



Applicable to Fieldbus

PSEL, ASEL

First Step Guide Third Edition

Thank you for purchasing our product.

Make sure to read the Safety Guide and detailed Instruction Manual (CD) included with the product in addition to this First Step Guide to ensure correct use.

This Instruction Manual is original.

Warning : Operation of this equipment requires detailed installation and operation instructions which are provided on the CD Manual included in the box this device was packaged in. It should be retained with this device at all times.
A copy of the CD Manual can be requested by contacting your nearest IAI Sales Office listed at the back cover of the Instruction Manual or on the First Step Guide.

- Using or copying all or part of this Instruction Manual without permission is prohibited.
- The company names, names of products and trademarks of each company shown in the sentences are registered trademarks.

Product Check

The standard configuration of this product is comprised of the following parts.

If you find any fault in the contained model or any missing parts, contact IAI or our distributor.

1. Parts

No.	Part Name	Model	Reference
1	Controller Main Body	Refer to "How to read the model plate", "How to read the model of the controller"	
Accessories			
2	Fieldbus Connector	DeviceNet type CC-Link type PROFIBUS-DP type	SMSTB2.5/5-ST-5.08AU (Supplier : PHOENIX CONTACT) 9-pin D-sub (female) connector.
	Fieldbus Terminal Resistance	DeviceNet type CC-Link type PROFIBUS-DP type	Installed if this is the end of the network 130Ω1/2W, 110Ω1/2W enclosed one unit each Installed if this is the end of the network
	First Step Guide		121Ω±1%, 1/4W 220Ω1/4W × 1, 390Ω1/4W × 1
5	Instruction Manual (CD)		
6	Safety Guide		

2. Teaching Tool (to be purchased separately)

The PC software or teaching pendant is necessary to perform setup operations such as position and parameter settings through teaching or other means. Prepare either the PC software or teaching pendant.

No.	Part Name	Model
1	PC Software (with RS232C cable + Emergency Stop Box)	IA-101-X-MW
2	PC Software (with USB converter adapter + RS232C cable + Emergency Stop Box)	IA-101-X-USBMW
3	PC Software (with the cable complying with Safety Category Class 4 specifications + Emergency Stop Box)	IA-101-XA-MW
4	Teaching Pendant	SEL-T
5	Teaching Pendant (with deadman switch)	SEL-TD
6	Teaching Pendant (with deadman switch + TP Adapter (IA-LB-TG))	SEL-TG
7	Teaching Pendant	IA-T-X
8	Teaching Pendant (with deadman switch)	IA-T-XD

3. Instruction Manuals related to this product, which are contained in the Instruction Manual (CD).

No.	Part Name	Manual No.
1	PSEL Controller Instruction Manual	ME0172
2	ASEL Controller Instruction Manual	ME0165
3	PC Software IA-101-X-MW/IA-101-X-USBMW	ME0154
4	Teaching Pendant SEL-T/TD	ME0183
5	Teaching Pendant IA-T-X/XD	ME0160
6	DeviceNet Instruction Manual	ME0124
7	CC-Link Instruction Manual	ME0123
8	PROFIBUS-DP Instruction Manual	ME0153

4. How to read the model plate

Model → MODEL PSEL-C-2-42PI-42PI-DV-2-0
Serial number → SERIAL No. 600117538 MADE IN JAPAN

5. How to read the model of the controller

5.1 PSEL

$\text{PSEL} - \text{C} - 2 - 20\text{PI} - 20\text{PIB} - \text{DV} - 2 - 0 - \text{ABU} - \text{H}$ <div>① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨</div>										
Model table										
Series	Controller Type	Number of axes	Details of axis 1 to axis 2			Standard I/O	I/O Flat cable length	Power-supply voltage	Simple absolute unit	High Acceleration Transportable Type
PSEL	C (Standard Type)	1 (1-axis) 2 (2-axis)	Motor Size 20P (20 □Size) 28P (28 □Size) 28SP (For RCP2-RA3C) 35P (35 □Size) 42P (42 □Size) 56P (56 □Size)	Encoder type I (Incremental) B (w/ brake)	Brake Not Specified (w/o brake) B (w/ brake)	DV DeviceNet Connection Specifications CC CC-Link Connection Specifications PR PROFIBUS-DP Connection Specifications	2 : 2m (Standard) 3 : 3m 5 : 5m 0 : None	0 : 24V DC	Not Specified (Not used) ABU (Use)	Not Specified (Standard) H (High Acceleration Type)

5.2 ASEL

$\text{ASEL} - \text{C} - 2 - 30\text{A} - 30\text{AB} - \text{DV} - 2 - 0$ <div>① ② ③ ④ ⑤ ⑥ ⑦</div>										
Model table										
Series	Controller Type	Number of axes	Details of axis 1 to axis 2					Standard I/O	I/O Flat cable length	Power-supply voltage
ASEL	C (Standard Type)	1 (1-axis) 2 (2-axis)	Motor Output 2 (2W) 5 (5W) 10 (10W) 20S (20W ^{Standard}) 20 (20W) 30 (30W)	Encoder type I (Incremental) A (Absolute)	Brake Not Specified (w/o brake) B (w/ brake)	Home Sensor Not Specified (w/o home sensor) B (Home Sensor)	High Accel/Decel Type Not Specified (Standard Type) HA (High Accel/Decel Type)	Low Power consumption Type Not Specified (Standard Type) LA (Power Consumption Type)	DV DeviceNet Connection Specifications CC CC-Link Connection Specifications PR PROFIBUS-DP Connection Specifications	2 : 2W (Standard) 3 : 3W 5 : 5W 0 : None

Note 1 For RCA-RA3C/RA3D/RA3R/RGS3C/RGS3D/RGD3C/RGD3D and RCA2-SA4C/TA5C, the motor type should be 20S.

