position	Bit position b15 b14 b13 b12 b11 b10 b9 b8	b7 b6 b5 b4 b3 b2 b1 b0
Equipment parameter 5 (Transfer data area)	0: Success	
Equipment parameter 6 (Transfer data area)	0	0
Equipment parameter 7 (Transfer data area)	0	0
Equipment parameter 8 (Transfer data area)	0	0
Equipment parameter 9 (Transfer data area)	0	0
Equipment parameter 10 (Transfer data area)	0	0
Equipment parameter 11 (Transfer data area)	0	0
Equipment parameter 12 (Transfer data area)	0	0
Equipment parameter 13 (Transfer data area)	0	0
Equipment parameter 14 (Transfer data area)	0	0
Equipment parameter 15 (Transfer data area)	0	0

②In responding to an error from the IO-Link device

Equipment parameter position	Bit position b15 b14 b13 b12 b11 b10 b9 b8	b7 b6 b5 b4 b3 b2 b1 b0
Equipment parameter 5 (Transfer data area)	Error code*2 (0x280C)	
Equipment parameter 6 (Transfer data area)	ErrorCode*3	AdditionalErrorCode*3
Equipment parameter 7 (Transfer data area)	0	0
Equipment parameter 8 (Transfer data area)	0	0
Equipment parameter 9 (Transfer data area)	0	0
Equipment parameter 10 (Transfer data area)	0	0
Equipment parameter 11 (Transfer data area)	0	0
Equipment parameter 12 (Transfer data area)	0	0
Equipment parameter 13 (Transfer data area)	0	0
Equipment parameter 14 (Transfer data area)	0	0
Equipment parameter 15 (Transfer data area)	0	0

*2 For the Error Code List, refer to page 50.

*3 For ErrorCode and AdditionalErrorCode, refer to the IO-Link specifications (V1.1.2).

③In an error state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	Other than “0”: Error code*1															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

*1 For the Error Code List, refer to page 50.

2-2) With splitting (first time)

2-2-1) Request format

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 2 (Total transfer data size)	N.A.								35							
Equipment parameter 3 (Index)	0x0061*2															
Equipment parameter 4 (SubIndex)	N.A.							0x01*2								
Equipment parameter 5 (Transfer data area)	OD to be written Byte1								OD to be written Byte0							
Equipment parameter 6 (Transfer data area)	OD to be written Byte3								OD to be written Byte2							
Equipment parameter 7 (Transfer data area)	OD to be written Byte5								OD to be written Byte4							
Equipment parameter 8 (Transfer data area)	OD to be written Byte7								OD to be written Byte6							
Equipment parameter 9 (Transfer data area)	OD to be written Byte9								OD to be written Byte8							
Equipment parameter 10 (Transfer data area)	OD to be written Byte11								OD to be written Byte10							
Equipment parameter 11 (Transfer data area)	OD to be written Byte13								OD to be written Byte12							
Equipment parameter 12 (Transfer data area)	OD to be written Byte15								OD to be written Byte14							
Equipment parameter 13 (Transfer data area)	OD to be written Byte17								OD to be written Byte16							
Equipment parameter 14 (Transfer data area)	OD to be written Byte19								OD to be written Byte18							
Equipment parameter 15 (Transfer data area)	N.A.															
Equipment parameter 17 (Data size of split command, head of split command data, command)	N.A.						20		1	CH0: 0x02/CH1: 0x32						
Equipment parameter 18 (Command execution request flag)	N.A.				1	N.A.										

*2 For the index and subindex, enter a value appropriate for the IO-Link device. (The above input values are listed as examples.)

2-2-2) Response format

①In a normal state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	0: Success															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

②In responding to an error from the IO-Link device

* Same as the table for “no splitting”

③In an error state

* Same as the table for “in an error state” in “no splitting”

2-3) With splitting (For the second time onward)

2-3-1) Request format

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 2 (Total transfer data size)	N.A.								35							
Equipment parameter 3 (Index)	0x0061*															
Equipment parameter 4 (SubIndex)	N.A.							0x01*								
Equipment parameter 5 (Transfer data area)	OD to be written Byte21								OD to be written Byte20							
Equipment parameter 6 (Transfer data area)	OD to be written Byte23								OD to be written Byte22							
Equipment parameter 7 (Transfer data area)	OD to be written Byte25								OD to be written Byte24							
Equipment parameter 8 (Transfer data area)	OD to be written Byte27								OD to be written Byte26							
Equipment parameter 9 (Transfer data area)	OD to be written Byte29								OD to be written Byte28							
Equipment parameter 10 (Transfer data area)	OD to be written Byte31								OD to be written Byte30							
Equipment parameter 11 (Transfer data area)	OD to be written Byte33								OD to be written Byte32							
Equipment parameter 12 (Transfer data area)	N.A.								OD to be written Byte34							
Equipment parameter 13 (Transfer data area)	N.A.															
Equipment parameter 14 (Transfer data area)	N.A.															
Equipment parameter 15 (Transfer data area)	N.A.															
Equipment parameter 17 (Data size of split command, head of split command data, command)	N.A.							20	0	CH0 : 0x02/CH1 : 0x32						
Equipment parameter 18 (Command execution request flag)	N.A.				1	N.A.										

* For the index and subindex, enter a value appropriate for the IO-Link device. (The above input values are listed as examples.)

2-3-2) Response format

①In a normal state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	0: Success															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

②In responding to an error from the IO-Link device

* Same as the table for “no splitting”

③In an error state

* Same as the table for “in an error state” in “no splitting”

3) Equipment parameter 17 (Command): 0x03/0x33 “Event acquisition”

3-1) Request format

The transfer data area (equipment parameters 5 to 15) are not used.

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 2 (Total transfer data size)	N.A.								0							
Equipment parameter 3 (Index)	0															
Equipment parameter 4 (SubIndex)	N.A.								0							
Equipment parameter 17 (Data size of split command, head of split command data, command)	N.A.						0	0	CH0: 0x03/CH1: 0x33							
Equipment parameter 18 (Command execution request flag)	N.A.				1	N.A.										

3-2) Response format

①In a normal state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	0: Success															
Equipment parameter 6 (Transfer data area)	0								First EventQualifier*1							
Equipment parameter 7 (Transfer data area)	First EventCode*2															
Equipment parameter 8 (Transfer data area)	0								Second EventQualifier*1							
Equipment parameter 9 (Transfer data area)	Second EventCode*2															
Equipment parameter 10 (Transfer data area)	0								Third EventQualifier*1							
Equipment parameter 11 (Transfer data area)	Third EventCode*2															
Equipment parameter 12 (Transfer data area)	0								Fourth EventQualifier*1							
Equipment parameter 13 (Transfer data area)	Fourth EventCode*2															
Equipment parameter 14 (Transfer data area)	0								Fifth EventQualifier*1							
Equipment parameter 15 (Transfer data area)	Fifth EventCode*2															

*1 For the information on EventQualifier, refer to the IO-Link specifications (V1.1.2).
*2 For the Event Code List, refer to page 51.

* Details of EventQualifier

Bit position							
b7	b6	b5	b4	b3	b2	b1	b0

b3: Source of event

Value	Source of event
0	Device
1	IO-Link Master LINKER

②In an error state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	Other than “0”: Error code*3															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

*3 For the Error Code List, refer to page 50.

4) Equipment parameter 17 (Command): 0x10/0x40 “Upload request”

4-1) Request format

The transfer data area (equipment parameters 5 to 15) are not used.

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 2 (Total transfer data size)	N.A.								0							
Equipment parameter 3 (Index)	0															
Equipment parameter 4 (SubIndex)	N.A.								0							
Equipment parameter 17 (Data size of split command, head of split command data, command)	N.A.						0	0	CH0: 0x10/CH1: 0x40							
Equipment parameter 18 (Command execution request flag)	N.A.			1	N.A.											

4-2) Response format

①In a normal state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	0: Success															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

②In an error state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	Other than “0”: Error code*															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

* For the Error Code List, refer to page 50.

5) Equipment parameter 17 (Command): 0x07/0x37 “CH LED setting”

5-1) Request format

The transfer data area (equipment parameters 2 to 4) are not used.

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	CH LED setting*1															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							
Equipment parameter 17 (Data size of split command, head of split command data, command)	N.A.							0	0	CH0: 0x07/CH1: 0x37						
Equipment parameter 18 (Command execution request flag)	N.A.				1	N.A.										

*1 The date to be reflected on the LED illumination shall be specified as follows using the PD ON/OFF positions 1 to 4.
0: The head bit is specified.
1 to 4: The PD ON/OFF positions 1 to 4 are specified.
5: PIN2 is specified.

5-2) Response format

①In a normal state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	0: Success															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

②In an error state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	Other than “0”: Error code*2															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

*2 For the Error Code List, refer to page 50.

6) Equipment parameter 17 (Command): 0x11/0x41 “CH LED setting”

6-1) Request format

The equipment parameters 2, 3, 4 and the transfer data area (equipment parameters 5 to 15) are not used.

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 17 (Data size of split command, head of split command data, command)	N.A.							0	0	CH0: 0x11/CH1: 0x41						
Equipment parameter 18 (Command execution request flag)	N.A.				1	N.A.										

6-2) Response format

①In a normal state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	0: Success															
Equipment parameter 6 (Transfer data area)	CH LED setting															
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

②In an error state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	Other than “0”: Error code*															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

* For the Error Code List, refer to page 50.

7) Equipment parameter 17 (Command): 0x09/0x39 “PD ON/OFF position 1 setting”

7-1) Request format

The equipment parameters 2 to 4 are not used.

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	Value set in PD ON/OFF position 1*1															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							
Equipment parameter 17 (Data size of split command, head of split command data, command)	N.A.							0	0	CH0: 0x09/CH1: 0x39						
Equipment parameter 18 (Command execution request flag)	N.A.				1	N.A.										

*1 Enter a value appropriate for the IO-Link device for the value to be set.

7-2) Response format

①In a normal state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	0: Success															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

②In an error state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	Other than “0”: Error code*2															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

*2 For the Error Code List, refer to page 50.

8) Equipment parameter 17 (Command): 0x0A/0x3A “PD ON/OFF position 2 setting”

8-1) Request format

The equipment parameters 2 to 4 are not used.

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	Value set in PD ON/OFF position 2*1															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							
Equipment parameter 17 (Data size of split command, head of split command data, command)	N.A.							0	0	CH0: 0x0A/CH1: 0x3A						
Equipment parameter 18 (Command execution request flag)	N.A.				1	N.A.										

*1 Enter a value appropriate for the IO-Link device for the value to be set.

8-2) Response format

①In a normal state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	0: Success															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

②In an error state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	Other than “0”: Error code*2															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

*2 For the Error Code List, refer to page 50.

9) Equipment parameter 17 (Command): 0x0B/0x3B “PD ON/OFF position 3 setting”

9-1) Request format

The equipment parameters 2 to 4 are not used.

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	Value set in PD ON/OFF position 3*1															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							
Equipment parameter 17 (Data size of split command, head of split command data, command)	N.A.							0	0	CH0: 0x0B/CH1: 0x3B						
Equipment parameter 18 (Command execution request flag)	N.A.				1	N.A.										

*1 Enter a value appropriate for the IO-Link device for the value to be set.

9-2) Response format

①In a normal state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	0: Success															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

②In an error state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	Other than “0”: Error code*2															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

*2 For the Error Code List, refer to page 50.

10) Equipment parameter 17 (Command): 0x0C/0x3C “PD ON/OFF position 4 setting”

10-1) Request format

The equipment parameters 2 to 4 are not used.

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	Value set in PD ON/OFF position 4*1															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							
Equipment parameter 17 (Data size of split command, head of split command data, command)	N.A.							0	0	CH0: 0x0C/CH1: 0x3C						
Equipment parameter 18 (Command execution request flag)	N.A.				1	N.A.										

*1 Enter a value appropriate for the IO-Link device for the value to be set.

10-2) Response format

①In a normal state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	0: Success															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

②In an error state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	Other than “0”: Error code*2															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

*2 For the Error Code List, refer to page 50.

11) Equipment parameter 17 (Command): 0x0E/0x3E “PD raw data start/end position setting (word data)”

11-1) Request format

The equipment parameters 2 to 4 are not used.

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	PD raw data start position (LSB side) setting*1															
Equipment parameter 6 (Transfer data area)	PD raw data end position (MSB side) setting*1															
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							
Equipment parameter 17 (Data size of split command, head of split command data, command)	N.A.							0	0	CH0: 0x0E/CH1: 0x3E						
Equipment parameter 18 (Command execution request flag)	N.A.				1	N.A.										

*1 Enter a value appropriate for the IO-Link device for the value to be set.

11-2) Response format

①In a normal state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	0: Success															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

②In an error state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	Other than “0”: Error code*2															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

*2 For the Error Code List, refer to page 50.

12) Equipment parameter 17 (Command): 0x0F/0x3F “PD raw data start/end position setting (bit data)”

12-1) Request format

The equipment parameters 2 to 4 are not used.

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	PD raw data start position (LSB side) setting*1															
Equipment parameter 6 (Transfer data area)	PD raw data end position (MSB side) setting*1															
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							
Equipment parameter 17 (Data size of split command, head of split command data, command)	N.A.							0	0	CH0: 0x0F/CH1: 0x3F						
Equipment parameter 18 (Command execution request flag)	N.A.				1	N.A.										

*1 Enter a value appropriate for the IO-Link device for the value to be set.

12-2) Response format

①In a normal state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	0: Success															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

②In an error state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	Other than “0”: Error code*2															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

*2 For the Error Code List, refer to page 50.

13) Equipment parameter 17 (Command): 0x13/0x43 “PD ON/OFF position 1 setting”

13-1) Request format

The equipment parameters 2, 3, 4 and the transfer data area (equipment parameters 5 to 15) are not used.

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 17 (Data size of split command, head of split command data, command)	N.A.						0	0	CH0: 0x13/CH1: 0x43							
Equipment parameter 18 (Command execution request flag)	N.A.			1	N.A.											

13-2) Response format

①In a normal state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	0: Success															
Equipment parameter 6 (Transfer data area)	Value set in PD ON/OFF position 1															
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

②In an error state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	Other than “0”: Error code*															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

* For the Error Code List, refer to page 50.

14) Equipment parameter 17 (Command): 0x14/0x44 “PD ON/OFF position 2 setting”

14-1) Request format

The equipment parameters 2, 3, 4 and the transfer data area (equipment parameters 5 to 15) are not used.

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 17 (Data size of split command, head of split command data, command)	N.A.						0	0	CH0: 0x14/CH1: 0x44							
Equipment parameter 18 (Command execution request flag)	N.A.			1	N.A.											

14-2) Response format

①In a normal state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	0: Success															
Equipment parameter 6 (Transfer data area)	Value set in PD ON/OFF position 2															
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

②In an error state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	Other than “0”: Error code*															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

* For the Error Code List, refer to page 50.

15) Equipment parameter 17 (Command): 0x15/0x45 “PD ON/OFF position 3 setting”

15-1) Request format

The equipment parameters 2, 3, 4 and the transfer data area (equipment parameters 5 to 15) are not used.

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 17 (Data size of split command, head of split command data, command)	N.A.							0	0	CH0: 0x15/CH1: 0x45						
Equipment parameter 18 (Command execution request flag)	N.A.				1	N.A.										

15-2) Response format

①In a normal state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	0: Success															
Equipment parameter 6 (Transfer data area)	Value set in PD ON/OFF position 3															
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

②In an error state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	Other than “0”: Error code*															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

* For the Error Code List, refer to page 50.

16) Equipment parameter 17 (Command): 0x16/0x46 “PD ON/OFF position 4 setting”

16-1) Request format

The equipment parameters 2, 3, 4 and the transfer data area (equipment parameters 5 to 15) are not used.

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 17 (Data size of split command, head of split command data, command)	N.A.						0	0	CH0: 0x16/CH1: 0x46							
Equipment parameter 18 (Command execution request flag)	N.A.			1	N.A.											

16-2) Response format

①In a normal state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	0: Success															
Equipment parameter 6 (Transfer data area)	Value set in PD ON/OFF position 4															
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

②In an error state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	Other than “0”: Error code*															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

* For the Error Code List, refer to page 50.

17) Equipment parameter 17 (Command): 0x18/0x48 “PD raw data start/end position setting (word data)”

17-1) Request format

The equipment parameters 2, 3, 4 and the transfer data area (equipment parameters 5 to 15) are not used.

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 17 (Data size of split command, head of split command data, command)	N.A.						0	0	CH0: 0x18/CH1: 0x48							
Equipment parameter 18 (Command execution request flag)	N.A.			1	N.A.											

17-2) Response format

①In a normal state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	0: Success															
Equipment parameter 6 (Transfer data area)	PD raw data start position (LSB side) setting															
Equipment parameter 7 (Transfer data area)	PD raw data end position (MSB side) setting															
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

②In an error state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	Other than “0”: Error code*															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

* For the Error Code List, refer to page 50.

18) Equipment parameter 17 (Command): 0x19/0x49 “PD raw data start/end position setting (bit data)”

18-1) Request format

The equipment parameters 2, 3, 4 and the transfer data area (equipment parameters 5 to 15) are not used.

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 17 (Data size of split command, head of split command data, command)	N.A.							0	0	CH0: 0x19/CH1: 0x49						
Equipment parameter 18 (Command execution request flag)	N.A.				1	N.A.										

18-2) Response format

①In a normal state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	0: Success															
Equipment parameter 6 (Transfer data area)	PD raw data start position (LSB side) setting															
Equipment parameter 7 (Transfer data area)	PD raw data end position (MSB side) setting															
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

②In an error state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	Other than “0”: Error code*															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

* For the Error Code List, refer to page 50.

19) Equipment parameter 17 (Command): 0x1D/0x4D “Cancel”

19-1) Request format

The equipment parameters 2, 3, 4 and the transfer data area (equipment parameters 5 to 15) are not used.

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 17 (Data size of split command, head of split command data, command)	N.A.							0	0	CH0: 0x1D/CH1: 0x4D						
Equipment parameter 18 (Command execution request flag)	N.A.				1	N.A.										

19-2) Response format

①In a normal state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	0: Success															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

②In an error state

Equipment parameter position	Bit position															
	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Equipment parameter 5 (Transfer data area)	Other than “0”: Error code*															
Equipment parameter 6 (Transfer data area)	0								0							
Equipment parameter 7 (Transfer data area)	0								0							
Equipment parameter 8 (Transfer data area)	0								0							
Equipment parameter 9 (Transfer data area)	0								0							
Equipment parameter 10 (Transfer data area)	0								0							
Equipment parameter 11 (Transfer data area)	0								0							
Equipment parameter 12 (Transfer data area)	0								0							
Equipment parameter 13 (Transfer data area)	0								0							
Equipment parameter 14 (Transfer data area)	0								0							
Equipment parameter 15 (Transfer data area)	0								0							

* For the Error Code List, refer to page 50.

[Error Code List]

1) Own unit error

Storage location	Type	Code	Description
Equipment parameter 16	Serious	0x0001	Number of MPU communication retries exceeded
Equipment parameter 16	Serious	0x0002	Mismatch of MPU communication response code
Equipment parameter 16	Serious	0x0003	MPU communication timeout
Equipment parameter 16	Serious	0x0004	Initial number of retries exceeded
–	Intermediate	–	None
–	Minor	–	None

2) Communication error

Storage location	Type	Code	Description	Conditions for generation
Equipment parameter 16	–	0x2000	Operation mode setting error (CH0)	- The CH0 operation mode setting is changed while CH0 is unused.
Equipment parameter 16	–	0x2003	Operation mode setting error (CH1)	- The CH1 operation mode setting is changed while CH1 is unused.
Equipment parameter 16	–	0x2006	Digital input filtering time setting error (CH0)	- The CH0 digital input filtering time setting is changed while CH0 is unused.
Equipment parameter 16	–	0x200A	Digital input filtering time setting error (CH1)	- The CH1 digital input filtering time setting is changed while CH1 is unused.
Equipment parameter 16	–	0x2038	Device verification setting error (CH0)	- The CH0 device verification setting is changed while CH0 is unused.
Equipment parameter 16	–	0x203B	Device verification setting error (CH1)	- The CH1 device verification setting is changed while CH1 is unused.
Equipment parameter 16	–	0x210E	MSByte & LSByte switch setting (endian setting) error (CH0)	- The MSByte & LSByte switch setting (endian setting) of CH0 is changed while CH0 is unused.
Equipment parameter 16	–	0x210F	MSByte & LSByte switch setting (endian setting) error (CH1)	- The MSByte & LSByte switch setting (endian setting) of CH1 is changed while CH1 is unused.
Equipment parameter 16	–	0x2110	I/O OFF delay setting error (CH0)	- The I/O OFF delay setting on CH0 is changed while CH0 is unused.
Equipment parameter 16	–	0x2116	I/O OFF delay setting error (CH1)	- The I/O OFF delay setting on CH1 is changed while CH1 is unused.
Equipment parameter 5	–	0x2801	P17 command error	- Undefined or unsupported P17 command is executed. - The OD setting/acquisition command is executed for a CH for which the device verification result is NG.
Equipment parameter 5	–	0x2802	P17 command channel designation error (unused CH designated)	- A command is executed for a CH setup as “not used.”
Equipment parameter 5	–	0x2803	Transmission data size error	- The total transfer data size is non-zero in operations other than OD acquisition/setting. - The total transfer data size is 233 or larger in OD acquisition/setting. - The total transfer data size is “0” in OD acquisition/setting.
Equipment parameter 5	–	0x2804	Index error*1	- INDEX3 specified in OD acquisition/setting. - INDEX0 specified in OD setting. - INDEX1 specified in OD setting.
Equipment parameter 5	–	0x2805	Split command unavailable error	- The head of split command data is turned ON in operations other than OD acquisition/setting.
Equipment parameter 5	–	0x2806	Split command data size error	- The split command data size is non-zero in operations other than OD acquisition/setting. - The head of split command data is turned ON and the split command data size is “0” while the split command is not performed in OD acquisition/setting. - The head of split command data is turned OFF and the split command data size is non-zero while the split command is not performed in OD acquisition/setting. - The head of split command data is turned OFF and the split command data size is “0” while the split command is performed in OD acquisition/setting. - The head of split command data is turned OFF and the split command data size is “21” or larger while the split command is performed in OD acquisition/setting. - The head of split command data is turned ON and the split command data size is “21” or larger while the split command is not performed in OD acquisition/setting.
Equipment parameter 5	–	0x2807	Head flag ON during the execution of split command	- The head of split command data is turned ON while the split command is performed in OD acquisition/setting.
Equipment parameter 5	–	0x2808	Other commands executed during the execution of split command	- Operations other than OD setting and cancel are performed while the split command is performed in OD setting. - Operations other than OD acquisition and cancel are performed while the split command is performed in OD acquisition.
Equipment parameter 5	–	0x2809	PD bit position specification error	- The setting is “65” or larger during the execution of PD ON/OFF position setting command. - The setting is “6” or larger during the execution of CH LED setting command. - The setting at the start position or end position is “65” or larger during the execution of PD raw data start/end position setting command.
Equipment parameter 5	–	0x280A	PD raw data start/end position setting error	- Start position > End position - Either setting is “0” (invalid) - The difference between the start position and end position is “16” (2 bytes) or larger.
Equipment parameter 16	–	0x280B	Timeout during the execution of split command	- 30 seconds have passed after cancelling remaining split commands during the execution of split command.
Equipment parameter 5	–	0x280C	IO-Link device error	- An error has been returned from the IO-Link device during the execution of OD setting/acquisition command.

*1 If an index error is issued on the device, the error will be returned as an error response from the device.
For the information on the error code, refer to the IO-Link specifications (V1.1.2).

[Event Code List]

Code	Classification	Description
0xC101	Error	An overcurrent on the C/Q line detected.
0xC102	Warning	A voltage drop on the L+ line detected.
0xC103	Error	An overcurrent on the L+ line detected.
0xC104	Warning	The channel supply voltage is 18V or below.
0xC105	Error	The channel supply voltage is 9V or below.
0xC106	Warning	High temperature warning (135℃ or higher)
0xC107	Error	High temperature warning (160℃ or higher)
0xC300	Notice	DS not supported.
0xC301	Notice	IO-Link device parameter download success.
0xC302	Notice	IO-Link device parameter upload success.
0xC303	Notice	IO-Link device parameter download failed.
0xC304	Notice	IO-Link device parameter upload failed.
0xC305	Notice	IO-Link device parameter download F/W revision mismatch
0xC307	Notice	Device ID or vendor ID mismatch (device verification)
0xC308	Notice	Serial No. mismatch (device verification)
0xC309	Notice	Revision ID not supported.
0xC30D	Notice	IO-Link device parameter access failed.
0xCFFF	Notice	Event lost.

