

RSEL-G, RCON-EXT-NP/PN

SEL Unit, Terminal Unit PIO/SIO/SCON Extension Unit, PIO Unit First Step Guide Second 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.

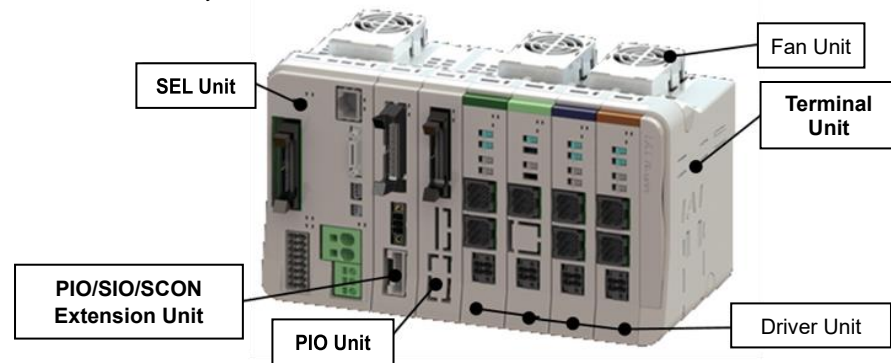
Warning: Read the instruction manual carefully and follow instruction manual when handling this product.
Please downloaded instruction manual from our website.
You can download it free of charge. User registration is required for the first time downloading.

URL www.iai-robot.co.jp/data_d/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.

- 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.

RSEL System is constructed not only with the SEL Unit (RSEL-G), Terminal Unit (RCON-GW-TR), PIO/SIO/SCON Extension Unit (RCON-EXT-NP/PN) and PIO Unit (RCON-NP/PN) that are explained in this manual, but also with Driver Unit (RCON-PC/PCF/AC/DC/SC), EC Connection Unit (RCON-EC-4), Simple Absolute Unit (RCON-ABU), Fan Unit (RCON-FU/FUH), SCON Extension Unit (RCON-EXT) and SCON Controller (SCON-CB-*RC) to connect to the PIO/SIO/SCON Extension Unit. Please refer to First Step Guide and Instruction Manual of each device for those not described in this guide.
SEL Unit is a communication unit to be connected to a host via the field network or PIO/SIO that must be located on the most left side of the RSEL System.
The terminal unit is a terminal resistor that should be allocated at the most right end of RSEL System.
The PIO/SIO/SCON extension unit (RCON-EXT-NP/PN) and the PIO unit (RCON-NP/PN) are available to use also in the RCON system.



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

(1) SEL Unit (RSEL-G)

No.	Part Name	Model	Number	Remarks
1	SEL Unit	Refer to "How to read the model plate", "How to read the model code"	1	
Accessories				
2	Terminal Unit (Terminal Resistance)	RCON-GW-TR	1	Select -TRN (with no terminal unit) in the option if it is not necessary
3	Fan Unit	RCON-FU	*1	*1 Indicate number of units in the option
4	System I/O Connector	DFMC1.5/8-ST-3.5 (RSEL) (Manufactured by PHOENIX CONTACT)	1	Recommended Cable Size 0.5 to 1.25mm ² (AWG20 to 16)
5	Dummy Plug	DP-4S	1	
6	CC-Link Connector (Enclosed for CC-Link Type)	MSTB2.5/5-STF-5.08 AU [Model-CC] TMSTBP2.5/5-STF-5.08 AU [Model-CC2] (Manufactured by PHOENIX CONTACT)	1	Terminal Resistance (130Ω/110Ω) enclosed one unit each Recommended Cable: Dedicated cable for CC-Link
7	DeviceNet Connector (Enclosed for DeviceNet Type)	MSTB2.5/5-STF-5.08 AU M [Model-DV] TMSTBP2.5/5-STF-5.08AU M [Model-DV2] (Manufactured by PHOENIX CONTACT)	1	Recommended Cable: Dedicated cable for DeviceNet
8	First Step Guide	ME0393	1	This Manual
9	Safety Guide	M0194	1	

[4] System I/O Connector [5] Dummy Plug [6] CC-Link Connector (-CC) [7] DeviceNet Connector (-DV)



(2) PIO/SIO/SCON Extension Unit (RCON-EXT-NP/PN)

No.	Part Name	Model	Number	Remarks
1	PIO/SIO/SCON Extension Unit	Refer to "How to read the model plate", "How to read the model code"	1	
Accessories				
2	PIO Cable	CB-PAC-PIO***	1	
3	Terminal Connector	RCON-EXT-TR	1	
4	Extension SIO Port Connector	FMC1.5/3-STF-7.62	1	
5	First Step Guide	ME0393	1	This Manual
6	Safety Guide	M0194	1	

(3) PIO Unit (RCON-NP/PN)

No.	Part Name	Model	Number	Remarks
1	PIO Unit	Refer to "How to read the model plate", "How to read the model code"	1	
Accessories				
2	PIO Cable	CB-PAC-PIO***	1	
3	First Step Guide	ME0393	1	This Manual
4	Safety Guide	M0194	1	

[2] PIO Cable

[3] Terminal Connector

[4] Extension SIO Port Connector



2. Teaching Tool (Please purchase separately)

A teaching tool such as PC software is necessary when performing the setup for position setting, parameter setting, etc. that can only be done on the teaching tool. Please prepare either of the following teaching tools.

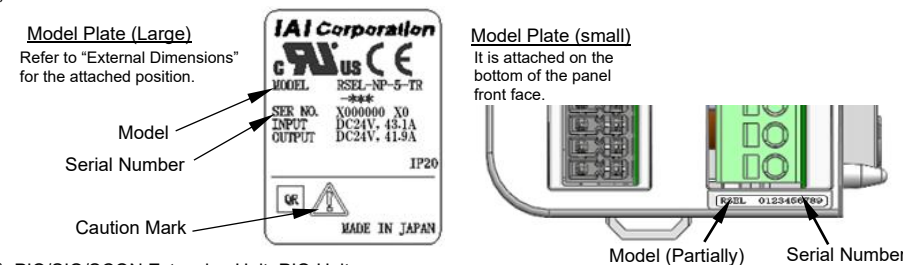
No.	Part Name	Model
1	PC software	IA-101-X/N
2	Touch Panel Teaching Pendant TB-02 (Standard/ Dead Man's Switch Mounted)	TB-02/TB-02D
3	Touch Panel Teaching Pendant TB-03	TB-03

