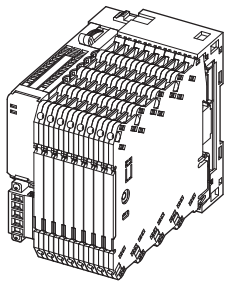
Remote I/O R6 Series

R6 SERIES GENERAL SPECIFICATIONS

Functions & Features
- Free combination of analog and discrete I/O
- Direct sensor inputs
- Space-saving
- Low power consumption

Typical Applications
- Remote I/O for DCS and PLC
- Personal computer I/O



CE

ORDERING INFORMATION

Refer to the specifications of the respective modules for details.

NETWORK MODULES: R6-[1]

Refer to the specifications of each module for details.

[1] I/O TYPE

NC1: CC-Link (Ver.1.10)
NC3: CC-Link (Ver.2.00, 64-point analog)
ND1: DeviceNet
NE1: Ethernet (Modbus/TCP, 32-point analog)
NE2: Ethernet (Modbus/TCP, 64-point analog)
NM1: Modbus (32-point analog)
NM2: Modbus (64-point analog)
NF1: T-Link (Fuji Electric) (CE not available)
(Select the Base model: R6x-BS8B)
(Select Power Supply Module model: R6x-PF1)
NP1: PROFIBUS-DP (62-point analog)

BASE: R6[1]-[2]

Refer to the specifications of each base for details.

[1] TERMINAL STYLE

D: Euro terminal
N: Screw terminal
S: Tension clamp

[2] FUNCTION

BS8A: 8 I/O slots + Network Module (18 mm wide)
BS8B: 8 I/O slots + Network Module (36.5 mm wide)
(Selectable only for using with R6-NF1, R6-NC3/W or R6-PSM)
BS8P: 8 I/O slots for extension

I/O MODULES: R6[1]-[2]

Refer to the specifications of each module for details.

[1] TERMINAL STYLE

D: Euro terminal
N: Screw terminal
S: Tension clamp

[2] FUNCTION

- I/O Module

SV2: DC voltage input, 2 points
SS2: DC current input, 2 points
TS2: Thermocouple input, 2 points
TS2A: Thermocouple input, 2 points, high-accuracy
(CE not available)
RS2: RTD input, 2 points
DS1: 4 – 20 mA input with 2-wire transmitter excitation
YV2: DC voltage output, 2 points
YS2: DC current output, 4 – 20 mA, 2 points
DA4: Discrete input, 4 points
DC4A: NPN transistor output, 4 points
DC4B: PNP transistor output, 4 points

- Blank Filler

DM: Blank filler module (CE not available)

POWER SUPPLY MODULES: R6[1]-PF1-R

Refer to the specifications of each module for details.

[1] TERMINAL STYLE

D: Euro terminal
N: Screw terminal
S: Tension clamp

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FUNCTION

PF1: Power supply

POWER INPUT

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

POWER SUPPLY MODULE: R6-PSM

Refer to the specifications of each module for details.

FUNCTION

PSM: Power supply module
(Select the Base model: R6x-BS8B)
(Not selectable with the T-Link module model: R6-NF1)

POWER INPUT

• AC power
100 - 240 AC (Operational voltage range: 90 - 264 V AC, 47 - 66 Hz)

FUNCTIONS & FEATURES

The R6 Series Remote I/O is composed of the power supply module, I/O modules, the network module and the base.

■ POWER SUPPLY MODULE

Converts 24 V DC power inputs for use in the network module and I/O modules.

■ I/O MODULES

Performs A/D conversion of field analog inputs; D/A conversion of data received through the internal bus into analog/discrete outputs.

■ NETWORK MODULE

Converts data between the open network fieldbus (Modbus, etc.) and the internal communication bus, functioning as a gateway between two buses.

■ BASE

Backplane with an internal communications bus and a power supply bus.
Basic 8-slot base (model: R6x-BS8A, R6x-BS8B) can be added with up to three (3) extension bases (model: R6x-BS8P) so that at the maximum of thirty-one (31) I/O modules can be mounted.

■ DATA CONVERSION

Varies depending on the types of I/O modules. Refer to the specifications of the respective I/O modules for details.

