

RCON-GW(G)/LC(G), RCON-GW-TR

Gateway Unit, Terminal Unit

First Step Guide Fifth 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 download 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_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.

- 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.

RCON System is constructed not only with the Gateway Unit (RCON-GW/GWG/LC/LCG) and Terminal Unit (RCON- GW-TR) that are explained in this manual, but also with Driver Unit (RCON-PC/PCF/AC/DC/SC), Power Supply Unit (RCON-PS2-3), Simple Absolute Unit (RCON-ABU), Fan Unit (RCON-FU), EC Connection Unit (RCON-EC-4), Extension Unit (RCON-EXT) and SCON Controller (SCON-CB-*RC) to connect to the extension unit. For RCON-LC/LCG, PIO unit (RCON-NP/PN) and PIO/SIO/SCON extension unit (RCON-EXT-NP/PN) can be connected. Please refer to First Step Guide and Instruction Manual of each device for additional instruction related to that device.
 Gateway Unit is a communication unit to be connected to the field network and must be located on the left end of the RCON System.
 The terminal unit is a terminal resistor that should be allocated at the right end of 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

No.	Part Name	Model	Number	Remarks
1	RCON Gateway 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	DFMC1.5/5-ST-3.5 (Manufactured by PHOENIX CONTACT)	1	Recommended Cable Size 0.2 to 1.25mm ² (AWG24 to 16)
5	Dummy Plug	DP-5	1	For the safety category compliant type
6	CC-Link Connector (Enclosed for CC-Link Type)	MSTB2.5/5-STF-5.08 AU (Manufactured by PHOENIX CONTACT)	1	Terminal Resistance (130Ω/110Ω) enclosed one unit each Recommended Cable Size 0.3mm ² (AWG22)
7	DeviceNet Connector (Enclosed for DeviceNet Type)	MSTB2.5/5-STF-5.08 AU M (Manufactured by PHOENIX CONTACT)	1	Recommended Cable Size 0.3mm ² (AWG22)
8	First Step Guide	ME0382	1	This Manual
9	Safety Guide	M0194	1	

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



2. Teaching Tool (Please purchase separately)

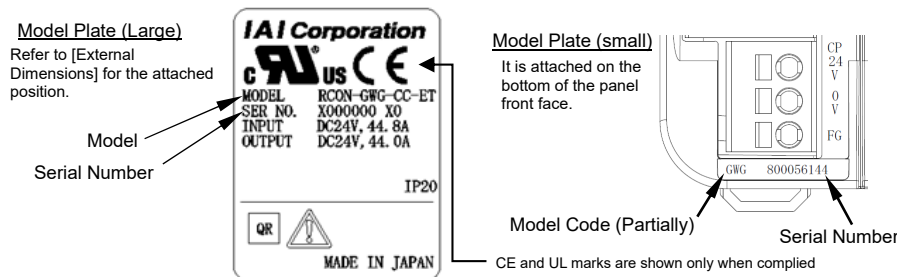
A teaching tool such as PC software is necessary when performing the setup for position setting, parameter setting, etc. that can only be done on the teaching tool. Please prepare either of the following teaching tools.

No.	Part Name	Model
1	PC Software (Includes USB Exchange Adapter + USB Cable + Peripheral Communication Cable)	RCM-101-USB
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	RCON System Instruction Manual	ME0384
2	RCON-LC System Instruction Manual	ME0416
3	SCON-CB/CGB/LC/LCG Controller Instruction Manual	ME0340
4	PC Software RCM-101-MW/RCM-101-USB Instruction Manual	ME0155
5	Touch Panel Teaching Pendant TB-02 Applicable for Position Controller Instruction Manual	ME0355
6	Touch Panel Teaching Pendant TB-03 Wired Link Applicable for Position Controller Instruction Manual	ME0376

4. How to read the model plate



Mark	Explanation of Mark
	Use IAI specified cables only.

5. How to read the model code

RCON - GWG - PRT - FU4 - **	
< Series >	
<Type>	
GW : Standard Type	
GWG : Safety Category Compliant Type	
LC : PLC Feature Equipped Type	
LCG : Safety Categories Complying PLC Feature Equipped Type	
<I/OType>	
CC : CC-Link Connection Type	CIE : CC-Link IE Field Connection Type
CIT : CC-Link IE TSN Connection Type	DV : DeviceNet Connection Type
EC : EtherCAT Connection Type	EP : EtherNet/IP Connection Type
PR : PROFIBUS-DP Type	PRT : PROFINET IO Connection Type
E : With No Field Network (Note 3)	
<Option>	
ET : Equipped with Ethernet (Note 1)	
EP : Equipped with Ethernet/IP (Note 2)	
FU* : Equipped with Fan Unit	
(* : Indicate number of units to mount from 1 to 8 after FU)	
TRN : With No Terminal Unit	
Note1 GW/GWG Type Only	
Note2 Select "E" for the I/O type.	
Note3 LC/LCG or front port EtherNet/IP type only	

* For details of CC-Link IE TSN Connection Type, refer to RCON System Instruction Manual (ME0384).

Basic Specifications

1. Specifications of Power Supply

Item	Specification
Power Input Voltage Range	24V DC ±10%
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

