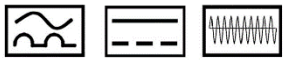
RCCB RCD1

Data Sheet V1.2

Our changing life style and high tech developments makes that there is need for more diversity in the RCCB protection devices. The RCD1 electromagnetic type RCCB (residual current circuit breaker) is the solution for this changing lifestyle. With the RCD1 you can find the right protection for your situation in any time. The design covers the range up to 125A, in type A and type B, with a sensitivities of 10, 30, 100, 300, 500mA, all of this with a breaking capacity of 10kA.

Type A



Type B

RCD1 residual current circuit breaker

RCD1 is a RCCB compliant to product standard IEC/EN 61008 and IEC/EN 62423 and with the following main technical features

- Breaking capacity 10kA
- Electromagnetic (IEC/EN 61008-2-1)
- Type A, A[G], A[S], B, B[G], B[S]
- Sensitivity 10, 30, 100, 300, 500mA
- rated current up to 125A

Application benefits

- Supply possible from top and bottom
- Fork or pin type busbar connection (above and below) up to 30mm² and cable connection up to 35mm² cables.
- Terminal cover with sealing possibility for operator safety
- Locking possibility for the handle in off position integrated in the housing.
- Family feeling in the SEP PRO range modular components

RCCB's RCD1

Technical Data

	Type				**RCD1-2**	**RCD1-4**
	Standards				IEC/EN 61008-1; IEC/EN 61008-2-1 IEC/EN 62423 (only for type B)	
	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 – A[G] – A[S] – B – B[G] – B[S]	
	Number of poles				1p+n	3p+n
	Rated current	In	A		16 - 25 - 40 - 63 - 80 - 100 - 125	25 - 40 - 63 - 80 - 100 - 125
	Rated sensitivity	IΔn	A		0.01 - 0.03 - 0.1 - 0.3	0.03 – 0,1 – 0,3 – 0,5
	Rated voltage	Ue	V		230 / 240	240 / 415
	Operating time	Type A/B			instantaneous	
		Type [G]			10ms delay	
		Type [S]			40ms delay	
	Insulation voltage	Ui	V		500 V AC	
	Overvoltage category				III	
	Pollution degree				2	
	Operating voltage of circuit test		V		110 - 264	110 – 415V
	Rated frequency		Hz		50 - 60	
	Rated breaking capacity acc. to IEC/EN 61009-1	Icu	A		10.000	
	Rated residual breaking capacity IΔm according to EN 61008-1	IΔm	A		1250	
	Rated impulse withstand voltage (1.2/50) Uimp		kV		6	
	Dielectric test voltage at ind. freq. for 1 min.		kV		2.5 kV (50 / 60Hz, 1 min.)	
	Energy limiting class acc. to EN 61008-1				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… +70	
	Storage temperature		°C		-40… +70	

RCCB's RCD1

Technical Data

	Type			RCD1-2	RCD1-4
Installation	Terminal type	bottom / top		lift / open-mouthed	
	Terminal size for cables	bottom / top	mm²	50/35	
	Terminal size for FORK busbar	bottom / top	mm²	10/16/30	
	Terminal size for PIN busbar	bottom / top	mm²	10/16/30	
	Solid /stranded wiring			1x 4mm² - 50mm² 2 x 4mm² - 16mm² *	
	Flexible wires with or without ferrules			1x 4mm² - 35mm² 2 x 4mm² - 16mm² *	
	Tightening torque	bottom / top		3.5 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	90 x 36 x 72	90 x 72 x 72
	Weight		kg	0,22	0,41
Packing	Packing A	QTY		1	1
		Dimensions (H x W x D)	mm	92 x 38 x 81	90 x 75 x 81
		Weight	kg	0,24	0,43
	Packing B *(x A)*	QTY		6	3
		Dimensions (H x W x D)	mm	230 x 100 x 90	230 x 100 x 90
		Weight	kg	1,47	1,35
	Packing C *(x B)*	QTY		60	30
		Dimensions (H x W x D)	mm	510 x 250 x 190	510 x 240 x 190
		Weight	kg	15	14
	CN-code			85362010	
Combination with auxiliary elements	Auxiliary contact			Yes	
	Alarm contact			NA	
	Shunt trip			NA	
	Auxiliary contact for bottom fitting			NA	
	Undervoltage release			NA	
	Overvoltage release			NA	
	Motor operating device			NA	

