IAI Quality and Innovation

Applicable to Field Bus

ACON-C/CG, PCON-C/CG
First Step Guide Eleventh Edition

Thank you for purchasing our product.
Make sure to read the Safety Guide and detailed Instruction Manual as well as this First Step Guide to ensure correct use.
This Instruction Manual is original.

⚠ Warning : Read the instruction manual carefully and follow the instruction manual when handling this equipment.
Please downloaded the user's manual from our website.
You can download it free of change. User registration is required for first time users.
URL:www.iai-robot.co.jp/data_dl/CAD_MANUAL/
Keep a printout of the introduction manual near the equipment in which this product is installed so that it can be checked at all times, or display it on your computer, tablet terminal, etc. so that you can check it immediately.
If you need a bound copy of the instruction manual, order it from the nearest sales office listed in the First Step Guide or at the end of the instruction manual. It will be provided for a fee.

Product Check

This product is comprised of the following parts if it is of standard configuration.
If you find any fault in the contained model or any missing parts, contact us or our distributor.

1. Parts (The option is excluded.)

No.	Part Name		Model
1	Controller		Refer to "How to read the model plate" and "How to read the model of the controller."
Accessories			
2	Field Bus Connector	DeviceNet type	MSTB2.5/5-STF-5.08AU (Maker : PHOENIX CONTACT)
		CC-Link type	
		PROFIBUS type	Prepare the Dsub 9-pin (female).
		CompoNet type	Prepare the CompoNet dedicated flat cable connector.
		MECHATROLINK type	Prepare the connector for MECHATROLINK-II.
3	First Step Guide		ME0212
4	Safety Guide		M0194

2. Teaching Tool (Option)
The PC software or teaching pendant is necessary to perform setup operations such as position and parameter settings through teaching or other means. Prepare any PC software or teaching pendant.

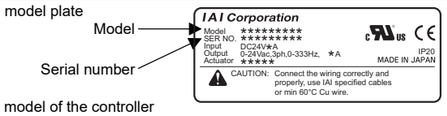
No.	Part Name	Model
1	PC Software Serial Port Type	RCM-101-MW
2	PC Software USB Type	RCM-101-USB
3	Teaching pendant	CON-T
4	Teaching pendant (Safety Category 4 type)	CON-TG
5	Simplified Teaching Pendant	RCM-E
6	Data setter*1	RCM-P
7	Touch Panel Indicator*2	RCM-PM-01

*1 For the data setter, the actuator can not be moved.
*2 For the touch panel indicator, there are some parameters that can not be set.

* Instruction Manuals related to this product

No.	Name	Manual No.
1	CC-Link Instruction Manual	ME0123
2	DeviceNet Instruction Manual	ME0124
3	PROFIBUS-DP Instruction Manual	ME0153
4	CompoNet Instruction Manual	ME0220
5	MECHATROLINK Instruction Manual	ME0221
6	ACON-C/CG Controller Instruction Manual	ME0176
7	PCON-C/CG/CF Controller Instruction Manual	ME0170
8	PC Software RCM-101-MW/ RCM-101-USB	ME0155
9	Teaching pendant CON-T/TG	ME0178
10	Teaching pendant RCM-T/TD	ME0173
11	Simplified Teaching Pendant RCM-E	ME0174
12	Data setter RCM-P	ME0175
13	Touch Panel Indicator RCM-PM-01	ME0182

* How to read the model plate



* How to read the model of the controller

[ACON-C/CG]

ACON-C-20IHA-NP-2-0-ABU

<Series>
<Type Name>
C : Positioner Drive Interruption Relay: Built-in Type
CG : Positioner Drive Interruption Relay: External Type
<Actuator Characteristics>
[Motor Type]
2 : 2W
5 : 5W
10 : 10W
20S : RA3, RA4, TA5 Dedicated 20W
20 : 20W
30 : 30W
[Encoder type]
I : Incremental
[Option]
No description : Standard Type
HA : High Accel/Decel Type
LA : Less Power consumption Type
For Simplified Absolute Unit Connection
<Power-supply voltage>
0 : 24VDC
<I/O cable length>
0: No Cable 3: 3m
2: 2m (standard) 5: 5m
<I/O signal pattern>
NP : NPN Specifications (Sink Type) (standard)
PN : PNP Specifications (Source Type)
DV : DeviceNet Connection Specifications
CC : CC-Link Connection Specifications
PR : PROFIBUS Connection Specifications
CN : CompoNet Connection Specifications
ML : MECHATROLINK Connection Specifications

[PCON-C/CG/CF]

PCON-C-20I-PR-2-0-ABU-H

<Series>
<Type Name>
C : Positioner Drive Interruption Relay: Built-in Type
CG : Positioner Drive Interruption Relay: External Type
<Actuator Characteristics>
[Motor Flange Size]
20P : 20 square
28P : 28 square
28SP : 28 square (Dedicated to RA3C)
35P : 35 square
42P : 42 square
56P : 56 square
86P : 86 square
[Encoder type]
I: Incremental
High Acceleration Transport Type
For Simplified Absolute Unit Connection
<Power-supply voltage>
0 : 24VDC
<I/O cable length>
0: No Cable 3: 3m
2: 2m (standard) 5: 5m
<I/O signal pattern>
NP : NPN Specifications (Sink Type) (standard)
PN : PNP Specifications (Source Type)
DV : DeviceNet Connection Specifications
CC : CC-Link Connection Specifications
PR : PROFIBUS Connection Specifications
CN : CompoNet Connection Specifications
ML : MECHATROLINK Connection Specifications

Basic Specifications

Characteristics
The mode can be selected from five operation modes including the mode where machine operation through PIO is performed using the communication, and the mode where the machine operation is performed using direct numerical command. Refer to the item about the operation modes and functions for the details.

ACON Specifications (Controller for RCA2/RCA/RCL Series)

Specification Item			ACON-C (Driving Source Interruption Relay: Built-in Type)/ ACON-CG (Driving Source Interruption Relay: External Type)			
Number of controlled axes			1 Axis/unit			
Power-supply voltage			24VDC±10%			
Control Power Capacity			0.5A			
Motor Power Capacity*1	Actuator	Motor Type	Standard Type /High Accel/Decel Type		Low or Less (LA) Power consumption Type	
			Rated	Max*2	Rated	Max*2
	RCA / RCA2	10W	1.3A	4.4A	1.3A	2.5A
		20W [Model No. 20]	1.3A	4.4A	1.3A	2.5A
		30W	1.3A	4.4A	1.3A	2.2A
		20W [Model No. 20S] Dedicated to RA3, RA4 and RA5 Types	1.7A	5.1A	1.7A	3.4A
	RCL	2W	0.8A	4.6A		
		5W	1.0A	6.4A		
		10W	1.3A	6.4A		
Heating value			8.4W			
Axis Control System			Sinusoidal Wave PWM Vector Current Control			
Data input method			Teaching pendant, PC software			
Field Bus Port			1CH Complying with the standards for each field bus (Refer to the wiring diagram for the connector).			
Communication cable length			Comply with the standards for each field bus. (Refer to the standards for each field bus described later.)			
Protective functions			Overvoltage, motor over current, motor overload, driver temperature abnormality, and Encoder abnormality etc.			
Backup Memory			Save the position data and parameters onto the non-volatile memory. About 100,000 times of serial EEPROM reload (Note 1)			
Encoder Resolution	RCA		800 Pulse/rev			
	RCA2	RCA2-□□□N	1048 Pulse/rev			
		Except for RCA2-□□□N	800 Pulse/rev			
	RCL	RA1L· SA1L· SA4L· SM4L	715 Pulse/rev			
		RA2L· SA2L· SA5L· SM5L	855 Pulse/rev			
		RA3L· SA3L· SA6L· SM6L	1145 Pulse/rev			
Serial Communication			RS485 1ch (Modbus Complying to the Protocol)			
Electromagnetic Brake Forced Releasing Function			NOM/BK RLS Switch (Front Panel)			
Cable length			Actuator Cable : 20m or less			
Insulation strength			500VDC 10MΩ			
Environment	Surrounding air temperature		0 to 40°C			
	Surrounding humidity		85% RH or less (non-condensing)			
	Surrounding environment		Refer to Installation Environment			
	Surrounding storage temperature		-10 to 65°C			
	Surrounding storage humidity		90% RH or less (non-condensing)			
	Vibration resistance		XYZ Each direction 10 to 57Hz Pulsating amplitude 0.035mm (continuous) 0.075mm (intermittent) 57 to 150Hz 4.9m/s² (continuous) 9.8m/s² (intermittent)			
Protection class			IP20			
Cooling method			Natural air-cooling			
Weight			300g or less			
External dimensions			35W × 178.5H × 68.1D (mm)			

