

BEFORE USE

Thank you for choosing us. Before use, please check contents of the package you received as outlined below. If you have any problems or questions with the product, please contact our sales office or representatives.

■ PACKAGE INCLUDES:

- Power/network module(1)
- Protective cover(1)

■ MODEL NO.

Confirm Model No. marking on the product to be 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.

■ EDS FILE

EDS files are downloadable at our web site.

POINTS OF CAUTION

■ CONFORMITY WITH EU DIRECTIVES

- The equipment must be mounted inside the instrument panel of a metal enclosure.
- 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.

* For example, installation of noise filters and clamp filters for the power source, input and output connected to the unit, etc.

■ POWER INPUT RATING & OPERATIONAL RANGE

- Locate the power input rating marked on the product and confirm its operational range as indicated below:

DC Power supply: 24V DC rating

24V DC \pm 10%, approx. 12W

(@ internal power max. current 1.6A)

Excitation supply (excitation for I/O module):

24V DC \pm 10%, operational current 10A

(From power supply/excitation supply connector, via connector for internal bus, supplied to each I/O module. Power output current consumption must be under operational current.)

■ GENERAL PRECAUTIONS

- Before you remove or mount the unit, turn off the power supply for safety.

■ 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 subject the unit to physical impact.
- 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.

■ AND

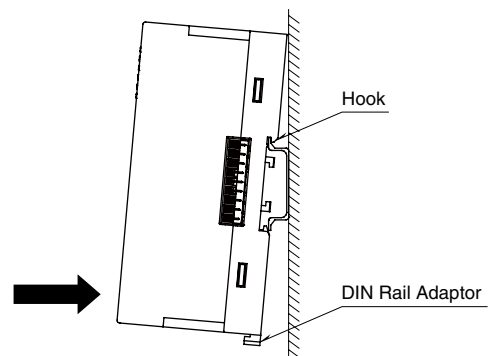
- The unit is designed to function as soon as power is supplied, however, a warm up for 10 minutes is required for satisfying complete performance described in the data sheet.

INSTALLATION

Internal power supply/communication is connected via each module's connector, therefore no backplane base is required, however, hot-swapping of modules is not possible.

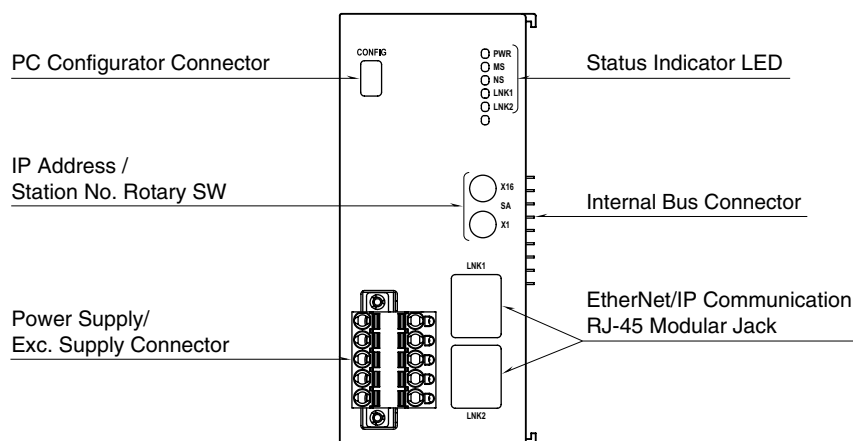
■ HOW TO MOUNT THE MODULE ON DIN RAIL

- Power/Network Module



Hang 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 minus screwdriver and pull.

COMPONENT IDENTIFICATION



■ STATUS INDICATOR LED

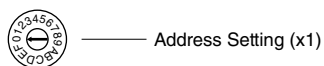
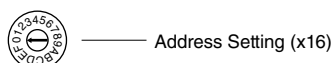
ID	STATUS	COLOR	TO INDICATE
PWR	ON	Green	Power supplied
	OFF	—	Power OFF
MS	ON	Green	Normal operation
	ON	Red	Critical failure
	Blink	Red	Minor failure
NS	ON	Green	Connections are established
	Blink	Green	Connections are not established
	ON	Red	Critical failure
	Blink	Red	Minor failure
LNK1	ON	Green	Link 1 established
LNK2	ON	Green	Link 2 established

■ IP ADDRESS (ID selector)

Set the host address of IP address with SA (x16 and x1).

IP address 01H to FFH can be used by combining with two rotary switches which have address 0 to F.