• Percent Data

The scaled input range of 0 – 100 % is converted into hexadecimal 0000 – 2710 (0 – 10000). The operational range is from -15 to +115% of the input range. When the signal exceeds the lower or upper limit of the operational range, the data is fixed at -15% or +115%. Negative value is represented in 2's complements. The same applies to DC voltage or current output.
Note: The signal will remain within the operational range depending on the scaled 0% and 100% input values.

• Engineering Unit Data: Temperature

Temperature input (T/C or RTD) is converted into signed binary data which equals 10 times its engineering unit value (°C). For example, 25.5°C is converted into 255. For °F temperature unit, the integer part of raw data is directly adopted. That is, 135.4°F is converted into 135. Minus temperature is converted into negative value represented in 2's complements.

■ SCALING & ZERO & SPAN ADJUSTMENTS

The PC Configurator Software (model: R6CON) is available to scale temperature and field I/O range into 0 – 100 %.

■ HOT SWAPPABLE I/O MODULES

Each I/O and network module has an independent CPU. Data is renewed by serial communications between modules. Removing or replacing modules does not adversely affect other modules on the same backplane. It is possible to replace them without removing the power supply.

RELATED PRODUCTS

• PC configurator software (model: R6CON)
Downloadable at our web site.
A dedicated cable is required to connect the module to the PC. Please refer to the internet software download site or the users manual for the PC configurator for applicable cable types.

GENERAL SPECIFICATIONS

Connection: Depends upon the type of modules. Refer to the specifications for the respective modules.
Housing material: Flame-resistant resin (black)
Internal communication bus:read rate Approx. 50 msec.

INSTALLATION

Current consumption: Depends upon the type of modules. Refer to the specifications for the respective modules.
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
Construction: DIN rail or surface mounting

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STANDARDS & APPROVALS

EU conformity:

EMC Directive
  EMI EN 61000-6-4
  EMS EN 61000-6-2
Low Voltage Directive
R6x-PF1
  EN 61010-1,EN 61010-2-201
  Measurement Category II (RUN contact output)
  Pollution Degree 2
  RUN contact output to internal bus or power
  supply: Reinforced insulation (300 V)
R6-PSM
  EN 61010-1,EN 61010-2-201
  Measurement Category II (RUN contact output)
  Installation Category II (power input)
  Pollution Degree 2
  Internal power or RUN contact output to power input to FG:
  Reinforced insulation (300 V)
  Internal power to RUN contact output: Basic insulation
(300 V)
RoHS Directive
  EN 50581

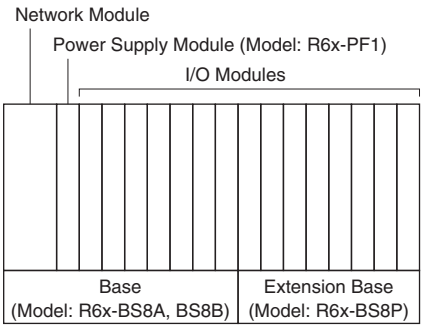
BASIC CONFIGURATIONS

■ EXTENSION BASE

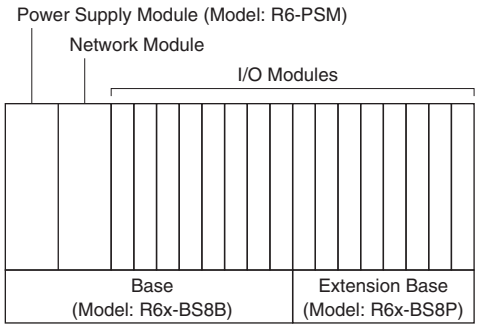
Up to three (3) extension bases can be added to the basic one, so that at the maximum of thirty-one (31) I/O modules can be mounted. Certain network modules allow only less number of I/O modules to be mounted. Refer to the data sheet for the respective network modules for more information.

The terminal style of the extension bases must be the same as that for the basic one.

■ **With R6x-PF1**
The power supply module could be mounted at any slots, however, installing them at either end is generally recommended.



■ **With R6-PSM**
Mount the R6-PSM on the slot of the left end of R6x-BS8B.