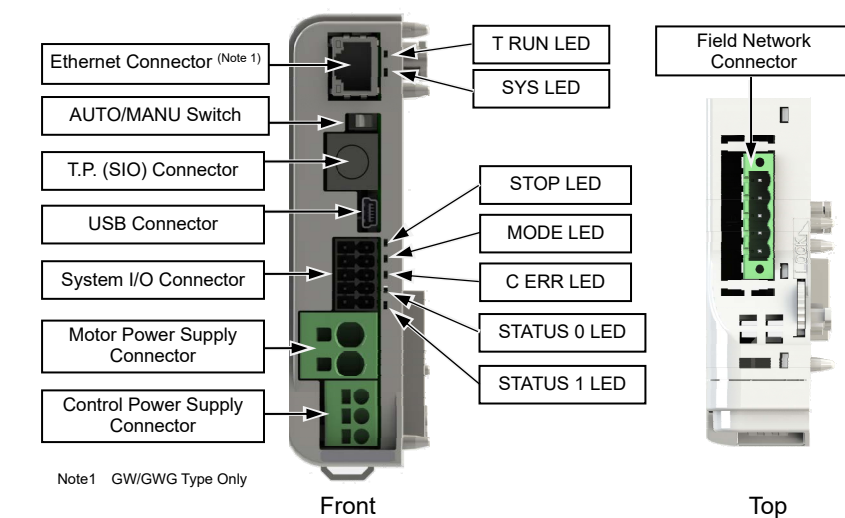
2. Specifications of Control Part

Item	Specification
Number of Controlled Axes	1 to 16 axes
Data Memory System	Position data and parameters are saved in the nonvolatile memory. (There is no limitation in number of writing)
SIO Interface (T. P. Connector)	Communication System: RS-485, Baud Rate: 9.6/19.2/38.4/57.6/115.2/230.4kbps
SIO Interface (USB Connector)	Communication System: USB, Baud Rate: 12Mbps
PIO Interface	GW/GWG: None LC/LCG: 8 units max. (128 points for each input and output) of PIO Unit available to be connected
Conformed Extension I/O Interface (Field Network Interface)	CC-Link, CC-Link IE Field, CC-Link IE TSN, DeviceNet, EtherCAT, EtherNet/IP, PROFIBUS-DP, PROFINET IO
Pulse Train Type	Unavailable to Control
Brake Output Voltage	24V DC ±10%
Calendar Feature	Maintained Duration: Approx. 10 days, Charge Time: Approx. 100 hours
Applied Safety Category	B (Safety category applicable type is capable to achieve 4 with external circuit)
Driver Source Cutoff System	Drive source cutoff with semiconductor (Power MOSFET)
Stop Input	Break Contact Input
Stop Action	Turning servo OFF + Drive source cutoff
Enable Input	None
T. P. Enable Input	Available
Enable Action	Turning servo OFF
Protective functions	Overcurrent, temperature error, encoder line breakage and overload
Preventive / Predictive Maintenance Feature	Electrolytic capacitor capacity dropdown and Fan revolution dropdown
LED Display	Refer to section in [Troubleshooting (LED Display)]
Brake Compulsory Release Feature	Brake release switch equipped on driver unit
Jog	Jog switch equipped on driver unit
Oversea Certifications	GW/GWG: CE Marking, UL Standard LC/LCG: Compliance not planned

3. Environmental Specifications

Item		Specification
Environment	Environment of Use	Pollution Degree 2
	Surrounding Air Temperature	0 to 55°C
	Surrounding Humidity	5% RH to 85% RH (Should be no-condensing or freezing)
	Peripheral Ambience of Use	Refer to [Installation Environment]
	Surrounding Storage Temperature	-20 to 70°C
	Vibration Durability	Frequency 10 to 57Hz/Swing width: 0.075mm Frequency 57 to 150Hz/Acceleration: 9.8m/s² XYZ Each direction Sweep time: 10min. Number of sweep: 10times
	Protection Class	IP20
	Altitude	1000m
	Cooling Method	Natural air-cooling
Dielectric Withstanding Voltage	Between power supply terminal and FG 500V DC 10MΩ or more	

