

Documents corresponding to the product:

Standard EN 60947-1
EN 60947-3 and IEC 60947-6



Switch disconnectors ISS2 125...800A

5 YEAR WARRANTY *for industrial usage, 3 years warranty

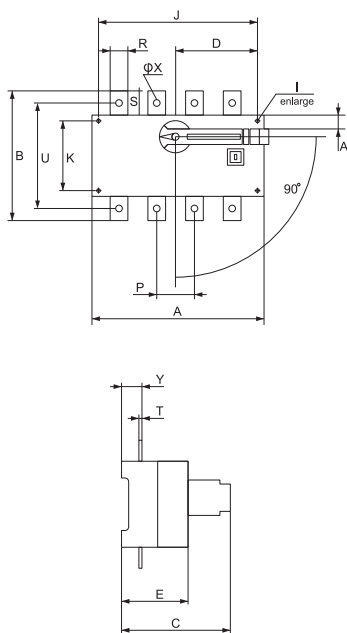
The series three- and four-pole load switch disconnectors ISS2 xxx are produced for mounting in main electrical boards for disconnection of the circuits, switching on of generators because of the fact they are not affected by the frequency variations. High mechanical strength and resistance to circulation. Simple and secure management. There is a possibility for the products to be produced with an window for visible disconnection.

Technical features:

- Rated voltage: not higher than 660V; 50/60Hz
- Double connector: screw connection
- Connection: solid or flexible conductors
- Insulation voltage: ≥1000V
- Resistance to impulse voltage: 8000V
- Electrical endurance (number of cycles): ≥5 000
- Mechanical endurance (number of cycles): ≥10 000
- IP code: IP>20
- Mounting method: to a surface by means of bolts
- Plastic resistant to UV rays
- Ambient temperature: -20°÷65°C

Functions:

- switching on and off of electrical circuits under load
- disconnection of electrical circuits
- used as main circuit-breaker
- resistant to high voltages, to short circuits in the protected circuit
- it has no protective function



Type	Dimensions (mm)											
	A	B	C	D	E	J	J1	K	R	S	T	Y
ISS2-125/3	140	135	125	27	73	120	120	65	20	25	3.5	25
ISS2-125/4	170	135	125	27	73	150	150	65	20	25	3.5	25
ISS2-160/3	140	135	125	27	73	120	120	65	20	25	3.5	25
ISS2-160/4	170	135	125	27	73	150	150	65	20	25	3.5	25
ISS2-250/3	180	170	138	35	86	160	160	90	25	30	3.5	25
ISS2-250/4	230	170	138	35	86	210	210	90	25	30	3.5	25
ISS2-400/3	230	240	165	50	110	210	210	140	32	40	5	37
ISS2-400/4	295	240	165	50	110	275	275	140	32	40	5	37
ISS2-630/3	230	260	165	50	110	210	210	140	40	50	6	37
ISS2-630/4	295	260	165	50	110	275	275	140	40	50	6	37
ISS2-800/3	378	312	240	50	140	353	353	175	60	56	8	48
ISS2-800/4	498	312	240	50	140	473	473	175	60	56	8	48

Type	Rated current I _n (A)	Maximum breaking capacity I _{cu} (A)	Tightening moment (Nm)	Packing/Box (pcs)	Catalogue number three-pole	Catalogue number four-pole
ISS2-125in	125	1250	6.5	1 / 12	41951	41961
ISS2-125out	125	1250	6.5	1 / 12	41952	41962
ISS2-160in	160	1250	6.5	1 / 12	41953	41963
ISS2-160out	160	1250	6.5	1 / 12	41954	41964
ISS2-250in	250	2000	10	1 / 6	41955	41965
ISS2-250out	250	2000	10	1 / 6	41956	41966
ISS2-400in	400	3200	14.5	1 / 2	41957	41967
ISS2-630in	630	4000	14.5	1 / 2	41958	41968
ISS2-800in	800	1000	27	1 / 2	41959	41969

Note: ISS2-xxx in – load circuit-breaker for mounting in the interior of a board
ISS2 -xxx out – load circuit-breaker with an extended lever for mounting on the front panel of the board

Manual switching to reserve series EQ 2M

Documents corresponding to the product:
Standard EN 60947-1
EN 60947-3 and IEC 60947-6

Manual switching to reserve series EQ 2M from 160...800A

5 YEAR WARRANTY *for industrial usage, 3 years warranty



The series three- and four-pole load isolating switch EQ 2 M xxx are produced for mounting in main electrical boards for disconnection of the circuits, manual switching between two power supplies or switching ON of generators because of the fact they are not affected by the frequency variations. High mechanical strength and resistance to circulation. Simple and secure management. There is a possibility for the products to be produced with an window for visible disconnection.

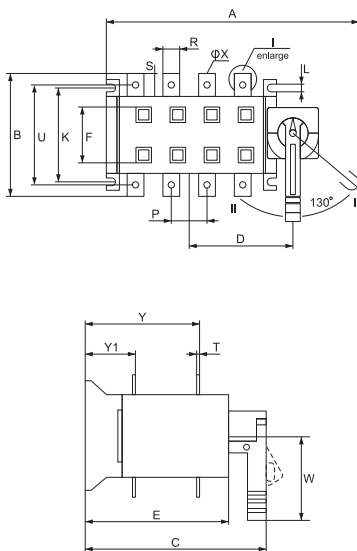
Functions:

- switching on and off of low voltage electrical circuits under load
- disconnection of the electrical circuit from one of the power supplies, while providing immediately switching to the other
- used as main switch
- resistant to high voltages, to short circuits in the protected circuit

- it has no protective function

Technical characteristics:

- Rated voltage: not higher than 690V; 50/60Hz
- Double connector: screw connection
- Connection: hard or flexible conductors
- Insulation voltage: $\geq 1000V$
- Resistance to impulse voltage: 8000V
- Electrical endurance (number of cycles): $\geq 5\ 000$
- Mechanical endurance (number of cycles): $\geq 10\ 000$
- IP code: IP>20
- Mounting method: to a surface by means of bolts
- Plastic resistant to UV rays
- Ambient temperature: $-20^{\circ}\div 65^{\circ}C$
- Option for moving the handle on the front panel of the board
- Small size
- Indication which of the two supplies is operating

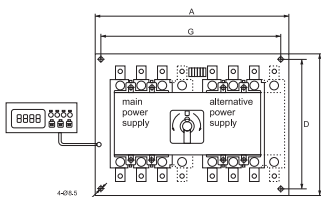
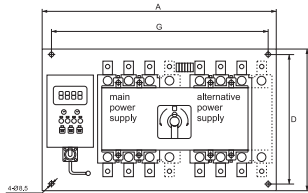


