4. How to read the model plate

Model
Serial number

5. How to read the model

REXT-SIO: Multi-row Arrangement
REXT-CTL: External SIO Link

Basic Specifications

- All typic ROBONET system is constructed not only with the Gateway R Unit that is explained in this manual, but also with RACON, RPCON, Simple Absolute Pi Unit, extension unit and ROBO Cylinder Controller to connect to the extension unit. Please refer to First Step Guide and Instruction Manual (CD/DVD) of each device for additional instruction related to that device. The extension unit is applicable when many units are required to construct ROBONET and there is not enough space to place them, or when it is required to interface with a controller such as SCON or PCON-CG on ROBONET.

External Dimensions

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

If you find any fault with the product you have received, or any missing parts, contact us or our distributor.

1. Parts

1) For REXT-SIO (Unit reversing set)
   - Controller Main Body
   - Unit Link Cable CB-REXT-SIO010 1m

2) For REXT-CTL (Controller connection set)
   - Controller Main Body
   - Unit Link Cable CB-REXT-CTL010 1m

2. Teaching Tool (to be purchased separately)

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

1. 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)

2) Storage and Preservation Environment

The storage and preservation environment should comply with the same standards as those for the installation environment. In addition, take the following environmental measures to prevent condensation.

- Location with frost or cold temperature
- Location exposed to corrosive gases or combustible gases
- Location exposed to a large amount of dust, dirt or oil powder
- Location subject to direct sunlight
- Location subject to water, oil or chemical droplets
- Environment that blocks the air vent (after installation and Noise Elimination Section)
- Environment where condensation is anticipated
- Environment subject to electronic noise
- Location where static electricity or other electromotive force is present
- Location with the mains or power lines passing nearby

2. Usage Environment

The storage and preservation environment should comply with the same standards as those for the installation environment. In addition, take the following environmental measures to prevent condensation.

- Location where the surrounding air temperature exceeds the range of 0 to 40°C
- Location where condensation occurs due to abrupt temperature change
- Location where relative humidity exceeds 80%RH
- Location subject to condensation
- Location exposed to direct sunlight
- Location exposed to water, oil or chemical droplets
- Environment that blocks the air vent (after installation and Noise Elimination Section)
- Environment where condensation is anticipated
- Environment subject to electronic noise
- Location where static electricity or other electromotive force is present
- Location with the mains or power lines passing nearby

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

1. ROBONET Instruction Manual
2. REXT-SIO Controller Instruction Manual
3. REXT-CTL Controller Instruction Manual
5. RPCON Instruction Manual
6. Simple Absolute Pi Unit Type Instruction Manual
7. Extension Unit Instruction Manual
8. Extension Unit Type Instruction Manual
9. Extension Unit Type Instruction Manual
10. Extension Unit Type Instruction Manual
11. Instruction Manual for the serial communication [for Modbus] (When RGA-DR is used with a Serial No. model)
### Installation and Noise Elimination

1. **Noise Elimination Grounding (Frame Ground)**

   - **Note:** When using REXT-SIO, make sure to perform the grounding also on the extended side of the units.

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.
   - 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. **Extension Unit Installation**
   - When an extension is required, the extension unit is to be placed on the most right side of the group of the units constructing ROBONET. Use the ROBONET communication connection PCB (JB-1) and the power connection board (PP-1) to connect it.
   - When using REXT-SIO, the extension unit in the other group of the units is to be installed on the most left side, and RCON and RPCON units are to be connected using the ROBONET communication connection PCB (JB-1) and the power connection board (PP-1).
   - FG line on each unit can be joined by fitting the units closely. Install the units tightly and securely together using (generally purposed) DIN rail end plates at each side of the installation.
   - When using the extension unit, each group of the units or connected controller needs grounding separately.

#### REXT-SIO Extension Units Group

**Note:** There may be a communication error occurred on the unit side in the following cases:
1) FG line contact is not appropriate (the joint of each unit is not close enough)
2) ROBONET communication connection PCB (JB-1) or terminal resistance PCB (7N-1) is not equipped or missing
3) If the connection of the power connection board (PP-1) is improper, it may cause an abnormal current or noise generation on the power supply. Make sure to correctly install the unit.

### System Configuration (Example)

- **Note:** Have the 0V line on 24V power supply for each controller in common (to make the electric potential in the same level). (SCON is excluded.)
- **Unit link cable and controller connection cable** are to be connected to output from the bottom of the extension unit and input into the extended unit as shown in the figures above. The system would not function if the cable is connected in the opposite way.
- For the details of the following contents, refer to Field Network Wirings and Settings for how to mount or set the terminal resistance.
- **Note:** If ROBONET is used as a terminal, refer to Field Network Wirings and Settings for how to mount or set the terminal resistance.
- **Note:** The master and slave devices in RGW-SIO should be connected one to one.
2. When Using REXT-CTL

When having an emergency stop, connect the emergency stop signal on the system side to EMG connector on Gateway R Unit. CR1 is an emergency stop relay for the entire system. Apply Relay CR2 when having an emergency stop for ERC2, PCON-CF or SCON connected to ROBONET executed with

1. When Using REXT-SIO

When having an emergency stop, connect the emergency stop signal on the system side to EMG connector on Gateway R Unit. CR is an emergency stop relay for the entire system.

Warning: The teaching pendant provides emergency stop functionality for all of the actuators connected to the ROBONET, but does not provide an interface to extend this capability to an integrated system.

It is permitted to use terminal block connections instead of a 4-way junction. Use a terminal block connection or direct-joint connection if there is a concern that a faulty connection may occur as a result of using the e-Con connector.
Wiring of Extension Cables

Starting Procedures

When using this product for the first time, refer carefully to GatewayR Unit First Step Guide or ROBONET Instruction Manual (CD/DVD) and make sure not to make any omission in check items or wiring layout.

Troubleshooting

LED Color Description

- **GN**: Normal condition
- **READY OFF**: 24V DC ROBONET power is not supplied, or an internal power supply error is occurred. Please contact us if the LED does not illuminate even when the 24V DC power is supplied properly.
- **GN**: The extension cable is not connected to the input and output (top and bottom) connectors at the same time.
- **RD**: The extension cable is connected to the input and output (top and bottom) connectors at the same time. (Wiring layout error)
- **STATUS OFF**: The cable is connected to neither of input or output (top or bottom) connector. (Wiring layout error)
- **RESERVE OFF**: This LED is not for use. It should be always off.

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**Table:**

<table>
<thead>
<tr>
<th>LED</th>
<th>Color</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>READY</td>
<td>ON</td>
<td>Normal condition when the 24V DC power is supplied, or no internal power supply error occurs.</td>
</tr>
<tr>
<td></td>
<td>OFF</td>
<td>24V DC ROBONET power is not supplied, or an internal power supply error is occurred. Please contact us if the LED does not illuminate even when the 24V DC power is supplied properly.</td>
</tr>
<tr>
<td>STATUS</td>
<td>ON</td>
<td>The extension cable is connected to the output (top and bottom) connectors at the same time. (Wiring layout error)</td>
</tr>
<tr>
<td></td>
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</tr>
<tr>
<td>RESERVE</td>
<td>OFF</td>
<td>This LED is not for use. It should be always off.</td>
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</tbody>
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**Heading:**

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