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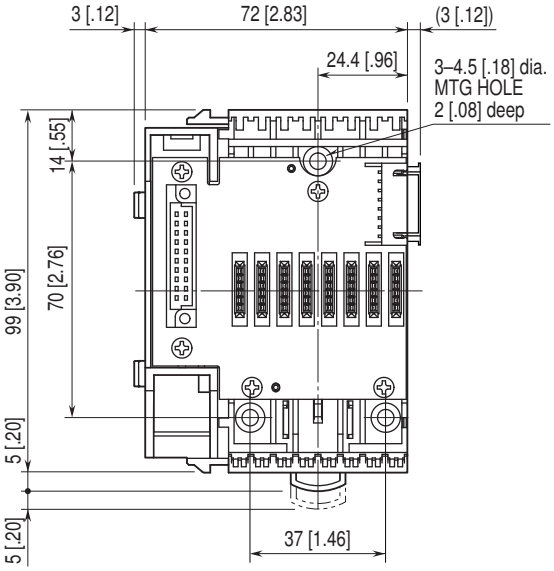
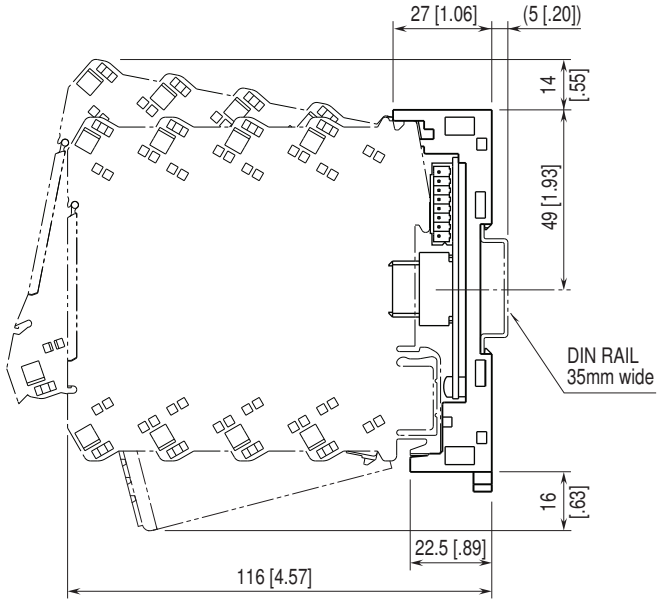
EXTERNAL DIMENSIONS unit: mm [inch]

