



FEDERAL®

"All Over the World"



Residual Current Protection Device (RCBO) with Overcurrent Protection User Manual

Introductory and Basic Information

Residual Current Circuit Breakers (RCBOs) with overcurrent protection can protect against Leakage currents that may occur in the connected electrical circuit, as well as fault currents such as short circuits and overloads. Residual current protection is produced in two types: life protection and fire protection.

A-Life Protection (30 mA): A value of 30 mA is the limit value for human health. At this threshold, the circuit must be disconnected immediately.

B-Fire Protection (300 mA): Even small ground faults can pose a fire hazard due to the heat generated by the electric arc. Residual current circuit breakers with a threshold current of 300 mA are used to prevent fire hazards.

Fires attributed to electrical faults are generally caused by ground leakage currents caused by insulation faults and cable insulation deterioration.

RCBO tripping characteristics are available in two types: Type B and Type C.

Type B: Used in home lighting, sockets, and control circuits.

Type C: Used in inductive loads such as motors, transformers, and many fluorescent lamps.

Type	B	C
I1 ($t > 1h$)	$1,13 \times I_n$	$1,13 \times I_n$
I2 ($t < 1h$)	$1,45 \times I_n$	$1,45 \times I_n$
I3 ($t > 0,1s$)	$3 \times I_n$	$5 \times I_n$
I4 ($t < 0,1s$)	$5 \times I_n$	$10 \times I_n$

Rules to be followed during use

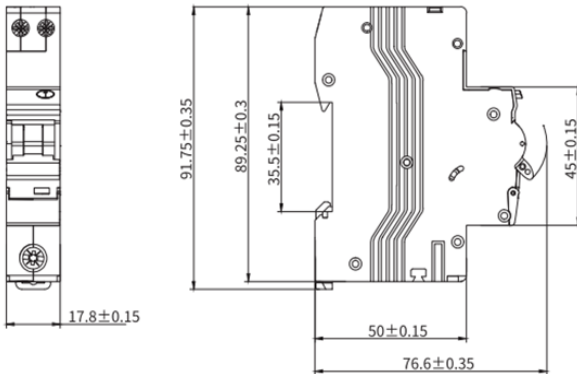
- Installing the product in environments containing flammable or explosive gases, damp condensation, and operating it with wet hands is strictly prohibited.
- Touching the conductive parts of the product while it is operating is strictly prohibited.
- Touching live wires or short-circuiting wires to test the product is strictly prohibited.
- When installing, repairing, or maintaining products, ensure that the circuit is closed.
- The product must be wired and installed by professionally qualified personnel.
- When installing and using the product, cable screws must be tightened to the appropriate torque, and cables must not be moved or pulled.
- Check the operation of the device by pressing the test button on the device once a month. The device should turn on. If it does not, contact an authorized service center.
- Periodic maintenance is not required unless the device loses its functionality.
- To protect the environment, when this product or its components are scrapped, please dispose of them appropriately as industrial waste or return them to a recycling station.

Technical Parameters

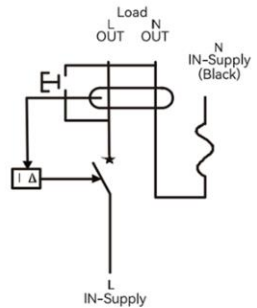
Type	FKO1	
Standard	IEC 61009-1	
Rated current - In	A	6 - 40
Rated residual operating current $I\Delta n$	mA	30, 300
Number of poles	1P+N	
Operating characteristic by current type ¹⁾	AC / A	
Rated operating voltage – Ue	AC 50-60 Hz	V 230
Rated insulation voltage – Ui	AC 50-60 Hz	V 500
Rated impulse withstand voltage - Uimp	kV	4
Rated short-circuit breaking capacity	kA	10
Protection Characteristics (instantaneous tripping)	B / C	
Operating environment	-25 / 60°C	
Mounting	DIN rail 35mm	
Mechanical life	Op.	> 20000
Electrical life	Op.	> 5000
Min-Max connection sections	mm ²	1-10
Min-Max tightening torque	Nm	1-2
Dimensions (width x length, depth)	mm	18 x 92 x 74

¹⁾ AC: Operating on sinusoidal alternating currents, A: Operating in sinusoidal and pulsed direct current

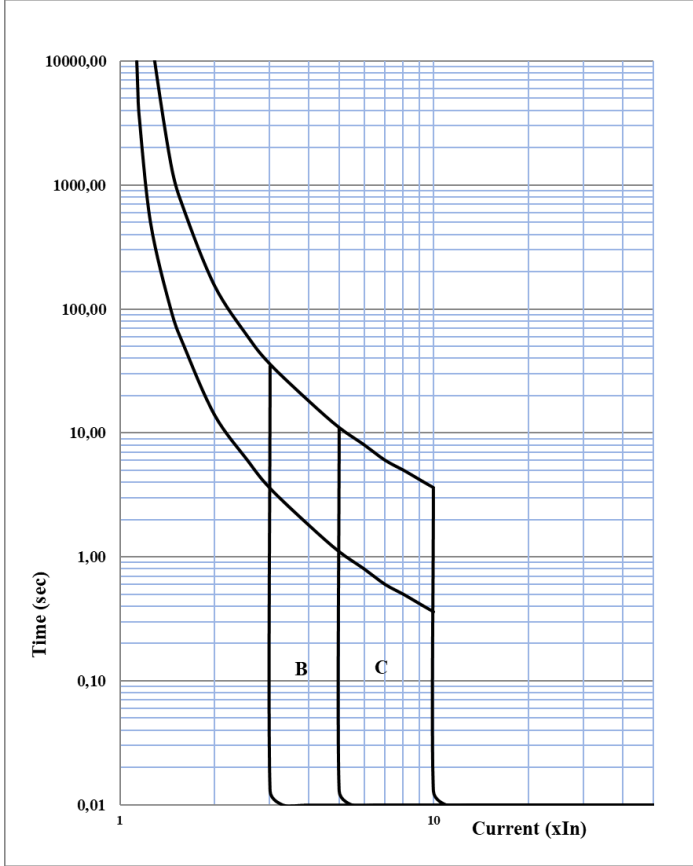
Dimensions



Connection Diagram



Time-Current Characteristics



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