

## Power Transducer Series L-UNIT

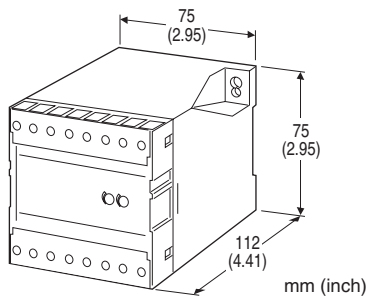
### FREQUENCY TRANSDUCER

#### Functions & Features

- Providing a DC output signal in proportion to deviation ( $\pm 5$  Hz) from center frequency (50 Hz or 60 Hz)
- DC output containing little ripple is ideal for computer input
- Isolation up to 2000 V AC
- Highdensity mounting

#### Typical Applications

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



### MODEL: LHZ-[1][2][3]-[4][5]

#### ORDERING INFORMATION

- Code number: LHZ-[1][2][3]-[4][5]
- Specify a code from below for each of [1] through [5].  
(e.g. LHZ-11A-C/Q)
- Special output range (For codes Z & 0)
  - Specify the specification for option code /Q  
(e.g. /C01/S01)

#### [1] FREQUENCY

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

#### [2] INPUT

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

#### [3] OUTPUT

Current

- A: 4 - 20 mA DC (Load resistance 600  $\Omega$  max.)
- D: 0 - 20 mA DC (Load resistance 600  $\Omega$  max.)
- E: 0 - 16 mA DC (Load resistance 750  $\Omega$  max.)
- F: 0 - 10 mA DC (Load resistance 1200  $\Omega$  max.)
- G: 0 - 1 mA DC (Load resistance 12 k $\Omega$  max.)
- J: 0 - 5 mA DC (Load resistance 2400  $\Omega$  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] AUXILIARY POWER SUPPLY

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

- R: 24 V DC
- V: 48 V DC
- P: 110 V DC

#### [5] 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:** Stand-alone; terminal access at the front

**Connection:** M3.5 screw terminals (torque 0.8 N·m)

**Screw terminal:** Nickel-plated steel (standard) or stainless steel

**Housing material:** Flame-resistant resin (black)

**Isolation:** Input to output to auxiliary power

(input to output to auxiliary power to ground)

**Computation:** One-shot

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

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

(input to output or ground)

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

**Span adjustment:** 95 to 105 % (front)

## INPUT SPECIFICATIONS

**Input burden:** 1 VA

**Overload capacity:** 150 % of rating for 10 sec., 120 % continuous

**Operational range:** 85 - 120 % of rating

## OUTPUT SPECIFICATIONS

■ **DC Current:** 0 - 20 mA DC

**Minimum span:** 1 mA

**Offset:** Max. 1.5 times span

**Load resistance:** Output drive 12 V max.

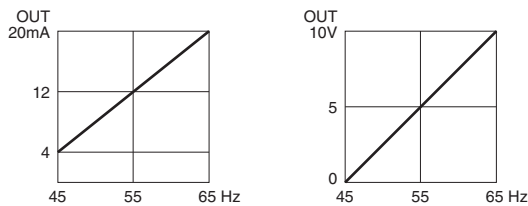
■ **DC Voltage:** 0 - 12 V DC

**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)**



Note: When there is no input voltage, the transducer outputs as negative (-) overrange.

## INSTALLATION

**Auxiliary power supply**

• **AC:** Operational voltage range: rating -15/+10 %, 50/60 Hz, approx. 2 VA

• **DC:** Operational voltage range: rating  $\pm 10$  %, or 85 - 150 V for 110 V rating, ripple 10 %p-p max., approx. 2 W (18 mA at 110 V)

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

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

**Mounting:** Surface or DIN rail

**Weight:** 300 g (0.66 lb)

## PERFORMANCE in percentage of span

**Accuracy:**  $\pm 1$  % (at 23°C  $\pm 10$ °C or 73.4°F  $\pm 18$ °F)

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

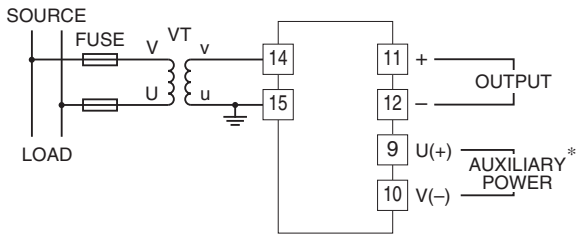
**Ripple:** 0.5 %p-p max.

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

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

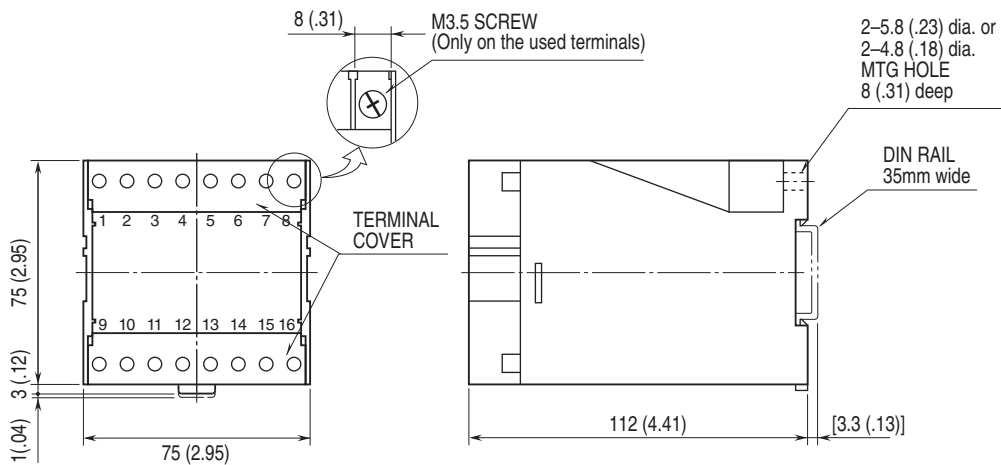
**Dielectric strength:** 2000 V AC @1 minute

## CONNECTION DIAGRAM



\*The transducer can be powered from the input voltage when the voltage is sufficiently stable and meets within the range of auxiliary power supply of the unit specified in the data sheet/instruction manual.

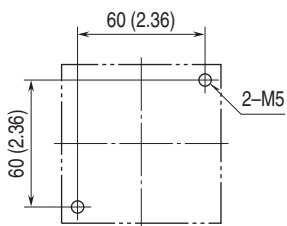
## EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]



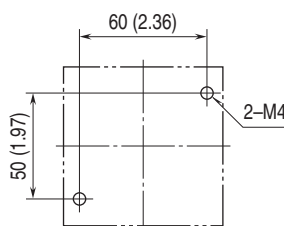
•When mounting, no extra space is needed between units.

## MOUNTING REQUIREMENTS unit: mm [inch]

### ■ M5 SCREWS



### ■ M4 SCREWS



Specifications are subject to change without notice.