

Plug-in Signal Conditioners M-UNIT

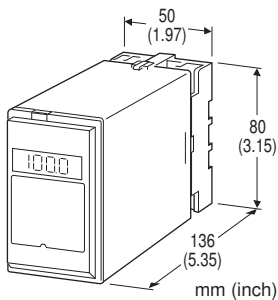
LVDT TRANSMITTER

Functions & Features

- Providing synchronous demodulation and conditioning for LVDT (Linear Variable Differential Transformer) transducers
- Wide input range 20 – 1000 mV/V
- Isolation up to 2000 V AC
- LCD meter
- High-density mounting

Typical Applications

- Measuring motion and other dynamic parameters



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

ORDERING INFORMATION

- Code number: MLV-[1]-[2][3]
- Specify a code from below for each of [1] through [3].
(e.g. MLV-A-B/E/Q)
- Special output range (For codes Z & 0)
- Specify the specification for option code /Q
(e.g. /C01/S01)

INPUT

LVDT 20 – 1000 mV/V at maximum deviation

[1] OUTPUT

Current

- A: 4 – 20 mA DC (Load resistance 750 Ω max.)
- B: 2 – 10 mA DC (Load resistance 1500 Ω max.)
- C: 1 – 5 mA DC (Load resistance 3000 Ω max.)
- D: 0 – 20 mA DC (Load resistance 750 Ω max.)
- E: 0 – 16 mA DC (Load resistance 900 Ω max.)
- F: 0 – 10 mA DC (Load resistance 1500 Ω max.)
- G: 0 – 1 mA DC (Load resistance 15 k Ω max.)
- Z: Specify current (See OUTPUT SPECIFICATIONS)

Voltage

- 1: 0 – 10 mV DC (Load resistance 10 k Ω min.)
- 2: 0 – 100 mV DC (Load resistance 100 k Ω min.)

- 3: 0 – 1 V DC (Load resistance 100 Ω min.)
- 4: 0 – 10 V DC (Load resistance 1000 Ω min.)
- 5: 0 – 5 V DC (Load resistance 500 Ω min.)
- 6: 1 – 5 V DC (Load resistance 500 Ω min.)
- 4W: -10 – +10 V DC (Load resistance 2000 Ω min.)
- 5W: -5 – +5 V DC (Load resistance 1000 Ω min.)
- 0: Specify voltage (See OUTPUT SPECIFICATIONS)

[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
- P: 110 V DC

[3] OPTIONS (multiple selections)

Input Signal Indicator

- blank: Without
- /E: With (0.0 - 100.0 % display)

Other 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)

Isolation: Input to output to power

Overrange output: Approx. -10 to +120 % at 1 – 5 V

Zero adjustment: -5 to +5 % (front)

Span adjustment: 95 to 105 % (front)

Gain adjustment: 1 – 50 (front)

Excitation adjustment: 6 – 10 Vp-p (front)

■ **DISPLAY (Input indicator)**

LCD digital display: 0.0 - 100.0 % (min. digit 0.1 %)

(No scaling)

INPUT SPECIFICATIONS

Input: LVDT; 20 – 1000 mV/V at max. deviation; Input voltage to the MLV must be over 160m Vp-p.

• **Excitation:** 6 – 10 Vp-p variable (8 Vp-p standard)

Frequency: Approx. 4 kHz

Maximum current: 20 mA r.m.s.

Caution: The input signal may be affected by the type and length of the cable between the LVDT and the transmitter.

When calibrating the system before installation, use the same type and length of cable.

If there is an error greater than the described accuracy, or when you need to change the frequency, please consult with M-System.

Certain type of LVDT may not be usable with the MLV.

Consult M-System before ordering to confirm the compatibility.

Mounting: Surface or DIN rail

Weight: 400 g (0.88 lb)

PERFORMANCE in percentage of span

Accuracy: ± 0.1 %

Display accuracy: $\pm (0.1$ % of FS + 1 digit)

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 M Ω with 500 V DC

Dielectric strength: 2000 V AC @1 minute (input to output to power to ground)

OUTPUT SPECIFICATIONS

■ **DC Current:** 0 – 20 mA DC

Minimum span: 1 mA

Offset: Max. 1.5 times span

Load resistance: Output drive 15 V max.