* For the event codes defined in the IO-Link standard, refer to the IO-Link specifications (V1.1.2).

[Troubleshooting]

＜LINK is unlit＞

Things to be checked	Remedy
Is the 24V-0V line normal?	Check to see if wires and cables satisfying the standard are used. (For further information, refer to the User's Manual of the ASLINK master unit in use.) Check to see if the 24V-0V line is broken.

＜LINK is lit＞

Things to be checked	Remedy
Are cables normal?	Check to see if wires and ASLINK cables satisfying the standard are used. (For further information, refer to the User's Manual of the ASLINK master unit in use.) Ensure that the ASLINK cable is not broken.
Is the ASLINK master unit working normally?	Check if the power is supplied to the ASLINK master unit. Check if the ASLINK master unit has been initialized.
Is the number of IO-Link Master LINKER, on which the DP-DN disconnection error is issued, one?	With one unit of IO-Link Master LINKER to be replaced removed from the transmission line, perform a single unit simplified replacement. If it is necessary to replace two or more units, turn OFF the power after replacing the first unit and remove the second IO-Link Master LINKER to be replaced before performing another single unit simplified replacement.
Are the IO-Link Master LINKER units before and after the replacement of the same type?	Ensure to use the same type of IO-Link Master LINKER for the replacement.
Is the IO-Link Master LINKER after the replacement of a new functional version?	For the new IO-Link Master LINKER, use one with the functional version newer than that of old IO-Link Master LINKER.

＜LINK is blinking in 0.5s cycle＞

Things to be checked	Remedy
Is there an error?	Identify the cause of error on the IO-Link Master LINKER using the latest error code and address the problem.
Is the IO-Link Master LINKER ID duplicated with another station?	Modify the setting so that all IDs will be unique.
Is the IO-Link Master LINKER address setting correct?	Ensure that the number of transmission points is within the specified range.

＜CH does not illuminate＞

Things to be checked	Remedy
Is the CH LED display position setting correct?	Check the CH LED display position setting.
Is the IO-Link device working normally?	Check to see if there is a short-circuit on the IO-Link device.
Are cables normal?	Check to see if wires and ASLINK cables satisfying the standard are used. (For further information, refer to the User's Manual of the ASLINK master unit in use.) Ensure that the ASLINK cable is not broken.
Is the IO-Link Master LINKER address setting correct?	Ensure that the number of transmission points is within the specified range.
Is the operation mode setting correct?	Check the operation mode setting.
Is the ASLINK master unit working normally?	Check if the power is supplied to the ASLINK master unit.
Is the voltage of externally supplied power (24VDC) within the standard range?	Adjust the voltage according to the range of performance specification.

＜CH is blinking in 0.25s cycle＞

Things to be checked	Remedy
Is the IO-Link device connected?	Check to see if wires and ASLINK cables satisfying the standard are used. (For further information, refer to the User's Manual of the ASLINK master unit in use.) Ensure that the ASLINK cable is not broken. Check if the replacement in progress flag is left unset in replacing the device.

＜ALM is lit＞

Things to be checked	Remedy
Does the voltage of externally supplied power satisfy the specification?	Check if the power supply voltage of the unit is within the range of performance specification. After the check, turn OFF the unit power and then turn it back ON. If the ALM LED does not turn OFF after turning OFF the unit power and turning it back ON, it is possible that the unit has failed.
Is there a hardware error?	
Is there an error?	Identify the cause of error on the IO-Link Master LINKER using the latest error code and address the problem.
Is there an event generated?	Read all events on both channels. Identify the cause of error on the IO-Link Master LINKER using the event code and address the problem.
Is the IO-Link device connected?	Check to see if wires and ASLINK cables satisfying the standard are used. (For further information, refer to the User's Manual of the ASLINK master unit in use.) Ensure that the ASLINK cable is not broken. Check if the replacement in progress flag is left unset in replacing the device.
Is the IO-Link device working normally?	Check to see if there is a short-circuit on the IO-Link device.
Is there an influence of a noise?	Check the wiring condition.

＜ALM is lit for 0.2s and unlit for 1s＞

Things to be checked	Remedy
Is the ASLINK master unit working normally?	Check if the power is supplied to the ASLINK master unit.

＜ALM is blinking in 0.5s cycle＞

Things to be checked	Remedy
Is there an error?	Identify the cause of error on the IO-Link Master LINKER using the latest error code and address the problem.
Is the IO-Link Master LINKER ID duplicated with another station?	Modify the setting so that all IDs will be unique.
Is the IO-Link Master LINKER address setting correct?	Ensure that the number of transmission points is within the specified range.
Is the single unit simplified replacement enabled?	Enable the single unit simplified replacement in the master unit's parameter setting. (Single unit simplified replacement enable/disable setting)
Is the number of IO-Link Master LINKER, on which the DP-DN disconnection error is issued, one?	With one unit of IO-Link Master LINKER to be replaced removed from the transmission line, perform a single unit simplified replacement. If it is necessary to replace two or more units, turn OFF the power after replacing the first unit and remove the second IO-Link Master LINKER to be replaced before performing another single unit simplified replacement.
Are the IO-Link Master LINKER units before and after the replacement of the same type?	Ensure to use the same type of IO-Link Master LINKER for the replacement.
Is the IO-Link Master LINKER after the replacement of a new functional version?	For the new IO-Link Master LINKER, use one with the functional version newer than that of old IO-Link Master LINKER.

＜ALM is blinking in 0.25s cycle＞

Things to be checked	Remedy
Is there a hardware error?	Turn OFF the unit power and then turn it back ON. If the ALM LED does not turn OFF after turning OFF the unit power and turning it back ON, it is possible that the unit has failed.

＜PD cannot be read or written＞

Things to be checked	Remedy
Is the equipment parameter 2 (input data enabled flag) turned ON?	Reconnect the IO-Link Master LINKER properly.
Is the IO-Link device parameter download failed event registered in the event history?	Reconnect the IO-Link device connected to the channel on which the IO-Link device parameter download failed event was generated.
Is the IO-Link device parameter upload failed event registered in the event history?	Reconnect the IO-Link device connected to the channel on which the IO-Link device parameter upload failed event was generated.
Is the IO-Link device access failed event registered in the event history?	Based on the manual of the IO-Link device, read the IO-Link device parameter Device Access Locks and ensure that the value of Bit1, Data Storage, is not set to “1: locked.” If it is set to “1: locked,” modify the value to “0: unlocked.” After that, switch the operation mode to disabled and then switch it back to the COM mode again.
Is the data storage buffer overflow event registered in the event history?	Reconnect the IO-Link device that sends out the parameter size in compliance to the standard to the channel on which the data storage buffer overflow event was generated. For the event codes defined in the IO-Link standard, refer to the IO-Link specifications (V1.1.2).
Is the channel used set up properly?	Set up the channel used properly.
Is the channel operation mode set up properly?	Set the channel’s operation mode to the COM mode or COM&PIN2 mode in accordance with the operation mode of IO-Link device connected.
Is the MSByte & LSByte switch setting correct?	Review the MSByte & LSByte switch setting in accordance with requirements for the application.
Is the bit position within the PD correct?	Set up the bit position within the PD properly.
Is the refresh device setting correct?	Check and correct the refresh parameter so that the setting of refresh device matches the program. For the setting of refresh parameter, refer to the User’s Manual of the ASLINK master unit in use.

＜The ON/OFF condition of external input cannot be read in the SIO mode＞

Things to be checked	Remedy
Is the CH LED of relevant channel on the IO-Link Master LINKER illuminated with the external input device ON?	If the LED does not light up, there is a problem in the input wiring. Check if there is a broken wire or short-circuit in the input wiring and if the input signal voltage is appropriate and then review the wiring.
Is the refresh device setting correct?	Check and correct the refresh parameter so that the setting of refresh device matches the program. For the setting of refresh parameter, refer to the User’s Manual of the ASLINK master unit in use.
Is the operation mode setting correct?	Check the operation mode and correct it to match the setting of external input device.
Is the input OFF delay function used correctly?	If the input OFF delay is enabled, the input signal turns OFF after the delay time has passed after the externally connected device has turned OFF. Either disable the input OFF delay or review the delay time.

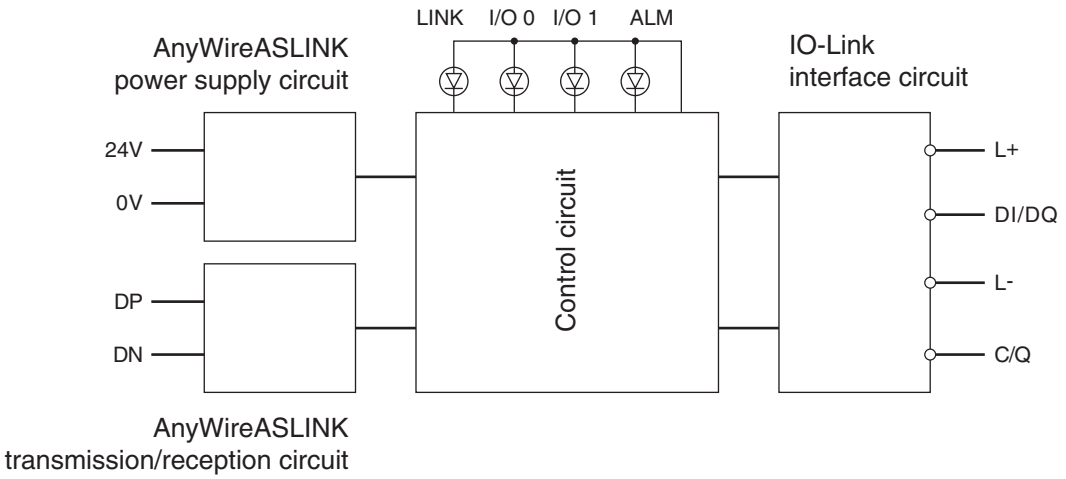
＜Parameters cannot be read or written＞

Things to be checked	Remedy
Refer to the manual of the IO-Link Master LINKER setup tool.	Consult the troubleshooting. [When the read/write operations cannot be completed properly on the IO-Link Master LINKER setting screen (timeout included)] [When the write operation cannot be completed properly on the IO-Link Master LINKER setting screen List 2] [When the read/write operations cannot be completed properly on the IO-Link device setting screen (timeout included)]

＜Equipment parameter 4 (device verification result) indicates an NG＞

Things to be checked	Remedy
Is the connected IO-Link device as intended?	Check if the connected IO-Link device is as intended. If an intended device is connected, reset the “device verification setting” to “0: Not verified” and reconnect the IO-Link device.

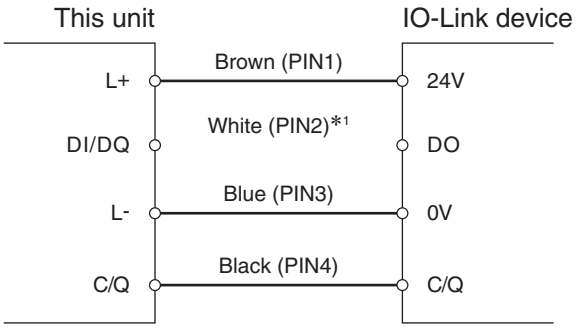
[Input Circuit Configuration and Electrical Properties]



Connection of an IO-Link device without the PIN2 digital input feature

＜Circuit conditions＞

Rated input voltage: 24VDC
Rated load current (C/Q): 200mA
Rated load current (L+): 200mA

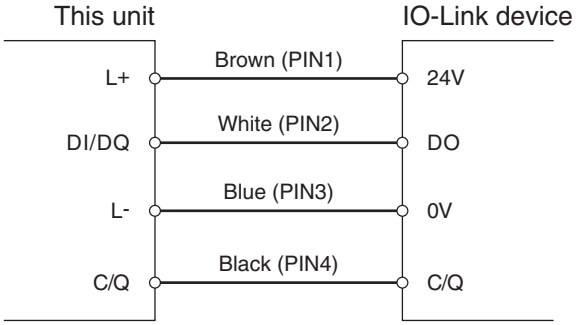


*1 If the PIN2 digital input feature is not used, the connection of DI (white) is not required.

Connection of an IO-Link device with the PIN2 digital input feature

＜Circuit conditions＞

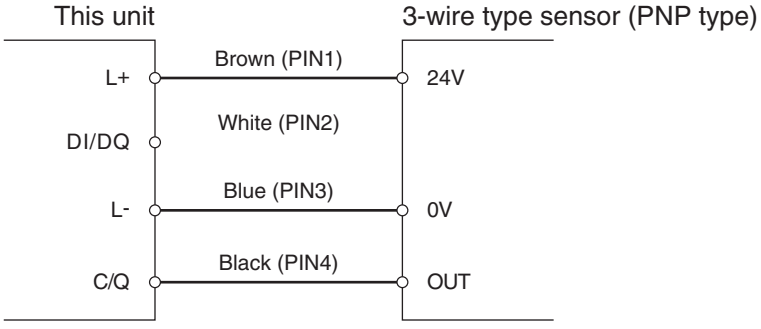
Rated input voltage: 24VDC
Rated input current: 200mA or less
ON current: 5mA or more
OFF current: 5mA or less
ON voltage: 11VDC or more
OFF voltage: 6VDC or less



Connection of a 3-wire type sensor

＜Circuit conditions＞

Rated input voltage: 24VDC
Rated input current: 200mA or less
ON current: 5mA or more
OFF current: 5mA or less
ON voltage: 11VDC or more
OFF voltage: 6VDC or less

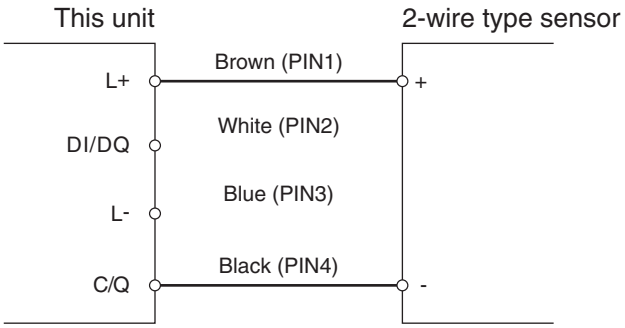


* The DI (white) terminal cannot be used.

Connection of a 2-wire type sensor

＜Circuit conditions＞

Rated input voltage: 24VDC
Rated input current: 200mA or less
ON current: 5mA or more
OFF current: 5mA or less
ON voltage: 11VDC or more
OFF voltage: 6VDC or less



[Specifications]

■ General specifications

Operating ambient temperature/humidity	0 to +55°C, 10 to 90% RH No condensation
Storing ambient temperature/humidity	-25 to +75°C, 10 to 90% RH No condensation
Vibration resistance	Based on JIS B 3502
Shock resistance	Based on JIS B 3502
Atmosphere	No corrosive gas
Operating altitude*1	0 to 2000m
Pollution level*2	2 or less

*1 Do not use or store AnyWireASLINK devices in an environment where the pressure exceeds the atmospheric pressure at an altitude of 0 meters. Doing so may result in malfunction.
*2 "Pollution level" is an index that indicates the degree of occurrence of conductive substances in the environment where the device is used.
Pollution level 2 means the occurrence of only pollution by non-conductive substances. In such an environment, however, electrical conduction could occur due to accidental condensation.

■ Transmission specifications

Service power supply voltage	24V DC +15% to -10% (21.6 to 27.6V DC) with a ripple of 0.5Vp-p or less
Transmission method	DC power supply superimposed total frame/cyclic method
Synchronization method	Frame/bit synchronization method
Transmission procedure	AnyWireASLINK protocol
Connection mode	Bus type (Multi-drop method, T-branch method, Tree branch method)
Number of connection points*3	Number of bit points: 1024 points max. (Input: 512 bits, Output: 512 bits) Number of word points: 1024 words max. (Input: 512 words, Output: 512 words)
Number of connection units*3	Up to 256 units
RAS features	Detection of transmission line disconnection, transmission line short-circuit, transmission power supply drop, and duplicated ID/unregistered ID

*3 The number differs depending on the master unit. Be sure to refer to the manual of the master unit for the number.

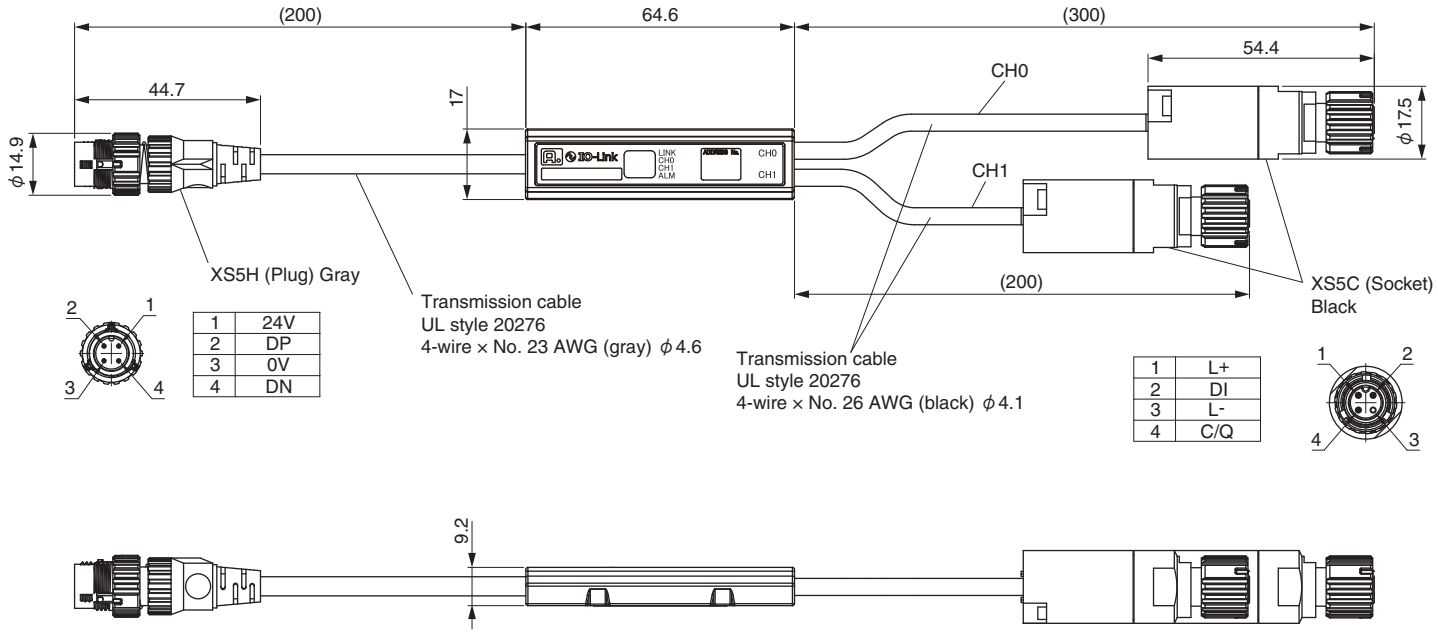
■ Individual specifications

Number of occupied points	With the word address setting: 8 word input + 10 points of bit input With the bit address setting: 42 points of bit input
Response time*4	COM mode: ASLINK processing time + IO-Link processing time ASLINK processing time Bit transmission cycle time × 1 IO-Link processing time COM1: 18ms, COM2: 2ms, COM3: 0.4ms SIO (DI) mode: 0.4ms or less PIN2 mode: 0.4ms or less
Protective structure	IP67
Detection function	Remote unit voltage drop (DP-DN voltage drop) I/O power supply drop (24V-0V voltage drop) I/O disconnection I/O short-circuit
Current consumption	Transmission side (DP-DN): 3.0mA I/O side*5 (24V-0V): 42.9mA
Weight	78g
Unit model number*6	014D

*4 Indicates the internal processing time of this unit. The maximum transmission delay time is defined as "this time + bit transmission cycle time × 2."
*5 The value is for the case in which all points between the 24V and IN (PNP) are short-circuited. If IO-Link sensors or 3-wire type sensors are connected, add the total current consumption of the sensors.
*6 Code (hexadecimal) specific to each model
It can be monitored by reading the parameter from the master unit. For details, refer to the manual for the master unit.

[Outside Dimensions]

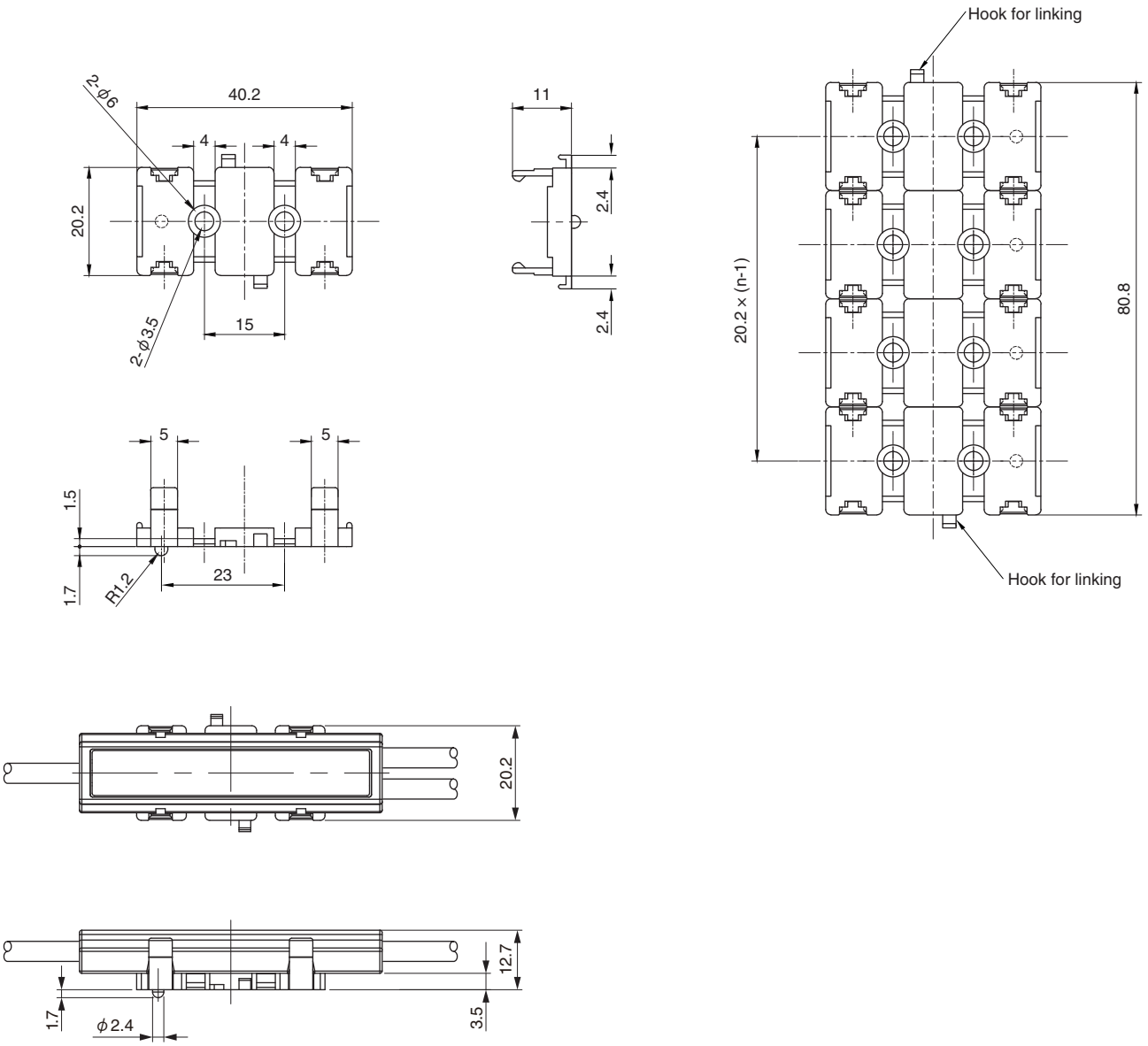
Unit: mm



1	24V
2	DP
3	0V
4	DN

1	L+
2	DI
3	L-
4	C/Q

■ADP-87 (Mounting adaptor)