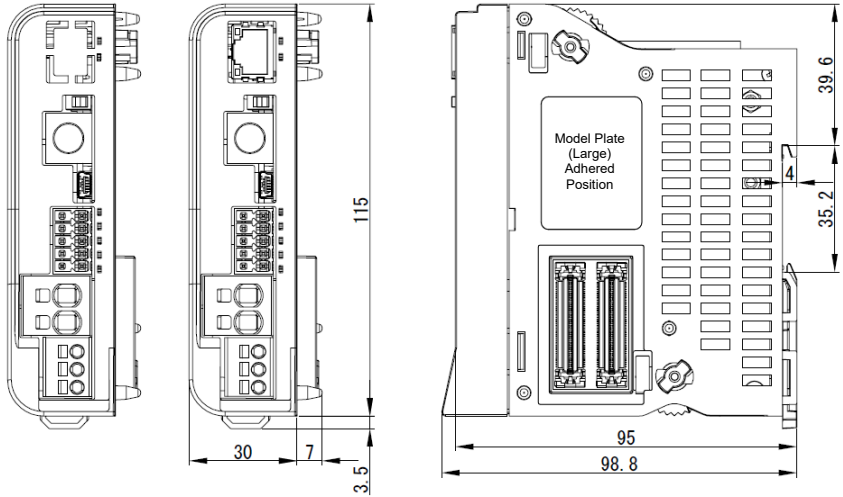
Names for Each Part



External Dimensions

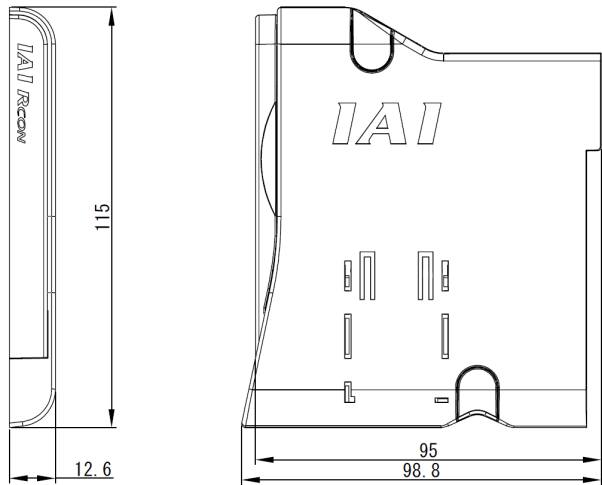
1. Gateway Unit

Item	Specification
External Dimensions	30W × 115H × 95D [mm]
Mass	Approx. 157g



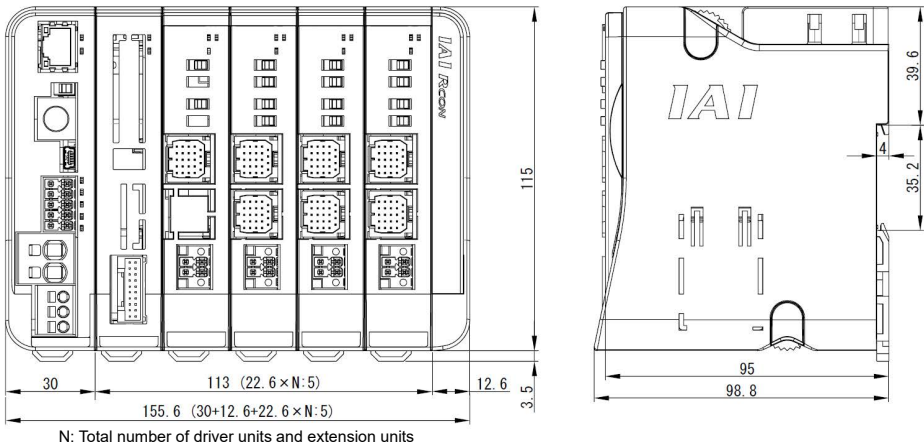
2. Terminal Unit

Item	Specification
External Dimensions	12.6W × 115H × 95D [mm]
Mass	Approx. 49g



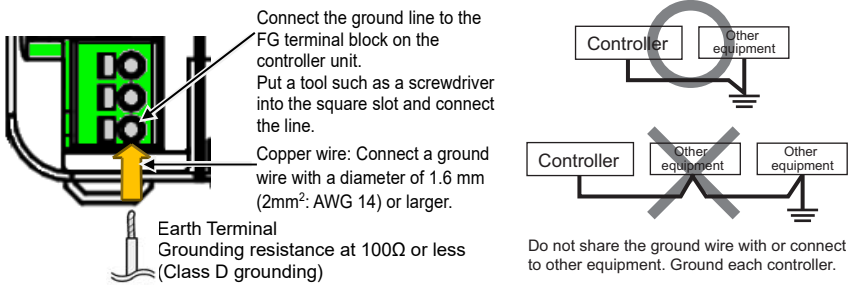
3. Linking Units

Item	Specification
External Dimensions	(42.6 + 22.6 × N) W × 115H × 95D [mm] N: Total number of driver units and extension units
Mass	Approx. (206 + 180 × N1 + 99 × N2) g N1: Number of driver units, N2: Number of extensions units



Installation and Noise Elimination

1. Noise Elimination Grounding (Frame Ground)



2. Precautions regarding wiring method

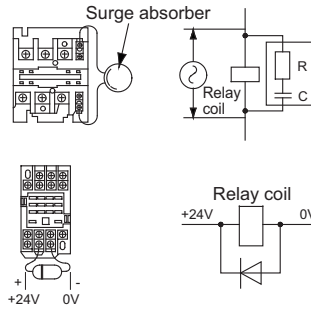
- 1) Wire is to be twisted for the 24V DC power supply.
- 2) Separate the signal and encoder lines from the power supply and power lines.

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.

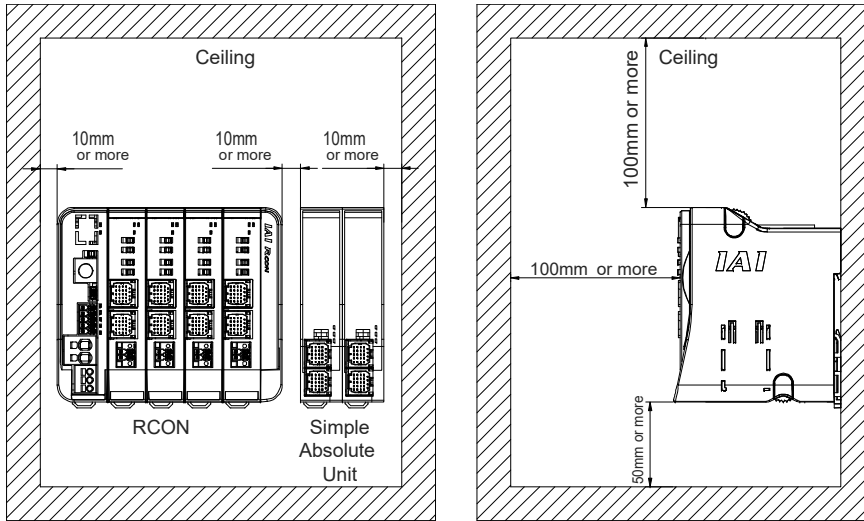
- 1) AC solenoid valves, magnet switches and relays
[Measure] Install a Surge absorber parallel with the coil.
- 2) DC solenoid valves, magnet switches and relays
[Measure] Consider whether to attach a diode in parallel to the coil or to use a diode built-in type.



4. Cooling Factors and Installation

Follow the specifications and dimensions shown below when you design and build a control board.

Item	Specification	Item	Specification
Installation Orientation	Vertical Orientation (Air outlet upwards)	Surrounding Air Temperature	0 to 55°C (Refer to section of [Current Amperage] in ME0383) Derating equipped when with no fan unit
Installation Method	Attached on DIN Rails	Grounding	Class D grounding
Installation Condition	See figure below		



* Simple absolute units can be installed in close contact with each other.

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 is out of range between 5%RH and 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.

