Assured safety for your loved ones

Datasheet

betagard

RESIDUAL CURRENT BREAKER OPERATOR

SIEMENS

Introduction:

The basic prerequisite for use of a residual current protective device is the running of a grounded PE conductor to the components and equipment to be protected. A current flow can then pass through a human body only when two faults occur (1) Interruption of the PE conductor in addition to the insulation fault or (2) When there is unintentional contact with live parts.

Residual current protective devices offer protection against

1. Direct contact – Direct contact is considered as direct contact of a human body with a live part.
2. Indirect contact (fault protection) – Indirect contact is considered as the contact of a human body with a de-energized, electrically conductive part. In these cases, the demand is for automatic interruption of the power supply when a fault can pose a risk due to the intensity and duration of the touch voltage.
3. Fire protection – For locations exposed to fire hazards, residual current protective devices should offer earth leakage protection for the prevention of fires, which may originate from insulation faults.

Types of residual current protective devices

1. Type AC – Residual current protective devices of type AC are suitable only for detecting sinusoidal AC residual currents.
2. Type A – In addition to AC sinusoidal currents, residual current protective devices of type A also measure pulsating DC residual currents. e.g. applications like ECGs, washing machines, fax machines etc. having electronic components.

Betagard RCBOs

RCBOs are combination devices, which offer overcurrent protection for overload and short circuit protection in addition to protection against residual currents. A version in this device group is a residual current block (RC unit) combined to a miniature circuit breaker (selected on the basis of characteristic & rated current) to form a RCBO. These devices are factory assembled and offer the same functions as RCBO. The RC unit has no contacts of its own; in the event of a fault, it trips the circuit breaker, which opens the contacts and interrupts the circuit.

Betagard RCBOs are available in 4 standard versions from 32A to 63A. They offer 10kA-breaking capacity as per IS8828 in 2P and 4P versions.

1. MCB C characteristics with RC unit Type AC
2. MCB C characteristics with RC unit Type A
3. MCB D characteristics with RC unit Type AC
4. MCB D characteristics with RC unit Type A

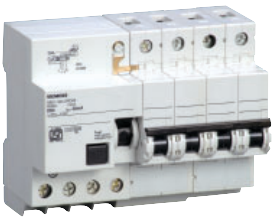
Technical Specifications:

Standards	IS12640-2(2001), IEC 61009
Poles	2 Pole/4 Pole
Rated Voltages, Un (V)	240Vac/415Vac, 50....60Hz
Rated Currents, In (A)	32,40,63
Rated residual currents, (mA)	30,100,300
Rated short circuit capacity (kA)	10
Tripping characteristics	C,D
Enclosure	Gray molded plastic (RAL7035)
Supply connection	Either top or bottom
Mounting position	Any
Conductor cross sections (Solid & stranded) (sq mm)	1...35
Service life	> 10,000 operations (mechanical + electrical)
Ambient temperature °C	-5...+45, occasionally +55 (-25...+45 for Type A)
Degree of protection	IP20 acc to EN60259 (VDE 0470 Part 1) IP40/42 when mounted in distribution boards

Selection and Ordering Data

Residual Current Breaker Operators:

	Rated Residual Current I Δn (mA)	Rated Current In (A)	Module Width#	Type AC with C characteristic	Type A with C characteristic
	240Vac; 50...60Hz; 2 pole				
	30	32	4	5SU13241RC32	5SU13247RC32
		40		5SU13241RC40	5SU13247RC40
		63		5SU13241RC63	5SU13247RC63
	100	32		5SU14241RC32	5SU14247RC32
		40		5SU14241RC40	5SU14247RC40
		63		5SU14241RC63	5SU14247RC63
	300	32		5SU16241RC32	5SU16247RC32
		40		5SU16241RC40	5SU16247RC40
		63		5SU16241RC63	5SU16247RC63
	415Vac; 50...60Hz; 4 pole				
	30	32	7	5SU13441RC32	5SU13447RC32
		40		5SU13441RC40	5SU13447RC40
		63		5SU13441RC63	5SU13447RC63
	100	32		5SU14441RC32	5SU14447RC32
		40		5SU14441RC40	5SU14447RC40
		63		5SU14441RC63	5SU14447RC63
	300	32		5SU16441RC32	5SU16447RC32
		40		5SU16441RC40	5SU16447RC40
		63		5SU16441RC63	5SU16447RC63

