

Power Transducer Series *LT-UNIT*

AC CURRENT TRANSDUCER
(clamp-on current sensor; RMS sensing)

MODEL **LTCEC**

MODEL & SUFFIX CODE SELECTION

LTCEC-□□□-□□

MODEL _____

SENSOR _____

1 : Leadwire type CLSA

2 : Screw terminal type CLSB

INPUT _____

10 : 0 – 10A AC 150: 0 – 150A AC

15 : 0 – 15A AC 175: 0 – 175A AC

20 : 0 – 20A AC 200: 0 – 200A AC

30 : 0 – 30A AC 225: 0 – 225A AC

40 : 0 – 40A AC 250: 0 – 250A AC

50 : 0 – 50A AC 300: 0 – 300A AC

60 : 0 – 60A AC 350: 0 – 350A AC

75 : 0 – 75A AC 400: 0 – 400A AC

100: 0 – 100A AC 500: 0 – 500A AC

125: 0 – 125A AC 600: 0 – 600A AC *1

*1 : Not selectable with the sensor type code 1.

OUTPUT _____

Current

Voltage

A : 4 – 20mA DC

1 : 0 – 10mV DC

D : 0 – 20mA DC

2 : 0 – 100mV DC

F : 0 – 10mA DC

3 : 0 – 1V DC

G : 0 – 1mA DC

4 : 0 – 10V DC

J : 0 – 5mA DC

5 : 0 – 5V DC

Z : Specify current

6 : 1 – 5V DC

0 : Specify voltage

AUXILIARY POWER SUPPLY _____

AC Power

DC Power

B : 100V AC

G : 200V AC

R : 24V DC

C : 110V AC

H : 220V AC

V : 48V DC

D : 115V AC

J : 240V AC

P : 110V DC

F : 120V AC

OPTIONS _____

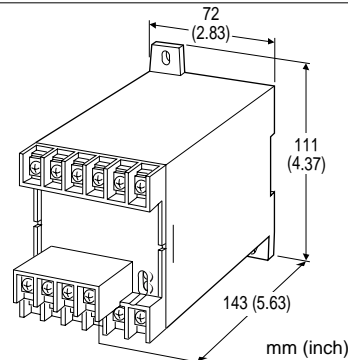
/T : Terminal cover

ORDERING INFORMATION

Specify code number and variables.

• **Code number** (e.g. LTCEC-150A-R/T)

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



Functions & Features

- Converts an alternating current into a standard process signal
- Easy-to-install clamp-on type current sensor without needing a current transformer
- Clamp-on current sensor included
- Wide input range from 10A up to 600A
- Input frequency 50 / 60 / 400 Hz
- Over-voltage clamp element for safety in open circuit
- Isolation up to 2000V AC
- High-density mounting

Typical Applications

- Centralized monitoring and control of motors at a supervisory panel
- Monitoring abnormal load current at motors to detect pump malfunctions

ACCESSORIES unit: mm (inch)

The clamp-on current sensor is included in the product package.

■ **CLAMP-ON CURRENT SENSOR (leadwire type CLSA)**

• 0 – 10A through 0 – 75A Use

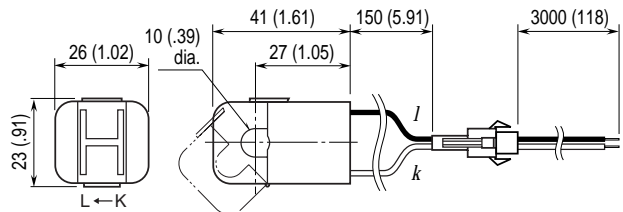
Sensor model No.: CLSA-08

Sensor cable model No.: CLSA-08C-30

Applicable cable diameter: Max. 10.0

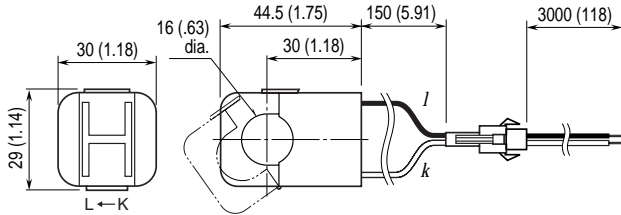
Sensor leadwire: AWG 22

Weight: 45 g (1.6 oz)