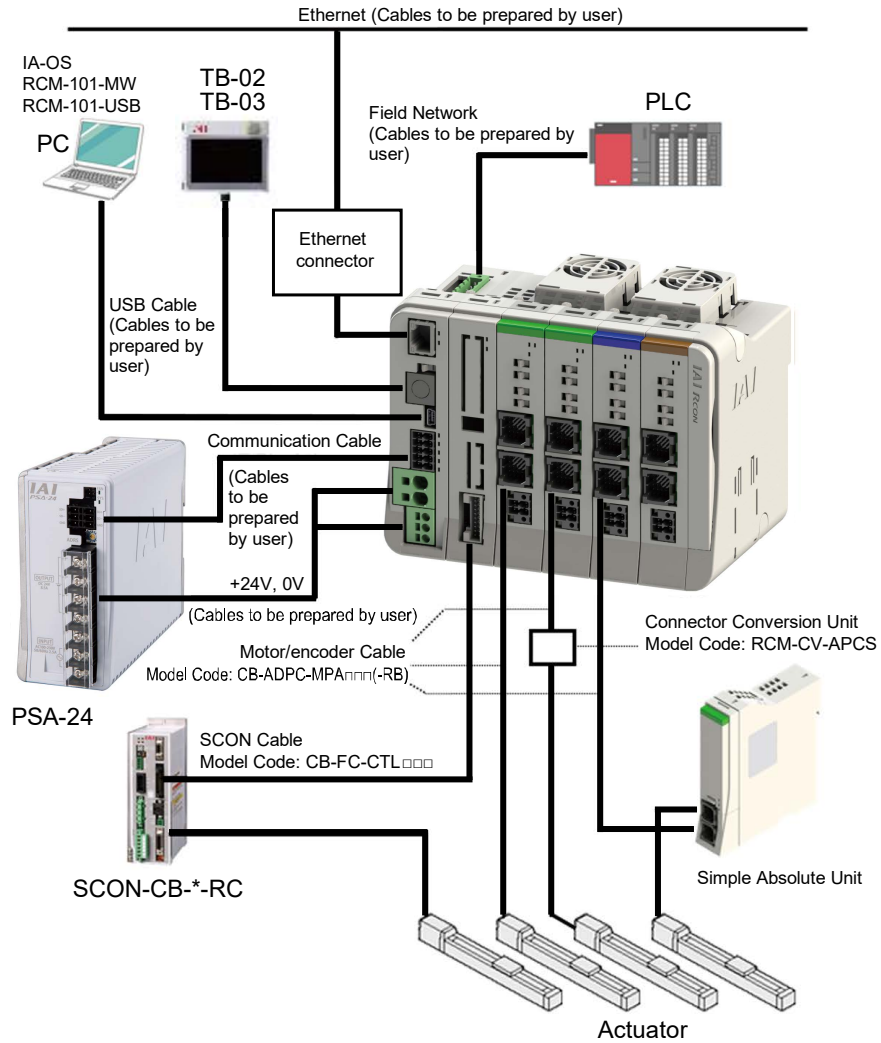
- Location subject to electrostatic noise
- Location where high electrical or magnetic field is present
- Location with the mains or power lines passing nearby

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.

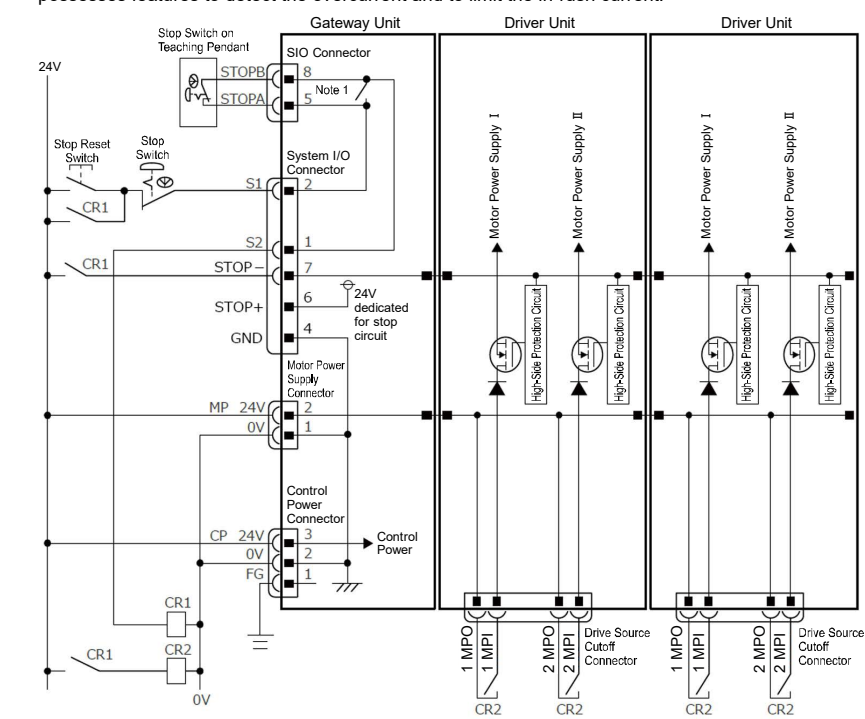
Connection to Peripheral Devices (Overall Wiring Diagram)



Power Supply and Stop Circuit (Example)

The diagram below shows a circuit related to RCON drive source cutoff. For RCON, motor power is supplied from the gateway unit, but the circuit related to the drive-source cutoff is on the driver unit side.

- Each driver unit possesses an interface (Drive source cutoff connector: MPI/MPO) available for external drive source cutoff prepared for each axis.
- Each driver unit possesses a drive source cutoff circuit by semiconductor prepared for each axis. The motor power should be cut off by STOP Signal. The drive source cutoff circuit by semiconductor possesses features to detect the overcurrent and to limit the in-rush current.



Note 1 **RCON-GW/LC** : If nothing is connected to the SIO connector, S1 and S2 will be short-circuited in the controller.
RCON-GWG/LCG: If nothing is connected to the SIO connector, S1 and S2 will not be short-circuited in the controller.
 To short-circuit, connect the supplied dummy plug DP-5 to the SIO connector.

Note

- When externally shutting off the motor drive source to comply with the safety category or the like, connect a contact such as a relay to the wiring between the MPI* and MPO* terminals.
- The rating of the STOP-signal to be turned ON/OFF with the contact CR1 is 24 VDC / 10 mA or less.
- The CR1 coil current must be 0.1 A or less.
- 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 RCON unit.