*1 For rush current, current 5 times to 12 times more of the rated current passes about 1 to 2 msec. after the power is input. The rush current value varies depending on the impedance of the power line.
*2 The current reaches its maximum level when the servo-motor exciting phase is detected which is to be performed in the first servo-motor turning ON processing after the power injection. (Normal: Approx. 1 to 2 sec, Max.: 10 sec)

As a +24V DC power supply, select the power supply of the "peak load support" specification or one with sufficient capacity. In particular, in the case of the unit with the remote sensing function, the greatest care is required.

⚠ Note : Position data and parameters are written to EEPROM.
The limitation for the reload is about 100,000 times.

PCON Specifications (Controller for RCP3/RCP2 Series)

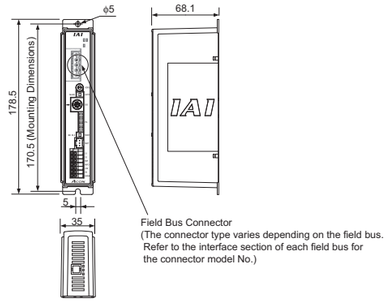
Specification Item		PCON-C (Interruption Relay: Built-in Type)		PCON-CG (Interruption Relay: External Type)	
Number of controlled axes		1 Axis/unit			
Power-supply voltage		24VDC±10%			
Control Power Capacity		0.5A			
Motor Power Capacity*1	Actuator	Rated	Max*2	Rated	Max*2
	20P, 28P, 28SP Motor	0.4A	2.0A	0.4A	2.0A
	35P, 42P, 56P Motor	1.2A		1.2A	
Heating value		9.6W			
Control method		Weak field-magnet vector control			
Data input method		Teaching pendant, PC software			
Field Bus Port		1CH Complying with the standards for each field bus (Refer to the wiring diagram for the connector).			
Communication cable length		Comply with the standards for each field bus. (Refer to the standards for each field bus described later.)			
Protective functions		Overvoltage, motor over current, motor overload, driver temperature abnormality, and Encoder abnormality etc.			
Backup Memory		Save the position data and parameters onto the non-volatile memory. About 100,000 times of serial EEPROM reload (Note 1)			
Encoder Resolution		Incremental Type 800 Pulse/rev			
Serial Communication		RS485 1ch (Modbus Complying to the Protocol)			
Electromagnetic Brake Forced Releasing Function		NOM/BK RLS Switch (Front Panel)			
Cable length		Actuator Cable : 20m or less			
Insulation strength		500VDC 10MΩ			
Environment	Surrounding air temperature	0 to 40°C			
	Surrounding humidity	85%RH or less (non-condensing)			
	Surrounding environment	Refer to Installation Environment			
	Surrounding storage temperature	-10 to 65°C			
	Surrounding storage humidity	90% RH or less (non-condensing)			
	Vibration resistance	XYZ Each direction 10 to 57Hz Pulsating amplitude 0.035mm (continuous) 0.075mm (intermittent) 57 to 150Hz 4.9m/s² (continuous) 9.8m/s² (intermittent)			
Protection class		IP20			
Cooling method		Natural air-cooling			
Weight		300g or less			
External dimensions		35W × 178.5H × 68.1D (mm)			

*1 For rush current, current 5 times to 12 times more of the rated current passes about 1 to 2 msec. after the power is input. The rush current value varies depending on the impedance of the power line.
*2 The excitation detection operation is performed after the power is input. In such a case, the current becomes maximum (normally 100 msec)
However, a current of approx. 6.0 A flows if the motor driving power is turned on again after its shutdown. (for approx. 1 to 2 msec)

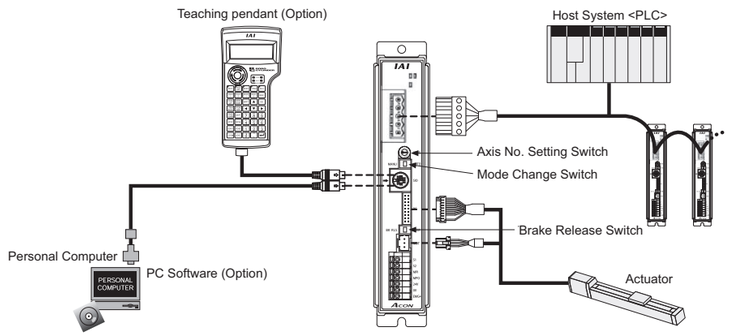
As a +24V DC power supply, select the power supply of the "peak load support" specification or one with sufficient capacity. In particular, in the case of the unit with the remote sensing function, the greatest care is required.

⚠ Note : Position data and parameters are written to EEPROM.
The limitation for the reload is about 100,000 times.

External Dimensions



Connection Diagram



Installation Environment

This product is capable for use in the environment of pollution degree 2*1 or equivalent.
*1 Pollution Degree 2 : Environment that may cause non-conductive pollution or transient conductive pollution by frost. (IEC60664-1)

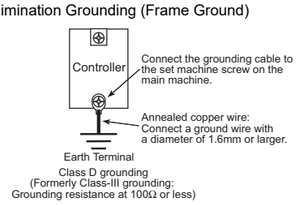
1. Installation Environment
Do not use this product in the following environment.
- Location where the surrounding air temperature exceeds the range of 0 to 40°C
- Location where condensation occurs due to abrupt temperature changes
- Location where relative humidity exceeds 85%RH
- Location exposed to corrosive gases or combustible gases
- Location exposed to significant amount of dust, salt or iron powder
- Location subject to direct vibration or impact
- Location exposed to direct sunlight
- Location where the product may come in contact with water, oil or chemical droplets
- Environment that blocks the air vent [Refer to Installation and Noise Elimination Section]

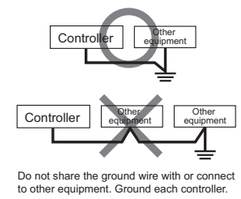
When using the product in any of the locations specified below, provide a sufficient shield.
- Location subject to electrostatic noise
- Location where high electrical or magnetic field is present
- Location with the mains or power lines passing nearby

2. Storage and Preservation Environment
The storage and preservation environment should comply with the same standards as those for the installation environment. In particular, when the machine is to be stored for a long time, pay close attention to environmental conditions so that no condensation forms. Unless specially specified, moisture absorbency protection is not included in the package when the machine is delivered. In the case that the machine is to be stored and preserved in an environment where condensation is anticipated, take the condensation preventive measures from outside of the entire package, or directly after opening the package.

Installation and Noise Elimination

1. Noise Elimination Grounding (Frame Ground)





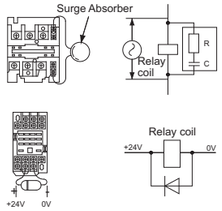
2. Precautions regarding wiring method
(1) Twist the wires for the 24VDC power unit.
(2) Separate the communication line from the power line.

3. Noise Sources and Elimination

Carry out noise elimination measures for power devices on the same power path and in the same equipment.
The following are examples of measures to eliminate noise sources.

