Pro-face

Digital Human Machine Interface

Device/PLC Connection Manuals

About the Device/PLC Connection Manuals

Prior to reading these manuals and setting up your device, be sure to read the "Important: Prior to reading the Device/PLC Connection manual" information. Also, be sure to download the "Preface for Trademark Rights, List of Units Supported, How to Read Manuals and Documentation Conventions" PDF file. Furthermore, be sure to keep all manual-related data in a safe, easy-to-find location.

Yokogawa Electric Corporation - Appendix

A.1 Maximum Number of Consecutive Device Addresses

The following lists the maximum number of consecutive addresses that can be read by each PLC. Refer to these tables to utilize *Block Transfer*.

When the device is setup using the methods below, the Data Communication Speed declines by the number of times the device is read.

- **When consecutive addresses exceed the maximum data number range**
- **When an address is designated for *division***
- **When device types are different**

To speed up data communication, plan the tag layout in screen units, as consecutive devices. (Includes the Alarm and Trend screens.)

■ PLC Units

<FACTORY ACE Series>

Device	Max. No. of Consecutive Address	Device	Max. No. of Consecutive Address
Input Relay X	1 Words	Timer (current value) TP	63 Words
Output Relay Y		Timer (setup value) TS	
Internal Relay I	63 Words	Counter (current value) CP	
Joint Relay E		Counter (setup value) CS	
Timer (contact) T	16 Words	Data Register D	
Counter (contact) C		Common Register B *1	
Special Relay M Link Relay L	63 Words	File Register B *1	
		Special Register Z	
		Link Register W	

**1 Device B becomes the Common Register when the CPU is FA500, and becomes the File Register when the CPU is FA-M3.*

<STARDOM Standalone Controller FCN/FCJ Series> (When using Yokogawa Electric FCN/FCJ ModbusRTU 1:n Protocol)

Device	Max. No. of Consecutive Addresses
Coil (0)	125 Words
Input Relay (1)	
Retain Register (4)	
Input Register (3)	

◆Ethernet Communication

<FACTORY ACE Series/FA-M3>

Device	Max.No.of Consecutive Addresses
Input Relay	1 Word
Output Relay	
Internal Relay	64 words
Common Relay	
Special Relay	
Link Relay	
Timer (contact)	16 words
Counter (contact)	
Timer (current value)	64words
Counter (current value)	
Timer (setup value)	
Counter (setup value)	
Data Register	
File Register	
Common Register	
Special Register	
Link Register	

■ Controller

<UT2000/UT3000/Green Series>

Device	Max. No. of Consecutive Address
D	63 Words
I	63 Words

<UT100>

Device	Max. No. of Consecutive Address
D Register	32 Words

A.2 Device Codes and Address Codes

Device codes and address codes are used to specify indirect addresses for the E-tags or K-tags.

The word addresses of data to be displayed are coded and stored in the word address specified by the E-tags and K-tags. (Code storage is done either by the PLC, or with T-tag and K-tags)

■ PLCs

<FA500 (1:1 communication)*>

	Device	Word Address	Device code (HEX)	Address code
Bit Device	Input Relay	X00201~	X	X
	Output Relay	Y00201~	X	X
	Internal Relay	I0001~	9000	Save as word address value minus 1 divided by 16.
	Joint Relay	E0001~	B800	Save as word address value minus 1 divided by 16.
	Special Relay	M001~	B000	Save as word address value minus 1 divided by 16.
	Link Relay	L0001~	C000	Save as word address value minus 1 divided by 16.
Word Device	Timer (current value)	TP001~	6000	Save as word address value minus 1.
	Timer (set velue)	TS001~	6800	Save as word address value minus 1.
	Coutner (current value)	CP001~	7000	Save as word address value minus 1.
	Counter (set value)	CS001~	7800	Save as word address value minus 1.
	Data Register	D0001~	0000	Save as word address value minus 1.
	Common Register	B0001~	2000	Save as word address value minus 1.
	Special Register	Z001~	5000	Save as word address value minus 1.
	Link Register	W0001~	5800	Save as word address value minus 1.
	LS area	LS0000~	4000	Word Address

