

RCBO RCM2-4

Data Sheet V1.2



The RCM2 and RCM4 RCBO's (residual current-breaker with overload protection) is the best solution for protection against overcurrent and earth fault currents. The RCM2 comes in 1p+n 36mm width (2 modules) and in 3p+n 72mm width (4 modules) and this in combination with a high breaking capacity of 6kA. The series ensures the best possible safety for people and equipment. The diversity in range and types makes it the one solution for almost every situation.



RCM2-4 residual current breaker with overcurrent protection

RCM2 and RCM4 is a RCBO compliant to product standard IEC/EN 61009 and with the following main technical features

- Breaking capacity 6kA
- Electromagnetic (IEC/EN 61009-2-1)
- Type A
- Sensitivity 10, 30, 100, 300 mA
- Tripping characteristics B – C
- 1p+n rated current up to 63A
- 3p+n rated current up to 40A
(50A and 63A separate document)

Application benefits

- Supply possible from top and bottom
- Fork type busbar connection (above and below) up to 16mm² and cable connection up to 25mm² cables.
- Toggle can be sealable in ON-OFF positions true a position inside attribute

CE

UK
CA

CB

KEMA
EUR

RoHS

RCBO's RCM2-4

Technical Data



			RCM2	RCM4
Electrical features	Type		IEC/EN 61009-1; IEC/EN 61009-2-1	
	Standards		CE, UKCA, CB, KEMA KEUR	
	Certification		CN	
	Country of origin		Compliant, No Exemption	
	RoHS Compliance Status		A	
	Type (wave form of the earth leakage sensed)		1p+n	
	Number of poles		3p+n	
	Rated current	In A	6 ≤ In ≤ 63	6 ≤ In ≤ 40
	Rated sensitivity	IΔn A	0.01 - 0.03 - 0.1 - 0.3	0.03 - 0.1 - 0.3
	Rated voltage	Ue V	230 / 240	230 / 400
	Operating time	Type A	instantaneous	
	Insulation voltage	Ui V	500 V AC	
	Overvoltage category		III	
	Pollution degree		2	
	Operating voltage of circuit test	V	187 - 264	230 - 485
	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 - (10*)	
		Service Ics kA	4.5 - (50% 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 RCM2-4