Basic Specifications

Specification Item		Single-Axis Type		2-Axis Type	
Control Power Source Voltage		24V DC ±10%			
Motor Power Source Voltage		24V DC ±10%			
Control Power Capacity		1.2A			
Motor Power Capacity Note 1	Actuator	Rated	MAX. Note 2	Rated	MAX. Note 2
	20, 28P, 28SP Motor	0.4A	2.0A	0.8A	4.0A
	35, 42, 56P Motor	1.2A		2.4A	
Heat Generation		14.4W			
Transient Power Cutoff Durability		0.5ms			
Insulation Resistance		500V DC 10MΩ or more			
Insulation Strength		500V AC for 1min (Between all power terminals and FG)			
Axis Control System		AC Full-digital Servo			
Position detection method		Incremental Encoder			
Battery for Backup		For System Memory Backup : Manufactured by our company AB-5 (Option)			
Program language		Super SEL language			
Max. Number of program steps		2000 steps			
Max. Number of position		1500 positions			
Max. Number of programs		64 programs			
Max. Number of multitask programs		8 programs			
Data storage device		Flash ROM + SRAM battery backup (Option)			
Data input method		Teaching pendant or PC software			
Teaching Port RS232C (Special Protocol)		26-pin Half Pitch I/O Connector (TX20A-26R-D2LT1-A1LHE for Connecting 1.27mm-pitch PCB Cable Pair Manufactured by JAE)			
USB Teaching Port for connecting the PC (Special Protocol)		USB B Connector (XM7B-0442) For connecting the PC			
Communication cable length		RS232C	15m or less	USB	5m or less
Fieldbus Port		1 channel Complying with the standards for each field bus (Refer to the Wiring diagram for the connector).			
System I/O		Emergency-stop input, safety gate input			
Protective functions		Overvoltage, motor over current, motor overload, driver temperature error, and Encoder error etc.			
Drive-source cutoff method		Internal Relay			
Environment	Ambient air temperature	0 to +40°C			
	Ambient humidity	10 to 95%RH (non-condensing)			
	Ambient environment	Free of corrosive gases, especially, no excessive dust			
	Ambient storage temperature	-25 to 70°C, batteries (option) excluded			
	Ambient storage humidity	10 to 95%RH (non-condensing)			
	Vibration strength	XYZ directions 10 to 57Hz Pulsating amplitude 0.035mm (continuous) 0.075mm (intermittent) 57 to 150Hz 4.9m/s ² (continuous) 9.8m/s ² (intermittent)			
	Impact	147mm/s ² , 11ms Semi-sine wave pulse three times to each of the directions X, Y and Z			
Protection class		IP20			
Cooling method		Natural Air Cooling			
Weight		440g			
External dimensions		(Refer to External Dimensions Section)			

Note 1 Inrush current of the control power when the power is turned ON, is about 30.0A for 5ms both for single axis type and 2-axis type.

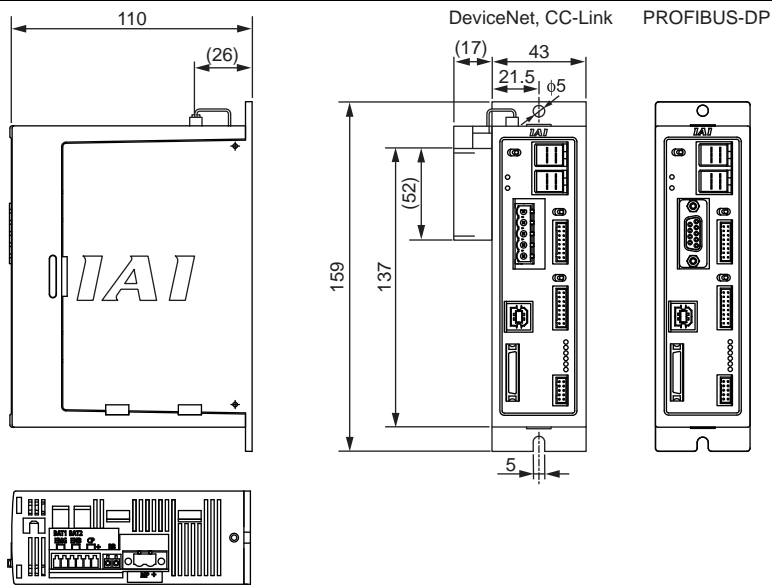
Note 2 After the servo-motor is turned ON, the excitation detection operation is performed. Excitation phase detection is performed after power-on. In such a case, the current becomes maximum (About 100ms).
However, after the motor driving power is turned OFF, when the motor driving power is turned ON again, about 6.0A of current passes for single axis type and 12.0A of current for 2-axis type. (for approx. 1 to 2ms)

Select a +24V DC power supply preferably offering "peak load support", or one with sufficient inrush capacity.

ASEL Specifications

Specification Item			Single-Axis Type				2-Axis Type			
Control Power Source Voltage			24V DC ±10%							
Motor Power Source Voltage			24V DC ±10%							
Control Power Capacity			1.2A							
Motor Power Capacity Note 1	Actuator		Standard Type / High Accel/Decel Type		Low Power Consumption Type		Standard Type / High Accel/Decel Type		Low Power Consumption Type	
			Rated	MAX. <small>Note 2</small>	Rated	MAX. <small>Note 3</small>	Rated	MAX. <small>Note 2</small>	Rated	MAX. <small>Note 3</small>
	RCA	SA4・SA5・RA4 (20W) type	1.3A	4.4A	1.3A	2.5A	2.6A	8.8A	2.6A	5.0A
		SA6・RA4 (30W) type	1.3A	4.0A	1.3A	2.2A	2.6A	8.0A	2.6A	4.4A
	RCA2	RA3 (20W) type	1.7A	5.1A	1.7A	3.4A	3.4A	10.2A	3.4A	6.8A
		SA3 (10W) type	1.3A	4.4A	1.3A	2.5A	2.6A	8.8A	2.6A	5.0A
		SA5・TA6 (20W) type	1.3A	4.4A	1.3A	2.5A	2.6A	8.8A	2.6A	5.0A
		RN3N・RP3N・GS3N・GD3N・SD3N・TC3N・TW3N・TF3N・TA4C・TA4R (10W) type	1.3A	4.4A			2.6A	8.8A		
		SA6・TA7 (30W) type	1.3A	4.0A	1.3A	2.2A	2.6A	8.0A	2.6A	4.4A
		RA4・TA5 (20W) type	1.7A	5.1A	1.7A	3.4A	3.4A	10.2A	3.4A	6.8A
		RN4N・RP4N・GS4N・GD4N・SD4N・TC4N・TW4N・TF4N (20W) type	1.7A	5.1A			3.4A	10.2A		
	RCL	RA1L, SA1L	0.8A	4.6A			1.6A	9.2A		
		RA2L, SA2L	1.0A	6.4A			2.0A	12.8A		
		RA3L, SA3L	1.3A	6.4A			2.6A	12.8A		
Heat Generation			14.4W							
Transient Power Cutoff Durability			0.5ms							
Insulation Resistance			500V DC 10MΩ or more							
Insulation Strength			500V AC for 1min (Between all power terminals and FG)							
Axis Control System			AC Full-digital Servo							
Position detection method			Incremental Encoder or Absolute Encoder							
Battery for Backup			For Absolute Data Backup : Manufactured by our company AB-5 For System Memory Backup : Manufactured by our company AB-5 (Option)							
Program language			Super SEL language							
Max. Number of program steps			2000 steps							
Max. Number of position			1500 positions							
Max. Number of programs			64 programs							
Max. Number of multitask programs			8 programs							
Data storage device			Flash ROM + SRAM battery backup (Option)							
Data input method			Teaching pendant or PC software							
Teaching Port RS232C (Special Protocol)			26-pin Half Pitch I/O Connector (TX20A-26R-D2LT1-A1LHE for Connecting 1.27mm-pitch PCB Cable Pair Manufactured by JAE)							
USB Teaching Port for connecting the PC (Special Protocol)			USB B Connector (XM7B-0442) For connecting the PC							
Communication cable length		RS232C	15m or less							
		USB	5m or less							
Fieldbus Port			1 channel Complying with the standards for each field bus (Refer to the wiring diagram for the connector).							
System I/O			Emergency-stop input, safety gate input							
Protective functions			Overvoltage, motor over current, motor overload, driver temperature error, and Encoder error etc.							
Drive-source cutoff method			Internal Relay							
Environment	Ambient air temperature		0 to +40°C							
	Ambient humidity		10 to 95%RH (non-condensing)							
	Ambient environment		Free of corrosive gases, especially, no excessive dust							
	Ambient storage temperature		-25 to 70 degrees (batteries (option) excluded)							
	Ambient storage humidity		10 to 95%RH (non-condensing)							
Vibration strength			XYZ directions 10 to 57Hz Pulsating amplitude 0.035mm (continuous) 0.075mm (intermittent) 57 to 150Hz 4.9m/s ² (continuous) 9.8m/s ² (intermittent)							
Impact			147mm/s ² , 11ms Semi-sine wave pulse three times to each of the directions X, Y and Z							
Protection class			IP20							
Cooling method			Natural Air Cooling							
Weight			450g							
External dimensions			(Refer to External Dimensions Section)							

