RCBO RCE1

Data Sheet V1.0

The RCE1 electronic type RCBO's (residual current-breaker with overload protection) is just 1 module width (18mm). With a breaking capacity of 6kA and the diversity in range and types makes it a good solution for protection against overcurrent and earth fault currents. The series ensures safety for people and equipment. The diversity in range and types makes it a good solution for almost every situation.

E3

RCE1 residual current breaker with overcurrent protection

RCME1 is a RCBO compliant to product standard IEC/EN 61009 and with the following main technical features

- Breaking capacity 6kA
- Electronic (IEC/EN 61009-2-2)
- Type A [E3]
- Sensitivity 10, 30, 100, 300 mA
- Tripping characteristics B – C
- rated current up to 40A

Application benefits

- Supply possible from top and bottom
- Pin type busbar connection (above and below) up to 16mm² and cable connection up to 10mm² cables.
- Toggle can be sealable in ON-OFF positions true a position inside attribute
- Family feeling in the SEP Compact range modular components

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RCBO's RCE1

Technical Data

	Type			**RCE1**
	Standards			IEC/EN 61009-1; IEC/EN 61009-2-2
	Certification			CE, UKCA, CB, KEMA KEUR
	Country of origin			CN
	RoHS Compliance Status			Compliant, No Exemption
Electrical features	Type (wave form of the earth leakage sensed)			A
	Protection			Electronic (IEC/EN 61009-2-2)
	Number of poles			1p+n (2p+2n)
	Rated current	In	A	6 ≤ In ≤ 40
	Rated sensitivity	IΔn	A	0.01 - 0.03 - 0.1 - 0.3
	Rated voltage	Ue	V	230 / 240
	Minimum working voltage	Umin	V	> 40VAC
	Operating time	Type A		instantaneous
	Insulation voltage	Ui	V	500 V AC
	Overvoltage category			III
	Pollution degree			2
	Operating voltage of circuit test		V	40 … 264V
	Rated frequency		Hz	50 - 60
	Rated breaking capacity acc. to IEC/EN 61009-1	Icu	A	6.000
	Rated breaking capacity acc. to IEC/EN 60947-2 (only referring to short circuit test)	Ultimate Icu	kA	6*
		Service Ics	kA	100% Icn*
	Rated residual breaking capacity IΔm according to EN 61009-1	IΔm	A	3.000
	Rated impulse withstand voltage (1.2/50) Uimp		kV	4
	Dielectric test voltage at ind. freq. for 1 min.		kV	2.5 kV (50 / 60Hz, 1 min.)
	Thermomagnetic release – characteristics	B: 3 In ≤ In ≤ 5 In		■
		C: 5 In ≤ In ≤ 10 In		■
	Energy limiting class acc. to EN 61009-1			3
	Surge current resistance (wave 8/20)			3000
Mechanical features	Housing			Insulation group I - II, RAL 7035
	Toggle			Insulation group II, RAL 5017
	Test button			Insulation group II, RAL 2000
	Contact position indication			Green / Red window
	Earth fault trip indication			White window
	Electrical life	operations		4.000
	Mechanical life	operations		10.000
	Protection degree acc. to EN 60529	housing		IP4X
		terminals		IP2X
	Shock resistance acc. to IEC/EN 60068-2-27			25g - 2 shocks - 13ms
	Vibration resistance acc. to IEC/EN 60068-2-6			0.1 mm or 1 g - 20 cycles at 5…150…5 Hz
	Environmental conditions (damp heat) acc. to IEC/EN 60068-2-30		°C/RH	28 cycles with 55°C/90-96% and 25°C/95-100%
	Reference temperature for setting of thermal element		°C	30
	Ambient temperature (with daily average ≤ +35 °C)		°C	-25… +40
	Storage temperature		°C	-40… +70

* *IEC/EN 60947-2 certificate and test-report are not available at present, the use of these values is the responsibility of the user*

