

ISOLATOR SWITCH HS1(E)

Data Sheet V1.0



The HS1E and HS1 isolator switches meet the demand of loading and isolating the circuit. It is used as a main switch in low voltage distribution systems. It is the best solution for disconnecting the circuit from the power supply, so that the circuit can be maintained without interrupting power to the rest of the system. It is easy to be assembled and works with the same series of compact circuit breakers together. The HS1 series with red operation handle can go up to 160A.

HS1(E) isolator switch



HS1(E) is an isolator switch compliant to product standard IEC/EN 60947 and with the following main technical features

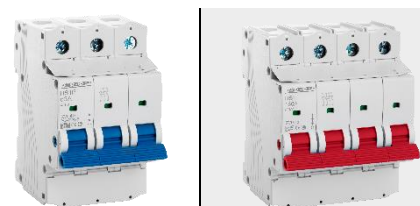
- Isolator switch (IEC/EN 60947-3)
- 1, 2, 3 and 4 pole
- HS1E (blue handle) type up to 63A
- HS1 (red handle) up to 160A

Application benefits

- Supply possible from top and bottom
- Fork type busbar connection (above and below) up to 16mm² and cable connection up to 70mm² cables.
- Terminal cover with sealing possibility for operator safety
- Toggle can be sealable in ON-OFF positions true a position inside attribute
- Family feeling in the SEP PRO range modular components

Isolator switch HS1(E)

Technical Data



				HS1E	HS1	
Electrical features	Type				IEC/EN 60947-3	
	Standards				CE, UKCA, CB, KEMA KEUR	
	Certification				CN	
	Country of origin				Compliant, No Exemption	
	RoHS Compliance Status				1, 2, 3 ,4	
	Number of poles				25 ≤ In ≤ 63	
	Rated operational current	le	AC-21A/B	A	25 ≤ In ≤ 63	25 ≤ In ≤ 160
			AC-22A/B	A	25 ≤ In ≤ 63	25 ≤ In ≤ 160
			AC-23A/B	A	-	25 ≤ In ≤ 125
			DC-22A*	A	-	160
			DC-23A*	A	-	160
	Rated AC voltage	Ue	V AC		415 (1P: 253)	
	Rated DC voltage	Ue	V DC		-	2p: 125 4p: 250
	Rated frequency		Hz		50 - 60	
	Insulation voltage	Ui	V		600	690
	Rated impulse withstand voltage	Uimp	kV		6	8
	Dielectric test voltage at ind. freq. for 1 min.		kV		2.5	2.5
	Rated short-circuit making capacity	Icm	kA		1	1.5
	Rated short-circuit withstand (s)	Icw	kA		0.756	2
	Suitable for isolation				Yes	
	Overvoltage category				III	
	Pollution degree				3	
	Utilization category		AC-21A/B		■	■
			AC-22A/B		■	■
			AC-23A/B		□	■
			DC-22A		□	■
			DC-23A		□	■
	Mechanical features	Housing				Insulation group I - II, RAL 7035
Toggle					Insulation group II, RAL 5017	Insulation group II, RAL 3001
Contact position indication					Green / Red window	
Electrical life		operations			1.500	
Mechanical life		operations			8.500	
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					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%	
Ambient temperature (with daily average ≤ +35 °C)		°C			-25... +40	
Storage temperature		°C			-40... +70	