Current Amperage

For current amperage, refer to the [first step guide for RCON driver unit].

Item	Document Control
RCON 24V Driver Unit, Fan Unit, Simple Absolute Unit and Extension Unit First Step Guide	ME0383
RCON 200V Power Supply Unit, Driver Unit, Fan Unit, Terminal Unit First Step Guide	ME0397

Field Network Wirings and Settings

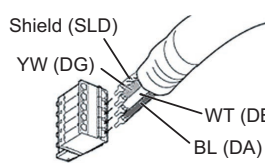
The field network connector is allocated on the top of the gateway unit. Refer to [Names for Each Part].

1. CC-Link (RCON-GW/GWG/LC/LCG-CC)

Refer to the instruction manuals for the master unit and PLC to connect for the details.

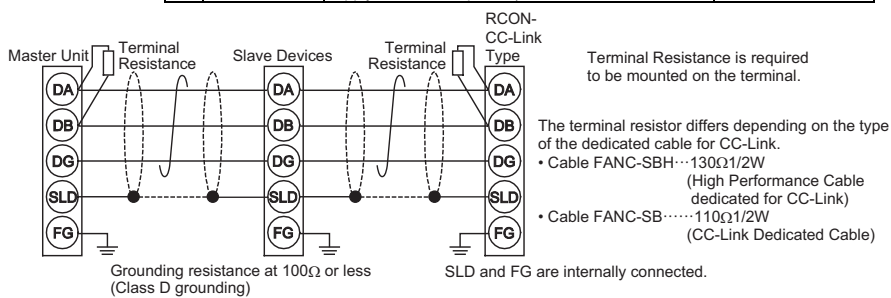


Top View of
Connector on
Controller side



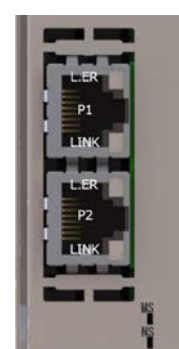
Connector Name	CC-Link Connector	Remarks
Cable Side	MSTB2.5/5-STF-5.08 AU (Manufactured by PHOENIX CONTACT)	Enclosed in standard package
Controller Side	MSTB2.5/5-GF-5.08 AU (Manufactured by PHOENIX CONTACT)	

Pin No.	Signal Name (Color)	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 Ground	
4	SLD	Connect the shield of the shielded cable (Connected inside to 5-pin FG and control power supply connector 1-pin FG)	
5	FG	Frame Ground (Connected inside to 4-pin SLD and control power supply connector 1-pin FG)	



2. CC-Link IE Field (RCON-GW/GWG/LC/LCG-CIE)

Refer to the instruction manuals for the master unit and PLC to connect for the details.

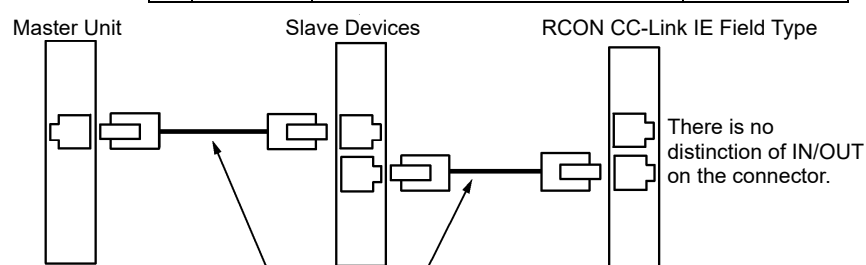


Top View of
Connector on
Controller side



Connector Name	CC-Link IE Field Connector	Remarks
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+	It is recommended to prepare a straight STP cable in Category 5e or above for the Ethernet cable.
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-	



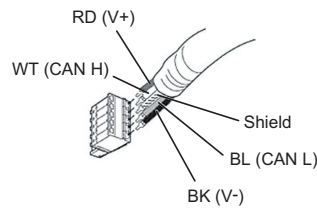
Ethernet Straight Cable Category 5e or more
Double shielded cable braided with aluminum foil recommended
(Note) Terminal resistance is not required

3. DeviceNet (RCON-GW/GWG/LC/LCG-DV)

Refer to the instruction manuals for the master unit and PLC to connect for the details.

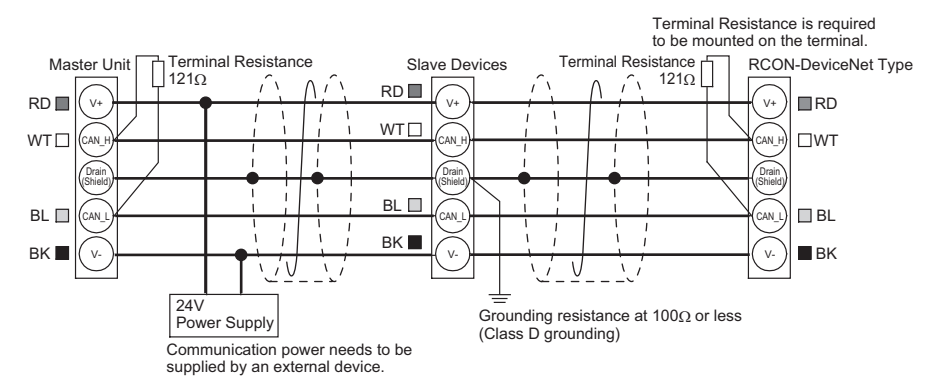


Top View of
Connector on
Controller side



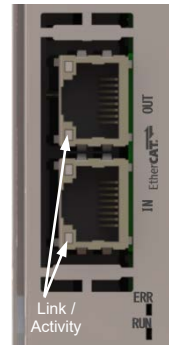
Connector Name	DeviceNet Connector	Remarks
Cable Side	MSTB2.5/5-STF-5.08 AU M (Manufactured by PHOENIX CONTACT)	Enclosed in standard package
Controller Side	MSTB2.5/5-GF-5.08 AU (Manufactured by PHOENIX CONTACT)	

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	-	Digital Ground	
4	CAN H (WT)	Communication Data High Side	
5	V+ (RD)	Power Supply Cable Positive Side	



4. EtherCAT (RCON-GW/GWG/LC/LCG-EC)

Refer to the instruction manuals for the master unit and PLC to connect for the details.

