

Usage Manual



RESIDUAL CURRENT CIRCUIT BREAKER (RCCB)

Onninen Sp. z o.o.
Teolin 18B, 92-701 Lodz, Poland
COK@onninen.com

Thank you for choosing EK Series Residual Current Circuit Breakers.
Please read this manual before installation, operation and maintenance.

OVERVIEW

Residual Current Circuit Breaker is a switch that must be used against electrical shocks occurring in the respective grid and endangering human lives or against fires resulting from the mistakes in isolation. Residual Current Circuit Breaker is produced in the following two types with its fully “electromechanical” operating principle:

- Life Protection(10,30mA)
- Fire Protection (100,300mA)

STANDARD AND QUALITY CERTIFICATES

CE RoHS TÜV

Model No.	Type	In(A)	IΔn(mA)
EKL1-63	AC,A,B,S	16,25,32,40,63A	10,30,100,300mA
EKL1-63H			
EKL1-100	AC,A,S	63,80,100A	30,100,300mA

TECHNICAL SPECIFICATIONS

Model No.	Rated Voltage U_e	Short-circuit current $I_{nc}=I\Delta C$	Rated Frequency	Number of Poles
EKL1-63	2P 230V~(240) 4P 400V~(415)	6,000A	50/60Hz	2P(1P+N) 4P(3P+N)
EKL1-63H		10,000A		
EKL1-100		6,000A		

EFFECTS OF RESIDUAL CURRENT

0,5-10 mA	→ Having pins and needles
10 mA	→ Beginning of convulsion
20-30 mA	→ Convulsion of diaphragm
70-100 mA	→ Beginning of heart trembling
100 mA	→ Stopping of heart and death

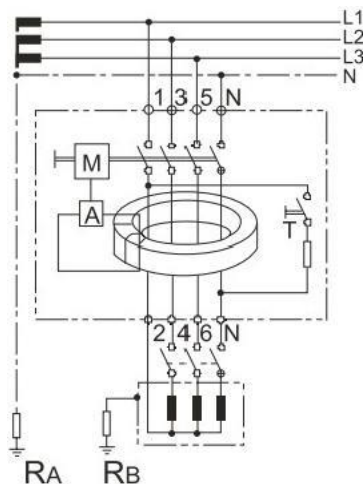
A :Opening Relay

M :Opening Coil

RA :Protection Earth

RB :Operation Earth

T :Test Button



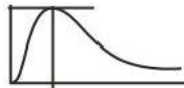
TECHNICAL SPECIFICATIONS (TYPE B)

Detectable wave form

B class

Tripping is ensured for sinusoidal AC residual currents pulsed DC residual currents, alternating residual sinusoidal currents up to 1000Hz, pulsating direct residual currents and for smooth direct residual currents, whether applied suddenly or increasing slowly.

Surge current proof



RCCB's surge capacity.

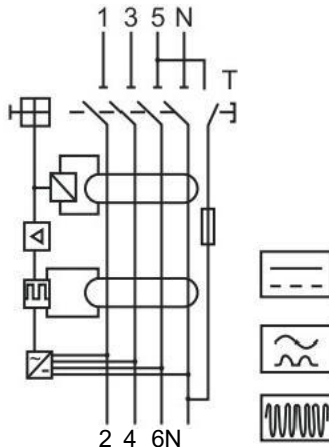
Not tripping at standardized 8/20 μ s surge-current waves according to VDE 0432 Part 2 with surge current values of up to 250A.

Pulsating direct current sensitive



They react to AC and pulsating DC fault current which reach 0 or almost 0 within one time period of the mains frequency.

Type B



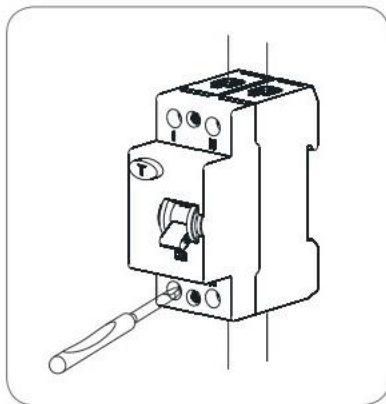
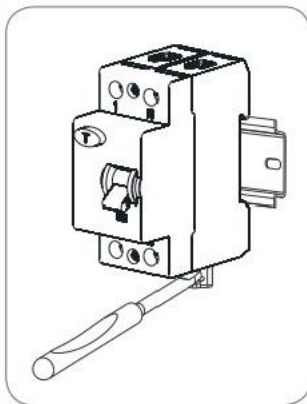
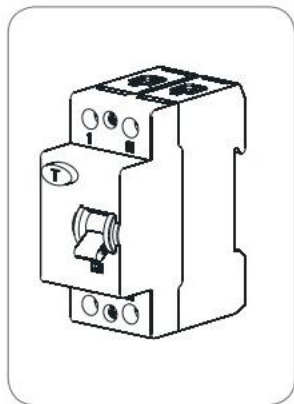
IEC61008-1
IEC62423

PRODUCT ASSEMBLY

Product calibrating and programming are performed during manufacturing and each product is offered to sales after a through quality control. There are no maintenance or programming tasks that the users can perform.



Ensure that the power is cut off before the assembly of the products. Connection and assembly of the electrical devices should be carried out only by the technical personnel having certificate of competency.