* no test certificate available

Technical Data



	Type			HS1E				HS1					
Installation	Terminal type	bottom / top		Twin-purpose terminal (lift / open-mouthed)									
	Terminal size for cables	bottom / top	mm ²	25/16				70/50					
	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			1x1,5mm ² - 25mm ²				1x1,5mm ² - 70mm ²					
	Flexible wires with or without ferrules			1x1,5mm ² - 16mm ²				1x1,5mm ² - 50mm ²					
	Tightening torque	bottom / top		2.5Nm				3.5Nm					
	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									
				1p	2p	3p	4p	1p	2p	3p	4p		
	Dimensions (H x W x D)	Height	mm	86									
		Width	mm	18	36	54	72	18	36	54	72		
		Depth	mm	77									
Weight		kg	0.08	0.15	0.23	0.31	0.09	0.19	0.28	0.38			
Packing	Packing A	QTY	12	6	4	3	12	6	4	3			
		Dimensions (H x W x D)	mm 225 x 95 x 85										
		Weight	kg 1				1.2						
	Packing B (x A)	QTY	120	60	40	30	120	60	40	30			
		Dimensions (H x W x D)	mm 510 x 240 x 190										
		Weight	kg 10				12						
	CN-code			85362010									
Combination with auxiliary elements	Auxiliary contact			NA									
	Signal contact / auxiliary contact			NA									
	Shunt trip			NA									
	Auxiliary contact for bottom fitting			NA									
	Undervoltage release			NA									
	Overvoltage release			NA									
	Motor operating device			NA									

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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 isolator switch is designed for standard level operations, performance information on higher altitude is not available

Derating in temperature HS1(E)

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

In [A]	Ambient temperature [°C]										
	-25	-15	-5	10	30	40	45	55	60	65	70
25	29.00	28.50	27.75	27.00	25	24.00	23.75	23.50	23.00	22.08	21.20
40	46.40	45.60	44.40	43.20	40	38.40	38.00	37.20	36.80	35.33	33.91
63	73.08	71.82	69.93	68.04	63	60.48	59.85	58.59	57.96	55.64	53.42
80	92.80	91.20	88.80	86.40	80	76.80	76.00	74.40	73.60	70.66	67.83
100	116.00	114.00	111.00	108.00	100	96.00	95.00	93.00	92.00	88.32	84.79
125	145.00	142.50	138.75	135.00	125	120.00	118.75	116.25	115.00	110.40	105.98
160	185.60	182.40	177.60	172.80	160	153.60	152.00	148.80	147.20	141.31	135.66

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).

Isolator switch HS1(E)

