

**NPN TRANSISTOR OUTPUT MODULE
(16 points, full and partial interlock)**

MODEL R8-DCM16ALH

BEFORE USE

Thank you for choosing us. Before use, check the contents of the package you received as below.

If you have any problems or questions with the product, please contact our sales office or representatives.

■ PACKAGE INCLUDES:

Transistor output module(1)

■ MODEL NO.

Confirm that the model number described on the product is exactly what you ordered.

■ INSTRUCTION MANUAL

This manual describes necessary points of caution when you use this product, including installation, connection and basic maintenance procedures.

POINTS OF CAUTION

■ CONFORMITY WITH EU DIRECTIVES

- The equipment must be mounted inside a panel.
- The actual installation environments such as panel configurations, connected devices, connected wires, may affect the protection level of this unit when it is integrated in a panel system. The user may have to review the CE requirements in regard to the whole system and employ additional protective measures to ensure the CE conformity.

■ GENERAL PRECAUTIONS

- Before you remove or mount the unit, turn off the power supply and I/O signal for safety.
- Switches on the side of the module can be set for maintenance only while the power supply is off. Do not access them while the power is supplied.

■ ENVIRONMENT

- Indoor use
- When heavy dust or metal particles are present in the air, install the unit inside proper housing with sufficient ventilation.
- Do not install the unit where it is subjected to continuous vibration. Do not apply physical impact to the unit.
- Environmental temperature must be within -10 to +55°C (14 to 131°F) with relative humidity within 30 to 90% RH in order to ensure adequate life span and operation.

■ WIRING

- Do not install cables close to noise sources (relay drive cable, high frequency line, etc.).
- Do not bind these cables together with those in which noises are present. Do not install them in the same duct.

■ EXCITATION SUPPLY

- Input connector: Rated current 50mA DC per channel
- Output connector: Rated current 3A DC (rated current 3A for internal fuse (slow blow fuse i^2t (A²sec) max. 5.04)

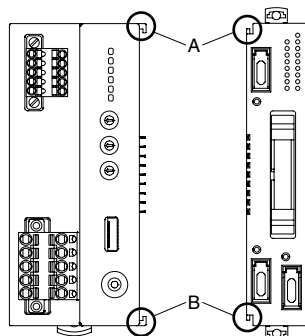
■ AND

- The unit is designed to function as soon as power is supplied, however, a warm up for 10 minutes is required for satisfying complete performance described in the data sheet.

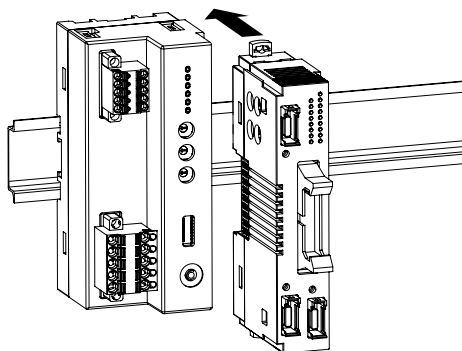
INSTALLATION

■ HOW TO MOUNT THE MODULE ON DIN RAIL

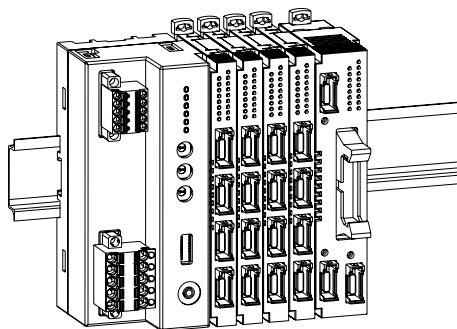
• I/O Module



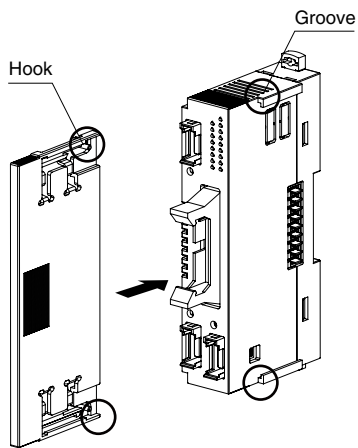
Confirm that the locking clamps of the I/O module are set. Insert the module in parallel to the next one while aligning the grooves of both modules (A & B in the above figure). Maintain it perpendicularly to the rail.