Technical Data



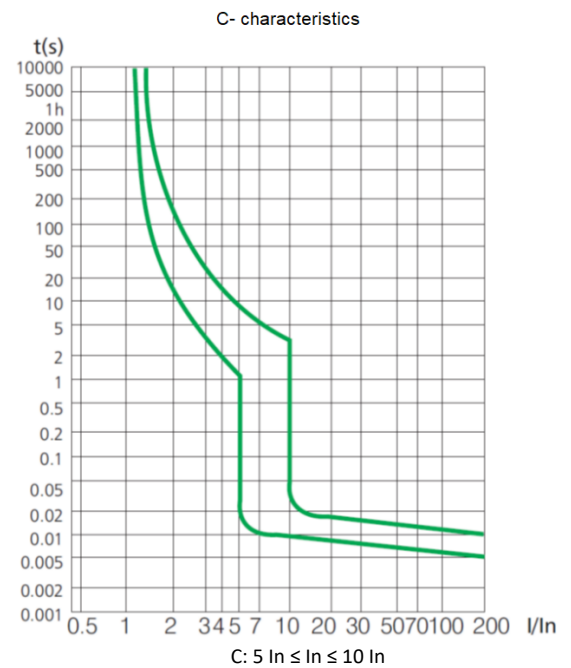
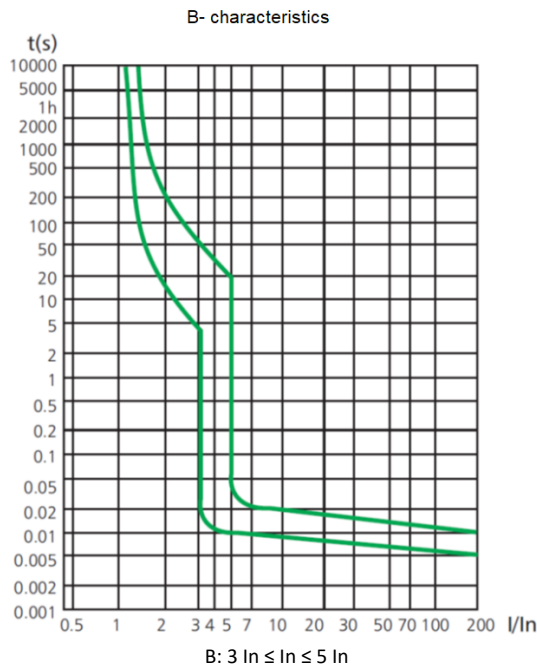
			RCM2	RCM4
Installation	Type		Twin-purpose terminal (lift / open-mouthed)	
	Terminal type	bottom / top		
	Terminal size for cables	bottom / top	mm ²	25/35
	Terminal size for PIN busbar	bottom / top	mm ²	10/16
	Terminal size for FORK busbar	bottom / top	mm ²	M6 - 10/16
	Solid /stranded wiring		1x 1mm ² - 35mm ² 2 x 1mm ² - 16mm ² *	
	Flexible wires with or without ferrules		1x 1mm ² - 25mm ² 2 x 1mm ² - 10mm ² *	
	Tightening torque	bottom / top	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	
Packing	Dimensions (H x W x D)	mm	83 x 36 x 72	83 x 72 x 72
	Weight	kg	0,19	0,42
	Packing A	QTY	1	1
		Dimensions (H x W x D)	mm	90 x 40 x 80
		Weight	kg	0,2
	Packing B (x A)	QTY	6	3
		Dimensions (H x W x D)	mm	255 x 95 x 91.2
		Weight	kg	1,3
	Packing C (x B)	QTY	60	30
		Dimensions (H x W x D)	mm	510 x 275 x 200
		Weight	kg	14,5
	CN-code		85362010	
Combination with auxiliary elements	Auxiliary contact		Yes	
	Signal contact / auxiliary contact		Yes	
	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 RCM2-4

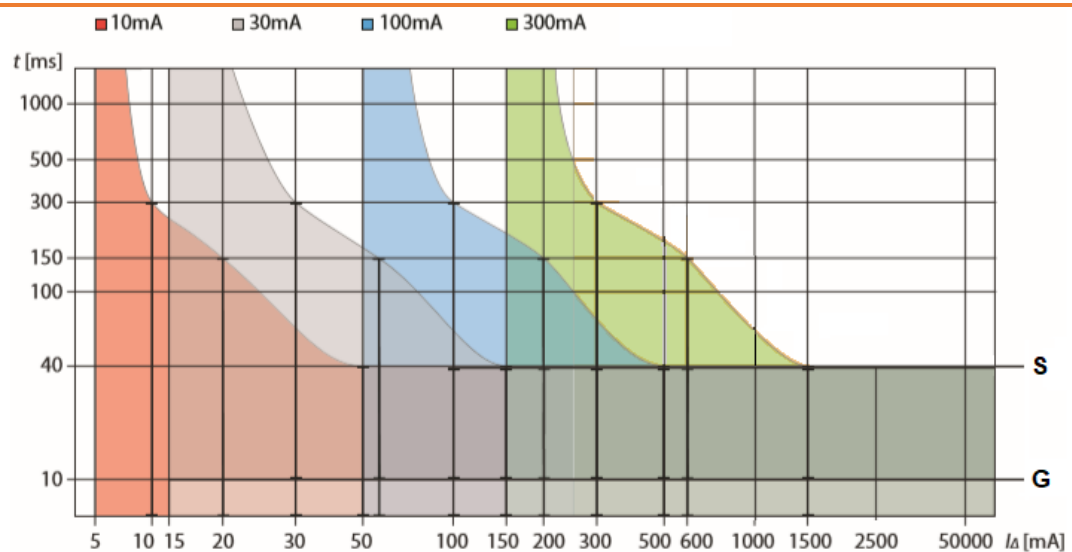
Technical Data

Tripping characteristics



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 [S] - residual current devices are not available in the RCM2-4 series).