3. Instruction manuals related to this product

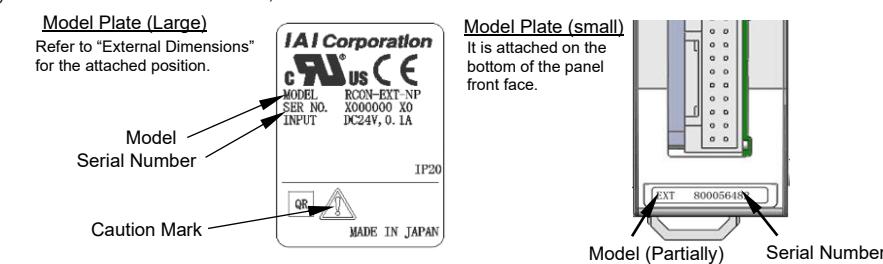
No.	Name	Manual No.
1	RSEL System Instruction Manual	ME0392
2	RCON System Instruction Manual	ME0384
3	SCON-CB/CGB/LC/LCG Controller Instruction Manual	ME0340
4	PC software Instruction Manual	ME0398
5	Touch Panel Teaching Pendant TB-02 Applicable for Program Controller Instruction Manual	ME0356
6	Touch Panel Teaching Pendant TB-03 Wired Link Applicable for Program Controller Instruction Manual	ME0377

4. How to read the model plate (This design is what is after UL/CE acquired.)

(1) SEL Unit



(2) PIO/SIO/SCON Extension Unit, PIO Unit



Mark	Explanation of Mark
	Use IAI specified cables only.

5. How to read the model code

[SEL Unit]

RSEL - G - PRT - 2 - FU*	
<Series>	<Option>
<Type>	FU* : Fan Unit
G : Safety Category Compliant Type	(*: Indicate number of units to mount from 1 to 5)
	TRN : With No Terminal Unit
	<I/O Cable length >
	0 : With No Cable 2 : 2m (Standard)
	3 : 3m 5 : 5m
<I/OType>	
E : Not to be used	
NP : PIO Type (NPN16/16)	PN : PIO Type (PNP16/16)
CC : CC-Link Connection Type	CC2 : CC-Link Connection Type (Two-way Connector enclosed)
DV : DeviceNet Connection Type	DV2 : DeviceNet Connection Type (Two-way Connector enclosed)
EC : EtherCAT Connection Type	EP : EtherNet/IP Connection Type
PR : PROFIBUS-DP Connection Type	PRT : PROFINET IO Connection Type
CIE : CC-Link IE Field Connection Type	

[PIO/SIO/SCON Extension Unit]

RCON - EXT - NP - 2

<I/OType>	<I/O Cable length >
NP : I/O NPN Type	0 : With No Cable 2 : 2m (Standard)
PN : I/O PNP Type	3 : 3m 5 : 5m

[PIO Unit]

RCON - PN - 2

<I/OType>	<I/O Cable length >
NP : I/O NPN Type	0 : With No Cable 2 : 2m (Standard)
PN : I/O PNP Type	3 : 3m 5 : 5m

Basic Specifications

1. Specifications of Power Supply

Item	Specification
Power Input Voltage Range	24V DC ±10% (For both motor power and control power)
Supply Current	Refer to [Current Amperage] in RCON Driver Unit First Step Guide (ME0383)
Current Amperage	Refer to [Current Amperage] in RCON Driver Unit First Step Guide (ME0383)
In-Rush Current	Refer to [Current Amperage] in RCON Driver Unit First Step Guide (ME0383)
Instantaneous Power Outage Endurance	By 24V power supply
Protection Function against Electric Shock	Class III

2. Specifications of Control Part

Item	Specification
Number of Controlled Axes	1 to 8 axes (ELECYLINDER is capable of connecting 16 axes at the maximum including the number of connectable axes to the driver unit.)
Connectable Unit	RCON-A Driver unit, RCON-D Driver unit, RCON-P Driver unit, RCON-P Driver unit, High-thrust type RCON-SC Power unit / Driver unit SCON Connection unit, PIO/SIO/SCON Connection unit, PIO unit, Simple Absolute unit, Terminal unit, EC Connection unit
Structure of Safety Circuit	Available to be reduplicated
Driver Source Cutoff System	Cutoff at internal semiconductor, External consolidated all axes cutoff
Emergency-stop Input	Contact B input (To be selected from external power supply, reduplication, internal power supply)
Enable Input	Contact B input (To be selected from external power supply, reduplication, internal power supply)
Speed Setting	From 1mm/s The upper limit depends on the specifications of actuator
Acceleration/Deceleration Setting	From 0.01G The upper limit depends on the specifications of actuator
Number of Axes Groups	2 (1 Group Max. 8 axes)
Programing Language	Super SEL language
Number of Programs	512 (Available for indication up to 99 with BCD in input signals and up to 255 in binary indication)
Number of Program Steps	20,000 steps
Number of Multitask Programs	16 programs
Number of Positions	36,000 positions (Variable depending on number of axes groups)
Number of Symbols Defined	2,000
Number of Symbols Used	20,000
Number of Symbol Characters	40 half-width font characters, 20 full-width font characters
Number of Step Comment Characters	32 half-width font characters, 16 full-width font characters
Data Memory Element	Flash ROM + Non-volatile RAM (FRAM) (No battery required)
Data input methods	Teaching pendant or PC software
Applicable Teaching pendant	TB-02, TB-03
Applicable PC software	XSEL PC software
Standard inputs/outputs	(I/O Slot Select) 16IN/16OUT PIO board (NPN/PNP)
Extension inputs/outputs	8 units max. of PIO Unit, EC Connection Unit available to be connected (In that, the EC Connection Unit should be four units at the maximum.)
Serial Communication Feature	Teaching port (Max. 115.2kbps), USB port (Mini-B: 12Mbps Full speed), Ethernet (RJ-45), PSA-24 Communication
Applicable Field Network	CC-Link, DeviceNet, EtherCAT, EtherNet/IP, PROFIBUS-DP, PROFINET IO, CC-Link IE Field
Ethernet	10/100BASE-T (RJ-45 Connector) XSEL serial communication protocol (Format B) *1, SEL message communication
USB	USB2.0 (Mini-B), XSEL serial communication protocol (Format B) *1
Preventive/Predictive Maintenance Feature	Electrolytic capacitor capacity dropdown and Fan revolution dropdown
Clock Function	Retaining time : approximately 10 days Time for battery charge : approximately 100 hours
SD Card	SD/SDHC (Used only in updating function)

*1: One port only should be available for communication in XSEL serial communication protocol (Format B).
No response to low priority with the teaching ports (priority: high) and USB, Ethernet (priority: low)