RCBO's RCE1

Technical Data

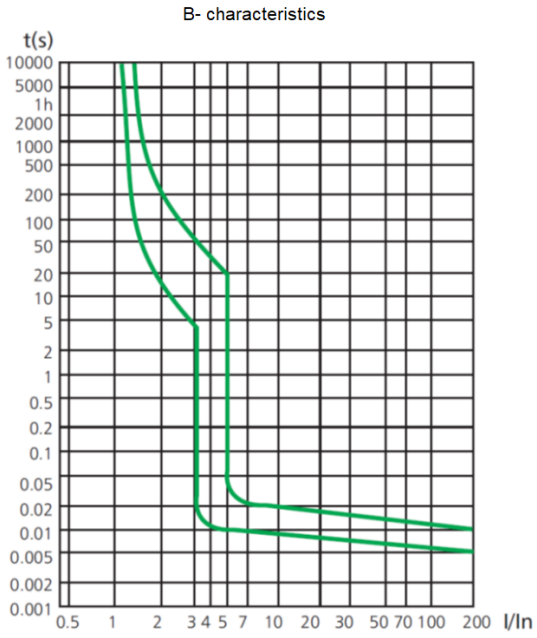
	Type			**RCE1**
Installation	Terminal type	bottom / top		lift / open-mouthed
	Terminal size for cables	bottom / top	mm²	16/10
	Terminal size for PIN busbar	bottom / top	mm²	10/16
	Solid /stranded wiring			1x 1.5mm² - 16mm² 2 x 1.5mm² - 10mm² *
	Flexible wires with or without ferrules			1x 1.5mm² - 10mm² 2 x 1.5mm² - 6mm² *
	Tightening torque	bottom / top		1.2 Nm
	Stripping length of the cable			10mm
	Mounting			on DIN rail EN 60715 (35mm) by means of mounting clip
	Mounting position			Any
	Supply from			Top / bottom terminals
	Dimensions (H x W x D)		mm	86 x 18 x 72
	Weight		kg	0,12
Packing	Packing A	QTY		1
		Dimensions (H x W x D)	mm	90 x 20 x 77
		Weight	kg	0,133
	Packing B *(x A)*	QTY		10
		Dimensions (H x W x D)	mm	225 x 98 x 86
		Weight	kg	1,38
	Packing C *(x B)*	QTY		120
		Dimensions (H x W x D)	mm	470 x 310 x 190
		Weight	kg	17
	CN-code			85362010
Combination with auxiliary elements	Auxiliary contact			Yes
	Alarming contact			NA
	Shunt trip			NA
	Auxiliary contact for bottom fitting			NA
	Undervoltage release			NA
	Overvoltage release			NA
	Motor operating device			NA

* *Check local installation rules, this type of connection is not advised. Special add-on terminals are available.*