RCBO's RCM2-4

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 RCM2-4

Max operating current depending on the ambient temperature (daily average $\leq +35$ °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
50	63	60.8	57	55	50	47.2	45.3	44	42.8	41.5	40.1
63	78	74.2	70.3	65.2	63	60.2	58.6	57.2	55.8	53.9	50.6

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).

RCBO's RCM2-4

Technical Data

Power loss, resistance, voltage drop *RCM2 (1p+N)*

In [A]	Component resistance [mΩ]	Component voltage drop [V]	Component power loss [W]
6	55,5	0,3	2,0
10	20,6	0,2	2,1
13	20,7	0,3	3,5
16	13,2	0,2	3,4
20	7,3	0,1	2,9
25	5,6	0,1	3,5
32	5,1	0,2	5,2
40	4,9	0,2	7,8
50	4,5	0,2	11,3
63	4,2	0,3	16,8

Power loss, resistance, voltage drop *RCM4 (3p+n)*

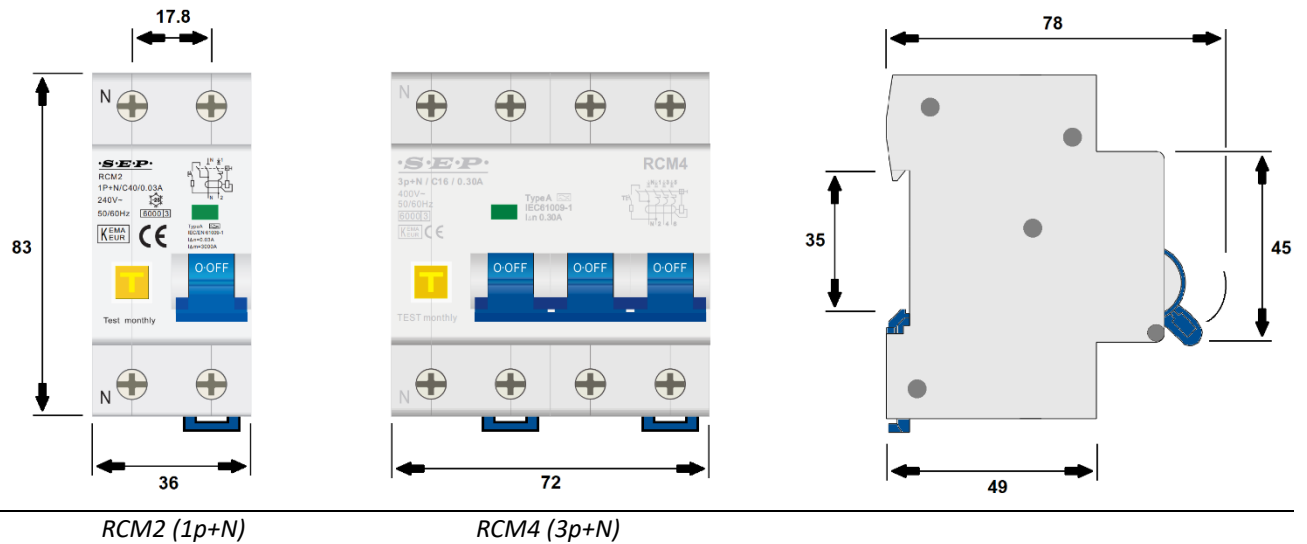
In [A]	Component resistance [mΩ]	Component voltage drop [V]	Component power loss [W]
6	138,1	0,8	5,0
10	51,2	0,5	5,1
16	32,9	0,5	8,4
20	18,1	0,4	7,2
25	14,0	0,4	8,8
32	12,7	0,4	13,0
40	12,1	0,5	19,4