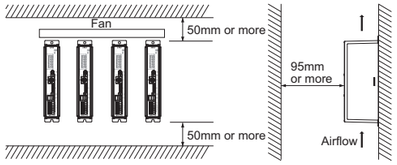
(1) AC solenoid valves, magnet switches and relays
[Measure] Attach the surge absorber in parallel with the coil.

(2) DC solenoid valves, magnet switches and relays
[Measure] Install a diode parallel with the coil. Use a DC relay with a built-in diode.



4. Heat Radiation and Installation

Conduct design and manufacture in consideration of the control box size, controller layout and cooling in such a way that the temperature around the controller will be 40°C or less.

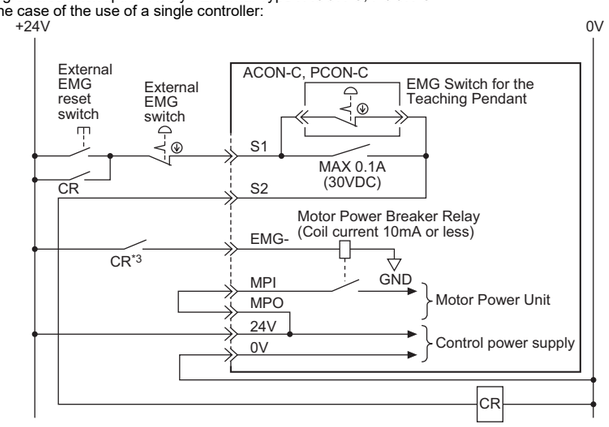


Power Supply and Emergency Stop Circuit

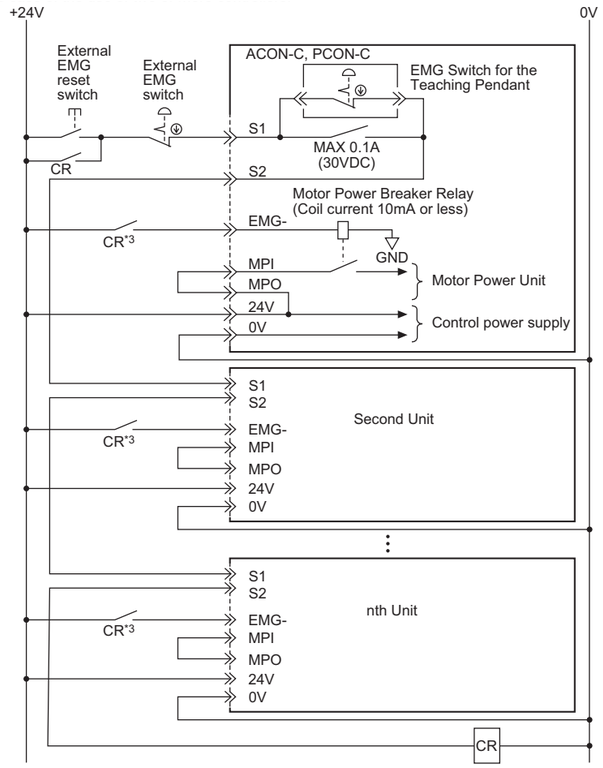
This shows the circuit example when the emergency stop switch in the teaching pendant is enabled on the emergency stop circuit to be built up by the client.

● Driving Source Interruption Relay : External Type : ACON-C, PCON-C

• In the case of the use of a single controller:



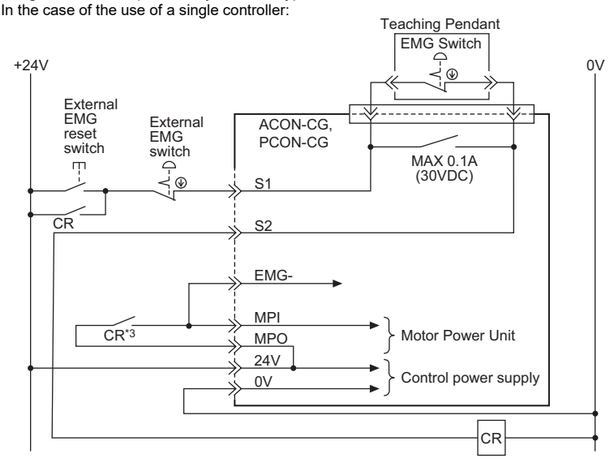
• In the case of the use of two or more controllers:



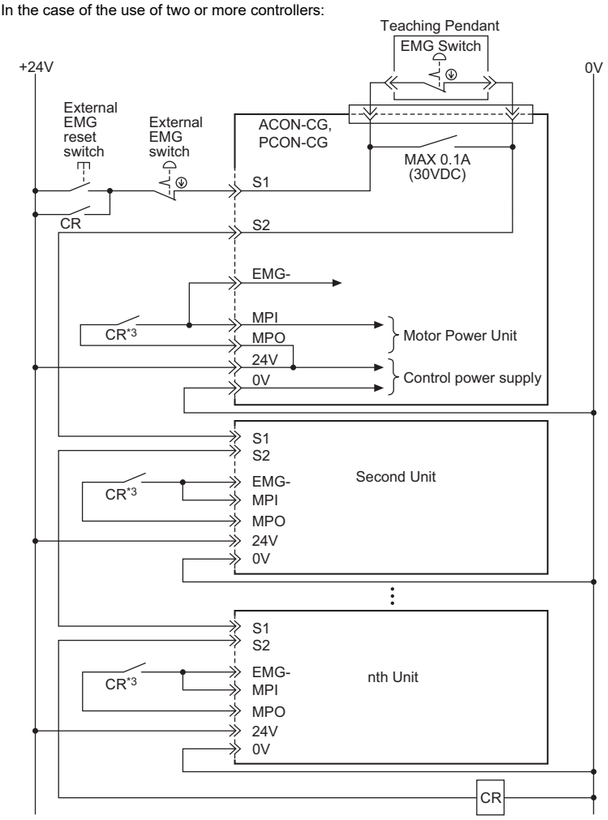
*1 When the Motor drive power supply corresponding to the safety category class 2 is shut off, connect the 24V power to the EMG terminal and connect the contact to the MPI/MPO terminal.
*2 When the teaching pendant is inserted into the controller, the controller confirms it automatically.
*3 For the CR contact, the rated voltage and rated current are “24VDC” and “0.1A”.

● Driving Source Interruption Relay External Type : ACON-CG, PCON-CG

• In the case of the use of a single controller:



• In the case of the use of two or more controllers:



*1 When the Motor drive power supply corresponding to the safety category class 2 is shut off, connect the 24V power to the EMG terminal and connect the contact to the MPI/MPO terminal.
*2 When the teaching pendant is inserted into the controller, the controller confirms it automatically.
*3 For the CR contact, select the rated volume and rated current based on the motor power capacity.

Operation Modes and Functions (Common to Each Field Bus)

The machine can be operated selecting one mode from the following five operation modes.

(1) Remote I/O Mode : This is the method where the operation through PIO (24V I/O) is performed using the field bus.
(2) Position/ Simple Direct Value Mode : This is the method where the machine is operated by means of directly specifying the target position using numerical values. For the speed, acceleration, deceleration, or positioning width, the already registered position data values are used.
(3) Half Direct Value Mode : In this operation mode, in addition to the target position, the speed, acceleration, deceleration and push current value are directly specified using numerical values
(4) Full Direct Value Mode : In this operation mode, all the values related to the position control, are directly specified using numerical values.
(5) Remote I/O Mode 2 : Here, the current position and current speed reading functions are added to the remote I/O mode.