Type	Dimensions (mm)												
	A	B	C	D	E	J	J1	K	R	S	T	Y	Y1
EQ2M-160/3	270	135	212	89	150	120	65	95	20	25	3.5	55	25
EQ2M-160/4	300	135	212	104	150	150	65	95	20	25	3.5	55	25
EQ2M-250/3	307	170	260	110	180	160	65	115	25	30	3.5	70	25
EQ2M-250/4	357	170	260	135	180	210	65	115	25	30	3.5	70	25
EQ2M-400/3	372	240	297	150	236	210	77	180	32	40	5	83	37
EQ2M-400/4	432	240	297	180	236	275	77	180	32	40	5	83	37
EQ2M-630/3	372	240	297	150	236	210	77	180	40	50	6	83	37
EQ2M-630/4	432	240	297	180	236	275	77	180	40	50	6	83	37
EQ2M-800/3	372	240	297	150	236	210	77	180	60	56	8	83	48
EQ2M-800/4	432	240	297	180	236	275	77	180	60	56	8	83	48

Type	Rated current I_n (A)	Maximum breaking capacity I_{cu} (A)	Tightening moment (Nm)	Packing/Box (pcs)	Catalogue number three-pole	Catalogue number four-pole
EQ2M-160	160	1250	6.5	1 / 4	44641	44641P
EQ2M-250	250	2000	10	1 / 2	44642	44642P
EQ2M-400	400	3200	14.5	1 / 2	44643	44643P
EQ2M-630	630	4000	14.5	1 / 2	44644	44644P
EQ2M-800	800	1000	27	1 / 2	44645	44645P

Documents corresponding to the product:

EN 60947-1
EN 60947-2; EN 60947-6-1



Dual power change-over switch EQ1 series (ATS)

5 YEAR WARRANTY *for industrial usage, 3 years warranty

The system for dual power change-over switch EQ1 is designed to provide continuous power supply and two electrical sources automatic switch in case of failure or deviation from the set parameters. It switches only when the three phases of the second power supply source are available. The system for dual power change-over switch consists of two molded case circuit breakers mounted on a metal frame connected with common operating mechanism and controlled by a command device that controls the system parameters' correspondence.

Functions:

- Switching on/off heavy loaded electrical circuits at main power supply discrepancy
- Switching to dual power change-over at power supply phase lack
- with option to connect to fire alarm controller. In case of fire, the ATS switches off both power supply sources
- Breaking of electrical circuits and control of powerful consumers
- Used as a main breaker in housing or industrial distributing installations supplied with a generator or a second power supply source (hospitals, post offices, military sites, control rooms)
- Remarkable with high reliability of current characteristics
- Control: motor
 - presence of the three phases
 - the phase voltage to be in the set limits
 - overload
 - short circuit at the outlet

Technical data:

- Rated operating voltage: 690V; 50/60Hz

- Surge voltage wear resistance: $\geq 6000V$
- Joining terminal: bolt connection with 4 bolts to the power supply rail
- Connecting:
 - copper rails
 - flexible or rigid conductors
- Electrical wear resistance (number of cycles): ≥ 2000
- Mechanical wear resistance (number of cycles): ≥ 6000
- IP code: IP21
- Mounting:
 - clamping with bolts
 - mounting position: vertical gradient – maximum 5°
- Plastic material of the breakers of UV rays and non-flammable
- Ambient temperature: $-10^\circ C + 65^\circ C$
- Installation altitude: up to 2000m

Basic functions of the control device:

- Overload protection
- Instantaneous short circuit protection
- Under phase protection
- Undervoltage protection
- Possibility for setting the change-over time between the two sources – min 3s
- Possibility for automatic switch-over to the main power supply source after restoring its parameters

The system for dual power change-over switch is offered in two types:

- with display (control device) mounted on the mounting plate (integrated type)
- with separated control display

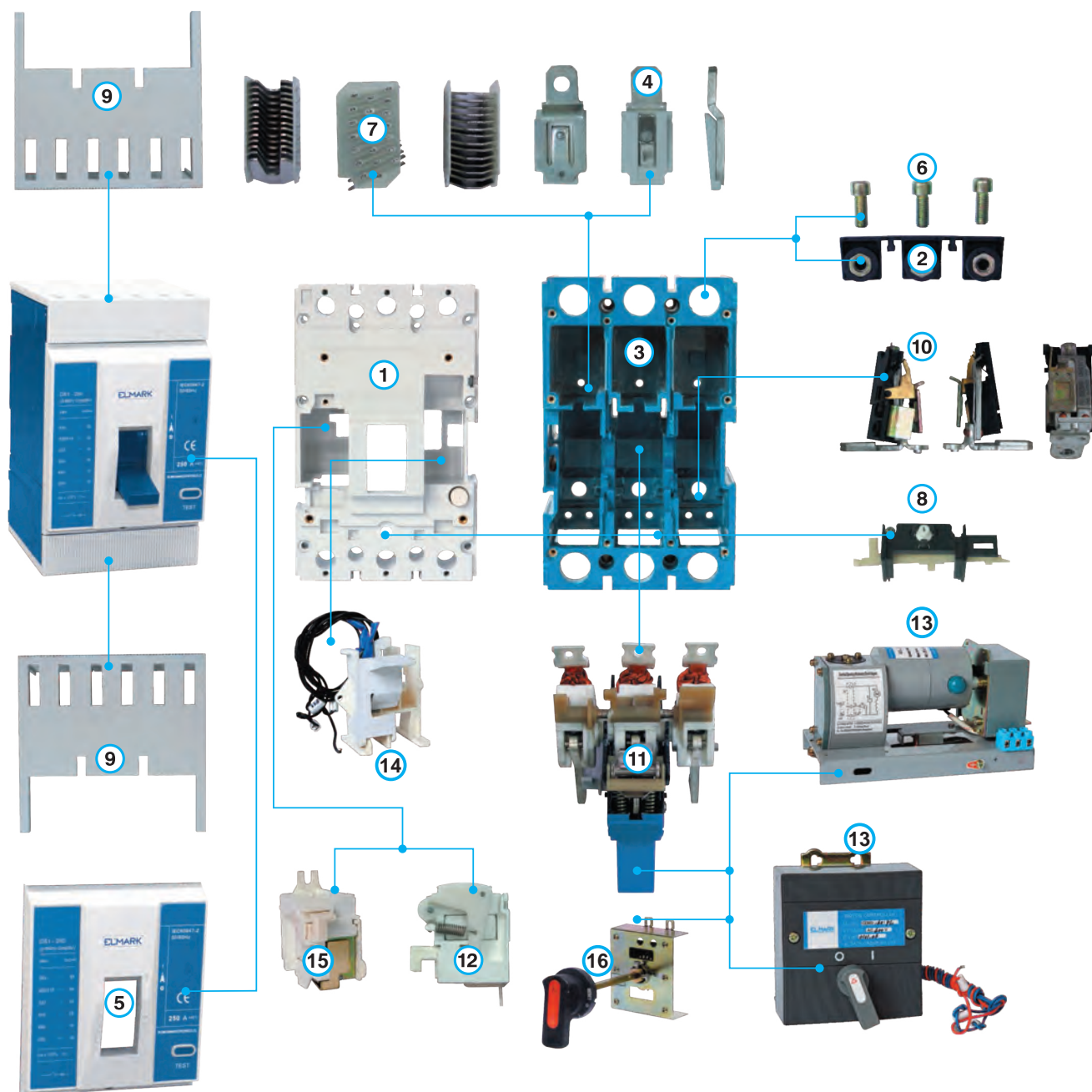
Type of the breaker	Type	Overall dimensions (mm)				
		A	B	C	D	H
EQ1 - 100	inner type	480	240	450	210	140
EQ1 - 225	inner type	480	240	450	210	140
EQ1 - 400	inner type	620	300	590	270	235
EQ1 - 630	inner type	660	300	630	270	240
EQ1 - 800	inner type					
EQ1 - 100*	moved type	420	230	390	200	145
EQ1 - 225*	moved type	420	230	390	200	145
EQ1 - 400*	moved type	570	300	540	270	235
EQ1 - 630*	moved type	610	300	580	270	240
EQ1 - 800*	moved type					