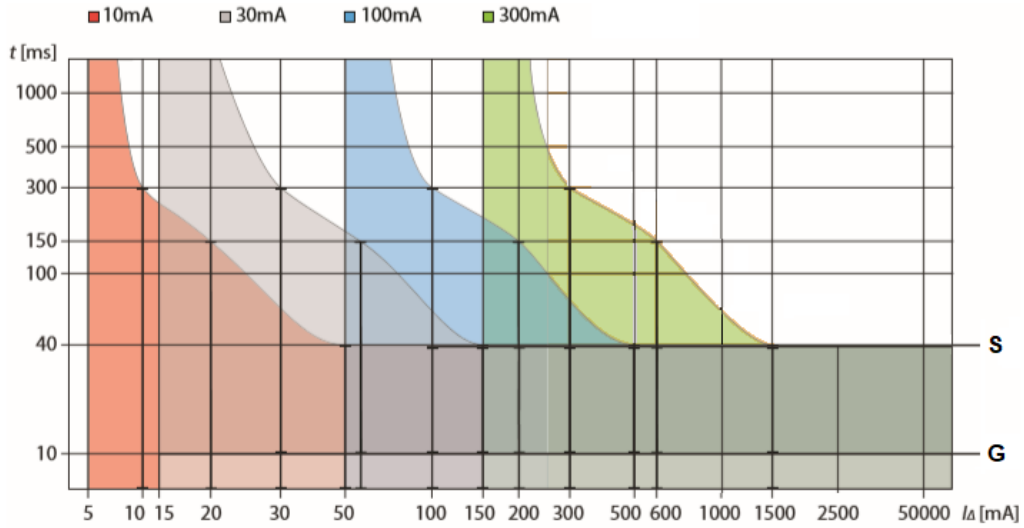
* *Check local installation rules, this type of connection is not advised. Special add-on terminals are available.*

RCCB's RCD1

Technical Data

Tripping Characteristics (IEC/EN 61008)

Tripping characteristics, tripping time range and selectivity of instantaneous, surge current-proof [G] and surge current-proof – selective [S] residual current devices.



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

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).

RCCB's RCD1

Technical Data

Derating in temperature *RCD1*

Max operating current depending on the ambient temperature (daily average ≤ +35 °C)

In [A]	Ambient temperature [°C]										
	-25	**-15**	**-5**	**10**	**30**	**40**	**45**	**55**	**60**	**65**	**70**
16	19.1	18.6	18	17.1	16	15.2	14.9	14.1	13.8	13.4	13
25	31.4	30.2	29.1	27.3	25	23.9	23.3	22.1	21.6	21	20.4
40	51	49	47	44	40	38.1	37.1	35.1	34.1	33.1	32.1
63	78	74.2	70.3	65.2	63	60.2	58.6	57.2	55.8	53.9	50.6
80	89.4	87.2	84.8	81.1	80	73.3	71.9	69.1	67.6	66.2	64.8
100	111.9	108.9	106.1	101.4	100	91.6	89.8	86.3	84.4	82.6	80.8
125	138.1	136.2	132.4	126.8	125	114.5	112.3	107.9	105.6	103.4	101.2

