

# YASKAWA DX100/DX200/FS100/YRC1000 Robot Controller (Ethernet)

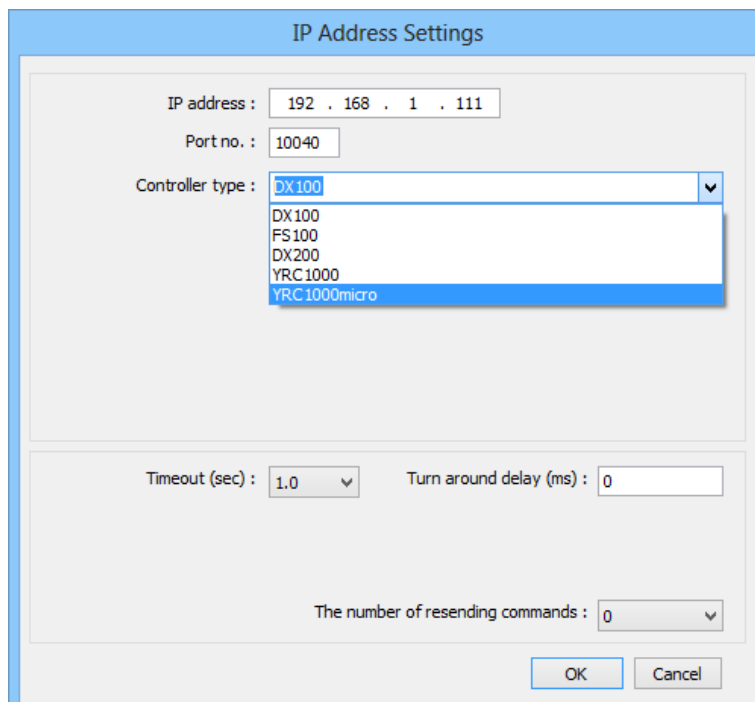
Supported Series: YASKAWA controller type DX100, FS100, DX200, YRC1000, YRC100micro

Website: <http://www.yaskawa.com/>

## HMI Setting:

Parameters	Recommended	Options	Notes
PLC type	YASKAWA DX100/DX200/FS100/YRC1000 Robot Controller (Ethernet)		
PLC I/F	Ethernet (UDP)		
Port no.	10040		
Controller type	DX100	DX100, FS100, DX200, YRC1000, YRC1000micro	

The address settings may vary according to the controller type selected. Take DX200 as an example, after selecting it as the controller, the window below opens. In this settings window, users may select the **Command** first, and then select the suitable **Instance** and **Attribute** to complete Address setting. Command stands for address type, Instance stands for the content of the Command, and Attribute stands for the attribute of the Instance. Instance and Attribute may have further settings to complete.



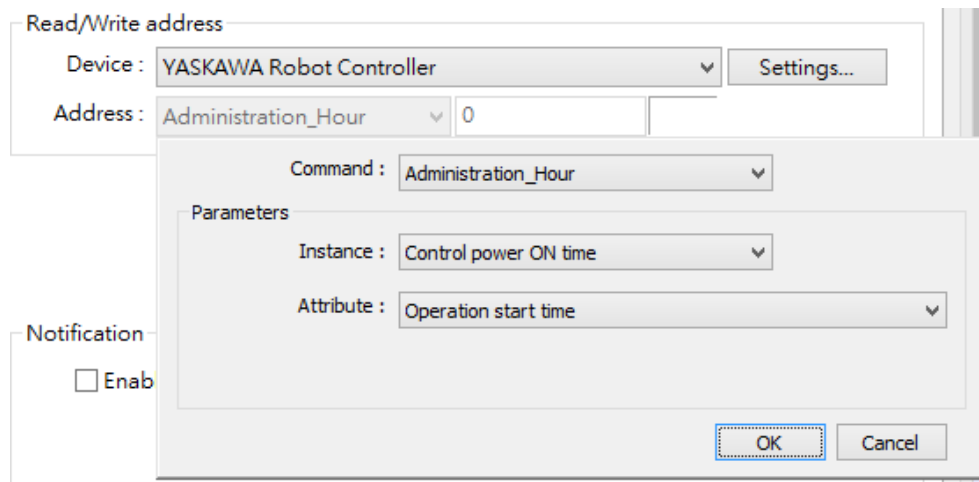
The screenshot shows the 'IP Address Settings' dialog box. The fields are as follows:

- IP address : 192 . 168 . 1 . 111
- Port no. : 10040
- Controller type : DX100 (with a dropdown menu showing options: DX100, FS100, DX200, YRC1000, YRC1000micro)
- Timeout (sec) : 1.0
- Turn around delay (ms) : 0
- The number of resending commands : 0