Type	Rated current In (A)	Max. breaking capacity (kA) Icu	Operating breaking capacity (kA) Ics	Section of the power supply conductor (mm ²)	Electrical wear resistance (number of cycles)	Mechanical wear resistance (number of cycles)	Packing / Box (pcs)	Catalogue number
EQ1 - 100	100	50	35	35	2000	6000	1 / 1	44100
EQ1 - 225	225	50	35	70	2000	6000	1 / 1	44225
EQ1 - 400	400	100	65	180	2000	6000	1 / 1	44403
EQ1 - 630	630	100	65	240	1000	3000	1 / 1	44633
EQ1 - 800	800	100	65	240	1000	3000	1 / 1	44833
EQ1 - 100*	100	50	35	35	2000	6000	1 / 1	44101
EQ1 - 225*	225	50	35	70	2000	6000	1 / 1	44226
EQ1 - 400*	400	100	65	180	2000	6000	1 / 1	44404
EQ1 - 630*	630	100	65	240	1000	3000	1 / 1	44634
EQ1 - 800*	800	100	65	240	1000	3000	1 / 1	44834

Note: *Dual power change-over switch with separated control display

CIRCUIT BREAKERS

Moulded case circuit breakers

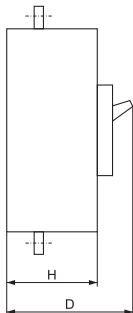
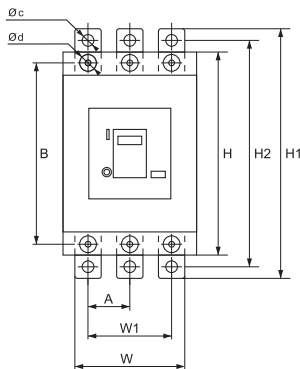


- | | | | |
|----------|-------------------------------|-----------|--|
| 1 | COVER | 9 | TERMINAL PLASTIC PLATE |
| 2 | TERMINALS | 10 | CONTACTS WITH BIMETAL PLATES |
| 3 | NON-FLAMABLE BASE | 11 | THERMAL SYSTEM WITH MOVABLE CONTACTS |
| 4 | STATIC CONTACTS | 12 | UNDER VOLTAGE RELEASE - UVR (accessory) |
| 5 | PART FROM THE COVER | 13 | REMOTE CONTROL – electrical (accessory) |
| 6 | SCREWS FOR TERMINALS | 14 | AUXILIARY CONTACT (accessory) |
| 7 | ARC CHAMBERS | 15 | SHUNT RELEASE (accessory) |
| 8 | ELEMENT FOR ADJUSTMENT | 16 | REMOTE CONTROL – manual (accessory) |



Documents corresponding to the product:

Standard EN 60947-1
EN 60947-2



Moulded case circuit breakers (MCCB) DS1 series from 40...1250A

7 YEAR WARRANTY *for industrial usage, 3 years warranty

Functions:

- switching on/off heavy loaded electrical circuits
- breaking of electrical circuits and control of powerful consumers
- can be used as a main breaker in housing or industrial distributing installations
- endures high currents of short circuit in the protected circuit
- remarkable with high reliability of current characteristics
- control: manual
- possibility for auxiliary devices mounting for automation

Technical data:

- Rated operating voltage: 415/690V; 50/60Hz
- Isolating voltage: 2000V
- Surge voltage wear resistance: $\geq 8000V$
- Joining terminal: flat (tunnel) screw terminal for the breakers up to 160A and a bolt connection for the breakers from 250A to 1600A

- Connecting:
 - rigid or flexible conductors
 - front conductors joining
 - possibility for mounting to lengthening terminal
- Plastic elements
 - not keeping the burning material nylon PA66
 - box permittivity strength: $>16MV/m$
- Abnormal heating wear resistance and fire of the outer parts: 960°C
- Static contacts – alloy: pure copper T2Y2
 - contact head: silver graphite CAg(5)
 - thickness: depends on the current
- Tightening moment: 1.33Nm
- Electrical wear resistance (number of cycles): ≥ 10000
- Mechanical wear resistance (number of cycles): ≥ 20000
- IP code: IP>20
- Mounting:
 - joining with bolts
 - mounting position: vertical
- Plastic material of UV rays and non-flammable
- Test button
- Ambient temperature: $-20^{\circ} \div 65^{\circ}C$

Type	Overall dimensions (mm)					Installation dimensions (mm)					
	W	H	D	H1	D1	A	B	W1	H2	Ø d	Ø e
DS1-125/3P	76.2	120	70		90	25	100	50		4	
DS1-160/3P	90	120	70		93	30	100	60		5	
DS1-250/3P	105	170	104	238	143.5	35	139	70	210	6	8.5
DS1-400/3P	140	257	104	316	144	44	214	87.5	285	6	11
DS1-630/3P	210	275	104	310	172	70	230	140	280	6	11
DS1-800/3P	210	275	104	347	172	70	230	140	307	6	16
DS1-1600/3P	210	410	140	410	210	70	300	140	350	10	12
DS1-125/4P	110	120	70		90	25	100	50		4	
DS1-160/4P	120	120	70		93	30	100	60		5	
DS1-250/4P	140	170	104	238	143.5	35	139	70	210	6	8.5
DS1-400/4P	184	257	104	316	144	44	214	87.5	285	6	11
DS1-630/4P	280	275	104	310	172	70	230	140	280	6	11
DS1-800/4P	280	275	104	347	172	70	230	140	307	6	16
DS1-1600/4P	280	410	140	410	210	70	300	140	350	10	12

Type	Rated current In (A)	Operating breaking capacity (kA) Ics	Maximum breaking capacity (kA) Icu		Thermal current adjustment (A)	Section of the conductor (mm ²)	Packing/ Box (pcs)	Catalogue number tree-poles	Catalogue number four-poles
			415V	690V					
DS1-125	40	16	35	10	fixed	16	1 / 20	44040	444040
DS1-125	50	16	35	10	fixed	16	1 / 20	44050	444050
DS1-125	63	16	35	10	fixed	25	1 / 20	44063	444063
DS1-125	80	16	35	10	fixed	25	1 / 20	44080	444080
DS1-125	100	16	35	10	fixed	35	1 / 20	44090	444090
DS1-125	125	16	35	10	fixed	50	1 / 20	44125	444125

