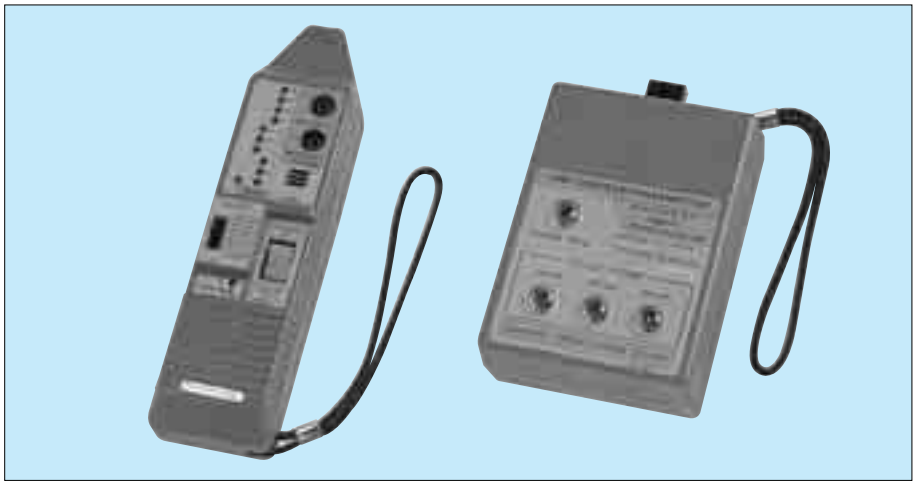
Allowing one-person tracing of breakers and wired routes in live-line conditions

WIRED ROUTE TRACING DEVICE WITH AN EARTH-LEAKAGE POINT LOCATING FUNCTION LINE CHECKER

Type TLC-B-Y



APPLICATIONS

In checking wiring before new or renewal construction and during maintenance and when there is trouble with production control facilities in factories, computer rooms, hospitals, public installations, hotels, etc., there is an increasing necessity to trace wired routes and check breaker positions without turning off the power due to their importance. The LINE CHECKER (type TLC-B-Y), allowing simple, safe and speedy one-person work, is ideal for this.

FEATURES

- Locating of earth-leakage points (with the power stopped)
- Tracing of breakers and wired routes both in live lines and dead lines
- Circuit voltage indicating function <100V, 200V or 400V is judged by the transmitter alone.>
- Conductivity checking function <Conductivity is checked by inserting the attached cord with a test lead bar into the receiver.>
- Easy judgment by sound and light

RATINGS AND SPECIFICATIONS

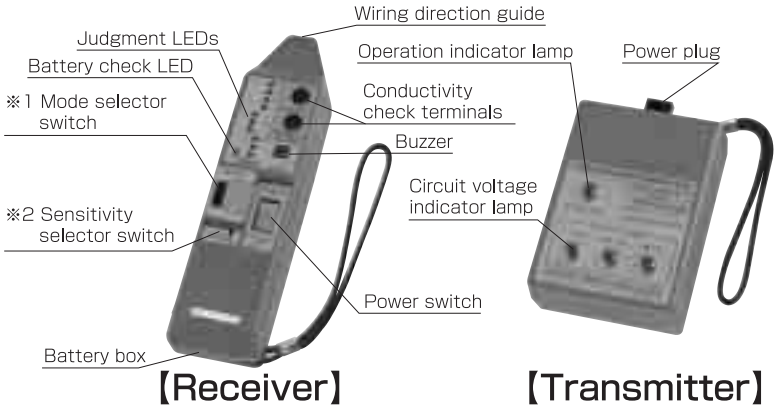
Transmitter (type TLC-B-T-Y)

Working voltage range	9V - 440V AC±10%, 50/60Hz, 9V - 440V DC±10%, *100V - 440V for locating earth-leakage points
Signal frequency	5kHz
Circuit voltage indicator lamp lighting range	100V:75±7.5～150±15V 200V:150±15～300±30V 400V:300±30～484V
Dimensions (mm)	124.5 (H) ×82 (W) ×40.3 (D)
Weight	Approx. 150g

Receiver (type TLC-B-R-Y)