Buttons: OK, Cancel

### Example 1.

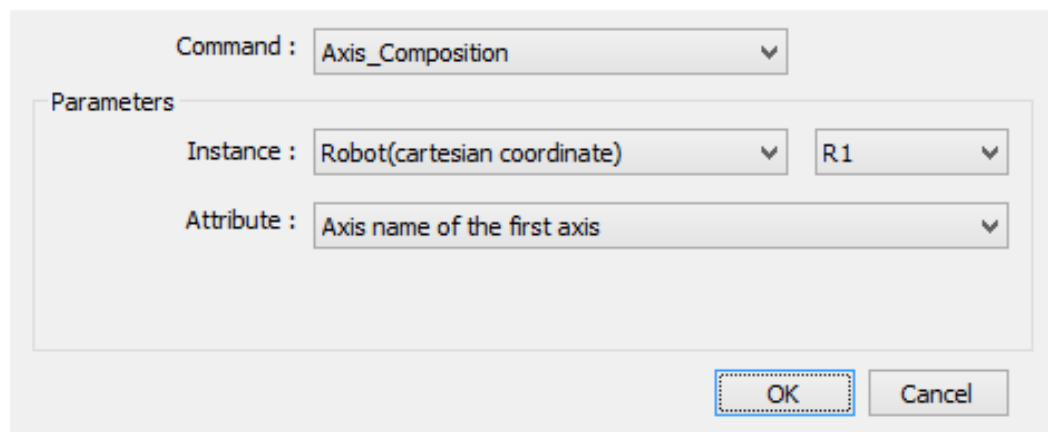
As shown in the settings below, the Command is Administration\_Hour, which is used to “Control power ON time”, and its attribute is “Operation start time”.



The screenshot shows a 'Read/Write address' dialog box. The 'Device' is set to 'YASKAWA Robot Controller'. The 'Address' is set to 'Administration\_Hour' with a value of '0'. A 'Parameters' sub-dialog is open, showing 'Command' as 'Administration\_Hour', 'Instance' as 'Control power ON time', and 'Attribute' as 'Operation start time'. There is an 'Enable' checkbox and 'OK' and 'Cancel' buttons.

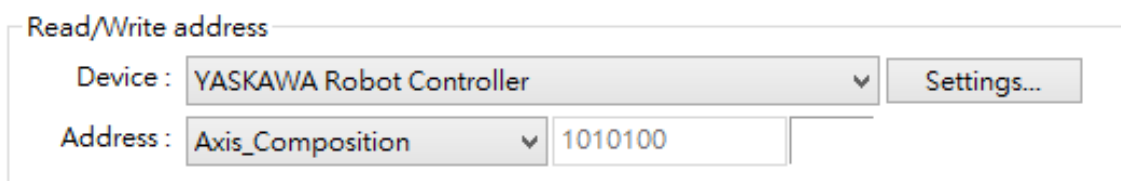
### Example 2.

As shown in the settings below, the Command is Axis\_Composition, which uses R1 of “Robot(Cartesian coordinate)”, and its attribute is “Axis name of the first axis”.



The screenshot shows a 'Parameters' sub-dialog box. The 'Command' is set to 'Axis\_Composition'. The 'Instance' is set to 'Robot(cartesian coordinate)' with a value of 'R1'. The 'Attribute' is set to 'Axis name of the first axis'. There are 'OK' and 'Cancel' buttons.

After setting, the following result is shown.



The screenshot shows the 'Read/Write address' dialog box. The 'Device' is 'YASKAWA Robot Controller'. The 'Address' is 'Axis\_Composition' with a value of '1010100'. There is a 'Settings...' button.

The number shown near Address drop-down list is automatically generated and cannot be changed by users. Users may skip it.

The details on Address parameters are explained below.

1.Command : Administration\_Hour

Function: Management Time Acquiring Command (0x88)

**Instances (DX100/FS100/DX200/YRC1000):**

Instance	Sub Instance	Details
Control power ON time		
Servo power ON time	(TOTAL)	
	(R1 to R8)	
	(S1 to S24)	
Play back time	(TOTAL)	
	(R1 to R8)	
	(S1 to S24)	
Motion time	(TOTAL)	
	(R1 to R8)	
	(S1 to S24)	
Operation time	(application 1 to 8)	

**Instances (YRC1000micro):**

Instance	Sub Instance	Details
Control power ON time		
Servo power ON time	(TOTAL)	
	(R1 to R2)	
	(S1 to S3)	
Play back time	(TOTAL)	
	(R1 to R2)	
	(S1 to S3)	
Motion time	(TOTAL)	
	(R1 to R2)	
	(S1 to S3)	
Operation time	(application 1 to 2)	

Attributes:

Attribute	Sub Attribute	Details
Operation start time		8 Words Ex. 2019/02/22 15:11
Elapse time		6 Words Ex. 000000:00'00

## 2.Command : Alarm

Function: Alarm Data Reading Command (0x70)

Instances:

Instance	Details
The latest alarm	Up to four alarms are displayed on the P.P display at the same time
The second alarm from the latest	
The third alarm from the latest	
The fourth alarm from the latestt	

Attributes:

