

# Usage Manual



## RCCB with Overcurrent Protection (RCBO)

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Thank you for choosing EK Series RCCB with Overcurrent Protection.  
Please read this manual before installation, operation and maintenance.

### STANDARD AND QUALITY CERTIFICATES

IEC/EN61009-1  

#### Technical Data

|                                                     |                                                                    |
|-----------------------------------------------------|--------------------------------------------------------------------|
| Mode                                                | EKL3-40, EKL13-63 Electronic<br>EKL3-40M Electromagnetic           |
| Type                                                | AC, A                                                              |
| Rated current $I_n$                                 | 6, 8, 10, 13, 16, 20, 25, 32, 40, 50, 63A                          |
| Poles                                               | 1P+N                                                               |
| Rated voltage $U_e$                                 | 230/240V~                                                          |
| Insulation voltage $U_i$                            | 500V                                                               |
| Rated frequency                                     | 50/60Hz                                                            |
| Rated residual operating current ( $I_{\Delta n}$ ) | 10, 30, 100, 300mA (EKL3-40/EKL13-63)<br>30, 100, 300mA (EKL3-40M) |
| Break time under $I_{\Delta n}$                     | $\leq 0.1s$                                                        |
| Rated breaking capacity                             | 6,000A                                                             |
| Energy limiting class                               | 3                                                                  |
| Rated impulse withstand voltage (1.5/50) $U_{imp}$  | 4,000V                                                             |

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|-------------------------------------------------------------------|--------------------------------------------------------|
| Dielectric test voltage at ind.Freq. for 1min                     | 2kV                                                    |
| Pollution degree                                                  | 2                                                      |
| Thermo-magnetic release characteristic                            | B, C                                                   |
| Electrical life                                                   | 4,000 Cycles                                           |
| Mechanical life                                                   | 10,000 Cycles                                          |
| Contact position indicator                                        | Yes                                                    |
| Protection degree                                                 | IP20                                                   |
| Reference temperature for setting of thermal element              | 30°C                                                   |
| Ambient temperature (with daily average $\leq 35^\circ\text{C}$ ) | $-5^\circ\text{C} \sim +40^\circ\text{C}$              |
| Storage temperature                                               | $-25^\circ\text{C} \sim +70^\circ\text{C}$             |
| Terminal connection type                                          | Cable/Pin-type busbar /U-type busbar                   |
| Terminal size top/bottom for cable                                | 25mm <sup>2</sup> 18-3AWG                              |
| Terminal size top/bottom for busbar                               | 25mm <sup>2</sup> 18-3AWG                              |
| Tightening torque                                                 | 2.5Nm 22In-lbs                                         |
| Mounting                                                          | On DIN rail EN60715(35mm) by means of fast clip device |

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### Characteristics

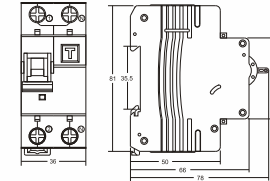
| Type | Tripping current $I_{\Delta}/A$               |                                                         |
|------|-----------------------------------------------|---------------------------------------------------------|
| AC   | $0.5I_{\Delta n} < I_{\Delta} < I_{\Delta n}$ |                                                         |
| A    | Lagging Angle                                 | $I_{\Delta n} > 0.01A$                                  |
|      | 0°                                            | $0.35I_{\Delta n} \leq I_{\Delta} \leq 1.4I_{\Delta n}$ |
|      | 90°                                           | $0.25I_{\Delta n} \leq I_{\Delta} \leq 1.4I_{\Delta n}$ |
|      | 135°                                          | $0.11I_{\Delta n} \leq I_{\Delta} \leq 1.4I_{\Delta n}$ |

### CHARACTERISTICS CURVES

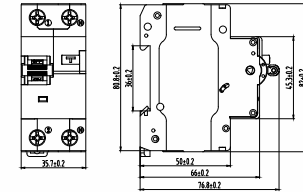
| IEC/EN61009-1 |                     | 30~35°C           |                     |                   |                 |
|---------------|---------------------|-------------------|---------------------|-------------------|-----------------|
|               |                     | Thermal Tripping  |                     | Magnetic Tripping |                 |
|               | No tripping current | Tripping current  | Time Limits t       | Hold current      | Trip current    |
| B Curve       | $1.13 \times I_n$   | $1.45 \times I_n$ | $\geq 1h$<br>$< 1h$ | $3 \times I_n$    | $5 \times I_n$  |
| C Curve       | $1.13 \times I_n$   | $1.45 \times I_n$ | $\geq 1h$<br>$< 1h$ | $5 \times I_n$    | $10 \times I_n$ |

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### Overall Installation Dimension(mm) EKL3-40

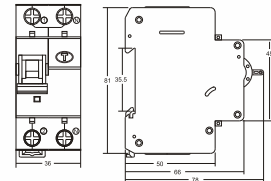


### EKL13-63



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### Overall Installation Dimension(mm) EKL3-40M



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