RCBO's RCM2-4

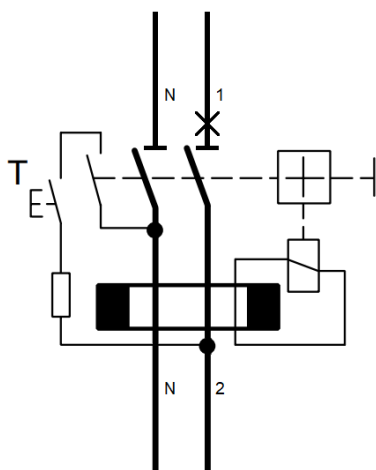
Technical Data

Overall dimensions

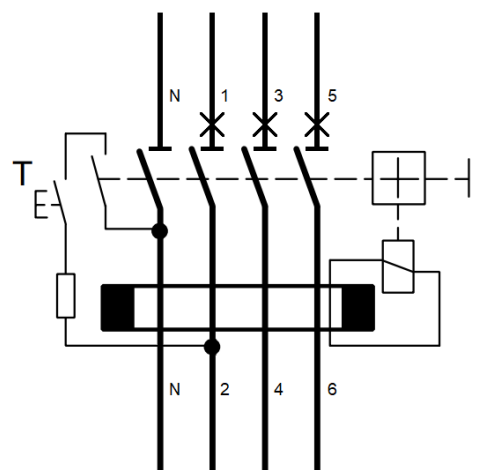
All measurements in mm



Connection diagram



RCM2 (1p+n)



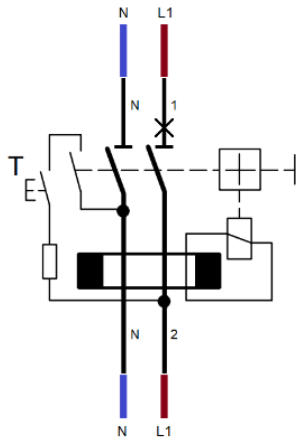
RCM4 (3p+n)

RCBO's RCM2-4

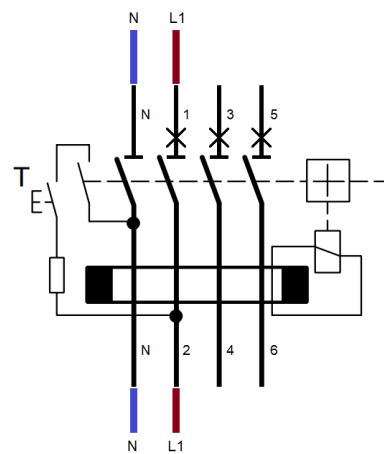
Technical Data

Wiring options

1 Phase systems



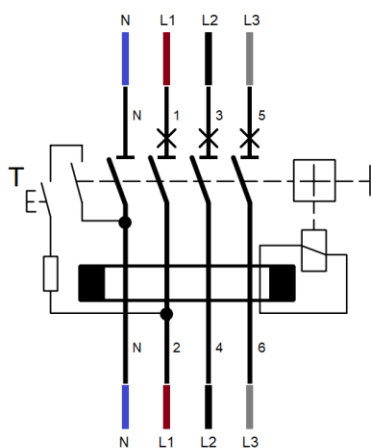
RCM2 (1p+n)



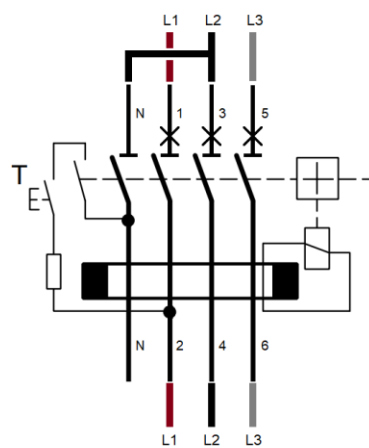
RCM4 (3p+n)

Wiring options

3 Phase systems



3 Phase and Neutral







3 Phase + bridge*

* If there is no neutral, the RCBO will be connected normally but a bridge (article no. 2305181002) will need to be added across terminals N/3, as shown, will cause a voltage drop which leaves the test circuit at a suitable normal operation range.