External Dimensions



- * Same dimensions are applied to both the single axis and 2-axis units.
- * The above figure shows the condition where the system memory backup battery (option) is attached.

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.

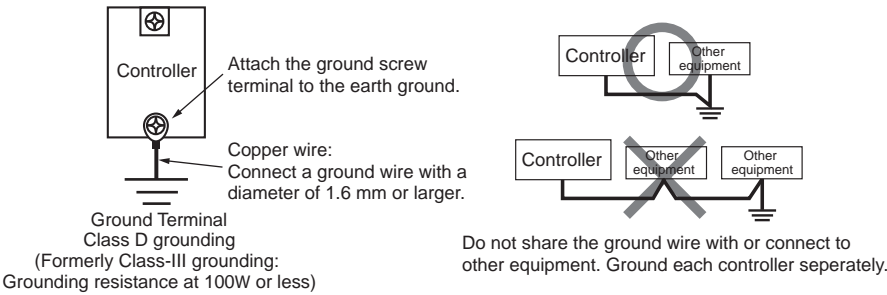
- Location subject to electrostatic noise
- Location where a high electrical or magnetic field is present
- Location with the mains or power lines passing nearby

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 absorber 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

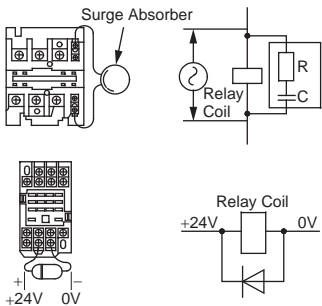
- 1) Twist the wires for the 24V DC power unit.
- 2) Separate the communication line from the power line.

3. Noise Sources and Elimination

Carry out noise elimination measures for power devices on the same power path and in the same equipment.

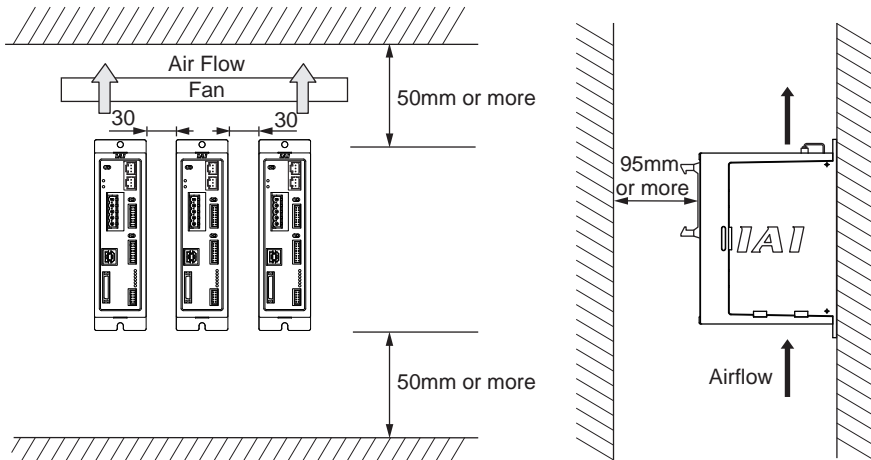
The following are examples of measures to eliminate noise sources.

- 1) AC solenoid valves, magnet switches and relays
[Measure] Install a Surge absorber 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.