Set 0 when using the IP host address set by PC Configurator Software (model: R80CFG). (Factory setting: 00)

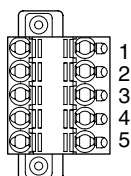


■ POWER SUPPLY, EXCITATION SUPPLY CONNECTOR ASSIGNMENT

Printed-circuit board connector (Phoenix Contact)

Unit side connector: MSTBV2,5/5-GF-5,08AU

Cable side connector: TFKC2,5/5-STF-5,08AU

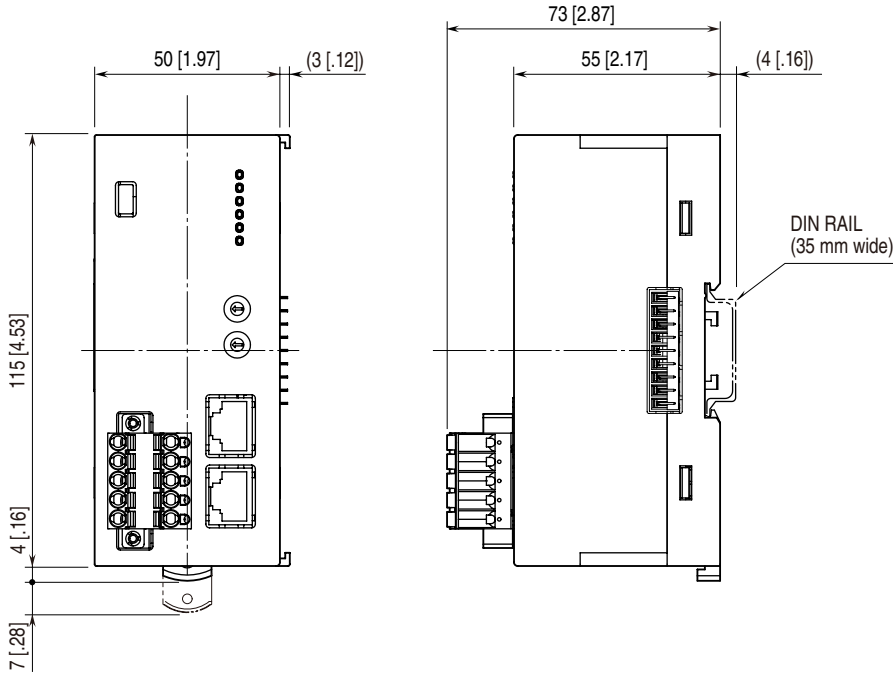


PIN No.	ID	FUNCTION
1	24V	Power supply 24V DC
2	0V	Power supply 0V DC
3	+	Excitation supply 24V DC
4	-	Excitation supply 0V DC
5	FE1	Grounding

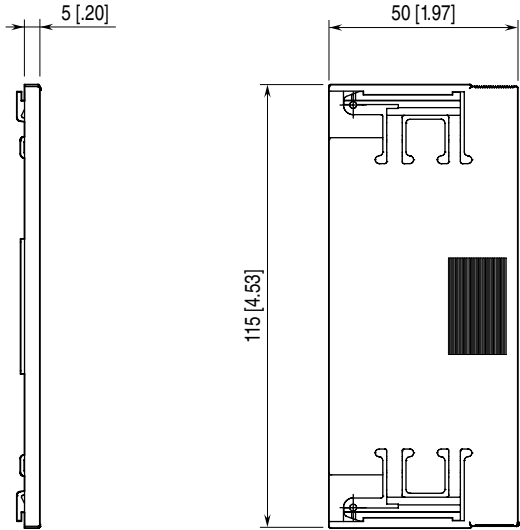
TERMINAL CONNECTIONS

Connect the unit as in the diagram below.

- EXTERNAL DIMENSIONS unit: mm [inch]
- UNIT



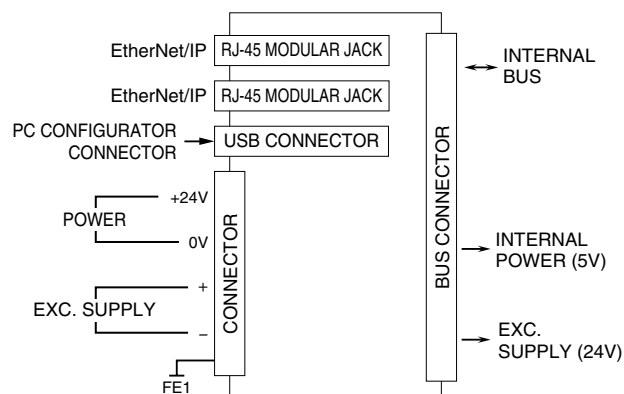
- PROTECTIVE COVER



CONNECTION DIAGRAM

Note: In order to improve EMC performance, bond the FE1 terminal to ground.