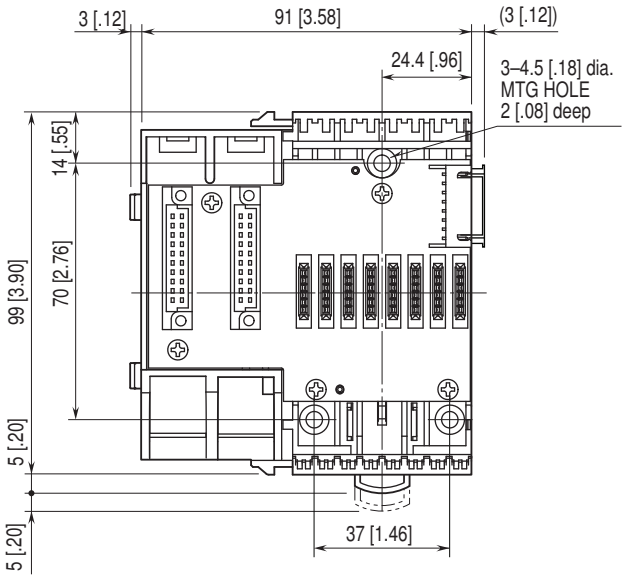
■ R6D: BASE

• **R6D-BS8A**

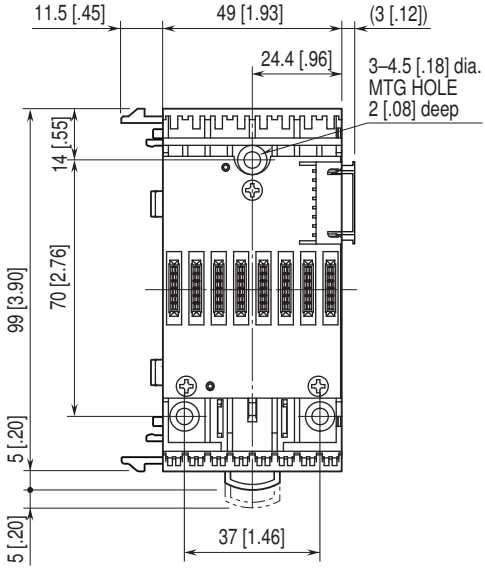




• **R6D-BS8B**



• **R6D-BS8P**



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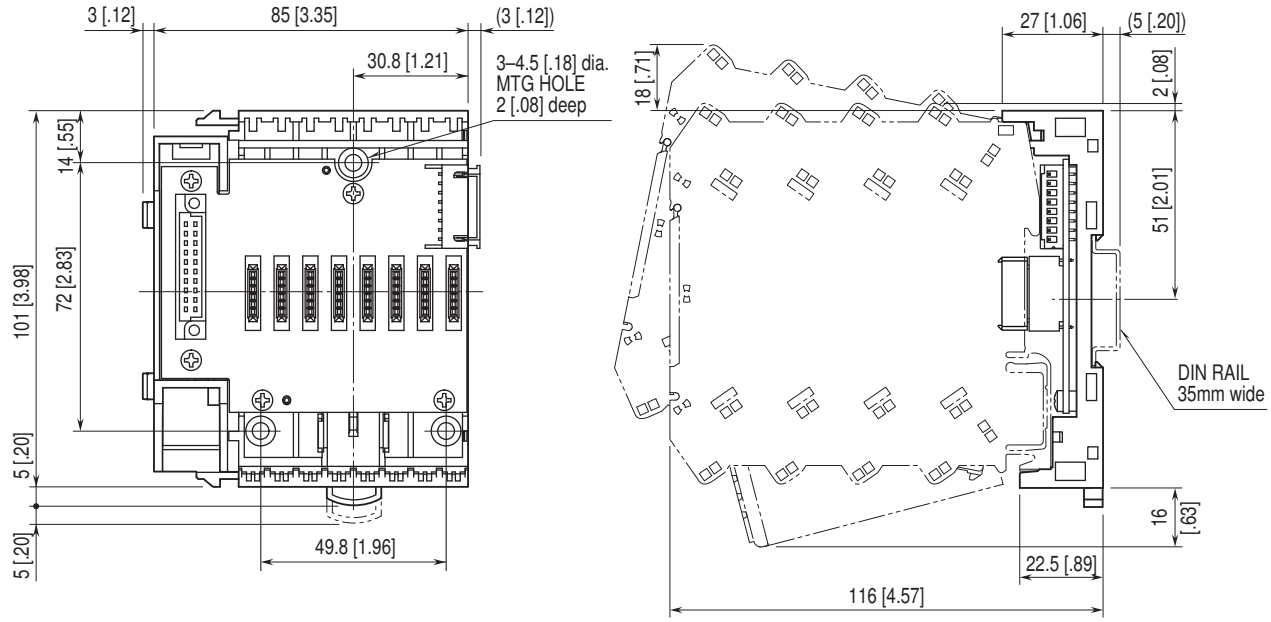
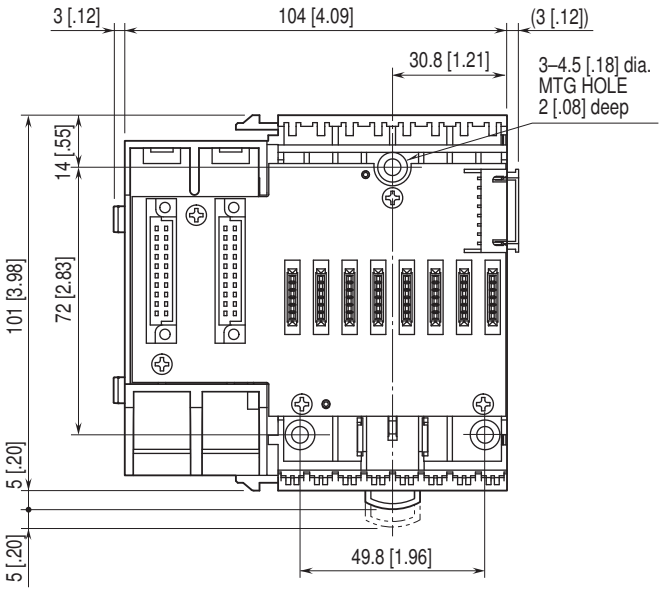
■ R6N: BASE