Operation Modes and Main Functions

Main Functions	Remote I/O Mode	Position/ Simple Direct Value Mode	Half Direct Value Mode	Full Direct Value Mode	Remote I/O Mode 2
No. of Occupied Channels (DeviceNet)	1	4	8	16	6
Number of occupied stations (CC-Link)	1	1	2	4	1
No. of Occupied Bytes (PROFIBUS)	2	8	16	32	12
No. of Occupied Bytes (CompoNet)	2	8	16	32	12
Operation with the Position No. Specified	○	○	×	×	○
Operation with the Position Data Specified	×	○ (*1)	○	○	×
Speed and Acceleration Direct Setup	×	×	○	○	×
Pressing Operation	○	○	○	○	○
Current Position Read	×	○	○	○	○
Current Speed Read	×	×	○	○	○
Completion Position No. Read	○	○	×	×	○
Max. Number of position table	512	768	Unused	Unused	512

(*1) The actuator is operated by specifying all position data, other than the position, using a position number.

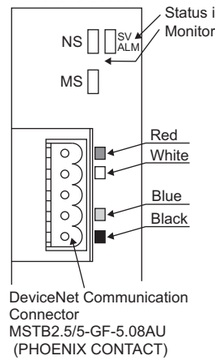
DeviceNet

● Specification

Item	Specification			
Communications standard	DeviceNet2.0			
	Group 2 Dedicated Server			
	Isolated Type Node for Driving with Network Power			
Communications speed	Automatic Following to the Master			
Communications system	Master/Slave System (Bit Slope or Polling)			
No. of Occupied CHs	MAX 16CH (Input, Output)			
No. of Connected Nodes	MAX 63 Node			
Communication cable length*2	Communications speed	Maximum Network Length	Total Branch Line Length	Maximum Branch Line Length
	500kbps	100m	39m	6m
	250kbps	250m	78m	
	125kbps	500m	156m	
Communication cable	Use the dedicated cable.			
Connector*1	Manufactured by Phoenix Contact MSTB2.5/5-GF-5.08AU			
Communication Power Source Consumption Current	60mA			
Communication Power Supply	24VDC (Supplied on the side of the DeviceNet)			

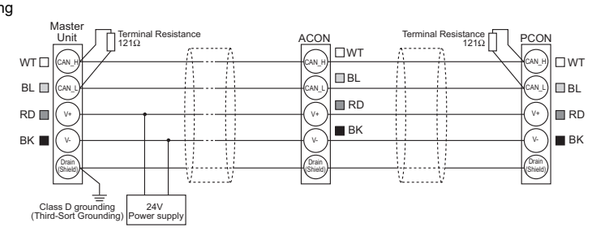
*1 The cable-side connector is a standard accessory.
Manufactured by Phoenix Contact MSTB2.5/5-STF-5.08AU
*2 For T branch communication, refer to the Instruction Manuals for the master unit and PLC to be mounted.

● Interface Section



LED	Color	Indication Status	Description
MS	GN	Illuminating	Normal operation
		Flashing	Hardware Error. It might be recovered with reconnect of the power.
	OR	Illuminating	Hardware Error. The replacement of the board is required.
		Flashing	It is a minor error such as a user setting error or configuration error. It can be recovered by re-setting, etc.
	-	OFF	The DeviceNet is being initialized, or the power is not supplied.
NS	GN	Illuminating	The connection has been established and the communication is being performed normally.
		Flashing	The machine is on-line, but the connection has not been established. Communication Stop (Network is normal).
	OR	Illuminating	Node address is duplicated or Busoff is detected. Communication Unavailable.
		Flashing	Communication Error (Communication Time-out Detection)
	-	OFF	The machine is not on-line. The power to the DeviceNet is not supplied.

● Wiring



● Operation Mode Setting and Address Allocation
The operation mode is set using the parameters.
Set the mode change switch on the front of the board to “MANU“ side and set the parameter No. 84 “FMOD: Field Bus Operation Mode“ using the Personal Computer Application Software for RC.

• PLC output → Input in ACON or PCON (* “n” shows the node address for each axis)

PLC Output Area (CH)	DI on the ACON or PCON side and Input Data Register				
	Remote I/O Mode	Position/Simple Direct Value Mode	Half Direct Value Mode	Full Direct Value Mode	Remote I/O Mode 2
	Parameter No.84: 0 (Set in delivery)	Parameter No.84: 1	Parameter No.84: 2	Parameter No.84: 3	Parameter No.84: 4
	No. of Occupied Channels: 1CH	No. of Occupied Channels: 4CH	No. of Occupied Channels: 8CH	No. of Occupied Channels: 16CH	No. of Occupied Channels: 6CH
n	Port No.0 to 15	Target Position	Target Position	Target Position	Port No.0 to 15
n+1					Occupied Domain
n+2		Specified Position No.	Positioning Band	Positioning Band	
n+3		Control Signal			
n+4			Velocity	Speed Specification	
n+5			Acceleration/ Deceleration		
n+6			PUSH Current Limit Value	Zone Boundary Value+	
n+7			Control Signal		
n+8				Zone Boundary Value-	
n+9				Acceleration	
n+10				Deceleration	
n+11				PUSH Current Limit Value	
n+12				ACON: Occupied Domain	
n+13				PCON: Load Current Threshold	
n+14				Control Signal1	
n+15				Control Signal2	

• Output in ACON or PCON → PLC Input Side (* “n” shows the word address of each axis.)

PLC Output Area (CH)	DO on the ACON or PCON side and Output Data Register				
	Remote I/O Mode	Position / Simple Direct Value Mode	Half Direct Value Mode	Full Direct Value Mode	Remote I/O Mode 2
	Parameter No.84: 0 (Set in delivery)	Parameter No.84: 1	Parameter No.84: 2	Parameter No.84: 3	Parameter No.84: 4
	No. of Occupied Channels: 1CH	No. of Occupied Channels: 4CH	No. of Occupied Channels: 8CH	No. of Occupied Channels: 16CH	No. of Occupied Channels: 6CH
n	Port No.0 to 15 *2	Current Position	Current Position	Current Position	Port No.0 to 15 *2
n+1					Occupied Domain
n+2		Completion Position No. (Simple Alarm ID)	Command Current	Command Current	Current Position
n+3		Status Signal			
n+4			Current Speed	Current Speed	Command Current
n+5					
n+6			Alarm code	Alarm code	
n+7			Status Signal		
n+8				Occupied Domain	
n+9					
n+10					
n+11					
n+12					
n+13					
n+14					
n+15				Status Signal	

*1 The Occupied Domain shows the domain to be occupied with the operation mode setting. Therefore, this domain cannot be used for any other purpose. Also, be careful of using duplicated node addresses.
*2 When an alarm is sounded, the completion position No. (4 bits for PM1 to PM8) shows the simple alarm code.

● Station No. Setting
The station No. is set using specific parameters.
Set the parameter No. 85 “NADR: Field Bus Node Address” using the personal computer application software for RC.
Settable Range:0 to 63 (It is set to “63” when the machine is delivered from the factory.)

● Communication Speed Setting
The setting for the communication speed is not required because it automatically follows the master’s communication speed.

(Note) After the parameter setting, turn on the power to the controller again and return the mode toggle switch on the front of the controller to “AUTO” side.