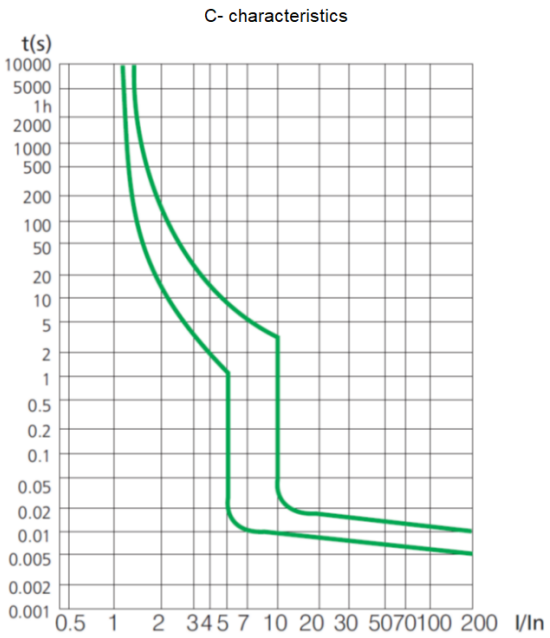
RCBO's RCE1

Technical Data

Tripping characteristics



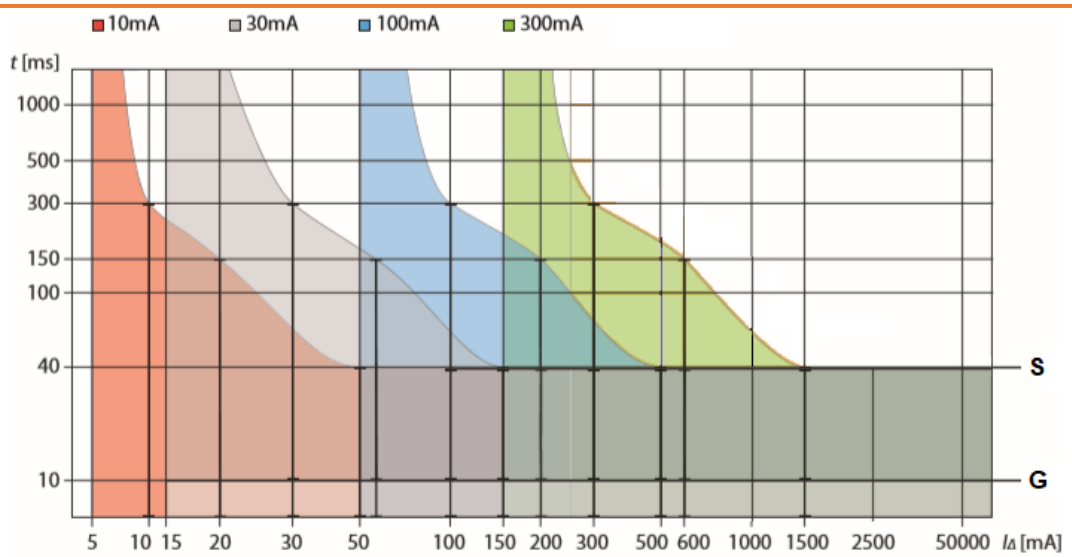
B: 3 In ≤ In ≤ 5 In



C: 5 In ≤ In ≤ 10 In

Tripping Characteristics (IEC/EN 61008)

Tripping characteristics, tripping time range and selectivity of instantaneous residual current devices (surge current-proof [G] and surge current-proof – selective [S] residual current devices are not available in the RCE1 series).



RCBO's RCE1

Technical Data

Performance in altitude*

Elevation [m]	2000	3000	4000	5000	6000
Rated current [A]	1 x In	0,95 x In	0,92 x In	0,90 x In	0,88 x In
Rated voltage [V]	1 x Un	0,85 x Un	0,75 x Un	0,65 x Un	0,55 x Un

** the RCBO is designed for standard level operations, performance information on higher altitude is not available*

Derating in temperature *RCE1*

Max operating current depending on the ambient temperature (daily average ≤ +35 °C) of characteristics type B and C.

In [A]	Ambient temperature [°C]										
	-25	-15	-5	10	30	40	45	55	60	65	70
6	7.0	6.8	6.6	6.4	6	5.7	5.6	5.3	5.2	5.1	4.9
10	12.3	11.9	11.4	10.8	10	9.5	9.3	8.8	8.6	8.4	8.1
13	15.1	14.7	14.3	13.7	13	12.5	12.3	11.8	11.6	11.3	11.1
16	19.1	18.6	18	17.1	16	15.2	14.9	14.1	13.8	13.4	13
20	24.8	23.9	23	21.7	20	19	18.5	17.5	17	16.5	16.1
25	31.4	30.2	29.1	27.3	25	23.9	23.3	22.1	21.6	21.1	20.4
32	40.1	38.6	37.1	34.9	32	30.4	29.6	28	27.3	26.5	25.7
40	51	49	47	44	40	38.1	37.1	35.1	34.1	33.1	32.1

Influence of adjacent devices

Number of devices	1	2-3	4-5	6-9	≥10
Correction factor	1	0,9	0,8	0,7	0,6

These values are provided by recommendation IEC 61439-1 and standards EN 61439-1. In order to avoid having to use these coefficients there must be good ventilation and the devices must be kept apart using the spacing element article number 2119000010 (0.5 module).

Power loss, resistance, voltage drop

RCE1 (1p+N)

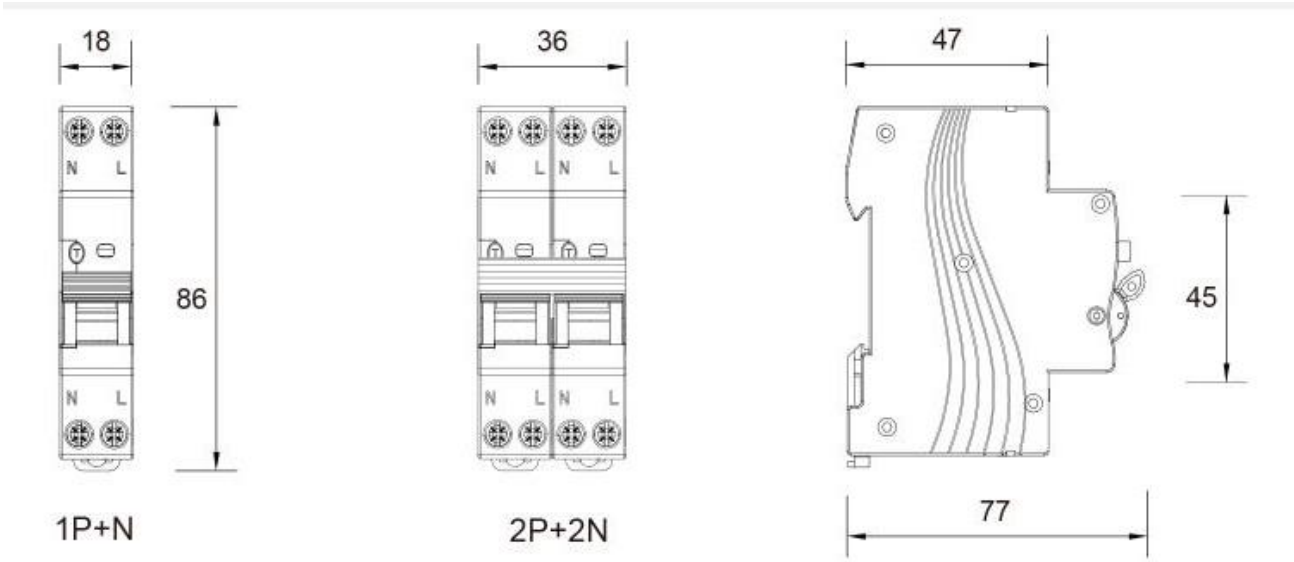
In [A]	Component voltage drop [V]	Component resistance [mΩ]	Powerloss (W)			
			Average per pole	Neutral pole	Phase pole	Total
6	0.25	41,67	0.75	0.04	1,46	1,5
10	0.20	20,00	1,00	0.1	1,90	2,0
16	0.16	9,77	1.25	0.1	2,40	2,5
20	0.13	6,25	1.25	0.1	2,40	2,5
25	0.16	6,24	1.95	0.2	3,60	3,9
32	0.19	5.86	3,00	0.3	5,70	6,0
40	0.18	4,38	3.50	0.3	6,70	7,0