Moulded case circuit breakers



Type	Rated current In (A)	Operating breaking capacity (kA) Ics	Maximum breaking capacity (kA) Icu		Thermal current adjustment (A)	Section of the conductor (mm ²)	Packing/Box (pcs)	Catalogue number tree-poles	Catalogue number four-poles
			415V	690V					
DS1 - 160	63	22	35	15	44 - 63	25	1 / 16	44163	444163
DS1 - 160	80	22	35	15	56 - 80	25	1 / 16	44164	444164
DS1 - 160	100	22	35	15	70 - 100	50	1 / 16	44165	444165
DS1 - 160	125	22	35	15	88 - 125	50	1 / 16	44166	444166
DS1 - 160	160	22	35	15	112 - 160	70	1 / 16	44160	444160
DS1 - 160	160	22	35	15	fixed	70	1/16	441601	-



Type	Rated current In (A)	Operating breaking capacity (kA) Ics	Maximum breaking capacity (kA) Icu		Thermal current adjustment (A)	Section of the conductor (mm ²)	Packing/Box (pcs)	Catalogue number tree-poles	Catalogue number four-poles
			415V	690V					
DS1 - 250	200	35	50	15	140 - 200	120	1 / 6	44200	444200
DS1 - 250	250	35	50	15	175 - 250	120	1 / 6	44250	444250



Type	Rated current In (A)	Operating breaking capacity (kA) Ics	Maximum breaking capacity (kA) Icu		Thermal current adjustment (A)	Section of the conductor (mm ²)	Packing/Box (pcs)	Catalogue number tree-poles	Catalogue number four-poles
			415V	690V					
DS1 - 400	315	50	65	25	fixed	240	1 / 3	44315	444315
DS1 - 400	400	50	65	25	fixed	240	1 / 3	44401	444401



Type	Rated current In (A)	Operating breaking capacity (kA) Ics	Maximum breaking capacity (kA) Icu		Thermal current adjustment (A)	Section of the conductor (mm ²)	Packing/Box (pcs)	Catalogue number tree-poles	Catalogue number four-poles
			415V	690V					
DS1 - 630	500	65	75	25	fixed	185	1 / 2	44500	444500
DS1 - 630	630	65	75	25	fixed	185	1 / 2	44630	444630
DS1 - 800	800	75	85	30	fixed	240	1 / 2	44800	444800



Type	Rated current In (A)	Max. breaking capacity (kA) Icu	Operating breaking capacity (kA) Ics	Section of the power supply conductor (mm ²)	Protection from overload	Packing/Box (pcs)	Catalogue number
DS1 - 1250	1250	85	65	240	fixed	1 / 1	44502



Moulded case circuit breakers (MCCB) DS1 with lock

Type	Rated current In (A)	Operating breaking capacity (kA) Ics	Maximum breaking capacity (kA) Icu		Thermal current adjustment (A)	Section of the conductor (mm ²)	Packing/Box (pcs)	Catalogue number tree-poles
			415V	690V				
DS1 - 125	125	16	35	10	fixed	25	1/20	44163K
DS1 - 250	160	35	50	15	125-160	25	1/16	44160K
DS1 - 250	250	35	50	15	160-250	50	1/6	44250K
DS1 - 400	400	50	65	25	fixed	50	1/3	44401K
DS1 - 630	630	65	75	25	fixed	185	1/2	44630K
DS1 - 800	800	75	85	30	fixed	240	1/2	44800K

Documents corresponding to the product:

Standard EN 60947-1
EN 60947-2



Moulded case circuit breakers (MCCB) DS1 to 1600A-electronic type

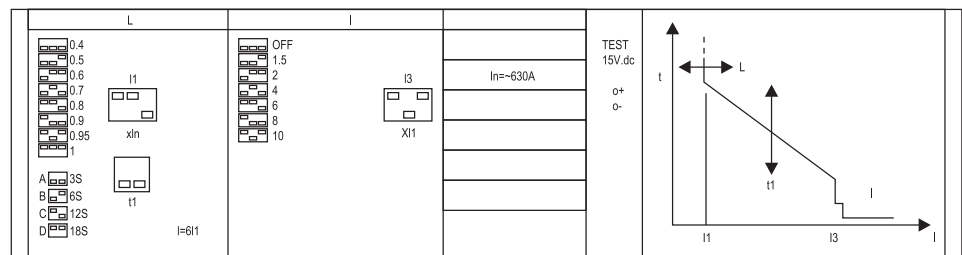
7 YEAR WARRANTY *for industrial usage, 3 years warranty

Functions:

- switching on/off heavily loaded electrical circuits
- breaking of electrical circuits and control of powerful consumers
- can be used as a main breaker in housing or industrial distributing installations
- endures high currents of short circuit in the protected circuit
- remarkable with high reliability of current characteristics
- control: manual
- possibilities for electrical module parameters adjustment through direct modules (combination of keys) thus providing accurate protection from overload and short circuit
- simultaneous protection of the three phases
- possibility for auxiliary devices mounting for automation
- contactor for TT test 15V DC

Technical data:

- Rated operating voltage: 415/690V; 50/60Hz
- Isolating voltage: 2000V
- Surge voltage wear resistance: $\geq 8000V$
- Joining terminal: flat (tunnel) screw terminal
- Connecting:
 - rigid or flexible conductors
 - front conductors joining
 - possibility for mounting to lengthening terminal
- Electrical wear resistance (number of cycles): ≥ 10000
- Mechanical wear resistance (number of cycles): ≥ 20000
- IP code: IP>20
- Abnormal heating wear resistance and fire of the outer parts: 960°C
- Mounting:
 - joining with bolts
 - mounting position: vertical
- Plastic material of UV rays and non-flammable
- Test button
- Ambient temperature: $-20^{\circ} \div 65^{\circ}C$



Protecting functions:

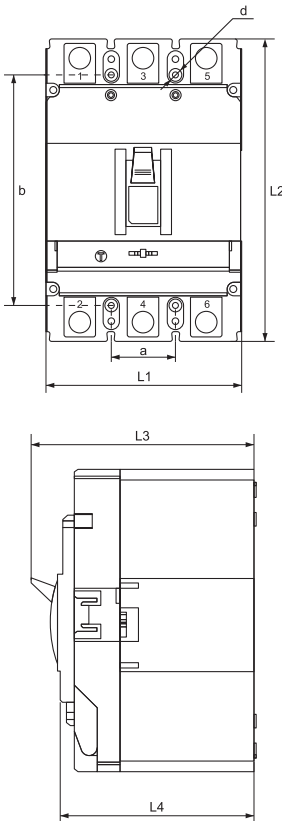
Function L – step adjustment for protection against overload. Adjustment of the operating current $I1=0.4+1xIn$ with discrete coefficients as the value can be 0.4; 0.5; 0.6; 0.7; 0.8; 0.9; 0.95 and 1
Time delay adjustment $t1$ of the protection against overload – step adjustment with four values A-3s; B-6s; C-12s; D-18s when current is $I=6I1$. The diagram of the current curves is presented on fig.1
Adjustment of the transitory protection current against short circuit $I3=X \times I1$ where X can take discrete value OFF; 1.5; 2; 4; 6; 8; 10

