

Earth Leakage Circuit Breakers

Design features

■ Description

Today's industries have introduced advanced information systems and automated systems to increase efficiency.

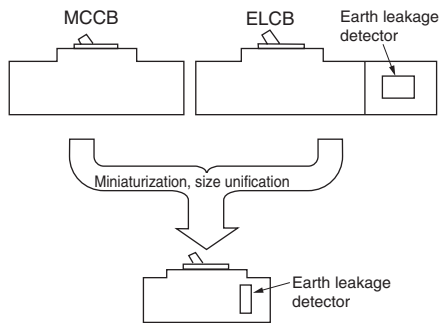
These systems rely on a stable supply of electrical power. The reliability, operational ease, and cost effectiveness of these power supplies must be improved. Earth leakage circuit breakers must also be more compact with improved reliability. They need to be economical to reduce the overall distribution panel cost.

The new FUJI ELCB has been developed to meet these expectations and requirements. Now, for the first time, FUJI ELCB and MCCB of the same rating are the same size, a long-awaited development in the manufacture of low-voltage distribution board.

■ Features

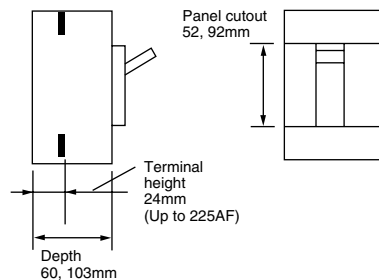
• Standardized ELCB and MCCB outline dimensions

FUJI α -TWIN breakers feature compact and modular construction. The ELCB's and MCCB's of the same rating, from 30AF to 800AF, are the same size.



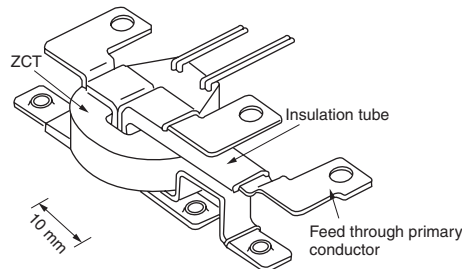
• Standardized modular construction

Having circuit breakers of the same basic dimensions promote modular designs. New α -TWIN ELCB's are available in two standard depths: 60 and 103mm, choose it from two front panel cutout height of 52mm or 92mm. The center of the window frame is positioned at the center of the circuit breaker. These design features enable a radical reduction in the number of mounting patterns.



• Ultra-small leakage detector and trip unit

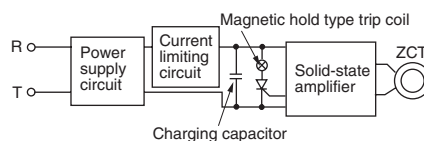
The leakage detector is equipped with a new, thin, high-performance ZCT with uniform magnetic characteristics. The new ZCT allows a compact leakage detector with stable balancing characteristics to be manufactured.



• Simple and highly reliable electronic circuit

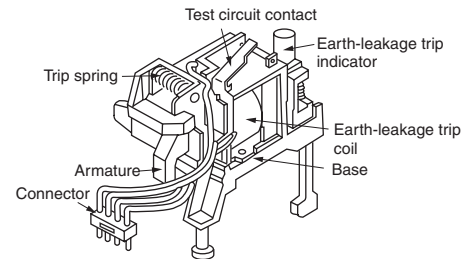
Very stable operation across a wide voltage range has been obtained with a highly reliable dedicated IC which is operated with minute currents and a FUJI designed power circuit.

100V/ 230V/440V circuit



• Small, high-efficiency trip unit

A small, highly efficient trip coil which operates with a small tripping current and has a strong driving force has been developed with a CAD (Computer Aided Design) based method of magnetic field analysis.



• One ELCB can be used with circuit voltages of 100–230–440V AC (high-speed type)

Easy selection of ELCB and great flexibility in meeting specification changes. Selection of the proper ELCB is made easier because of the wide voltage range of one unit, (100–230–440V AC). Changes in specifications can also be made more easily with such a wide voltage range.

• Three-step, sensitivity to fault currents (100/200/500mA)

A three-step change (100/200/500mA) in the rated sensitivity to fault currents has widened the range of application. This allows full compliance with changes in specifications.

• Easily interchangeable ELCB and MCCB

The ELCB and MCCB allow the designer to quickly alter distribution panel and facility design when specifications are changed. The ELCB and MCCB can be easily replaced by each other because their sizes and basic specifications are the same.