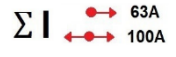
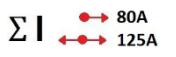
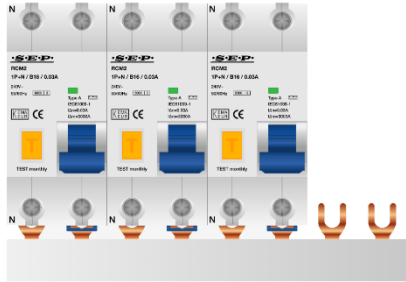

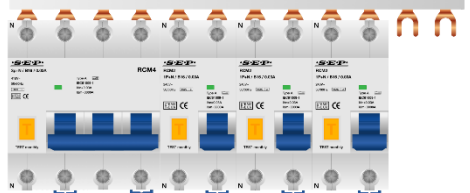
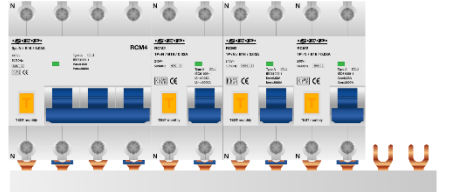
RCBO's RCM2-4

Order codes

			RCM2 (1p+n)		RCM4 (3p+n)	
						
Type A	IΔn	Inom	B characteristic	C characteristic	B characteristic	C characteristic
	10mA	6 A	3104540106	3104550106	-	-
		10 A	3104540110	3104550110	-	-
		13 A	3104540113	3104550113	-	-
		16 A	3104540116	3104550116	-	-
		20 A	3104540120	3104550120	-	-
		25 A	3104540125	3104550125	-	-
		32 A	3104540132	3104550132	-	-
		40 A	3104540140	3104550140	-	-
	30mA	6 A	3104540006	3104550006	3104640006	3104650006
		10 A	3104540010	3104550010	3104640010	3104650010
		13 A	3104540013	3104550013	-	-
		16 A	3104540016	3104550016	3104640016	3104650016
		20 A	3104549020	3104550020	3104640020	3104650020
		25 A	3104540025	3104550025	3104640025	3104650025
		32 A	3104540032	3104550032	3104640032	3104650032
		40 A	3104540040	3104550040	3104640040	3104650040
	100mA	50 A	3104540050	3104550050	-	-
		63A	3104540063	3104550063	-	-
		6 A	3104540206	3104550206	3104640206	3104650206
		10 A	3104540210	3104550210	3104640210	3104650210
		13 A	3104540213	3104550213	-	-
		16 A	3104540216	3104550216	3104640216	3104650216
		20 A	3104540220	3104550220	3104640220	3104650220
		25 A	3104540225	3104550225	3104640225	3104650225
	300mA	32 A	3104540232	3104550232	3104640232	3104650232
		40 A	3104540240	3104550240	3104640240	3104650240
		50 A	3104540250	3104550250	-	-
		63 A	3104540263	3104550263	-	-
		6 A	3104540306	3104550306	3104641006	3104651006
		10 A	3104540310	3104550310	3104641010	3104651010
		13 A	3104540313	3104550313	-	-
		16 A	3104540316	3104550316	3104641016	3104651016
		20 A	3104540320	3104550320	3104641020	3104651020
		25 A	3104540325	3104550325	3104641025	3104651025
		32 A	3104540332	3104550332	3104641032	3104651032
		40 A	3104540340	3104550340	3104641040	3104651040
		50 A	3104540350	3104550350	-	-
		63 A	3104540363	3104550363	-	-
Auxiliary contact 1CO			3104000010			
Alarming contact 1CO			3104000020			
						