RCBO's RCE1

Technical Data

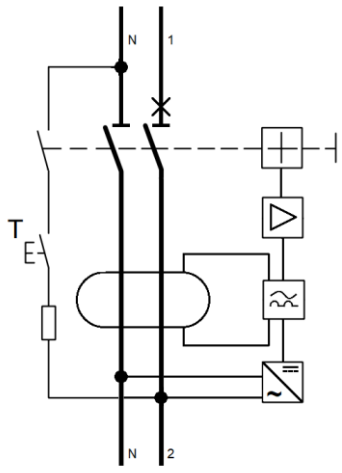
Overall dimensions

All measurements in mm



RCE1 (1p+n) *RCE1 (2p+2N)*

Connection diagram



RCE1 (1p+n)

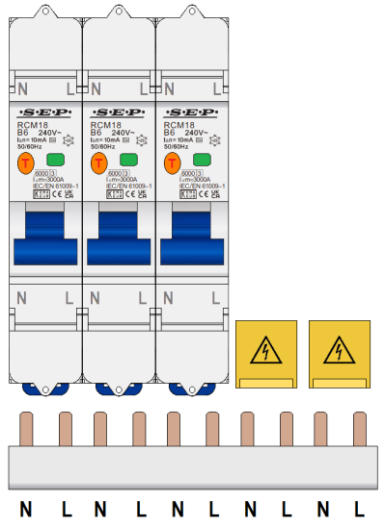
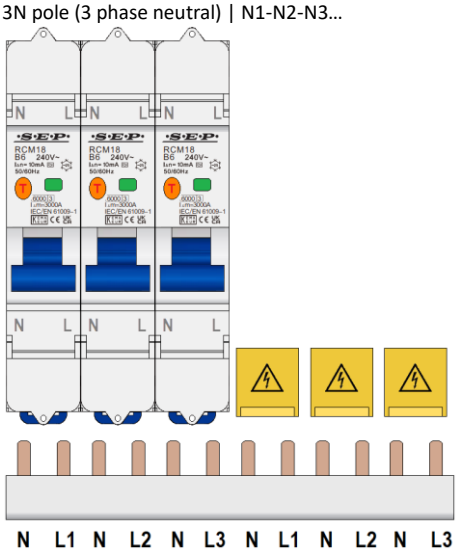
RCBO's RCE1

Order codes

	IΔn	Inom	B- characteristic	C- characteristic
	10mA	6 A	3104510106	3104520106
		10 A	3104510110	3104520110
		16 A	3104510116	3104520116
		20 A	3104510120	3104520120
		25 A	3104510125	3104520125
		32 A	3104510132	3104520132
		40 A	3104510140	3104520140
	30mA	6 A	3104510006	3104520006
		10 A	3104510010	3104520010
		16 A	3104510016	3104520016
		20 A	3104510020	3104520020
		25 A	3104510025	3104520025
		32 A	3104510032	3104520032
		40 A	3104510040	3104520040
	100mA	6 A	3104510206	3104520206
		10 A	3104510210	3104520210
		16 A	3104510216	3104520216
		20 A	3104510220	3104520220
		25 A	3104510225	3104520225
		32 A	3104510232	3104520232
		40 A	3104510240	3104520240
	300mA	6 A	3104510306	3104520306
		10 A	3104510310	3104520310
		16 A	3104510316	3104520316
		20 A	3104510320	3104520320
		25 A	3104510325	3104520325
		32 A	3104510332	3104520332
		40 A	3104510340	3104520340
	30mA	16 A	3104511016	3104521016
		20 A	3104511020	3104521020
		25 A	3104511025	3104521025
		Auxiliary contact 1CO	3104500001	
		Terminal cover 2p (yellow)	3102290010	
		Terminal cover 4p (yellow)	3102490010	