* *Only CPU No. 1 is available.*

<FA500 (1:n communication)*>

	Device	Word Address	Device code (HEX)	Address code
Bit Device	Input Relay	X00201~	X	X
	Output Relay	Y00201~	X	X
	Internal Relay	I0001~	9000	Save as word address value minus 1 divided by 16.
	Joint Relay	E0001~	B800	Save as word address value minus 1 divided by 16.
	Special Relay	M001~	B000	Save as word address value minus 1 divided by 16.
	Link Relay	L0001~	C000	Save as word address value minus 1 divided by 16.
Word Device	Timer (current value)	TP001~	6000	Save as word address value minus 1.
	Timer (set velue)	TS001~	6800	Save as word address value minus 1.
	Coutner (current value)	CP001~	7000	Save as word address value minus 1.
	Counter (set value)	CS001~	7800	Save as word address value minus 1.
	Data Register	D0001~	0000	Save as word address value minus 1.
	Common Register	B0001~	2000	Save as word address value minus 1.
	Special Register	Z001~	5000	Save as word address value minus 1.
	Link Register	W0001~	5800	Save as word address value minus 1.
	LS area	LS0000~	4000	Word Address

* *Only CPU No. 1 in station No.1 is available.*

<STARDOM Standalone Controller FCN/FCJ Series> (When using Yokogawa Electric FCN/FCJ ModbusRTU 1:n Protocol)

Device	Device Address	Device code	Address Code
1_0	1_000001 -	0xB000	(Word Address)/ 16
2_0	2_000001 -	0xB200	
3_0	3_000001 -	0xB400	
4_0	4_000001 -	0xB600	
5_0	5_000001 -	0xB800	
6_0	6_000001 -	0xBA00	
7_0	7_000001 -	0xBC00	
8_0	8_000001 -	0xBE00	
9_0	9_000001 -	0xC000	
10_0	10_000001 -	0xC200	
11_0	11_000001 -	0xC400	
12_0	12_000001 -	0xC600	
13_0	13_000001 -	0xC800	
14_0	14_000001 -	0xCA00	
15_0	15_000001 -	0xCC00	
16_0	16_000001 -	0xCE00	
17_0	17_000001 -	0x8000	
18_0	18_000001 -	0x8200	
19_0	19_000001 -	0x8400	
20_0	20_000001 -	0x8600	
21_0	21_000001 -	0x8800	
22_0	22_000001 -	0x8A00	
23_0	23_000001 -	0x8C00	
24_0	24_000001 -	0x8E00	
25_0	25_000001 -	0xD000	
26_0	26_000001 -	0xF200	
27_0	27_000001 -	0xF400	
28_0	28_000001 -	0xF600	
29_0	29_000001 -	0xF800	
30_0	30_000001 -	0xFA00	
31_0	31_000001 -	0xFC00	
1_1	1_100001 -	0x9000	(Word Address)/ 16
2_1	2_100001 -	0x9200	
3_1	3_100001 -	0x9400	
4_1	4_100001 -	0x9600	
5_1	5_100001 -	0x9800	
6_1	6_100001 -	0x9A00	
7_1	7_100001 -	0x9C00	
8_1	8_100001 -	0x9E00	
9_1	9_100001 -	0xA000	
10_1	10_100001 -	0xA200	