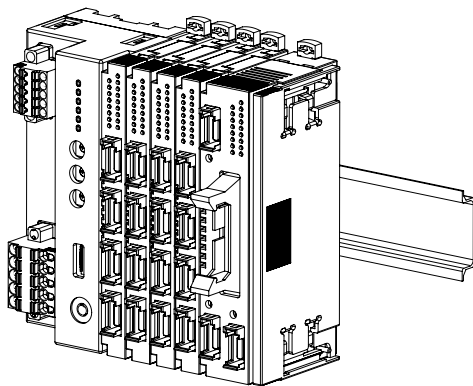
More I/O modules can be added in the same manner.



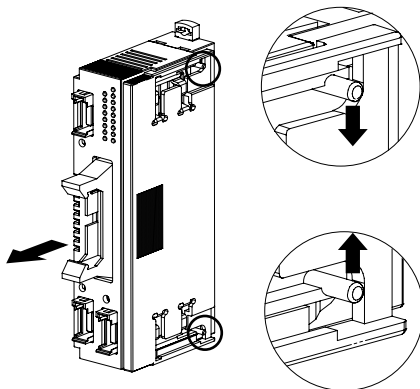
• Protective Cover



The protective cover is to be attached over the connected I/O module at the right end.
Align the hooks on the cover with the grooves of the module and slide it straight until the hooks are latched.

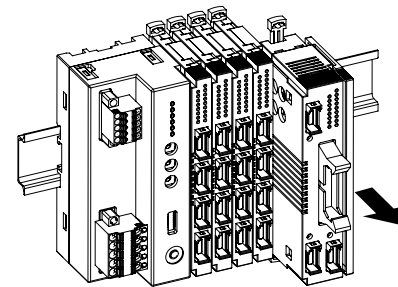
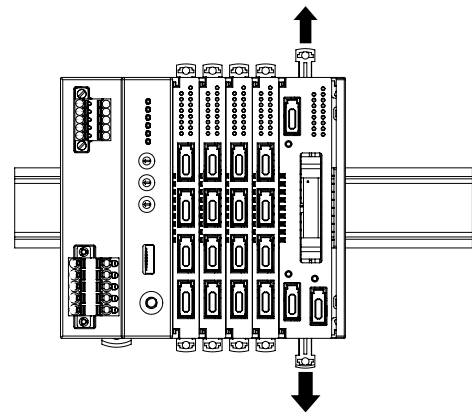


When removing the cover, pull it out while squeezing the hooks inward.

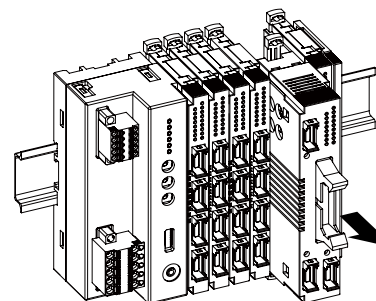
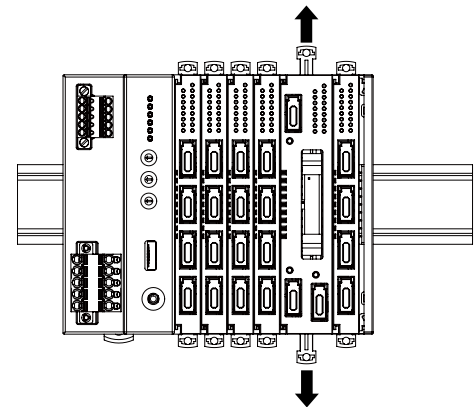


■ HOW TO MOUNT THE MODULE ON DIN RAIL

Release the locking clamps and pull out straight the module.