Power loss RCD1

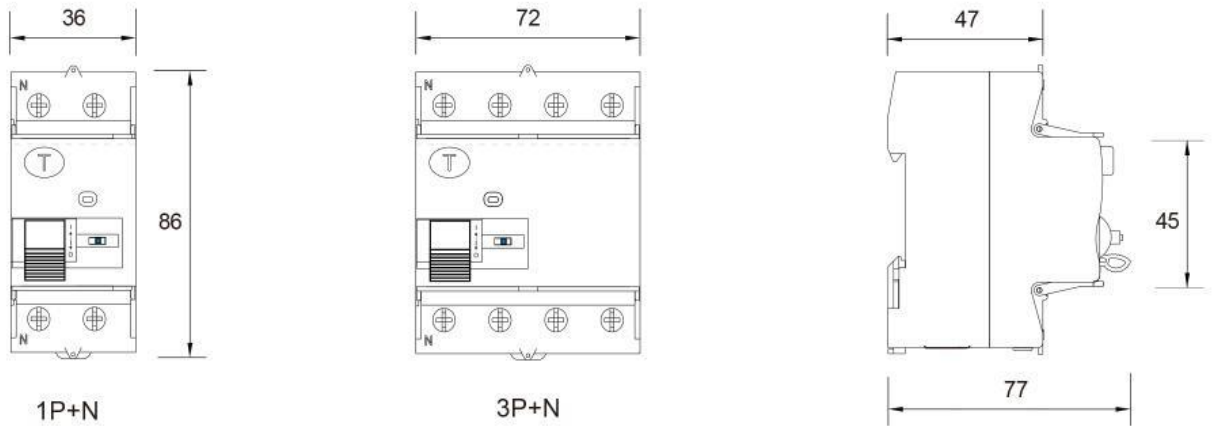
		Type A			**Type B**		
IΔn [mA]	**In [A]**	**Average per pole**	**2 pole**	**4 pole**	**Average per pole**	**2 pole**	**4 pole**
10	16	0,30	0,59	1,19	-	-	-
	25	0,72	1,44	2,89	-	-	-
	40	1,85	3,70	7,40	-	-	-
30 - 100 -	16	0,19	0,38	0,76	-	-	-
300 - 500	25	0,47	0,93	1,86	0,47	0,94	1,88
	40	1,19	2,38	4,76	1,20	2,40	4,80
	63	2,95	5,91	11,81	2,98	5,96	11,91
	80	3,20	6,40	12,80	3,84	7,68	15,36
	100	5,00	10,00	20,00	6,00	12,00	24,00
	125	7,81	15,63	31,25	9,38	18,75	37,50

RCCB's RCD1

Technical Data

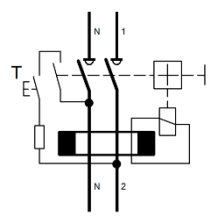
Overall dimensions

All measurements in mm

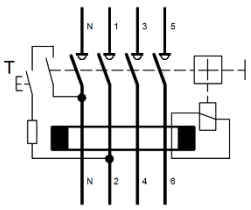


RCD1

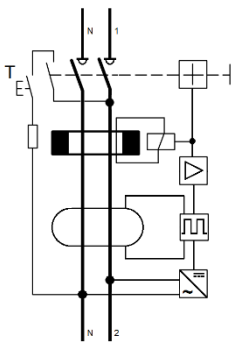
Connection diagram



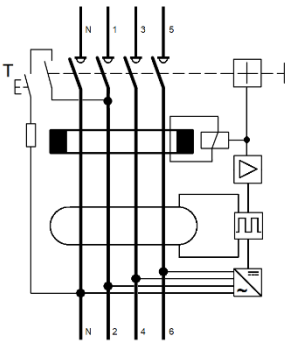
Type A
1p+n



Type A
3p+n



Type B
1p+n



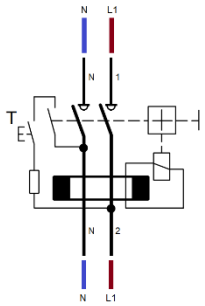
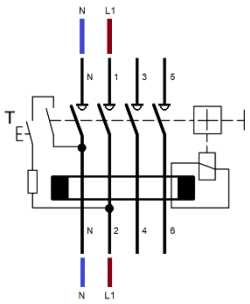
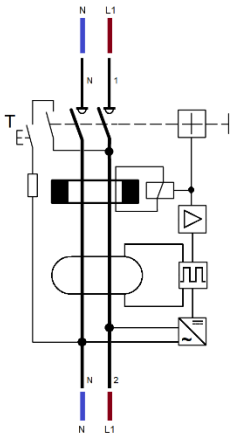
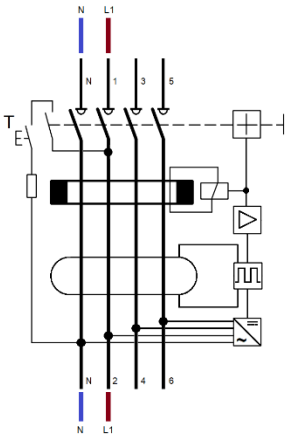
Type B
3p+n