3. Environmental Specifications

Item	Specification
Environment	Environment of Use
	Pollution Degree 2
	Surrounding Air Temperature
	0 to 55°C
	Surrounding Humidity
Vibration	85% RH or less (non-condensing)
	Peripheral Ambience of Use
	Refer to [Installation Environment]
	Surrounding Storage Temperature
Protection	-20 to 70°C
	Vibration Durability
	Frequency 10 to 57Hz / Swing width: 0.075mm
Altitude	Frequency 57 to 150Hz / Acceleration: 9.8m/s ²
	XYZ Each direction Sweep time: 10 min. Number of sweep: 10 times
Protection Class	IP20
Cooling Method	Natural air-cooling, Compulsory cooling by fan unit
Dielectric Withstanding Voltage	Between power supply terminal and FG 500V DC 10MΩ or more

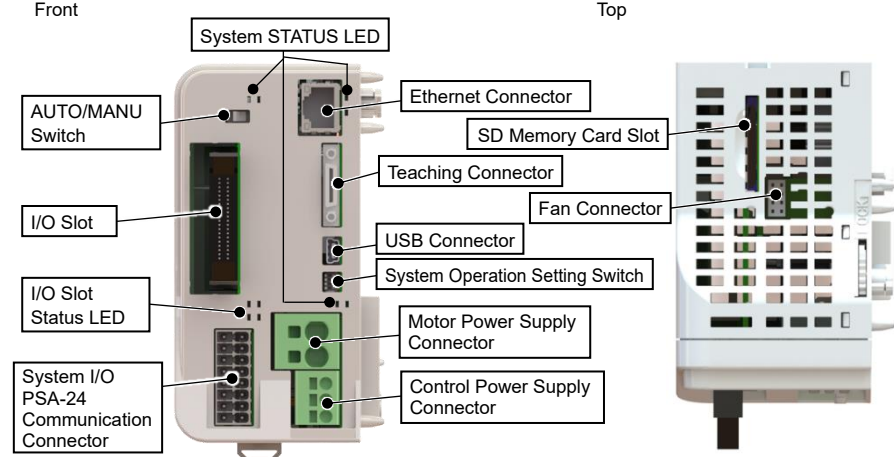
Current Amperage

For current amperage, refer to the first step guide for RCON 24V Driver Unit.

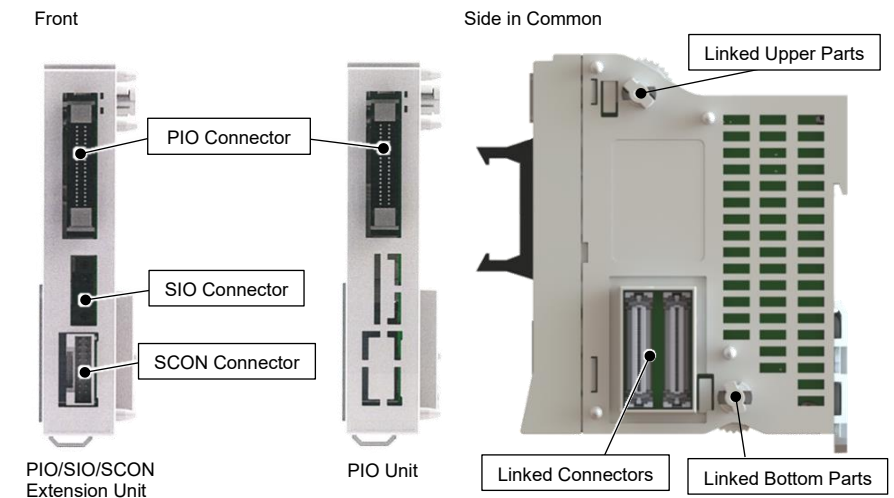
Item	Document Control
RCON 24V Driver Unit, Fan Unit, Simple Absolute Unit and Extension Unit First Step Guide	ME0383

Names for Each Part

[SEL Unit]



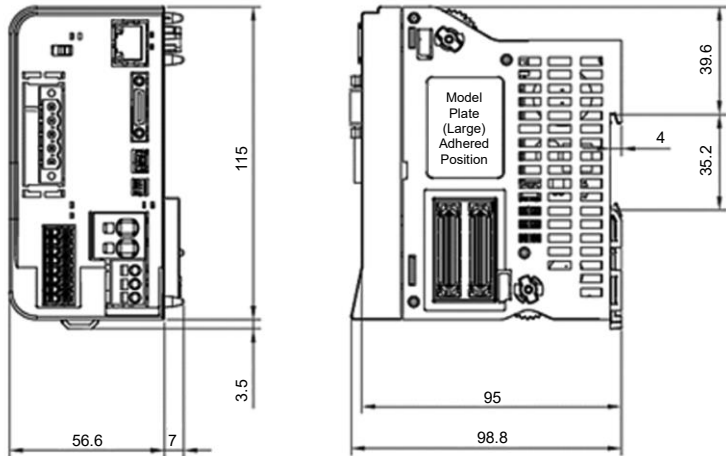
[PIO/SIO/SCON Extension Unit] [PIO Unit]



External Dimensions

1. SEL Unit

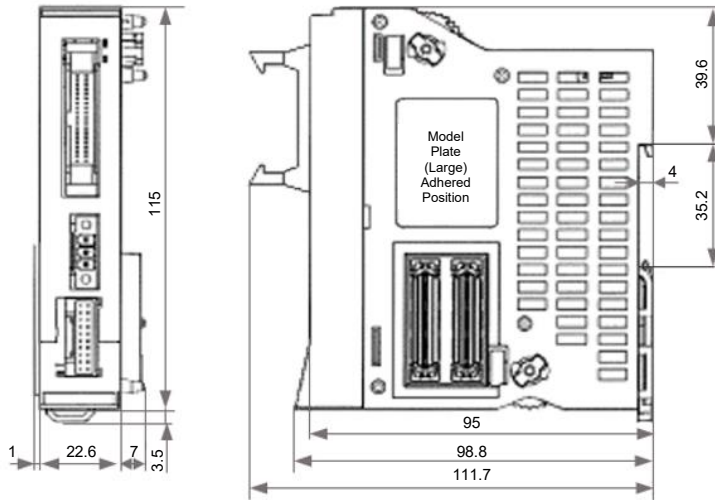
Item	Specification
External Dimensions	56.6W × 115H × 95D [mm]
Mass	Approx. 265g