11_1	11_100001 -	0xA400	
12_1	12_100001 -	0xA600	
13_1	13_100001 -	0xA800	
14_1	14_100001 -	0xAA00	
15_1	15_100001 -	0xAC00	
16_1	16_100001 -	0xAE00	
17_1	17_100001 -	0x6000	
18_1	18_100001 -	0x6200	
19_1	19_100001 -	0x6400	
20_1	20_100001 -	0x6600	
21_1	21_100001 -	0x6800	
22_1	22_100001 -	0x6A00	
23_1	23_100001 -	0x6C00	
24_1	24_100001 -	0x6E00	
25_1	25_100001 -	0x7000	
26_1	26_100001 -	0x7200	
27_1	27_100001 -	0x7400	
28_1	28_100001 -	0x7600	
29_1	29_100001 -	0x7800	
30_1	30_100001 -	0x7A00	
31_1	31_100001 -	0x7C00	
1_4	1_400001 -	0xD200	Word Address - 1
2_4	2_400001 -	0xD400	
3_4	3_400001 -	0xD600	
4_4	4_400001 -	0xD800	
5_4	5_400001 -	0xDA00	
6_4	6_400001 -	0xDC00	
7_4	7_400001 -	0xDE00	
8_4	8_400001 -	0xE000	
9_4	9_400001 -	0xE200	
10_4	10_400001 -	0xE400	
11_4	11_400001 -	0xE600	
12_4	12_400001 -	0xE800	
13_4	13_400001 -	0xEA00	
14_4	14_400001 -	0xEC00	
15_4	15_400001 -	0xEE00	
16_4	16_400001 -	0xF000	
17_4	17_400001 -	0x4200	
18_4	18_400001 -	0x4400	
19_4	19_400001 -	0x4600	
20_4	20_400001 -	0x4800	
21_4	21_400001 -	0x4A00	
22_4	22_400001 -	0x4C00	

23_4	23_400001 -	0x4E00	
24_4	24_400001 -	0x5000	
25_4	25_400001 -	0x5200	
26_4	26_400001 -	0x5400	
27_4	27_400001 -	0x5600	
28_4	28_400001 -	0x5800	
29_4	29_400001 -	0x5A00	
30_4	30_400001 -	0x5C00	
31_4	31_400001 -	0x5E00	
1_3	1_300001 -	0x2000	Word Address - 1
2_3	2_300001 -	0x2200	
3_3	3_300001 -	0x2400	
4_3	4_300001 -	0x2600	
5_3	5_300001 -	0x2800	
6_3	6_300001 -	0x2A00	
7_3	7_300001 -	0x2C00	
8_3	8_300001 -	0x2E00	
9_3	9_300001 -	0x3000	
10_3	10_300001 -	0x3200	
11_3	11_300001 -	0x3400	
12_3	12_300001 -	0x3600	
13_3	13_300001 -	0x3800	
14_3	14_300001 -	0x3A00	
15_3	15_300001 -	0x3C00	
16_3	16_300001 -	0x3E00	
17_3	17_300001 -	0x0200	
18_3	18_300001 -	0x0400	
19_3	19_300001 -	0x0600	
20_3	20_300001 -	0x0800	
21_3	21_300001 -	0x0A00	
22_3	22_300001 -	0x0C00	
23_3	23_300001 -	0x0E00	
24_3	24_300001 -	0x1000	
25_3	25_300001 -	0x1200	
26_3	26_300001 -	0x1400	
27_3	27_300001 -	0x1600	
28_3	28_300001 -	0x1800	
29_3	29_300001 -	0x1A00	
30_3	30_300001 -	0x1C00	
31_3	31_300001 -	0x1E00	
LS Area	LS0000 -	0x4000	Word Address

<FA-M3 (1:1 communication)*>

	Device	Word Address	Device code (HEX)	Address code
Bit Device	Input Relay	X00201~	X	X
	Output Relay	Y00201~	X	X
	Internal Relay	I0001~	9000	Save as word address value minus 1 divided by 16.
	Joint Relay	E0001~	B800	Save as word address value minus 1 divided by 16.
	Special Relay	M0001~	B000	Save as word address value minus 1 divided by 16.
	Link Relay	L00001~	C000	Save as word address value minus 1 divided by 16.
Word Device	Timer (current value)	TP0001~	6000	Save as word address value minus 1.
	Timer (set velue)	TS0001~	6800	Save as word address value minus 1.
	Coutner (current value)	CP0001~	7000	Save as word address value minus 1.
	Counter (set value)	CS0001~	7800	Save as word address value minus 1.
	Data Register	D0001~	0000	Save as word address value minus 1.
	File Register	B00001~	2000	Save as word address value minus 1.
		B65537~	2800	Save as word address value minus 65537.
		B131073~	1000	Save as word address value minus 131073.
		B196609~	1800	Save as word address value minus 196609.
	Joint Register	R0001~	0800	Save as word address value minus 1.
	Special Register	Z001~	5000	Save as word address value minus 1.
	Link Register	W00001~	5800	Save as word address value minus 1.
	LS area	LS0000~	4000	Word Address