RCCB's RCD1

Technical Data

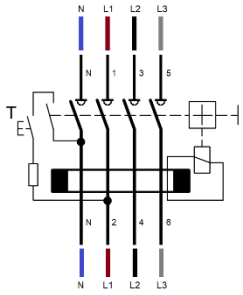
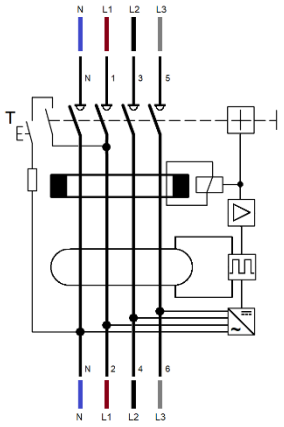
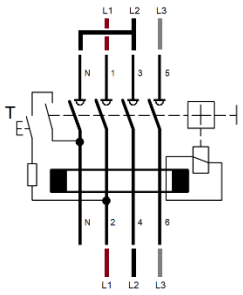
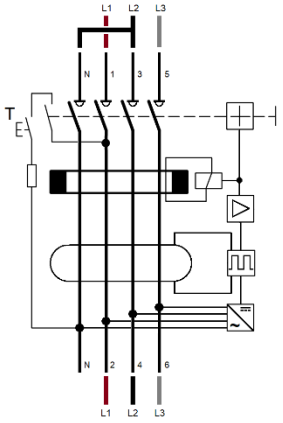
Wiring options

1 Phase systems

			
Type A RCD1 1p+n	*Type A* RCD1 3p+n	*Type B* RCD1 1p+n	*Type B* RCD1 3p+n

Wiring options

3 Phase systems

3 Phase – 4 wire		***3 Phase – 3 wire (bridge* solution)***	
			
Type A *RCD1 3p+n*	*Type B* *RCD1 3p+n*	*Type A* *RCD1 3p+n*	*Type B* *RCD1 3p+n*

** If there is no neutral, the RCCB 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.*

RCCB's RCD1

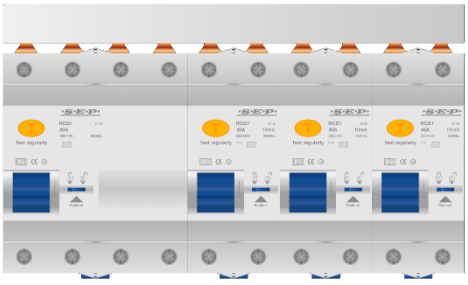
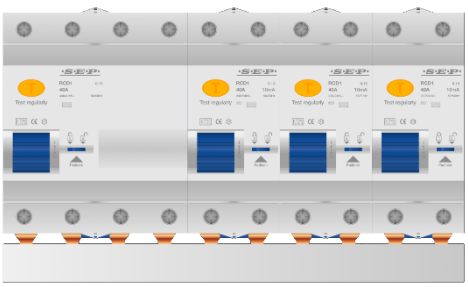
Order codes

	IΔn	Inom	A	A[G]	A[S]	B	B[G]*	B[S]*
	10mA	16 A	3112000010	3112000740	-	-	-	-
		25 A	3112000030	3112000760	-	-	-	-
		40 A	3112000070	3112000800	-	-	-	-
	30mA	16 A	3112000020	3112000750	-	3112001200	-	-
		25 A	3112000040	3112000770	-	3112001230	-	-
		40 A	3112000080	3112000810	-	3112001280	-	-
		63 A	3112000130	3112000840	-	3112001330	-	-
		80 A	3112000180	3112000870	-	3112001380	-	-
		100 A	3112000230	3112000900	-	3112001430	-	-
		125 A	3112000280	3112000930	-	3112001200	-	-
	100mA	25 A	3112000050	3112000780	-	3112001210	-	-
		40 A	3112000090	3112000820	3112000110	3112001240	-	3112001260
		63 A	3112000140	3112000850	3112000160	3112001260	-	3112001290
		80 A	3112000190	3112000880	3112000210	3112001290	-	3112001310
		100 A	3112000240	3112000910	3112000260	3112001310	-	3112001340
		125 A	3112000290	3112000940	3112000310	3112001340	-	3112001360
	300mA	25 A	3112000060	3112000790	-	3112001220	-	-
		40 A	3112000100	3112000830	3112000120	3112001250	-	3112001270
		63 A	3112000150	3112000860	3112000150	3112001270	-	3112001300
		80 A	3112000200	3112000890	3112000170	3112001300	-	3112001320
		100 A	3112000250	3112000920	3112000200	3112001320	-	3112001350
		125 A	3112000300	3112000950	3112000220	3112001350	-	3112001370
	30mA	25 A	3112000330	3112000960	-	3112001480	-	-
		40 A	3112000390	3112001000	-	3112001540	-	-
		63 A	3112000460	3112001040	-	3112001610	-	-
		80 A	3112000530	3112001080	-	3112001680	-	-
		100 A	3112000600	3112001120	-	3112001750	-	-
		125 A	3112000670	3112001160	-	3112001820	-	-
	100mA	25 A	3112000340	3112000970	3112000370	3112001490	-	3112001520
		40 A	3112000400	3112001010	3112000430	3112001520	-	3112001550
		63 A	3112000470	3112001050	3112000500	3112001550	-	3112001580
		80 A	3112000540	3112001090	3112000570	3112001580	-	3112001620
		100 A	3112000610	3112001130	3112000640	3112001620	-	3112001650
		125 A	3112000680	3112001170	3112000710	3112001650	-	3112001690
	300mA	25 A	3112000350	3112000980	3112000380	3112001500	-	3112001530
		40 A	3112000380	3112001020	3112000410	3112001530	-	3112001560
		63 A	3112000410	3112001060	3112000440	3112001560	-	3112001590
		80 A	3112000440	3112001100	3112000480	3112001590	-	3112001630
		100 A	3112000480	3112001140	3112000510	3112001630	-	3112001660
		125 A	3112000510	3112001180	3112000550	3112001660	-	3112001700
	500mA	25 A	3112000360	3112000990	-	3112001510	-	-
		40 A	3112000420	3112001030	3112000450	3112001570	-	3112001600
		63 A	3112000450	3112001070	3112000490	3112001600	-	3112001640
		80 A	3112000490	3112001110	3112000520	3112001640	-	3112001670
		100 A	3112000520	3112001150	3112000560	3112001670	-	3112001710
		125 A	3112000560	3112001190	3112000590	3112001710	-	3112001740
	Auxiliary contact 1CO		3105300001					