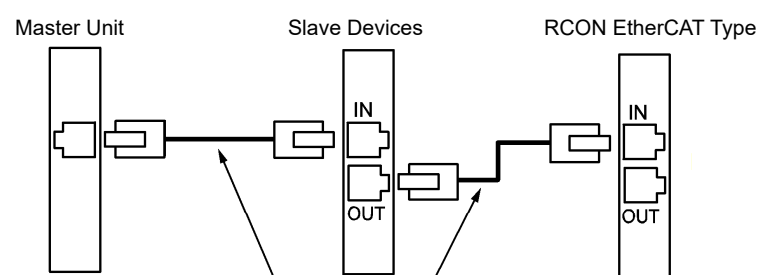


Top View of
Connector on
Controller side



Connector Name	EtherCAT Connector	Remarks
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)	

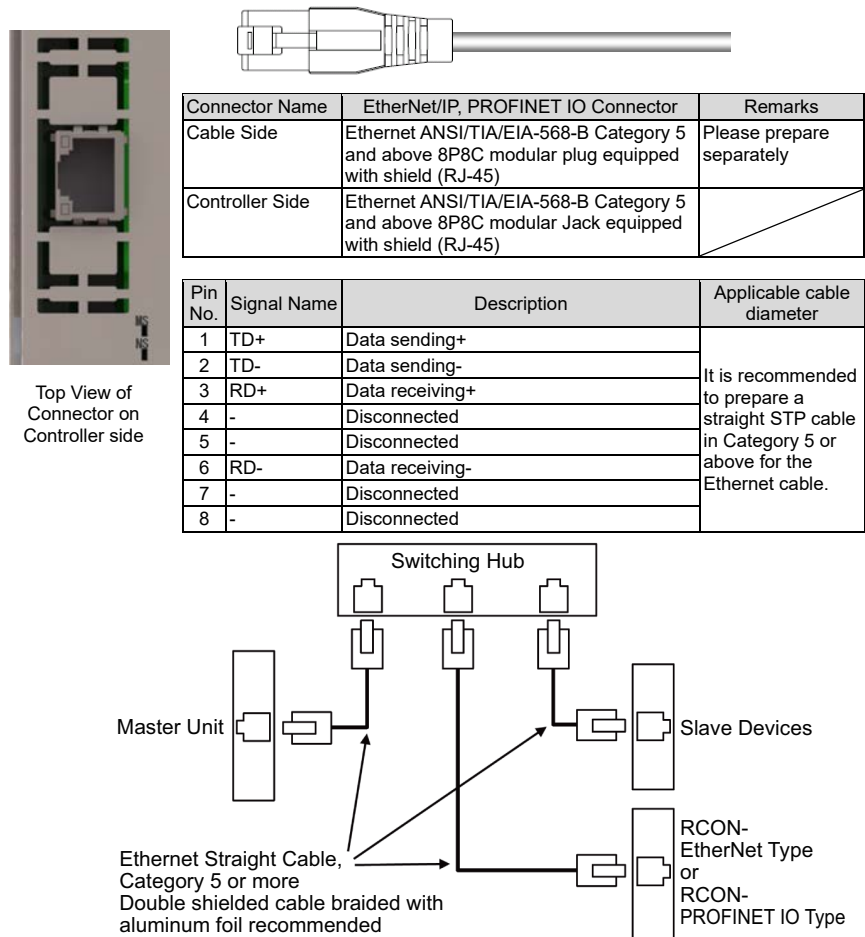
Pin No.	Signal Name	Description	Applicable cable diameter
1	TD+	Data sending+	It is recommended to prepare a straight STP cable in Category 5 or above for the Ethernet cable.
2	TD-	Data sending-	
3	RD+	Data receiving+	
4	-	Disconnected	
5	-	Disconnected	
6	RD-	Data receiving-	
7	-	Disconnected	
8	-	Disconnected	



Ethernet Straight Cable Category 5 or more
Double shielded cable braided with aluminum foil recommended
(Note) Terminal resistance is not required

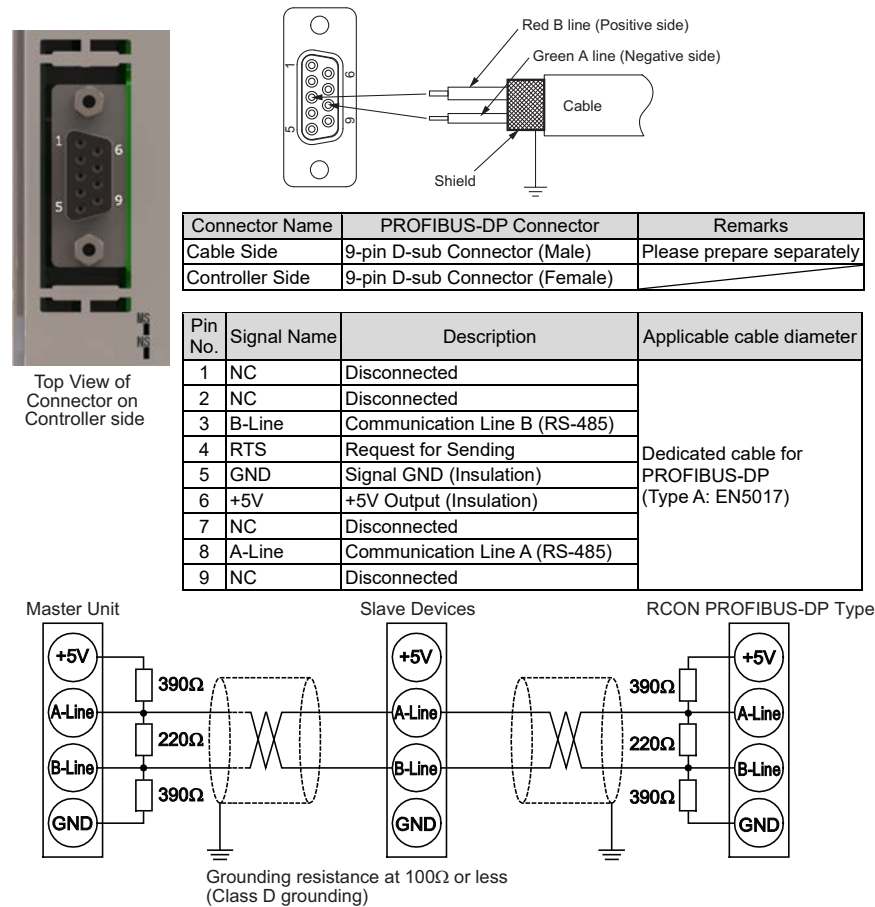
5. EtherNet/IP (RCON-GW/GWG/LC/LCG-EP)
7. PROFINET IO (RCON-GW/GWG/LC/LCG-PRT)