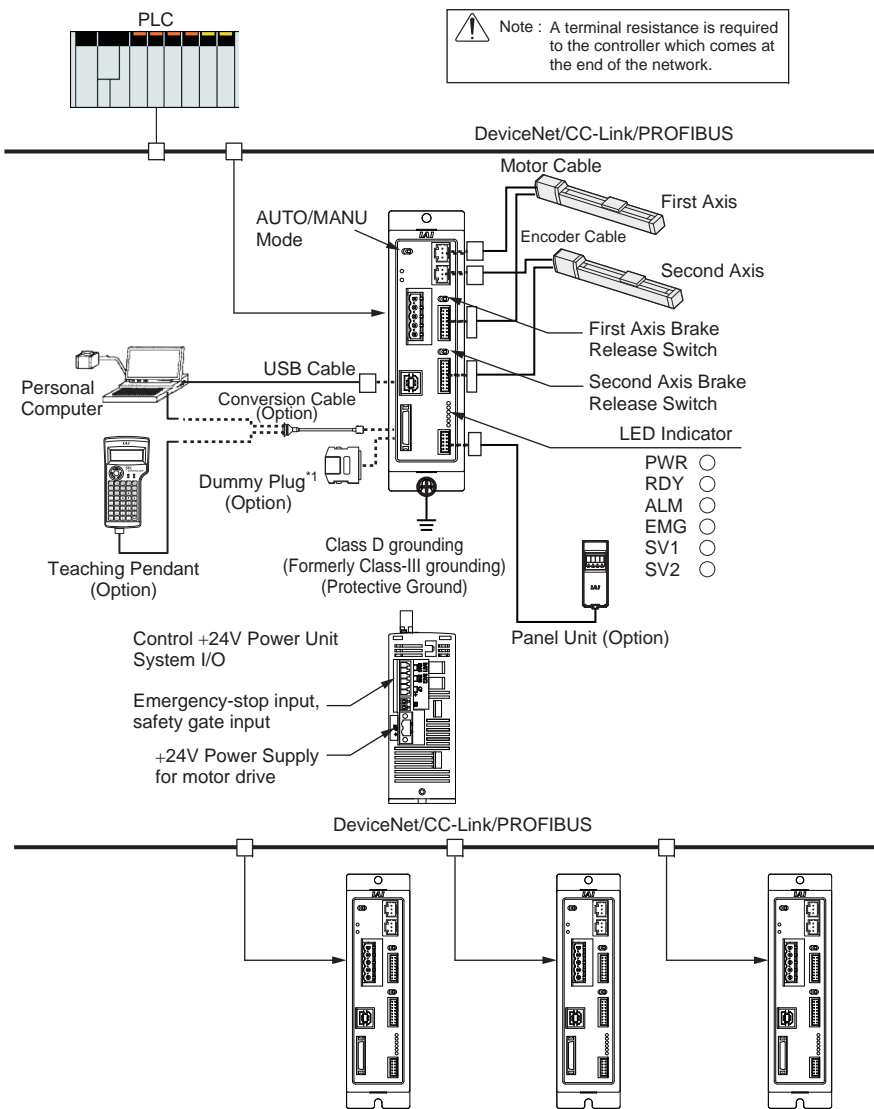
4. Heat Radiation and Installation

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.



Wiring

For PSEL and ASEL controller, the same wiring is applied.

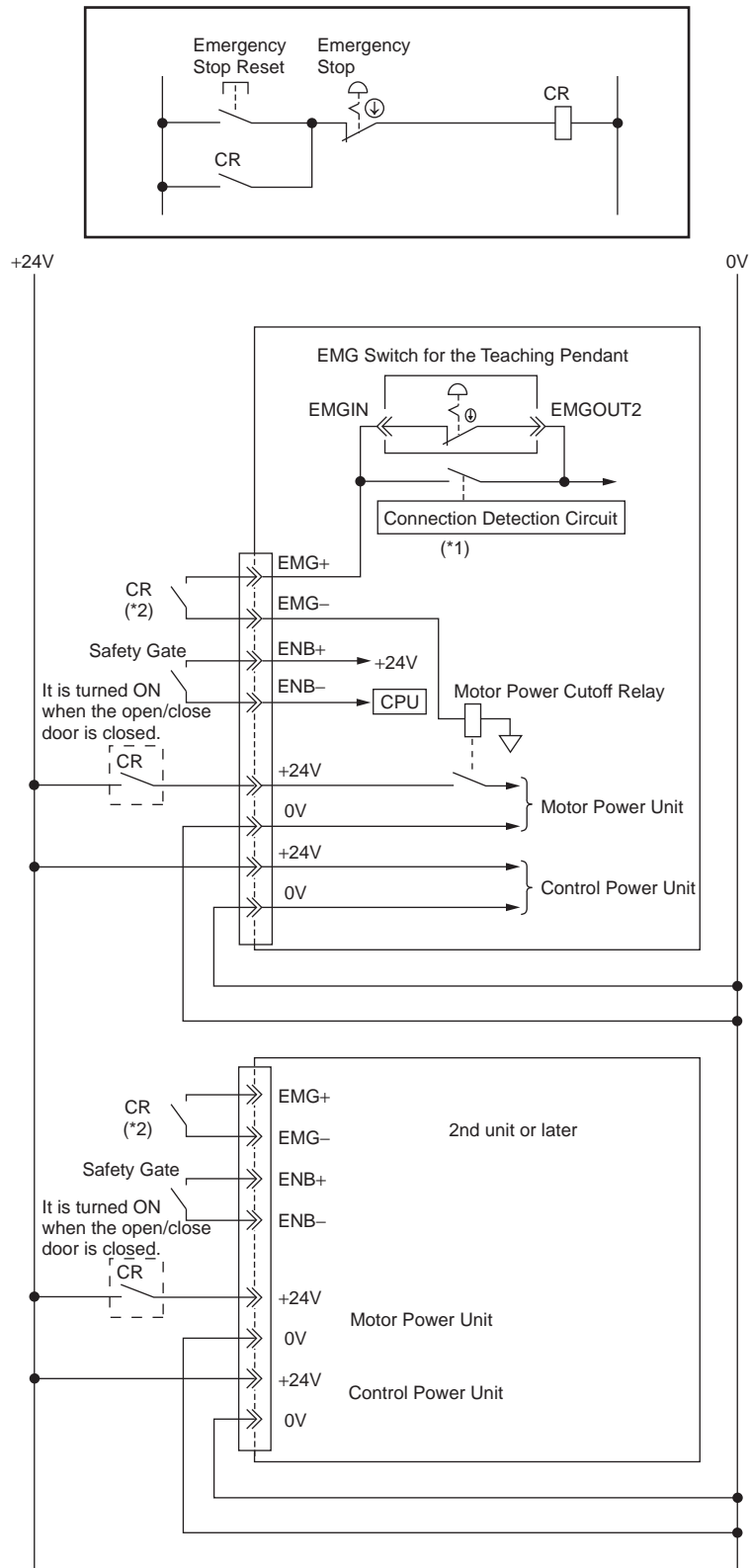


*1 When the PC is connected to the controller using the USB cable, it is required to attach the dummy plug to the controller to short the Safety Gate Signal for the PC application software and teaching pendant.

Warning : When the PC is connected to the controller using the USB cable, the emergency stop box can not be connected. In the case of stop in an emergency, process it in the system.

Power Supply and Emergency Stop Circuit

Shown is an example when two or more controllers on the whole system emergency stop circuit, are stopped in an emergency.



*1 The connection of the teaching pendant is automatically recognized using the controller.