Caution: FE1 terminal is NOT a protective conductor terminal.



WIRING INSTRUCTIONS

TENSION CLAMP TERMINAL

Applicable wire size: 0.2 – 2.5 mm²

Stripped length: 10 mm

Recommended solderless terminal

AI0,25-10YE 0.25 mm² (Phoenix Contact)

AI0,34-10TQ 0.34 mm² (Phoenix Contact)

AI0,5-10WH 0.5 mm² (Phoenix Contact)

AI0,75-10GY 0.75 mm² (Phoenix Contact)

AI1-10RD 1.0 mm² (Phoenix Contact)

AI1,5-10BK 1.5 mm² (Phoenix Contact)

AI2,5-10BU 2.5 mm² (Phoenix Contact)

PC CONFIGURATOR

The following parameter items can be configured with the PC configurator software (model: R80CFG).

Refer to the users manual of the software for detailed operations.

NETWORK MODULE SETTING

PARAMETER	SETTING RANGE	DEFAULT SETTING
Data Size	67-word (64+3) 35-word (32+3)	67-word (64+3)
IP Address	0.0.0.0 to 255.255.255.255	192.168.0.250
Subnet Mask	0.0.0.0 to 255.255.255.255	255.255.255.0
Default Gateway	0.0.0.0 to 255.255.255.255	192.168.0.1
Communication Timeout	0.0 to 3200.0 (sec.)	3.0 (sec.)

CHANNEL BATCH SETTING

PARAMETER	SETTING RANGE	DEFAULT SETTING
No. of I/O modules	1 to 16 (modules)	16 (modules)

CHECKING ETHERNET/IP CONNECTION

■ IP ADDRESS

Set the host address in the IP address using the front rotary switches.

When using the host address in the IP address set on the PC configurator software (model:R80CFG), set the switches to '0'. When the network address, Subnet Mask, and Default Gateway need to be changed, do so on R80CFG.

■ CHECK WIRING

Connect an Ethernet cable to the front RJ-45 modular jack.

To configure a DLR (Device Level Ring) network, perform wiring so as to form a ring topology.

The DLR network requires at least one node as a ring supervisor.

The customer shall prepare one or more ring supervisors separately as the R80NEIP1 unit does not function as one.

■ CHECK LED

When wiring is correct, LNK1 or LNK2 is turned on.

■ CHECK R80NEIP1 CONNECTION

Open Command Prompt in Windows, and enter "ping command" as follows:

```
C:\WINDOWS>ping *.*.*.*.*
(*.*.*.*.*: Enter IP address in decimal.)
ping *.*.*.*.* with 32 bytes of data:
Reply from *.*.*.*.* : bytes=32 time<10ms TTL=64
Reply from *.*.*.*.* : bytes=32 time<10ms TTL=64
Reply from *.*.*.*.* : bytes=32 time<10ms TTL=64
Reply from *.*.*.*.* : bytes=32 time<10ms TTL=64
Ping statistics for *.*.*.*.*
Packets:Sent=4,Received=4,Lost=0(0% loss)
```

Replies in case of normal connection are as shown above. If the connection cannot be established normally due to e.g. wrong IP address, other replies such as "time over" will be received.

■ CHECK CONNECTION TO THE APPLICATION SOFTWARE

Check Point 1: LINK LED

LNK1 or LNK2 turns on when the module has established normal connections with PC, PLC, hub, and so on, regardless of data sending/receiving status.

In the case that they are not on, check power supply to the hub.

Check Point 2: MS AND NS INDICATOR

When the module has transmitted/received data correctly to/from the application software, MS and NS indicators turn on in green.