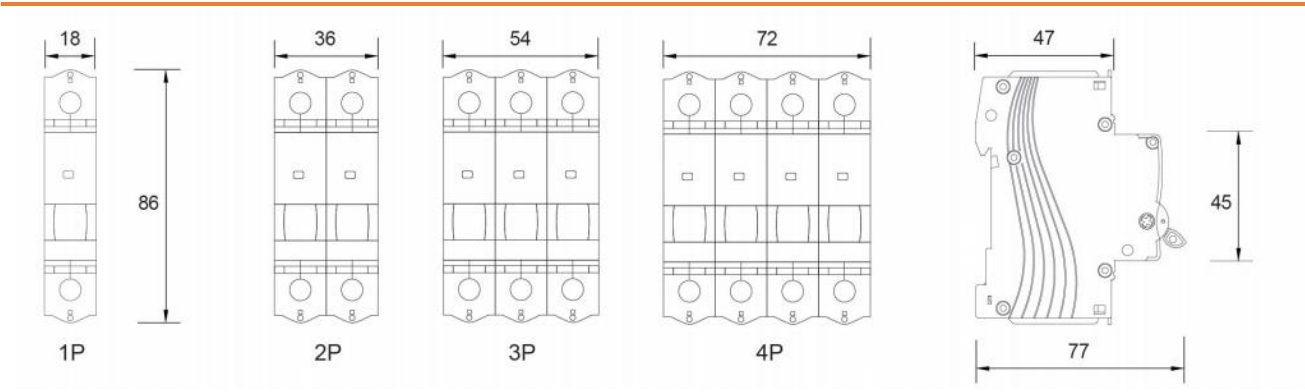
Technical Data

Power loss component

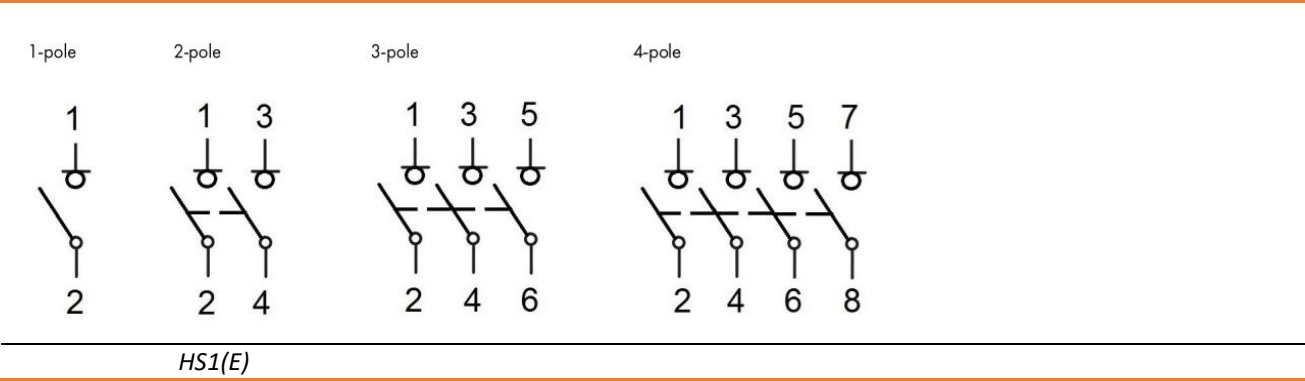
Inom (A)	HS1E				HS1			
	1p (W)	2p (W)	3p (W)	4p (W)	1p (W)	2p (W)	3p (W)	4p (W)
25	0,59	1,19	1,78	2,38	0,28	0,56	0,84	1,12
40	1,52	3,04	4,56	6,09	0,72	1,44	2,16	2,88
63	3,77	7,55	11,32	15,10	1,78	3,56	5,34	7,12
80	-	-	-	-	2,87	5,74	8,61	11,48
100	-	-	-	-	4,48	8,96	13,44	17,92
125	-	-	-	-	7,00	14,00	21,00	28,00
160	-	-	-	-	11,47	22,94	34,41	45,88

Overall dimensions


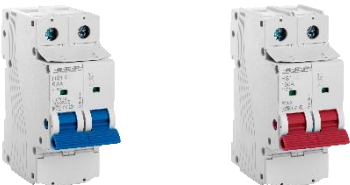


All measurements in mm



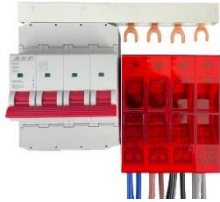
Connection diagram







Isolator switch HS1(E)
Order codes

		Inom	HS1E	HS1
1P		25 A	3110010010	3110000010
		40 A	3110010020	3110000020
		63 A	3110010030	3110000030
		80 A	-	3110000040
		100 A	-	3110000050
		125 A	-	3110000060
		160 A	-	3110000070
2p		25 A	3110010080	3110000080
		40 A	3110010090	3110000090
		63 A	3110010100	3110000100
		80 A	-	3110000110
		100 A	-	3110000120
		125 A	-	3110000130
		160 A	-	3110000140
3p		25 A	3110010150	3110000150
		40 A	3110010160	3110000160
		63 A	3110010170	3110000170
		80 A	-	3110000180
		100 A	-	3110000190
		125 A	-	3110000200
		160 A	-	3110000210
4p		25 A	3110010220	3110000220
		40 A	3110010230	3110000230
		63 A	3110010240	3110000240
		80 A	-	3110000250
		100 A	-	3110000260
		125 A	-	3110000270
		160 A	-	3110000280
				3110000220



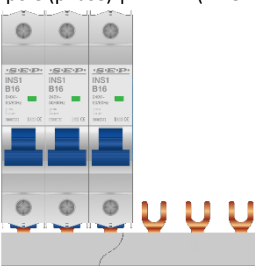
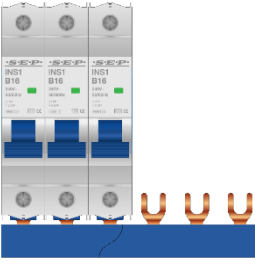
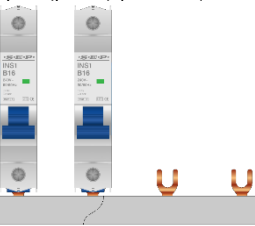
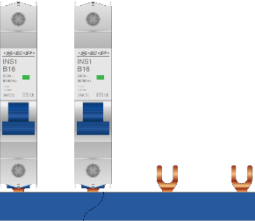
Modular distribution block HJ1
Order codes