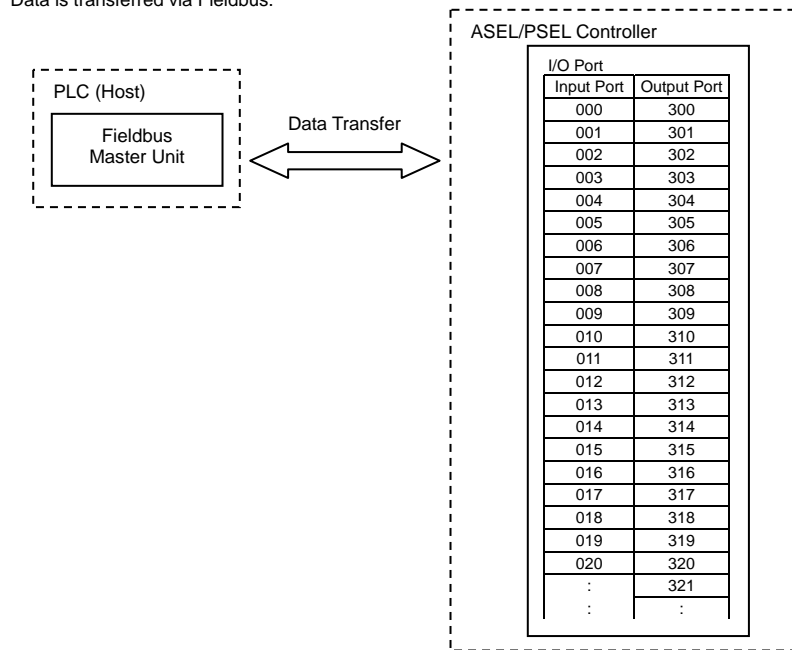
*2 For the CR contacts between EMG "+" and EMG "-", use 24V DC, 0.5A/contact or more.

*3 When the safety category requirements include the motor driving source interception, connect CR.

CR Contact Capacity : 24V DC 160mA or more
CR Load Current : 160mA ≥ 10mA (current consumption caused by emergency stop circuit of each unit) × Total Number of PSEL and ASEL Units

I/O Port

I/O port is a place where the data inside the master unit and ASEL/PSEL controllers is sent and received.
1 port can handle data of 1 contact (1 bit).
Data is transferred via Fieldbus.



I/O Mapping

At delivery, the I/O port numbers and their functions are shown below for the ASEL/PSEL controller.
The port numbers and their function assignments can be changed in the I/O parameters.
[Please refer to the "ASEL/PSEL Controller Instruction Manual" for the details.]

	Port No.	Function		Port No.	Function
Input	016	Program select (RPG No.1)	Input	008	General-purpose Input
	017	Program select (RPG No.2)		009	General-purpose Input
	018	Program select (RPG No.4)		010	General-purpose Input
	019	Program select (RPG No.8)		011	General-purpose Input
	020	Program select (RPG No.10)		012	General-purpose Input
	021	Program select (RPG No.20)		013	General-purpose Input
	022	Program select (RPG No.40)		014	General-purpose Input
	023	Software reset (Restart)		015	General-purpose Input
	000	Program Start	Output	300	Alarm Output
	001	General-purpose Input		301	Ready Output
	002	General-purpose Input		302	General-purpose Output
	003	General-purpose Input		303	General-purpose Output
	004	General-purpose Input		304	General-purpose Output
	005	General-purpose Input		305	General-purpose Output
	006	General-purpose Input		306	General-purpose Output
	007	General-purpose Input		307	General-purpose Output

(Note) Number of I/O ports is:

Input 000 to 299 (MAX. 300 points)
Output 300 to 599 (MAX. 300 points)

Initial Setting (I/O parameter)

No.	Parameter Name	Initial Value (Reference)	Input Range	Reference
1	I/O Port Allocation Type	1	0, 1	0: Fixed Allocation 1: Automatic Allocation (Order of Priority : Field Bus Port) → Standard I/O Board (Slot 1)
14	Number of Network I/F Card Remote Input Ports	64	0 to 256	Multiples of 8 Set up the number of input ports to be used for Fieldbus. For No. 14 and 15, choose the greater number and input the same value.
15	Number of Network I/F Card Remote Output Ports	64	0 to 256	Multiples of 8 Set up the number of output ports to be used for Fieldbus. For No. 14 and 15, choose the greater number and input the same value.
16	Network I/F Module Fix-Allocated Input Port Start No.	0	-1, 0 to 299	Multiples of 8 (Unavailable when it is negative figure) Set the top port number of the input ports used for Fieldbus.
17	Network I/F Module Fix-Allocated Output Port Start No.	300	-1, 300 to 599	Multiples of 8 (Unavailable when it is negative figure) Set the top port number of the output ports used for Fieldbus.
18	Network I/F Module Error Monitor	1	0 to 5	0: No Monitoring 1: Monitoring [Note] It is able to operate on the teaching tool without an alarm generation if it is set to "No Monitoring" even if it is not connected to the network at the startup. Make sure to put the setting back when a change is made.

The occupied address area on the PLC side is determined by the number of used inputs and outputs.
Refer to Instruction Manual (CD) or the instruction manual of the master unit for the details.

DeviceNet

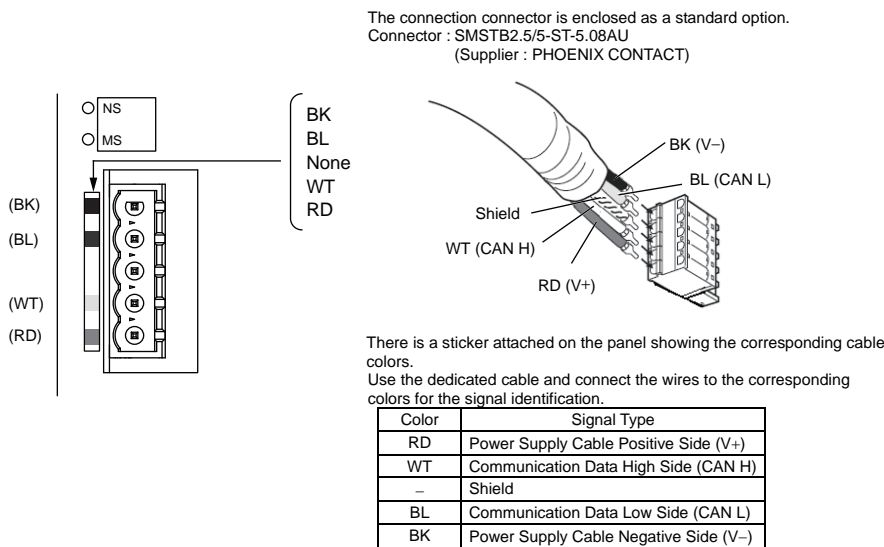
Specification

Item	Specification			
Communication Protocol	DeviceNet2.0 (Certified Interface)			
For Communication	Master/Slave Connection		Bit Strobe	
			Polling	
			Cyclic	
Baud Rate	500k/250k/125kbps			
Communication Cable Length (Note1)	Baud Rate	Max. Network Length	Max. Branch Line Length	Total Branch Line Length
	500kbps	100m	6m	39m
	250kbps	250m		78m
	125kbps	500m		156m
	(Note) When DeviceNet dedicated cable is used			
No. of Occupied Nodes	1 node			
Communication Power Supply	Voltage 24V DC±10% Current Consumption 60mA Externally Supplied (Supplied from DeviceNet communication cable side)			
Communication Cable	Dedicated cable for DeviceNet			

Note 1 Refer to the Instruction Manuals for the master unit and the mounted programmable logic controller (stated as PLC from now on) when a T-junction communication is to be conducted.

