Plug-in Signal Conditioners M-UNIT

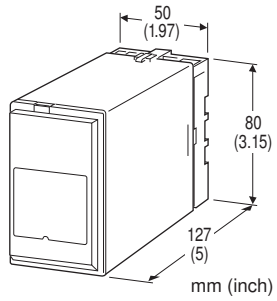
PULSE DURATION TRANSMITTER

Functions & Features

- Converting a DC input into an output pulse
- The duration or "ON" time is linearly proportional to the input analog signal amplitude
- Frame duration adjustable
- High-density mounting

Typical Applications

- Transmission or telemetering
- Proportional ON-OFF control to operate solenoid valves or other similar final control elements



MODEL: MTD-[1]4-[2][3]

ORDERING INFORMATION

- Code number: MTD-[1]4-[2][3]
  Specify a code from below for each [1] through [3].
(e.g. MTD-A4-K/Q)
- Special input range (For codes Z & 0)
- Specify the specification for option code /Q
  (e.g. /C01/S01)

[1] INPUT

Current

A: 4 – 20 mA DC (Input resistance 250 Ω)
A1: 4 – 20 mA DC (Input resistance 50 Ω)
B: 2 – 10 mA DC (Input resistance 500 Ω)
C: 1 – 5 mA DC (Input resistance 1000 Ω)
D: 0 – 20 mA DC (Input resistance 50 Ω)
E: 0 – 16 mA DC (Input resistance 62.5 Ω)
F: 0 – 10 mA DC (Input resistance 100 Ω)
G: 0 – 1 mA DC (Input resistance 1000 Ω)
H: 10 – 50 mA DC (Input resistance 100 Ω)
Z: Specify current (See INPUT SPECIFICATIONS)

Voltage

1: 0 – 10 mV DC (Input resistance 10 kΩ min.)
2: 0 – 100 mV DC (Input resistance 100 kΩ min.)
3: 0 – 1 V DC (Input resistance 1 MΩ min.)
4: 0 – 10 V DC (Input resistance 1 MΩ min.)
5: 0 – 5 V DC (Input resistance 1 MΩ min.)
6: 1 – 5 V DC (Input resistance 1 MΩ min.)
4W: -10 – +10 V DC (Input resistance 1 MΩ min.)
0: Specify voltage (See INPUT SPECIFICATIONS)

OUTPUT

4: 24 V voltage pulse

[2] POWER INPUT

AC Power

K: 85 – 132 V AC
(Operational voltage range 85 – 132 V, 47 – 66 Hz)
L: 170 – 264 V AC
(Operational voltage range 170 – 264 V, 47 – 66 Hz)

[3] OPTIONS

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

SPECIFICATIONS OF OPTION: Q (multiple selections)

COATING (For the detail, refer to M-System's 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)
Frame duration: 0.1 – 102.4 sec. adjustable
Preselection: Front-accessed rotary switch
Fine adjustment: Front-accessed potentiometer
Isolation: Input to output to power
Zero adjustment: 0 – 20 % (front)
Span adjustment: 80 to 100 % (front)

INPUT SPECIFICATIONS

■ **DC Current**:
Shunt resistor attached to the input terminals (0.5 W)
Specify input resistance value for code Z.
■ **DC Voltage**: -300 – +300 V DC
Minimum span: 10 mV
Offset: Max. 1.5 times span
Input resistance

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Span 10 – 100 mV : ≥ 10 kΩ
Span 0.1 – 1 V : ≥ 100 kΩ
Span ≥ 1 V : ≥ 1 MΩ

OUTPUT SPECIFICATIONS

■ **Voltage Pulse**

High pulse width: Duty cycle 0 – 100 %
High level: 24 V ±2 V
Low level: 0 V ±1 V
Maximum current: 50 mA at high level
Load resistance: 480 Ω min.
Output frames

PRESELECTION SWITCH POSITION (F.SEL)	ADJUSTABLE RANGE BY POTENTIOMETER (FRAME)
0	0.1 to 0.2 seconds
1	0.2 to 0.4 seconds
2	0.4 to 0.8 seconds
3	0.8 to 1.6 seconds
4	1.6 to 3.2 seconds
5	3.2 to 6.4 seconds
6	6.4 to 12.8 seconds
7	12.8 to 25.6 seconds
8	25.6 to 51.2 seconds
9	51.2 to 102.4 seconds

Ex-factory setting: Preselection Switch = 3, Frame = 1.0 sec., Zero/Span = Output 1 – 99% with the input 1 – 99%.