Reading and writing equipment parameters

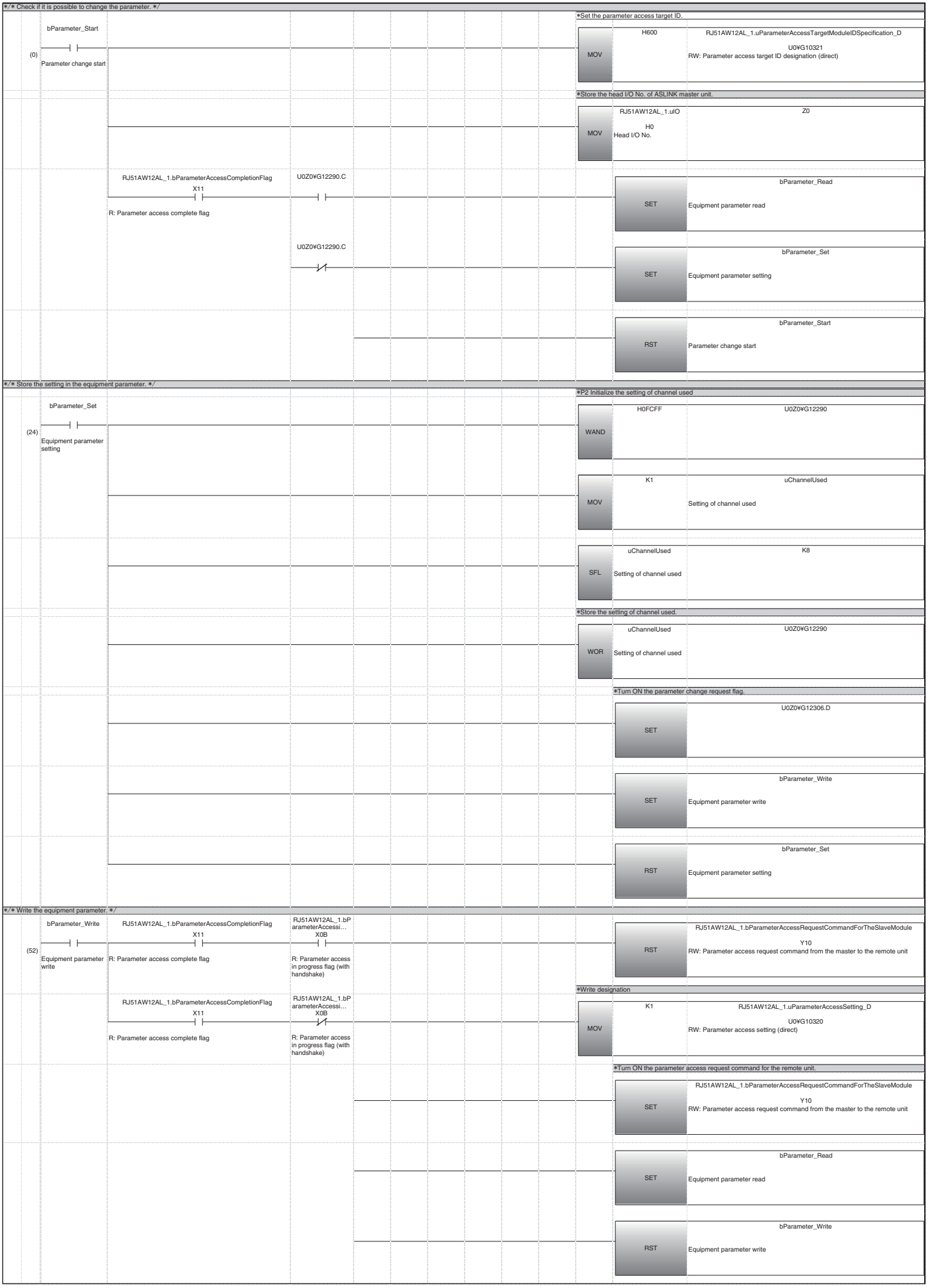
■ Checking the assumed conditions

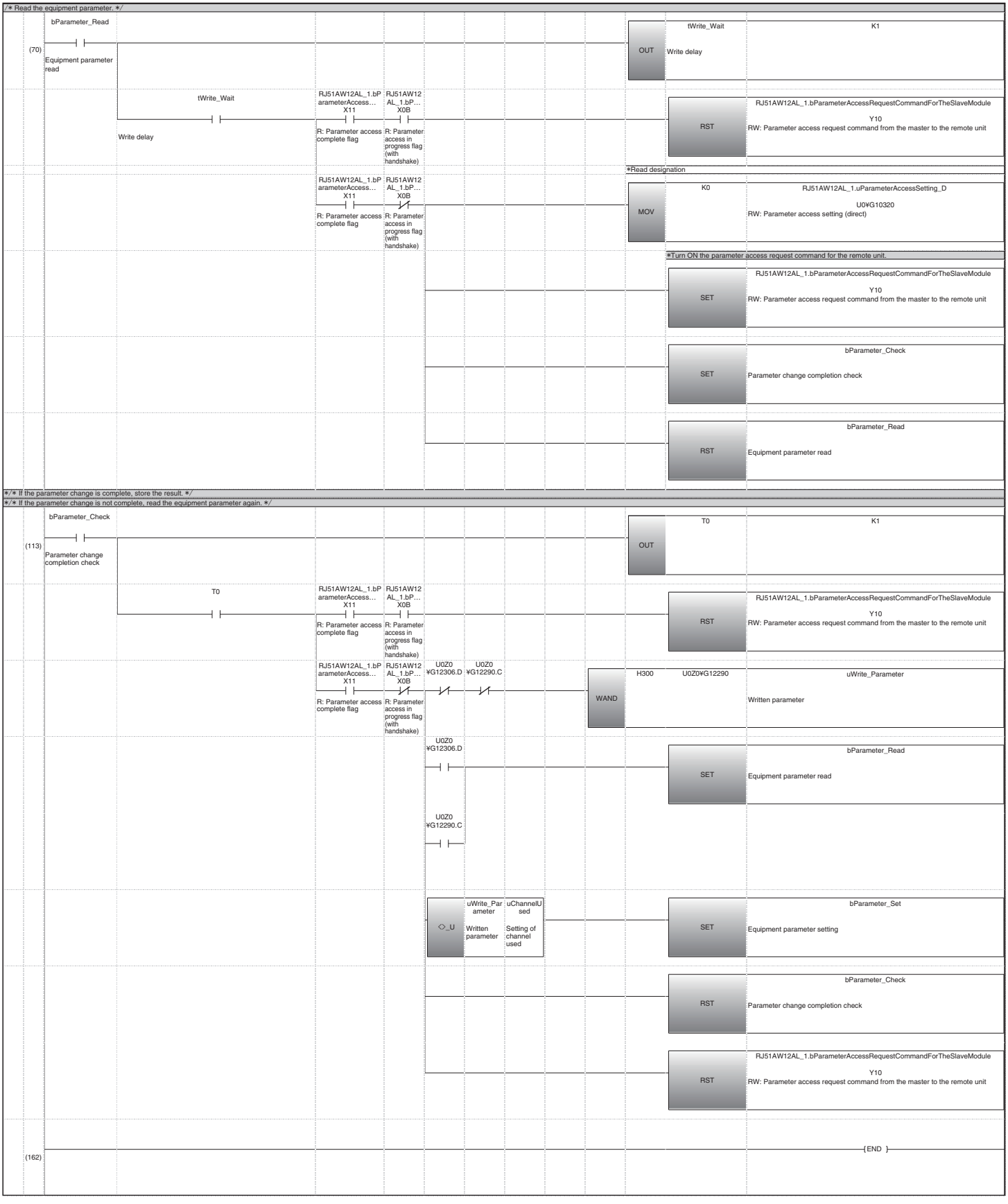
- Configuration Use RJ51AW12AL (head I/O No. 0000)
- This unit's address Word input 0
- Unit labels to be used

Label name	Description	Device/ buffer memory address
RJ51AW12AL_1.uIO	Head I/O No.	–
RJ51AW12AL_1.bParameterAccess CompletionFlag	R: Parameter access complete flag	X11
RJ51AW12AL_1.bParameterAccessingFlag_ WithHandshake	R: Parameter access in progress flag (with handshake)	X0B
RJ51AW12AL_1.bParameterAccessRequest CommandForTheSlaveModule	RW: Parameter access request command from the master to the remote unit	Y10
RJ51AW12AL_1.uParameterAccessSetting_D	RW: Parameter access setting (direct)	U0¥G10320
RJ51AW12AL_1.uParameterAccessTarget ModuleIDSpecification_D	RW: Parameter access target ID designation (direct)	U0¥G10321

- Local labels to be used

Label name	Data type	Class	Initial value	Constant	Comment
bParameter_Start	Bit	VAR			Parameter change start
bParameter_Set	Bit	VAR			Equipment parameter setting
bParameter_Write	Bit	VAR			Equipment parameter write
bParameter_Read	Bit	VAR			Equipment parameter read
bParameter_Check	Bit	VAR			Parameter change completion check
uChannelUsed	Word [unsigned]/Bit column [16 bit]	VAR			Setting of channel used
uWrite_Parameter	Word [unsigned]/Bit column [16 bit]	VAR			Written parameter
tWrite_Wait	Timer	VAR			Write delay


/ Check if it is possible to change the parameter. */
*Set the parameter access target ID.
bParameter_Start
(0)
Parameter change start
MOV
H600
RJ51AW12AL_1.uParameterAccessTargetModuleIDSpecification_D
U0¥G10321
RW: Parameter access target ID designation (direct)
*Store the head I/O No. of ASLINK master unit.
MOV
RJ51AW12AL_1.uIO
H0
Head I/O No.
Z0
RJ51AW12AL_1.bParameterAccessCompletionFlag
X11
R: Parameter access complete flag
U0Z0¥G12290.C
SET
bParameter_Read
Equipment parameter read
U0Z0¥G12290.C
SET
bParameter_Set
Equipment parameter setting
RST
bParameter_Start
Parameter change start
/ Store the setting in the equipment parameter. */
*P2 Initialize the setting of channel used
bParameter_Set
(24)
Equipment parameter setting
WAND
H0FCFF
U0Z0¥G12290
MOV
K1
uChannelUsed
Setting of channel used
SFL
uChannelUsed
K8
Setting of channel used
*Store the setting of channel used.
WOR
uChannelUsed
U0Z0¥G12290
Setting of channel used
*Turn ON the parameter change request flag.
SET
U0Z0¥G12306.D
SET
bParameter_Write
Equipment parameter write
RST
bParameter_Set
Equipment parameter setting
/ Write the equipment parameter. */
bParameter_Write
(52)
Equipment parameter write
RJ51AW12AL_1.bParameterAccessCompletionFlag
X11
R: Parameter access complete flag
RJ51AW12AL_1.bParameterAccessi…
X0B
R: Parameter access in progress flag (with handshake)
RST
RJ51AW12AL_1.bParameterAccessRequestCommandForTheSlaveModule
Y10
RW: Parameter access request command from the master to the remote unit
*Write designation
RJ51AW12AL_1.bParameterAccessCompletionFlag
X11
R: Parameter access complete flag
RJ51AW12AL_1.bParameterAccessi…
X0B
R: Parameter access in progress flag (with handshake)
MOV
K1
RJ51AW12AL_1.uParameterAccessSetting_D
U0¥G10320
RW: Parameter access setting (direct)
*Turn ON the parameter access request command for the remote unit.
SET
RJ51AW12AL_1.bParameterAccessRequestCommandForTheSlaveModule
Y10
RW: Parameter access request command from the master to the remote unit
SET
bParameter_Read
Equipment parameter read
RST
bParameter_Write
Equipment parameter write


/* Read the equipment parameter. */
bParameter_Read
(70)
Equipment parameter read
tWrite_Wait
Write delay
RJ51AW12AL_1.bParameterAccess... X11
R: Parameter access complete flag
RJ51AW12AL_1.bP... X0B
R: Parameter access in progress flag (with handshake)
OUT
tWrite_Wait
K1
Write delay
RST
RJ51AW12AL_1.bParameterAccessRequestCommandForTheSlaveModule
Y10
RW: Parameter access request command from the master to the remote unit
*Read designation
MOV
K0
RJ51AW12AL_1.uParameterAccessSetting_D
U0¥G10320
RW: Parameter access setting (direct)
*Turn ON the parameter access request command for the remote unit.
SET
RJ51AW12AL_1.bParameterAccessRequestCommandForTheSlaveModule
Y10
RW: Parameter access request command from the master to the remote unit
SET
bParameter_Check
Parameter change completion check
RST
bParameter_Read
Equipment parameter read
/ If the parameter change is complete, store the result. */
/ If the parameter change is not complete, read the equipment parameter again. */
bParameter_Check
(113)
Parameter change completion check
T0
OUT
T0
K1
RST
RJ51AW12AL_1.bParameterAccessRequestCommandForTheSlaveModule
Y10
RW: Parameter access request command from the master to the remote unit
U0Z0 ¥G12306.D
U0Z0 ¥G12290.C
WAND
H300
U0Z0¥G12290
uWrite_Parameter
Written parameter
SET
bParameter_Read
Equipment parameter read
◇_U
uWrite_Parameter
Written parameter
uChannelUsed
Setting of channel used
SET
bParameter_Set
Equipment parameter setting
RST
bParameter_Check
Parameter change completion check
RST
RJ51AW12AL_1.bParameterAccessRequestCommandForTheSlaveModule
Y10
RW: Parameter access request command from the master to the remote unit
(162)
{END }

OD acquisition (no splitting)

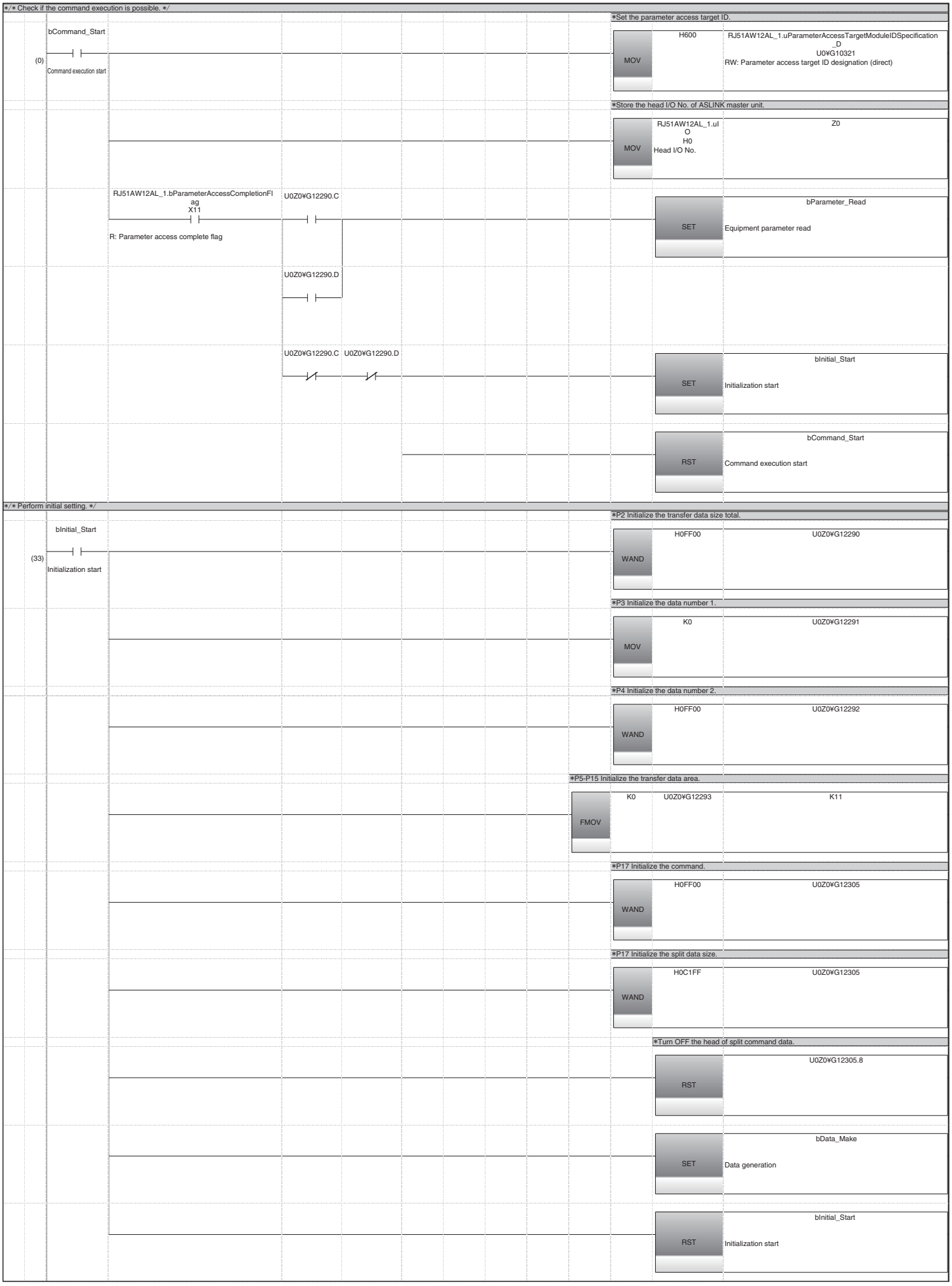
■ Checking the assumed conditions

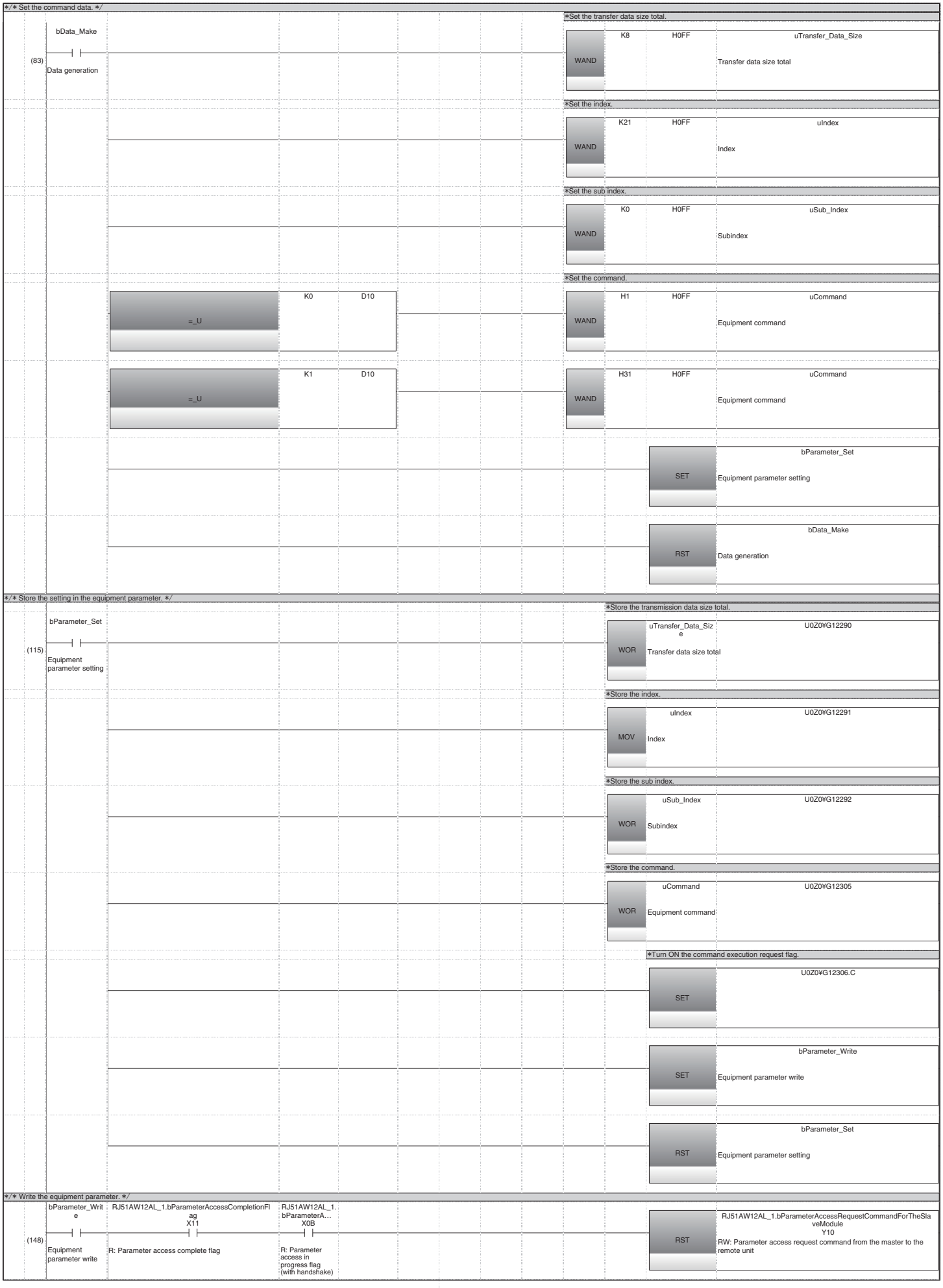
- Configuration Use RJ51AW12AL (head I/O No. 0000)
- This unit's address Word input 0
- Unit labels to be used

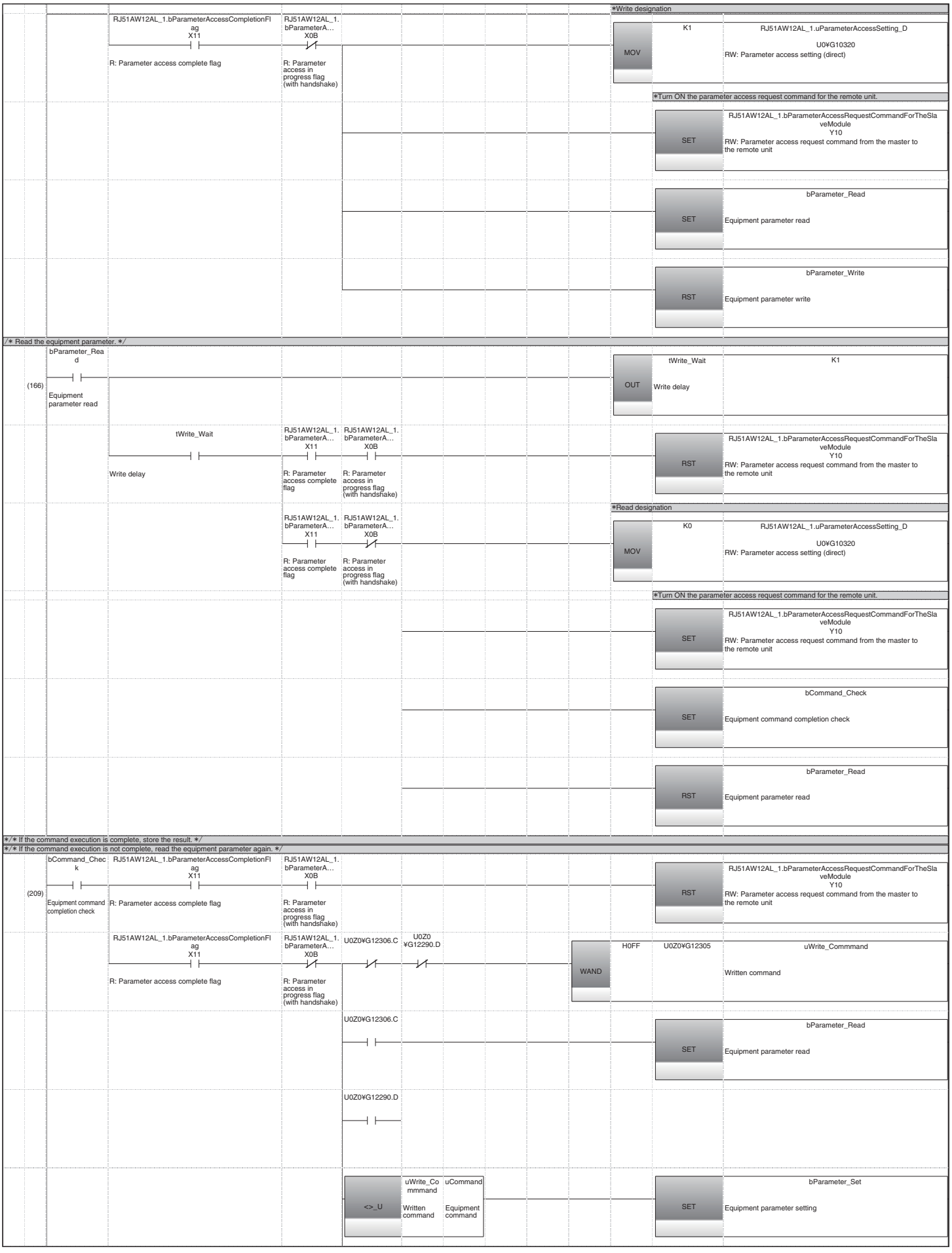
Label name	Description	Device/ buffer memory address
RJ51AW12AL_1.uIO	Head I/O No.	–
RJ51AW12AL_1.bParameterAccess CompletionFlag	R: Parameter access complete flag	X11
RJ51AW12AL_1.bParameterAccessingFlag_ WithHandshake	R: Parameter access in progress flag (with handshake)	X0B
RJ51AW12AL_1.bParameterAccessRequest CommandForTheSlaveModule	RW: Parameter access request command from the master to the remote unit	Y10
RJ51AW12AL_1.uParameterAccessSetting_D	RW: Parameter access setting (direct)	U0¥G10320
RJ51AW12AL_1.uParameterAccessTarget ModuleIDSpecification_D	RW: Parameter access target ID designation (direct)	U0¥G10321