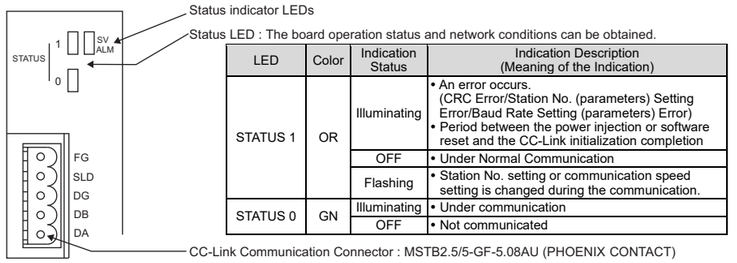
CC-Link

● Specification

Item	Specification					
Communications standard	CC-Link Ver1.10					
Communications speed	10M/5M/2.5M/625k/156kbps					
Communications system	Broad Cast Polling System					
Number of occupied stations	Remote Device Station MAX 4 Stations					
No. of Connected Stations	MAX 63 Stations					
Communication cable length*1	Communications speed (bps)	10M	5M	2.5M	625k	156k
	Total Cable Length (m)	100	160	400	900	1200
Communication cable	Use the dedicated cable.					
Connector*2	Manufactured by Phoenix Contact MSTB2.5/5-GF-5.08AU					

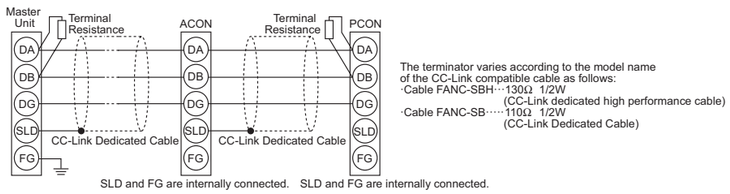
*1 For T branch communication, refer to the Instruction Manuals for the master unit and PLC to be mounted.
*2 The cable-side connector is a standard accessory. Manufactured by Phoenix Contact MSTB2.5/5-STF-5.08AU

● Interface Section



LED	Color	Indication Status	Indication Description (Meaning of the Indication)
STATUS 1	OR	Illuminating	• An error occurs. (CRC Error/Station No. (parameters) Setting Error/Baud Rate Setting (parameters) Error) • Period between the power injection or software reset and the CC-Link initialization completion
		OFF	• Under Normal Communication
		Flashing	• Station No. setting or communication speed setting is changed during the communication.
STATUS 0	GN	Illuminating	• Under communication
		OFF	• Not communicated

● Wiring



● Operation Mode Setting and Address Allocation
The operation mode is set using the parameters.
Set the mode change switch on the front of the board to “MANU“ side and set the parameter No. 84 “FMOD: Field Bus Operation Mode“ using the Personal Computer Application Software for RC.

• PLC output → Input in ACON or PCON (* “n” shows the node address for each axis)

Address on the PLC side	DI on the ACON or PCON side and Input Data Register				
	Remote I/O Mode	Position/Simple Direct Value Mode	Half Direct Value Mode	Full Direct Value Mode	Remote I/O Mode 2
	Parameter No.84: 0 (Set in delivery)	Parameter No.84: 1	Parameter No.84: 2	Parameter No.84: 3	Parameter No.84: 4
	Number of occupied stations : 1 Station	Number of occupied stations : 1 Station	Number of occupied stations : 2 Stations	Number of occupied stations : 4 Stations	Number of occupied stations : 1 Station
RY n0 to nF	Port No.0 to 15	Occupied Domain	Occupied Domain	Occupied Domain	Port No.0 to 15
RY (n+1) 0 to (n+1)F	Occupied Domain				Occupied Domain
RWw (n+0)		Target Position	Target Position	Target Position	
RWw (n+1)					
RWw (n+2)		Specified Position No.	Positioning Width	Positioning Width	
RWw (n+3)		Control Signal			
RWw (n+4)			Velocity	Velocity	
RWw (n+5)			Acceleration/ Deceleration		
RWw (n+6)			PUSH Current Limit Value	Zone Boundary Value+	
RWw (n+7)			Control Signal		
RWw (n+8)				Zone Boundary Value-	
RWw (n+9)				Acceleration	
RWw (n+A)				Deceleration	
RWw (n+B)				PUSH Current Limit Value	
RWw (n+C)				ACON: Occupied Domain	
RWw (n+D)				PCON: Load Current Threshold	
RWw (n+E)				Control Signal1	
RWw (n+F)				Control Signal2	

• Output in ACON or PCON → PLC Input Side (* “n” shows the node address for each axis)

Address on the PLC side	DO on the ACON or PCON side and Input Data Register				
	Remote I/O Mode	Position/Simple Direct Value Mode	Half Direct Value Mode	Full Direct Value Mode	Remote I/O Mode 2
	Parameter No.84: 0 (Set in delivery)	Parameter No.84: 1	Parameter No.84: 2	Parameter No.84: 3	Parameter No.84: 4
	Number of occupied stations : 1 Station	Number of occupied stations : 1 Station	Number of occupied stations : 2 Stations	Number of occupied stations : 4 Stations	Number of occupied stations : 1 Station
RX n0 to nF	Port No.0 to 15 *2	Occupied Domain	Occupied Domain	Occupied Domain	Port No.0 to 15
RX (n+1) 0 to (n+1)F	Occupied Domain				Occupied Domain
RWr (n+0)		Current Position	Current Position	Current Position	Current Position
RWr (n+1)					
RWr (n+2)		Completion Position No. (Simple Alarm ID)	Command Current	Command Current	Current Speed
RWr (n+3)		Status Signal			
RWr (n+4)			Current Speed	Current Speed	
RWr (n+5)					
RWr (n+6)			Alarm code	Alarm code	
RWr (n+7)			Status Signal		
RWr (n+8)				Occupied Domain	
RWr (n+9)					
RWr (n+A)					
RWr (n+B)					
RWr (n+C)					
RWr (n+D)					
RWr (n+E)					
RWr (n+F)				Status Signal	

*1 The Occupied Domain stands for the domain occupied depending on the setting of the remote device station quantity. Therefore, this domain cannot be used for any other purpose. Also, take care to avoid shared use of the data register.
*2 When an alarm is sounded, the completion position No. (4 bits for PM1 to PM8) shows the simple alarm code.

● Station No. Setting
The station No. is set using specific parameters.
Set the parameter No. 85 “NADR: Field Bus Node Address” using the personal computer application software for RC.
Settable Range : 1 to 64 (Already set in system delivery)

● Communication Speed Setting
Set the parameter No.86 “FBRS: Field Bus Communication Speed” using the RC personal computer application software.

Set Value	Communications speed
0 (Set in delivery)	156kbps
1	625kbps
2	2.5Mbps
3	5Mbps
4	10Mbps

(Note) Set the Station Data for the Master Station to “ver 1, Remote Device Station”.
(Note) After the parameter setting, turn on the power to the controller again and return the mode toggle switch on the front of the controller to “AUTO” side.

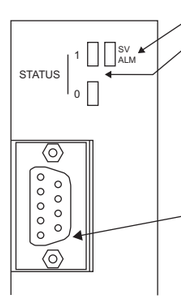
PROFIBUS-DP

● Specification

Item	Specification		
Communications standard	PROFIBUS-DP		
Communications speed	Transmission path format		
Communications system	Hybrid System (Master/Slave System or Token Passing System)		
Occupied Domain	MAX 32byte (Input, Output)		
No. of Connected Stations	MAX 32 Stations/Segment Available up to 126 stations with the repeater		
Communication cable length	Maximum Total Network	Communications speed	Cable Type
	100m	12,000/6,000/3,000kbps	Type A Cable
	200m	1,500kbps	
	400m	500kbps	
	1000m	187.5kbps	
	1200m	9.6/19.2/93.75kbps	
Communication cable	Twist Pair Cable with a Shield AWG18		
Connector*1	9 pin female D-sub Connector		
Transmission path format	Bus/Tree/Star		

*1 Prepare the 9-pin male D-sub connector as the connector on the cable side.

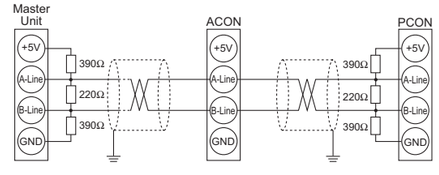
● Interface Section



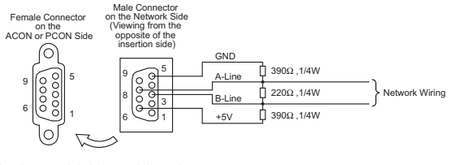
LED	Color	Indication Status	Indication Description (Meaning of the Indication)
STATUS 1	GN	Illuminating	The communication is being performed normally from the field bus in online mode.
		Flashing	The machine is in offline mode from the field bus
	OR	Flashing	A communication error is caused.
STATUS 0	GN	Illuminating	The machine is in the normal operation.
		Flashing	Preparation for the operation is performed.
	OR	Illuminating	A communication hardware error was detected in the operation preparation mode.