Refer to the instruction manuals for the master unit and PLC to connect for the details.



6. PROFIBUS-DP (RCON-GW/GWG/LC/LCG-PR)

Refer to the instruction manuals for the master unit and PLC to connect for the details.



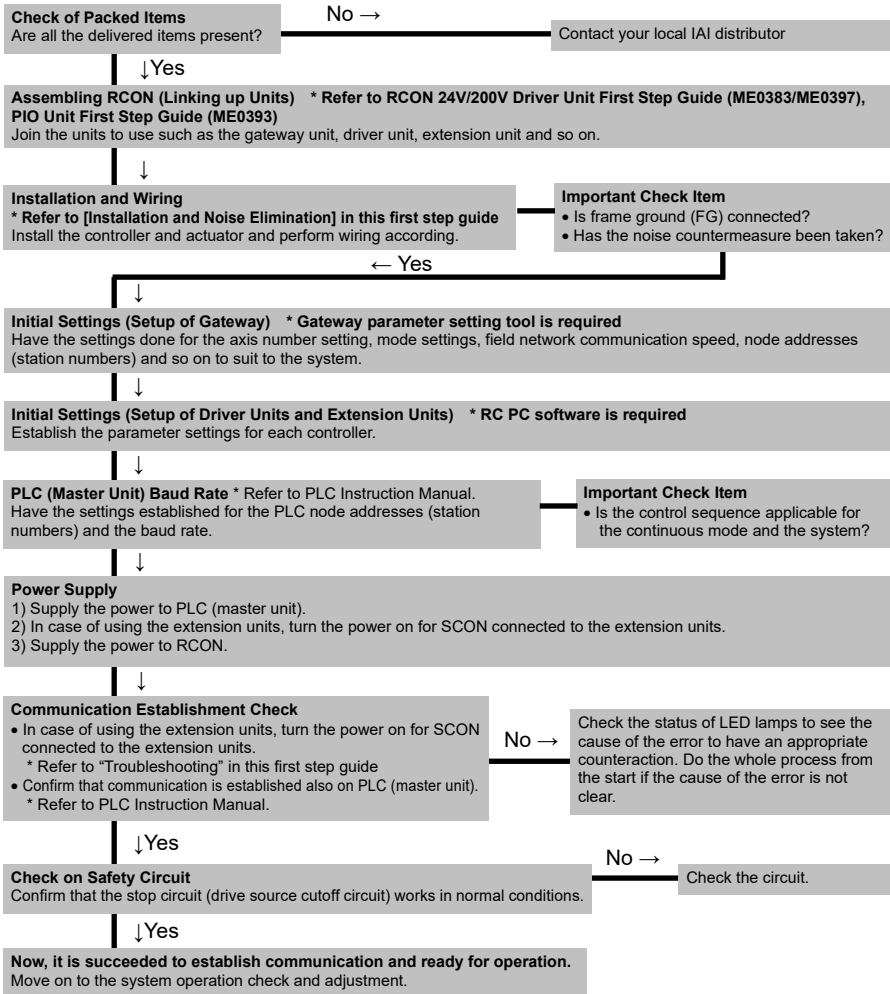
Operation Mode Selected

In this controller, it is available to select six types of operation modes individually for each axis as the field network type. The settings are to be established with Gateway Parameter Setting Tool for GW/GWG and DFC Command for LC/LCG.

Operation Mode	Contents
Direct Indication Mode	The target position, speed, acceleration/deceleration and pressing current limit can be indicated with inputting a number. Monitoring of not only the current position, but also the current speed and indicated current are available.
Simple Direct Mode	The target position can be indicated directly by inputting a value. Also, monitoring of the current position is available in 0.01mm unit. Those other than the target position are to be indicated in the position table, and the setting can be done for 128 points at maximum.
Positioner 1 Mode	The 128 points of position data can be registered at the maximum and is able to stop at the registered positions. Also, monitoring of the current position is available in 0.01mm unit.
Positioner 2 Mode	This is the operation mode of the position data of 128 points at maximum set in the position table. The monitoring of the current position is not available. This mode is that the transferred data is reduced from Positioner 1 Mode.
Positioner 3 Mode	This is the operation mode of the position data of 128 points at maximum set in the position table. The monitoring of the current position is not available. This is the mode to control with the minimized number of signals to perform the positioning operation by reducing the amount of sent and received data from Positioner 2 Mode.
Positioner 5 Mode	This is the operation mode of the position data of 16 points at maximum set in the position table. It is a mode that enabled to monitor the current position in 0.1mm unit by reducing the number of position table from Positioner 2 Mode.

Starting Procedures

When using this product for the first time, make sure to avoid mistakes and incorrect wiring by referring to the procedure below. In this section, explains how to start up especially for RCON controller. Follow an instruction manual for each device for how to link to other devices, controllers and actuators that are linked in the network.