Attribute	Details
Alarm code	Range is from 0x0001 to 0x270F(decimal value: 1~9999)
Alarm data	Setting values vary in accordance with the contents of the alarm type. Also, some alarms are not displayed with the sub code. In this case, the value is zero (0x0).
By alarm type	0 : No alarm 1 : Decimal UNSIGNED SHORT type (display example: [1]) 2 : UNSIGNED CHAR bit pattern (display example: [0000_0001]) 3 : User axis type (display example: [SLURBT]) 4 : Spacial coordinate type (display example: [XYZ]) 5 : Robot coordinate type (display example: [XYZRxRyRz]) 6 : Conveyor characteristic file (display example: [123]) 8 : Control group type (display example: [R1R2S1S2]) robot & station 9 : Decimal SHORT type (display example: [-1]) 10 : UNSIGNED SHORT bit pattern (display example: [0000_0000_0000_0001]) 11 : Control group type (display example:

Attribute	Details
	[R1]) for robot only 12 : Control group type (display example:[R1S1B1]) for robot, station and base 20 : Control group LOW/HIGH logical axis (display example: [R1:LOW SLURBT, HIGH SLURBT]) 21 : Control group MIN/MAX logical axis (display example: [R1: MIN SLURBT, MAX SLURBT]) 22 : Control group MIN/MAX spacial coordinate (display example: [R1: MIN XYZ, MAX XYZ]) 23 : Logical axis of both control group 1 and control group 2 (display example: [R1: SLURBT, R2: SLURBT]) 24 : Logical axis 1 and 2 of the control group (display example: [R1: SLURBT, SLURBT]) 25 : Logical axis of the control group and UNSIGNED CHAR type (display example: [R1: SLURBT, 1]) 27 : Control group and UNSIGNED CHAR type (display example: [R1: 1])
<b>Alarm occurring time</b>	8 Words
<b>Alarm character string name</b>	16 Words

### 3.Command : Alarm\_Detailed

Function: Alarm Data Reading Command (0x30A)

Instances:

Instance	Details
The latest alarm	Up to four alarms are displayed on the P.P display at the same time. Specify one out of them.
The second alarm from the latest	
The third alarm from the latest	
The fourth alarm from the latest	

Attributes:

Attribute	Details
Alarm code	Range is from 0x0001 to 0x270F(decimal value:0 ~ 9999)
Alarm data	Setting values vary in accordance with the contents of the alarm type. Also, some alarms are not displayed with the sub code. In this case, the value is zero (0x0).
By alarm type	0 : No alarm 1 : Decimal UNSIGNED SHORT type (display example: [1]) 2 : UNSIGNED CHAR bit pattern (display example: [0000_0001]) 3 : User axis type (display example: [SLURBT]) 4 : Spacial coordinate type (display example: [XYZ]) 5 : Robot coordinate type (display example: [XYZRxRyRz]) 6 : Conveyor characteristic file (display example: [123]) 8 : Control group type (display example: [R1R2S1S2]) robot & station 9 : Decimal SHORT type (display example: [-1]) 10 : UNSIGNED SHORT bit pattern (display example: [0000_0000_0000_0001]) 11 : Control group type (display example: [R1]) for robot only

Attribute	Details
	12 : Control group type (display example:[R1S1B1]) for robot, station and base 20 : Control group LOW/HIGH logical axis (display example: [R1:LOW SLURBT, HIGH SLURBT]) 21 : Control group MIN/MAX logical axis (display example: [R1: MIN SLURBT, MAX SLURBT]) 22 : Control group MIN/MAX spacial coordinate (display example: [R1: MIN XYZ, MAX XYZ]) 23 : Logical axis of both control group 1 and control group 2 (display example: [R1: SLURBT, R2: SLURBT]) 24 : Logical axis 1 and 2 of the control group (display example: [R1: SLURBT, SLURBT]) 25 : Logical axis of the control group and UNSIGNED CHAR type (display example: [R1: SLURBT, 1]) 27 : Control group and UNSIGNED CHAR type (display example: [R1: 1])
<b>Alarm occurring time</b>	8 Words
<b>Alarm character string name</b>	16 Words
<b>Sub code data additional information character strings</b>	8 Words
<b>Sub code data character strings</b>	48 Words
<b>Sub code data character strings</b>	48 Words

Attribute	Details
<b>reverse display information</b>	

#### 4.Command : Alarm\_History

Function: Alarm History Reading Command (0x71)

Instances:

Instance	Sub Instance	Details
<b>Major failure</b>		
<b>Monitor alarm</b>		
<b>User alarm</b>	system	
	user	
<b>OFF line alarm</b>		

Attributes:

Attribute	Details
<b>Alarm code</b>	Range is from 0x0001 to 0x270F(decimal value: 9999)
<b>Alarm data</b>	Setting values vary in accordance with the contents of the alarm type. Also, some alarm are not displayed with the sub code. In this case, the value is 0 :0x0).
<b>Alarm type</b>	0 : No alarm 1 : Decimal UNSIGNED SHORT type (display example: [1]) 2 : UNSIGNED CHAR bit pattern (display example: [0000_0001]) 3 : User axis type (display example: [SLURBT]) 4 : Spacial coordinate type (display example: [XYZ]) 5 : Robot coordinate type (display example: [XYZRxRyRz]) 6 : Conveyor characteristic file (display example: [123]) 8 : Control group type (display example: [R1R2S1S2]) robot & station 9 : Decimal SHORT type (display example:



Attribute	Details
	[-1]) 10 : UNSIGNED SHORT bit pattern (display example: [0000_0000_0000_0001]) 11 : Control group type (display example: [R1]) for robot only 12 : Control group type (display example:[R1S1B1]) for robot, station and base 20 : Control group LOW/HIGH logical axis (display example: [R1: LOW SLURBT, HIGH SLURBT]) 21 : Control group MIN/MAX logical axis (display example: [R1: MIN SLURBT, MAX SLURBT]) 22 : Control group MIN/MAX spacial coordinate (display example: [R1: MIN XYZ, MAX XYZ]) 23 : Logical axis of both control group 1 and control group 2 (display example: [R1: SLURBT, R2: SLURBT]) 24 : Logical axis 1 and 2 of the control group (display example: [R1:SLURBT, SLURBT]) 25 : Logical axis of the control group and UNSIGNED CHAR type (display example: [R1: SLURBT, 1]) 27 : Control group and UNSIGNED CHAR type (display example: [R: 1])
<b>Alarm occurring time</b>	8 Words
<b>Alarm character strings name</b>	16 Words

## 5.Command : Alarm\_History\_Detailed

Function: Alarm History Reading Command (0x30B)

Instances:

Instance	Sub Instance	Details
Major failure		
Monitor alarm		
User alarm	System	
	User	
OFF line alarm		

Attributes:

Attribute	Details
Alarm code	Range is from 0x0001 to 0x270F(decimal value: 9999)
Alarm data	Setting values vary in accordance with the contents of the alarm type. Also, some alarms are not displayed with the sub code. In this case, the value is zero (0x0).
Alarm type	0 : No alarm 1 : Decimal UNSIGNED SHORT type (display example: [1]) 2 : UNSIGNED CHAR bit pattern (display example: [0000_0001]) 3 : User axis type (display example: [SLURBT]) 4 : Spacial coordinate type (display example: [XYZ]) 5 : Robot coordinate type (display example: [XYZRxRyRz]) 6 : Conveyor characteristic file (display example: [123]) 8 : Control group type (display example: [R1R2S1S2]) robot & station 9 : Decimal SHORT type (display example: [-1]) 10 : UNSIGNED SHORT bit pattern

Attribute	Details
	(display example: [0000_0000_0000_0001]) 11 : Control group type (display example: [R1]) for robot only 12 : Control group type (display example:[R1S1B1]) for robot, station and base 20 : Control group LOW/HIGH logical axis (display example: [R1:LOW SLURBT, HIGH SLURBT]) 21 : Control group MIN/MAX logical axis (display example: [R1: MIN SLURBT, MAX SLURBT]) 22 : Control group MIN/MAX spacial coordinate (display example: [R1: MIN XYZ, MAX XYZ]) 23 : Logical axis of both control group 1 and control group 2 (display example: [R1: SLURBT, R2: SLURBT]) 24 : Logical axis 1 and 2 of the control group (display example: [R1: SLURBT, SLURBT]) 25 : Logical axis of the control group and UNSIGNED CHAR type (display example: [R1: SLURBT, 1]) 27 : Control group and UNSIGNED CHAR type (display example: [R1: 1])
<b>Alarm occurring time</b>	8 Words
<b>Alarm character strings name</b>	16 Words
<b>Sub code data additional information character strings</b>	8 Words

Attribute	Details
Sub code data character strings	48 Words
Sub code data character strings reverse display information	48 Words

#### 6.Command : Axis\_Composition

Function: Axis Configuration Information Reading Command (0x74)

#### Instances(DX100/FS100/DX200/YRC1000):

Instance	Sub Instance	Details
Robot (pulse value)	R1~R8	
Base (pulse value)	B1~B8	
Station (pulse value)	S1~S24	
Robot (cartesian coordinate)	R1~R8	
Base (cartesian coordinate)	B1~B8	

#### Instances(YRC1000Micro):

Instance	Sub Instance	Details
Robot (pulse value)	R1~R2	
Base (pulse value)	B1~B2	
Station (pulse value)	S1~S3	
Robot (cartesian coordinate)	R1~R2	
Base (cartesian coordinate)	B1~B2	

#### Attributes:

Attribute	Details
First coordinate name	2 Words
Second coordinate name	
Third coordinate name	
Fourth coordinate name	
Fifth coordinate name	
Sixth coordinate name	
Seventh coordinate name	
Eighth coordinate name	