Maximum terminal for cable
Cable sections

Momentum power for electrical terminal connection
Suitable panel and rail for product assembly

:25mm²
:13mm
:2.5Nm max.
:35mm Din rail

THINGS TO CONSIDER DURING RESIDUAL CURRENT CIRCUIT BREAKER ASSEMBLY

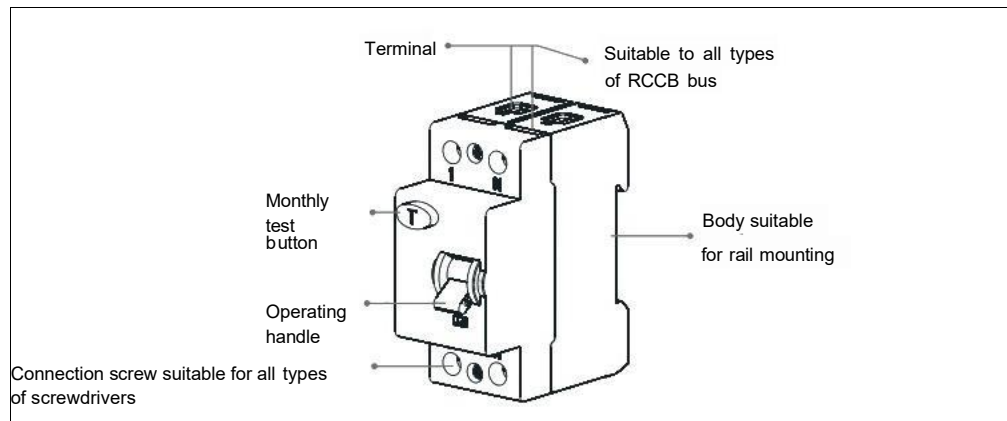
The nominal currents of the Residual Current Circuit Breaker should be at values in line with the size of the protected grid.

The installation should be grounded.

In two-pole Residual Current Circuit Breaker, two phase and one neutral, and in four-pole Residual Current Circuit Breaker, three phase and one neutral should be connected.

To test Residual Current Circuit Breaker, "Test Monthly" button should be pressed. This test should be repeated once a month. Phase and neutral should never be bypassed to test Residual Current Circuit Breaker

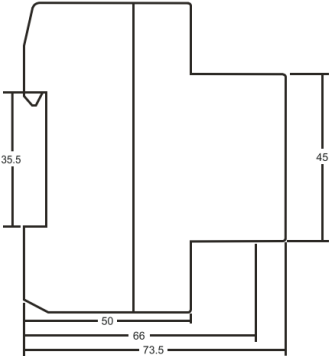
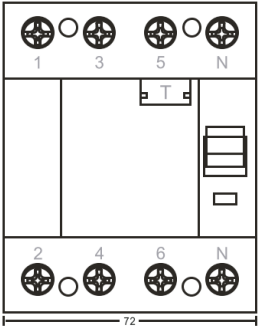
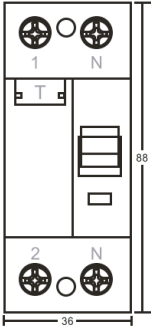
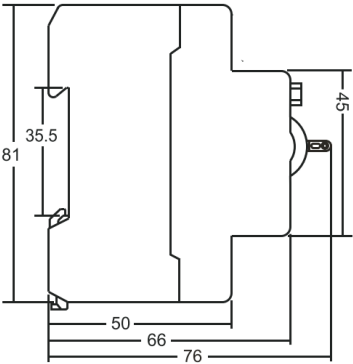
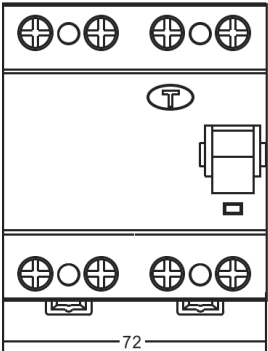
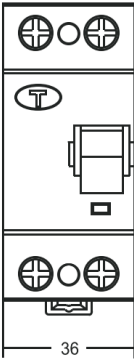
PRODUCT FUNCTIONS



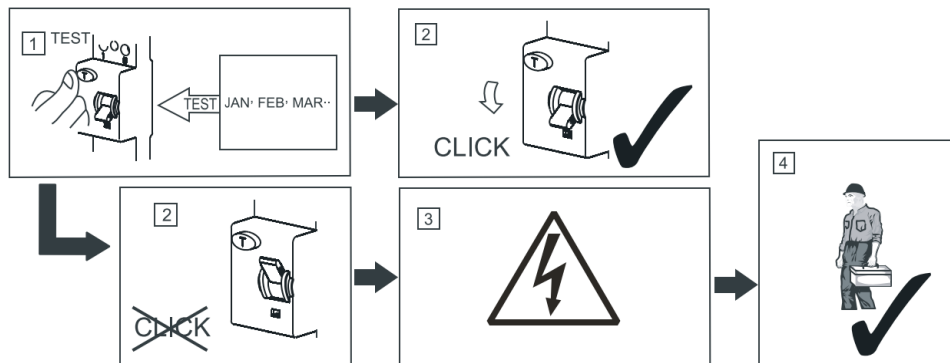
Overall and Installation Dimension(mm)

2 Pole

4 Pole



Operation alarm of Test Button



ELECTRICAL DIAGRAM (AC,A,S)

