

Power Transducer Series *LT-UNIT*

FREQUENCY TRANSDUCER

MODEL LTHZ

MODEL & SUFFIX CODE SELECTION

LTHZ-□□□-□□

MODEL _____

FREQUENCY _____

1 : 45 – 55 Hz

2 : 55 – 65 Hz

3 : 45 – 65 Hz

VT INPUT _____

1 : 100, 110, 115, 120V AC

2 : 190, 200, 210, 220, 230, 240V AC

4 : 380, 400, 415, 430, 440, 480V AC

OUTPUT _____

Current

A : 4 – 20mA DC

D : 0 – 20mA DC

F : 0 – 10mA DC

G : 0 – 1mA DC

J : 0 – 5mA DC

Z : Specify current

Voltage

1 : 0 – 10mV DC

2 : 0 – 100mV DC

3 : 0 – 1V DC

4 : 0 – 10V DC

5 : 0 – 5V DC

6 : 1 – 5V DC

0 : Specify voltage

AUXILIARY POWER SUPPLY _____

AC Power

K3 : 100 – 120V AC

L3 : 200 – 240V AC

DC Power

R : 24V DC

V : 48V DC

P : 110V DC

OPTIONS _____

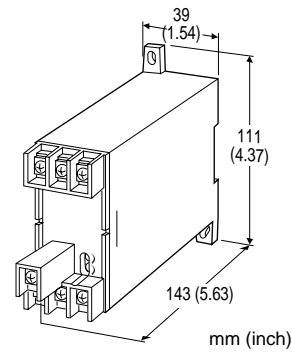
/T : Terminal cover

ORDERING INFORMATION

Specify code number and variables.

• **Code number** (e.g. LTHZ-11A-R/T)

• **Special output range** (For codes Z & 0)



Functions & Features

- Providing a DC output signal in proportion to deviation (± 5 Hz) from center frequency (50 Hz or 60 Hz)
- DC output containing little ripple is ideal for computer input
- Isolation up to 2000V AC
- High-density mounting
- Conforms to IEC 688

Typical Applications

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

GENERAL SPECIFICATIONS

Construction: stand-alone; terminal access at the front

Connection: M4 screw terminals

(chrome-plated steel; torque 1.2 N·m)

Housing material: flame-resistant resin (black)

Isolation: input to output to power

Computation: one-shot

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

Front adjustments: zero and span; $\pm 5\%$

INPUT & OUTPUT**INPUT**

Operational range: 85 – 120% of rating

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

Input burden: 1VA

OUTPUT

• **DC Current:** 0 – 20mA DC

Minimum span: 1mA

Zero suppression/elevation: max. 1.5 times span

Load resistance: output drive 10V maximum

| Output | Load Resistance |
|----------|---------------------------|
| 4 – 20mA | : 500 (Ω maximum) |
| 0 – 20mA | : 500 |
| 0 – 10mA | : 1000 |
| 0 – 1mA | : 10k |
| 0 – 5mA | : 2000 |

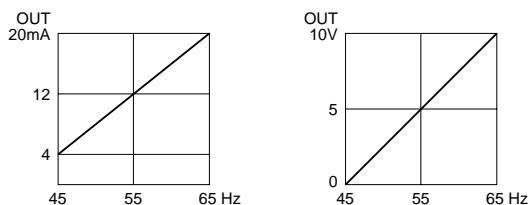
• **DC Voltage:** 0 – 12V DC

Minimum span: 5mV

Zero suppression/elevation: max. 1.5 times span

Load resistance: output drive 1mA maximum at $\geq 0.5V$

| Output | Load Resistance |
|-----------|---------------------------|
| 0 – 10mV | : 10k (Ω minimum) |
| 0 – 100mV | : 100k |
| 0 – 1V | : 1000 |
| 0 – 10V | : 10k |
| 0 – 5V | : 5000 |
| 1 – 5V | : 5000 |

OPERATION DIAGRAM (example)**INSTALLATION****Power input**

AC: operational voltage range for K3: 90 – 132V or L3: 180 – 264V
47 – 66 Hz, approx. 2VA

DC: operational voltage range for R, V: rating $\pm 10\%$ or P: 85 – 150V; ripple 10% p-p max.
approx. 2W (18mA at 110V)

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

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

Mounting: surface or DIN rail

Dimensions: W39×H111×D143 mm (1.54"×4.37"×5.63")
*D147 mm (5.79") with terminal cover
See General Spec. Sheet Figure A-1.

Weight: 400 g (0.88 lbs)

Terminal assignment: See General Spec. Sheet Figure B-1.

PERFORMANCE in percentage of span

Accuracy: $\pm 0.2\%$ (at 23°C $\pm 10^\circ\text{C}$ or 73.4°F $\pm 18^\circ\text{F}$,
45 – 65 Hz)

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

Response time: ≤ 1 second (0 – 100% $\pm 1\%$)

Ripple: 0.5% p-p max.

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

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

Dielectric strength: 2000V AC @1 minute

(input to output to power to ground)

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

(input to output or ground)

STANDARDS & APPROVALS

CE conformity: EMC Directive (89/336/EEC)

EMI EN61000-6-4

EMS EN61000-6-2

Low Voltage Directive (73/23/EEC)

Installation category II

Pollution degree 2

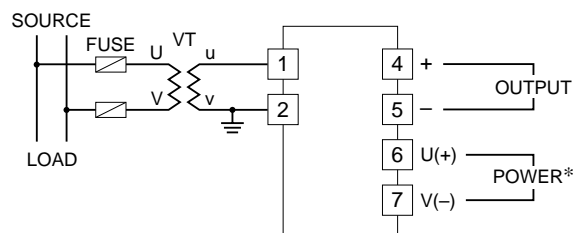
Input to output or power – Reinforced insulation

Max. operating voltage 550V

Output to power – Reinforced insulation

Max. operating voltage 300V

IEC Standard: IEC 60688

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.