Tracing	Method	Magnetic flux detection by signal current
	Sensitivity	8-step selection by two slide switches
	Leak detectable line conditions	Ground fault resistance: 2kΩ or less, earth capacity: 0.01μF or less
	Output	10-step indication by LEDs (flashing), intermittent sound of buzzer (twice/sec.)
Conductivity check	Resistance measuring range	0～900Ω
	Voltage and current at measurement	5V DC, 2mA or less
	Output	10-step indication by LEDs (lighting), continuous sound of buzzer
Others	Battery	9V alkaline battery×1
	Auto power off	Turns off the power 3 min.±30 sec. after turning on the power switch.
	Battery check	LED (green)
	Circuit operating voltage	7V or more
	Fuse rating	250V 0.1A
	Battery life	Tracing: approx. 11 hrs, conductivity check: approx. 7 hrs when used continuously (20℃)
	Dimensions (mm)	191 (H) ×51 (W) ×36 (D) (main unit)
	Weight	Approx. 190g (including battery)

NAMES OF PARTS



Applications of the mode selector switch of the receiver

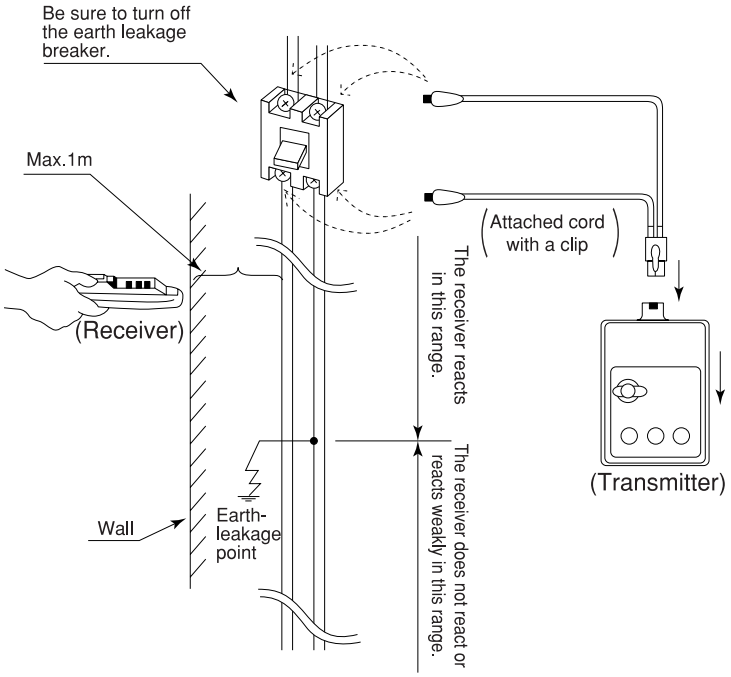
※1 ※2

Mode selection	Sensitivity selection	Application (object to be traced)	Sensitivity
Wire	Low	Electric wires (when tracing directly)	Low ↑ ↓ High
	High	1P breakers	
Breaker	Low	Breakers (when tracing directly or from above resin cover)	
	High	Breakers (when tracing from above iron cover)	
Route	Low	Wired routes (short distance)	
	High	Wired routes (long distance)	
E. Leak	Low	Earth-leakage point (leak current: large)	
	High	Earth-leakage point (leak current: small)	

OPERATING PROCEDURES

1 Locating of earth-leakage points (with the power stopped)

[Mode ··· E. Leak] [Sensitivity ··· High] [Judgment ··· Judgment LEDs: flashing, buzzer: intermittent sound]



Transmitter operating procedure

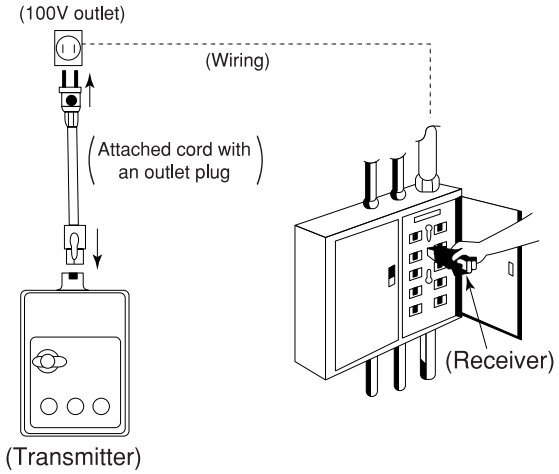
- Connect the plug of the transmitter to the same phase on the power supply side and load side of the earth leakage breaker with the earth leakage breaker OFF.
- At this time, check that the operation indicator lamp or circuit voltage indicator lamp of the transmitter flashes.

