

MCB INS36 (space reduction up to 50%)

Data Sheet V1.2



The SEP INS36 is a miniature circuit breaker suitable for domestic, utility as well as industrial applications. With this MCB design you can save up to 50% on your installation space (transport and storage). The INS36 design is based on the SEP Compact range of products and is therefore easy to combine together. The extended range of busbars is also available to connect the items together. The INS36 has a breaking capacity of 6kA, is available in a range of current up to 40A and in characteristics B, C or D.

INS36 miniature circuit breaker

CE

UK
CA

CB

KEMA
EUR

RoHS

INS36 is a MCB compliant to product standard IEC/EN 60898 and with the following main technical features

- Breaking capacity 6kA
- Rated current up to 40A
- (1p+n) 2p, 3p, 3p+n, 4p
- Characteristics B and C

Application benefits

- Supply possible from top and bottom
- Pin type busbar connection (above and below) up to 16mm² and a connection up to 10mm² cables.
- Locking possibility for the handle in off position by attribute
- Family feeling in the SEP Compact range modular components

MCB INS36

Technical Data



Type			INS36-2	INS36-4
Standards			IEC/EN 60898	
Certification			CE, UKCA, CB, KEMA KEUR	
Country of origin			CN	
RoHS Compliance Status			Compliant, No Exemption	
Number of poles			1p+n / 2p	3p+n / 4p
Number of modules (18mm)			1	2
Tripping characteristics			B, C, D	B, C, D
Rated current	In	A	1 ≤ In ≤ 40A	1 ≤ In ≤ 40A
Rated voltage	Ue	V	230 / 240 (1p+n) 240 / 415 (2p)	400 / 415
Min. operating voltage		V	12	
Max. operating voltage		V	264 (1p+n) 440 (2p)	440
Insulation voltage	Ui	V	500 V AC	
Overvoltage category			III	
Pollution degree			2	
Rated frequency			50 - 60	
Rated breaking capacity acc. to IEC/EN 60898	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	4.5*	
Rated impulse withstand voltage (1.2/50) Uimp			4	
Dielectric test voltage at ind. freq. for 1 min.			2.5 kV (50 / 60Hz, 1 min.)	
Thermomagnetic release – characteristics	B: 3 In ≤ In ≤ 5 In		■	
	C: 5 In ≤ In ≤ 10 In		■	
	D: 10 In ≤ In ≤ 20 In		■	
Energy limiting class acc. to EN 61009-1			3 (B/C)	
Mechanical features	Housing		Insulation group I - II, RAL 7035	
	Toggle		Insulation group II, RAL 5017	
	Contact position indication		Green / Red 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		40g - 18 shocks - 5ms	
	Vibration resistance acc. to IEC/EN 60068-2-6		0.35 mm or 5 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			30	
Ambient temperature (with daily average ≤ +35 °C)			-25... +55	
Storage temperature			-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

MCB INS36

Technical Data



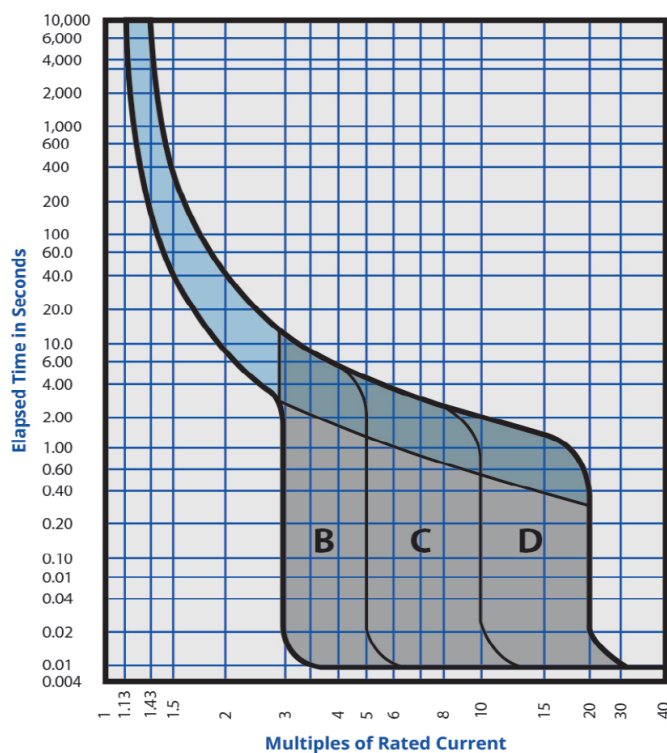
				INS36	INS36
Installation	Type			lift / open-mouthed	
	Terminal type	bottom / top		10/6	
	Terminal size for cables	bottom / top		mm ²	
	Terminal size for PIN busbar	bottom / top		mm ²	
	Solid /stranded wiring			1x 1.5mm ² - 10mm ² 2 x 1.5mm ² - 6mm ² *	
	Flexible wires with or without ferrules			1x 1.5mm ² - 6mm ² 2 x 1.5mm ² - 4mm ² *	
	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 77	86 x 36 x 77
	Weight	kg		0.13	0.23
Packing	Packing A	QTY		1	1
		Dimensions (H x W x D)		90 x 20 x 80	90 x 40 x 80
		Weight		0.14	0.26
	Packing B (x A)	QTY		10	5
		Dimensions (H x W x D)		225 x 97 x 86	
		Weight		1.3	1.3
	Packing C (x B)	QTY		120	60
		Dimensions (H x W x D)		440 x 292 x 185	
		Weight		15	16
	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.

