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*Ensure that these instructions are made available to the end user for future reference.*

LIVE ELECTRICAL DISTRIBUTION UK LTD

© Product installation and operation guide


# TYPE BHP RESIDUAL CURRENT CIRCUIT BREAKER

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## Description

CEB series is a Type B HP Residual Current Device(RCD) for heat pumps, available in 1P+N and 3P+N up to 100A. It detects AC, pulsating DC, and smooth DC, and is specially optimized for high-frequency leakage from inverter compressors. It operates beyond 20kHz, with a raised 150mA trip threshold above 1kHz, reducing nuisance tripping. Tolerance to DC prevents RCD “blinding” and ensures reliable fault detection.
Compliant with BS7671 for heat pump installs, CEB is a robust, recognized alternative to “B+” RCDs. Its high-frequency and heat pump tuning makes it ideal not only for heat pumps, but also for PV, EV charging, and variable-speed drives.

## Technical Data

| | |
|---|---|
| Time characteristic | Instantaneous |
| No. of poles | 1P+N, 3P+N |
| Neutral | Switched, N pole on the left |
| Insulation voltage (Ui) | 500V |
| Rated voltage (Ue) | 1P+N: 230/240V~; 3P+N: 400/415V~ |
| Rated currents (I△n) | 16, 25, 40, 63, 80, 100A |
| Rated sensitivity currents (I△n) | 30, 100, 300mA |
| Residual current off-time under (I△n) | ≤0.1s |
| Rated residual making and breaking capacity (I△n) | 500A (In≤50A), 10In (In>50A) |
| Rated frequency | 50/60Hz |
| Rated conditional short-circuit current (Inc=I△c ) | 10kA |
| Rated impulse withstand voltage (Uimp) (1.2/50μs) | 4kV |
| Dielectric test voltage | 2kV (50/60Hz, 1 min.) |
| Fire resistance (glow-wire test) | 960±15°C (Enclosure), 650±10°C (Handle) |
| Electrical life | 2,000 Cycles |
| Mechanical life | 4,000 Cycles |
| Contact position indicator | green OFF/ red ON |
| Ground fault indicator | White: Normal; Red: Leakage fault |
| Protection degree | IP20 |
| Ambient temperature | -25°C ~ +40°C |



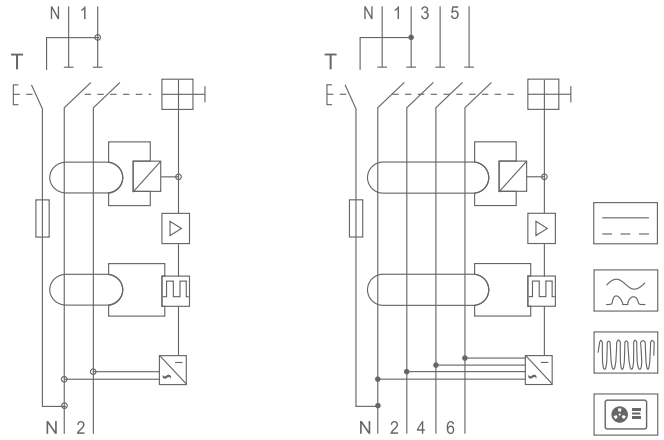
| | |
|---|---|
| Storage temperature | -30°C ~ +70°C |
| Terminal connection type | Cable/ Pin-type/ Fork-type busbar |
| Max. terminal size for cable | 35mm² |
| Max. tightening torque | 2.5N.m |
| Installation | Mounting on 35mm DIN rail |
| Incoming method | Bi-directional |
| Standard | IEC/EN 62423 (Type B) + IEC/EN 61008-1;<br>Compliant with BS 7671 for heat pump use |
| Protection | Ground fault (residual current) |
| Type of trip | Electro-magnetic (RCD) |
| Residual current type | Type B HP - residual AC, pulsating DC and smooth DC;<br>high-frequency immunity for inverter/heat-pump leakage |
| HF behavior (Type B HP) | Designed to tolerate switching noise ≥20kHz;<br>for f≥1kHz uses a raised minimum tripping threshold,<br>typically ≥150mA to reduce nuisance tripping |

## Wiring Capacity

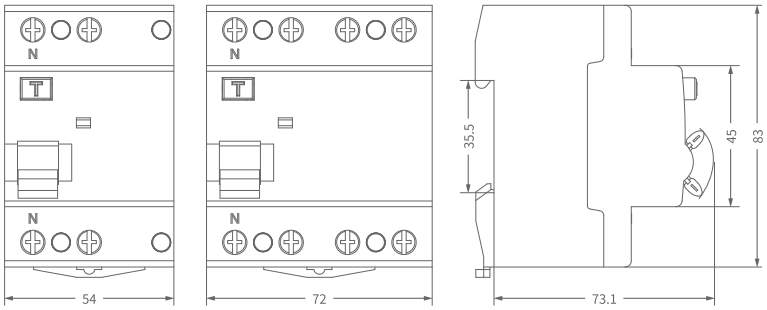
| Rated current In (A) | Cross section area s (mm²) | Tightening torque (N.m) |
|---|---|---|
| 16 | 2.5 | 2.5 |
| 25 | 4 | 2.5 |
| 32 | 6 | 2.5 |
| 40 | 10 | 2.5 |
| 63 | 16 | 2.5 |
| 80 | 25 | 2.5 |
| 100 | 35 | 2.5 |

Torque settings :
Before powering up the installation check all connections are TORQUED (see table). Loose connections cause fires!

## Wiring Diagram




## Dimension (mm)






## Installation

1. The RCCB is installed in the distribution box, distribution cabinet or box using the TH35-7.5 steel mounting rail.
2. Generally, the RCCB should be installed vertically, with the handle facing upward to power on
3. There should be no significant impact and vibration at the installation place
4. Connection method: Tighten the connection with screws
5. The external magnetic field of the installation site shall not exceed 5 times of the earth magnetic field in any direction
6.Installation and disassembly:

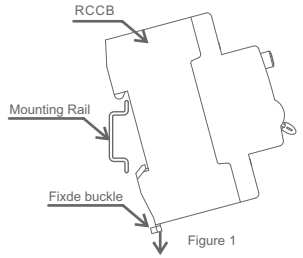


Figure 1

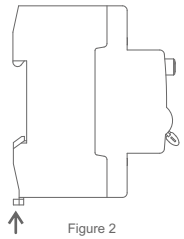


Figure 2

a.Installation: Pull the fixed buckle of the RCCB down in the direction of arrow 1 according to Figure 1, and then put the RCCB in align the rail with the upper end of the installation guide rail (see Figure 1), and ensure that the bottom of the RCCB is fully aligned with the installation guide rail. After that (see Figure 2), push the fixed buckle of the RCCB into the lower end of the installation guide rail according to the arrow direction in Figure 2 to release it.

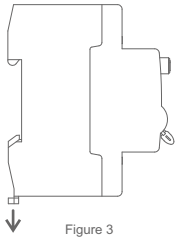


Figure 3

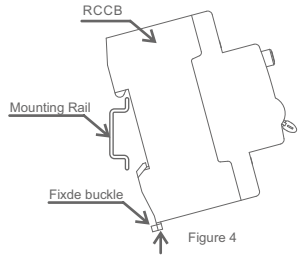


Figure 4

b.Disassemble: Pull the fixed buckle of the RCCB down in the arrow direction as shown in Figure 3, and then pull the RCCB as shown in Figure 4.The lower end of the RCCB is lifted up and pushed upward, then the RCCB can be removed.

## Environment

Waste electrical products should not be disposed of in household waste contact your retailer or local authority for recycling information.