Receiver operating procedure

- Set the mode selector switch to "E. Leak".
- Set the sensitivity selector switch to "High".
- While depressing the "TRACE ON" side of the power switch, bring the receiver close to the place where wiring is assumed to be buried.
- Since the wiring in question is within the range where intermittent beep sounds and flashing of judgment LEDs are the most intensive, continue the tracing of the wiring toward the load in this way.
- The point where the buzzer stops sounding and the judgment LEDs stop flashing, or the number of flashes decreases suddenly is an earth-leakage point.

2 Tracing 2P/3P breakers for 100V outlets (in live lines)

[Mode ··· Breaker] [Sensitivity ··· Low] [Judgment ··· Judgment LEDs: flashing, buzzer: intermittent sound]

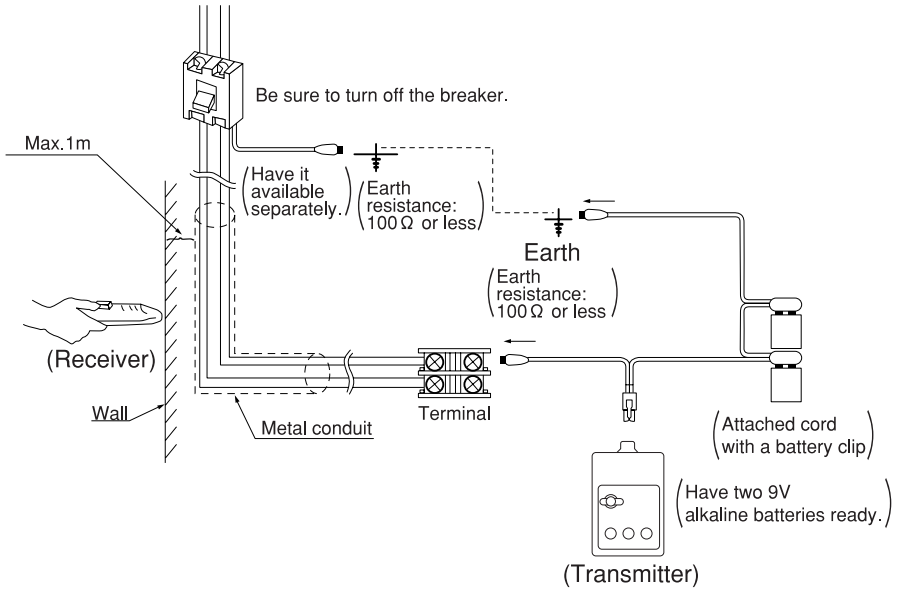


Receiver operating procedure

- Set the mode selector switch to "Breaker".
- Set the sensitivity selector switch to "Low".
- While depressing the "TRACE ON" side of the power switch, bring the receiver close to the breakers in the distribution board, and move it slowly.
- The breaker in question is at the place where intermittent beep sounds and flashing of judgment LEDs are the most intensive.

3 Tracing wired routes in walls, underground and in metal conduits (in dead lines)

[Mode ··· Route] [Sensitivity ··· High] [Judgment ··· Judgment LEDs: flashing, buzzer: intermittent sound]



Transmitter operating procedure

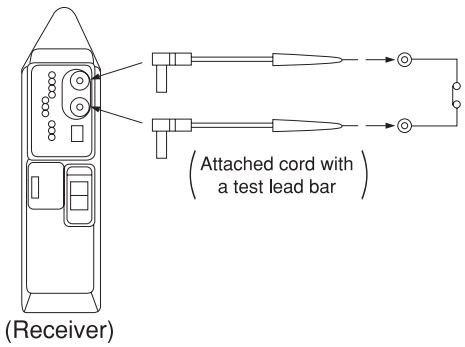
- Connect the attached cord with the battery clips to two 9V alkaline batteries as shown on the left-hand side.(Connect so that the operation indicator lamp of the transmitter flashes.)

Receiver operating procedure

- Set the mode selector switch to "Route".
- Set the sensitivity selector switch to "High".
- While depressing the "TRACE ON" side of the power switch, bring the receiver close to the place where wiring is assumed to be buried.
- The wiring in question is within the range where the intermittent beep sounds and the flashing of judgment LEDs are the most intensive.