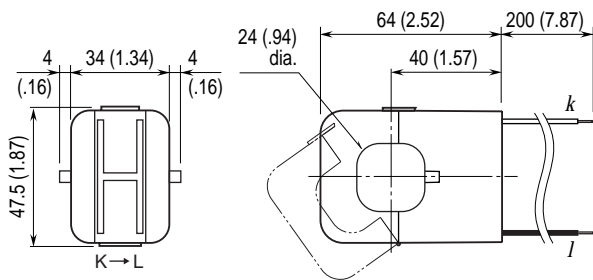
•0 – 100A Use

Sensor model No.: CLSA-12
Sensor cable model No.: CLSA-08C-30
Applicable cable diameter: Max. 16.0
Sensor leadwire: AWG 22
Weight: 70 g (2.5 oz)



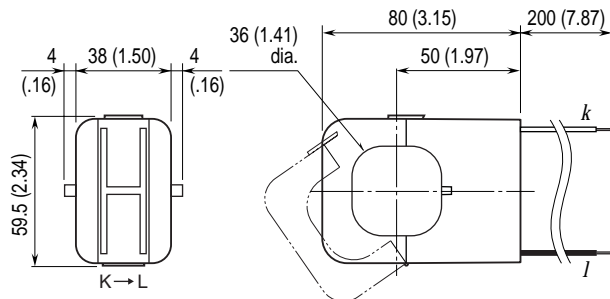
•0 – 125A through 0 – 300A Use

Sensor model No.: CLSA-30
Applicable cable diameter: Max. 24.0
Sensor leadwire: AWG 18, 200 mm
Weight: 200 g (7.1 oz)



•0 – 350A through 0 – 500A Use

Sensor model No.: CLSA-50
Applicable cable diameter: Max. 36.0
Sensor leadwire: AWG 18, 200 mm
Weight: 300 g (10.6 oz)

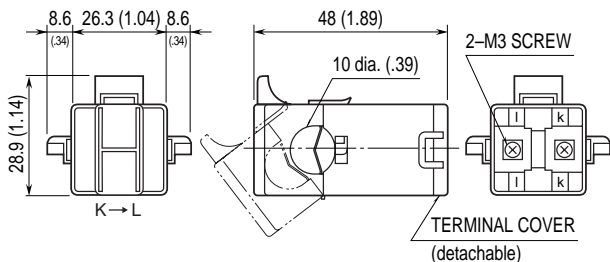


■CLAMP-ON CURRENT SENSOR (screw terminal type CLSB)

Connection: M3 screw terminal
 (nickel-plated steel; torque 0.5 N·m)

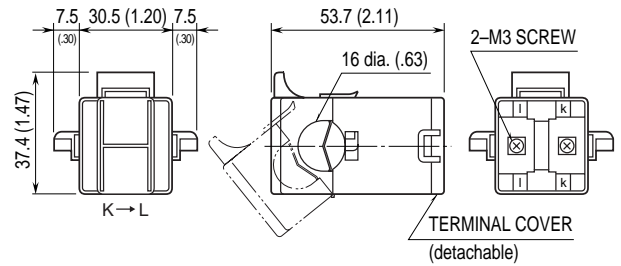
•0 – 10A through 0 – 50A Use

Sensor model No.: CLSB-05
Applicable cable diameter: Max. 10.0
Weight: 45 g (1.6 oz)



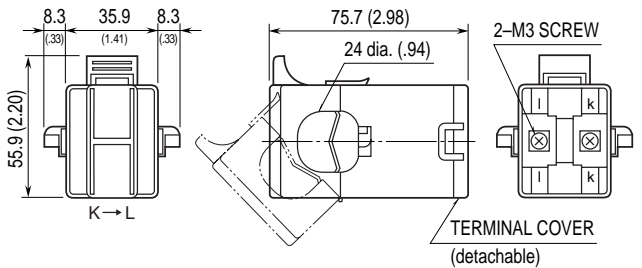
•0 – 60A through 0 – 100A Use

Sensor model No.: CLSB-10
Applicable cable diameter: Max. 16.0
Weight: 80 g (2.8 oz)



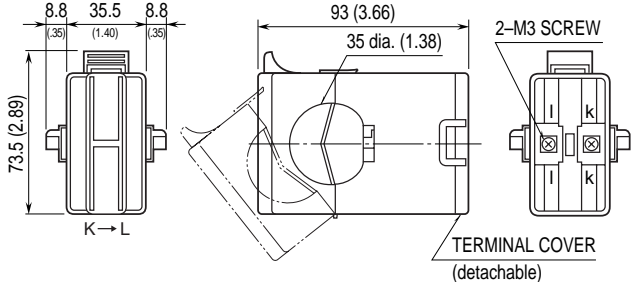
•0 – 125A through 0 – 200A Use

Sensor model No.: CLSB-20
Applicable cable diameter: Max. 24.0
Weight: 200 g (7.1 oz)



