

Plug-in Signal Conditioners M-UNIT

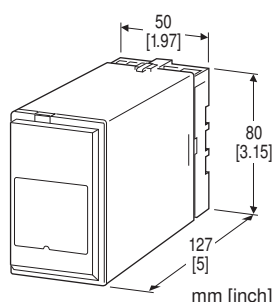
PULSE DURATION TRANSMITTER

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 of [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 k Ω min.)
- 2: 0 - 100 mV DC (Input resistance 100 k Ω min.)

- 3: 0 - 1 V DC (Input resistance 1 M Ω min.)
- 4: 0 - 10 V DC (Input resistance 1 M Ω min.)
- 5: 0 - 5 V DC (Input resistance 1 M Ω min.)
- 6: 1 - 5 V DC (Input resistance 1 M Ω min.)
- 4W: -10 - +10 V DC (Input resistance 1 M Ω 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 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)

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 - 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

Span 10 – 100 mV : $\geq 10\text{ k}\Omega$

Span 0.1 – 1 V : $\geq 100\text{ k}\Omega$

Span $\geq 1\text{ V}$: $\geq 1\text{ M}\Omega$

OUTPUT SPECIFICATIONS

■ Voltage Pulse

High pulse width: Duty cycle 0 – 100 %

High level: 24 V $\pm 2\text{ V}$

Low level: 0 V $\pm 1\text{ V}$

Maximum current: 50 mA at high level

Load resistance: 480 Ω min.

Output frames

PRESELECTION SWITCH POSITION (FR 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

K: Approx. 1.0 VA (with no load), approx. 4 VA (with max. load)

L: Approx. 2.5 VA (with no load), approx. 5 VA (with max. load)

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: $\pm 0.1\%$ or 1 msec., whichever is greater, with output duration 1 – 99 %

Temp. coefficient: $\pm 0.015\%$ /°C ($\pm 0.008\%$ /°F)

Response time: $\leq 0.5\text{ sec.}$ (0 – 90 %)

Line voltage effect: $\pm 0.1\%$ over voltage range

Insulation resistance: $\geq 100\text{ M}\Omega$ with 500 V DC

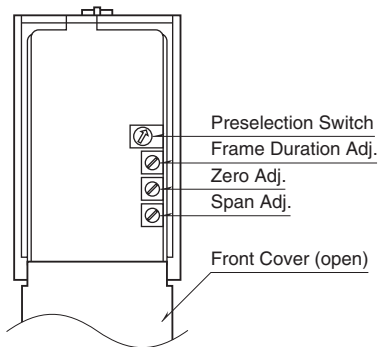
Dielectric strength: 1000 V AC @ 1 minute

(input to output to power)

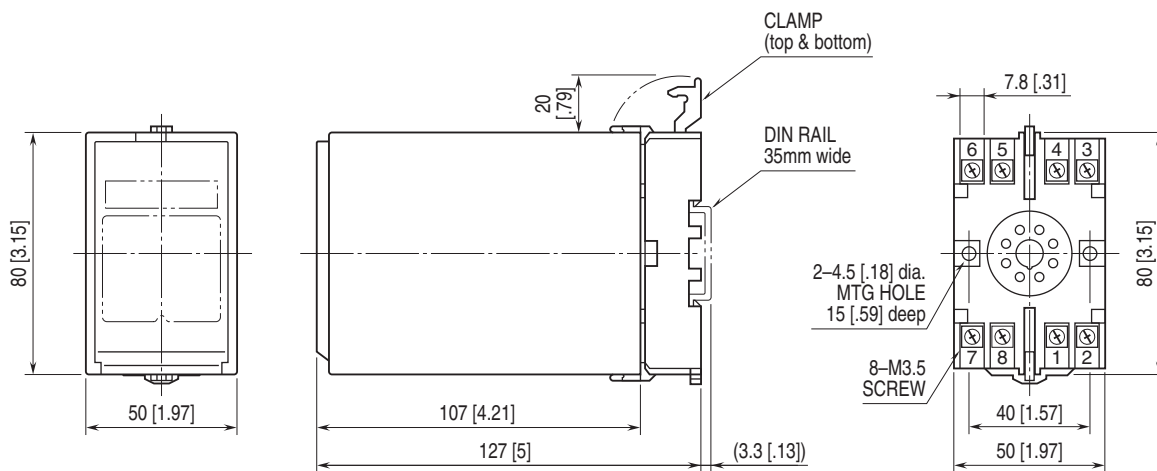
2000 V AC @ 1 minute

(input or output or power to ground)

EXTERNAL VIEW

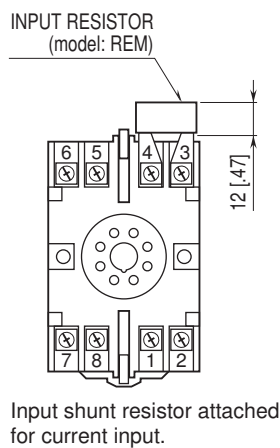


EXTERNAL DIMENSIONS unit: mm [inch]

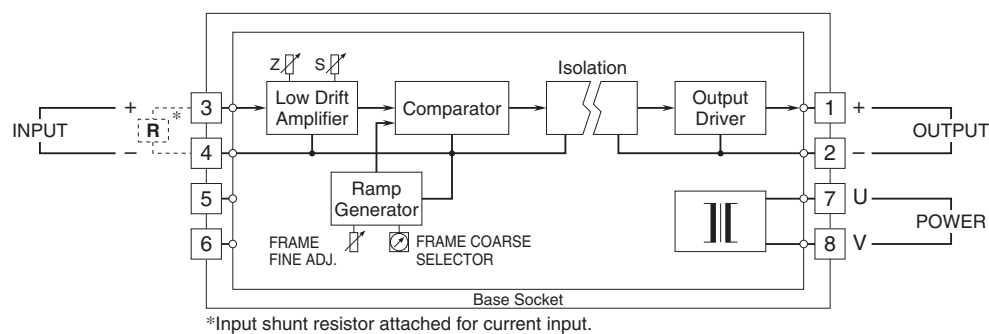


• When mounting, no extra space is needed between units.

TERMINAL ASSIGNMENTS unit: mm [inch]



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Specifications are subject to change without notice.