• Removing an intermediate module

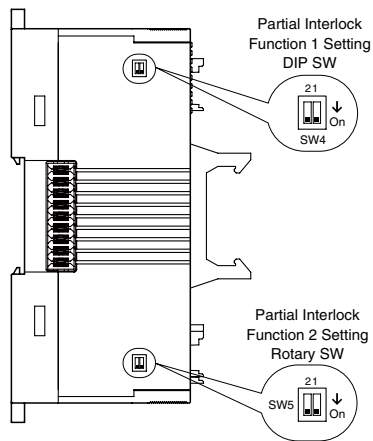


Caution !

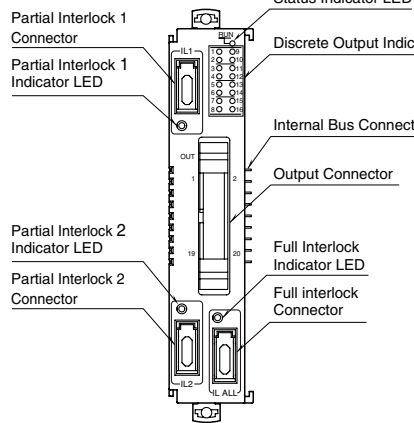
- 1) Be careful not to hurt your hand by pointed edges of the internal communication bus connector.
- 2) I/O modules cannot hold tightly on the DIN rail by themselves without power/network module.
Secure them to the position if necessary by using DIN rail end plates.

COMPONENT IDENTIFICATION

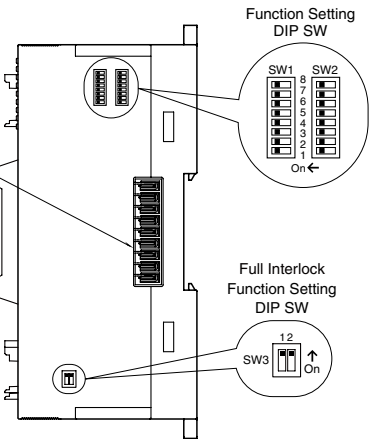
LEFT SIDE VIEW



FRONT VIEW



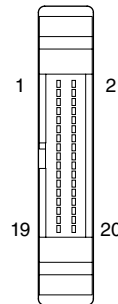
RIGHT SIDE VIEW



INDICATOR LED

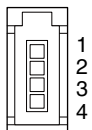
| LED | OPERATION | FUNCTION |
|-----------|-------------------------------|-------------------------------|
| Status | OFF | Stopping |
| | Green ON | Valid host communication |
| | Green Blinking | Reading/writing configuration |
| | Red ON | Setting error |
| Output | Red Blinking | Parameter error |
| | OFF | OFF |
| Interlock | Green ON | ON |
| | OFF | Interlock invalid |
| | | Interlock valid Output ON |
| Red ON | Interlock valid Output OFF | |

OUTPUT CONNECTOR ASSIGNMENT



| PIN No. | ID | FUNCTION |
|---------|------|-----------------------|
| 1 | Do1 | Output 1 |
| 2 | Do2 | Output 2 |
| 3 | Do3 | Output 3 |
| 4 | Do4 | Output 4 |
| 5 | Do5 | Output 5 |
| 6 | Do6 | Output 6 |
| 7 | Do7 | Output 7 |
| 8 | Do8 | Output 8 |
| 9 | Do9 | Output 9 |
| 10 | Do10 | Output 10 |
| 11 | Do11 | Output 11 |
| 12 | Do12 | Output 12 |
| 13 | Do13 | Output 13 |
| 14 | Do14 | Output 14 |
| 15 | Do15 | Output 15 |
| 16 | Do16 | Output 16 |
| 17, 18 | 0V | Excitation supply 0V |
| 19, 20 | 24V | Excitation supply 24V |

INPUT CONNECTOR ASSIGNMENT



| PIN No. | ID | FUNCTION |
|---------|-----|------------------------|
| 1 | 24V | Excitation supply 24 V |
| 2 | IL | Discrete input |
| 3 | 0V | Excitation supply 0 V |
| 4 | NC | No connection |

■ MODULE ADDRESS

Module address can be set with SW1-1 through 1-4 for the tens, and SW1-5 through 1-8 for the ones place digit.

