Plug-in Signal Conditioners M-UNIT

ANALOG SWITCHING MODULE

Functions & Features

• Selecting one signal as output from up to four analog input signals

• Distributing a single input signal to any or all of the up to four output channels

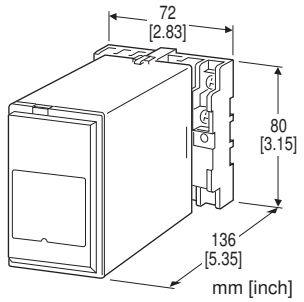
• High-density mounting

Typical Applications

• Switching 1 – 5 V DC signal: no contact failure that happens when using mechanical contacts for this purpose

• Switching low-speed pulse signals

• Switching alternating signals



MODEL: MNV-[1]-[2][3]

ORDERING INFORMATION

• Code number: MNV-[1]-[2][3]

Specify a code from below for each of [1] through [3].
(e.g. MNV-1-B/Q)

• Specify the specification for option code /Q
(e.g. /C01/S01)

[1] SWITCHING CIRCUIT

1: Single circuit
2: Double circuit

[2] POWER INPUT

AC Power
B: 100 V AC
C: 110 V AC
D: 115 V AC
F: 120 V AC
G: 200 V AC
H: 220 V AC
J: 240 V AC
DC Power
S: 12 V DC
R: 24 V DC
V: 48 V DC

[3] OPTIONS

blank: none
/Q: With options (specify the specification)

SPECIFICATIONS OF OPTION: Q (multiple selections)

COATING (For the detail, refer to our web site.)
/C01: Silicone coating
/C02: Polyurethane coating
/C03: Rubber coating
TERMINAL SCREW MATERIAL
/S01: Stainless steel

GENERAL SPECIFICATIONS

Construction: Plug-in
Connection: M3.5 screw terminals
Screw terminal: Chromated steel (standard) or stainless steel
Housing material: Flame-resistant resin (black)
Switching: Photo MOSFET relay
Isolation: Switching command relay to signal line to power
Monitor LED 1: Red light turns on with SW1 ON
Monitor LED 2: Red light turns on with SW2 ON
Monitor LED 3: Red light turns on with SW3 ON
Monitor LED 4: Red light turns on with SW4 ON

INPUT & OUTPUT

■ Signal Line
Max. operational voltage range: ±50 V DC (min. span 10 mV)
Max. operational current range: ±50 mA DC
Max. operational frequency range: 100 Hz
ON resistance: Approx. 50 Ω per line
■ Switching Command: Relay contact or open collector
Sensing:
Approx. 20 V DC @ 7 mA with single circuit
Approx. 20 V DC @ 14 mA with double circuit
Detection levels
ON resistance: ≤ 1 KΩ, ≤ 5 V
OFF resistance: ≥ 100 kΩ, ≥ 18 V
Leakage current at OFF: 1 μA (400 V AC between lines)

INSTALLATION

Power input
• AC: Operational voltage range: rating ±10 %, 50/60 ±2 Hz, approx. 2 VA
•DC: Operational voltage range: rating ±10 %

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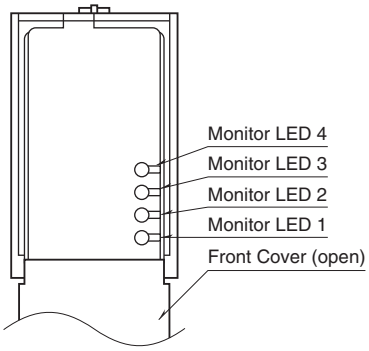
(ripple 10 % p-p max.) approx. 1 W (30 mA at 24 V)
Operating temperature: -5 to +60°C (23 to 140°F)
Operating humidity: 30 to 90 %RH (non-condensing)
Mounting: Surface or DIN rail
Weight: 350 g (0.77 lb)