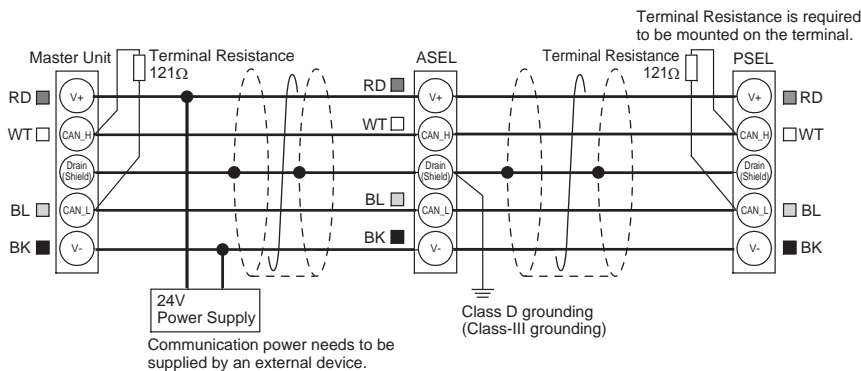
Wiring

For details, refer to the Instruction Manuals of the master unit and PLC in which in the master unit is installed.



There is a sticker attached on the panel showing the corresponding cable colors.
Use the dedicated cable and connect the wires to the corresponding colors for the signal identification.

Color	Signal Type
RD	Power Supply Cable Positive Side (V+)
WT	Communication Data High Side (CAN H)
—	Shield
BL	Communication Data Low Side (CAN L)
BK	Power Supply Cable Negative Side (V-)



Network Type Setting

The I/O Parameter No. 225 "Network I/F Module Control" has been set to "2H" (DeviceNet) when the unit is delivered. (Therefore, the setting is not necessary.)

Node Addresses

Station number is set with parameter.
Set the node address to I/O Parameter No. 226 "Network I/F Module Communication Attribute 1" The setting range is from 0 to 63. (Set in delivery : 0)
(Note) "D75: Fieldbus Parameter Error" would occur if the set address is out of the allowable range.

Baud Rate Setting

There is no need to set the baud rate since it automatically follows the master setting.

(Note) Make sure to reboot the controller after the parameter setting is complete, and do not forget to turn the mode changeover switch to "AUTO" side.

CC-Link

Specification

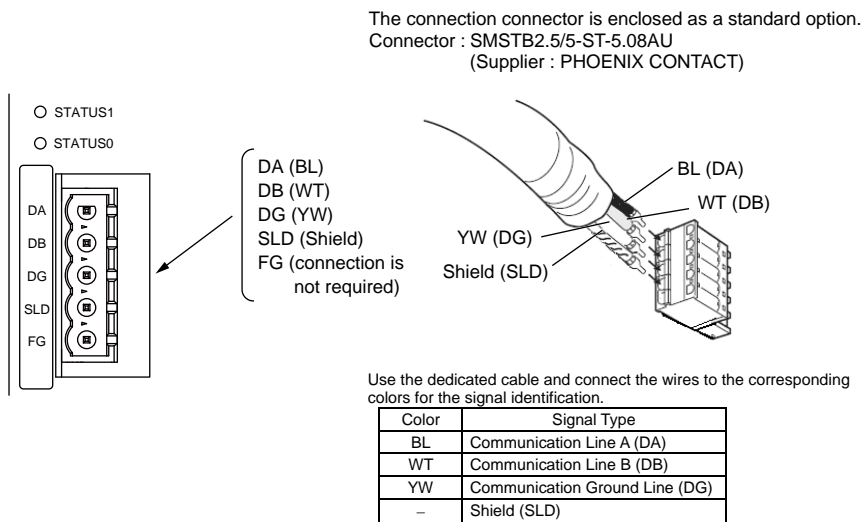
Item	Specification					
Communication Protocol	CC-Link Ver1.10					
Baud Rate	10M/5M/2.5M/625k/156kbps					
Communication System	Broadcast Polling System					
Synchronization System	Frame synchronization system					
Transmission Path Format	Bus format (EIA RS485 conformance 3-line type)					
Error Control System	CRC ($X^{16} + X^{12} + X^5 + 1$) ^{*1}					
No. of Occupied Stations	Remote Device Station [Refer to Field Network Wirings and Settings Section]					
Communication Cable Length (Note1)	Baud Rate	10Mbps	5Mbps	2.5Mbps	625kbps	156kbps
	Total Cable Length	100m	160m	400m	900m	1200m
Communication Cable	Dedicated cable for CC-Link					

Note 1 Refer to the Instruction Manuals for the master unit and the mounted programmable logic controller (stated as PLC from now on) when a T-junction communication is to be conducted.

*1 CRC : Cyclic Redundancy Check It is a data error detection method often used for the synchronous transmission

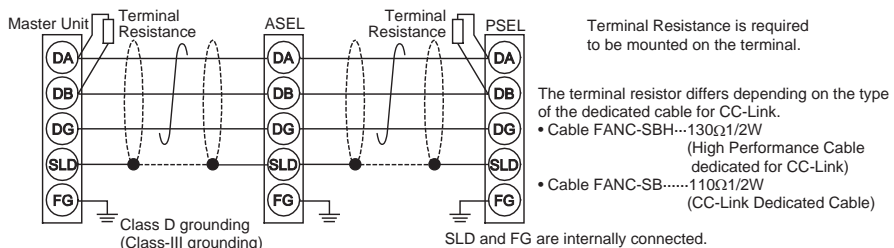
Wiring

For details, refer to the Instruction Manuals of the master unit and PLC in which in the master unit is installed.



Use the dedicated cable and connect the wires to the corresponding colors for the signal identification.