Troubleshooting (LED Display)

On RCON Gateway Unit, there are the monitor LEDs for the field network and communication. You can confirm the communication establishment and also communication errors on these LEDs. Refer to [Names for Each Part] for the position and name of each LED lamp.

Panel Display	Color	Status	Explanation
T RUN	GN	Illuminating	Inside bus communication in normal conditions
		Flashing	Waiting for initializing communication
SYS	OR	Illuminating	Inside bus communication in error
		OFF	
STOP	RD	Illuminating	Confirmed STOP Signal input (driver unit drive source being cut off)
		OFF	No STOP Signal input confirmed
MODE	GN	Illuminating	In AUTO (automatic operation) Mode
		OFF	In MANU (manual operation) Mode
C ERR	OR	Illuminating	Error occurred in field network
		OFF	Field network operating in normal conditions
STATUS 0	-	-	Differs depending on field network (Refer to [Field Network Communication Conditions from 1 to 7])
STATUS 1	-	-	Differs depending on field network (Refer to [Field Network Communication Conditions from 1 to 7])

[Field Network Communication Conditions]

1. CC-Link (RCON-GW/GWG/LC/LCG-CC)

Name	Panel Display	Color	Status	Explanation
STATUS 0	RUN	GN	Illuminating	Succeeded in refresh and polling reception after getting into network, or succeeded in refresh reception
			OFF	1. Not in network 2. Carrier detected for channel 3. Timeover 4. In hardware reset
STATUS 1	ERR	GN	Illuminating	1. CRC Error 2. Station number setting error at reset release (65 stations or more including 0 or occupied station number) 3. Baud rate setting error at reset release (5 or more for baud rate setting)
			Flashing (Flash for 0.4sec)	Numbers changed from station numbers and baud rate setting numbers at reset release
			OFF	1. Communication in normal conditions 2. In hardware reset

2. CC-Link IE Field (RCON-GW/GWG/LC/LCG-CIE)

Name	Panel Display	Color	Status	Explanation
STATUS 0	MS	GN	Illuminating	Operation in normal conditions
			OFF	Hardware error occurred
		OR	Illuminating	Error being occurred
STATUS 1	NS	GN	OFF	Operation in normal conditions
			Flashing	Cyclic transmission paused
		OR	OFF	Cyclic transmission not conducted, parallel off
			Illuminating	Received data in error
LINK	-	GN	OFF	Linkup in process
			Illuminating	Link-down in process
L.ER	-	OR	OFF	Received data in error
			Illuminating	Received data in normal conditions

3. DeviceNet (RCON-GW/GWG/LC/LCG-DV)

Name	Panel Display	Color	Status	Explanation
STATUS 0	MS	GN	ILLuminating	Operation in normal conditions
			Flashing (1Hz)	There is no configuration information, or not complete, device trial run necessary
		OR	ILLuminating	Malfunction with no opportunity for recovery
			Flashing (1Hz)	Malfunction with opportunity for recovery
		GN/OR	ILLuminated by turns	Self - diagnosis
STATUS 1	NS	GN	ILLuminating	Online, Connection established
			Flashing (1Hz)	Online, No connection established
		OR	ILLuminating	Critical Error
			Flashing (1Hz)	Connection Timeout
		RD/GN	ILLuminated by turns	Self - diagnosis
			OFF	Offline

4. EtherCAT (RCON-GW/GWG/LC/LCG-EC)

Name	Panel Display	Color	Status	Explanation
STATUS 0	ERR	OR	ILLuminating	Communication component (module) error
			Flashing (continuously)	Construction information (setting) error ON: 200ms / OFF: 200ms
			Flashing (twice)	Communication part circuit error ON: 200ms × 2 / OFF: 1000ms
			OFF	In initializing process
STATUS 1	RUN	GN	ILLuminating	In normal operation (OPERATION)
			Flashing (continuously)	In PRE-OPERATION condition ON: 200ms / OFF: 200ms
			Flashing (once)	In SAFE-OPERATION condition ON: 200ms / OFF: 1000ms
			Flashing	Communication component (module) error
		OR	Flashing	Communication component (module) error

5. EtherNet/IP (RCON-GW/GWG/LC/LCG-EP)

Name	Panel Display	Color	Status	Explanation
STATUS 0	MS	GN	ILLuminating	Operation in normal conditions
			Flashing	There is no configuration information, or scanner in idol condition
		OR	ILLuminating	Malfunction with no opportunity for recovery
			Flashing	Malfunction with opportunity for recovery
STATUS 1	NS	GN	ILLuminating	Online, connection established
			Flashing	Online, No connection established
		OR	ILLuminating	Critical error, IP address duplicated error
			Flashing	Connection Timeout
		GN/OR	OFF	No IP address
			OFF	No IP address

6. PROFIBUS-DP (RCON-GW/GWG/LC/LCG-PR)

Name	Panel Display	Color	Status	Explanation
STATUS 0	MS	GN	ILLuminating	Initialization completed
			Flashing	Initialization completed, there is a diagnosis event
		RD	ILLuminating	Exception error
		GN/RD	OFF	Not initialized
STATUS 1	NS	GN	ILLuminating	Online, data exchange
			Flashing	Online, cleared
		RD	ILLuminating	Parameter error
			Flashing	Configuration error
		GN/RD	OFF	Offline
			OFF	Offline

7. PROFINET IO (RCON-GW/GWG/LC/LCG-PRT)

Name	Panel Display	Color	Status	Explanation
STATUS 0	MS	GN	ILLuminating	Communication in normal conditions
			Flashing (once)	In network diagnosis
			Flashing (twice)	Engineering tools identifying nodes
		OR	ILLuminating	Exception error occurred (malfunction of hardware)
			Flashing (once)	Mismatch of setting an actual network construction
			Flashing (twice)	IP address not established
			Flashing (three times)	Station name not established
			Flashing (four times)	Internal error occurred
STATUS 1	NS	GN/RD	OFF	In initializing process
		GN	ILLuminating	Online (communication in normal conditions: RUN)
			Flashing	Online (STOP)
		GN/OR	OFF	No connection



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