			
1 pole	2 pole	3 pole	4 pole
3119000010	3119000020	3119000030	3119000040

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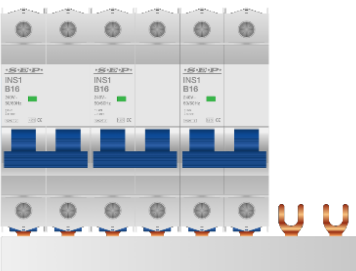
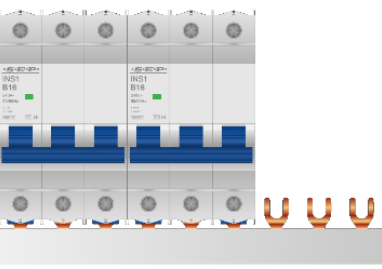
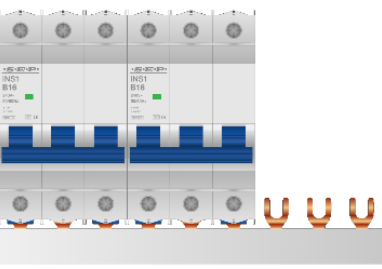
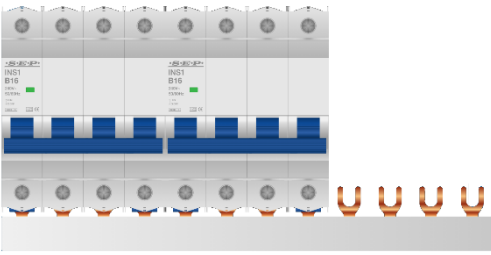

Order codes for connective rail

Busbar / connective rail type	No. devices	10mm ² (closed end - non cuttable)		16mm ² (cut to size with end- caps)	
		ΣI 		ΣI 	
		PIN	FORK	PIN	FORK
1 pole (phase) L-L-L ... (17.8mm) 	2x 1p	2305101002	2305111002	-	-
	3x 1p	2305101003	2305111003	-	-
	4x 1p	2305101004	2305111004	-	-
	5x 1p	2305101005	2305111005	-	-
	6x 1p	2305101006	2305111006	2306010006	2306110006
	7x 1p	2305101007	2305111007	-	-
	8x 1p	2305101008	2305111008	-	-
	9x 1p	2305101009	2305111009	2306010009	2306110009
	10x 1p	2305101010	2305111010	-	-
	11x 1p	2305101011	2305111011	-	-
	12x 1p	2305101012	2305111012	2306010012	2306110012
	13x 1p	2305101013	2305111013	-	-
	15x 1p	-	-	2306010015	2306110015
	18x 1p	-	-	2306010018	2306110018
	21x 1p	-	-	2306010021	2306110021
	24x 1p	-	-	2306010024	2306110024
	54x 1p	-	-	2306160100	2306161100
1 pole (neutral) N-N-N ... (17.8mm) 	2x 1p	2305101902	2305111902	-	-
	3x 1p	2305101903	2305111903	-	-
	4x 1p	2305101904	2305111904	-	-
	5x 1p	2305101905	2305111905	-	-
	6x 1p	2305101906	2305111906	2306019006	2306119006
	7x 1p	2305101907	2305111907	-	-
	8x 1p	2305101908	2305111908	-	-
	9x 1p	2305101909	2305111909	2306019009	2306119009
	10x 1p	2305101910	2305111910	-	-
	11x 1p	2305101911	2305111911	-	-
	12x 1p	2305101912	2305111912	2306019012	2306119012
	13x 1p	2305101913	2305111913	-	-
	15x 1p	-	-	2306019015	2306119015
	18x 1p	-	-	2306019018	2306119018
	21x 1p	-	-	2306019021	2306119021
	24x 1p	-	-	2306019024	2306119024
	54x 1p	-	-	2306160101	2306161101
1 pole (phase) L-L-L ... (35.6mm) 	2x 1p	2305171002	2305181002	-	-
	3x 1p	2305171003	2305181003	-	-
	4x 1p	2305171004	2305181004	-	-
	5x 1p	2305171005	2305181005	-	-
	6x 1p	2305171006	2305181006	2306010206	2306110206
	9x 1p	-	-	2306010209	2306110209
	12x 1p	-	-	2306010212	2306110212
	27x 1p	-	-	2306160120	2306161120
1 pole (phase) N-N-N ... (35.6mm) 	2x 1p	2305171902	2305181902	-	-
	3x 1p	2305171903	2305181903	-	-
	4x 1p	2305171904	2305181904	-	-
	5x 1p	2305171905	2305181905	-	-
	6x 1p	2305171906	2305181906	2306019206	2306119206
	9x 1p	-	-	2306019209	2306119209
	12x 1p	-	-	2306019212	2306119212
	27x 1p	-	-	2306160121	2306161121