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Tripping Characteristics



Performance in altitude*

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

* the MCB 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).

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Technical Data

Derating in temperature *INS36*

Max operating current depending on the ambient temperature (daily average $\leq +35\text{ }^{\circ}\text{C}$)

In [A]	Ambient temperature [°C]										
	-25	-15	-5	10	30	40	45	55	60	65	70
1	1,2	1,17	1,13	1,08	1	0,96	0,94	0,9	0,88	-	-
2	2,35	2,29	2,23	2,13	2	1,93	1,89	1,82	1,78	-	-
3	3,52	3,43	3,34	3,2	3	2,9	2,84	2,73	2,68	-	-
4	4,75	4,62	4,49	4,9	4	3,85	3,77	3,61	3,53	-	-
6	7,59	7,32	7,5	6,62	6	5,66	5,49	5,12	4,92	-	-
8	10,12	9,76	10	8,83	8	7,53	7,3	6,79	6,51	-	-
10	11,75	11,45	11,14	10,67	10	9,65	9,47	9,09	8,9	-	-
13	16,29	15,74	15,17	14,29	13	12,24	11,86	11,04	10,59	-	-
16	19,3	18,74	18,17	17,27	16	15,32	14,97	14,25	13,87	-	-
20	24,09	23,40	22,69	21,58	20	19,16	18,73	17,82	17,36	-	-
25	29,36	28,62	27,86	26,67	25	24,12	23,67	22,74	22,26	-	-
32	38,93	37,76	36,56	34,68	32	30,57	29,83	28,28	27,48	-	-
40	47,81	46,48	45,13	43	40	38,41	37,59	35,89	35,01	-	-

Power loss *INS36*

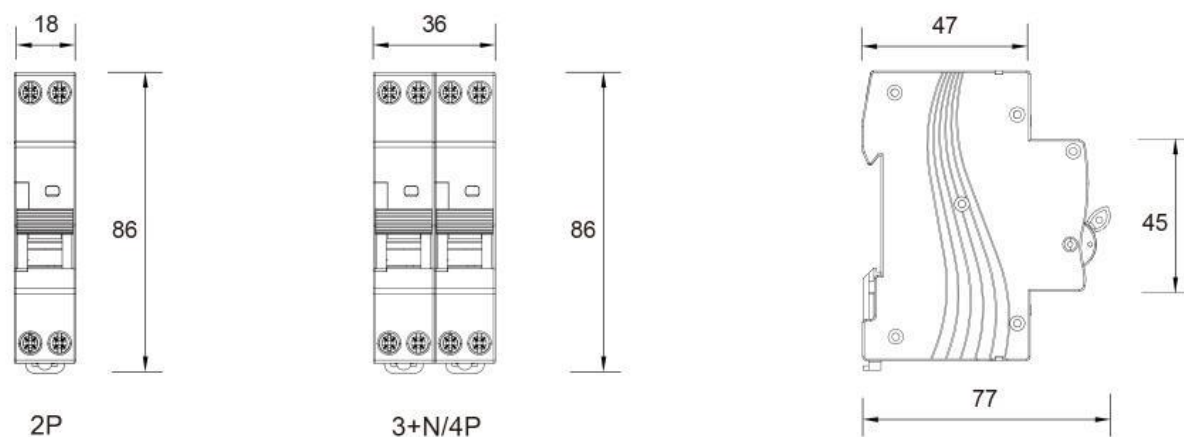
In [A]	1p+n	2p	3p	3p+n	4p
1	-	2,8	4,2	5,18	5,6
2	-	3,2	4,8	5,92	6,4
3	-	2,8	4,2	5,18	5,6
4	-	4,48	6,72	8,29	8,96
6	-	1,8	2,7	3,33	3,6
8	-	3,8	5,7	7,03	7,6
10	-	1,8	2,7	3,33	3,6
13	-	2,86	4,29	5,29	5,72
16	-	3,84	5,76	7,10	7,68
20	-	3,8	5,7	7,03	7,6
25	-	6,4	9,6	11,84	12,8
32	-	7	10,5	12,95	14
40	-	11,2	16,8	20,72	22,4