2. PIO/SIO/SCON Extension Unit, PIO Unit

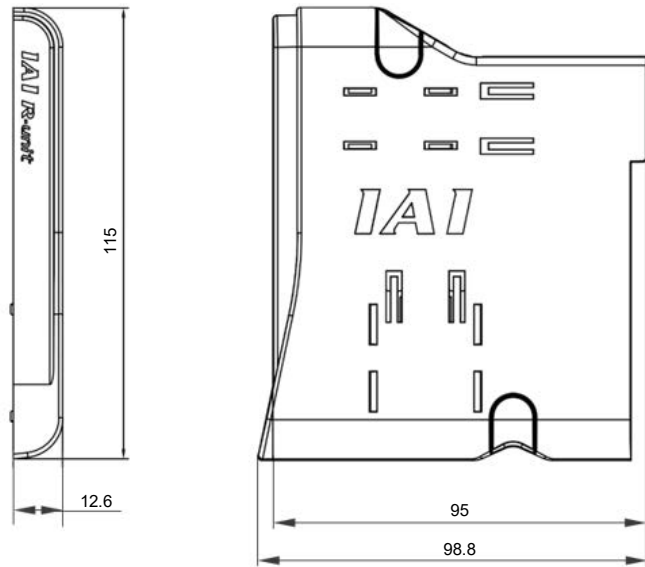
Item	Specification
External Dimensions	22.6W × 115H × 95D [mm]
Mass	PIO/SIO/SCON Extension Unit Approx. 110g PIO Unit Approx. 105g

* The outside dimensions for PIO/SIO/SCON Extension Units and PIO Unit are the same. (The figure below shows PIO/SIO/SCON Extension Unit.)



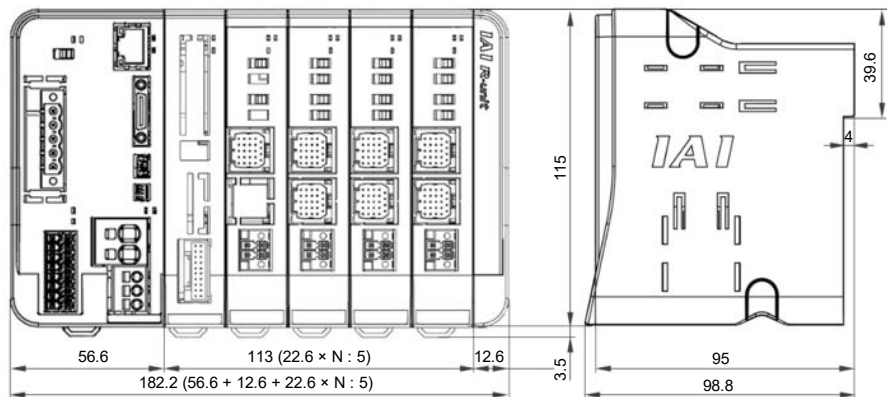
3. Terminal Unit

Item	Specification
External Dimensions	12.6W × 115H × 95D [mm]
Mass	Approx. 48g



4. Linking Units

Item	Specification
External Dimensions	182.2W × 115H × 95D [mm]
Mass	Approx. 1124g



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 ambient temperature is out of the range between 0 and 55°C (with fan) or 0 and 40°C (with no fan)
- 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]
- Place with an altitude of 1,000m or more

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

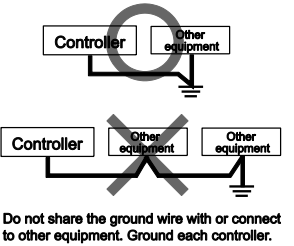
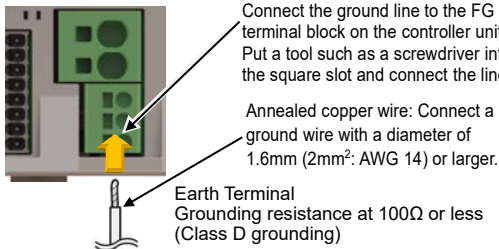
2. Storage and Preservation Environment

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 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

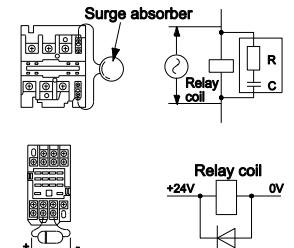
- 1) Wire is to be twisted for the 24V DC power supply.
- 2) Separate the signal and encoder lines from the power supply and power lines.

3. Noise Sources and Elimination

Carry out noise elimination measures for electrical 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] Consider whether to attach a diode in parallel to the coil or to use a diode built-in type.

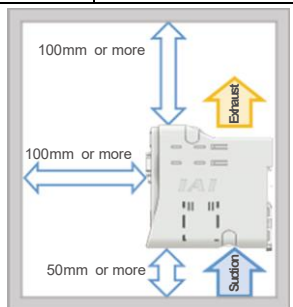
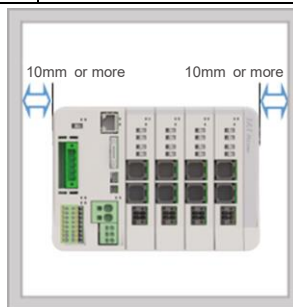


4. Cooling Factors and Installation

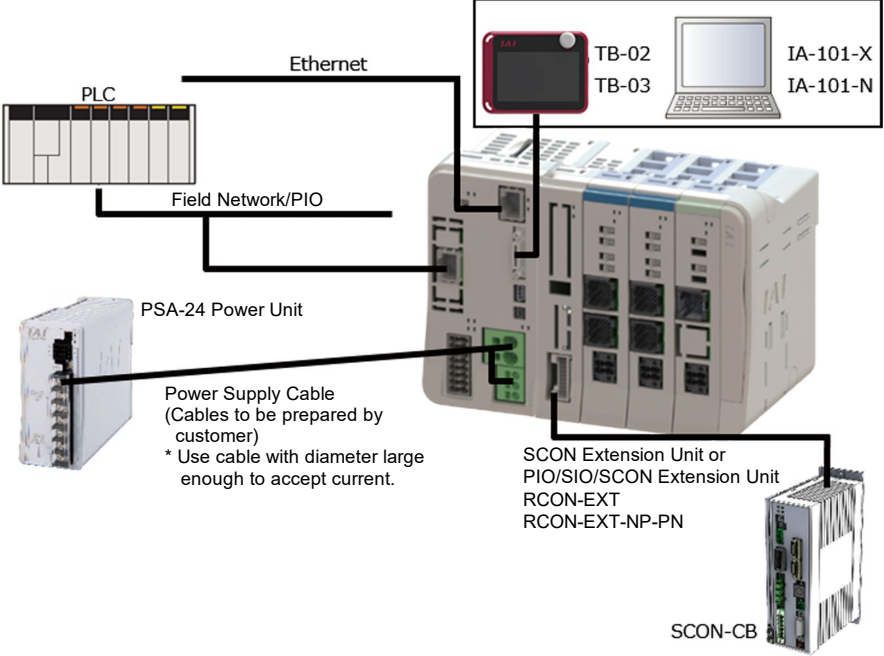
Caution for Installation

- Have the control panel size, location of the controller and cooling appropriate to keep the ambient temperature of the controller at 55°C or less for that equipped with the fan unit and at 40°C or less for that with no fan unit.
- Have the unit installed vertically on the wall with the exhaust outlet side upwards.
- Make sure to have a clearance of 100mm on the top and 50mm on the bottom at least for installation.
- Have a clearance of 100mm or more on the front of the controller to the wall (lid).
- Make sure that the exhaust outlet on the top of a controller does not align with the suction inlet of another controller when several controllers are allocated in vertical direction.
- Have the same clearances secured for the Simple Absolute Unit.

