

**Power Transducer Series LT-UNIT**

**FREQUENCY TRANSDUCER**

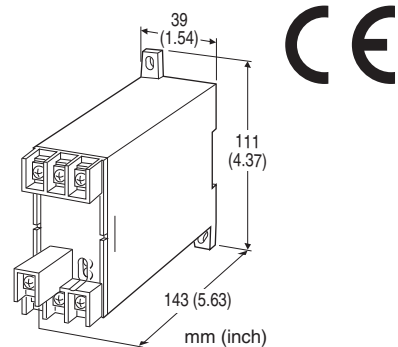
(self-powered)

**Functions & Features**

- Provides a DC output signal in proportion to the deviation ( $\pm 5$  Hz) from the center frequency (50 Hz or 60 Hz)
- DC output containing little ripple is ideal for computer input
- No auxiliary power supply required
- Isolation up to 2000 V AC
- High-density mounting
- Conforms to IEC 60688

**Typical Applications**

- Centralized monitoring and control of power management system in manufacturing facility or building
- Measuring frequency for UPS



**MODEL: LTHZN-[1][2][3][4]**

**ORDERING INFORMATION**

- Code number: LTHZN-[1][2][3][4]
- Specify a code from below for each of [1] through [4]. (e.g. LTHZN-11A/T/Q)
- Special output range (For codes Z & 0)
- Specify the specification for option code /Q (e.g. /C01)

**[1] FREQUENCY**

- 1: 45 - 55 Hz
- 2: 55 - 65 Hz
- 3: 45 - 65 Hz

**[2] VT INPUT**

- 1: 110 V AC
- 2: 220 V AC

**[3] OUTPUT**

**Current**

- A: 4 - 20 mA DC (Load resistance 500  $\Omega$  max.)
- D: 0 - 20 mA DC (Load resistance 500  $\Omega$  max.)
- F: 0 - 10 mA DC (Load resistance 1000  $\Omega$  max.)
- G: 0 - 1 mA DC (Load resistance 10 k $\Omega$  max.)
- J: 0 - 5 mA DC (Load resistance 2000  $\Omega$  max.)
- Z: Specify current (See OUTPUT SPECIFICATIONS)

**Voltage**

- 1: 0 - 10 mV DC (Load resistance 10 k $\Omega$  min.)
- 2: 0 - 100 mV DC (Load resistance 100 k $\Omega$  min.)
- 3: 0 - 1 V DC (Load resistance 1000  $\Omega$  min.)
- 4: 0 - 10 V DC (Load resistance 10 k $\Omega$  min.)
- 5: 0 - 5 V DC (Load resistance 5000  $\Omega$  min.)
- 6: 1 - 5 V DC (Load resistance 5000  $\Omega$  min.)
- 0: Specify voltage (See OUTPUT SPECIFICATIONS)

**[4] OPTIONS (multiple selections)**

**Terminal Cover**

- blank: Without
- /T: With

**Other Options**

- blank: none
- /Q: Option other than the above (specify the specification)

**SPECIFICATIONS OF OPTION: Q**

**COATING (For the detail, refer to M-System's web site.)**

- /C01: Silicone coating
- /C02: Polyurethane coating
- /C03: Rubber coating

**GENERAL SPECIFICATIONS**

- Connection:** M4 screw terminals (torque 1.2 N·m)
- Screw terminal:** Chrome-plated steel
- Housing material:** Flame-resistant resin (black)
- Isolation:** Input to output
- Computation:** One-shot
- Overrange output:** Approx. -10 to +120 % at 1 - 5 V
- Zero adjustment:** -5 to +5 % (front)
- Span adjustment:** 95 to 105 % (front)

**INPUT SPECIFICATIONS**

- Operational range:** 85 - 110 % of rating
- Overload capacity:** 150 % of rating for 10 sec., 110 % continuous
- Input burden:** 3 VA

