

# Usage Manual



## RCBO EKL9-40 With Arc Fault Protective

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Thank you for choosing EK Series Arc Fault Circuit Breaker.  
Please read this manual before installation, operation and maintenance.

## **Safety Precautions**

This Unit must be installed by a qualified electrician in accordance with the latest edition of IEE wiring Regulations for Electrical Installations.

The EKAFD40 can be connected by suitable cables in line with Wiring regulations BS7671.  
(Max. wiring conductor cross section: 16mm<sup>2</sup>)

**ELECTRICITY IS DANGEROUS IF IN ANY DOUBT  
PLEASE SEEK QUALIFIED ADVICE**

Any attempt to open or tamper with the device will result in voiding the warranty. Failure to observe installation and testing instructions will also result in voiding the warranty.

## General Information

The EKA4FD40 consists of a RCBO (Residual Current operated Circuit-breaker with Integral Overcurrent protection) and a Arc fault detection module in a 1 Pole +N, 2 module DIN rail mounted unit. They combine short circuit, overload and arc fault protection and will switch off in the event of these faults being detected.

The Arc detection unit will recognize serial, parallel and ground arc faults in both radial and ring circuits. (Note: serial fault in a ring circuit does not always lead to an arc fault due to power flowing to either side of the fault at the same potential voltage.)

These units must be switched off when conducting insulation testing to avoid damage to the EKA4FD40.

The EKA4FD40 should be tested every month by pushing the Test button.

## LED Warnings

- 1) Connect the power supply and switch on the handle, the green indicator light is on, indicating the normal working of the product.
- 2) When the handle is closed, connect the load, press the arc test button, the product trips and the green indicator light goes out.
- 3) During the load normal operating, if the product tripped, at this time, turn off all loads first, and then switch on the handle.  
If the indicator light shows red and then goes out, it is determined that the last tripping of the product was caused by fault arc. If the red indicator light is not on, it is determined that the last tripping of the product was caused by overload, short circuit or leakage.
- 4) Confirm the arc fault of the lower line, first operate with series No. 3, then switch on the handle, connect and run the load before the last trip. If the red indicator flashes momentarily and the product tripped and the lower power supply is disconnected, it is determined there is an arc fault in the line, at this time, asking a professional electrician to troubleshoot the line fault.
- 5) Any abnormal instructions can be contacted with the supplier or manufacturer

## Installation Guide

Ensure the power to the Consumer Unit/Enclosure is OFF before installation to DIN rail.

Locate to DIN rail and connect using the required cable cross section compliant to the rating used.

EKA4FD40 is fed Line N-L from DIN rail clip end and Load N-L to top of unit with Neutral on L/H side.

Recommended terminal screw torque 2Nm.

## Technical Data

Rated Working voltage	240v AC
Rated working frequency	50Hz
Rated insulation voltage	400v AC
Rated withstand voltage	2KV
MCB ratings	6A,10A,16A, 20A,25A ,32A,40A
Number of poles	1P+N(Pole N could be On/Off)
MCB Characteristic Type	B,C
RCBO Type	AC,A,S
RCBO Rated residual operating current	10,30,100,300mA
Rating breaking capacity	6kA
Terminal Capacity	16 mm <sup>2</sup>
Standard	IEC/EN62606 IEC/EN61009-1

Ambient Temperature range -5°C to + 40°C

Storage temperature range -25°C to + 70 °C

Protection installed = IP20 in consumer unit & Enclosures

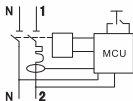
Mounting Top Hat 35mm DIN rail to EN 50022

## Tripping characteristics and residual current operation table Characteristics

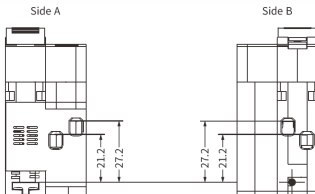
Type	Tripping current $I_{\Delta n}/A$		
AC	$0.5I_{\Delta n} < I_{\Delta} < I_{\Delta n}$		
A	Lagging Angle	$I_{\Delta n} > 0.01A$	$I_{\Delta n} \leq 0.01A$
	0°	$0.35I_{\Delta n} \leq I_{\Delta} \leq 1.4I_{\Delta n}$	$0.35I_{\Delta n} \leq I_{\Delta} \leq 2I_{\Delta n}$
	90°	$0.25I_{\Delta n} \leq I_{\Delta} \leq 1.4I_{\Delta n}$	$0.25I_{\Delta n} \leq I_{\Delta} \leq 2I_{\Delta n}$
	135°	$0.11I_{\Delta n} \leq I_{\Delta} \leq 1.4I_{\Delta n}$	$0.11I_{\Delta n} \leq I_{\Delta} \leq 2I_{\Delta n}$

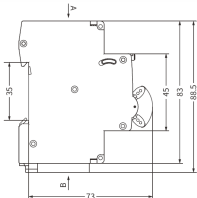
As per IEC60898	Thermal Tripping			Magnetic Tripping		
	No tripping current	Tripping current $I_z$	Time Limits $t$	Hold current $I_n$	Trip current $I_s$	Time Limits $t$
B Curve	$1.13 \times I_n$	$1.45 \times I_n$	$\geq 1h$	$3 \times I_n$	$5 \times I_n$	$\geq 0.1s$
			$< 1h$			$< 0.1s$
C Curve	$1.13 \times I_n$	$1.45 \times I_n$	$\geq 1h$	$5 \times I_n$	$10 \times I_n$	$\geq 0.1s$
			$< 1h$			$< 0.1s$

## Wiring Diagram



## Overall and Installation Dimensions (mm)





## Disposal and Recycling

Waste electrical products should not be disposed of with general waste. Please recycle where these facilities exist. Check with your local authority or retailer for recycling advice