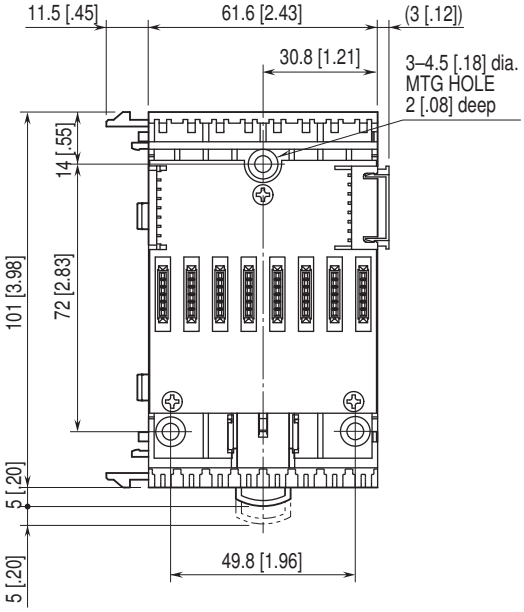
• **R6N-BS8A**



• **R6N-BS8B**



• **R6N-BS8P**



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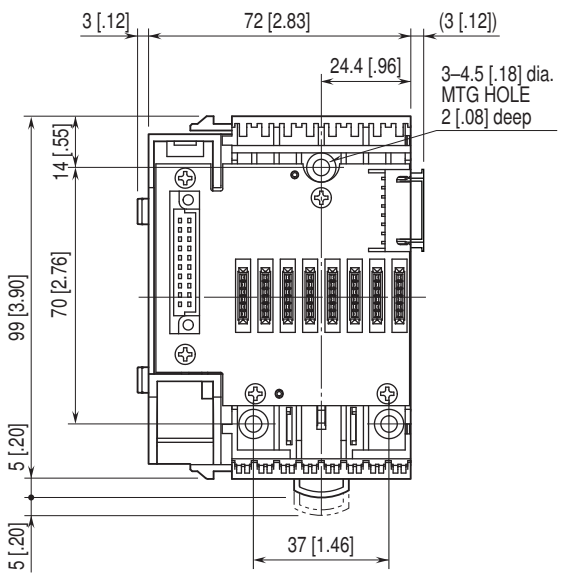
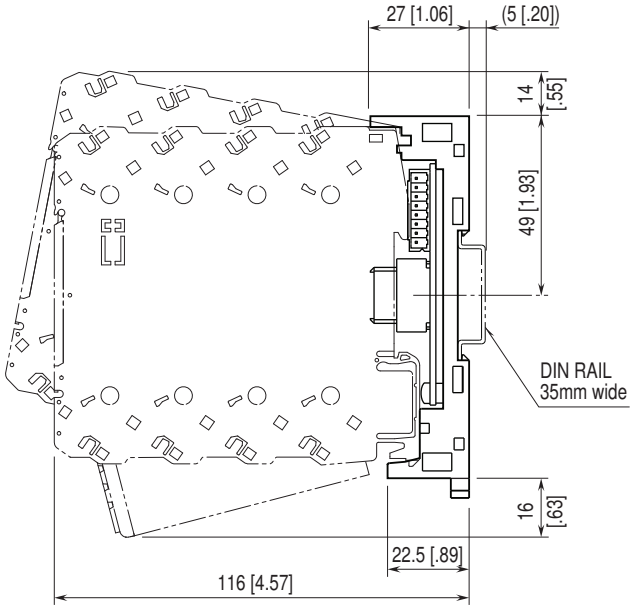
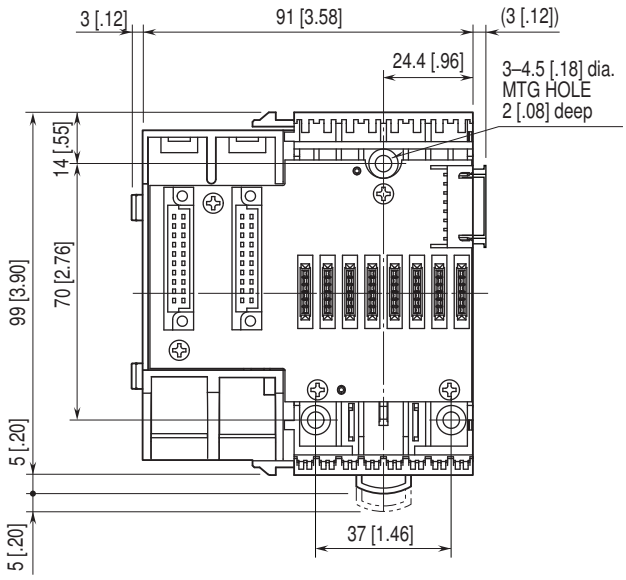
■ R6S: BASE