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Technical Data

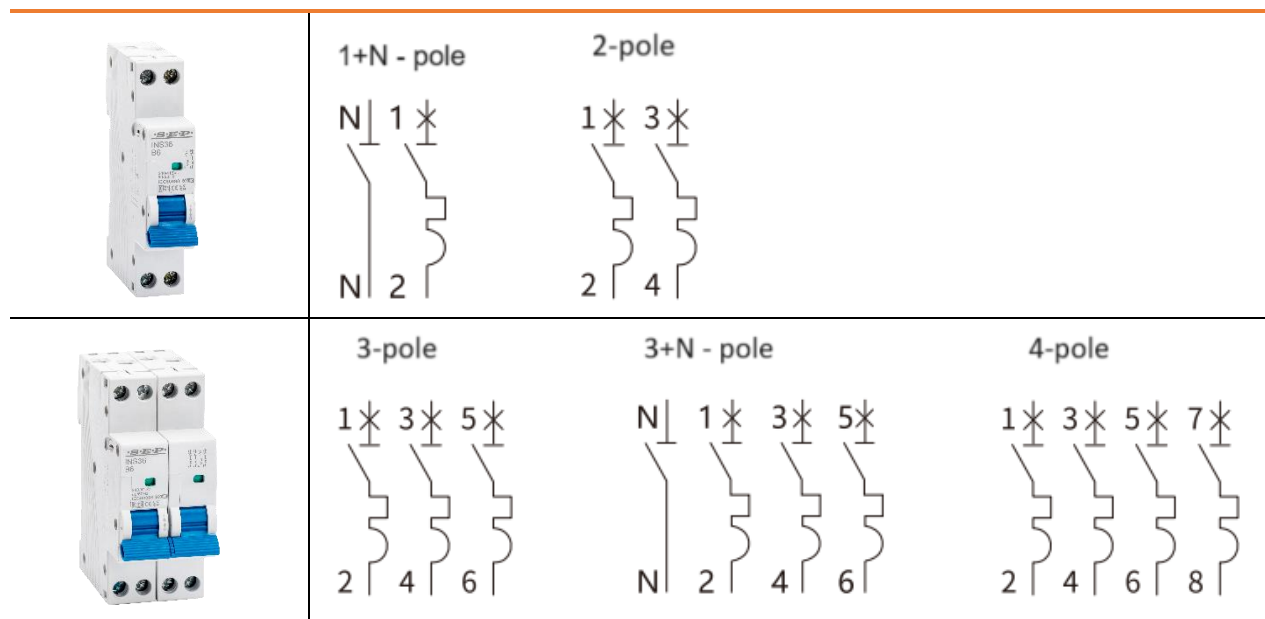
Overall dimensions

All measurements in mm








INS36

Connection diagram



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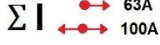

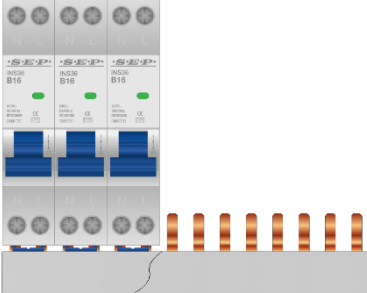
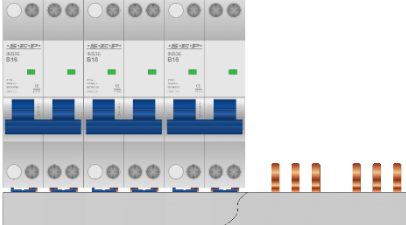
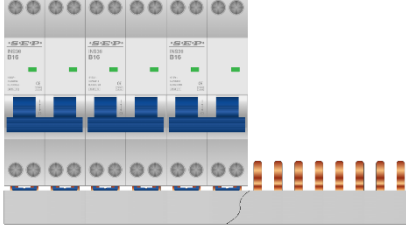

