Remote I/O R80 Series

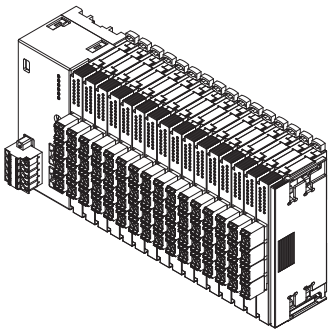
R80 SERIES GENERAL SPECIFICATIONS

Functions & Features

• Remote I/O modules which interchange analog or digital I/O signals with the fieldbus
• Space-saving

Typical Applications

• Remote I/O for DCS and PLC
• Personal computer I/O



ORDERING INFORMATION

Refer to the specifications of the respective modules for details.

POWER/NETWORK MODULE: R80[1]-R

Refer to the specifications for the respective models.

[1] MODULE TYPE

NECT1: EtherCAT

POWER INPUT

DC power

R: 24 V DC
(Operational voltage range: ±10 %; ripple 10 %p-p max.)

I/O MODULE: R80[1]

Refer to the specifications for the respective models.

[1] MODULE TYPE

• Discrete Input

DAT8A: Discrete input (NPN), 8 points (Tension clamp terminal block)

• Discrete Output

DCT8A: Transistor output (NPN), 8 points (Tension clamp terminal block)

Since internal power supply source and internal communication bus are performed through the connector of each module, installation base is unnecessary.

FUNCTIONS & FEATURES

The R80 Series Remote I/O is composed of power/network modules and I/O modules.

■ I/O MODULE

Performs data conversion of field inputs; Data conversion of data received through the internal bus into outputs.

■ POWER/NETWORK MODULE

The power/network module supplies the I/O modules with required internal electrical power source.
The power/network module changes the receiving data from internal bus into output signal and vice versa, acts as a gateway between transmission line and internal bus.

■ HOT INSERTION/REMOVAL OF I/O MODULES

Since internal power supply and internal bus are performed through the connector of each module, it cannot be replaced with the power on.

■ DIELECTRIC STRENGTH

As dielectric strength differs depending on each module, refer to each specification sheet.

RELATED PRODUCTS

• PC configurator software (model: R80CFG)
Downloadable at M-System's web site.
For connecting to PC, use commercially available Mini-B type USB cable. (provided by user)

GENERAL SPECIFICATIONS

Power input:
•R80NECT1-R
24 V DC ±10 %; ripple 10 %p-p max.
Power consumption
•DC: Approx. 12 W
24 V DC (@ output current 1.6 A)
Internal power
•DC: 5 V DC
•Operational current: 1.6 A
Excitation supply output
•DC: 24 V DC ±10 %
•Operational current: 10 A
(Power output current consumption must be under rated current)
Operating temperature: -10 to +55°C (14 to 131°F)
Operating humidity: 30 to 90 %RH (non-condensing)
Atmosphere: No corrosive gas or heavy dust
Mounting: DIN rail (35 mm wide)
Connection
•Power/network module

·**Power supply, exc. supply**:
Tension clamp terminal block (Front twin connection)
Applicable wire size: 0.2 to 2.5 mm^2, stripped length 10 mm
·**EtherCAT**: RJ-45 connector
•**I/O module**:
Tension clamp terminal block
Applicable wire size: 0.2 to 1.5 mm^2, stripped length 10 mm
Housing material: Flame-resistant resin (black)
Max. number of I/O modules: 16 (module address: 0 to 15)
Internal communication bus: Transmission cycle approx. 65 µsec. + 65 µsec. x No. of Modules

■ **Weight**
R80NECT1: 210 g (0.46 lb)
R80DAT8A: 80 g (0.18 lb)
R80DCT8A: 80 g (0.18 lb)
Protective cover: 15 g (0.03 lb)

CURRENT CONSUMPTION

The I/O modules operate by the DC voltage (5 V DC) supplied from the power/network module. Arrange these modules in order that the total current consumed by these modules can be within the supply current capacity. If the current consumption exceeds the limit, change the combination of I/O modules or reduce the no. of modules mounted. Even if total consumption current of the I/O modules is less than the supply current capacity, the total install number of the modules is max. 16.

■ **Max. current consumption**
R80DAT8A: 100 mA
R80DCT8A: 120 mA

USING EXCITATION SUPPLY

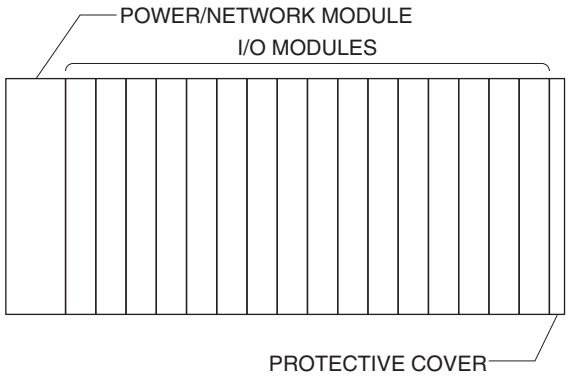
Some I/O modules use excitation supply, on the other hand some I/O modules do not. When excitation supply is cut off during power supply is on, operation is as the table shown below.