**7.Command : B**

Function: Byte Variable (B) Reading / Writing Command (0x7A)

Instances:

Data type: 8 bit

Instance	Sub Instance	Details
	0~99	

Attributes:

Attribute	Details
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**8.Command : BP**

Function: Base Position Type Variable (Bp) Reading / Writing Command(0x80)

Instances:

Instance	Sub Instance	Details
	0~127	

Attributes:

Attribute	Details
<b>Data type</b>	0 : Pulse value 16: Base coordinated value
<b>Coordinated data” of the first axis</b>	2 Words
<b>Coordinated data” of the second axis</b>	
<b>Coordinated data” of the third axis</b>	
<b>Coordinated data” of the fourth axis</b>	
<b>Coordinated data” of the fifth axis</b>	
<b>Coordinated data” of the sixth axis</b>	
<b>Coordinated data” of the seventh axis</b>	
<b>Coordinated data” of the eighth axis</b>	

**9.Command : D**

Function: Double Precision Integer Type Variable (D) Reading / Writing Command (0x7C)

Data type: 32 bit

Instances:

Instance	Sub Instance	Details
	0 ~ 99	

Attributes:

Attribute	Details
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**10.Command : Axis\_Position\_Deflection**

Function: Position Error Reading Command (0x76)

**Instances(DX100/FS100/DX200/YRC1000):**

Instance	Sub Instance	Details
Robot axis	R1~R8	
Base axis	B1~B8	
Station axis	S1~S24	

**Instances(YRC1000micro):**

Instance	Sub Instance	Details
Robot axis	R1~R2	
Base axis	B1~B2	
Station axis	S1~S3	

Attributes:

Attribute	Details
First axis data	Position variable data of each axis can be read out
Second axis data	
Third axis data	
Fourth axis data	
Fifth axis data	
Sixth axis data	
Seventh axis data	
Eighth axis data	

**11.Command: Each\_Shaft\_Torque**

Function: Torque Data Reading Data (0x77)

**Instances(DX100/FS100/DX200/YRC1000):**

Instance	Sub Instance	Details
Robot axis	R1~R8	
Base axis	B1~B8	
Station axis	S1~S24	

**Instances(YRC1000micro):**

Instance	Sub Instance	Details
Robot axis	R1~R2	
Base axis	B1~B2	
Station axis	S1~S3	

Attributes:

Attribute	Details
First axis data	Torque data of each axis can be read out
Second axis data	
Third axis data	
Fourth axis data	
Fifth axis data	
Sixth axis data	
Seventh axis data	
Eighth axis data	

**12.Command: EX**

Function: External Axis Type Variable (Ex) Reading / Writing Command (0x81)

Data type: 32 bit

Instances:

Instance	Sub Instance	Details
	0~127	

Attributes:

Attribute	Details
Data type	0: Pulse value
Coordinated data" of the first axis	
Coordinated data" of the second axis	
Coordinated data" of the third axis	
Coordinated data" of the fourth axis	
Coordinated data" of the fifth axis	
Coordinated data" of the sixth axis	
Coordinated data" of the seventh axis	
Coordinated data" of the eighth axis	

**13.Command : I**

Function: Integer Type Variable (I) Reading / Writing Command (0x7B)

Data type: 16 bit

Instances:

Instance	Sub Instance	Details
	0~99	

Attributes:

Attribute	Details
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**14.Command : IO\_Data**

Function: I/O Data Reading / Writing Command (0x78)

Data type: 8 bit

Instances:

Instance	Details
Robot user input signal	
Robot user output signal	
External input signal	
Network input signal	Only net work input signal is writable
External output signal	
Network output signal	
Robot system input signal	
Robot system output signal	
Interface panel input signal	
Auxiliary relay signal	
Robot control status signal	
Pseudo input signal	

Attributes:

Attribute	Details
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**15.Command: Job\_Information**

Function: Executing Job Information Reading Command (0x73)

Instances:

Instance	Details
Master task	
Sub task 1~15	

Attributes:

Attribute	Details
Job name	16 Words
Line number	0~9999
Step number	1~9998
Speed override value	



**16.Command : Job\_Select**

Function: Job Select Command (0x87)

Instances:

Instance	Details
<b>Set the executing job</b>	
<b>Set the master job (task 0~15)</b>	

Attributes:

Attribute	Details
<b>Job name</b>	16 Words
<b>Line number</b>	2 Words (0~9999)

\*16 words job name + 2 words line number = 18 words need to be written together.