Order codes

						
Characteristics	Inom	1p+n*	2p	3p	3p+n	4p
B	1 A	-	3101642001	3101645001	3101643001	3101644001
	2 A	-	3101642002	3101645002	3101643002	3101644002
	3 A	-	3101642003	3101645003	3101643003	3101644003
	4 A	-	3101642004	3101645004	3101643004	3101644004
	6 A	-	3101642006	3101645006	3101643006	3101644006
	8 A	-	3101642008	3101645008	3101643008	3101644008
	10 A	-	3101642010	3101645010	3101643010	3101644010
	13 A	-	3101642013	3101645013	3101643013	3101644013
	16 A	-	3101642016	3101645016	3101643016	3101644016
	20 A	-	3101642020	3101645020	3101643020	3101644020
	25 A	-	3101642025	3101645025	3101643025	3101644025
	32 A	-	3101642032	3101645032	3101643032	3101644032
	40 A	-	3101642040	3101645040	3101643040	3101644040
C	1 A	-	3101652001	3101655001	3101653001	3101654001
	2 A	-	3101652002	3101655002	3101653002	3101654002
	3 A	-	3101652003	3101655003	3101653003	3101654003
	4 A	-	3101652004	3101655004	3101653004	3101654004
	6 A	-	3101652006	3101655006	3101653006	3101654006
	8 A	-	3101652008	3101655008	3101653008	3101654008
	10 A	-	3101652010	3101655010	3101653010	3101654010
	13 A	-	3101652013	3101655013	3101653013	3101654013
	16 A	-	3101652016	3101655016	3101653016	3101654016
	20 A	-	3101652020	3101655020	3101653020	3101654020
	25 A	-	3101652025	3101655025	3101653025	3101654025
	32 A	-	3101652032	3101655032	3101653032	3101654032
	40 A	-	3101652040	3101655040	3101653040	3101654040
D	1 A	-	3101662001	3101665001	3101663001	3101664001
	2 A	-	3101662002	3101665002	3101663002	3101664002
	3 A	-	3101662003	3101665003	3101663003	3101664003
	4 A	-	3101662004	3101665004	3101663004	3101664004
	6 A	-	3101662006	3101665006	3101663006	3101664006
	8 A	-	3101662008	3101665008	3101663008	3101664008
	10 A	-	3101662010	3101665010	3101663010	3101664010
	13 A	-	3101662013	3101665013	3101663013	3101664013
	16 A	-	3101662016	3101665016	3101663016	3101664016
	20 A	-	3101662020	3101665020	3101663020	3101664020
	25 A	-	3101662025	3101665025	3101663025	3101664025
	32 A	-	3101662032	3101665032	3101663032	3101664032
	40 A	-	3101662040	3101665040	3101663040	3101664040
Auxiliary contact	1CO	3104500001				
						
Terminal cover (yellow)		3102290010		3102490010		
						

* Types are available through special order

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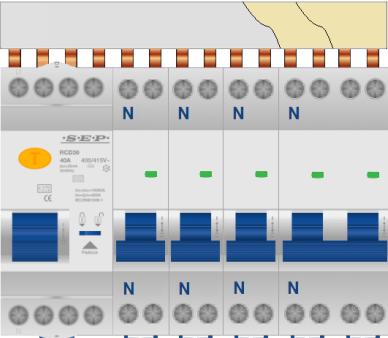
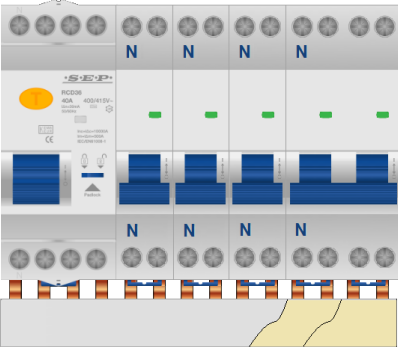