	Rated Residual Current I Δn (mA)	Rated Current In (A)	Module Width	Type AC with D characteristic	Type A with D characteristic
	240Vac; 50...60Hz; 2 pole				
	30	32	4	5SU13242RC32	5SU13248RC32
		40		5SU13242RC40	5SU13248RC40
		63		5SU13242RC63	5SU13248RC63
	100	32		5SU14242RC32	5SU14248RC32
		40		5SU14242RC40	5SU14248RC40
		63		5SU14242RC63	5SU14248RC63
	300	32		5SU16242RC32	5SU16248RC32
		40		5SU16242RC40	5SU16248RC40
		63		5SU16242RC63	5SU16248RC63
	415Vac; 50...60Hz; 4 pole				
	30	32	7	5SU13442RC32	5SU13448RC32
		40		5SU13442RC40	5SU13448RC40
		63		5SU13442RC63	5SU13448RC63
	100	32		5SU14442RC32	5SU14448RC32
		40		5SU14442RC40	5SU14448RC40
		63		5SU14442RC63	5SU14448RC63
	300	32		5SU16442RC32	5SU16448RC32
		40		5SU16442RC40	5SU16448RC40
		63		5SU16442RC63	5SU16448RC63

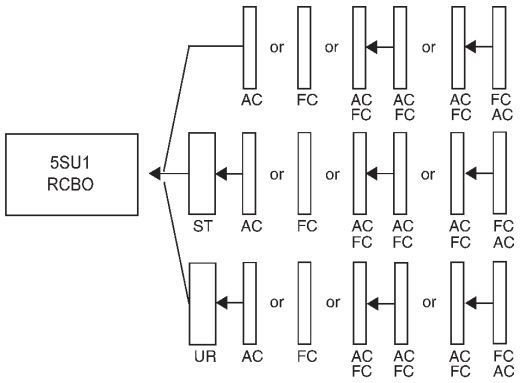
Accessories for Residual Current Breaker Operators:

	Item Description	Module Width#	Ordering Code
	Auxiliary Contact, 1NO+1NC (AC)	0.5	5ST3010
	Fault signal contact, 1NO+1NC (FC)	0.5	5ST3020
	Undervoltage release, 230Vac (UR)	1	5ST3043
	Undervoltage release, 24Vdc (UR)	1	5ST3045
	Shunt trip, 110...415Vac (ST)	1	5ST3030
	Shunt trip, 24...48Vac/dc (ST)	1	5ST3031
	Motorized drive, 230Vac	3.5	5ST3050

1 module width = 18mm

Mounting concept

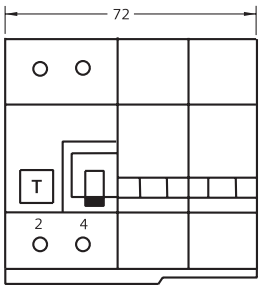
Using this mounting concept, all additional 5ST3 components can be combined with residual current breaker operators of 5SU1 series:



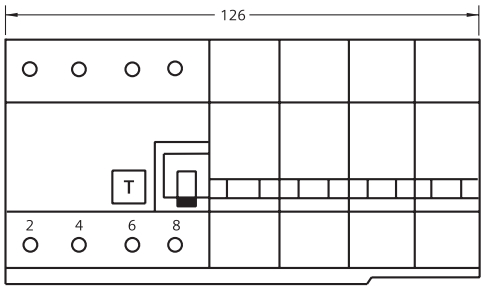
Dimensional drawings

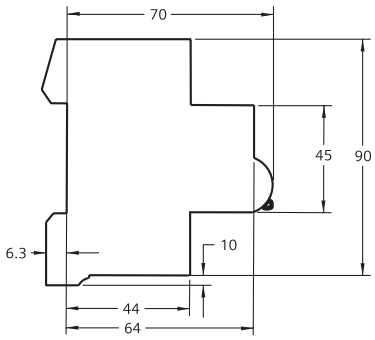
RCBO

2P-4M



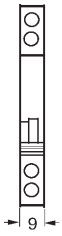
4P-7M



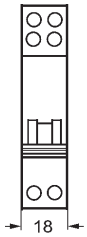


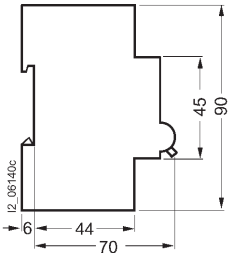
Add-on components

Auxiliary contact / Fault signal contact



Shunt trip / undervoltage release





All dimensions in mm

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