

ANALOG SWITCHING MODULE

MODEL M2MNV

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:

Signal conditioner (body + base socket)..... (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.

POINTS OF CAUTION**■ CONFORMITY WITH EU DIRECTIVES OR UK LEGISLATION**

- This equipment is suitable for Pollution Degree 2 and Installation Category II (transient voltage 2500V). Reinforced insulation (signal channel or switching command contact to power: 300V) and basic insulation (signal channel to switching command contact: 300V) are maintained. Prior to installation, check that the insulation class of this unit satisfies the system requirements.
- Altitude up to 2000 meters.
- The equipment must be mounted inside a panel.
- The equipment must be installed such that appropriate clearance and creepage distances are maintained to conform to CE or UKCA requirements. Failure to observe these requirements may invalidate the CE or UKCA conformance.
- 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/UKCA requirements in regard to the whole system and employ additional protective measures* to ensure the CE/UKCA conformity.
- * For example, installation of noise filters and clamp filters for the power source, input and output connected to the unit, etc.
- Install lightning surge protectors for those wires connected to remote locations.

■ POWER INPUT RATING & OPERATIONAL RANGE

- Locate the power input rating marked on the product and confirm its operational range as indicated below:
 - 100 – 240V and 85 – 264V AC rating:
 - 85 – 264V, 47 – 66 Hz, approx. 3 – 5VA
 - 24V DC rating: 24V ±10%, approx. 2W
 - 11 – 27V DC rating: 11 – 27V, approx. 2W
 - 110V DC rating: 85 – 150V, approx. 2W

■ GENERAL PRECAUTIONS

- Before you remove the unit from its base socket or mount it, turn off the power supply and input signal for safety.

■ ENVIRONMENT

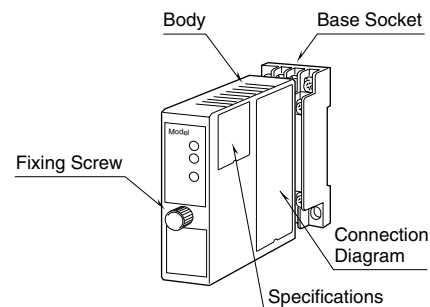
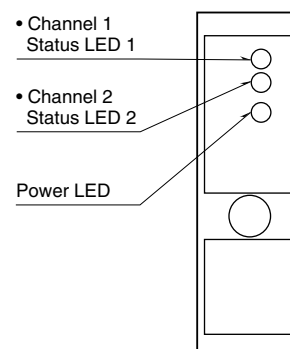
- Indoor use.
- When heavy dust or metal particles are present in the air, install the unit inside proper housing with sufficient ventilation.
- Do not install the unit where it is subjected to continuous vibration. Do not subject the unit to physical impact.
- Environmental temperature must be within -5 to +55°C (23 to 131°F) with relative humidity within 30 to 90% RH in order to ensure adequate life span and operation.
- Be sure that the ventilation slits are not covered with cables, etc.

■ 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.

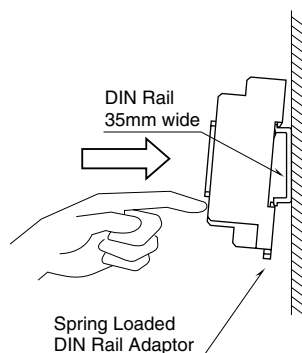
COMPONENT IDENTIFICATION**■ FRONT PANEL CONFIGURATION**

INSTALLATION

Loosen the fixing screw at the front of the unit in order to separate the body from the base socket.

■ DIN RAIL MOUNTING

Set the base socket so that its DIN rail adaptor is at the bottom. Position the upper hook at the rear side of base socket on the DIN rail and push in the lower. When removing the socket, push down the DIN rail adaptor utilizing a minus screwdriver and pull.



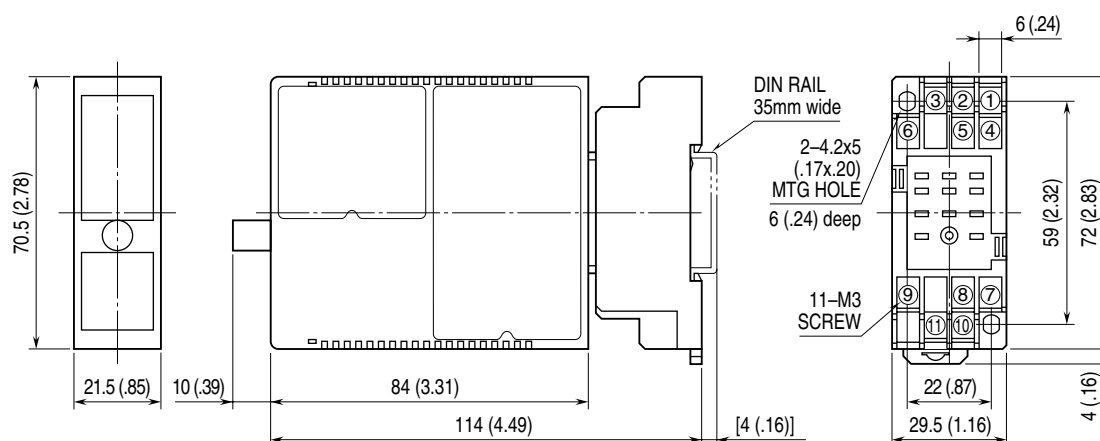
■ WALL MOUNTING

Refer to "EXTERNAL DIMENSIONS."