4 Conductivity check (in dead lines)

[Power switch ··· Conductivity ON] [Judgment ··· Judgment LEDs: lighting, buzzer: continuous sound]



Receiver operating procedure

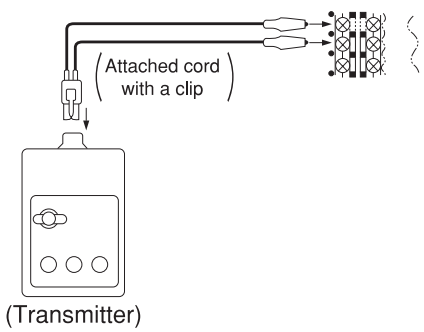
- Set the power switch to "Conductivity ON".
- Apply the test lead bars to the measuring terminals.
- When they are conductive, the buzzer sounds continuously, and the LEDs (1 - 10) illuminate.

Rough resistance and the number of illuminated judgment LEDs are as follows.

Number of lighting judgment LEDs	Rough resistance	Buzzer
10	0Ω (conductive)	Continuous sound (large)
5	500Ω	Continuous sound (medium)
1	900Ω	Continuous sound (small)
0	900Ω or more or open	No sound

5 Circuit voltage check

[Check ··· Flashing of the circuit voltage indicator lamp]



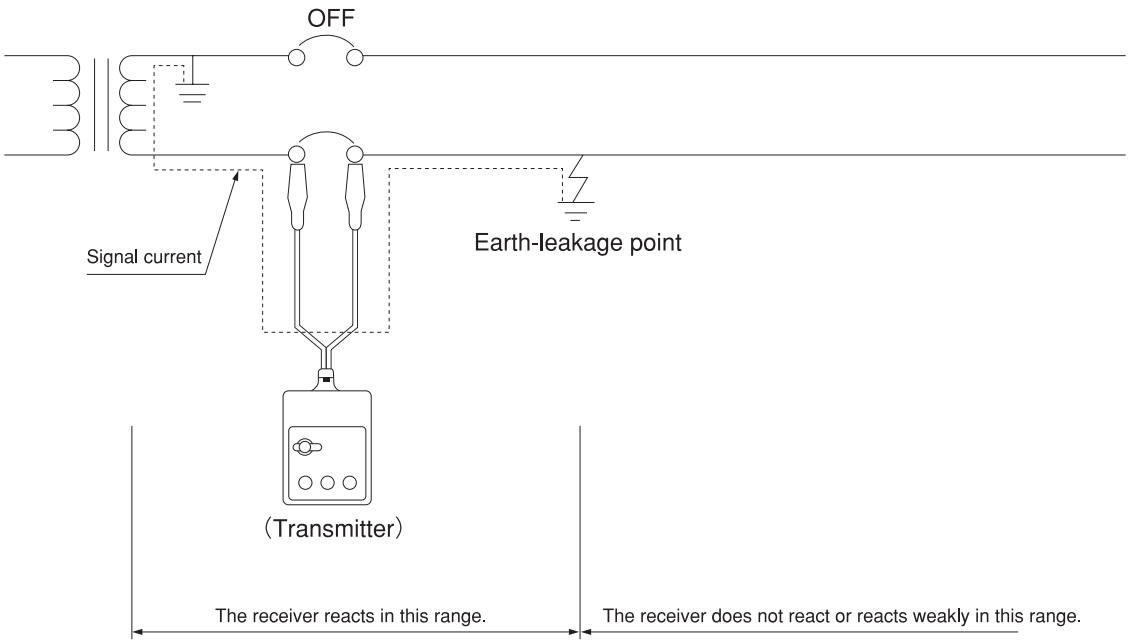
Transmitter operating procedure

- Connect the cords with a clip to the terminals.
- Check the flashing circuit voltage indicator lamp.

※If no voltage indicator lamp flashes despite the flashing of the operation indicator lamp, the circuit voltage may be 75V or less.

■PRINCIPLE OF LOCATING EARTH-LEAKAGE POINTS

When the transmitter is connected to the same phase on the power supply side and load side of the earth leakage breaker, a loop circuit of the earth-leakage point, transmitter and earth point is formed, where a signal current commensurate with the earth resistance of the earth-leakage point flows. (See below.)
This signal current is measured by the receiver to locate the earth-leakage point.



■DETAILS OF THE KIT

【Photo of the kit】

The kit consisting of:

- Transmitter×1
- Receiver×1
- 100V outlet cord×1
- Cord with a clip×1
- Cord with battery clips×1
- Cord with resistance×1
- Cord with a test lead bar×1
- 9V alkaline battery (for receiver)×1
- Carrying case×1

■STANDARD PRICE LIST

Type	Standard price	Electrical contractors' price	Remarks	Delivery
TLC-B-Y	79,800			△