MODEL	EXC. SUPPLY	OPERATION AT ONLY EXC. SUPPLY CUTOFF
R80DAT8A	√	Input is turned OFF.
R80DCT8A	√	Output is turned OFF.

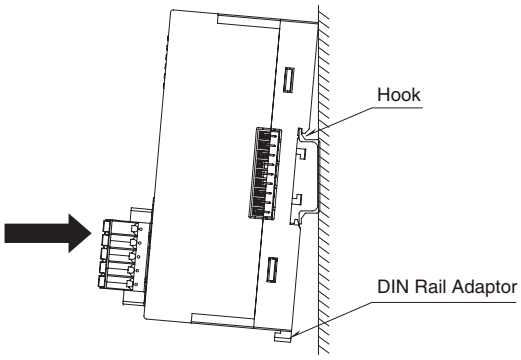
'√': Excitation supply is used.
'–': Excitation supply is not used.

BASIC CONFIGURATION

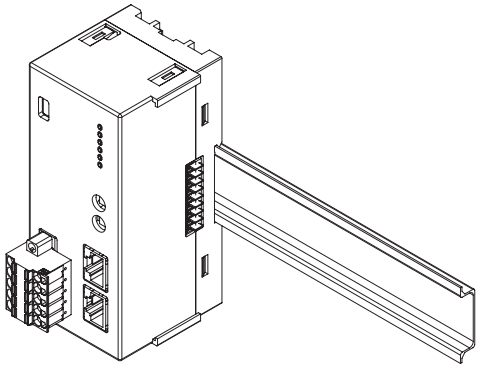
The number of I/O modules that can be mounted changes depending on the power/network module. Refer to the specifications of each power/network module for details. Althoug the module address can be arbitrarily set regardless of its mounting position, to avoid overlapped and unused addresses, set them consecutively starting at 0. Only for rightmost module, set termination resistor to enable. Protective cover is included in the package of power/network module.



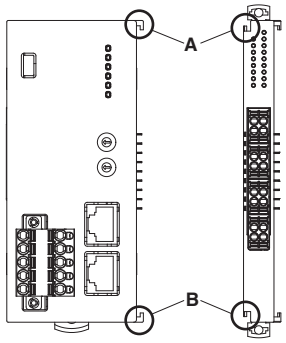
■ **HOW TO MOUNT THE MODULE ON DIN RAIL**
• Power/Network Module



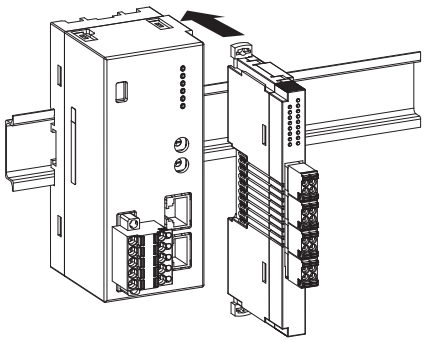
Position the upper hook at the rear on the DIN rail and push in the lower. When removing the module, push down the DIN rail adaptor utilizing a flat-blade screwdriver and pull.



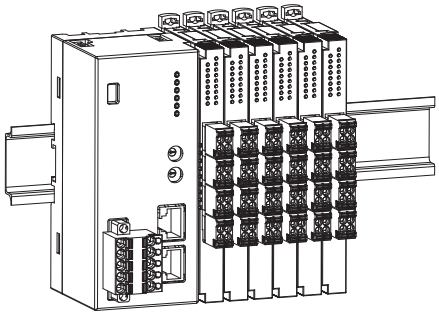
• I/O Module



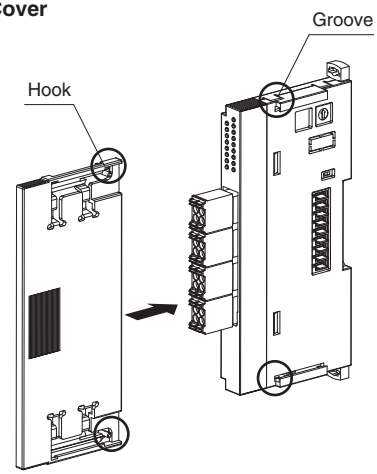
Confirm that the locking clamps of the I/O module are set.
Insert the module in parallel to the next one while aligning the grooves of both modules (A & B in the above figure).
Maintain it perpendicularly to the rail.