Address is selected between 0 to 31. (Factory setting: 0)

| MODULE ADDRESS | SW1 | | | |
|----------------|--------|--------|--------|--------|
| | 1 5 | 2 6 | 3 7 | 4 8 |
| 0 | OFF | OFF | OFF | OFF |
| 1 | OFF | OFF | OFF | ON |
| 2 | OFF | OFF | ON | OFF |
| 3 | OFF | OFF | ON | ON |
| 4 | OFF | ON | OFF | OFF |
| 5 | OFF | ON | OFF | ON |
| 6 | OFF | ON | ON | OFF |
| 7 | OFF | ON | ON | ON |
| 8 | ON | OFF | OFF | OFF |
| 9 | ON | OFF | OFF | ON |

■ OPERATING MODE

*Factory setting

• Interlock Communication Logic Reversal

Setting internal communication bus logic.

| INTERLOCK COMMUNICATION LOGIC REVERSAL | SW2-1 |
|--|-------|
| Interlock function setting off: 1 Interlock function setting on: normal = 1, interlock = 0 | ON |
| Interlock function setting off: 0 (*) Interlock function setting on: normal = 0, interlock = 1 | OFF |

Caution: 1 and 0 values are validated as logic through internal communication bus logic.

• Output at The Loss of Communication

Setting for all output.

| OUTPUT AT THE LOSS OF COMMUNICATION | SW2-5 |
|--|-------|
| Output Hold (*) (last data correctly received is hold) | OFF |
| Stop output (Output fixed at OFF) | ON |

• Terminator DIP SW

| TERMINATOR SW | SW2-6 |
|---------------|-------|
| Without (*) | OFF |
| With | ON |

• Configuration Mode

| CONFIGURATION MODE | SW2-8 |
|-----------------------------------|-------|
| DIP switch setting (*) | OFF |
| PC Configurator and communication | ON |

Caution: SW2-2 through 2-4 and 2-7 are unused; be sure to turn OFF unused channels.

■ FULL INTERLOCK FUNCTION

It is available to apply full interlock function to all outputs (Do1 through Do16)

| FULL INTERLOCK FUNCTION | SW3-1 |
|---------------------------------------|-------|
| OFF | OFF |
| ON (*) (all outputs OFF if input OFF) | ON |

Caution: SW3-2 is unused; be sure to turn OFF unused channels.

■ PARTIAL INTERLOCK

• Partial interlock function 1

At output, it is available to apply interlock function to Do1 though Do8.

| PARTIAL INTERLOCK 1 | SW4-1 |
|------------------------------------|-------|
| OFF | OFF |
| ON (*) (Input OFF with output OFF) | ON |

• Partial interlock function 2

At output, it is available to apply interlock function to Do9 though Do16.

| PARTIAL INTERLOCK 2 | SW5-1 |
|------------------------------------|-------|
| OFF | OFF |
| ON (*) (Input OFF with output OFF) | ON |

Caution: SW4-2 and 5-2 are unused; be sure to turn OFF unused channels.