**17.Command : On\_Off**

Write only, 1 = ON, 2 = OFF

Function: Hold / Servo On/off Command (0x83)

Instances:

Instance	Details
<b>HOLD</b>	
<b>Servo ON</b>	
<b>HLOCK</b>	

Attributes:

Attribute	Details
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**18.Command: P**

Function: Robot Position Type Variable (P) Reading / Writing Command(0x7f)

Instances:

Instance	Sub Instance	Details
	0~127	

Attributes:

Attribute	Details
<b>Data type</b>	0: Pulse value 16: Base coordinated value 17: Robot coordinated value 18: User coordinated value 19: Tool coordinated value
<b>Form</b>	For the form, refer to “Details of data”.
<b>Tool number</b>	
<b>User coordinate number</b>	
<b>Extended form</b>	For the extended form, refer to “Details of data”.
<b>Coordinated data” of the first axis</b>	
<b>Coordinated data” of the second axis</b>	
<b>Coordinated data” of the third axis</b>	
<b>Coordinated data” of the fourth axis</b>	
<b>Coordinated data” of the fifth axis</b>	
<b>Coordinated data” of the sixth axis</b>	
<b>Coordinated data” of the seventh axis</b>	
<b>Coordinated data” of the eighth axis</b>	

Details of data

Form

<b>Bit0</b>	0 : Front	1 : Back
<b>Bit1</b>	0: Upper arm	1: Lower arm
<b>Bit2</b>	0: Flip	1:No flip
<b>Bit3</b>	0: $\theta R < 180$	1: $\theta R \geq 180$
<b>Bit4</b>	0: $\theta T < 180$	1: $\theta T \geq 180$
<b>Bit5</b>	0: $\theta S < 180$	1: $\theta S \geq 180$
<b>Bit6</b>	0: Redundant front	1: Redundant back
<b>Bit7</b>	0: Previous step regarded	1: Form regarded reverse

## Extend Form

<b>Bit0</b>	0: eL<180	1: eL ≥180
<b>Bit1</b>	0: eU<180	1: eU ≥180
<b>Bit2</b>	0: eB<180	1: eB ≥180
<b>Bit3</b>	0: eE<180	1: eE ≥180
<b>Bit4</b>	0: eW<180	1: eW ≥180
<b>Bit5</b>	Reserve	
<b>Bit6</b>		
<b>Bit7</b>		

## 19.Command: R

Function: Real Type Variable (R) Reading / Writing Command (0x7D)

Instances:

32 bit Data

Instance	Sub Instance	Details
	0~99	

Attributes:

Attribute	Details
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## 20.Command : Register\_Data

Function: Register Data Reading / Writing Command (0x79)

Instances:

16 bit Data

Instance	Sub Instance	Details
	0~999	

Attributes:

Attribute	Details
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## 21.Command : Reset\_Cancellation

Write only write 1 to reset

Function: Alarm Reset / Error Cancel Command (0x82)

Instances:

Instance	Details
<b>Resetting of alarm</b>	
<b>Cancelling of error</b>	

Attributes:

Attribute	Details
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**22.Command : Robot\_Position**

Function: Robot Position Data Reading Command (0x75)

**Instances (DX100/FS100/DX200/YRC1000):**

Instance	Sub Instance	Details
Robot (pulse value)	R1~R8	
Base (pulse value)	B1~B8	
Station (pulse value)	S1~S24	
Robot (cartesian coordinate)	R1~R8	

**Instances (YRC1000micro):**

Instance	Sub Instance	Details
Robot (pulse value)	R1~R2	
Base (pulse value)	B1~B2	
Station (pulse value)	S1~S3	
Robot (cartesian coordinate)	R1~R2	

**Attributes:**

Attribute	Details
Data type	0: pulse value/16: base coordinate value
Form	For the form, refer to "Details of data".
Tool number	
User coordinate number	
Extended form	For the extended form, refer to "Details of data".
First axis data	
Second axis data	
Third axis data	
Fourth axis data	
Fifth axis data	
Sixth axis data	
Seventh axis data	
Eighth axis data	

## Details of data

## Form

<b>Bit0</b>	0 : Front	1 : Back
<b>Bit1</b>	0: Upper arm	1: Lower arm
<b>Bit2</b>	0: Flip	1: No flip
<b>Bit3</b>	0: $\theta R < 180$	1: $\theta R \geq 180$
<b>Bit4</b>	0: $\theta T < 180$	1: $\theta T \geq 180$
<b>Bit5</b>	0: $\theta S < 180$	1: $\theta S \geq 180$
<b>Bit6</b>	0: Redundant front	1: Redundant back
<b>Bit7</b>	0: Previous step regarded reverse conversion specified	1: Form regarded reverse conversion specified

## Extend Form

<b>Bit0</b>	0: $\theta L < 180$	1: $\theta L \geq 180$
<b>Bit1</b>	0: $\theta U < 180$	1: $\theta U \geq 180$
<b>Bit2</b>	0: $\theta B < 180$	1: $\theta B \geq 180$
<b>Bit3</b>	0: $\theta E < 180$	1: $\theta E \geq 180$
<b>Bit4</b>	0: $\theta W < 180$	1: $\theta W \geq 180$
<b>Bit5</b>	Reserve	
<b>Bit6</b>		
<b>Bit7</b>		