Item	Specification	Item	Specification
Installation Orientation	Vertical Orientation (Air outlet upwards)	Installation Condition	Refer to caution for installation, figure below
Installation Method	Attached on DIN Rails	Grounding	For functional grounding only

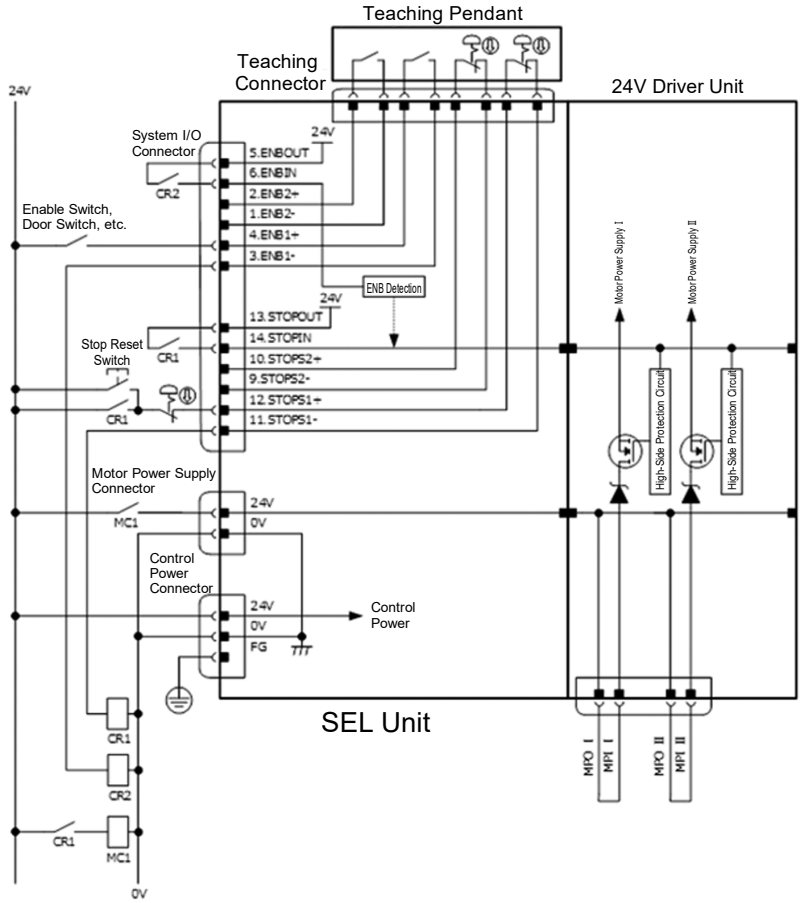


Connection to Peripheral Devices (Overall Wiring Diagram)



Drive Source Cutoff Circuit (Example)

For RSEL System, motor power is supplied from the SEL Unit, but the drive source cutoff circuit is mounted on the Driver Unit. Each driver unit possesses a drive source cutoff circuit by semiconductor. The motor power should be cut off by STOP Signal. The drive source cutoff circuit by semiconductor possesses features to detect the high-side overcurrent and to limit the in-rush current. In the diagram below shows a circuit related to RSEL System drive source cutoff.



(Note) When supplying power by turning ON/OFF 24 VDC, leave 0 V connected and supply/cut off +24 V.

Warning : Note that the teaching pendant cannot have a stop for the system side even though it can have a stop for all the actuators connected to RSEL System.

PIO Type

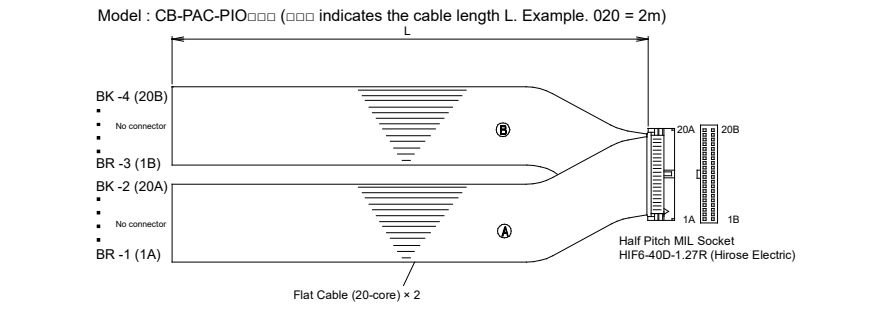
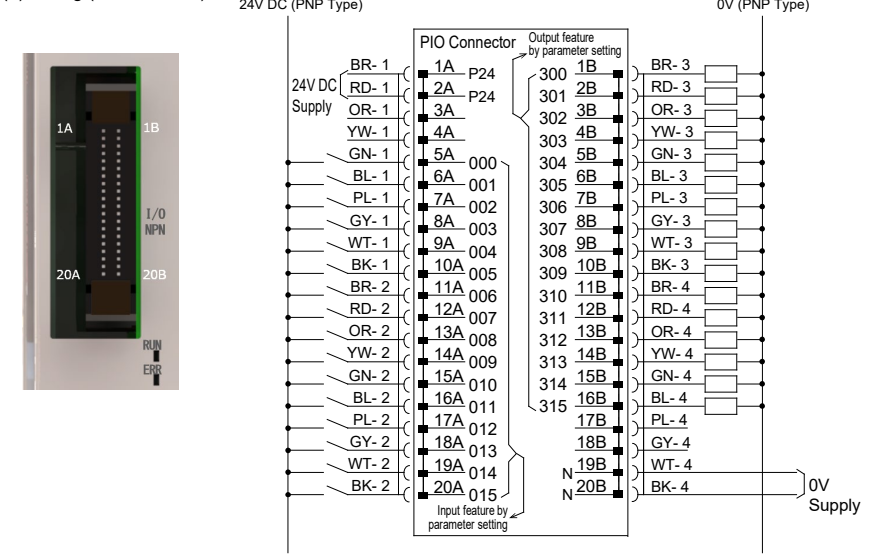
The specifications are in common for SEL Unit PIO Type, PIO/SIO/SCON Connection Unit and PIO Unit. Shown below is the relation between the pin numbers and port numbers. When the input start port number is set to 0 and the output start number is set to 300 in the automatic assignment or the fixed assignment, shown below are the table for port numbers.