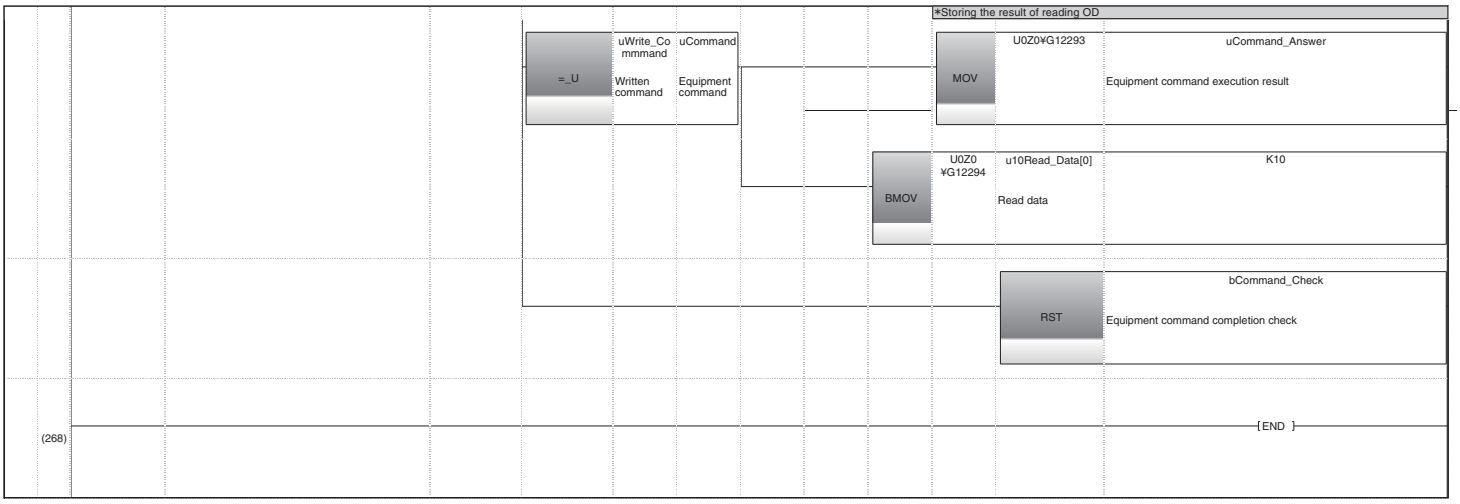
- Local labels to be used

Label name	Data type	Class	Initial value	Constant	Comment
bCommand_Start	Bit	VAR			Command execution start
bInitial_Start	Bit	VAR			Initialization start
bData_Make	Bit	VAR			Data generation
bParameter_Set	Bit	VAR			Equipment parameter setting
bParameter_Write	Bit	VAR			Equipment parameter write
bParameter_Read	Bit	VAR			Equipment parameter read
bCommand_Check	Bit	VAR			Equipment command completion check
uTransfer_Data_Size	Word [unsigned]/Bit column [16 bit]	VAR			Transfer data size total
uIndex	Word [unsigned]/Bit column [16 bit]	VAR			Index
uSub_Index	Word [unsigned]/Bit column [16 bit]	VAR			Subindex
uCommand	Word [unsigned]/Bit column [16 bit]	VAR			Equipment command
uCommand_Answer	Word [unsigned]/Bit column [16 bit]	VAR			Equipment command execution result
u10Read_Data	Word [unsigned]/Bit column [16 bit] (0..9)	VAR			Read data
uWrite_Commmand	Word [unsigned]/Bit column [16 bit]	VAR			Written command
tWrite_Wait	Timer	VAR			Write delay


/ Check if the command execution is possible. */
*Set the parameter access target ID.
bCommand_Start
(0)
Command execution start
MOV
H600
RJ51AW12AL_1.uParameterAccessTargetModuleIDSpecification_D
U0¥G10321
RW: Parameter access target ID designation (direct)
*Store the head I/O No. of ASLINK master unit.
MOV
RJ51AW12AL_1.uIO
H0
Head I/O No.
Z0
RJ51AW12AL_1.bParameterAccessCompletionFlag
X11
R: Parameter access complete flag
U0Z0¥G12290.C
U0Z0¥G12290.D
SET
bParameter_Read
Equipment parameter read
U0Z0¥G12290.C
U0Z0¥G12290.D
SET
bInitial_Start
Initialization start
RST
bCommand_Start
Command execution start
/ Perform initial setting. */
*P2 Initialize the transfer data size total.
bInitial_Start
(33)
Initialization start
WAND
H0FF00
U0Z0¥G12290
*P3 Initialize the data number 1.
MOV
K0
U0Z0¥G12291
*P4 Initialize the data number 2.
WAND
H0FF00
U0Z0¥G12292
*P5-P15 Initialize the transfer data area.
FMOV
K0
U0Z0¥G12293
K11
*P17 Initialize the command.
WAND
H0FF00
U0Z0¥G12305
*P17 Initialize the split data size.
WAND
H0C1FF
U0Z0¥G12305
*Turn OFF the head of split command data.
RST
U0Z0¥G12305.8
SET
bData_Make
Data generation
RST
bInitial_Start
Initialization start


/ Set the command data. */
bData_Make
(83)
Data generation
*Set the transfer data size total.
WAND
K8
H0FF
uTransfer_Data_Size
Transfer data size total
*Set the index.
WAND
K21
H0FF
uIndex
Index
*Set the sub index.
WAND
K0
H0FF
uSub_Index
Subindex
*Set the command.
=_U
K0
D10
WAND
H1
H0FF
uCommand
Equipment command
=_U
K1
D10
WAND
H31
H0FF
uCommand
Equipment command
SET
bParameter_Set
Equipment parameter setting
RST
bData_Make
Data generation
/ Store the setting in the equipment parameter. */
bParameter_Set
(115)
Equipment parameter setting
*Store the transmission data size total.
WOR
uTransfer_Data_Size
Transfer data size total
U0Z0¥G12290
*Store the index.
MOV
uIndex
Index
U0Z0¥G12291
*Store the sub index.
WOR
uSub_Index
Subindex
U0Z0¥G12292
*Store the command.
WOR
uCommand
Equipment command
U0Z0¥G12305
*Turn ON the command execution request flag.
SET
U0Z0¥G12306.C
SET
bParameter_Write
Equipment parameter write
RST
bParameter_Set
Equipment parameter setting
/ Write the equipment parameter. */
bParameter_Write
RJ51AW12AL_1.bParameterAccessCompletionFlag
X11
RJ51AW12AL_1.bParameterA...
X0B
(148)
Equipment parameter write
R: Parameter access complete flag
R: Parameter access in progress flag (with handshake)
RST
RJ51AW12AL_1.bParameterAccessRequestCommandForTheSlaveModule
Y10
RW: Parameter access request command from the master to the remote unit


*Write designation
RJ51AW12AL_1.bParameterAccessCompletionFlag
X11
RJ51AW12AL_1.bParameterA...
X0B
R: Parameter access complete flag
R: Parameter access in progress flag (with handshake)
MOV
K1
RJ51AW12AL_1.uParameterAccessSetting_D
U0¥G10320
RW: Parameter access setting (direct)
*Turn ON the parameter access request command for the remote unit.
SET
RJ51AW12AL_1.bParameterAccessRequestCommandForTheSlaveModule
Y10
RW: Parameter access request command from the master to the remote unit
SET
bParameter_Read
Equipment parameter read
RST
bParameter_Write
Equipment parameter write
/* Read the equipment parameter. */
bParameter_Read
(166)
Equipment parameter read
OUT
tWrite_Wait
K1
Write delay
tWrite_Wait
RJ51AW12AL_1.bParameterA...
X11
RJ51AW12AL_1.bParameterA...
X0B
Write delay
R: Parameter access complete flag
R: Parameter access in progress flag (with handshake)
RST
RJ51AW12AL_1.bParameterAccessRequestCommandForTheSlaveModule
Y10
RW: Parameter access request command from the master to the remote unit
*Read designation
MOV
K0
RJ51AW12AL_1.uParameterAccessSetting_D
U0¥G10320
RW: Parameter access setting (direct)
*Turn ON the parameter access request command for the remote unit.
SET
RJ51AW12AL_1.bParameterAccessRequestCommandForTheSlaveModule
Y10
RW: Parameter access request command from the master to the remote unit
SET
bCommand_Check
Equipment command completion check
RST
bParameter_Read
Equipment parameter read
/ If the command execution is complete, store the result. */
/ If the command execution is not complete, read the equipment parameter again. */
bCommand_Check
(209)
Equipment command completion check
RJ51AW12AL_1.bParameterAccessCompletionFlag
X11
RJ51AW12AL_1.bParameterA...
X0B
R: Parameter access complete flag
R: Parameter access in progress flag (with handshake)
RST
RJ51AW12AL_1.bParameterAccessRequestCommandForTheSlaveModule
Y10
RW: Parameter access request command from the master to the remote unit
U0Z0¥G12306.C
U0Z0¥G12290.D
WAND
H0FF
U0Z0¥G12305
uWrite_Commmand
Written command
U0Z0¥G12306.C
SET
bParameter_Read
Equipment parameter read
U0Z0¥G12290.D
<>_U
uWrite_Commmand
uCommand
Written command
Equipment command
SET
bParameter_Set
Equipment parameter setting


*Storing the result of reading OD
=_U
uWrite_Command
Written command
uCommand
Equipment command
MOV
U0Z0¥G12293
uCommand_Answer
Equipment command execution result
BMOV
U0Z0 ¥G12294
u10Read_Data[0]
Read data
K10
RST
bCommand_Check
Equipment command completion check
(268)
{END }

OD acquisition (with splitting)

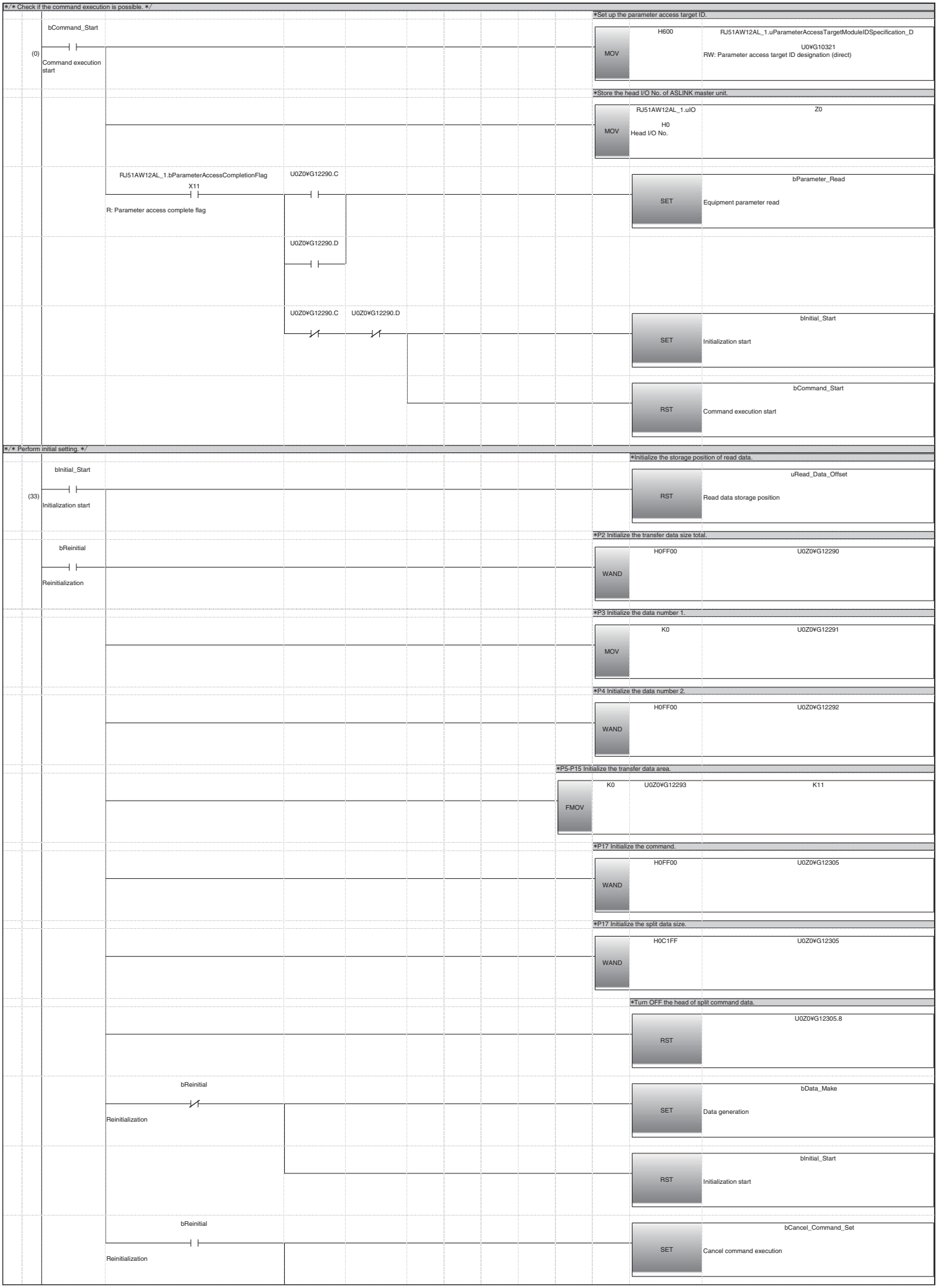
■ Checking the assumed conditions

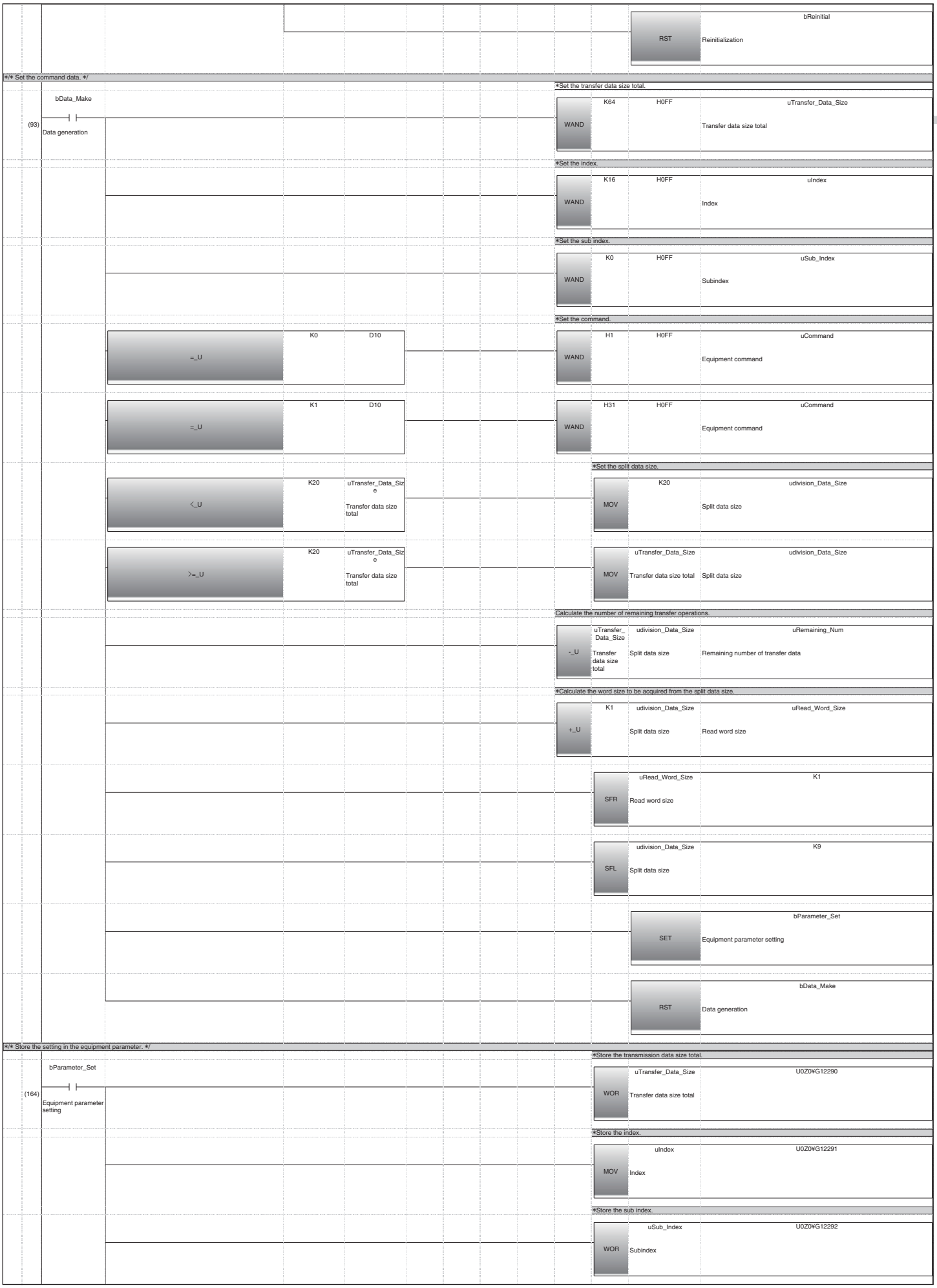
- Configuration Use RJ51AW12AL (head I/O No. 0000)
- This unit's address Word input 0
- Unit labels to be used

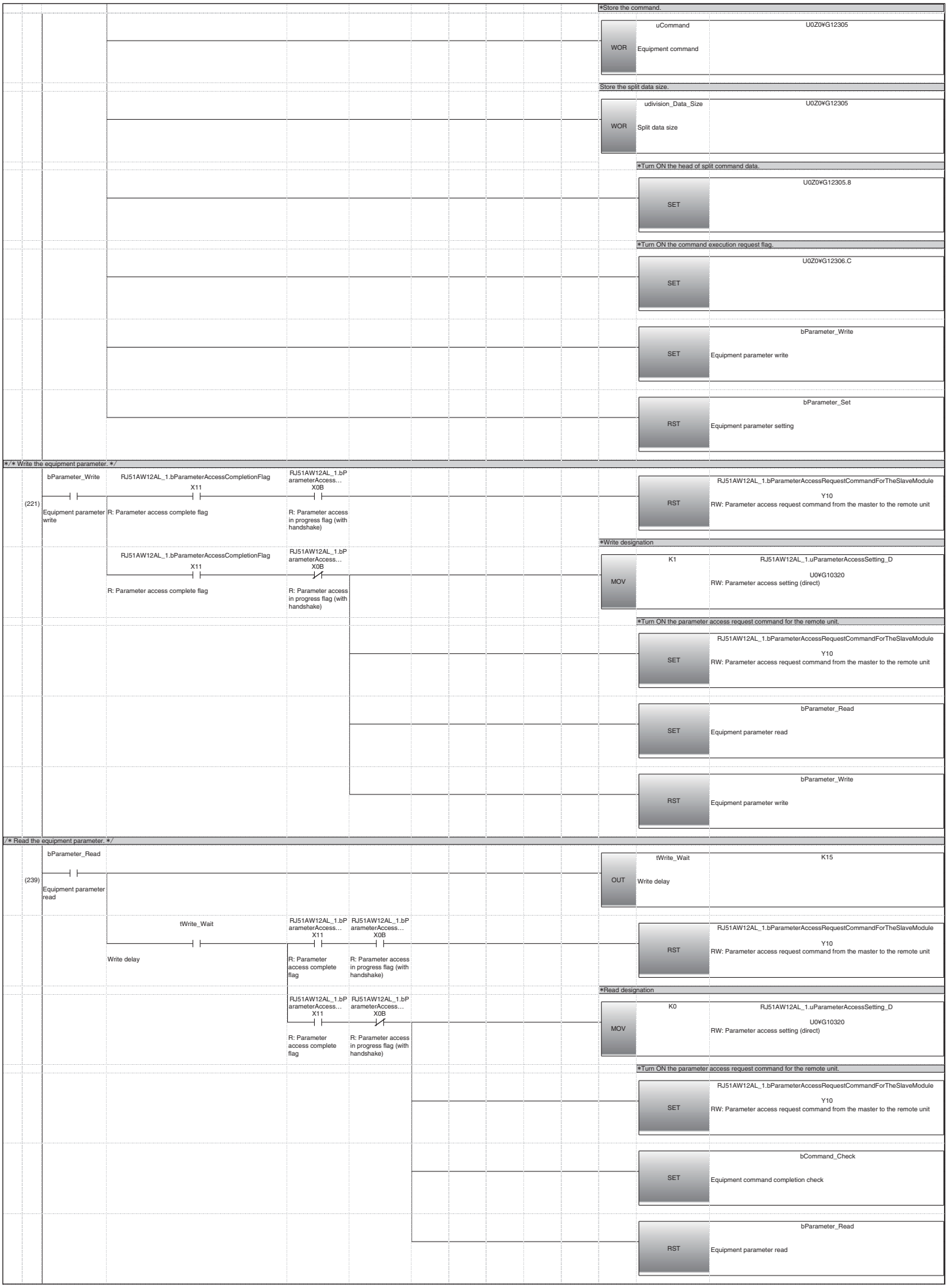
Label name	Description	Device/ buffer memory address
RJ51AW12AL_1.uIO	Head I/O No.	–
RJ51AW12AL_1.bParameterAccess CompletionFlag	R: Parameter access complete flag	X11
RJ51AW12AL_1.bParameterAccessingFlag_ WithHandshake	R: Parameter access in progress flag (with handshake)	X0B
RJ51AW12AL_1.bParameterAccessRequest CommandForTheSlaveModule	RW: Parameter access request command from the master to the remote unit	Y10
RJ51AW12AL_1.uParameterAccessSetting_D	RW: Parameter access setting (direct)	U0¥G10320
RJ51AW12AL_1.uParameterAccessTarget ModuleIDSpecification_D	RW: Parameter access target ID designation (direct)	U0¥G10321