Type	Rated current I_n (A)	Operating breaking capacity (kA) I_{cs}	Maximum breaking capacity (kA) I_{cu}		Thermal current adjustment (A)	Section of the conductor (mm ²)	Packing/Box (pcs)	Catalogue number tree-poles
			415V	690V				
DS1 - 400E	400	50	65	25	160 - 400	240	1 / 3	44940
DS1 - 630E	630	65	75	25	252 - 630	185	1 / 2	44963
DS1 - 800E	800	65	75	30	320 - 800	240	1 / 2	44980
DS1 - 1250E	1000	85	100	65	400 - 1000	240	1 / 1	44999
DS1 - 1250E	1250	85	100	65	500 - 1250	240	1 / 1	44925
DS1 - 1600E	1600	85	100	65	640 - 1600	240	1 / 1	44960

Moulded case circuit breakers

Documents corresponding to the product:

Standard EN 60947-1
EN 60947-2



High breaking capacity level moulded case circuit breakers (MCCB) DS1 MAX from 63A... 800A

7 YEAR WARRANTY *for industrial usage, 3 years warranty

Functions:

- high breaking capacity level
- switching on/off heavy loaded electrical circuits
- breaking of electrical circuits and control of powerful consumers
- can be used as a main breaker in housing or industrial distributing installations
- endures high currents of short circuit in the protected circuit
- remarkable with high reliability of current characteristics control: manual
- possibility for auxiliary devices mounting for automation

Technical data:

- Rated operating voltage: 415/690V; 50/60Hz
- Isolating voltage: 2000V
- Surge voltage wear resistance: $\geq 8000V$
- Connecting:
 - rigid or flexible conductors
 - front conductors joining
 - possibility for mounting to lengthening terminal

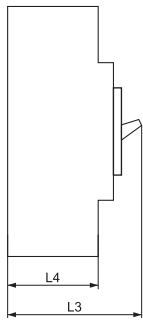
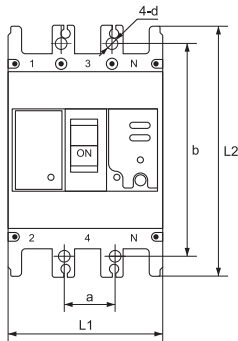
- Plastic elements
 - not keeping the burning material nylon PA66
 - box permittivity strength: $>16MV/m$
- Abnormal heating wear resistance and fire of the outer parts: $960^{\circ}C$
- Static contacts – alloy: pure copper T2Y2
 - acontact head: silver graphite CAg(5)
 - athickness: depends on the current
- Tightening moment: 1.33Nm
- Electrical wear resistance (number of cycles): ≥ 10000
- Mechanical wear resistance (number of cycles): ≥ 20000
- IP code: IP>20
- Mounting:
 - joining with bolts
 - mounting position: vertical
- Plastic material of UV rays and non-flammable
- Test button
- Ambient temperature: $-20^{\circ}/65^{\circ}C$.

Type	Overall dimensions (mm)						
	L1	L2	L3	L4	a	b	d
DS1 MAX 125/63 3P M	92	150	110	92	30	129	4.5
DS1 MAX 125/80 3PM	92	150	110	92	30	129	4.5
DS1 MAX 125/100 3P M	92	150	110	92	30	129	4.5
DS1 MAX 125/125 3P M	92	150	110	92	30	129	4.5
DS1 MAX 250/160 3P M	92	165	110	90	35	126	4.5
DS1 MAX 250/200 3P M	107	165	110	90	35	126	4.5
DS1 MAX 250/250 3P H	107	165	110	90	35	126	4.5
DS1 MAX 400/400 3P H	150	257	146	106	44	194	7
DS1 MAX 630/630 3P H	182	270	155	116	116	200	7
DS1 MAX 800/800 3P H	210	28	155	116	70	243	7
DS1 MAX 125/63 4P M	122	150	110	92	60	129	4.5
DS1 MAX 125/80 4PM	122	150	110	92	60	129	4.5
DS1 MAX 125/100 4P M	122	150	110	92	60	129	4.5
DS1 MAX 125/125 4P M	122	150	110	92	60	129	4.5
DS1 MAX 250/160 4P M	142	165	110	90	70	126	4.5
DS1 MAX 250/200 4P M	142	165	110	90	70	126	4.5
DS1 MAX 250/250 4P H	142	165	110	90	70	126	4.5
DS1 MAX 400/400 4P H	198	257	146	106	44	194	7
DS1 MAX 630/630 4P H	240	270	155	116	116	200	7
DS1 MAX 800/800 4P H	280	280	155	116	70	243	7

Type	Rated current In (A)	Operating breaking capacity (kA) Ics	Maximum breaking capacity (kA) Icu		Thermal current adjustment (A)	Packing/box	Catalogue number three-poles	Catalogue number four-poles
			415V	690V				
DS1 MAX - 125	63	36	50	20	50,4-63	1/16	44163MM	444163MM
DS1 MAX - 125	80	36	50	20	64-80	1/16	44164MM	444164MM
DS1 MAX - 125	100	36	50	20	80-100	1/16	44165MM	444165MM
DS1 MAX - 125	125	36	50	20	100-125	1/16	44166MM	444166MM
DS1 MAX - 250	160	36	50	20	128-160	1/6	44160MM	444160MM
DS1 MAX - 250	200	36	50	20	160-200	1/6	44200MM	444200MM
DS1 MAX - 250	250	42	65	25	200-250	1/6	44250MH	444250MH
DS1 MAX - 400	400	50	85	30	320-400	1/3	44401MH	444401MH
DS1 MAX - 630	630	50	85	30	504-630	1/2	44630MH	444630MH
DS1 MAX - 800	800	65	100	50	640-800	1/2	44800MH	444800MH

Documents corresponding to the product:

Standard EN 60947-1
EN 60947-2



High breaking capacity level moulded case circuit breakers (MCCB) DS1 MAX with ELCB

7 YEAR WARRANTY *for industrial usage, 3 years warranty

Earth Leakage Circuit Breaker (ELCB). Combine all functions of a standard circuit breaker, and prevent the consequences caused by short circuit, overload and shock. Widely used product for protection of low voltage circuits from fire.

Technical data:

- Rated operating voltage: 415/690V; 50/60Hz
- Rated residual operating current I Δ n (mA) - 100mA; 300mA 500mA- adjustable
- Tripping time I Δ n- instantaneous; 0.4s; 1s -adjustable
- Max delayed 2 In limit non-actuating time 1s 0.2/0.5
- Isolating voltage: 2000V.
- Surge voltage wear resistance: $\geq 8000V$
- Joining terminal: flat (tunnel) screw terminal.
- Connecting:
 - rigid or flexible conductors
 - front conductors joining
 - possibility for mounting to lengthening terminal.
- Electrical wear resistance (number of cycles): ≥ 10000 .
- Mechanical wear resistance (number of cycles): ≥ 20000 .
- IP code: IP>20.
- Abnormal heating wear resistance and fire of the outer parts: 960°C
- Mounting:
 - joining with bolts
 - mounting position: vertical.
- Plastic material of UV rays and non-flammable.
- Residual indicating push button
- Test button.
- Ambient temperature: -20°±65°C