Order codes for connective rail

	INS36	INS36	10mm ² (closed end - non cuttable)	16mm ² (cut to size with end- caps)
			ΣI  63A 100A	ΣI  80A 125A
Busbar / connective rail type			PIN	PIN
2 pole (phase neutral) N1-N1-N1... 12-12-12				
	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	-	2305142920	2306050918
	12	-	2305142924	2306050924
	15	-	-	2306050930
	18	-	-	2306050936
	21	-	-	2306050942
	24	-	-	2306050948
	54	-	-	2306162400
3 pole (3 phase) 123-123...				
	-	2	2305132808	-
	-	3	2305132812	-
	-	4	2305132816	-
	-	5	2305132820	-
	-	6	2305132824	-
4 pole (4 phase) 1234-1234...				
	-	2	2305142808	-
	-	3	2305142812	-
	-	4	2305142816	-
	-	5	2305142820	-
	-	6	2305142824	-
	Open mouth covers for busbar PIN 9/18		2115900015	

* pictures are indicative – other combinations are possible

MCB INS36


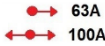
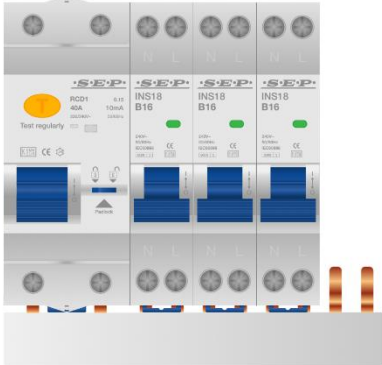


Order codes for connective rail

Busbar / connective rail type*	4p (2 modules)	2p (1 modules)	10mm ² (closed end - non cuttable)
	 No. devices	 No. devices	ΣI  PIN
Combination rail - top N123-N1-N2-N3-(N1 / N123) 	1	3	2305195910
	1	4	2305195912
	2	3	2305195914
Combination rail - bottom N123-N1-N2-N3-(N1 / N123) 	1	3	-
	1	4	2305194010
	2	3	2305194014
	Open mouth covers for busbar PIN 9/18		2115900015

* pictures are indicative – other combinations are possible

MCB INS36


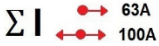
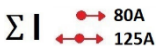
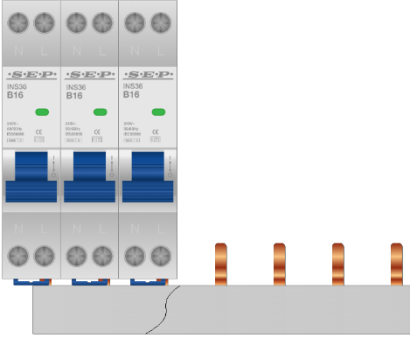
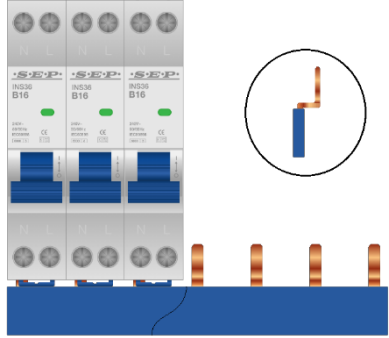

Order codes for connective rail

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

* pictures are indicative – other combinations are possible

MCB INS36


Order codes for connective rail

Busbar / connective rail type	INS36 	10mm ² (closed end - non cuttable) 		16mm ² (cut to size with end- caps) 	
		PIN		PIN	
		Grey	Blue	Grey	Blue
1 pole – phase/neutral bar (17,8mm) 	2	2305101002	2305101902	-	-
	3	2305101003	2305101903	-	-
	4	2305101004	2305101904	-	-
	5	2305101005	2305101905	-	-
	6	2305101006	2305101906	230601006	2306019006
	7	2305101007	2305101907	-	-
	8	2305101008	2305101908	-	-
	9	2305101009	2305101909	230601009	2306019009
	10	2305101010	2305101910	-	-
	11	2305101011	2305101911	-	-
	12	2305101012	2305101912	2306010012	2306019012
	13	2305101013	2305101913	-	-
	15	-	-	2306010015	2306019015
	18	-	-	2306010018	2306019018
	21	-	-	2306010021	2306019021
	24	-	-	2306010024	2306019024
	54	-	-	2306160100	2306160101
1 pole – neutral bar (17,8mm) 	2	-	2305101992	-	-
	3	-	2305101993	-	-
	4	-	2305101994	-	-
	5	-	2305101995	-	-
	6	-	2305101996	-	-
	8	-	2305101998	-	-
	10	-	2305101990	-	-
	12	-	2305101991	-	-
	Open mouth covers for busbar PIN	2115900010			


MCB INS36

Order codes accessories


Add-on terminals

Reference image	Wire size	PIN connection high		PIN connection Low	
		Grey	Blue	Grey	Blue
	2x10mm ² solid/stranded 2x6mm ² 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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