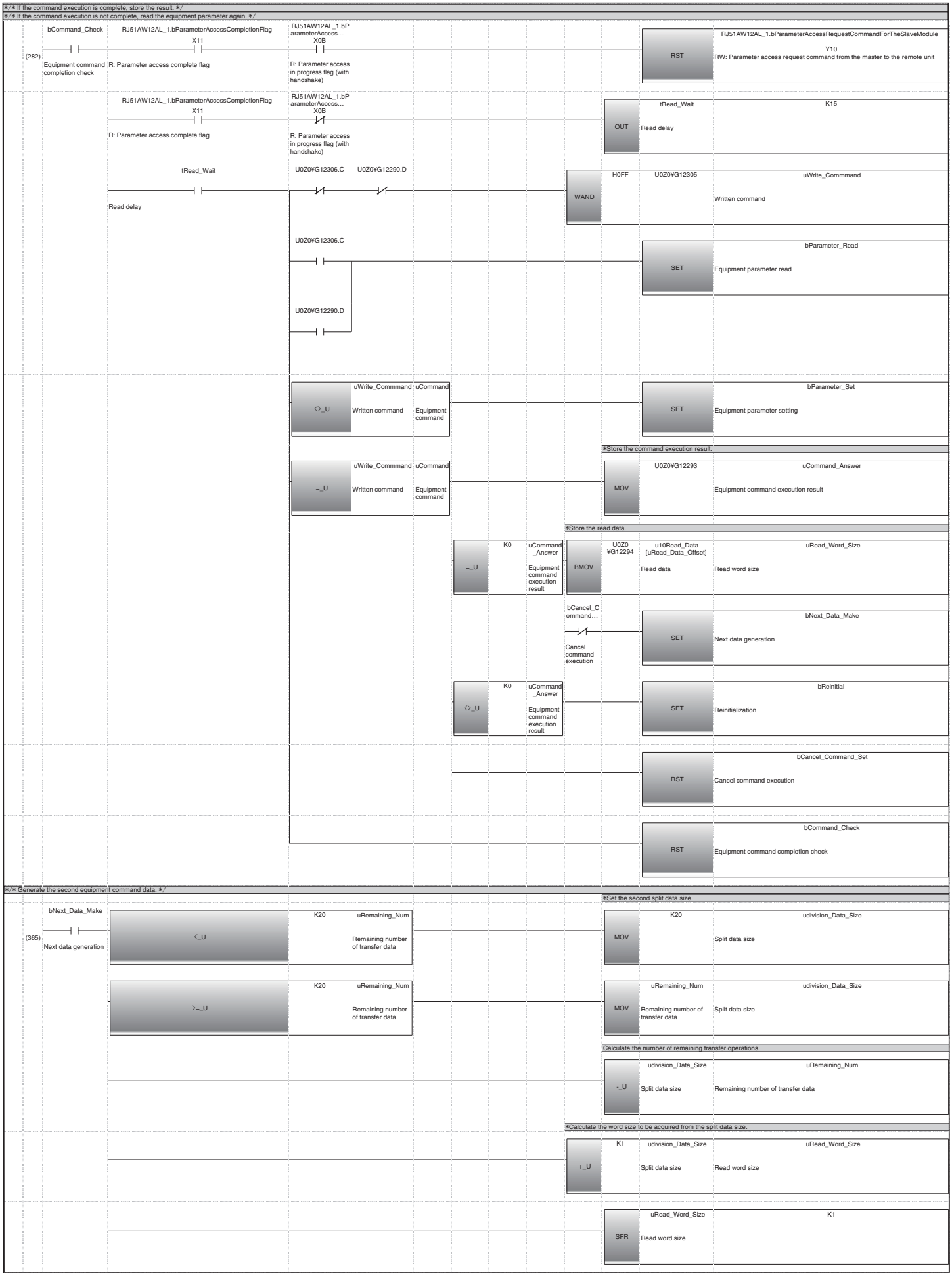
- Local labels to be used

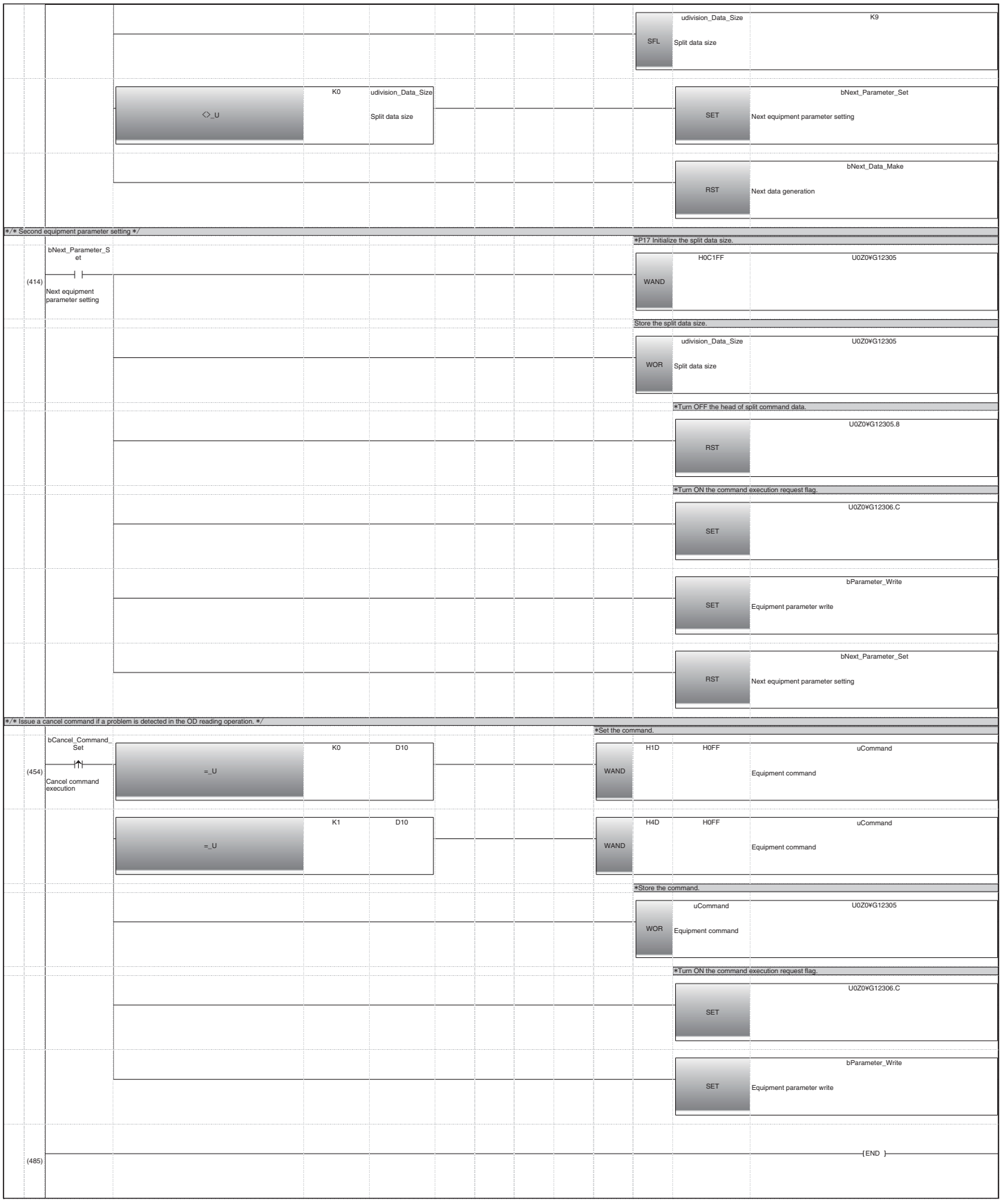
Label name	Data type	Class	Initial value	Constant	Comment
bCommand_Start	Bit	VAR			Command execution start
bInitial_Start	Bit	VAR			Initialization start
bData_Make	Bit	VAR			Data generation
bParameter_Set	Bit	VAR			Equipment parameter setting
bParameter_Write	Bit	VAR			Equipment parameter write
bParameter_Read	Bit	VAR			Equipment parameter read
bCommand_Check	Bit	VAR			Equipment command completion check
bCommand_Req_Check	Bit	VAR			Equipment command acceptance check
bReinitial	Bit	VAR			Reinitialization
bNext_Data_Make	Bit	VAR			Next data generation
bNext_Parameter_Set	Bit	VAR			Next equipment parameter setting
bCancel_Command_Set	Bit	VAR			Cancel command execution
uTransfer_Data_Size	Word [unsigned]/Bit column [16 bit]	VAR			Transfer data size total
uIndex	Word [unsigned]/Bit column [16 bit]	VAR			Index
uSub_Index	Word [unsigned]/Bit column [16 bit]	VAR			Subindex
uCommand	Word [unsigned]/Bit column [16 bit]	VAR			Equipment command
udivision_Data_Size	Word [unsigned]/Bit column [16 bit]	VAR			Split command data size
uRead_Word_Size	Word [unsigned]/Bit column [16 bit]	VAR			Read word size
uRead_Data_Offset	Word [unsigned]/Bit column [16 bit]	VAR			Read data storage position
uCommand_Answer	Word [unsigned]/Bit column [16 bit]	VAR			Equipment command execution result
u10Read_Data	Word [unsigned]/Bit column [16 bit] (0..31)	VAR			Read data
uRemaining_Num	Word [unsigned]/Bit column [16 bit]	VAR			Remaining number of transfer data
uWrite_Commmand	Word [unsigned]/Bit column [16 bit]	VAR			Written command
tWrite_Wait	Timer	VAR			Write delay
tRead_Wait	Timer	VAR			Read delay


/ Check if the command execution is possible. */
*Set up the parameter access target ID.
bCommand_Start
(0)
Command execution start
MOV
H600
RJ51AW12AL_1.uParameterAccessTargetModuleIDSpecification_D
U0¥G10321
RW: Parameter access target ID designation (direct)
*Store the head I/O No. of ASLINK master unit.
MOV
RJ51AW12AL_1.uIO
H0
Head I/O No.
Z0
RJ51AW12AL_1.bParameterAccessCompletionFlag
X11
R: Parameter access complete flag
U0Z0¥G12290.C
U0Z0¥G12290.D
SET
bParameter_Read
Equipment parameter read
U0Z0¥G12290.C
U0Z0¥G12290.D
SET
bInitial_Start
Initialization start
RST
bCommand_Start
Command execution start
/ Perform initial setting. */
*Initialize the storage position of read data.
bInitial_Start
(33)
Initialization start
RST
uRead_Data_Offset
Read data storage position
*P2 Initialize the transfer data size total.
bReinitial
Reinitialization
WAND
H0FF00
U0Z0¥G12290
*P3 Initialize the data number 1.
MOV
K0
U0Z0¥G12291
*P4 Initialize the data number 2.
WAND
H0FF00
U0Z0¥G12292
*P5-P15 Initialize the transfer data area.
FMOV
K0
U0Z0¥G12293
K11
*P17 Initialize the command.
WAND
H0FF00
U0Z0¥G12305
*P17 Initialize the split data size.
WAND
H0C1FF
U0Z0¥G12305
*Turn OFF the head of split command data.
RST
U0Z0¥G12305.8
bReinitial
Reinitialization
SET
bData_Make
Data generation
RST
bInitial_Start
Initialization start
bReinitial
Reinitialization
SET
bCancel_Command_Set
Cancel command execution


bReinitial
RST
Reinitialization
/ Set the command data. */
*Set the transfer data size total.
bData_Make
(93)
Data generation
WAND
K64
H0FF
uTransfer_Data_Size
Transfer data size total
*Set the index.
WAND
K16
H0FF
uIndex
Index
*Set the sub index.
WAND
K0
H0FF
uSub_Index
Subindex
*Set the command.
=_U
K0
D10
WAND
H1
H0FF
uCommand
Equipment command
=_U
K1
D10
WAND
H31
H0FF
uCommand
Equipment command
*Set the split data size.
<_U
K20
uTransfer_Data_Size
Transfer data size total
MOV
K20
udivision_Data_Size
Split data size
>=_U
K20
uTransfer_Data_Size
Transfer data size total
MOV
uTransfer_Data_Size
Transfer data size total
udivision_Data_Size
Split data size
Calculate the number of remaining transfer operations.
-_U
uTransfer_Data_Size
Transfer data size total
udivision_Data_Size
Split data size
uRemaining_Num
Remaining number of transfer data
*Calculate the word size to be acquired from the split data size.
+_U
K1
udivision_Data_Size
Split data size
uRead_Word_Size
Read word size
SFR
uRead_Word_Size
Read word size
K1
SFL
udivision_Data_Size
Split data size
K9
SET
bParameter_Set
Equipment parameter setting
RST
bData_Make
Data generation
/ Store the setting in the equipment parameter. */
*Store the transmission data size total.
bParameter_Set
(164)
Equipment parameter setting
WOR
uTransfer_Data_Size
Transfer data size total
U0Z0¥G12290
*Store the index.
MOV
uIndex
Index
U0Z0¥G12291
*Store the sub index.
WOR
uSub_Index
Subindex
U0Z0¥G12292


*Store the command.
uCommand
U0Z0¥G12305
WOR
Equipment command
Store the split data size.
udivision_Data_Size
U0Z0¥G12305
WOR
Split data size
*Turn ON the head of split command data.
U0Z0¥G12305.8
SET
*Turn ON the command execution request flag.
U0Z0¥G12306.C
SET
bParameter_Write
SET
Equipment parameter write
bParameter_Set
RST
Equipment parameter setting
/ Write the equipment parameter. */
bParameter_Write
RJ51AW12AL_1.bParameterAccessCompletionFlag
X11
RJ51AW12AL_1.bP arameterAccess…
X0B
(221)
Equipment parameter write
R: Parameter access complete flag
R: Parameter access in progress flag (with handshake)
RJ51AW12AL_1.bParameterAccessRequestCommandForTheSlaveModule
Y10
RST
RW: Parameter access request command from the master to the remote unit
*Write designation
RJ51AW12AL_1.bParameterAccessCompletionFlag
X11
RJ51AW12AL_1.bP arameterAccess…
X0B
K1
RJ51AW12AL_1.uParameterAccessSetting_D
U0¥G10320
MOV
RW: Parameter access setting (direct)
R: Parameter access complete flag
R: Parameter access in progress flag (with handshake)
*Turn ON the parameter access request command for the remote unit.
RJ51AW12AL_1.bParameterAccessRequestCommandForTheSlaveModule
Y10
SET
RW: Parameter access request command from the master to the remote unit
bParameter_Read
SET
Equipment parameter read
bParameter_Write
RST
Equipment parameter write
/* Read the equipment parameter. */
bParameter_Read
(239)
Equipment parameter read
tWrite_Wait
K15
OUT
Write delay
tWrite_Wait
RJ51AW12AL_1.bP arameterAccess…
X11
RJ51AW12AL_1.bP arameterAccess…
X0B
RJ51AW12AL_1.bParameterAccessRequestCommandForTheSlaveModule
Y10
RST
RW: Parameter access request command from the master to the remote unit
Write delay
R: Parameter access complete flag
R: Parameter access in progress flag (with handshake)
*Read designation
RJ51AW12AL_1.bP arameterAccess…
X11
RJ51AW12AL_1.bP arameterAccess…
X0B
K0
RJ51AW12AL_1.uParameterAccessSetting_D
U0¥G10320
MOV
RW: Parameter access setting (direct)
R: Parameter access complete flag
R: Parameter access in progress flag (with handshake)
*Turn ON the parameter access request command for the remote unit.
RJ51AW12AL_1.bParameterAccessRequestCommandForTheSlaveModule
Y10
SET
RW: Parameter access request command from the master to the remote unit
bCommand_Check
SET
Equipment command completion check
bParameter_Read
RST
Equipment parameter read


/ If the command execution is complete, store the result. */
/ If the command execution is not complete, read the equipment parameter again. */
bCommand_Check
Equipment command completion check
RJ51AW12AL_1.bParameterAccessCompletionFlag
X11
R: Parameter access complete flag
RJ51AW12AL_1.bParameterAccessRequestCommandForTheSlaveModule
Y10
RW: Parameter access request command from the master to the remote unit
RST
tRead_Wait
K15
Read delay
OUT
U0Z0¥G12306.C
U0Z0¥G12290.D
H0FF
U0Z0¥G12305
uWrite_Commmand
Written command
WAND
bParameter_Read
Equipment parameter read
SET
uWrite_Commmand
uCommand
Equipment command
◇_U
bParameter_Set
Equipment parameter setting
*Store the command execution result.
=_U
U0Z0¥G12293
uCommand_Answer
Equipment command execution result
MOV
*Store the read data.
K0
uCommand_Answer
Equipment command execution result
U0Z0¥G12294
u10Read_Data [uRead_Data_Offset]
Read data
uRead_Word_Size
Read word size
BMOV
bCancel_Command…
Cancel command execution
bNext_Data_Make
Next data generation
bReinitial
Reinitialization
bCancel_Command_Set
Cancel command execution
bCommand_Check
Equipment command completion check
/ Generate the second equipment command data. */
*Set the second split data size.
K20
uRemaining_Num
Remaining number of transfer data
<_U
>=_U
udivision_Data_Size
Split data size
Calculate the number of remaining transfer operations.
-_U
*Calculate the word size to be acquired from the split data size.
K1
+_U
SFR


udivision_Data_Size
K9
SFL
Split data size
<>_U
K0
udivision_Data_Size
Split data size
bNext_Parameter_Set
SET
Next equipment parameter setting
bNext_Data_Make
RST
Next data generation
/ Second equipment parameter setting */
bNext_Parameter_Set
(414)
Next equipment parameter setting
*P17 Initialize the split data size.
H0C1FF
U0Z0¥G12305
WAND
Store the split data size.
udivision_Data_Size
U0Z0¥G12305
WOR
Split data size
*Turn OFF the head of split command data.
U0Z0¥G12305.8
RST
*Turn ON the command execution request flag.
U0Z0¥G12306.C
SET
bParameter_Write
SET
Equipment parameter write
bNext_Parameter_Set
RST
Next equipment parameter setting
/ Issue a cancel command if a problem is detected in the OD reading operation. */
bCancel_Command_Set
(454)
Cancel command execution
=_U
K0
D10
*Set the command.
H1D
H0FF
uCommand
WAND
Equipment command
=_U
K1
D10
H4D
H0FF
uCommand
WAND
Equipment command
*Store the command.
uCommand
U0Z0¥G12305
WOR
Equipment command
*Turn ON the command execution request flag.
U0Z0¥G12306.C
SET
bParameter_Write
SET
Equipment parameter write
(485)
{END }

OD setting (No splitting)

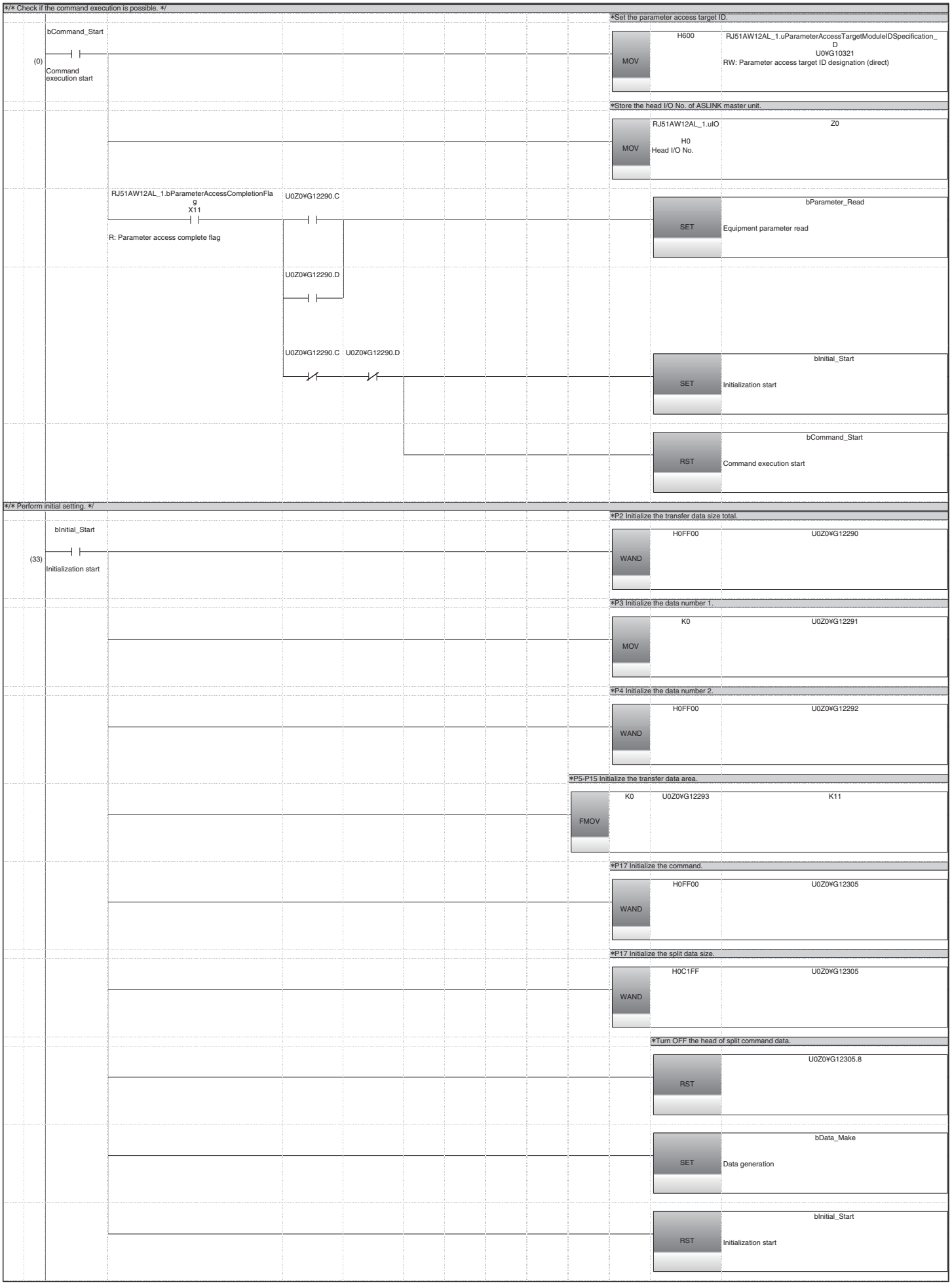
■ Checking the assumed conditions

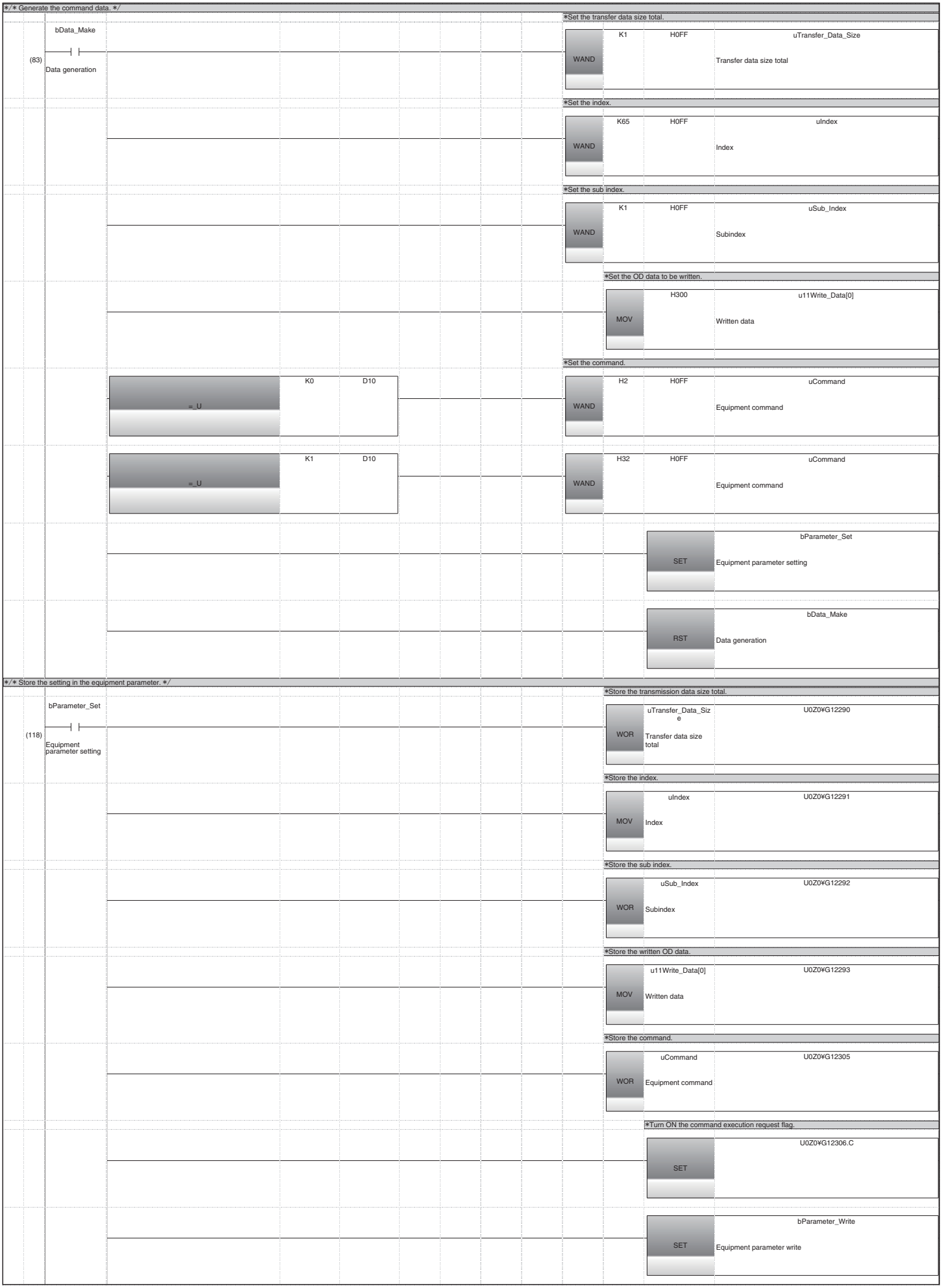
- Configuration Use RJ51AW12AL (head I/O No. 0000)
- This unit's address Word input 0
- Unit labels to be used