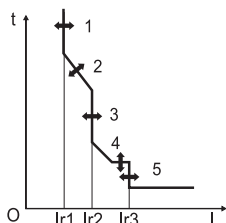
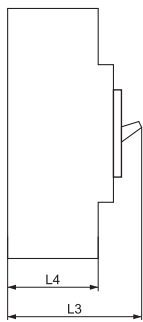
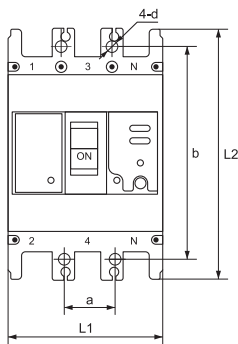
Type	Overall dimensions (mm)						
	L1	L2	L3	L4	a	b	d
DS1 MAX 225/125 3P M	92	150	110	92	30	129	4.5
DS1 MAX 400/250 3P H	150	257	146	106	44	194	7
DS1 MAX 400/400 3P H	150	257	146	106	44	194	7
DS1 MAX 225/125 4P M	122	150	110	92	60	129	4.5
DS1 MAX 400/250 4P H	198	257	146	106	44	194	7
DS1 MAX 400/400 4P H	198	257	146	106	44	194	7

Type	Rated current I $_n$ (A)	Operating breaking capacity (kA) I $_cs$	Maximum breaking capacity (kA) I $_cu$		Rated residual operating current I Δ n (mA)	Packing /box	Catalogue number three-poles	Catalogue number four-poles
			415V	690V				
DS1 MAX - 225	125	36	50	20	100/300/500	1/16	44163MMEL	444163MMEL
DS1 MAX - 400	250	42	65	25	100/300/500	1/6	44250MHLE	444250MHLE
DS1 MAX - 400	400	50	85	30	100/300/500	1/3	44401MHLE	444401MHLE

Moulded case circuit breakers

Documents corresponding to the product:

Standard EN 60947-1
EN 60947-2



High breaking capacity level moulded case circuit breakers (MCCB) DS1 MAX to 800A-electronic type

7 YEAR WARRANTY *for industrial usage, 3 years warranty

Functions:

- high breaking capacity level
- switching on/off heavy loaded electrical circuits
- breaking of electrical circuits and control of powerful consumers
- can be used as a main breaker in housing or industrial distributing installations
- endures high currents of short circuit in the protected circuit
- remarkable with high reliability of current characteristics
- control: manual
- possibilities for electrical module parameters adjustment through direct modules (combination of keys) thus providing accurate protection from overload and short circuit
- simultaneous protection of the three phases
- possibility for auxiliary devices mounting for automation
- contactor for TT test 15V DC

Technical data:

- Rated operating voltage: 415/690V; 50/60Hz
- Isolating voltage: 2000V
- Surge voltage wear resistance: $\geq 8000V$
- Joining terminal: flat (tunnel) screw terminal
- Connecting:
 - rigid or flexible conductors
 - front conductors joining
 - possibility for mounting to lengthening terminal
- Electrical wear resistance (number of cycles): ≥ 10000
- Mechanical wear resistance (number of cycles): ≥ 20000
- IP code: IP>20
- Abnormal heating wear resistance and fire of the outer parts: 960°C
- Mounting:
 - joining with bolts
 - mounting position: vertical
- Plastic material of UV rays and non-flammable
- Test button
- Ambient temperature: $-20^{\circ} \div 65^{\circ}C$

Type	Rated current In (A)	Operating breaking capacity (kA) Ics	Maximum breaking capacity (kA) Icu		Thermal current adjustment (A)	Packing/box	Catalogue number three-poles	Catalogue number four-poles
			415V	690V				
DS1 MAX - 400E	400	50	85	30	200-400	1/3	44940MH	444940MH
DS1 MAX - 630E	630	50	85	30	400-630	1/2	44963MH	444963MH
DS1 MAX - 800E	800	65	100	50	630-800	1/2	44980MH	444980MH

Tripping characteristic:

Ir1(A) Over-load long time delay tripping current

Ir1 adjustment, according to the different rated current of MCCB.

t1(s) Long time delay tripping time t1 adjustment.

Ir2(XIr1) Short circuit short time delay tripping time Ir2 adjustment.

t2(s) Short time delay tripping time t2 adjustment.

Ir3(XIr1) Short circuit instantaneous tripping current Ir3 adjustment.

Ir0(XIr1) Pre-alarm tripping current Ir0 adjustment.

TEST

DS1 MAX - 400E Ir1(A) t1(s) Ir2(XIr1) t2(s) Ir3(XIr1) Ir0(XIr1)

DS1 MAX - 630E Ir1(A) t1(s) Ir2(XIr1) t2(s) Ir3(XIr1) Ir0(XIr1)

DS1 MAX - 800E Ir1(A) t1(s) Ir2(XIr1) t2(s) Ir3(XIr1) Ir0(XIr1)

Documents corresponding to the product:

Standard EN 60947-1; EN 60947-2; IEC 947-2



Moulded case circuit breaker(MCCB) DW1 series

5 YEAR WARRANTY *for industrial usage, 3 years warranty

The DW1 series is an intelligent type circuit breaker used to control and protect low voltage electrical distribution network. Possibility to set the parameters of the circuit protection, built in under voltage release, remote control, earth protection and load monitoring.

Functions:

- switching on/off heavy loaded electrical circuits
- breaking of electrical circuits and control of powerful consumers
- used as a main breaker in housing or industrial distributing installations
- endures high currents of short circuit in the protected circuit
- remarkable with high reliability of current characteristics
- motor control
- mounted auxiliary devices for automation - under voltage release, earth protection, intelligent controlling block with a possibility for a choice of the protected function

Technical data:

- Rated operating voltage: 690V; 50/60Hz
- Isolating voltage: 690V
- Surge voltage wear resistance: 2kV
- Joining terminal: bolt connection with 4 bolts to the power supply rail
- Connecting:
 - copper rails
 - busway connection – at the back
- Electrical wear resistance (number of cycles): ≥ 2000

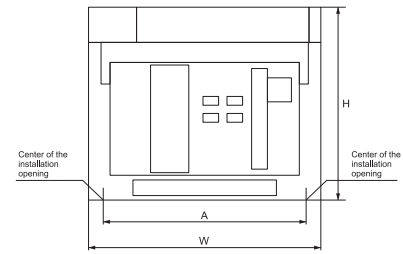
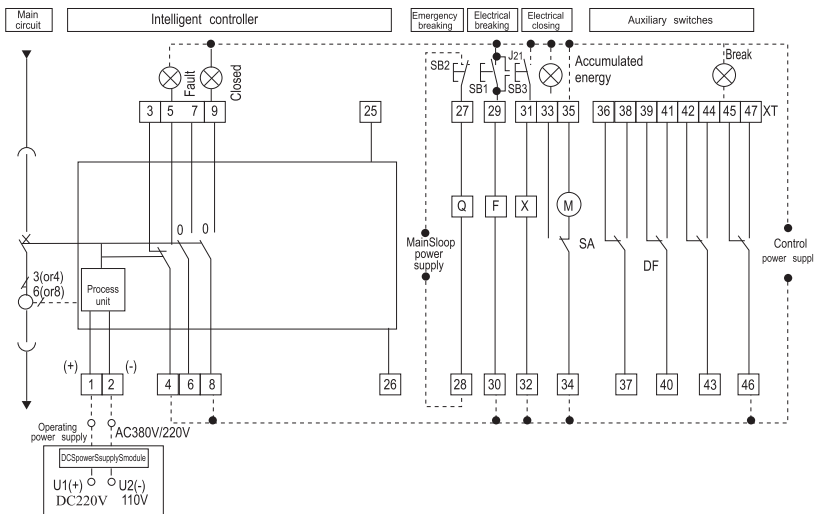
- Mechanical wear resistance (number of cycles): ≥ 9000
- IP code: IP54
- Mounting:
 - clamping with bolts
 - mounting position: vertical gradient – maximum 5°