## 23.Command : S

Function: 16 Byte Character Type Variable (S) Reading Writing Command (0x7e)

8 Words

Instances:

Instance	Sub Instance	Details
	0~99	

Attributes:

Attribute	Details
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## 24.Command :Start

Write only write 1 to start

Function: Start-up (Job Start) Command (0x86)

**25.Command : State\_Switch**

Write only 1: STEP/2: 1 CYCLE/3:CONTINUE

Function: Step / Cycle / Continuous Switching Command (0x84)

**26.Command :Status**

Function: Status Information Reading Command (0x72)

Instances:

Instance	Sub Instance	Details
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Attributes:

Attribute	Details
<b>Data 1</b>	Specify the status data number.
<b>Data 2</b>	For the details of Data1 and Data 2, refer to "Details of data".

Details of data

Data1

<b>Bit0</b>	Step
<b>Bit1</b>	1 cycle
<b>Bit2</b>	Automatic and continuous
<b>Bit3</b>	Running
<b>Bit4</b>	In-guard safe operation
<b>Bit5</b>	Teach
<b>Bit6</b>	Play
<b>Bit7</b>	Command remote

Data2

<b>Bit0</b>	
<b>Bit1</b>	In hold status (by programming pendant)
<b>Bit2</b>	In hold status (externally)
<b>Bit3</b>	In hold status (by command)
<b>Bit4</b>	Alarming
<b>Bit5</b>	Error occurring
<b>Bit6</b>	Servo ON
<b>Bit7</b>	

**27.Command :String\_Display\_To\_Pendant**

Write only

Function: Character String Display Command To The Programming Pendant(0x85)

15 words

**28.Command :System\_Information**
**Function: System Information Acquiring Command (0x89)**
**Instances(DX100/FS100/DX200/YRC1000):**

Instance	Sub Instance	Details
Type information	R1~R8	
Type information	S1~S24	
Application information	1~8	

**Instances(YRC1000micro):**

Instance	Sub Instance	Details
Type information	R1~R2	
Type information	S1~S3	
Application information	1~2	

Attributes:

Attribute	Details
System software version	12 Words
Model name / application	8 Words
Parameter version	4 Words

**29.Command :S\_32BYTE**

Function: 32 Byte Character Type Variable (S) Reading Writing Command (0x8E)

16 words

Instances:

Instance	Sub Instance	Details
	0~99	

**30.Command :Move\_Instruction\_Cartesian**

Write only, data must be written all at once. See Data Part below.

Function: Move instruction command (Type Cartesian coordinates)(0x8A)

Instances:

Instance	Sub Instance	Details
Link absolute position operation		
Straight absolute position operation		
Straight increment value operation		

Data	Details
<b>Specifying control group (Robot)</b>	1 to 8 (Robot No.)
<b>Specifying control group (Station)</b>	1 to 24 (Station No.)
<b>Specifying the classification in speed</b>	Specify the classification of operations 0: % (Link operation) 1: V (Cartesian operation) 2: VR (Cartesian operation)
<b>Specifying a speed</b>	Specify the rate Link operation : 0.01% Cartesian operation V speed : 0.1 mm/s Cartesian operation VR speed : 0.1 degree/s
<b>Specifying the operation coordinate</b>	Specify the operation coordinate 16: Base coordinate 17: Robot coordinate 18: User coordinate 19: Tool coordinate
<b>X coordinate value</b>	
<b>Y coordinate value</b>	
<b>Z coordinate value</b>	
<b>Tx coordinate value (unit: 0.0001 degree)</b>	
<b>Ty coordinate value (unit: 0.0001 degree)</b>	
<b>Tz coordinate value (unit: 0.0001 degree)</b>	
<b>Reservation</b>	



Data	Details
<b>Reservation</b>	Only support in YRC1000micro
<b>Type</b>	Refer to following data at the next page for details
<b>Expanded type</b>	
<b>Tool No. (0 to 63)</b>	
<b>User coordinate No. (1 to 63)</b>	
<b>Base 1st axis position</b>	
<b>Base 2nd axis position</b>	
<b>Base 3rd axis position</b>	
<b>Station 1st axis position</b>	
<b>Station 2nd axis position</b>	
<b>Station 3rd axis position</b>	
<b>Station 4th axis position</b>	
<b>Station 5th axis position</b>	
<b>Station 6th axis position</b>	

Details of data

Form

<b>Bit0</b>	0 : Front	1: Back
<b>Bit1</b>	0: Upper arm	1: Lower arm
<b>Bit2</b>	0: Flip	1: No flip
<b>Bit3</b>	0: $\theta R < 180$	1: $\theta R \geq 180$
<b>Bit4</b>	0: $\theta T < 180$	1: $\theta T \geq 180$
<b>Bit5</b>	0: $\theta S < 180$	1: $\theta S \geq 180$
<b>Bit6</b>	Reserve	
<b>Bit7</b>		