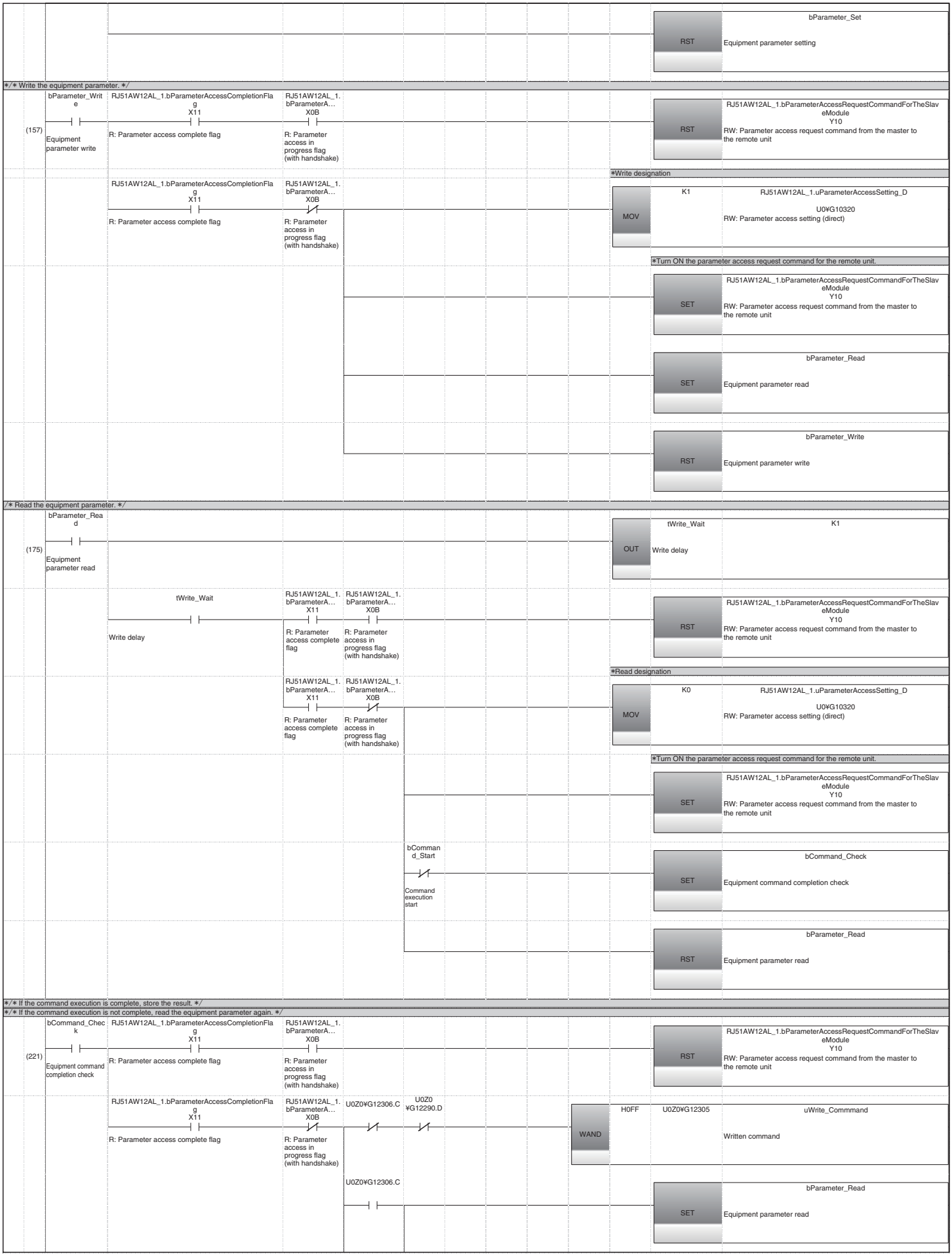
Label name	Description	Device/ buffer memory address
RJ51AW12AL_1.uIO	Head I/O No.	–
RJ51AW12AL_1.bParameterAccess CompletionFlag	R: Parameter access complete flag	X11
RJ51AW12AL_1.bParameterAccessingFlag_ WithHandshake	R: Parameter access in progress flag (with handshake)	X0B
RJ51AW12AL_1.bParameterAccessRequest CommandForTheSlaveModule	RW: Parameter access request command from the master to the remote unit	Y10
RJ51AW12AL_1.uParameterAccessSetting_D	RW: Parameter access setting (direct)	U0¥G10320
RJ51AW12AL_1.uParameterAccessTarget ModuleIDSpecification_D	RW: Parameter access target ID designation (direct)	U0¥G10321

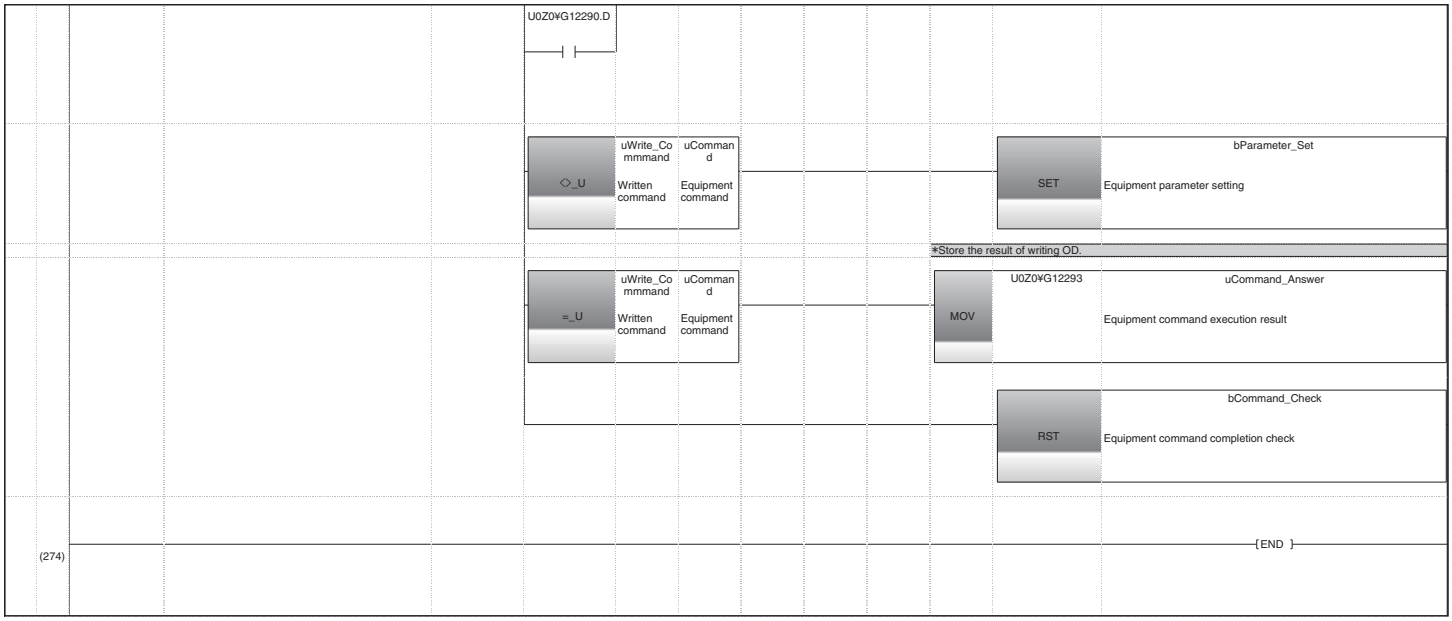
- Local labels to be used

Label name	Data type	Class	Initial value	Constant	Comment
bCommand_Start	Bit	VAR			Command execution start
bInitial_Start	Bit	VAR			Initialization start
bData_Make	Bit	VAR			Data generation
bParameter_Set	Bit	VAR			Equipment parameter setting
bParameter_Write	Bit	VAR			Equipment parameter write
bParameter_Read	Bit	VAR			Equipment parameter read
bCommand_Check	Bit	VAR			Equipment command completion check
uTransfer_Data_Size	Word [unsigned]/Bit column [16 bit]	VAR			Transfer data size total
uIndex	Word [unsigned]/Bit column [16 bit]	VAR			Index
uSub_Index	Word [unsigned]/Bit column [16 bit]	VAR			Subindex
u11Write_Data	Word [unsigned]/Bit column [16 bit] (0..10)	VAR			Written data
uCommand	Word [unsigned]/Bit column [16 bit]	VAR			Equipment command
uCommand_Answer	Word [unsigned]/Bit column [16 bit]	VAR			Equipment command execution result
uWrite_Commmand	Word [unsigned]/Bit column [16 bit]	VAR			Written command
tWrite_Wait	Timer	VAR			Write delay


/ Check if the command execution is possible. */
*Set the parameter access target ID.
bCommand_Start
(0)
Command execution start
MOV
H600
RJ51AW12AL_1.uParameterAccessTargetModuleIDSpecification_D
U0¥G10321
RW: Parameter access target ID designation (direct)
*Store the head I/O No. of ASLINK master unit.
MOV
RJ51AW12AL_1.uIO
H0
Head I/O No.
Z0
RJ51AW12AL_1.bParameterAccessCompletionFlag
X11
R: Parameter access complete flag
U0Z0¥G12290.C
U0Z0¥G12290.D
SET
bParameter_Read
Equipment parameter read
U0Z0¥G12290.C
U0Z0¥G12290.D
SET
bInitial_Start
Initialization start
RST
bCommand_Start
Command execution start
/ Perform initial setting. */
*P2 Initialize the transfer data size total.
bInitial_Start
(33)
Initialization start
WAND
H0FF00
U0Z0¥G12290
*P3 Initialize the data number 1.
MOV
K0
U0Z0¥G12291
*P4 Initialize the data number 2.
WAND
H0FF00
U0Z0¥G12292
*P5-P15 Initialize the transfer data area.
FMOV
K0
U0Z0¥G12293
K11
*P17 Initialize the command.
WAND
H0FF00
U0Z0¥G12305
*P17 Initialize the split data size.
WAND
H0C1FF
U0Z0¥G12305
*Turn OFF the head of split command data.
RST
U0Z0¥G12305.8
SET
bData_Make
Data generation
RST
bInitial_Start
Initialization start


/ Generate the command data. */
bData_Make
(83)
Data generation
*Set the transfer data size total.
WAND
K1
H0FF
uTransfer_Data_Size
Transfer data size total
*Set the index.
WAND
K65
H0FF
uIndex
Index
*Set the sub index.
WAND
K1
H0FF
uSub_Index
Subindex
*Set the OD data to be written.
MOV
H300
u11Write_Data[0]
Written data
*Set the command.
=_U
K0
D10
WAND
H2
H0FF
uCommand
Equipment command
=_U
K1
D10
WAND
H32
H0FF
uCommand
Equipment command
SET
bParameter_Set
Equipment parameter setting
RST
bData_Make
Data generation
/ Store the setting in the equipment parameter. */
bParameter_Set
(118)
Equipment parameter setting
*Store the transmission data size total.
WOR
uTransfer_Data_Size
Transfer data size total
U0Z0¥G12290
*Store the index.
MOV
uIndex
Index
U0Z0¥G12291
*Store the sub index.
WOR
uSub_Index
Subindex
U0Z0¥G12292
*Store the written OD data.
MOV
u11Write_Data[0]
Written data
U0Z0¥G12293
*Store the command.
WOR
uCommand
Equipment command
U0Z0¥G12305
*Turn ON the command execution request flag.
SET
U0Z0¥G12306.C
SET
bParameter_Write
Equipment parameter write


bParameter_Set
RST
Equipment parameter setting
/ Write the equipment parameter. */
bParameter_Write
RJ51AW12AL_1.bParameterAccessCompletionFlag
X11
RJ51AW12AL_1.bParameterA...
X0B
(157)
Equipment parameter write
R: Parameter access complete flag
R: Parameter access in progress flag (with handshake)
RJ51AW12AL_1.bParameterAccessRequestCommandForTheSlaveModule
Y10
RW: Parameter access request command from the master to the remote unit
*Write designation
K1
RJ51AW12AL_1.uParameterAccessSetting_D
U0¥G10320
MOV
RW: Parameter access setting (direct)
*Turn ON the parameter access request command for the remote unit.
SET
bParameter_Read
Equipment parameter read
bParameter_Write
Equipment parameter write
/* Read the equipment parameter. */
bParameter_Read
(175)
tWrite_Wait
K1
OUT
Write delay
RJ51AW12AL_1.bParameterA...
X11
RJ51AW12AL_1.bParameterA...
X0B
R: Parameter access complete flag
*Read designation
K0
*Turn ON the parameter access request command for the remote unit.
bCommand_Start
Command execution start
bCommand_Check
Equipment command completion check
/ If the command execution is complete, store the result. */
/ If the command execution is not complete, read the equipment parameter again. */
(221)
U0Z0¥G12306.C
U0Z0¥G12290.D
WAND
H0FF
U0Z0¥G12305
uWrite_Commmand
Written command


U0Z0¥G12290.D
◇_U
uWrite_Command
uCommand
Written command
Equipment command
SET
bParameter_Set
Equipment parameter setting
*Store the result of writing OD.
=_U
uWrite_Command
uCommand
Written command
Equipment command
MOV
U0Z0¥G12293
uCommand_Answer
Equipment command execution result
RST
bCommand_Check
Equipment command completion check
(274)
{END }

OD setting (with splitting)

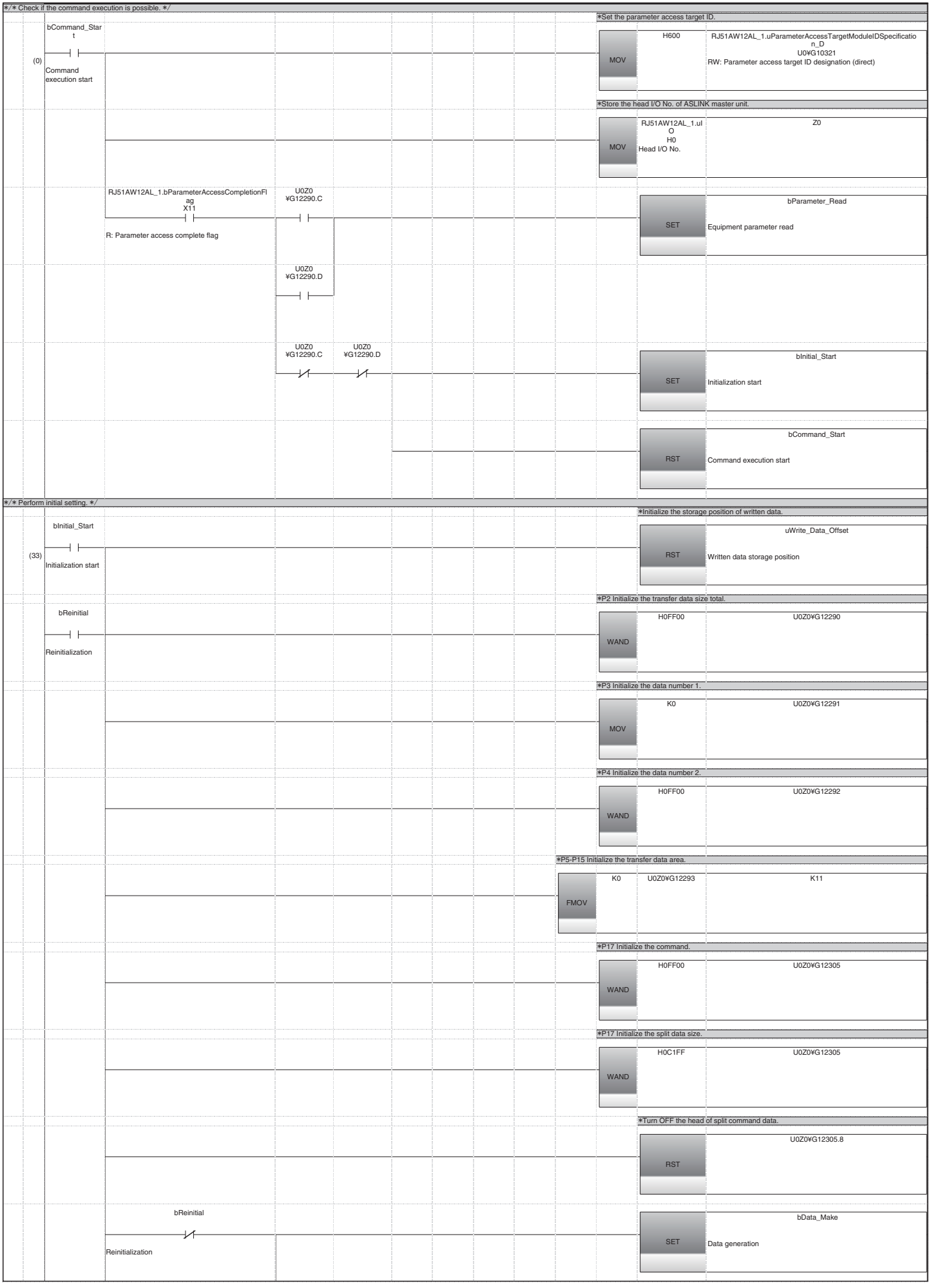
■ Checking the assumed conditions

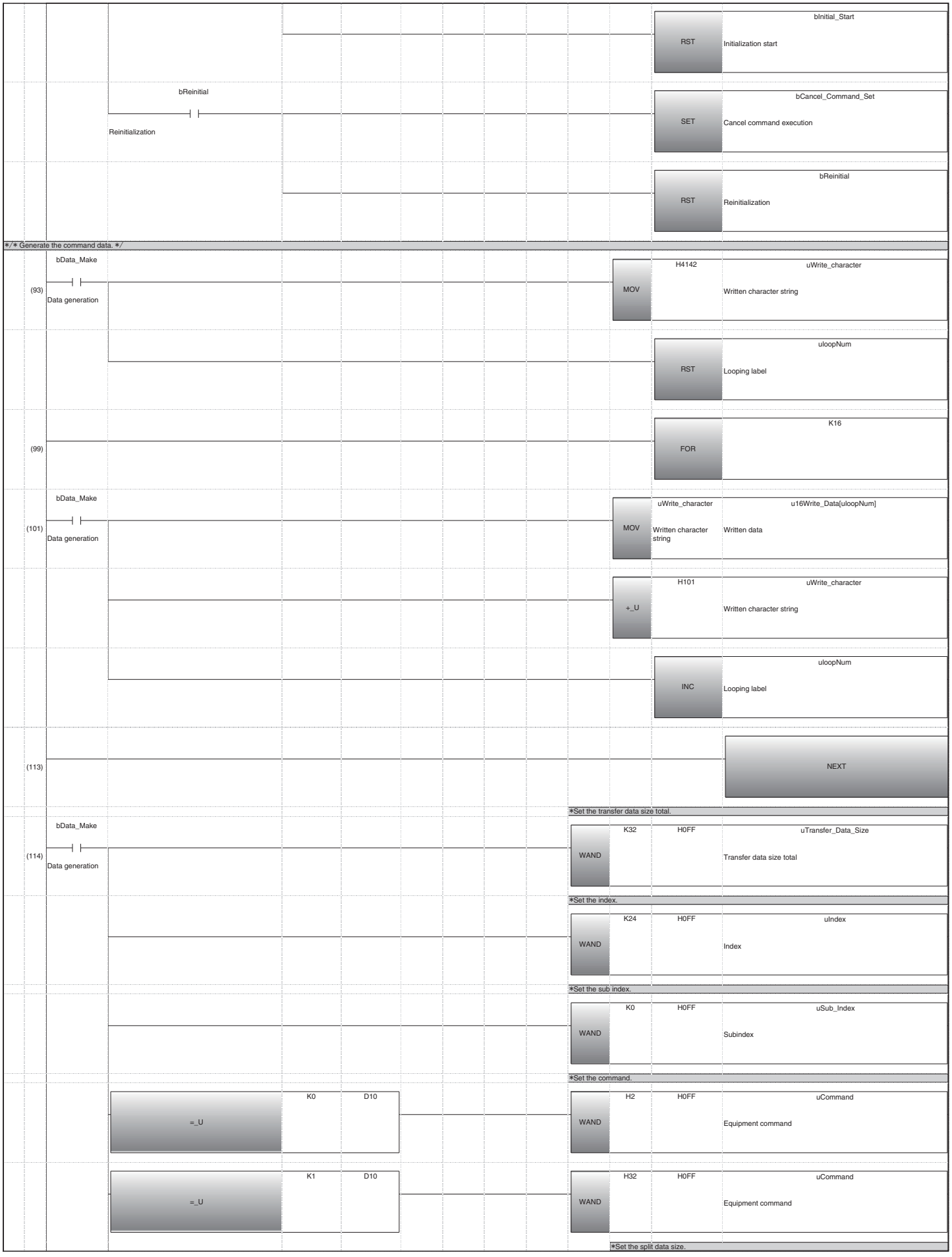
- Configuration Use RJ51AW12AL (head I/O No. 0000)
- This unit's address Word input 0
- Unit labels to be used

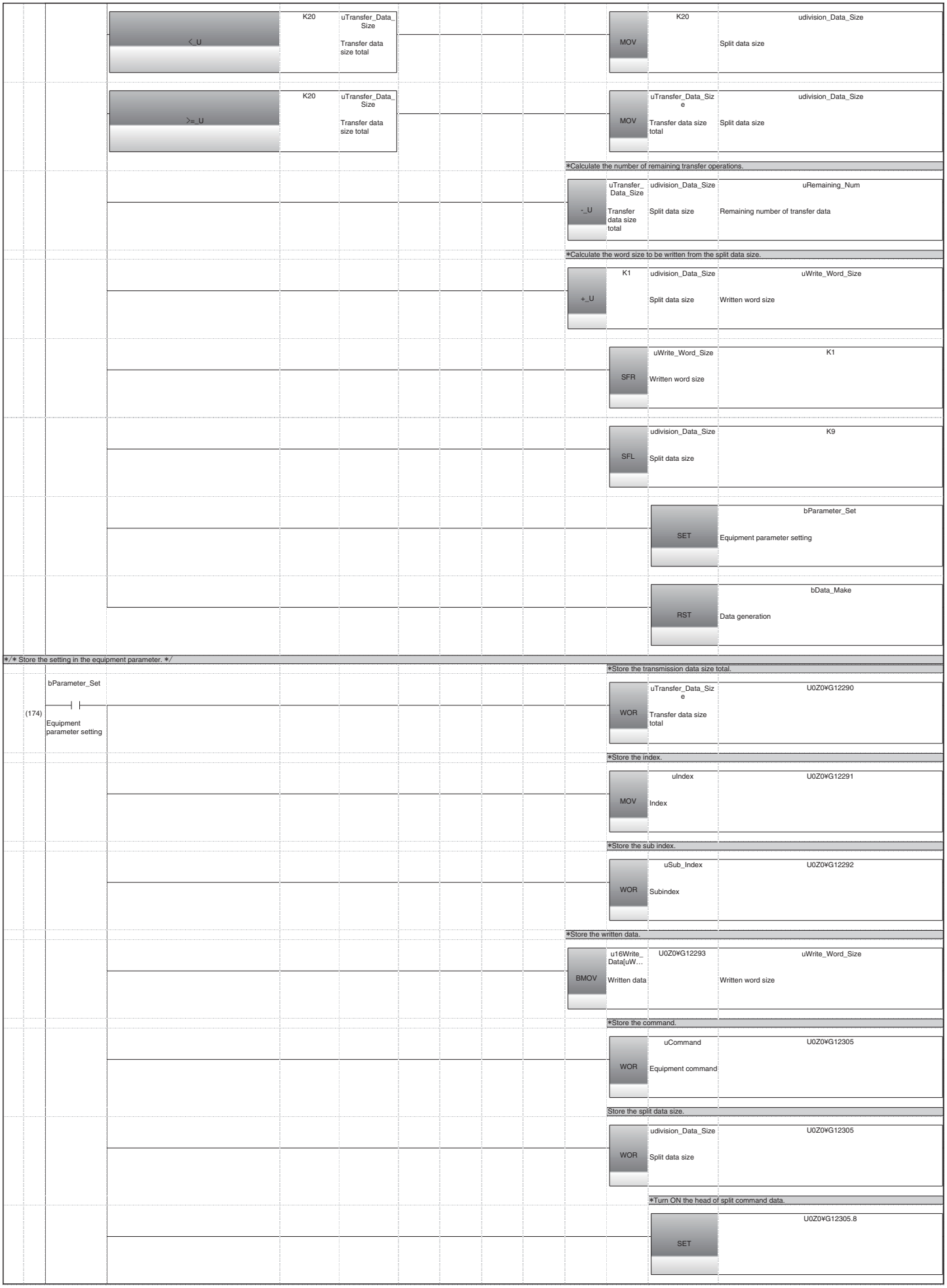
Label name	Description	Device/ buffer memory address
RJ51AW12AL_1.uIO	Head I/O No.	–
RJ51AW12AL_1.bParameterAccess CompletionFlag	R: Parameter access complete flag	X11
RJ51AW12AL_1.bParameterAccessingFlag_ WithHandshake	R: Parameter access in progress flag (with handshake)	X0B
RJ51AW12AL_1.bParameterAccessRequest CommandForTheSlaveModule	RW: Parameter access request command from the master to the remote unit	Y10
RJ51AW12AL_1.uParameterAccessSetting_D	RW: Parameter access setting (direct)	U0¥G10320
RJ51AW12AL_1.uParameterAccessTarget ModuleIDSpecification_D	RW: Parameter access target ID designation (direct)	U0¥G10321