RCBO's RCM2-4

Order codes for connective rail

Busbar / connective rail type	RCM2 	RCM4 	10mm ² (closed end - non cuttable) 		16mm ² (cut to size with end-caps) 	
			PIN	FORK	PIN	FORK
2 pole (phase neutral) N1-N1-N1...	2	-	2305102004	2305112004	-	-
	3	-	2305102006	2305112006	2306020006	2306120006
	4	-	2305102008	2305112008	2306020008	2306120008
	5	-	2305102010	2305112010	2306020010	2306120010
	6	-	2305102012	2305112012	2306020012	2306120012
	7	-	2305102014	2305112014	2306020014	2306120014
	8	-	2305102016	2305112016	2306020016	2306120016
	9	-	2305102018	2305112018	2306020018	2306120018
	10	-	-	-	2306020020	2306120020
	11	-	-	-	2306020022	2306120022
	12	-	-	-	2306020024	2306120024
	27	-	-	-	2306160200	2306161200
3N pole (3 phase neutral) N1-N2-N3...	6	-	2305105012	2305115012	2306050012	2306150012
	9	-	2305105018	2305115018	2306050018	2306150018
	12	-	-	-	2306050024	2306150024
	28	-	-	-	2306160500	2306161500
4 pole (3 phase neutral) N123-N123...	-	2	2305104008	2305114008	2306040008	2306140008
	-	3	2305104012	2305114012	2306040012	2306140012
	-	4	2305104016	2305114016	2306040016	2306140016
	-	5	-	-	2306040020	2306140020
	-	6	-	-	2306040024	2306140024
	-	14	-	-	2306160400	2306161400
Top Combi-rail N123-N1-N2-N3-(N1)	3	1	2305195310	2305195010	-	-
	4	1	2305195312	2305195012	-	-
Bottom Combi-rail N123-N1-N2-N3-(N1)	3	1	2305195110	2305195210	-	-
	4	1	2305195112	2305195212	-	-

* pictures are indicative – other combinations possible

RCBO's RCM2-4

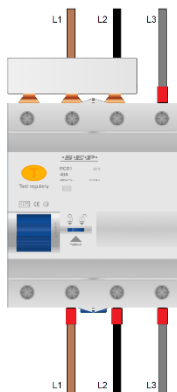
Order codes for connective rail

Busbar / connective rail type

1 phase – neutral bar (35.6mm)



1 phase – phase bar (35.6mm)



RCM2



10mm²
(closed end - non cuttable)

ΣI 63A
100A

PIN

FORK

16mm²
(cut to size with end- caps)

ΣI 80A
125A

PIN

FORK

2	2305171902	2305181902	-	-
3	2305171903	2305181903	-	-
4	2305171904	2305181904	-	-
5	2305171905	2305181905	-	-
6	2305171906	2305181906	2306019206	2306119206
9	-	-	2306019209	2306119209
12	-	-	2306019212	2306119212
27	-	-	2306160121	2306161121

2	2305171002	2305181002	-	-
3	2305171003	2305181003	-	-
4	2305171004	2305181004	-	-
5	2305171005	2305181005	-	-
6	2305171006	2305181006	2306010206	2306110206
9	-	-	2306010209	2306110209
12	-	-	2306010212	2306110212
27	-	-	2306160120	2306161120

BRIDGE connector
for 3 phase systems
without neutral.

2305181002

Open mouth covers
for busbar PIN/FORK


2115900010

* pictures are indicative – other combinations possible


RCBO's RCM2-4

Order codes accessories


Add-on terminals

Reference image	Wire size	PIN		FORK	
		Grey	Blue	Grey	Blue
	1x50mm2 solid/stranded 1x35mm2 flexible	2115900060	2115900120	2115900090	2115900150
	2x25mm2 solid/stranded 2x16mm2 flexible	2115900070	2115900130	2115900100	2115900160
	3x16mm2 solid/stranded 3x10mm2 flexible	2115900080	2115900140	2115900110	2115900170

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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