- Plastic material of UV rays and non-flammable
- Test button
- Ambient temperature: -10°C + 65°C
- Installation altitude: up to 2000m

Basic protective functions:

- Overload protection with long time delay
- Short circuit protection with short time delay, time inversion limit
- Short circuit protection with short time delay, time fixed limit
- Instantaneous short circuit protection
- Earth protection function
- Full stability function
- "Overload alarm" function
- Test function
- Auto diagnostics function

A commutation type of breakers with RS 485 connection for duplex transmission of all function parameters, adjustment and data can also be produced at client's order and delivery terms agreement.

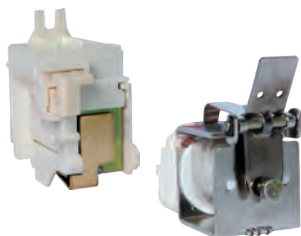


Type	Dimensions		
	A	H	W
DW1-2000 FIXED	362	402	373
DW1-3200 FIXED	422	402	363
DW1-2000 DRAW-OUT	375	432	461
DW1-3200 DRAW-OUT	435	432	494
DW1-4000 DRAW-OUT	550	432	494
DW1-6300 DRAW-OUT	813	452	504

Type	Rated current In (A)	Rated voltage Un (V)	Breaking capacity (kA)		Electrical wear resistance (number of cycles)	Mechanical wear resistance (number of cycles)	Packing/Box (pcs)	Catalogue number
			400 V	690 V				
DW1-2000 FIXED	1600	AC400V	80	50	2000	9000	1/1	44208
DW1-2000 FIXED	2000	AC400V	80	50	2000	9000	1/1	44209
DW1-3200 FIXED	2500	AC400V	100	65	2000	9000	1/1	44255
DW1-3200 FIXED	3200	AC400V	100	65	2000	9000	1/1	44329
DW1-2000 DRAW-OUT	1600	AC400V	80	50	2000	9000	1/1	44208DO
DW1-2000 DRAW-OUT	2000	AC400V	80	50	2000	9000	1/1	44209DO
DW1-3200 DRAW-OUT	2500	AC400V	100	65	2000	9000	1/1	44255DO
DW1-4000 DRAW-OUT	3600	AC400V	100	75	2000	9000	1/1	44436DO
DW1-4000 DRAW-OUT	4000	AC400V	100	75	2000	9000	1/1	44440DO
DW1-6300 DRAW-OUT	5000	AC400V	120	75	2000	9000	1/1	44650DO
DW1-6300 DRAW-OUT	6300	AC400V	120	75	2000	9000	1/1	44663DO

7 YEAR WARRANTY *for industrial usage, 3 years warranty

Shunt release (MX)



The device is used for remote control of breakers as at voltage signal it starts operating and switches off the breaker to which it is mounted

Technical data:

- rated operating voltage: 230/400V 50/60Hz
- electromagnetic coil 100VA for breakers up to 400A
- electromagnetic coil 150VA for breakers 630-800A
- available joining conductors

Mounting:

Mounted in a special jack after cover dismounting

Connecting:

Connected with the operative system through the provided conductors

***Note:** The breakers are offered with mounted accessory



DS1-electronic type with mounted MX

Type	Catalogue number	
	400V	230V
DS1 400/3300	444511	44452
DS1 630/3300	44455	44456
DS1 800/3300	44459	44460

DS1 MAX-electronic type with mounted MX

Type	Catalogue number	
	400V	230V
DS1 MAX 400/3300	444511M	44452M
DS1 MAX 630/3300	44455M	44456M
DS1 MAX 800/3300	44459M	44460M

DS1-thermomagnetic type with mounted MX

Type	Catalogue number	
	400V	230V
DS1 125/40	44317	44318
DS1 125/50	44321	41322
DS1 125/63	44326	44327
DS1 125/80	44331	44332
DS1 125/100	44336	44337
DS1 125/125	44340	44341
DS1 160/100	44463	44464
DS1 160/160	44333	44344
DS1 250/200	44347	44348
DS1 250/250	44351	44352
DS1 400/315	44467	44468
DS1 400/400	44355	44356
DS1 630/500	44359	44360
DS1 630/630	44363	44364
DS1 800/800	44367	44368

DS1 MAX-thermomagnetic type with mounted MX

Type	Catalogue number	
	400V	230V
DS1 MAX 125/63	44326M	44327M
DS1 MAX 125/80	44331M	44332M
DS1 MAX 125/100	44336M	44337M
DS1 MAX 125/125	44340M	44341M
DS1 MAX 250/160	44333M	44344M
DS1 MAX 250/200	44347M	44348M
DS1 MAX 250/250	44351M	44352M
DS1 MAX 400/400	44355M	44356M
DS1 MAX 630/630	44363M	44364M
DS1 MAX 800/800	44367M	44368M

7 YEAR WARRANTY *for industrial usage, 3 years warranty

Under voltage release (MN)



MN for DS1 - 125-160

The device switches off and/or does not allow the switching on of the breaker to which it is mounted at power breakdown or voltage decrease under certain limits

Technical data:

- operating voltage: 230/400V 50Hz
- electromagnetic coil 6VA for breakers up to 400A
- electromagnetic coil 10VA for breakers 630-800A
- available joining conductors

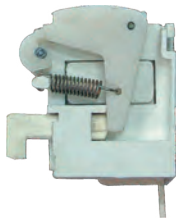
- switches off at voltage decrease under 75% of the operating

Mounting:

Mounted in a special jack after cover dismounting
Note: The breakers are offered with mounted accessory

Connecting:

Connected with the operative system through the provided conductors



MN for DS1 - 250-800

DS1-electronic type with mounted MN

Type	Catalogue number	
	400V	230V
DS1 400/3300	44483	44484
DS1 630/3300	44487	44488
DS1 800/3300	44491	44492

DS1 MAX-electronic type with mounted MN

Type	Catalogue number	
	400V	230V
DS1 MAX 400/3300	44483M	44484M
DS1 MAX 630/3300	44487M	44488M
DS1 MAX 800/3300	44491M	44492M

DS1-thermomagnetic type with mounted MN

Type	Catalogue number	
	400V	230V
DS1 125/40	44383	44384
DS1 125/50	44387	44388
DS1 125/63	44391	44392
DS1 125/80	44395	44396
DS1 125/100	44399	44402
DS1 125/125	44407	44408
DS1 160/100	44475	44476
DS1 160/160	44411	44412
DS1 250/200	44415	44416
DS1 250/250	44419	44420
DS1 400/315	44479	44480
DS1 400/400	44423	44424
DS1 630/500	44427	44428
DS1 630/630	44431	44432
DS1 800/800	44435	44436