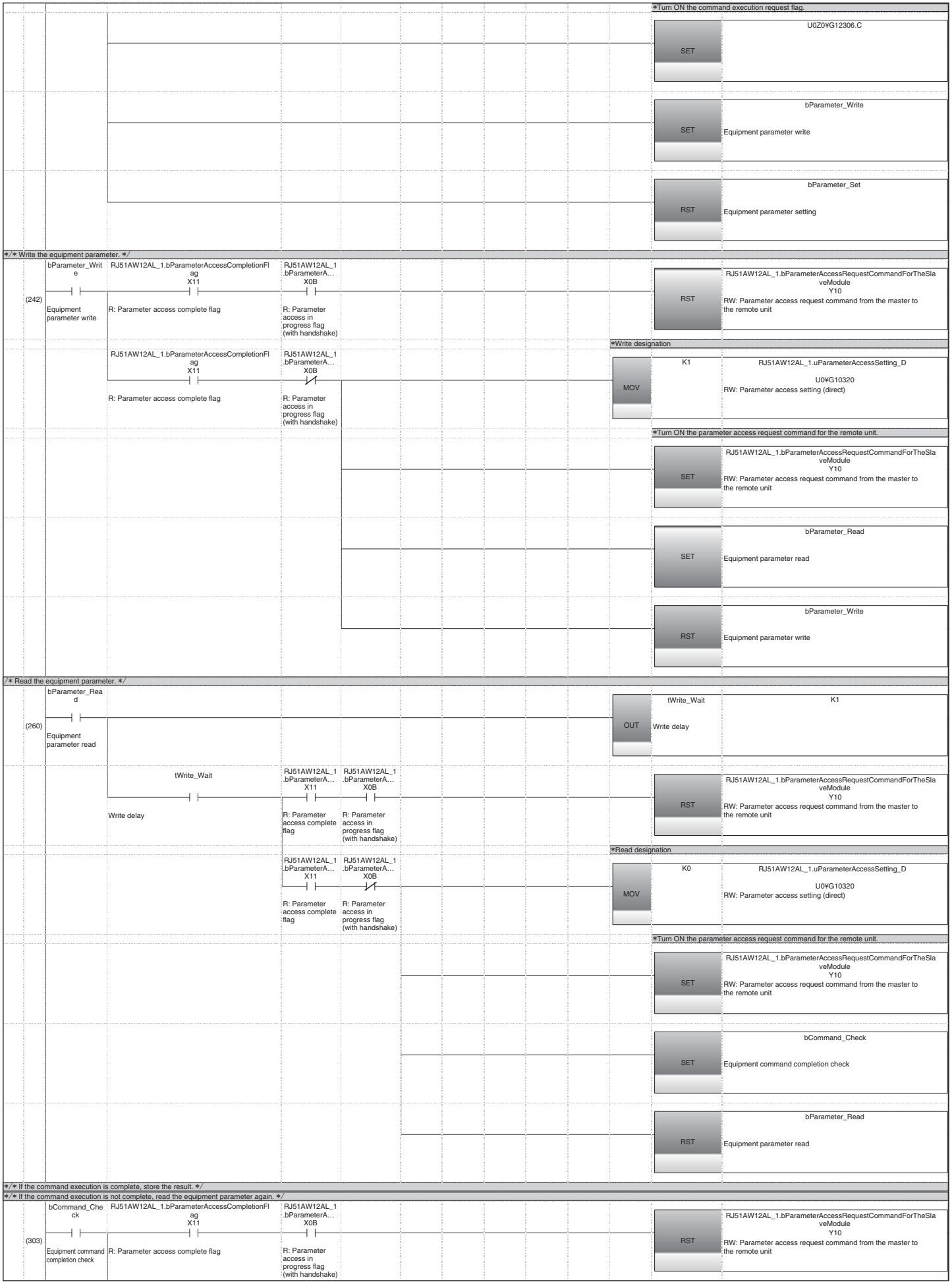
- Local labels to be used

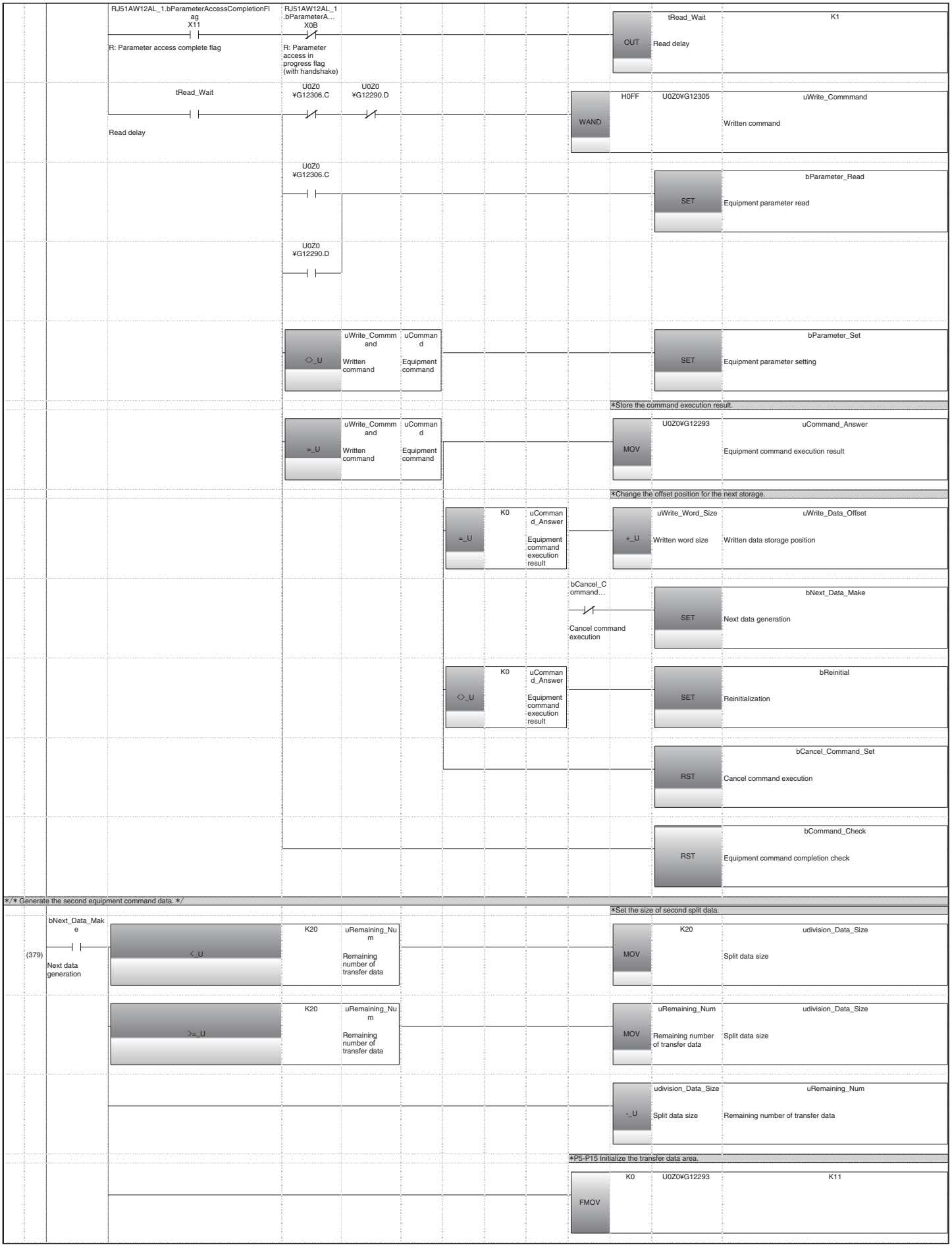
Label name	Data type	Class	Initial value	Constant	Comment
bCommand_Start	Bit	VAR			Command execution start
bInitial_Start	Bit	VAR			Initialization start
bData_Make	Bit	VAR			Data generation
bParameter_Set	Bit	VAR			Equipment parameter setting
bParameter_Write	Bit	VAR			Equipment parameter write
bParameter_Read	Bit	VAR			Equipment parameter read
bCommand_Check	Bit	VAR			Equipment command completion check
bCommand_Req_Check	Bit	VAR			Equipment command acceptance check
bReinitial	Bit	VAR			Reinitialization
bNext_Data_Make	Bit	VAR			Next data generation
bNext_Parameter_Set	Bit	VAR			Next equipment parameter setting
bCancel_Command_Set	Bit	VAR			Cancel command execution
uTransfer_Data_Size	Word [unsigned]/Bit column [16 bit]	VAR			Transfer data size total
uIndex	Word [unsigned]/Bit column [16 bit]	VAR			Index
uSub_Index	Word [unsigned]/Bit column [16 bit]	VAR			Subindex
uCommand	Word [unsigned]/Bit column [16 bit]	VAR			Equipment command
udivision_Data_Size	Word [unsigned]/Bit column [16 bit]	VAR			Split data size
uRead_Word_Size	Word [unsigned]/Bit column [16 bit]	VAR			Written word size
uRead_Data_Offset	Word [unsigned]/Bit column [16 bit]	VAR			Written data storage position
uCommand_Answer	Word [unsigned]/Bit column [16 bit]	VAR			Equipment command execution result
u16Write_Data	Word [unsigned]/Bit column [16 bit] (0..15)	VAR			Written data
uWrite_character	Word [unsigned]/Bit column [16 bit]	VAR			Written character string
uloopNum	Word [unsigned]/Bit column [16 bit]	VAR			Looping label
uRemaining_Num	Word [unsigned]/Bit column [16 bit]	VAR			Remaining number of transfer data
uWrite_Commmand	Word [unsigned]/Bit column [16 bit]	VAR			Written command
tWrite_Wait	Timer	VAR			Write delay
tRead_Wait	Timer	VAR			Read delay

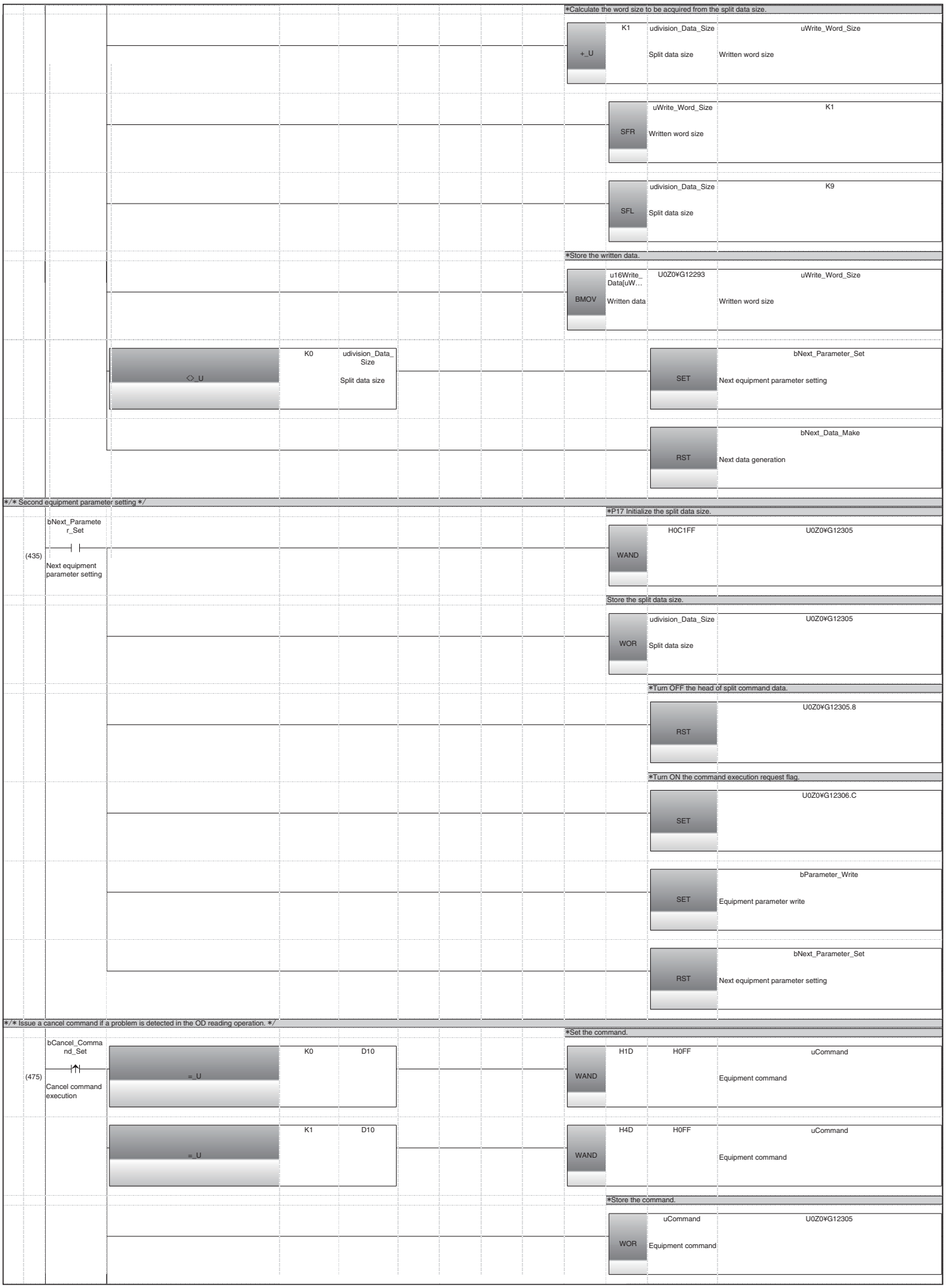

/ Check if the command execution is possible. */
*Set the parameter access target ID.
bCommand_Start
(0)
Command execution start
MOV
H600
RJ51AW12AL_1.uParameterAccessTargetModuleIDSpecification_D
U0¥G10321
RW: Parameter access target ID designation (direct)
*Store the head I/O No. of ASLINK master unit.
MOV
RJ51AW12AL_1.uIO
H0
Head I/O No.
Z0
RJ51AW12AL_1.bParameterAccessCompletionFlag
X11
R: Parameter access complete flag
U0Z0
¥G12290.C
U0Z0
¥G12290.D
SET
bParameter_Read
Equipment parameter read
U0Z0
¥G12290.C
U0Z0
¥G12290.D
SET
bInitial_Start
Initialization start
RST
bCommand_Start
Command execution start
/ Perform initial setting. */
*Initialize the storage position of written data.
bInitial_Start
(33)
Initialization start
RST
uWrite_Data_Offset
Written data storage position
*P2 Initialize the transfer data size total.
bReinitial
Reinitialization
WAND
H0FF00
U0Z0¥G12290
*P3 Initialize the data number 1.
MOV
K0
U0Z0¥G12291
*P4 Initialize the data number 2.
WAND
H0FF00
U0Z0¥G12292
*P5-P15 Initialize the transfer data area.
FMOV
K0
U0Z0¥G12293
K11
*P17 Initialize the command.
WAND
H0FF00
U0Z0¥G12305
*P17 Initialize the split data size.
WAND
H0C1FF
U0Z0¥G12305
*Turn OFF the head of split command data.
RST
U0Z0¥G12305.8
bReinitial
Reinitialization
SET
bData_Make
Data generation

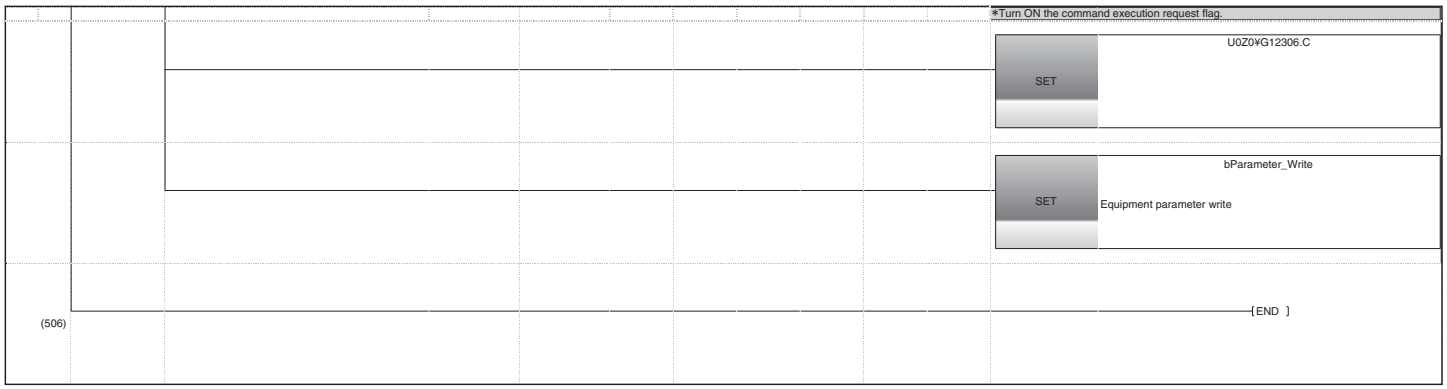

bInitial_Start
RST
Initialization start
bReinitial
Reinitialization
bCancel_Command_Set
SET
Cancel command execution
bReinitial
RST
Reinitialization
/ Generate the command data. */
bData_Make
(93)
Data generation
H4142
uWrite_character
MOV
Written character string
uloopNum
RST
Looping label
K16
(99)
FOR
bData_Make
(101)
Data generation
uWrite_character
u16Write_Data[uloopNum]
MOV
Written character string
Written data
H101
uWrite_character
+_U
Written character string
uloopNum
INC
Looping label
(113)
NEXT
*Set the transfer data size total.
bData_Make
(114)
Data generation
K32
H0FF
uTransfer_Data_Size
WAND
Transfer data size total
*Set the index.
K24
H0FF
uIndex
WAND
Index
*Set the sub index.
K0
H0FF
uSub_Index
WAND
Subindex
*Set the command.
K0
D10
H2
H0FF
uCommand
=_U
WAND
Equipment command
K1
D10
H32
H0FF
uCommand
=_U
WAND
Equipment command
*Set the split data size.


<_U
K20
uTransfer_Data_Size
Transfer data size total
MOV
K20
udivision_Data_Size
Split data size
>=_U
K20
uTransfer_Data_Size
Transfer data size total
MOV
uTransfer_Data_Size
Transfer data size total
udivision_Data_Size
Split data size
*Calculate the number of remaining transfer operations.
-_U
uTransfer_Data_Size
Transfer data size total
udivision_Data_Size
Split data size
uRemaining_Num
Remaining number of transfer data
*Calculate the word size to be written from the split data size.
+_U
K1
udivision_Data_Size
Split data size
uWrite_Word_Size
Written word size
SFR
uWrite_Word_Size
Written word size
K1
SFL
udivision_Data_Size
Split data size
K9
SET
bParameter_Set
Equipment parameter setting
RST
bData_Make
Data generation
*/ Store the setting in the equipment parameter. */
bParameter_Set
(174)
Equipment parameter setting
*Store the transmission data size total.
WOR
uTransfer_Data_Size
Transfer data size total
U0Z0¥G12290
*Store the index.
MOV
uIndex
Index
U0Z0¥G12291
*Store the sub index.
WOR
uSub_Index
Subindex
U0Z0¥G12292
*Store the written data.
BMOV
u16Write_Data[uW…
Written data
U0Z0¥G12293
uWrite_Word_Size
Written word size
*Store the command.
WOR
uCommand
Equipment command
U0Z0¥G12305
Store the split data size.
WOR
udivision_Data_Size
Split data size
U0Z0¥G12305
*Turn ON the head of split command data.
SET
U0Z0¥G12305.8


*Turn ON the command execution request flag.
U0Z0¥G12306.C
SET
bParameter_Write
SET
Equipment parameter write
bParameter_Set
RST
Equipment parameter setting
/* Write the equipment parameter. */
bParameter_Write
RJ51AW12AL_1.bParameterAccessCompletionFlag
X11
RJ51AW12AL_1.bParameterA...
X0B
(242)
Equipment parameter write
R: Parameter access complete flag
R: Parameter access in progress flag (with handshake)
RST
RJ51AW12AL_1.bParameterAccessRequestCommandForTheSlaveModule
Y10
RW: Parameter access request command from the master to the remote unit
*Write designation
RJ51AW12AL_1.bParameterAccessCompletionFlag
X11
RJ51AW12AL_1.bParameterA...
X0B
R: Parameter access complete flag
R: Parameter access in progress flag (with handshake)
MOV
K1
RJ51AW12AL_1.uParameterAccessSetting_D
U0¥G10320
RW: Parameter access setting (direct)
*Turn ON the parameter access request command for the remote unit.
SET
RJ51AW12AL_1.bParameterAccessRequestCommandForTheSlaveModule
Y10
RW: Parameter access request command from the master to the remote unit
bParameter_Read
SET
Equipment parameter read
bParameter_Write
RST
Equipment parameter write
/* Read the equipment parameter. */
bParameter_Read
(260)
Equipment parameter read
OUT
tWrite_Wait
Write delay
K1
tWrite_Wait
RJ51AW12AL_1.bParameterA...
X11
RJ51AW12AL_1.bParameterA...
X0B
Write delay
R: Parameter access complete flag
R: Parameter access in progress flag (with handshake)
RST
RJ51AW12AL_1.bParameterAccessRequestCommandForTheSlaveModule
Y10
RW: Parameter access request command from the master to the remote unit
*Read designation
RJ51AW12AL_1.bParameterA...
X11
RJ51AW12AL_1.bParameterA...
X0B
R: Parameter access complete flag
R: Parameter access in progress flag (with handshake)
MOV
K0
RJ51AW12AL_1.uParameterAccessSetting_D
U0¥G10320
RW: Parameter access setting (direct)
*Turn ON the parameter access request command for the remote unit.
SET
RJ51AW12AL_1.bParameterAccessRequestCommandForTheSlaveModule
Y10
RW: Parameter access request command from the master to the remote unit
bCommand_Check
SET
Equipment command completion check
bParameter_Read
RST
Equipment parameter read
/* If the command execution is complete, store the result. */
/* If the command execution is not complete, read the equipment parameter again. */
bCommand_Check
RJ51AW12AL_1.bParameterAccessCompletionFlag
X11
RJ51AW12AL_1.bParameterA...
X0B
(303)
Equipment command completion check
R: Parameter access complete flag
R: Parameter access in progress flag (with handshake)
RST
RJ51AW12AL_1.bParameterAccessRequestCommandForTheSlaveModule
Y10
RW: Parameter access request command from the master to the remote unit


RJ51AW12AL_1.bParameterAccessCompletionFlag
X11
R: Parameter access complete flag
RJ51AW12AL_1.bParameterA...
X0B
R: Parameter access in progress flag (with handshake)
tRead_Wait
OUT
Read delay
K1
tRead_Wait
Read delay
U0Z0 ¥G12306.C
U0Z0 ¥G12290.D
WAND
H0FF
U0Z0¥G12305
uWrite_Commmand
Written command
U0Z0 ¥G12306.C
SET
bParameter_Read
Equipment parameter read
U0Z0 ¥G12290.D
<>_U
uWrite_Commmand
Written command
uCommand
Equipment command
SET
bParameter_Set
Equipment parameter setting
*Store the command execution result.
=_U
uWrite_Commmand
Written command
uCommand
Equipment command
MOV
U0Z0¥G12293
uCommand_Answer
Equipment command execution result
*Change the offset position for the next storage.
=_U
K0
uCommand_Answer
Equipment command execution result
+_U
uWrite_Word_Size
Written word size
uWrite_Data_Offset
Written data storage position
bCancel_Command...
Cancel command execution
SET
bNext_Data_Make
Next data generation
<>_U
K0
uCommand_Answer
Equipment command execution result
SET
bReinitial
Reinitialization
RST
bCancel_Command_Set
Cancel command execution
RST
bCommand_Check
Equipment command completion check
/ Generate the second equipment command data. */
*Set the size of second split data.
bNext_Data_Make
(379)
Next data generation
<_U
K20
uRemaining_Num
Remaining number of transfer data
MOV
K20
udivision_Data_Size
Split data size
>=_U
K20
uRemaining_Num
Remaining number of transfer data
MOV
uRemaining_Num
Remaining number of transfer data
udivision_Data_Size
Split data size
-_U
udivision_Data_Size
Split data size
uRemaining_Num
Remaining number of transfer data
*P5-P15 Initialize the transfer data area.
FMOV
K0
U0Z0¥G12293
K11