Pin No.	Description	Contents
3	B-Line	RxD·TxD (Communication Line on the Plus Terminal Side)
5	GND	Signal Cable Grounding (Insulated)
6	+5V	5V Output (Insulated)
8	A-Line	/RxD·/TxD (Signal Line on the Minus Terminal Side)
Housing	Shield	Cable Shield (for Case and Connection)

● Wiring



● Bus Terminal Treatment
When the line is connected to the network terminal, connect the terminal resistance to the PROFIBUS-DP communication connector as shown in the following figure, or use the connector with the terminal resistance.
• Example of using the connector with the terminal resistance : SUBCON-PLUS-PROFIB/AX/SC (PHOENIX CONTACT)
• Connection of the Terminal Resistance



● Operation Mode Setting and Address Allocation
The operation mode is set using the parameters.
Set the mode change switch on the front of the board to “MANU” side and set the parameter No. 84 “FMOD: Field Bus Operation Mode” using the Personal Computer Application Software for RC.

• PLC output → Input in ACON or PCON (* “n” shows the word address of each axis.)

PLC Output Address	DI on the ACON or PCON side and Input Data Register				
	Remote I/O Mode	Position/Simple Direct Value Mode	Half Direct Value Mode	Full Direct Value Mode	Remote I/O Mode 2
	Parameter No.84: 0 (Set in delivery)	Parameter No.84: 1	Parameter No.84: 2	Parameter No.84: 3	Parameter No.84: 4
	No. of Occupied Bytes: 2	No. of Occupied Bytes: 8	No. of Occupied Bytes: 16	No. of Occupied Bytes: 32	No. of Occupied Bytes: 12
%QW n	Port No.0 to 15	Target Position	Target Position	Target Position	Port No.0 to 15
%QW n+1					Occupied Domain
%QW n+2		Specified Position No.	Positioning Band	Positioning Band	
%QW n+3		Control Signal			
%QW n+4			Velocity	Speed Setup	
%QW n+5			Acceleration/ Deceleration		
%QW n+6			PUSH Current Limit Value	Zone Boundary Value+	
%QW n+7			Control Signal		
%QW n+8				Zone Boundary Value-	
%QW n+9				Acceleration	
%QW n+10				Deceleration	
%QW n+11				PUSH Current Limit Value	
%QW n+12				ACON: Occupied Domain	
%QW n+13				PCON: Load Current Threshold	
%QW n+14				Control Signal1	
%QW n+15				Control Signal2	

• Output in ACON or PCON → PLC Input Side (* “n” shows the word address of each axis.)

PLC Output Address	DO on the ACON or PCON side and Input Data Register				
	Remote I/O Mode	Position/Simple Direct Value Mode	Half Direct Value Mode	Full Direct Value Mode	Remote I/O Mode 2
	Parameter No.84: 0 (Set in delivery)	Parameter No.84: 1	Parameter No.84: 2	Parameter No.84: 3	Parameter No.84: 4
	No. of Occupied Bytes: 2	No. of Occupied Bytes: 8	No. of Occupied Bytes: 16	No. of Occupied Bytes: 32	No. of Occupied Bytes: 12
%IW n	Port No.0 to 15 *2	Current Position	Current Position	Current Position	Port No.0 to 15
%IW n+1					Occupied Domain
%IW n+2		Completion Position No. (Simple Alarm ID)	Command Current	Command Current	Command Current
%IW n+3		Status Signal			
%IW n+4			Current Speed	Current Speed	Current Speed
%IW n+5					
%IW n+6			Alarm code	Alarm code	
%IW n+7			Status Signal		
%IW n+8				Occupied Domain	
%IW n+9					
%IW n+10					
%IW n+11					
%IW n+12					
%IW n+13					
%IW n+14				Status Signal	
%IW n+15					

*1 The Occupied Domain shows the domain to be occupied with the operation mode setting.
Therefore, this domain cannot be used for any other purpose. Also, be careful of using duplicated node addresses.
*2 When an alarm is sounded, the completion position No. (4 bits for PM1 to PM8) shows the simple alarm code.

● Station No. Setting
The station No. is set using specific parameters.
Set the parameter No. 85 “NADR: Field Bus Node Address” using the personal computer application software for RC.
Settable Range : 0 to 125 (It is set to “1” when the machine is delivered from the factory.)

● Communication Speed Setting
The setting for the communication speed is not required because it automatically follows the master’s communication speed.

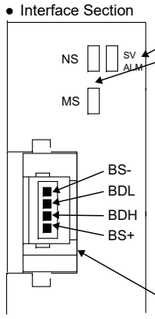
(Note) After the parameter setting, turn on the power to the controller again and return the mode toggle switch on the front of the controller to “AUTO” side.

CompoNet

● Specification

Item	Specification
Communications system	CompoNet Special Protocol
Communication Type	Remote I/O Communication
Communications speed	Automatic Following to the Master
Communication cable length	Complying with the CompoNet Specifications
Slave Type	Word Mix Slave
Settable Node Address	0 to 63 (Setting using the Controller Parameters)
Communication cable	Round Cable (JIS C3306, VCTF2 conductor) Flat cable I (Without a sheath) Flat cable II (With a sheath)
Connector (on the Controller Side)	XW7D-PB4-R (Equivalent to OMRON product)

● Interface Section

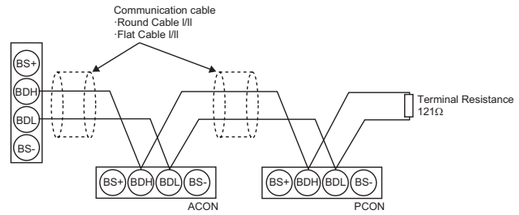


Status indicator LEDs
Monitor LED : The board operation status and network conditions can be obtained.

LED	Color	Indication Status	Description
MS	GN	Illuminating	In the normal operation
	RD	Illuminating	Hardware Error. The replacement of the board is required.
		Flashing	It is a minor error such as a user setting error or configuration error. It can be recovered by re-setting, etc.
	-	OFF	The CompoNet is being initialized, or the power is not supplied.
NS	GN	Illuminating	The connection has been established and the communication is being performed normally.
		Flashing	The machine is on-line, but the connection has not been established. Communication Stop (Network is normal).
	RD	Illuminating	A duplicated node address is considered.
		Flashing	Communication Error (Communication Time-out Detection)
	-	OFF	The machine is not on-line. The power is not supplied.

CompoNet Communication Connector : XW7D-PB4-R (OMRON)

● Wiring



* For the ACON or PCON equipped with CompoNet, communication supply power is not required. However, when a multiple electrical feed is performed, connect the communication power cable to the BS+ and BS- terminals on ACON or PCON.

● Operation Mode Setting and Address Allocation

• PLC output → Input in ACON or PCON (* “n” shows the node address for each axis)

PLC Output Area (CH)	DI on the ACON or PCON side and Input Data Register				
	Remote I/O Mode	Simple Direct Value Mode	Half Direct Value Mode	Full Direct Value Mode	Remote I/O Mode 2
	Parameter No.84: 0 (Set in delivery)	Parameter No.84: 1	Parameter No.84: 2	Parameter No.84: 3	Parameter No.84: 4
	No. of Occupied Channels: 1CH	No. of Occupied Channels: 4CH	No. of Occupied Channels: 8CH	No. of Occupied Channels: 16CH	No. of Occupied Channels: 6CH
n	Port No.0 to 15	Target Position	Target Position	Target Position	Port No.0 to 15
n+1					Occupied Domain
n+2		Specified Position No.	Positioning Band	Positioning Band	
n+3		Control Signal			
n+4			Velocity	Speed Setup	
n+5			Acceleration/ Deceleration		
n+6			PUSH Current Limit Value	Zone Boundary Value+	
n+7			Control Signal		
n+8				Zone Boundary Value-	
n+9				Acceleration	
n+10				Deceleration	
n+11				PUSH Current Limit Value	
n+12				ACON: Occupied Domain	
n+13				PCON: Load Current Threshold	
n+14				Control Signal1	
n+15				Control Signal2	