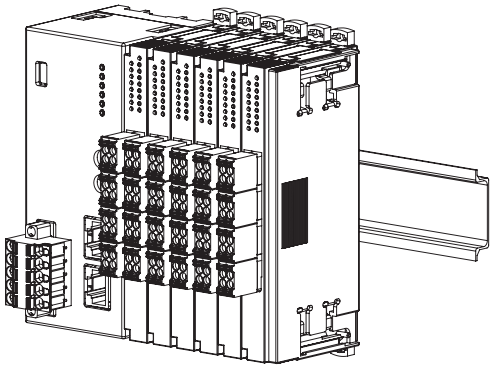
More I/O modules can be added in the same manner.



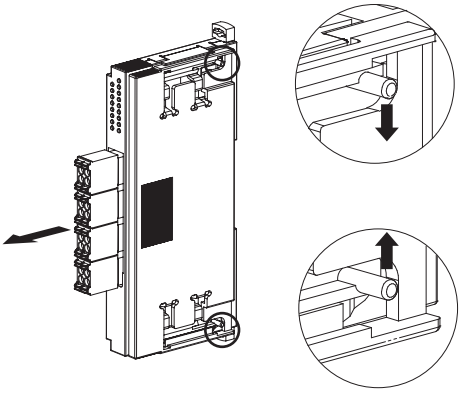
• Protective Cover



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.

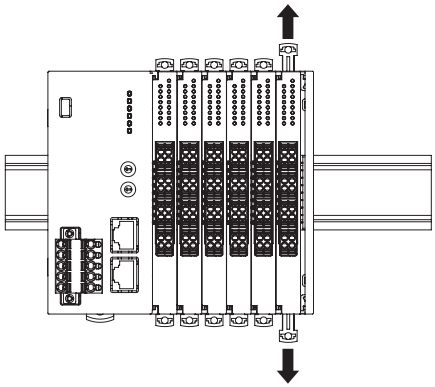


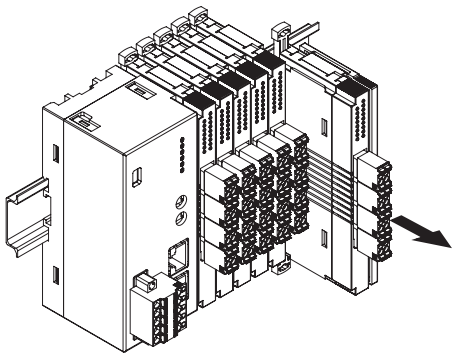
When removing the cover, pull it out while squeezing the hooks inward.



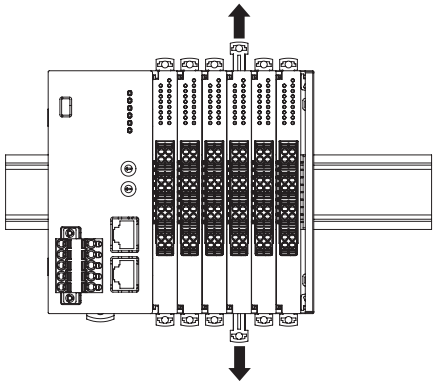
■ HOW TO UNMOUNT THE MODULE FROM DIN RAIL

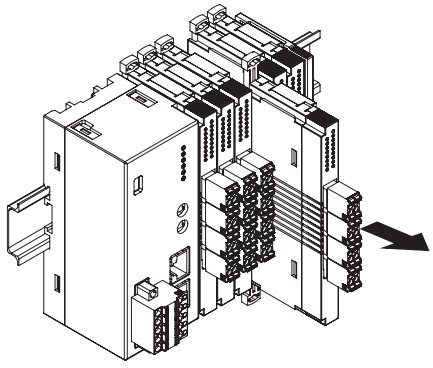
• Release the locking clamps and pull out straight the module.