**OUTPUT SPECIFICATIONS**

- **DC Current:** 0 - 20 mA DC
- Minimum span:** 1 mA

**Offset:** Max. 1.5 times span

**Load resistance:** Output drive 10 V max.

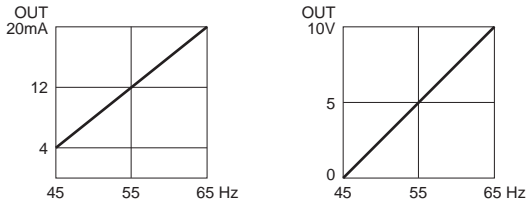
■ **DC Voltage:** 0 - 12 V DC

**Minimum span:** 5 mV

**Offset:** Max. 1.5 times span

**Load resistance:** Output drive 1 mA max.; at  $\geq 0.5$  V

■ **OPERATION DIAGRAM (example)**



## INSTALLATION

**Operating temperature:** -10 to +55°C (14 to 131°F)

**Operating humidity:** 30 to 85 %RH (non-condensing)

**Mounting:** Surface or DIN rail

**Weight:** 400 g (0.88 lb)

## PERFORMANCE in percentage of span

**Accuracy:**  $\pm 0.2$  % (at 23°C  $\pm 10$ °C or 73.4°F  $\pm 18$ °F, 45 - 65 Hz)

**Magnetic field (ext. origin) effect:**  $\pm 0.2$  % (400 A/m)

**Response time:**  $\leq 1$  sec. (0 - 100 %  $\pm 1$  %)

**Ripple:** 0.5 %p-p max.

**Insulation resistance:**  $\geq 100$  M $\Omega$  with 500 V DC

**Dielectric strength:** 2000 V AC @1 minute

(input to output to ground)

**Impulse withstand voltage:** 1.2 / 50  $\mu$ sec.,  $\pm 5$  kV

(input to output or ground)

## STANDARDS & APPROVALS

**EU conformity:**

EMC Directive

EMI EN 61000-6-4

EMS EN 61000-6-2

Low Voltage Directive

EN 61010-1

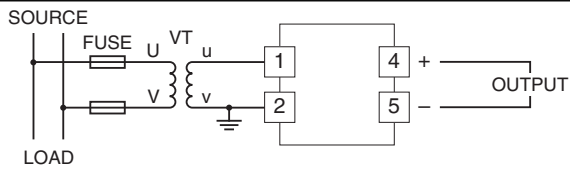
Measurement Category II (input)

Pollution Degree 2

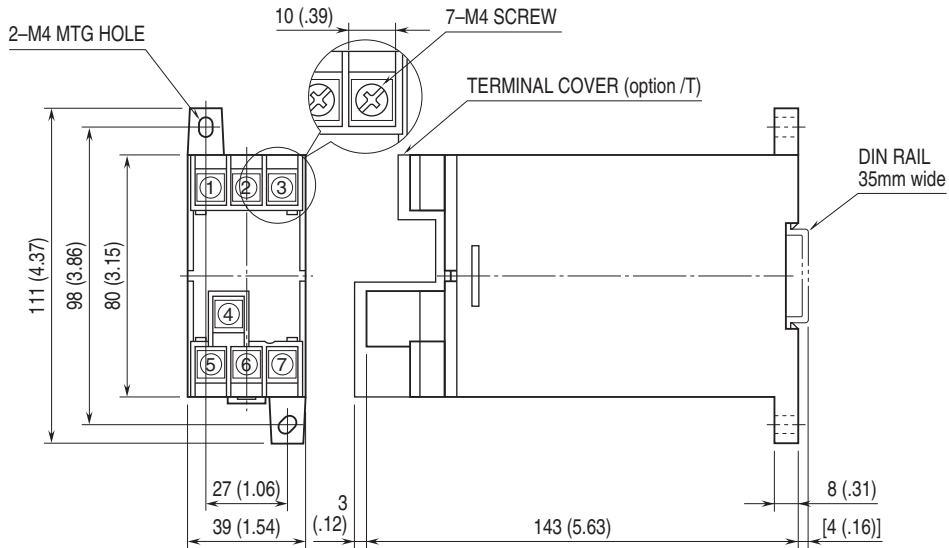
Input to output: Reinforced insulation (300 V)

RoHS Directive

**CONNECTION DIAGRAM**



**EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]**



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



Specifications are subject to change without notice.