• Output in ACON or PCON → PLC Input Side (* “n” shows the node address for each axis)

PLC Input Area (CH)	DO on the ACON or PCON side and Output Data Register				
	Remote I/O Mode	Simple Direct Value Mode	Half Direct Value Mode	Full Direct Value Mode	Remote I/O Mode 2
	Parameter No.84: 0 (Set in delivery)	Parameter No.84: 1	Parameter No.84: 2	Parameter No.84: 3	Parameter No.84: 4
	No. of Occupied Channels: 1CH	No. of Occupied Channels: 4CH	No. of Occupied Channels: 8CH	No. of Occupied Channels: 16CH	No. of Occupied Channels: 6CH
n	Port No.0 to 15 *2	Current Position	Current Position	Current Position	Port No.0 to 15
n+1					Occupied Domain
n+2		Completion Position No. (Simple Alarm ID)	Command Current	Command Current	Target Position
n+3		Status Signal			
n+4			Current Speed	Current Speed	Command Current
n+5					
n+6			Alarm code	Alarm code	
n+7			Status Signal		
n+8				Occupied Domain	
n+9					
n+10					
n+11					
n+12					
n+13					
n+14				Status Signal	
n+15					

*1 The Occupied Domain shows the domain to be occupied with the operation mode setting.
Therefore, this domain cannot be used for any other purpose. Also, be careful of using duplicated node addresses.

● Station No. Setting
The station No. is set using specific parameters.
Set the parameter No. 85 “NADR: Field Bus Node Address” using the personal computer application software for RC.
Settable Range : 0 to 63 (It is set to “0” when the machine is delivered from the factory.)

(Note) The setting for the communication speed is not required because it automatically follows the master’s communication speed.

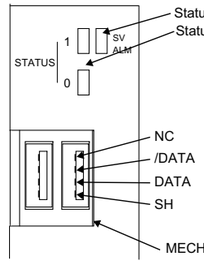
(Note) After the parameter setting, turn on the power to the controller again and return the mode toggle switch on the front of the controller to “AUTO” side.

MECHATROLINK

● Specification

Item		Specification
Slave Type		Intelligent I/O
Communications speed	MECHATROLINK I	4 Mbps
	MECHATROLINK II	10 Mbps
Max. Transmission Distance		50m
Min. Inter-Station Distance		0.5m
No. of Connected Slaves	MECHATROLINK I	15 Stations
	MECHATROLINK II	30 Stations (In the case of 17 stations or more, a repeater is required.)
Transmission Frequency		1 to 8ms
Transmission Frequency	MECHATROLINK I	17 byte
	MECHATROLINK II	17/32 byte
Node Address Setting Range		61 to 7F [hex]
Communication cable		Twist Pair Cable with a Shield (Characteristic Impedance 130Ω)
Connector	Controller side	USB-AR41-T11 (Equivalent to DDK product)

● Interface Section

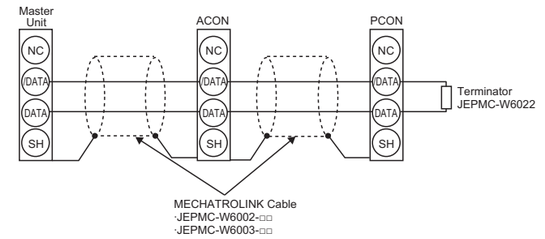


Status indicator LEDs
Status LED : The board operation status and network conditions can be obtained.

LED	Color	Indication Status	Description
STATUS 1	GN	Illuminating	The communication is being performed normally from the field bus in online mode.
	RD	Illuminating	A communication error occurred.
	-	OFF	The machine is in offline mode from the field bus.
STATUS 0	GN	Illuminating	The machine is in the normal operation.
	RD	Illuminating	A communication hardware error was detected in the operation preparation mode.
	-	OFF	In the standby mode or the power has not been supplied.

MECHATROLINK Communication Connector : USB-AR41-T11 (DDK)

● Wiring



● Operation Mode Setting and Address Allocation

• PLC output → Input in ACON or PCON

Address on the PLC side (Byte Address)	DI on the ACON or PCON side and Input Data Register			
	Remote I/O Mode	Position/Simple Direct Value Mode	Half Direct Value Mode *1	Remote I/O Mode 2
	Parameter No.84: 0 (Set in delivery)	Parameter No.84: 1	Parameter No.84: 2	Parameter No.84: 4
5, 6	Port No.0 to 15	Target Position	Target Position	Port No.0 to 15
7, 8				
9, 10		Specified Position No.	Positioning Band	
11, 12		Control Signal		
13, 14			Velocity	
15, 16			Acceleration/ Deceleration	
17, 18			PUSH Current Limit Value	
19, 20			Control Signal	

• Output in ACON or PCON → PLC Input Side

Address on the PLC side (Byte Address)	DO on the ACON or PCON side and Output Data Register			
	Remote I/O Mode	Position/Simple Direct Value Mode	Half Direct Value Mode *1	Remote I/O Mode 2
	Parameter No.84: 0 (Set in delivery),	Parameter No.84: 1	Parameter No.84: 2	Parameter No.84: 4
5, 6	Port No.0 to 15	Current Position	Current Position	Port No.0 to 15
7, 8				
9, 10		Specified Position No. (Simple Alarm ID)	Command Current	Current Position
11, 12				
13, 14		Status Signal	Current Speed	Command Current
15, 16				
17, 18			Alarm code	
19, 20			Status Signal	

(Note) Be careful of using duplicated node addresses. (*1) It can not be used with 17-byte mode.

● Node Address Setting
The node address is set using specific parameters.
Set the parameter No. 85 “NADR: Field Bus Node Address” using the personal computer application software for RC.
Settable Range : 61 to 7F [hex] (It is set to “61” when the machine is delivered from the factory.)

● Communication Speed Setting
Set the parameter No.86 “FBRS: Field Bus Communication Speed” using the RC personal computer application software.

Set Value	Communications speed	Data Length
0	4 Mbps (MECHATROLINK I)	17 byte
1	10 Mbps (MECHATROLINK II)	17 byte
2 (Set in delivery)	10 Mbps (MECHATROLINK II)	32 byte

(Note) After the parameter setting, turn on the power to the controller again and return the mode toggle switch on the front of the controller to “AUTO” side.

Starting Procedure

When using this product for the first time, make sure to avoid mistakes and incorrect wiring by referring to the procedure below

Check of Packed Items
Are there all the delivered items?
No → Contact the sales shop.
↓ Yes

Installation and Wiring
Install the controller and actuator and perform wiring according to the instruction manual and the contents in this book.
→ Point Check Item
·Have you performed the frame grounding (FG) and protective earthing (PE)?
·Has the noise countermeasure been taken?
← Yes

Operation Mode Setting
Set it according to the items for the operation modes and functions, and each field bus.
(Operation Mode, Station No. and Communication Speed)
↓

Power Supply and Alarm Check
Connect the personal computer or teaching pendant, set the mode change switch to "MANU" side and input the power to each unit.
Select [Teaching Mode 1 Safety Speed Enabled/PIO Startup Disabled] in the personal computer application software or the teaching pendant.
→ Check Item
Is the LED indicator [ALM] turned off on the front panel?
No → Connect the personal computer or teaching pendant and confirm the alarm description to treat the problem.
↓ Yes

Set the safety speed.
Set it using the parameter No. 35, if necessary.
When the machine is delivered, the safety speed has been set to "100mm/s".
↓

Servo ON
Turn ON the servo motor with the personal computer or teaching pendant operation.
→ Check Item
Does the Status LED Indicator [SV] illuminate in green?
No → When an alarm is sounded, connect the personal computer or teaching pendant and confirm the alarm description to treat the problem.
↓ Yes

⚠ Note
When the machine is turned ON/OFF repeatedly at the same position, it might be lowered slightly due to its own weight.
Take care not to catch your hand or damage the work.