• Removing an intermediate module

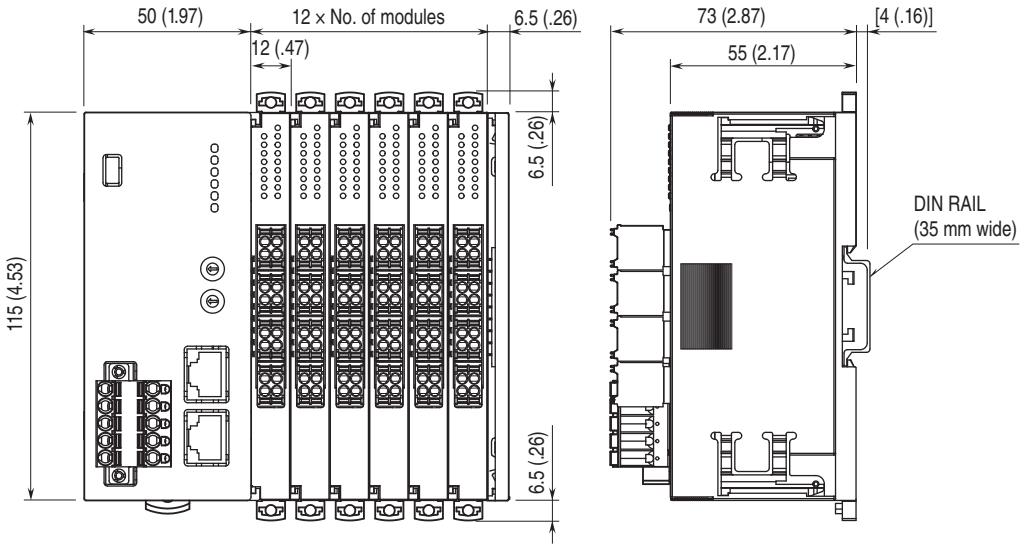




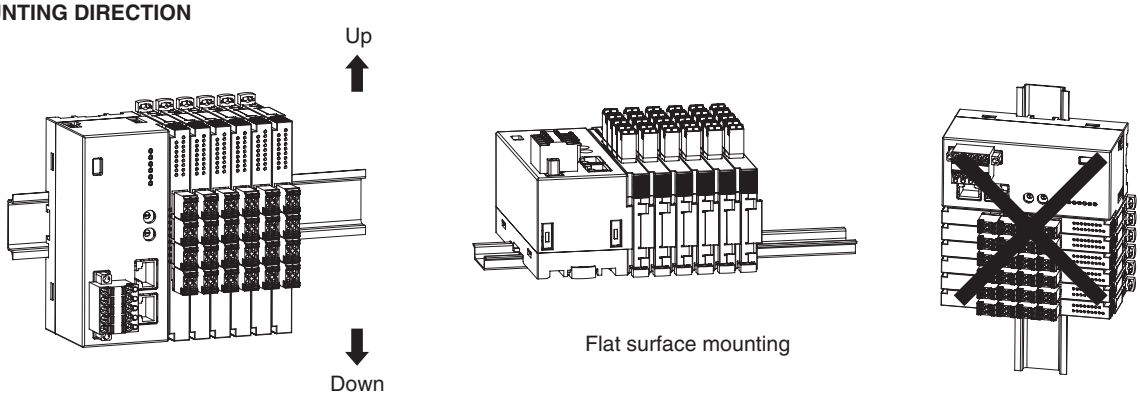
Note 1: Be careful not to hurt your hand by pointed edges of the internal bus connector.

Note 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.

MOUNTING REQUIREMENTS unit: mm (inch)

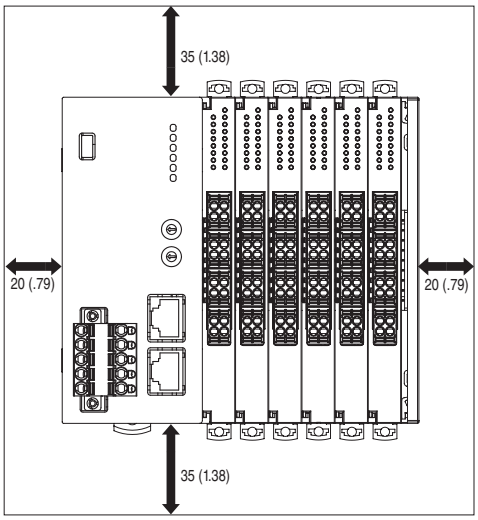


■ MOUNTING DIRECTION



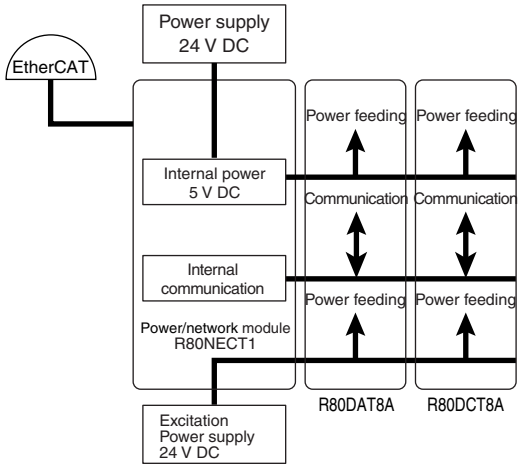
■ MOUNTING TO PANEL

Leave enough space between the modules and the mounting panel.



SYSTEM CONFIGURATION EXAMPLES

■ **POWER/NETWORK MODULE: EXAMPLE OF R80NECT1**



⚠ Specifications are subject to change without notice.