(1) I/O Map

Pin No.	Classification	Signal Name	Port No.	Pin No.	Classification	Signal Name	Port No.
1A	24	P24	-	1B	Output	OUT0	300
2A	24	P24	-	2B		OUT1	301
3A	-	-	-	3B		OUT2	302
4A	-	-	-	4B		OUT3	303
5A	Input	IN0	0	5B		OUT4	304
6A		IN1	1	6B		OUT5	305
7A		IN2	2	7B		OUT6	306
8A		IN3	3	8B		OUT7	307
9A		IN4	4	9B		OUT8	308
10A		IN5	5	10B		OUT9	309
11A		IN6	6	11B		OUT10	310
12A		IN7	7	12B		OUT11	311
13A		IN8	8	13B		OUT12	312
14A		IN9	9	14B		OUT13	313
15A		IN10	10	15B		OUT14	314
16A		IN11	11	16B		OUT15	315
17A		IN12	12	17B	-	-	-
18A		IN13	13	18B	-	-	-
19A		IN14	14	19B	0	N	-
20A		IN15	15	20B	0	N	-

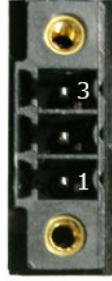
Note The dedicated features set in the standard I/O ports should be able to change in the settings of I/O parameter numbers from No. 30 to 61.

(2) Wiring (Standard I/O)



LED	Color	Display Status	Content of Display
RUN	GN	Illuminating	Initialization completed, Operation in normal conditions
ERR	OR	Illuminating	PIO Power Supply (24V DC) Voltage Drop Error

SIO Type (PIO/SIO/SCON Connection Unit)



Pin No.	Signal Name	Description
1	ISO_GND	Grounding for Extended Communication
2	ISO_SD-	Extended Communication Line -
3	ISO_SD+	Extended Communication Line +

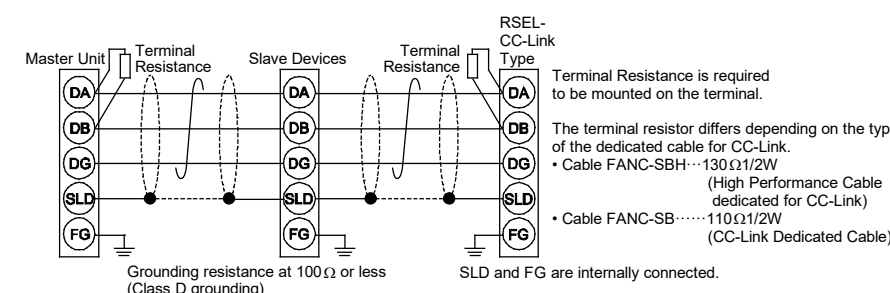
CC-Link Connection Type (SEL Unit)



Connector Name	CC-Link Connector	
Cable Side	MSTB2.5/5-STF-5.08 AU (Manufactured by PHOENIX CONTACT)	Enclosed in standard package
	TMSTBP2.5/5-STF-5.08 AU (Manufactured by PHOENIX CONTACT)	Enclosed Two-way Type
Controller Side	MSTB2.5/5-GF-5.08 AU (Manufactured by PHOENIX CONTACT)	

Pin No.	Signal Name	Description	Applicable cable diameter
1	DA (BL)	Communication Line A	Dedicated cable for CC-Link
2	DB (WT)	Communication Line B	
3	DG (YW)	Digital GND	
4	SLD	Connect the shield of the shielded cable	
5	FG	Frame Ground	

LED for Monitoring			
LED	Color	Status	Content of Display
RUN	GN	Illuminating	Refresh & polling properly received after entered to network or refresh properly received
ERR	OR	Illuminating	Error occurred (CRC error / station number setting error / baud rate setting error)
		Flashing	Value changed from station number or baud rate setting at reset released



Grounding resistance at 100Ω or less (Class D grounding)

SLD and FG are internally connected.

DeviceNet Connection Type (SEL Unit)

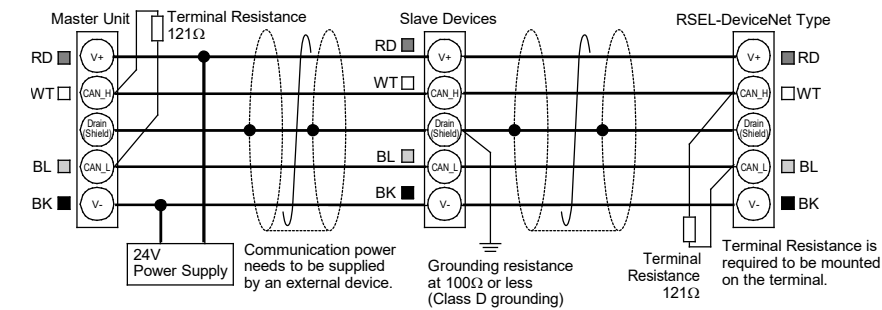
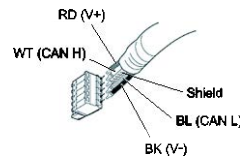


Connector Name	DeviceNet Connector	
Cable Side	MSTB2.5/5-STF-5.08 AU M (Manufactured by PHOENIX CONTACT)	Enclosed in standard package
Controller Side	TMSTBP2.5/5-STF-5.08 AU M (Manufactured by PHOENIX CONTACT)	Enclosed Two-way Type
Controller Side	MSTB2.5/5-GF-5.08 AU (Manufactured by PHOENIX CONTACT)	

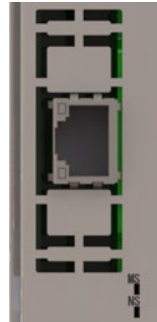
Pin No.	Signal Name (Color)	Description	Applicable cable diameter
1	V- (BK)	Power Supply Cable Negative Side	Dedicated cable for DeviceNet
2	CAN L (BL)	Communication Data Low Side	
3	Shield	Shield	
4	CAN H (WT)	Communication Data High Side	
5	V+ (RD)	Power Supply Cable Positive Side	