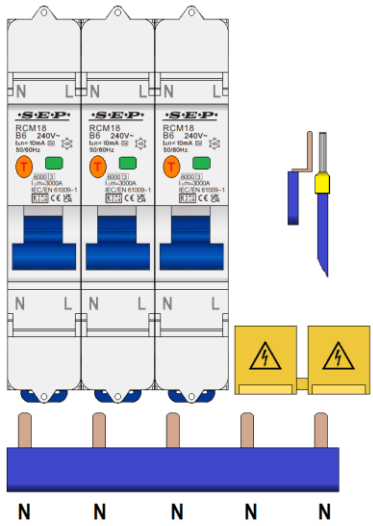
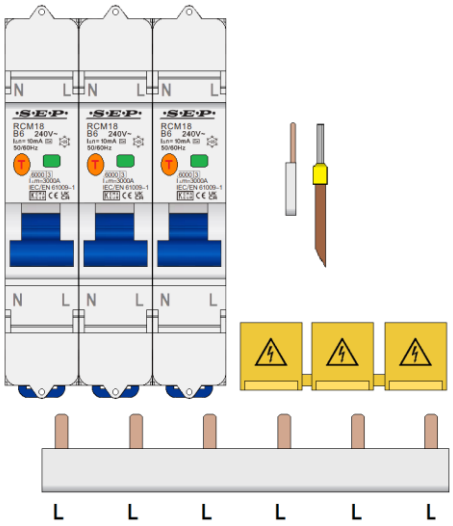
RCBO's RCE1

Order codes for connective rail

	RCE1	10mm² (closed end - non cuttable) ΣI 63A 100A	16mm² (cut to size with end- caps) ΣI 80A 125A
Busbar / connective rail type	**No. devices**	***PIN***	**PIN**
2 pole (phase neutral) | N1-N1-N1… 	3	2305122906	2306020906
	4	2305122908	2306020908
	5	2305122910	2306020910
	6	2305122912	2306020912
	8	2305122916	-
	9	-	2306020918
	10	2305122920	-
	12	2305122924	2306020924
	18	-	2306020936
	24	-	2306020948
	54	-	2306162200
3N pole (3 phase neutral) | N1-N2-N3… 	6	2305142912	2306050912
	9	2305142918	2306050918
	12	2305142924	2306050924
	15	-	2306050930
	18	-	2306050936
	21	-	2306050942
	24	-	2306050948
	54	-	2306162400
	Open mouth covers for busbar PIN	2115900015	

RCBO's RCE1

Order codes for connective rail

	RCE1 	10mm² (closed end - non cuttable) ΣI 63A 100A	16mm² (cut to size with end- caps) ΣI 80A 125A
Busbar / connective rail type	**No. devices**	***PIN***	**PIN**
1 phase – neutral bar 	2	2305101992	-
	3	2305101993	-
	4	2305101994	-
	5	2305101995	-
	6	2305101996	-
	8	2305101998	-
	10	2305101990	-
	12	2305101991	-
1 phase – phase bar 	2	2305101002	-
	3	2305101003	-
	4	2305101004	-
	5	2305101005	-
	6	2305101006	2306010006
	7	2305101007	-
	8	2305101008	-
	9	2305101009	2306010012
	10	2305101010	-
	11	2305101011	-
	12	2305101012	2306010012
	13	2305101013	-
	15	-	2306010015
	18	-	2306010018
	21	-	2306010021
	24	-	2306010024
	54	-	2306160100
	Open mouth covers for busbar PIN/FORK	2115900010	

RCBO's RCE1

Order codes accessories

Add-on terminals

Reference image	Wire size	PIN connection high		PIN connection Low	
		Grey	Blue	Grey	Blue
	2x10mm² solid/stranded 2x6mm² flexible	2115900040	2115900540	2115900041	2115900541

Marker - spacer

Reference image	Description	Code
	Component Spacer 0,5mm	2119000010

Lockout

Reference image	Description	Code
	Lockout set - complete	2115909099
	Locking devices adaptor	2115909015
	Locking device screw adaptor	2115909010
	Padlock with 2 identical keys	2115909020
	Warning tag (English)	2115909030

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