INSTALLATION

Power consumption
•**AC**: Approx. 2.5 VA
Operating temperature: -5 to +55°C (23 to 131°F)
Operating humidity: 30 to 90 %RH (non-condensing)
Mounting: Surface or DIN rail
Weight: 400 g (0.88 lb)

PERFORMANCE in percentage of span

Accuracy: ±0.1 % or 1 msec., whichever is greater, with output duration 1 – 99 %
Temp. coefficient: ±0.015 %/°C (±0.008 %/°F)
Response time: ≤ 0.5 sec. (0 – 90 %)
Line voltage effect: ±0.1 % over voltage range
Insulation resistance: ≥ 100 MΩ with 500 V DC
Dielectric strength: 1000 V AC @1 minute
(input to output to power)
2000 V AC @1 minute
(input or output or power to ground)

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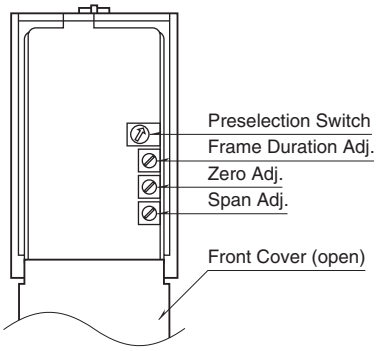
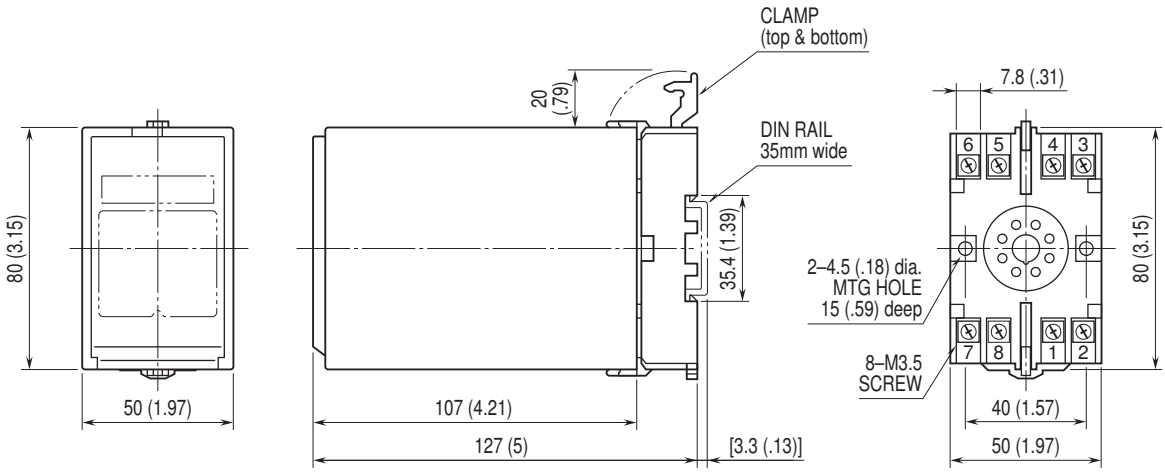
EXTERNAL VIEW

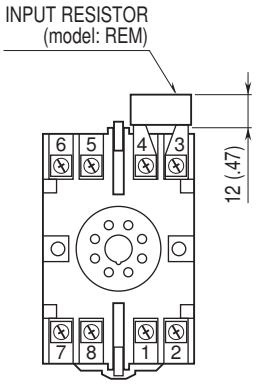


DIMENSIONS unit: mm (inch)



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

TERMINAL ASSIGNMENTS unit: mm (inch)



Input shunt resistor attached
for current input.

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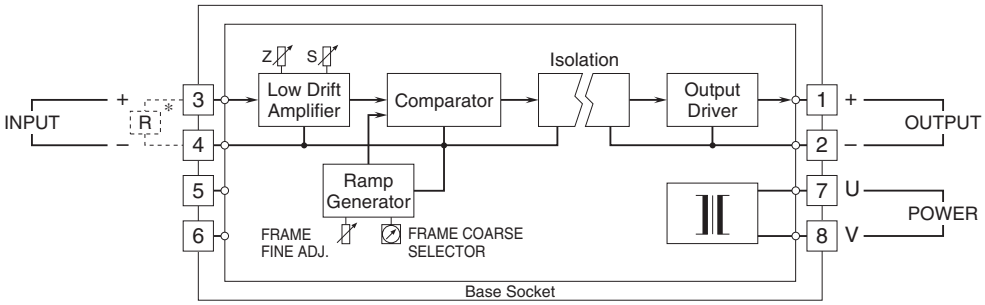
SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



*Input shunt resistor attached for current input.

⚠ Specifications are subject to change without notice.

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