Extend Form

<b>Bit0</b>	0: $\theta L < 180$	1: $\theta L \geq 180$
<b>Bit1</b>	0: $\theta U < 180$	1: $\theta U \geq 180$
<b>Bit2</b>	0: $\theta B < 180$	1: $\theta B \geq 180$
<b>Bit3</b>	0: $\theta E < 180$	1: $\theta E \geq 180$
<b>Bit4</b>	0: $\theta W < 180$	1: $\theta W \geq 180$
<b>Bit5</b>	Reserve	
<b>Bit6</b>		
<b>Bit7</b>		

## 31.Command :Move\_Instruction\_Pluse

Write only, data must be written all at once. See Data Part below 該 command 為 Move Instruction Command (Type Pulse) (0x8B)

Instance

Instance	Sub Instance	Details
Link absolute position operation		
Straight absolute position operatio		

Data	Details
Specifying control group (Robot)	1 to 8 (Robot No.)
Specifying control group (Station)	1 to 24 (Station No.)
Specifying the classification in speed	Specify the classification of operations 0: % (Link operation) 1: V (Cartesian operation) 2: VR (Cartesian operation)
Specifying a speed	Specify the rate Link operation : 0.01% Cartesian operation V speed : 0.1 mm/s Cartesian operation VR speed : 0.1 degree/s
Robot 1st axis pulse value	
Robot 2nd axis pulse value	
Robot 3rd axis pulse value	
Robot 4th axis pulse value	
Robot 5thaxis pulse value	
Robot 6th axis pulse value	
Robot 7th axis pulse value	
Robot 8th axis pulse value	
Tool No. (0 to 63)	
Base 1st axis position (Pulse value) Up to three axes	
Base 2nd axis position (Pulse value)	
Base 3rdaxis position (Pulse value)	
Station 1st axis position (pulse value)	
Station 2nd axis position (pulse value)	
Station 3rdaxis position (pulse value)	

Data	Details
Station 4th axis position (pulse value)	
Station 5th axis position (pulse value)	
Station 6th axis position (pulse value)	

## Device Address:

Bit/Word	Device type (Command)	Format	Range
B	Status_Bit	DDDDDDDDdd	0 ~ 163836331
B	Robot_Position_Bit	DDDDDDDDdd	0 ~ 163836331
B	IO_Data_Bit	DDDDDo	0 ~ 163837
B	Register_Data_Bit	DDDDDDdd	0 ~ 1638315
B	B_Bit	DDDDDo	0 ~ 163837
B	I_Bit	DDDDDDdd	0 ~ 1638315
B	D_Bit	DDDDDDdd	0 ~ 1638331
B	R_Bit	DDDDDDdd	0 ~ 1638331
B	P_Bit	DDDDDDDDdd	0 ~ 163836331
W	Administration_Hour	DDDDDDDDDD	0 ~ 163836300
W	Alarm	DDDDDDDDDD	0 ~ 163836300
W	Alarm_Detailed	DDDDDDDDDD	0 ~ 163836300
W	Alarm_History	DDDDDDDDDD	0 ~ 163836300
W	Alarm_History_Detailed	DDDDDDDDDD	0 ~ 163836300
W	Axis_Composition	DDDDDDDDDD	0 ~ 163836300
W	B	DDDDDD	0 ~ 16383
W	BP	DDDDDDDD	0 ~ 163363
W	D	DDDDDD	0 ~ 16383
W	Axis_Position_Deflection	DDDDDDDD	0 ~ 1638363
W	Each_Shaft_Torque	DDDDDDDD	0 ~ 1638363
W	EX	DDDDDDDD	0 ~ 1638363
W	I	DDDDDD	0 ~ 16383
W	IO_Data	DDDDDD	0 ~ 16383
W	Job_Information	DDDDDDDDDD	0 ~ 163836300
W	Job_Select	DDDDDDDDDD	0 ~ 163836300
W	On_Off	DDDDDD	0 ~ 16383
W	P	DDDDDDDD	0 ~ 1638363
W	R	DDDDDD	0 ~ 16383

Bit/Word	Device type (Command)	Format	Range
W	Register_Data	DDDDDD	0 ~ 16383
W	Reset_Cancellation	DDDDDD	0 ~ 16383
W	Robot_Position	DDDDDDDD	0 ~ 1638363
W	S	DDDDDDDD	0 ~ 1638300
W	Start	DDDDDDDD	0 ~ 1638363
W	State_Switch	DDDDDD	0 ~ 16383
W	Status	DDDDDDDD	0 ~ 1638363
W	String_Display_To_Pendant	DDDDDDDD	0 ~ 1638300
W	System_Information	DDDDDDDDDD	0 ~ 163836300
W	S_32BYTE	DDDDDDDD	0 ~ 1638300
W	Move_Instruction_Cartesian	DDDDDDDD	0 ~ 1638300
W	Move_Instruction_Pluse	DDDDDDDD	0 ~ 1638300

## Wiring Diagram:

### Ethernet cable