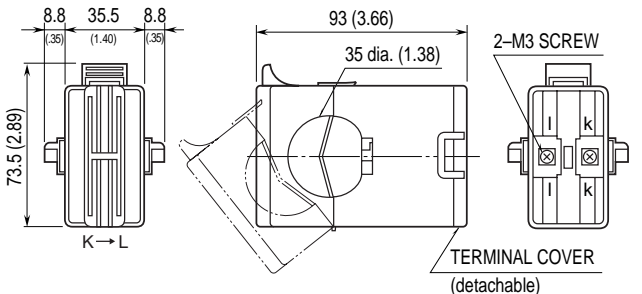
•0 – 225A through 0 – 400A Use

Sensor model No.: CLSB-40
Applicable cable diameter: Max. 35.0
Weight: 300 g (10.6 oz)



•0 – 500A through 0 – 600A Use

Sensor model No.: CLSB-60
Applicable cable diameter: Max. 35.0
Weight: 360 g (12.7 oz)



Note 1: The output values may vary depending on the accuracy of engagement at the clamp connection.
 Note 2: The sensor is detachable up to 100 times (approx.).
 Note 3: The sensor's mechanical construction may cause it to generate resonance sound. However, it does not affect the performance of the sensor.

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: Sensor core to sensor output or input to output to power

Input waveform: Up to 15% of 3rd harmonic content

Overrange output: 0 – 120% at 1 – 5V

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

INPUT & OUTPUT

■ **INPUT:** 0 – 10AAC, 0 – 15AAC, 0 – 20AAC,
0 – 30AAC, 0 – 40AAC, 0 – 50AAC,
0 – 60AAC, 0 – 75AAC, 0 – 100AAC,
0 – 125AAC, 0 – 150AAC, 0 – 175AAC,
0 – 200AAC, 0 – 225AAC, 0 – 250AAC,
0 – 300AAC, 0 – 350AAC, 0 – 400AAC,
0 – 500AAC, 0 – 600AAC

Frequency: 50 / 60 / 400 Hz

Overload capacity

CLSA-08: 120A continuous
CLSA-12: 300A continuous
CLSA-30: 360A continuous
CLSA-50: 600A continuous
CLSB-05: 100A continuous
CLSB-10: 200A continuous
CLSB-20: 300A continuous
CLSB-40: 600A continuous
CLSB-60: 720A continuous

Operational range: 0 – 120% of rating

Be sure that the input voltage is of 440V or less.

■ 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

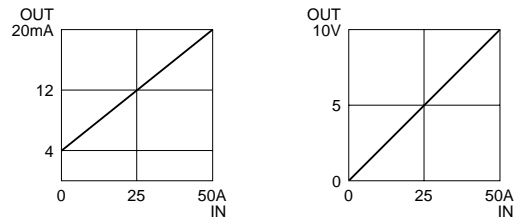
Minimum span: 5mV

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

Auxiliary power supply

AC: Operational voltage range: Rating -15%/+10%, 50/60 Hz, approx. 3VA

DC: Operational voltage range for R, V: Rating $\pm 10\%$ or P: 85 – 150V; ripple 10% p-p max. approx. 1.7W (15mA 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: W72×H111×D143* mm (2.83"×4.37"×5.63")

*D147 mm (5.79") with terminal cover

See General Spec. Sheet Figure C-1.

Weight: 450 g (0.99 lbs)

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

PERFORMANCE in percentage of span

Accuracy: $\pm 0.5\%$

$\pm 1.0\%$ at 400 Hz

(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: $\pm 0.5\%$ (400A/m)

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

Ripple: 0.5% p-p max.

Line voltage effect: $\pm 0.25\%$ over voltage range

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

(input to output to power)

$\geq 100M\Omega$ with 500V DC

(sensor core to sensor output)

Dielectric strength: 2000V AC @1 minute

(input to output to power to ground)

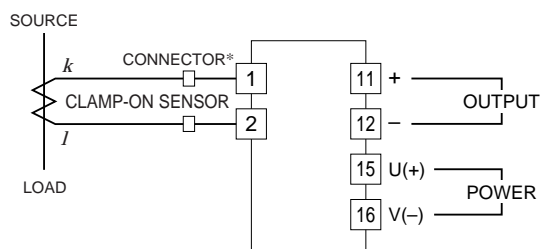
1000V AC @1 minute

(sensor core to sensor output)

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

(input to output or ground)

CONNECTION DIAGRAM



*Connector provided only for the CLSA-08 and CLSA-12.