** Types are available through special order*

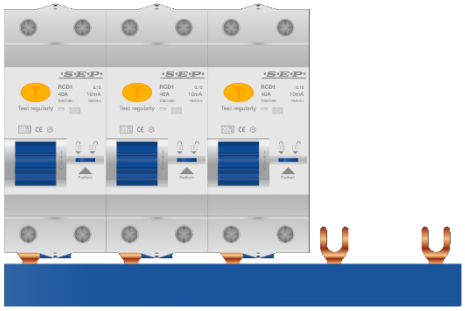
RCCB's RCD1

Order codes for connective rail

	RCD1-2	RCD1-4	10mm² (closed end - non cuttable) ΣI 63A 100A		16mm² (cut to size with end- caps) ΣI 80A 125A	
Busbar / connective rail type			***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	-	-

RCCB's RCD1

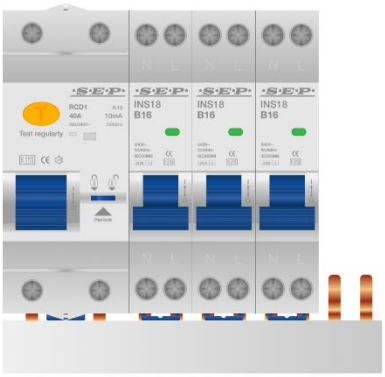
Order codes for connective rail

Busbar / connective rail type	RCD1-2 	10mm² (closed end - non cuttable) ΣI 63A 100A		16mm² (cut to size with end- caps) ΣI 80A 125A	
		PIN	***FORK***	**PIN**	**FORK**
1 phase – neutral bar (35.6mm) 	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
1 phase – phase bar (35.6mm) 	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			

RCCB RCD1

Order codes for connective rail

Supplied by SEP EUROPE ®

		**10mm²** **(closed end - non cuttable)** **ΣI** 63A / 100A
Busbar / connective rail type	***No. devices***	
Bottom Combi-rail | (L1-L2) *RCD1 – INS18/INS36* 	1x 2p + 2x 2P (18mm)	2305192306
	1x 2p + 3x 2P (18mm)	2305192308
	1x 2p + 4x 2P (18mm)	2305192310
	1x 2p + 5x 2P (18mm)	2305192312
Bottom Combi-rail | (N-L1-L2-L3-N1-N2-N3-N1) *RCD1 – INS18/ INS36* 	1x 4p + 4x 2P (18mm)	2305194312
	Open mouth covers for busbar PIN 9/18	2115900015

** pictures are indicative – other combinations are possible*

RCCB's RCD1

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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