TERMINAL CONNECTIONS

Connect the unit as in the diagram below or refer to the connection diagram on the side of the unit.

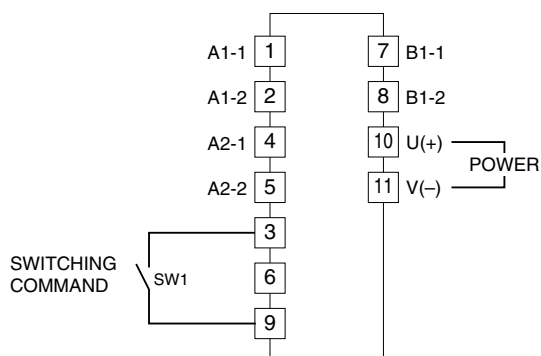
■ EXTERNAL DIMENSIONS unit: mm (inch)



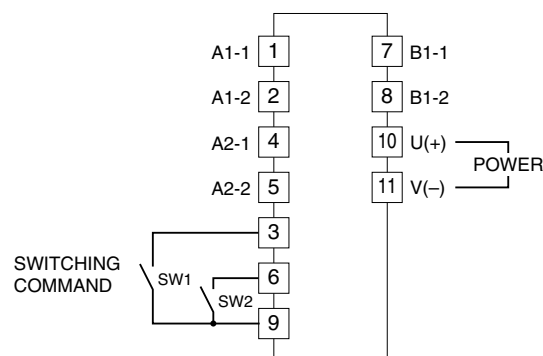
• When mounting, no extra space is needed between units.

■ CONNECTION DIAGRAM

■ INTERLOCKING SWITCHING CONTROL (single-pole contact)



■ INDEPENDENT SWITCHING CONTROL (double-pole contact)



WIRING INSTRUCTIONS

■ SCREW TERMINAL

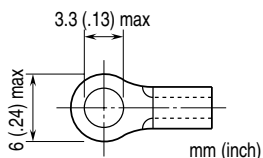
Torque: 0.8 N·m

■ SOLDERLESS TERMINAL

Refer to the drawing below for recommended ring tongue terminal size. Spade tongue type is also applicable.

Applicable wire size: 0.25 to 1.65 mm² (AWG 22 to 16)

Recommended manufacturer: Japan Solderless Terminal MFG.Co.Ltd, Nichifu Co.,Ltd



CHECKING

- 1) Terminal wiring: Check that all cables are correctly connected according to the connection diagram.
- 2) Power input voltage: Check voltage across the terminal 10 – 11 with a multimeter.
- 3) Switching command contact: Confirm adequate operations of the contact signal.

LIGHTNING SURGE PROTECTION

We offer a series of lightning surge protector for protection against induced lightning surges. Please contact us to choose appropriate models.

SWITCHING OPERATIONS

■ INTERLOCKING SWITCHING CONTROL (single-pole contact)

Single contact is used to switch from Signal Channel 1 (A1 – B1) to Signal Channel 2 (A2 – B1) and vice versa.

	CHANNEL 1 (A1)	CHANNEL 2 (A2)
Terminal 3 – 9 OFF (open)	OFF	ON
Terminal 3 – 9 ON (closed)	ON	OFF

Status LED turn on when the respective channels are alive.

• Switching Status

	Current Signal (no receiving resistor)	Current Signal (receiving resistor 50 Ω) Voltage Signal
Power : OFF Switching command : OFF (open)		
Power : ON Switching command : OFF (open)		
Power : ON Switching command : ON (short)		

*1. Resistor is provided only for the input code 2: Current signal (receiving resistor 50 Ω).

	Transition (ON to OFF, OFF to ON) Status	
	Current Signal (no receiving resistor)	Current Signal (receiving resistor 50 Ω) Voltage Signal
Power : ON Switching command : OFF to ON or Power : ON Switching command : ON to OFF	 When the switching command contact is switched from OFF to ON or from ON to OFF, the signal channel is switched only after all photo MOSFET relays turn on (closed).	 When the switching command contact is switched from OFF to ON or from ON to OFF, the signal channel is switched only after all photo MOSFET relays turn off (open).

*1. Resistor is provided only for the input code 2: Current signal (receiving resistor 50 Ω).

■ INDEPENDENT SWITCHING CONTROL (double-pole contact)

Double contacts are used to independently switch Signal Channel 1 (A1 – B1) and Signal Channel 2 (A2 – B1).

	CHANNEL 1 (A1)	CHANNEL 2 (A2)
Terminal 3 – 9 OFF (open)	OFF	----
Terminal 3 – 9 ON (closed)	ON	----
Terminal 6 – 9 OFF (open)	----	OFF
Terminal 6 – 9 ON (closed)	----	ON

Status LED turn on when the respective channels are alive.