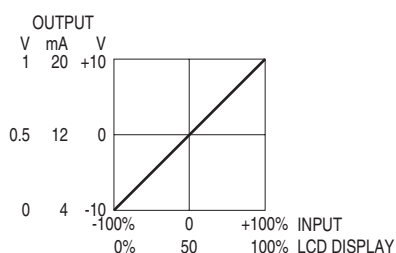
■ **DC Voltage:** -10 – +12 V DC

Minimum span: 5 mV

Offset: Max. 1.5 times span

Load resistance: Output drive 10 mA max.; 5 mA for negative voltage output; at ≥ 0.5 V

■ **OPERATION DIAGRAM**



INSTALLATION

Power input

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

• **DC:** Operational voltage range: rating ± 10 %, or 85 – 150

V for 110 V rating (ripple 10 % p-p max.)

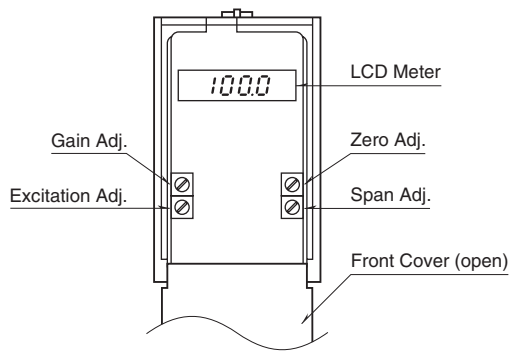
approx. 2 W (80 mA at 24 V)

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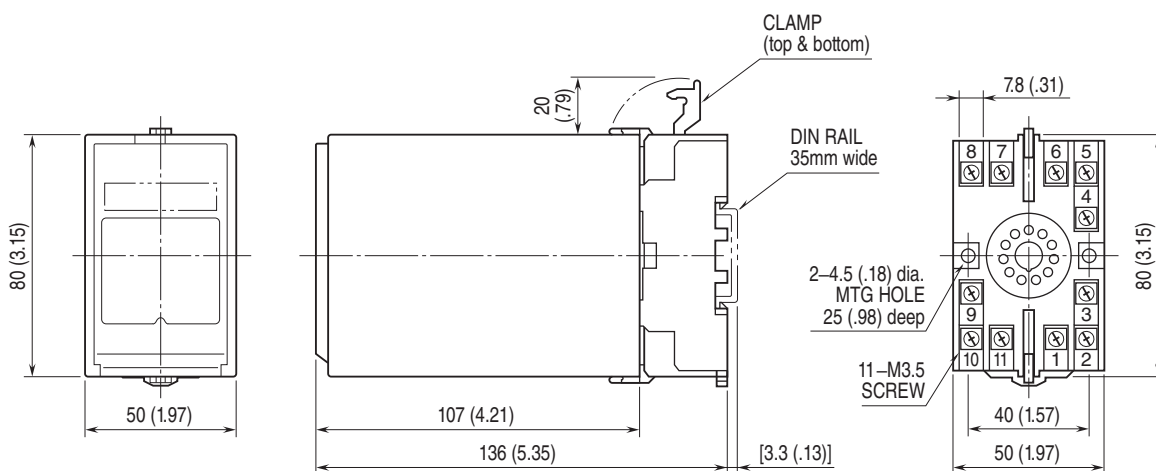
Operating temperature: -5 to +55°C (23 to 131°F)

Operating humidity: 30 to 90 %RH (non-condensing)

EXTERNAL VIEW

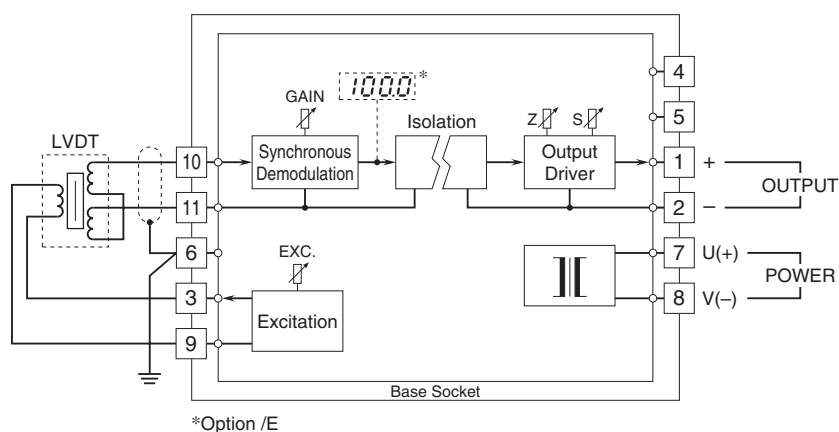


EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



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

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Specifications are subject to change without notice.