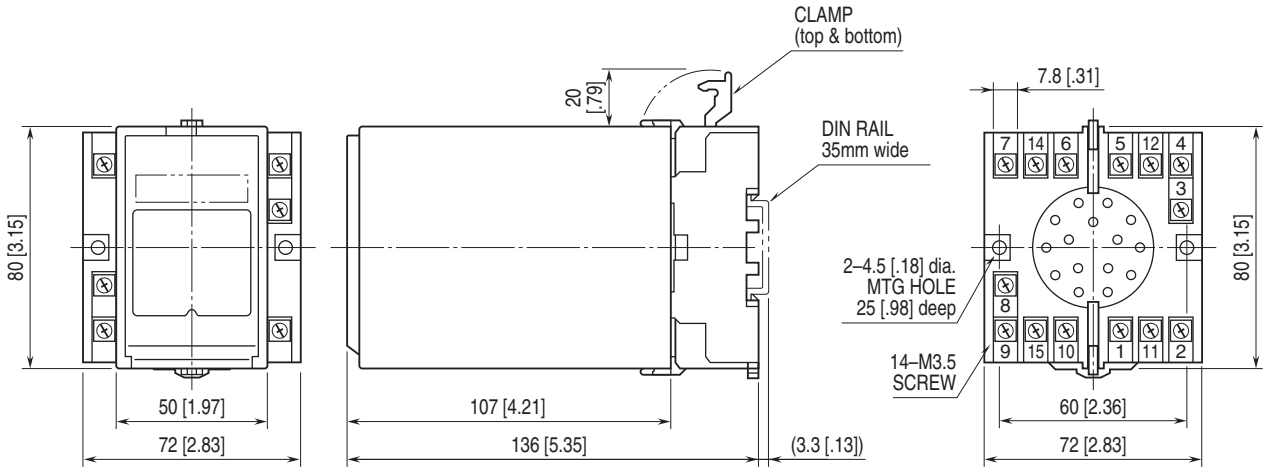
PERFORMANCE

Response time: Approx. 1 msec.
Leakage current at open circuit: ≤ 1 μA
Insulation resistance: ≥ 100 MΩ with 500 V DC
Dielectric strength: 1500 V AC @ 1 minute
(switching command relay to singal line to power to ground)

EXTERNAL VIEW



EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]



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

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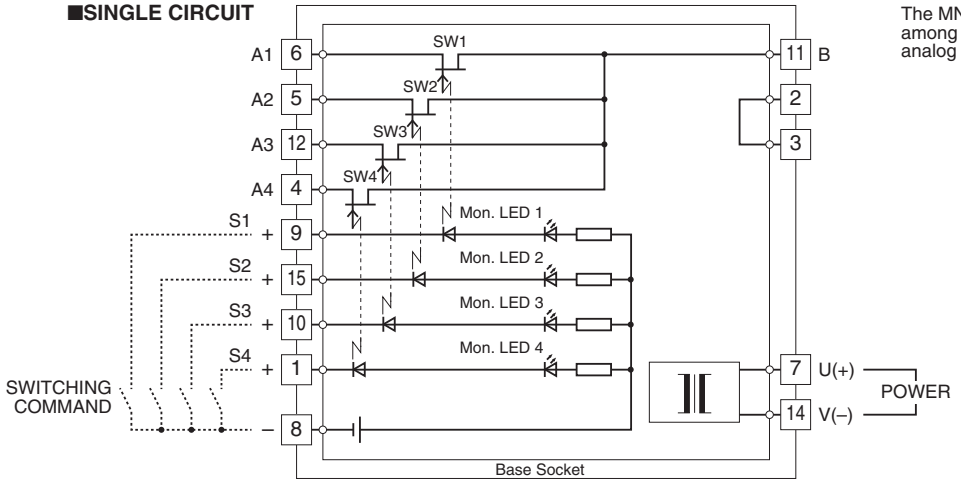
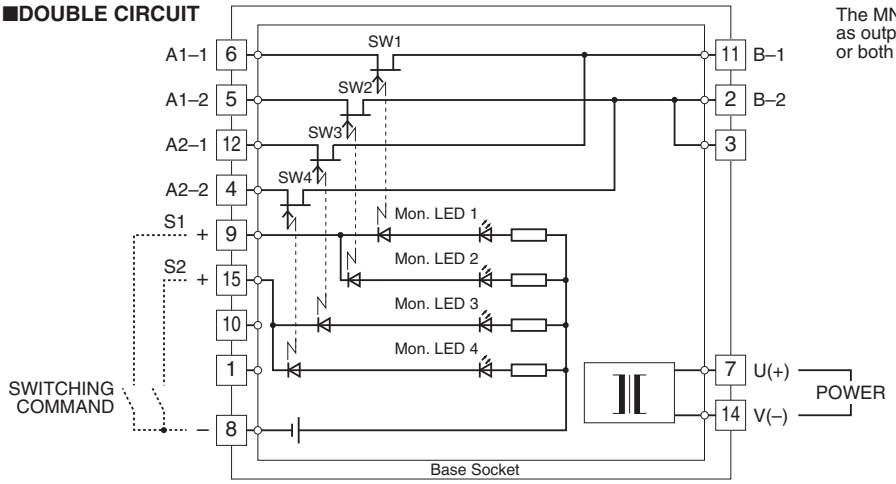
SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

■SINGLE CIRCUIT



The MNV can select and output one signal (B) from among the 4 channels (A1 – A4) or distribute a single analog signal (B) to any or all of the channels (A1 – A4).

■DOUBLE CIRCUIT



The MNV can select either (B) of the 2 channels (A1, A2) as output or distribute a single analog signal (B) to either or both channels (A1, A2).

⚠ Specifications are subject to change without notice.

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