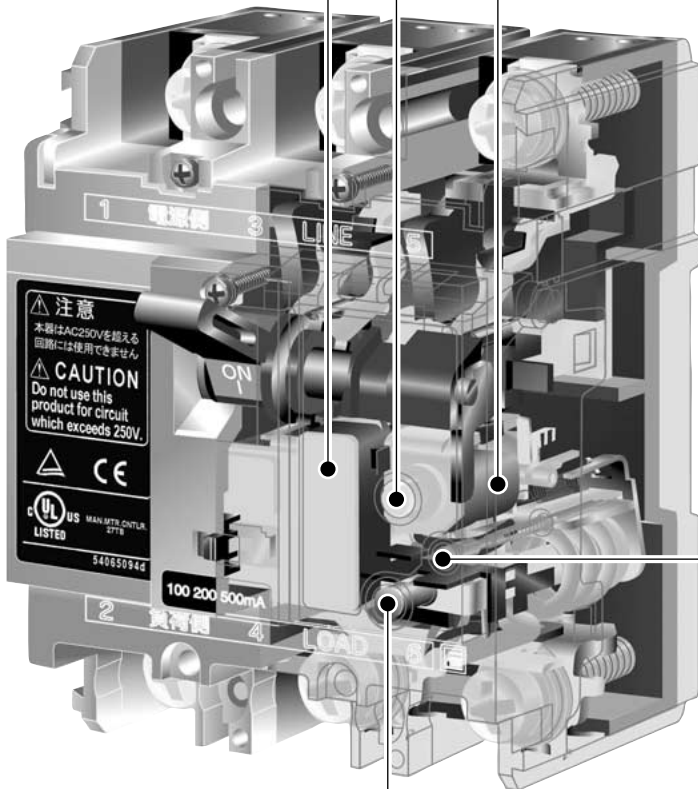
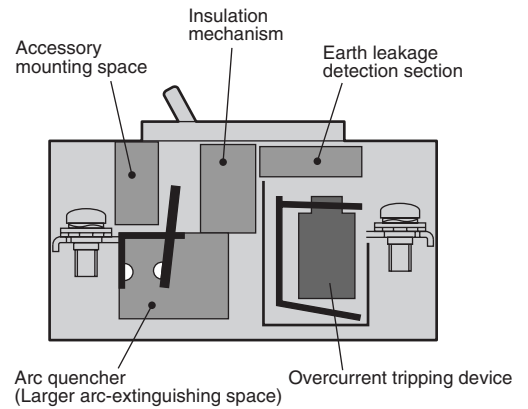
■ Construction

Tripping indication button

When the breaker opens due to an earth leakage current the trip indication button pops out to indicate that an earth leakage has occurred.

ELR unit with less wiring

A unit construction for the ELR and greater wiring efficiency has boosted connection reliability.



Test button

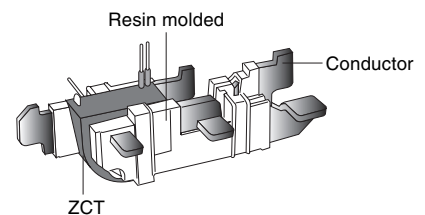
The sensitive trip mechanism operation can be checked at any time by simply pressing the test button.

Trip button

The ELCB can be mechanically tripped externally.

Solid-state insulation ZCT

Insulation has been strengthened by using resin to mold the main circuit conductor and ZCT into an integrated unit.



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Design features

Internal and external accessories A wider range of customer-mountable accessories

The range of cassette-type internal accessories has been greatly expanded for α -TWIN ELCBs. This speeds up and simplifies customer response to specification changes. All accessories shown here can be mounted by the customer except for motor operating mechanism and plate type padlocking device.

Wide variety of internal accessory combinations

Up to two auxiliary switches, two alarm switches, and one shunt trip device or undervoltage trip device quickly snap on or in.

Quick and easy mounting

No need to open breaker cover to mount accessories. Internal accessories easily snap into a pocket at the left of the breaker window frame.

No adjustments

Accessory mounting is quick and easy — accessories adjust automatically at the correct position when mounted.

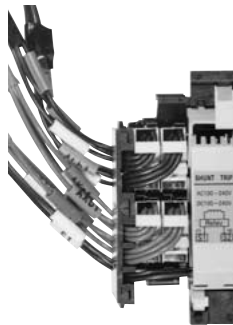
Two ways to connect — lead wires or terminal blocks

Lead wire types

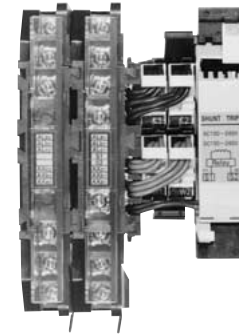
Leads are marked with to indicate the correct terminal number of the accessory — incorrect wiring is minimized. To make wiring easy and prevent to incorrect connection, the lead wires are provided with color coated tube and marking on it.

Terminal block types

Terminal blocks are mounted on the side of the breaker case. Blocks are only 12.5 or 19mm thick, minimizing panel mounting space. Installed lead wires are parallel to the side of the case.



AF93-82



AF93-81