LED for Monitoring

LED	Color	Status	Content of Display
MS	GN	Illuminating	Operation in normal conditions
		Flashing	There is no configuration information, or not complete
	OR	Illuminating	Malfunction (with no opportunity for recovery)
		Flashing	Malfunction (with opportunity for recovery)
NS	GN/OR	Illuminated by turns	In Self-diagnosis
	GN	Illuminating	Online
		Flashing	Online (No connection established)
	OR	Illuminating	Error occurred
		Flashing	Timeout in connection with one or more
	GN/OR	Illuminated by turns	In Self-diagnosis



PROFINET IO Connection Type (SEL Unit)



Connector Name	PROFINET IO Connector	
Cable Side	Ethernet ANSI/TIA/EIA-568-B Category 5 and above 8P8C modular plug equipped with shield (RJ-45)	Please prepare separately
Controller Side	Ethernet ANSI/TIA/EIA-568-B Category 5 and above 8P8C modular Jack equipped with shield (RJ-45)	

Pin No.	Signal Name	Description	Applicable cable diameter
1	TD+	Data sending+	Use a straight STP cable in Category 5 or above for the Ethernet cable.
2	TD-	Data sending-	
3	RD+	Data receiving+	
4	-	Disconnected	
5	-	Disconnected	
6	RD-	Data receiving-	
7	-	Disconnected	
8	-	Disconnected	

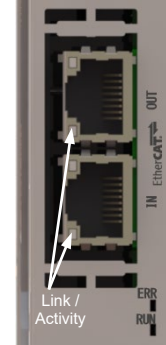
LED for Monitoring

LED	Color	Display Status	Content of Display
MS	GN	Illuminating	Operation in normal conditions
		Flashing 1	In process of diagnosis event
		Flashing 2	Engineering tools identifying nodes
		Flashing 3	Exception error (Necessary to replace board)
	OR	Flashing 1	Error in communication setting
		Flashing 2	IP address error (IP address not established)
		Flashing 3	Station name error (Station name not established)
		Flashing 4	Hardware error (Necessary to replace board)
NS	GN	OFF	Power turned OFF or initialization incomplete
		Illuminating	Connection established, Communication in normal conditions (RUN)
	-	Flashing	Connection established, Communication stopped (STOP)
		OFF	No connectable controller, power turned OFF

Flashing 1 (0.75s OFF → Illuminating for 0.25s repeatedly)
 Flashing 2 (0.75s OFF → Flashing frequently in 0.5s cycle for twice)
 Flashing 3 (0.75s OFF → Flashing frequently in 0.5s cycle for 3 times)
 Flashing 4 (0.75s OFF → Flashing frequently in 0.5s cycle for 4 times)



EtherCAT Connection Type (SEL Unit)



Connector Name	EtherCAT Connector	
Cable Side	Ethernet ANSI/TIA/EIA-568-B Category 5 and above 8P8C modular plug equipped with shield (RJ-45)	Please prepare separately
Controller Side	Ethernet ANSI/TIA/EIA-568-B Category 5 and above 8P8C modular Jack equipped with shield (RJ-45)	

Pin No.	Signal Name	Description	Applicable cable diameter
1	TD+	Data sending+	Use a straight STP cable in Category 5 or above for the Ethernet cable.
2	TD-	Data sending-	
3	RD+	Data receiving+	
4	-	Disconnected	
5	-	Disconnected	
6	RD-	Data receiving-	
7	-	Disconnected	
8	-	Disconnected	

LED for Monitoring

LED	Color	Display Status	Content of Display
ERR	OR	Illuminating	Error not able to recover
		Blinking	Network contraction error
		Double-flashing	Watchdog timeout
RUN	-	OFF	No error, no power supply
		Illuminating	EtherCAT communication in "OPERATION" status
		Blinking	EtherCAT communication in "PRE-OPERATION" status
	GN	Single-flashing	EtherCAT communication in "SAFE-OPERATION" status
		Illuminating	Malfunction (with no opportunity for recovery)
		OFF	EtherCAT communication in "INIT" status, no power supply
Link/Activity	GN	Illuminating	Under linking (communication traffic not detected)
		Flickering	Under linking (communication traffic detected)
		OFF	No link, no power supply

Blinking : ON: 200ms → OFF: 200ms
 Single-flashing : ON: 200ms → OFF: 1000ms
 Double-flashing : ON: 200ms × twice → OFF: 1000ms
 Flickering : ON: 50ms → OFF: 50ms



PROFIBUS-DP Connection Type (SEL Unit)

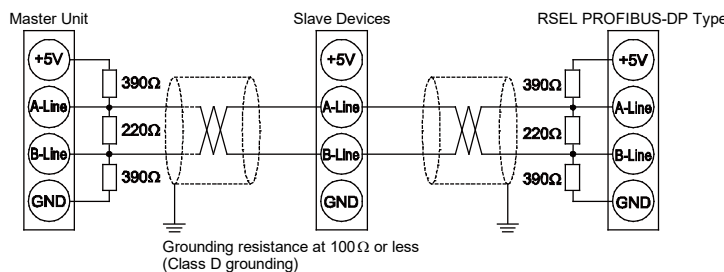
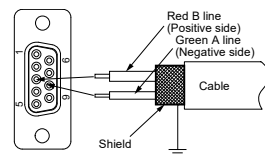


Connector Name	PROFIBUS-DP Connector	
Cable Side	D-sub 9-pin (Male)	Please prepare separately
Controller Side	D-sub 9-pin (Female)	

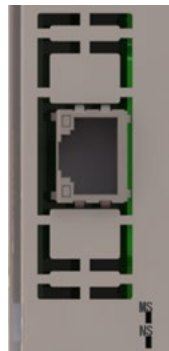
Pin No.	Signal Name	Description	Applicable cable diameter
1	NC	Disconnected	
2	NC	Disconnected	
3	B-Line	Communication Line B (RS-485)	
4	RTS	Request for Sending	
5	GND	Signal GND (Insulation)	
6	+5V	+5V Output (Insulation)	
7	NC	Disconnected	
8	A-Line	Communication Line A (RS-485)	
9	NC	Disconnected	
Housing	Shield	Cable Shield (connected to FG inside controller)	

LED for Monitoring

LED	Color	Display Status	Content of Display
MS	GN	Illuminating	Initialization completed
		Flashing	Initialization completed (there is a network diagnosis event)
	OR	Illuminating	Error occurred (Exception error)
		Flashing	Online (Communication in normal conditions)
NS	GN	Illuminating	Online (Cleared)
		Flashing	Error occurred (Parameterization error, PROFIBUS configuration error)



EtherNet/IP Connection Type (SEL Unit)



Connector Name	EtherNet/IP Connector	
Cable Side	Ethernet ANSI/TIA/EIA-568-B Category 5 and above 8P8C modular plug equipped with shield (RJ-45)	Please prepare separately
Controller Side	Ethernet ANSI/TIA/EIA-568-B Category 5 and above 8P8C modular Jack equipped with shield (RJ-45)	