*Calculate the word size to be acquired from the split data size.
K1
udivision_Data_Size
Split data size
+_U
uWrite_Word_Size
Written word size
uWrite_Word_Size
Written word size
SFR
K1
udivision_Data_Size
Split data size
SFL
K9
*Store the written data.
u16Write_Data[uW…
Written data
BMOV
U0Z0¥G12293
uWrite_Word_Size
Written word size
K0
udivision_Data_Size
Split data size
<>_U
bNext_Parameter_Set
Next equipment parameter setting
SET
bNext_Data_Make
Next data generation
RST
/ Second equipment parameter setting */
bNext_Parameter_Set
(435)
Next equipment parameter setting
*P17 Initialize the split data size.
H0C1FF
U0Z0¥G12305
WAND
Store the split data size.
udivision_Data_Size
Split data size
WOR
U0Z0¥G12305
*Turn OFF the head of split command data.
U0Z0¥G12305.8
RST
*Turn ON the command execution request flag.
U0Z0¥G12306.C
SET
bParameter_Write
Equipment parameter write
SET
bNext_Parameter_Set
Next equipment parameter setting
RST
/ Issue a cancel command if a problem is detected in the OD reading operation. */
bCancel_Command_Set
(475)
Cancel command execution
K0
D10
=_U
*Set the command.
H1D
H0FF
uCommand
Equipment command
WAND
K1
D10
=_U
H4D
H0FF
uCommand
Equipment command
WAND
*Store the command.
uCommand
Equipment command
WOR
U0Z0¥G12305


*Turn ON the command execution request flag.
U0Z0¥G12306.C
SET
bParameter_Write
SET
Equipment parameter write
(506)
[END]

OD setting (PD ON/OFF position setting)

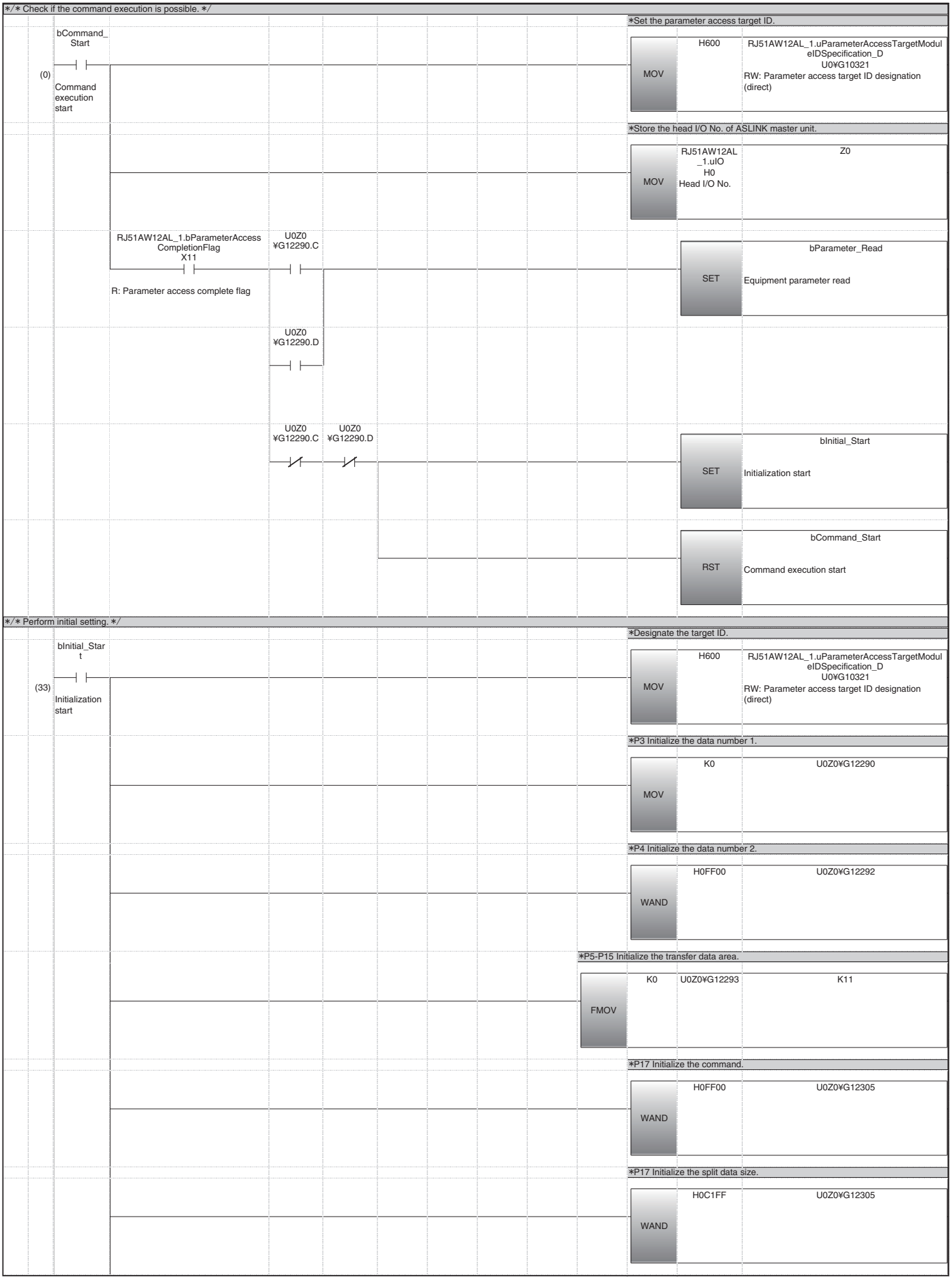
■ Checking the assumed conditions

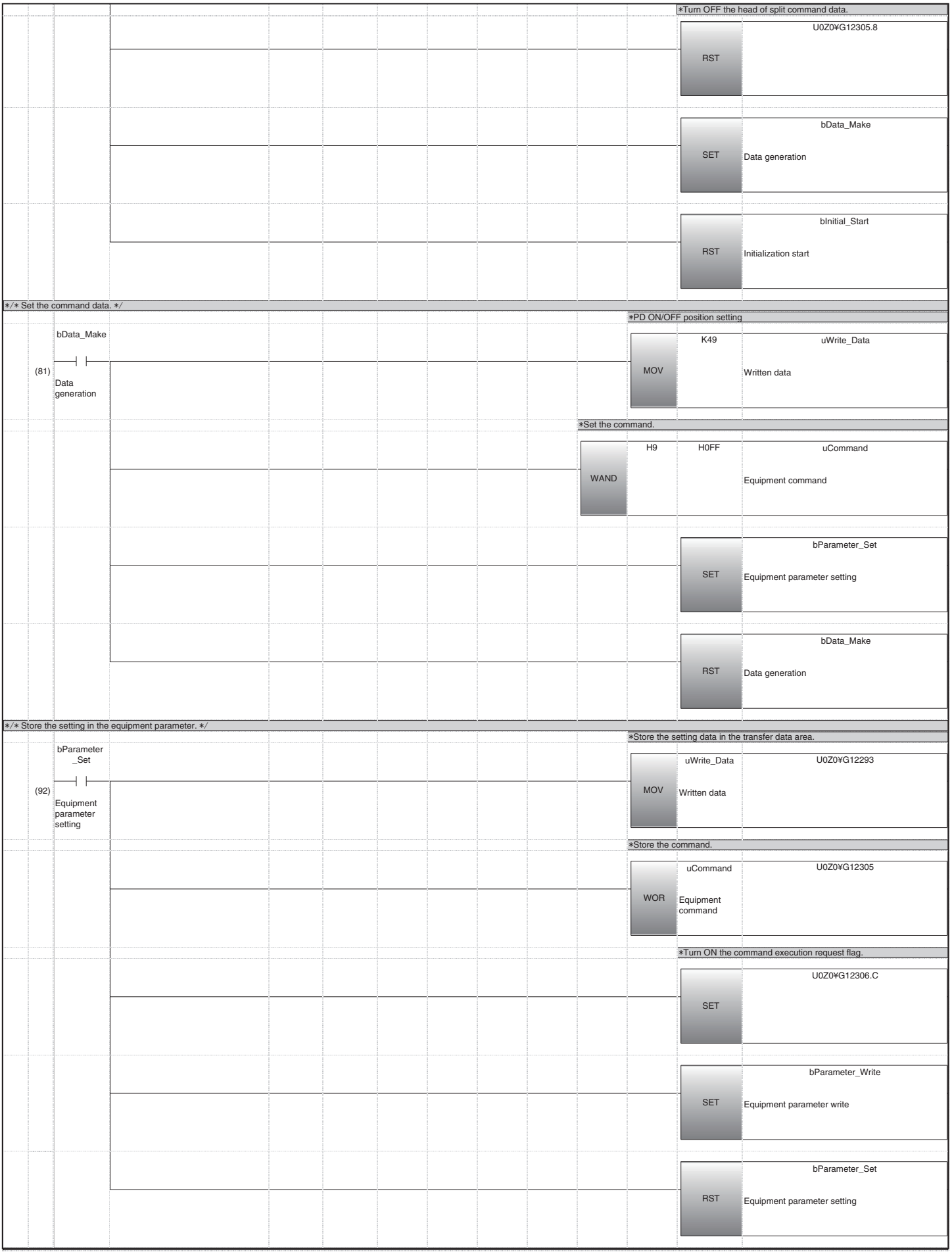
- Configuration Use RJ51AW12AL (head I/O No. 0000)
- This unit's address Word input 0
- Unit labels to be used

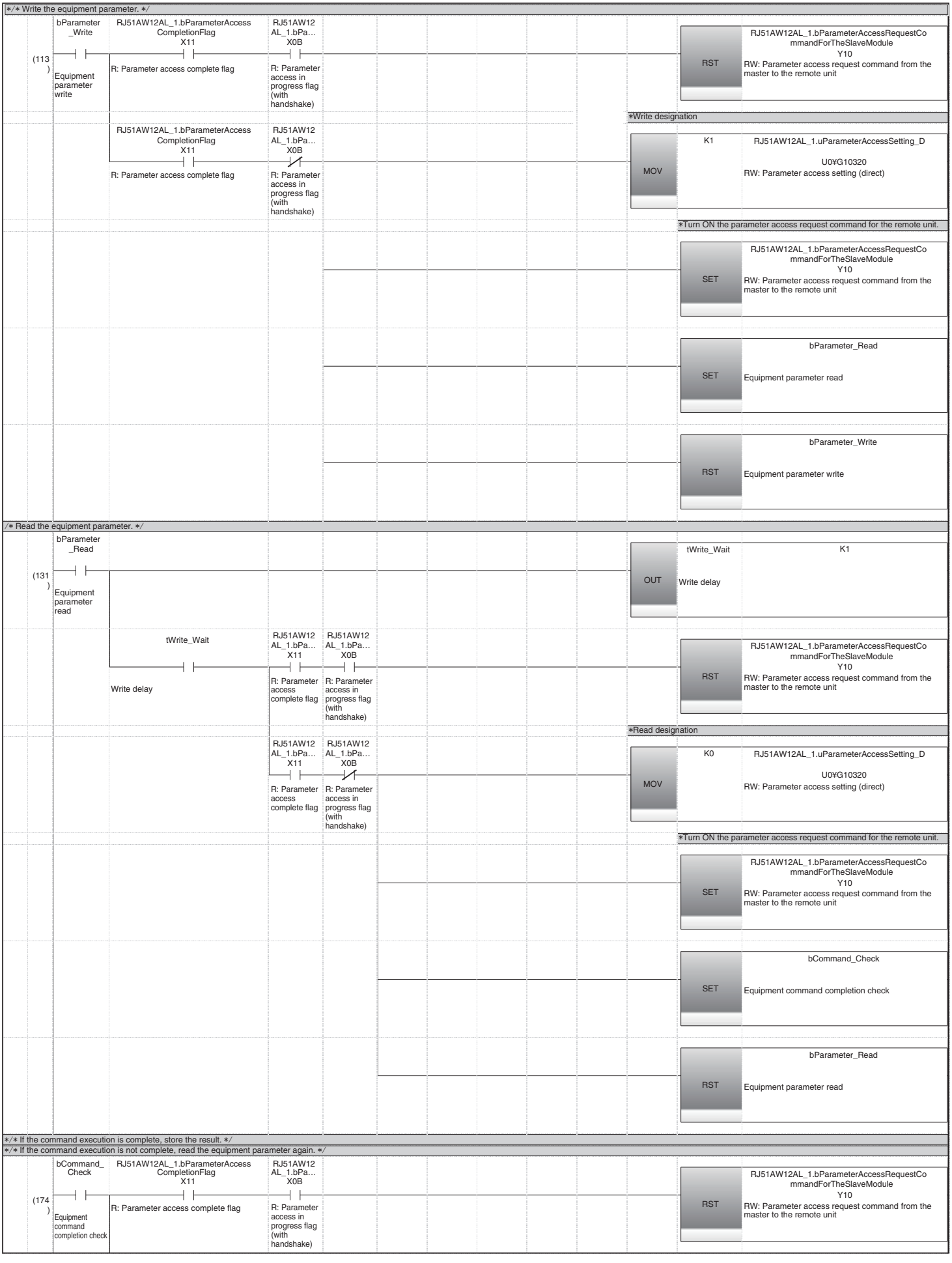
Label name	Description	Device/ buffer memory address
RJ51AW12AL_1.uIO	Head I/O No.	–
RJ51AW12AL_1.bParameterAccess CompletionFlag	R: Parameter access complete flag	X11
RJ51AW12AL_1.bParameterAccessingFlag_ WithHandshake	R: Parameter access in progress flag (with handshake)	X0B
RJ51AW12AL_1.bParameterAccessRequest CommandForTheSlaveModule	RW: Parameter access request command from the master to the remote unit	Y10
RJ51AW12AL_1.uParameterAccessSetting_D	RW: Parameter access setting (direct)	U0¥G10320
RJ51AW12AL_1.uParameterAccessTarget ModuleIDSpecification_D	RW: Parameter access target ID designation (direct)	U0¥G10321

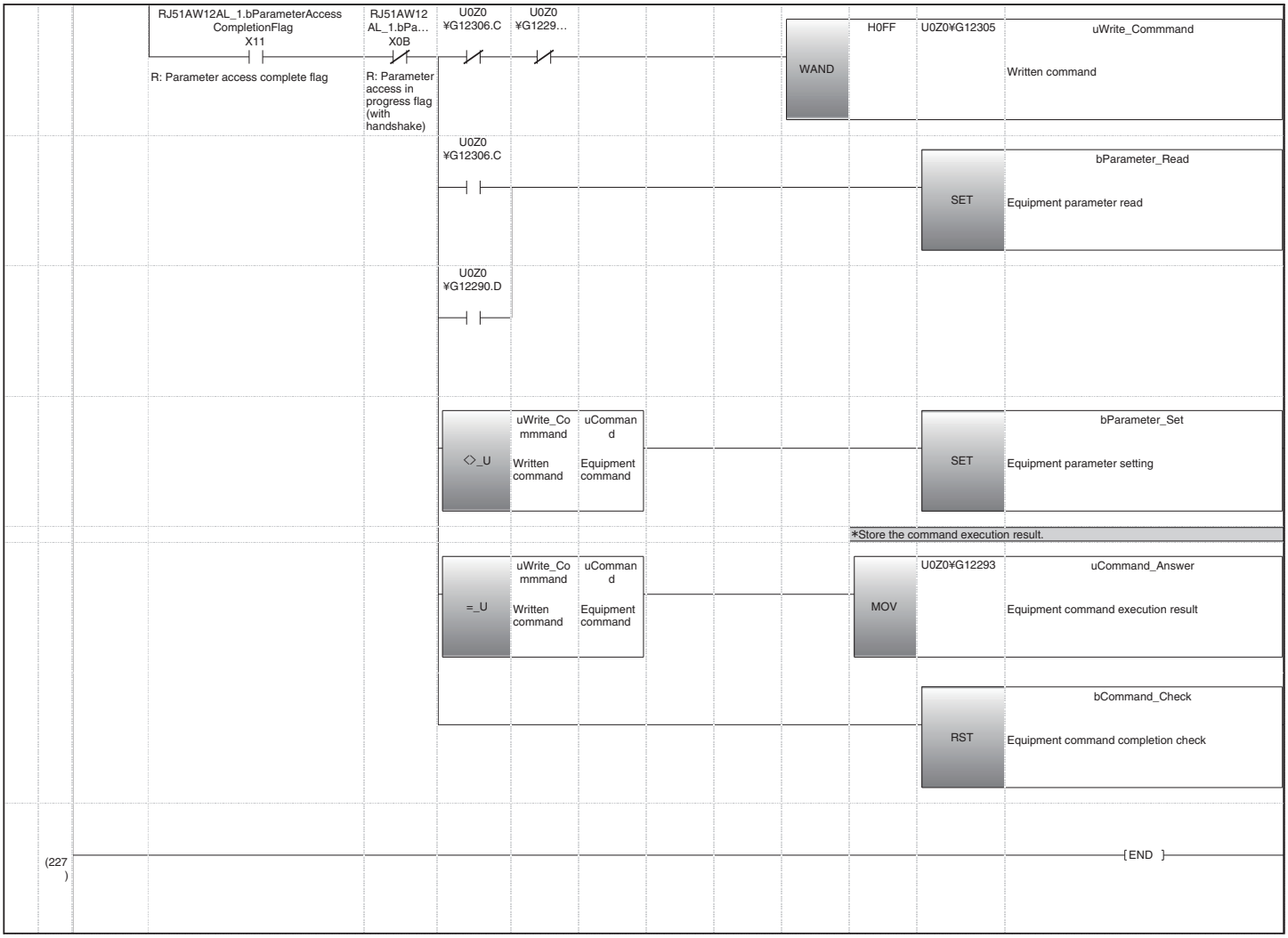
- Local labels to be used

Label name	Data type	Class	Initial value	Constant	Comment
bCommand_Start	Bit	VAR			Command execution start
bInitial_Start	Bit	VAR			Initialization start
bData_Make	Bit	VAR			Data generation
bParameter_Set	Bit	VAR			Equipment parameter setting
bParameter_Write	Bit	VAR			Equipment parameter write
bParameter_Read	Bit	VAR			Equipment parameter read
bCommand_Req_Check	Bit	VAR			Equipment command acceptance check
bCommand_Check	Bit	VAR			Equipment command completion check
uTransfer_Data_Size	Word [unsigned]/Bit column [16 bit]	VAR			Transfer data size total
uWrite_Data	Word [unsigned]/Bit column [16 bit]	VAR			Written data
uCommand	Word [unsigned]/Bit column [16 bit]	VAR			Equipment command
uCommand_Answer	Word [unsigned]/Bit column [16 bit]	VAR			Equipment command execution result
uWrite_Commmand	Word [unsigned]/Bit column [16 bit]	VAR			Written command
tWrite_Wait	Timer	VAR			Write delay


/ Check if the command execution is possible. */
*Set the parameter access target ID.
bCommand_Start
(0)
Command execution start
MOV
H600
RJ51AW12AL_1.uParameterAccessTargetModuleIDSpecification_D
U0¥G10321
RW: Parameter access target ID designation (direct)
*Store the head I/O No. of ASLINK master unit.
MOV
RJ51AW12AL_1.uIO
H0
Head I/O No.
Z0
RJ51AW12AL_1.bParameterAccessCompletionFlag
X11
R: Parameter access complete flag
U0Z0
¥G12290.C
U0Z0
¥G12290.D
SET
bParameter_Read
Equipment parameter read
U0Z0
¥G12290.C
U0Z0
¥G12290.D
SET
bInitial_Start
Initialization start
RST
bCommand_Start
Command execution start
/ Perform initial setting. */
*Designate the target ID.
bInitial_Start
(33)
Initialization start
MOV
H600
RJ51AW12AL_1.uParameterAccessTargetModuleIDSpecification_D
U0¥G10321
RW: Parameter access target ID designation (direct)
*P3 Initialize the data number 1.
MOV
K0
U0Z0¥G12290
*P4 Initialize the data number 2.
WAND
H0FF00
U0Z0¥G12292
*P5-P15 Initialize the transfer data area.
FMOV
K0
U0Z0¥G12293
K11
*P17 Initialize the command.
WAND
H0FF00
U0Z0¥G12305
*P17 Initialize the split data size.
WAND
H0C1FF
U0Z0¥G12305


*Turn OFF the head of split command data.
RST
U0Z0¥G12305.8
SET
bData_Make
Data generation
RST
bInitial_Start
Initialization start
/ Set the command data. */
*PD ON/OFF position setting
bData_Make
(81)
Data generation
MOV
K49
uWrite_Data
Written data
*Set the command.
WAND
H9
H0FF
uCommand
Equipment command
SET
bParameter_Set
Equipment parameter setting
RST
bData_Make
Data generation
/ Store the setting in the equipment parameter. */
*Store the setting data in the transfer data area.
bParameter_Set
(92)
Equipment parameter setting
MOV
uWrite_Data
Written data
U0Z0¥G12293
*Store the command.
WOR
uCommand
Equipment command
U0Z0¥G12305
*Turn ON the command execution request flag.
SET
U0Z0¥G12306.C
SET
bParameter_Write
Equipment parameter write
RST
bParameter_Set
Equipment parameter setting


/* Write the equipment parameter. */
bParameter_Write
(113)
Equipment parameter write
RJ51AW12AL_1.bParameterAccessCompletionFlag
X11
R: Parameter access complete flag
RJ51AW12AL_1.bPa…
X0B
R: Parameter access in progress flag (with handshake)
RST
RJ51AW12AL_1.bParameterAccessRequestCommandForTheSlaveModule
Y10
RW: Parameter access request command from the master to the remote unit
*Write designation
MOV
K1
RJ51AW12AL_1.uParameterAccessSetting_D
U0¥G10320
RW: Parameter access setting (direct)
*Turn ON the parameter access request command for the remote unit.
SET
bParameter_Read
Equipment parameter read
bParameter_Write
Equipment parameter write
/* Read the equipment parameter. */
bParameter_Read
(131)
Equipment parameter read
OUT
tWrite_Wait
K1
Write delay
RJ51AW12AL_1.bPa…
X11
R: Parameter access complete flag
X0B
R: Parameter access in progress flag (with handshake)
*Read designation
bCommand_Check
Equipment command completion check
*/ If the command execution is complete, store the result. */
*/ If the command execution is not complete, read the equipment parameter again. */
(174)


RJ51AW12AL_1.bParameterAccess CompletionFlag
X11
R: Parameter access complete flag
RJ51AW12 AL_1.bPa…
X0B
R: Parameter access in progress flag (with handshake)
U0Z0 ¥G12306.C
U0Z0 ¥G1229…
WAND
H0FF
U0Z0¥G12305
uWrite_Commmand
Written command
U0Z0 ¥G12306.C
SET
bParameter_Read
Equipment parameter read
U0Z0 ¥G12290.D
<>_U
uWrite_Co mmmand
Written command
uComman d
Equipment command
SET
bParameter_Set
Equipment parameter setting
*Store the command execution result.
=_U
MOV
U0Z0¥G12293
uCommand_Answer
Equipment command execution result
RST
bCommand_Check
Equipment command completion check
(227)
{END }

【中国版RoHS指令】

的产品中有害物质的名称及含量

部件名称	有害物质					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 [Cr(VI)]	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
安装基板	×	○	○	○	○	○
框架	○	○	○	○	○	○

本表格依据SJ/T11364的规定编制。

○：表示该有害物质在该部件所有均质材料中的含量均在GB/T26572规定的限量要求以下。

×：表示该有害物质至少在该部件的某一均质材料中的含量超出GB/T26572规定的限量要求。

基于中国标准法的参考规格：GB/T15969.2

[Address]

Anywire Corporation

Headquarters :1 Babazusho, Nagaokakyo-shi, Kyoto 617-8550 JAPAN

Contact :Contact by mail info_e@anywire.jp
:Contact by website http://www.anywire.jp

Printed in Japan 2023 UMA-20234AB-EN_a