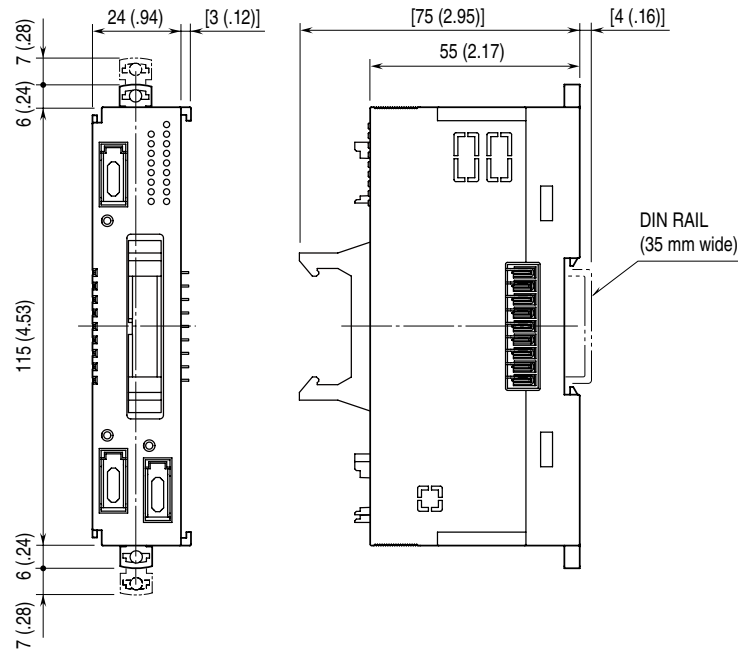
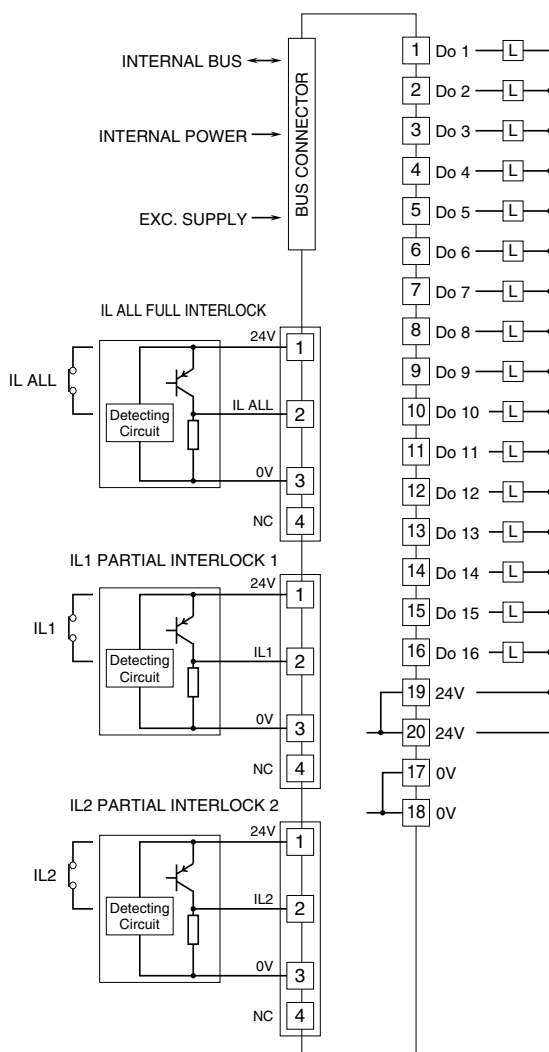
■ PC CONFIGURATOR

The following parameters can be set with using PC Configurator Software (model: R8CFG):

- Output at the startup
- Output at the loss of communication
- Common setting (loss of internal bus communication detection time)

Turn SW2-8 ON to allow programming by the PC Configurator via the Power/Network Module.

Refer to the users manual of the R8CFG for detailed operation of the software program.

EXTERNAL DIMENSIONS unit: mm (inch)**CONNECTION DIAGRAM****WIRING INSTRUCTIONS**■ **e-CON connector (discrete input)**

PWB connector XN2D-1474-S002 (Omron)

Recommended cable connector XN2A-1470 (Omron)*1

Applicable wire size: 0.08 mm² (AWG28) - 0.5 mm² (AWG20)
(Outer sheath diameter: max. 1.5 dia)■ **MIL connector (discrete output)**

PWB connector XG4A-2034 (Omron)

Recommended socket XG5N-201 (Omron)*1

Recommended contact XG5W-0231 (Omron)*1

Applicable wire size: AWG22, number of conductor 17, di-
ameter of conductor 0.16 mm*1. Not included in the package. Refer to the specifications
of the product.