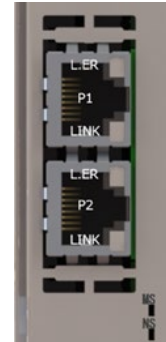
Pin No.	Signal Name	Description	Applicable cable diameter
1	TD+	Data sending+	Use a straight STP cable in Category 5 or above for the Ethernet cable.
2	TD-	Data sending-	
3	RD+	Data receiving+	
4	-	Disconnected	
5	-	Disconnected	
6	RD-	Data receiving-	
7	-	Disconnected	
8	-	Disconnected	

LED for Monitoring

LED	Color	Status	Content of Display
MS	GN	Illuminating	Operating condition with control under scanner (master)
		Flashing	Construction data setting incomplete or scanner (master) in idling condition
	OR	Illuminating	Critical malfunction (exclusive condition or critical error)
		Flashing	Light malfunction recoverable
	GN/OR	OFF	Power turned OFF
NS	GN	Illuminating	Online (connection established with one or more)
		Flashing	Online (connection unestablished)
	OR	Illuminating	IP address duplicated, Critical error
		Flashing	Timeout in connection with one or more
	GN/OR	OFF	Power turned OFF, IP address not established



CC-Link IE Field Connection Type (SEL Unit)



Connector Name	CC-Link IE Field Connector	
Cable Side	Ethernet ANSI/TIA/EIA-568-B Category 5e and above 8P8C modular plug equipped with shield (RJ-45)	Please prepare separately
Controller Side	Ethernet ANSI/TIA/EIA-568-B Category 5e and above 8P8C modular Jack equipped with shield (RJ-45)	

Pin No.	Signal Name	Description	Applicable cable diameter
1	TP0+	Data 0+	
2	TP0-	Data 0-	
3	TP1+	Data 1+	
4	TP2+	Data 2+	
5	TP2-	Data 2-	
6	TP1-	Data 1-	
7	TP3+	Data 3+	
8	TP3-	Data 3-	

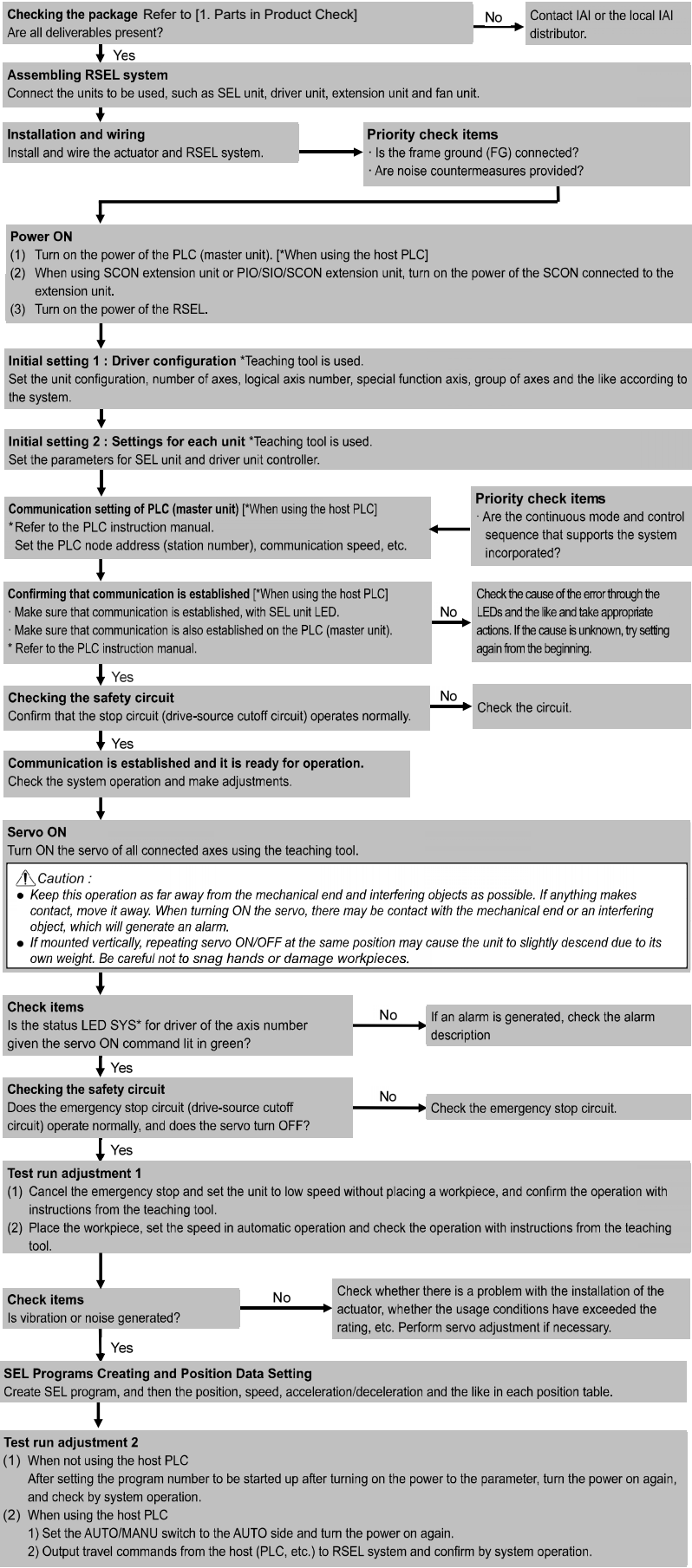
LED for Monitoring

LED	Color	Display Status	Content of Display
MS	GN	Illuminating	Operation in normal conditions
		OFF	Hardware error occurred, Power not supplied
	OR	Illuminating	Error being occurred (Node error / station number setting error)
		OFF	Operation in normal conditions, Power not supplied
NS	GN	Illuminating	Cyclic transmission in process
		Flashing	Cyclic transmission paused
		OFF	Cyclic transmission not conducted, Parallel off, Power not supplied
	OR	Illuminating	Received data in error (Illuminated simultaneously with L.ER)
		OFF	Received data in normal conditions, Power not supplied
LINK	GN	Illuminating	Linkup in process
L.ER	OR	OFF	Link-down in process, Power not supplied
		Illuminating	Received data in error
		OFF	Received data in normal conditions, Power not supplied



Starting Procedures

When using this product for the first time, refer to the following procedure and pay attention so as to avoid checking or wiring errors.
This section describes the startup procedure of the RSEL system. For installation and wiring of miscellaneous devices connected to the network, controllers and actuators, follow the respective instruction manuals.



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