Check of Safety Circuit
Check that the emergency stop circuit (or motor drive-power cutoff circuit) operates normally to turn off the servo.
No → Check the emergency stop circuit.
↓ Yes

Target Position Setting
Set a target position in the "Position" field for each position in the position table.
When carrying out direct teaching, perform home return operation first.
When the unit is equipped with the brake, move it after setting the brake release switch to "BK RLS" side.
⚠ Note
To ensure safety, it is recommended that safety speed be enabled during initial movements.
↓ Yes

Trial Run Adjustment
(1) Set the safety speed to "Disable" using the personal computer application software or teaching pendant and perform the performance check.
(2) Set the personal computer or teaching pendant to "MANU" operation mode, select the "Monitor Mode 2: Safety Speed Disabled/PIO Start-up Permitted" and then, remove it from the controller.
(3) Set the mode toggle switch to "AUTO".
(4) Set the field bus on the host side.
No → In the case that vibration or abnormal noise is caused
Confirm that there is no problem in the actuator installation or the actuator operation condition demands more than the rated voltage.
↓ Yes

Check Item
Start up the host side and check if the LED indications on the front panel for each field bus are as follows.
CC-Link : STATUS1 OFF, STATUS0 Green Light is turned ON.
DeviceNet, CompoNet : Green light is turned ON for both MS and NS.
PROFIBUS, MECHATROLINK : Green light is turned ON for both STATUS1 and STATUS0.
No → ·Check the station No. setting.
·Check the terminal resistance.
·Check the communication speed setting.
↓ Yes

The driving preparation was completed above. Please do the system driving adjustment.

Trouble Shooting

When an error is caused, in the case of ACON or PCON, the operation status can be checked using the status LED on the front panel.

● In the case of DeviceNet: ○ : Illuminating ● : OFF ◎ : Flashing

Monitor LED MS GN	Monitor LED MS RD	Monitor LED NS GN	Monitor LED NS RD	Status	Treatment
○	-	○	-	Normal operation	
○	-	●	●	Waiting for the completion of the node address duplication check on the master side	• Check if the communication speed of the master is the same as that for all the slave units. Correct the setting and re-start the machine. • Check if the connector is connected correctly.
○	-	◎	-	Waiting for the establishment of the connection with the master	• Check if the master is operated normally. • Check if it has been registered in the master's scanning list.
-	○	●	●	Hardware Error	• Contact our company.
-	◎	●	●	Dip Switch Setting Error	• Check if the communication speed of this unit is the same as that of the master. • Check if the configuration has been set correctly.
○	-	-	○	Duplicated node address or Busoff (Communication stop due to frequent data error) detection	• Correct the node address and restart the machine. • Check if there is any noise source close to the unit or the communication cable is not arranged parallel to the power line, and check for the influence of the noise
○	-	-	◎	Communication Time-out	• Check if the communication speed of this unit is the same as that of the master.
NS repeats the green illumination and flashing alternatively or red flashing and green flashing alternatively.				Communication Error	• Check if it has been registered in the master's scanning list. • Check if the I/O area is not duplicated with that of the other slave unit. • Check if the I/O area does not exceed the area permitted by the master unit (in the case of fixed allocation).

● In the case of CC-Link ○ : Illuminating ● : OFF ◎ : Flashing

STATUS1	STATUS0	Treatment
○	○	Impossible condition
○	●	• An error occurs. (CRC Error, Station Setting Error or Communication Speed Setting Error) • Period between the power injection or software reset and the CC-Link initialization completion
●	○	Normal Communication Status
●	●	Power Failure: Remote station power unit breakdown or communication cable breakage
◎	○	Impossible condition
◎	●	Station No. setting or communication speed setting is changed during the communication.

● In the case of PROFIBUS

LED	Color	Indication Status	Indication Description (Meaning of the Indication)
STATUS 1	GN	Illuminating	The communication is being performed normally from the field bus in online mode.
		Flashing	The machine is in offline mode from the field bus.
	OR	Flashing	A communication error is caused.
STATUS 0	GN	Illuminating	The machine is in the normal operation.
		Flashing	Preparation for the operation is performed.
	OR	Illuminating	A communication hardware error was detected in the operation preparation mode.

● In the case of CompoNet

LED	Color	Indication Status	Description
MS	GN	Illuminating	In the normal operation
	RD	Illuminating	Hardware Error. The replacement of the board is required.
		Flashing	It is a minor error such as a user setting error or configuration error. It can be recovered by re-setting, etc.
	-	OFF	The CompoNet is being initialized, or the power is not supplied.
NS	GR	Illuminating	The connection has been established and the communication is being performed normally.
		Flashing	The machine is on-line, but the connection has not been established. Communication Stop (Network is normal).
	RD	Illuminating	A duplicated node address is considered.
		Flashing	Communication Error (Communication Time-out Detection)
	-	OFF	The machine is not on-line. The power is not supplied.

● In the case of MECHATROLINK

LED	Color	Indication Status	Description
STATUS 1	GN	Illuminating	The communication is being performed normally from the field bus in online mode.
	RD	Illuminating	A communication error occurred.
	-	OFF	The machine is in offline mode from the field bus.
STATUS 0	GN	Illuminating	The machine is in the normal operation.
	RD	Illuminating	A communication hardware error was detected in the operation preparation mode.
	-	OFF	In the standby mode or the power has not been supplied.

When an error occurs, connect the personal computer application software for RC or teaching pendant and check it using the status monitor.
All the alarms for the field bus are described as follows. For other alarms, refer to the instruction manual for the controller body and treat it.

Code	Error Name	ID (*1)	RES (*2)	Cause/Treatment
0F2	Field Bus Module Error	05	×	Cause : The field bus module error is detected. Treatment : Check the parameter.
0F3	Undetected Field Bus Module Error	04	×	Cause : The module can not be detected. Treatment : Turn ON the power again. If the error is not removed, contact our company.

(*1) ID → Simple Alarm Code
(*2) RES → Alarm Reset Available/Unavailable ○ : Alarm Reset Available / × : Alarm Reset Unavailable

IAI
Quality and Innovation

IAI Corporation
Head Office: 577-1 Obane Shimizu-KU Shizuoka City Shizuoka 424-0103, Japan
TEL +81-54-364-5105 FAX +81-54-364-2589
website: www.iai-robot.co.jp/

IAI America, Inc.
Head Office: 2690 W. 237th Street, Torrance, CA 90505
TEL (310) 891-6015 FAX (310) 891-0815
Chicago Office: 110 East State Parkway, Schaumburg, IL 60173
TEL(847) 908-1400 FAX (847) 908-1399
Atlanta Office: 1220 Kennestone Circle, Suite 108, Marietta, GA 30066
TEL (678) 354-9470 FAX (678) 354-9471
website: www.intelligentactuator.com

IAI Industrieroboter GmbH
Ober der Röth 4, D-65824 Schwalbach am Taunus, Germany
TEL 06196-88950 FAX 06196-889524
website: www.iai-automation.com

Technical Support available in Great Britain
LC Automation
control & safety
Duttons Way, Shadsworth Business Park, Blackburn, Lancashire, BB1 2QR, United Kingdom
TEL 01254-605900
website: www.lcautomation.com

IAI (Shanghai) Co., Ltd.
SHANGHAI JIAHUA BUSINESS CENTER A8-303, 808, Hongciao Rd. Shanghai 200030, China
TEL 021-6448-4753 FAX 021-6448-3992
website: www.iai-robot.com

IAI Robot (Thailand) Co., Ltd.
825 PhairojKijja Tower 7th Floor, Debaratana RD., Bangna-Nuea, Bangna, Bangkok 10260, Thailand
TEL +66-2-361-4458 FAX +66-2-361-4456
website:www.iai-robot.co.th

Manual No.: ME0212-11A