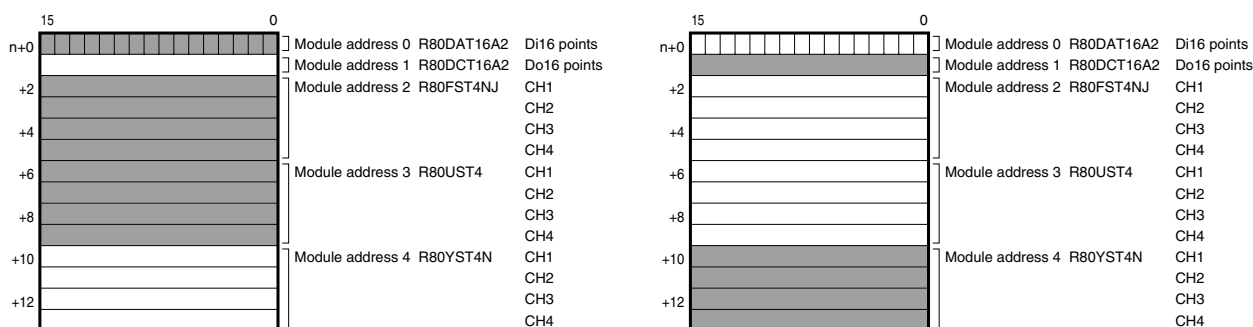
TRANSMISSION DATA DESCRIPTIONS

This unit recognize type of I/O module (number of occupied station) configured the same base, and assign it to I/O Modules data with slot order automatically. However, I/O module assignment is performed only when power is turned on, in the case of changing configuration of I/O module, please turn on power again.

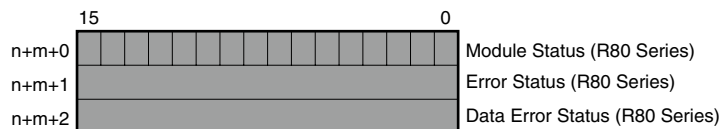
Keep number of station occupied of I/O module under 16.

For example, the configuration is as below, data areas are assigned as shown below.

SLOT NUMBER	MODEL	NUMBER OF WORDS
0	R80DAT16A2	1
1	R80DCT16A2	1
2	R80FST4NJ	4
3	R80UST4	4
4	R80YST4N	4



STATUS DATA



n: begin address

m: 64 (for data size = 67-word (64+3))

32 (for data size = 35-word (32+3))

• Module Status

n+m+0 (bit 0 to 15) indicate whether individual I/O modules of R80 series are mounted or not. The bit corresponding to the mounted slot turns to "1", and the unmounted slot to "0".

• Error Status

n+m+1 (bit 0 to 15) indicate error status for each module of R80 series.

The bit corresponding to such module turns to "1", as described below.

R80UST4, R80FST4NJ input current in error (AD converter response failure)

R80YST4N output current in error (DA converter response failure)

• Data Error Status

n+m+2 (bit 0 to 15) indicate data error status for each module of R80 series.

The bit corresponding to such module turns to "1", as described below.

R80UST4 burnout detecting, or input value error.

(-15% or less, +115% or more, or lower than lower limit, higher than upper limit of measuring range)

R80FST4NJ input value error (lower than lower limit, higher than upper limit of measuring range)

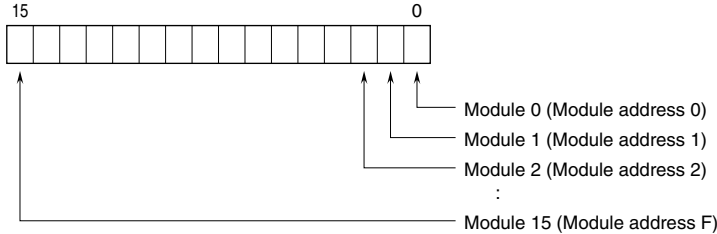
R80YST4N output value error (lower than lower limit, higher than upper limit of measuring range)

I/O DATA DESCRIPTIONS

■ OPERATION IN CASE OF A COMMUNICATION ERROR WITH I/O MODULES

When the communication between the network module and the I/O modules is lost due to an error in an input module, the last process values are held until the communication is re-established.

■ MODULE STATUS, ERROR STATUS, DATA ERROR STATUS



■ ANALOG DATA (16-bit data, models: R80UST4, R80FST4NJ, etc.)

16-bit binary data.

Basically, 0 to 100% of the selected I/O range is converted into 0 to 10000 (binary). Negative percentage is represented in 2's complements.



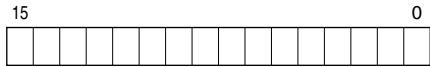
■ ANALOG DATA (16-bit data, models: R80UST4, etc.)

16-bit binary data.

With °C temperature unit, raw data is multiplied by 10. For example, 25.5°C is converted into 255.

With °F temperature unit, the integer section of raw data is directly converted into the data. For example, 135.4°F is converted into 135.

Minus temperature is converted into negative values, represented in 2's complements.



■ DISCRETE DATA (models: R80DAT16A2, R80DCT16A2, etc.)