* pictures are indicative – other combinations are possible

Isolator switch HS1(E)

Order codes for connective rail

Busbar / connective rail type	No. devices	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... 12-12-12.. 	2x 2p	2305102004	2305112004	-	-
	3x 2p	2305102006	2305112006	2306020006	2306120006
	4x 2p	2305102008	2305112008	2306020008	2306120008
	5x 2p	2305102010	2305112010	2306020010	2306120010
	6x 2p	2305102012	2305112012	2306020012	2306120012
	7x 2p	2305102014	2305112014	2306020014	2306120014
	8x 2p	2305102016	2305112016	2306020016	2306120016
	9x 2p	2305102018	2305112018	2306020018	2306120018
	10x 2p	-	-	2306020020	2306120020
	11x 2p	-	-	2306020022	2306120022
	12x 2p	-	-	2306020024	2306120024
	27x 2p	-	-	2306160200	2306161200
3N pole (3 phase neutral) N1-N2-N3... 	6x 2p	2305105012	2305115012	2306050012	2306150012
	9x 2p	2305105018	2305115018	2306050018	2306150018
	12x 2p	-	-	2306050024	2306150024
	28x 2p	-	-	2306160500	2306161500
3 pole (3 phase) 123-123-123... 	2x 3p	2305103006	2305113006	2306030006	2306130006
	3x 3p	2305103009	2305113009	2306030009	2306130009
	4x 3p	2305103012	2305113012	2306030012	2306130012
	5x 3p	2305103015	2305113015	2306030015	2306130015
	6x 3p	2305103018	2305113018	2306030018	2306130018
	7x 3p	-	-	2306030021	2306130021
	8x 3p	-	-	2306030024	2306130024
	18x 3p	-	-	2306160300	2306161300
4 pole (4 phase) N123-N123... 123N-123N... 	2x 4p	2305104008	2305114008	2306040008	2306140008
	3x 4p	2305104012	2305114012	2306040012	2306140012
	4x 4p	2305104016	2305114016	2306040016	2306140016
	5x 4p	-	-	2306040020	2306140020
	6x 4p	-	-	2306040024	2306140024
	14x 4p	-	-	2306160400	2306161400
	Open mouth covers for busbar PIN	2115900010			

* pictures are indicative – other combinations are possible

Isolator switch HS1(E)

Order codes for connective rail


Busbar / connective rail type	No. devices	10mm ² (closed end - non cuttable)		16mm ² (cut to size with end- caps)	
		PIN	FORK	PIN	FORK
Top Combi-rail N123-N1-N2-N3-(N1)	1x4p + 3x2p	2305195310	2305195010	-	-
	1x4p + 4x2p	2305195312	2305195012	-	-
Bottom Combi-rail N123-N1-N2-N3-(N1)	1x 4p + 3x 2p	2305195110	2305195210	-	-
	1x 4p + 4x 2p	2305195112	2305195212	-	-

* pictures are indicative – other combinations are possible


Isolator switch HS1(E)

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