* *Only CPU No. 1 is available.*

<FA-M3 (1:n communication)*>

	Device	Word Address	Device code (HEX)	Address code
Bit Device	Input Relay	X00201~	X	X
	Output Relay	Y00201~	X	X
	Internal Relay	I00001~	9000	Save as word address value minus 1 divided by 16.
	Joint Relay	E0001~	B800	Save as word address value minus 1 divided by 16.
	Special Relay	M0001~	B000	Save as word address value minus 1 divided by 16.
	Link Relay	L00001~	C000	Save as word address value minus 1 divided by 16.
Word Device	Timer (current value)	TP0001~	6000	Save as word address value minus 1.
	Timer (set velue)	TS0001~	6800	Save as word address value minus 1.
	Coutner (current value)	CP0001~	7000	Save as word address value minus 1.
	Counter (set value)	CS0001~	7800	Save as word address value minus 1.
	Data Register	D0001~	0000	Save as word address value minus 1.
	File Register	B0001~	2000	Save as word address value minus 1.
	Joint Register	R0001~	0800	Save as word address value minus 1.
	Special Register	Z001~	5000	Save as word address value minus 1.
	Link Register	W0001~	5800	Save as word address value minus 1.
	LS area	LS0000~	4000	Word Address

* *Only CPU No. 1 in station No. 1 is available.*

<FA-M3 (Ethenet communication)*>

	Device	Word Address	Device code (HEX)	Address code
Bit Device	Input Relay	X00201~	X	X
	Output Relay	Y00201~	X	X
	Internal Relay	I00001~	9000	Save as word address value minus 1 divided by 16.
	Joint Relay	E0001~	B800	Save as word address value minus 1 divided by 16.
	Special Relay	M0001~	B000	Save as word address value minus 1 divided by 16.
	Link Relay	L00001~	C000	Save as word address value minus 1 divided by 16.
Word Device	Timer (current value)	TP0001~	6000	Save as word address value minus 1.
	Timer (set velue)	TS0001~	6800	Save as word address value minus 1.
	Coutner (current value)	CP0001~	7000	Save as word address value minus 1.
	Counter (set value)	CS0001~	7800	Save as word address value minus 1.
	Data Register	D0001~	0000	Save as word address value minus 1.
	File Register	B0001~	2000	Save as word address value minus 1.
		B65537~	2800	Save as word address value minus 65537.
		B131073~	1000	Save as word address value minus 131073.
		B196609~	1800	Save as word address value minus 196609.
	Joint Register	R0001~	0800	Save as word address value minus 1.
	Special Register	Z001~	5000	Save as word address value minus 1.
	Link Register	W0001~	5800	Save as word address value minus 1.
	LS area	LS0000~	4000	Word Address

** Only CPU No. 1 is available*

◆ DeviceNet Communication

	Device	Word Address	Device code (HEX)	Address code
Word Device	LS area	LS0000 ~	4000	Word Address

■ Controllers

<UT2000/UT3000/Green Series>

	Device	Word Address	Device Code (HEX)	Address Code
Word Device	D	0001 ~	0000	Word Address -1
Bit Device	I	0001 ~	9000	Save as word address -1 value divided by 16
Word Device	LS Area	LS6000 ~	4000	Woord Address

<UT100>

	Device	Word Address	Device Code (HEX)	Address Code
Word Device	D Register	d0001 ~	3000	Word Address -1
	LS Area	LS0000 ~	4000	Word Address