• **R6S-BS8A**

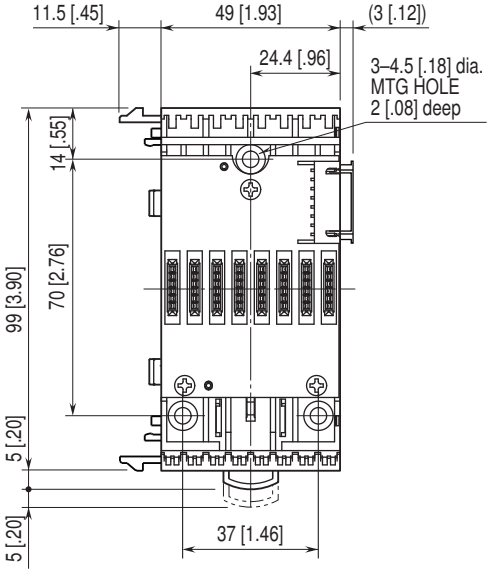




• **R6S-BS8B**



• **R6S-BS8P**



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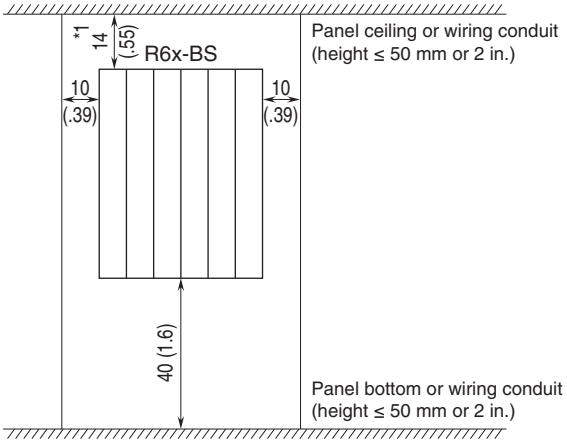
MOUNTING REQUIREMENTS unit: mm [inch]

■ MOUNTING DIRECTION

The unit must be mounted on a vertical panel. Mounting in any other angle will cause internal temperature to rise, may shorten the product's life expectation or deteriorate its performance.



*1:18 (.71) for R6N-BS

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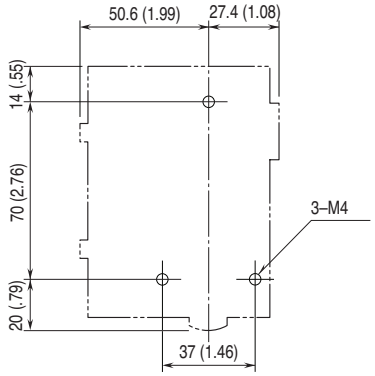
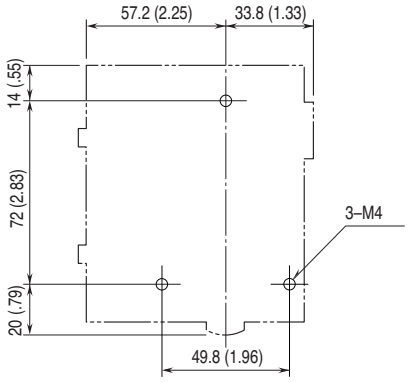
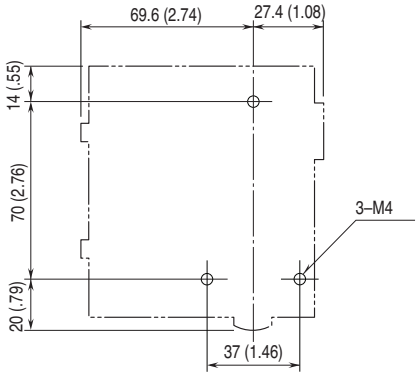
• R6D/R6S-BS8A