Color	Signal Type
BL	Communication Line A (DA)
WT	Communication Line B (DB)
YW	Communication Ground Line (DG)
—	Shield (SLD)



Terminal Resistance is required to be mounted on the terminal.

The terminal resistor differs depending on the type of the dedicated cable for CC-Link.
• Cable FANC-SBH---130Q1/2W (High Performance Cable dedicated for CC-Link)
• Cable FANC-SB-----110Q1/2W (CC-Link Dedicated Cable)

SLD and FG are internally connected.

Network Type Setting

The I/O Parameter No. 225 "Network I/F Module Control" has been set to "1H" (CC-Link) when the unit is delivered. (Therefore, the setting is not necessary.)

Node Addresses

Set the station number to I/O Parameter No. 226 "Network I/F Module Communication Attribute 1". The setting range is from 1 to 63. (Set in delivery : 0)
(Note) "D75: Fieldbus Parameter Error" would occur if either of the occupied stations is set to a station number 0 or more than 65.

Baud Rate Setting

Set the baud rate to the bits 0 to 3 in I/O Parameter No. 227 "Network I/F Module Communication Attribute 2".
The setting range is from 0 to 4H.

Value set in I/O parameter No.227	Baud Rate [bps]
0	156k
1	625k
2	2.5M
3	5M
4 (Set in delivery)	10M

(Note) Set the baud rate to match with the setting in the master station.

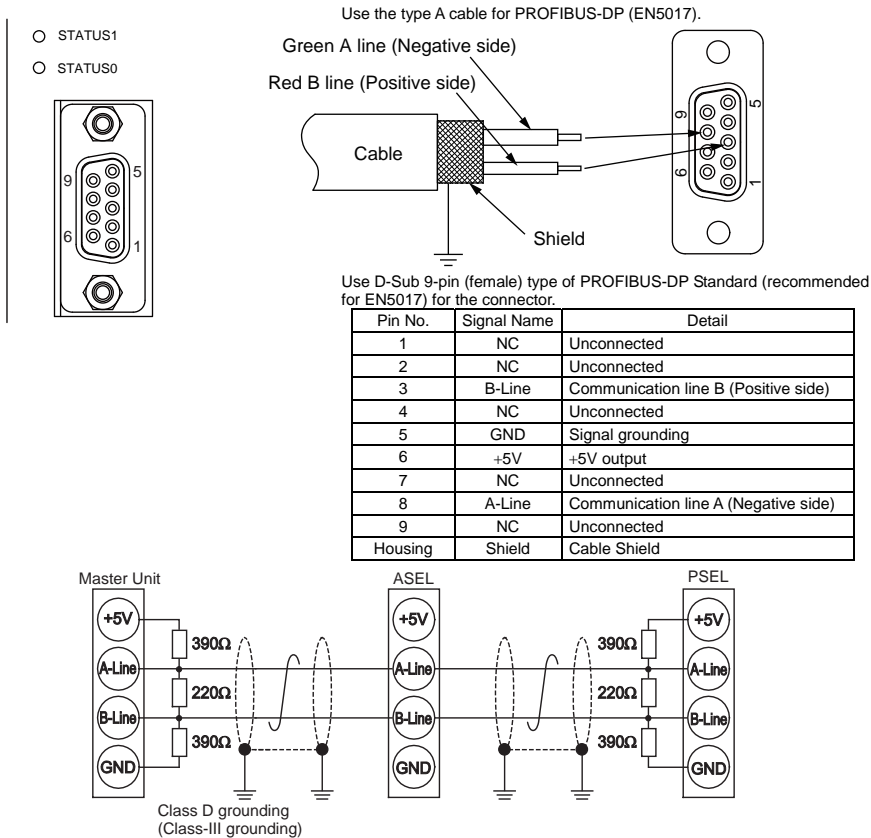
PROFIBUS-DP

• Specification

Item	Specification					
Communication Protocol	PROFIBUS-DP (RS485 conformance)					
Communication System	Hybrid System (Master-Slave System or Token Passing System)					
Baud Rate	9.6k to 12Mbps (Automatically follows the master)					
Communication Cable Length (Type A Cable)	Baud Rate	12/6/3Mbps	1.5Mbps	500kbps	187.5kbps	93.75/45.45/19.2/9.6kbps
	Total Cable Length	100m	200m	400m	1000m	1500m
No. of Occupied Nodes	1 node					
Communication Cable	Type A Cable for PROFIBUS-DP (Standard EN50170)					

• Wiring

For details, refer to the Instruction Manuals of the master unit and PLC in which in the master unit is installed.



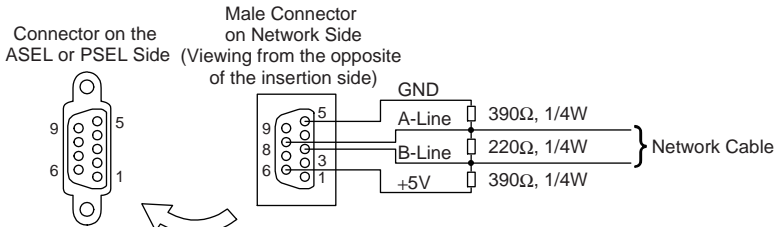
• Bus Termination

When connecting to the network terminal, apply a terminal resistor to PROFIBUS-DP Communication Connector as shown below or apply a connector already equipped with a terminal resistor.

- An example for a connector equipped with a terminal resistor :

SUBCON-PLUS-PROFIB/AX/SC (PHOENIX CONTACT)

• Connection of Terminal Resistor



• Network Type Setting

The I/O Parameter No. 225 "Network I/F Module Control" has been set to "3_H" (PROFIBUS-DP) when the unit is delivered. (Therefore, the setting is not necessary.)

• Node Addresses

Station number is set with parameter.
Set the node address to I/O Parameter No. 226 "Network I/F Module Communication Attribute 1". The setting range is from 0 to 125. (Set in delivery : 1)
(Note) "D75: Fieldbus Parameter Error" would occur if the set address is out of the allowable range.