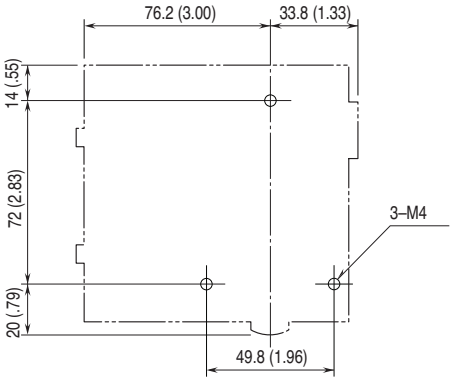
• R6N-BS8A



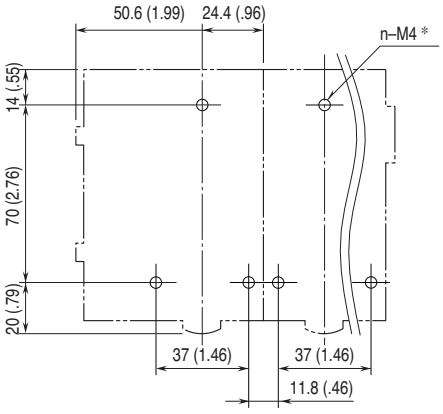
• R6D/R6S-BS8B



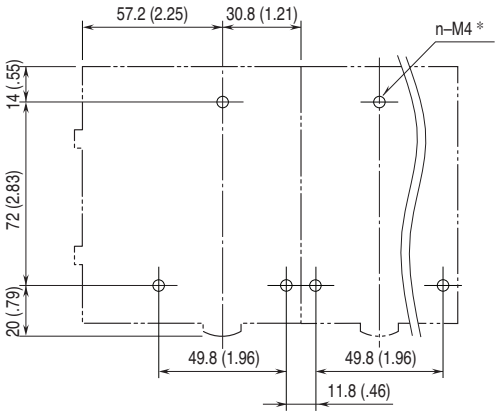
• R6N-BS8B



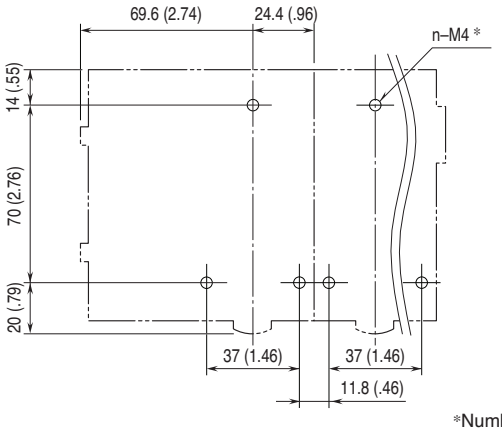
• R6D/R6S-BS8A+BS8P



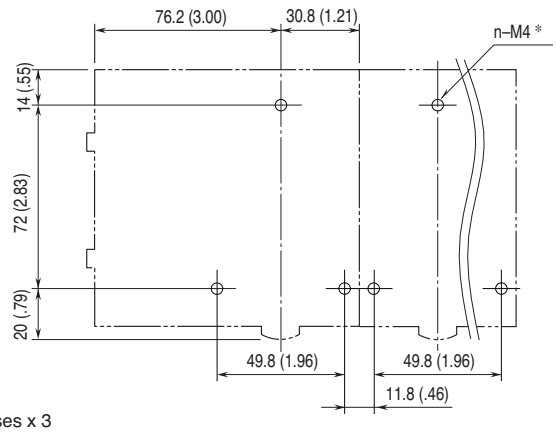
• R6N-BS8A+BS8P



• R6D/R6S-BS8B+BS8P



• R6N-BS8B+BS8P



*Number of bases x 3

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⚠ Specifications are subject to change without notice.

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