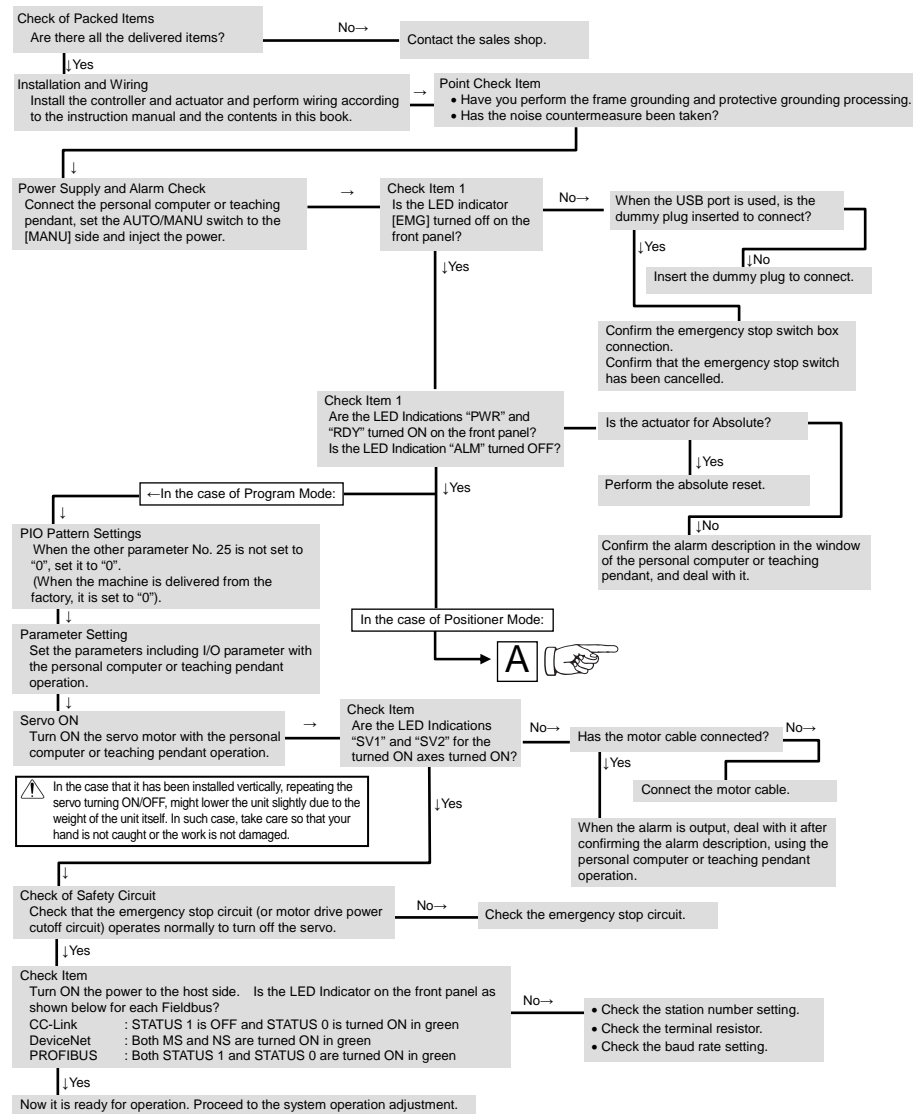
• Baud Rate Setting

There is no need to set the baud rate since it automatically follows the master setting.

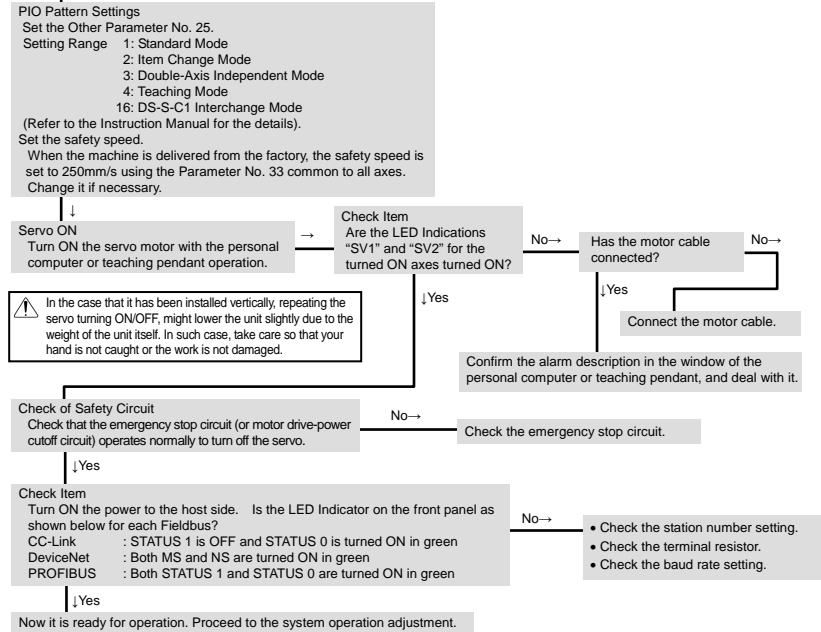
(Note) Make sure to reboot the controller after the parameter setting is complete, and do not forget to turn the mode switch to "AUTO" side.

Starting Procedures

When using this product for the first time, work while making sure to avoid omission and incorrect wiring by referring to the procedure below.



A



Troubleshooting

For ASEL and PSEL, it is possible to check the operation status with the status LEDs on the front panel when an error is occurred.

• In the case of DeviceNet:

LED Indicators for Monitoring				Condition	Treatment
MS	OR	GN	OR		
GN	OR	GN	OR	In normal operation	
Illuminating	—	Illuminating	—	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.
Illuminating	—	OFF	OFF	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.
Illuminating	—	Flashing	—	A hardware error occurred.	• Contact our company.
—	Illuminating	OFF	OFF	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.
—	Flashing	OFF	OFF	Duplicated node address or Busoff (Communication stop due to frequent data line 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.
Illuminating	—	—	Illuminating	Communication Time-out	• Check if the communication speed of this unit is the same as that of the master.
Illuminating	—	—	Flashing	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

STATUS1	STATUS0	Condition
Illuminating	Illuminating	Impossible condition
Illuminating	OFF	• An error occurs. (CRC Error, Station Setting Error or Communication Speed Setting Error) • Since turning the power ON or software reset till completion of CC-Link initialization
OFF	Illuminating	Normal Communication Status
OFF	OFF	Power Failure: Remote station power unit breakdown or communication cable breakage
Flashing	Illuminating	Impossible condition
Flashing	OFF	The station number setting or the baud rate setting is changed during the communication

• In the case of PROFIBUS

LED	Color	Illumination Status	Indication Description (Meaning)
STATUS 1	GN	Illuminating	Online from fieldbus and communication in normal condition.
	OR	Flashing	Offline from fieldbus.
STATUS 0	GN	Flashing	Communication error is occurred.
	OR	Illuminating	In normal operation.
STATUS 0	GN	Flashing	Getting ready for operation.
	OR	Illuminating	An error detected on communication-related hardware during preparing for operation.

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