DS1 MAX-thermomagnetic type with mounted MN

Type	Catalogue number	
	400V	230V
DS1 MAX 125/63	44391M	44392M
DS1 MAX 125/80	44395M	44396M
DS1 MAX 125/100	44399M	44402M
DS1 MAX 125/125	44407M	44408M
DS1 MAX 250/160	44411M	44412M
DS1 MAX 250/200	44415M	44416M
DS1 MAX 250/250	44419M	44420M
DS1 MAX 400/400	44423M	44424M
DS1 MAX 630/630	44431M	44432M
DS1 MAX 800/800	44435M	44436M



Documents corresponding to the product:

Standard EN 60947-1
EN 60947-2



7 YEAR WARRANTY *for industrial usage, 3 years warranty

Auxiliary contact (OF)

According to the way of mounting the auxiliary devices can be divided into two groups:

- internal devices – accessories for whose mounting it is necessary to dismount the cover of the breakers and fix them in specially designed jacks
- external devices – they are mounted right on the top cover of the breaker

INTERNAL DEVICES

Auxiliary contact (OF)

The device changes its condition conformably to the breaker's condition; it has a NO and a NC contactor.

Technical data:

- for breakers up to 160A operating current through the auxiliary contact: 3A
- for breakers from 250 to 800A operating current through the auxiliary contact: 6A
- available joining conductors
- labeling of the cables

Mounting:

Mounted in a special jack after cover dismounting

Note:

The breakers are offered with mounted accessory

Connecting:

Connected with the operative system through the provided conductors

DS1-thermomagnetic type with mounted OF

Type	Catalogue number
DS1 125/40	44301
DS1 125/50	44302
DS1 125/63	44303
DS1 125/80	44304
DS1 125/100	44305
DS1 125/125	44306
DS1 160/160	44307
DS1 250/200	44308
DS1 250/250	44309
DS1 400/400	44310
DS1 630/500	44311
DS1 630/630	44312
DS1 800/800	44313



DS1 MAX-thermomagnetic type with mounted OF

Type	Catalogue number
DS1 MAX 125/63	44303M
DS1 MAX 125/80	44304M
DS1 MAX 125/100	44305M
DS1 MAX 125/125	44306M
DS1 MAX 250/160	44307M
DS1 MAX 250/200	44308M
DS1 MAX 250/250	44309M
DS1 MAX 400/400	44310M
DS1 MAX 630/630	44312M
DS1 MAX 800/800	44313M



MCCB with auxiliary devices mounted (MX+OF) and (MN+OF)

7 YEARS GUARANTEE *for industrial usage, 3 years warranty

DS1 -electronic type with mounted MX+OF

Type	Catalogue number	
	400V	230V
DS1 400/3300	44453	44454
DS1 630/3300	44457	44458
DS1 800/3300	44461	44462

DS1-thermomagnetic type with mounted MX+OF

Type	Catalogue number	
	400V	230V
DS1 125/40	44319	44320
DS1 125/50	44323	41324
DS1 125/63	44328	44330
DS1 125/80	44334	44335
DS1 125/100	44338	44339
DS1 125/125	44342	44343
DS1 160/100	44465	44466
DS1 160/160	44345	44346
DS1 250/200	44349	44350
DS1 250/250	44353	44354
DS1 400/315	44469	44470
DS1 400/400	44357	44358
DS1 630/500	44361	44362
DS1 630/630	44365	44366
DS1 800/800	44369	44370

DS1 MAX-thermomagnetic type with mounted MN+OF

Type	Catalogue number	
	400V	230V
DS1 MAX 125/63	44393M	44394M
DS1 MAX 125/80	44397M	44398M
DS1 MAX 125/100	44405M	44406M
DS1 MAX 125/125	44409M	44410M
DS1 MAX 250/160	44413M	44414M
DS1 MAX 250/200	44417M	44418M
DS1 MAX 250/250	44421M	44422M
DS1 MAX 400/400	44425M	44426M
DS1 MAX 630/630	44433M	44434M
DS1 MAX 800/800	44437M	44438M

DS1 MAX-electronic type with mounted MN+OF

Type	Catalogue number	
	400V	230V
DS1 MAX 400/3300	44485M	44486M
DS1 MAX 630/3300	44489M	44490M
DS1 MAX 800/3300	44493M	44494M

DS1 MAX-electronic type with mounted MX+OF

Type	Catalogue number	
	400V	230V
DS1 MAX 400/3300	44453M	44454M
DS1 MAX 630/3300	44457M	44458M
DS1 MAX 800/3300	44461M	44462M

DS1 MAX- thermomagnetic type with mounted MX+OF

Type	Catalogue number	
	400V	230V
DS1 MAX 125/63	44328M	44330M
DS1 MAX 125/80	44334M	44335M
DS1 MAX 125/100	44338M	44339M
DS1 MAX 125/125	44342M	44343M
DS1 MAX 250/160	44345M	44346M
DS1 MAX 250/200	44349M	44350M
DS1 MAX 250/250	44353M	44354M
DS1 MAX 400/400	44357M	44358M
DS1 MAX 630/630	44365M	44366M
DS1 MAX 800/800	44369M	44370M

DS1-thermomagnetic type with mounted MN+OF

Type	Catalogue number	
	400V	230V
DS1 125/40	44385	44386
DS1 125/50	44389	44390
DS1 125/63	44393	44394
DS1 125/80	44397	44398
DS1 125/100	44405	44406
DS1 125/125	44409	44410
DS1 160/100	44477	44478
DS1 160/160	44413	44414
DS1 250/200	44417	44418
DS1 250/250	44421	44422
DS1 400/315	44481	44482
DS1 400/400	44425	44426
DS1 630/500	44429	44430
DS1 630/630	44433	44434
DS1 800/800	44437	44438

DS1-electronic type with mounted MN+OF

Type	Catalogue number	
	400V	230V
DS1 400/3300	44485	44486
DS1 630/3300	44489	44490
DS1 800/3300	44493	44494

Terminal plates for MCCB - DS1 and DS1 MAX type

7 YEAR WARRANTY *for industrial usage, 3 years warranty



Straight copper electro-tinned extensions enabling cable connection outside the switch terminals and providing excellent contact with the switch terminal base. Terminal extensions with different cross section are available depending on the switch rated power.

Mounting:

Extensions are directly bolt mounted to the switch terminal base.

Terminal plates for MCCB - DS1

Type	Rated current (A)	Catalogue number 3pcs/set	Catalogue number 4pcs/set
TP 125	125	31125	314125
TP 160	160	31160	314160
TP 250	250	31250	314250
TP 400	400	31400	314400
TP 630	630	31630	314630
TP 800	800	31850	314850
TP 1250	1250	311250	-

Terminal plates for MCCB - DS1 MAX

Type	Rated current (A)	Catalogue number 3pcs/set	Catalogue number 4pcs/set
TP 125 MAX	125	31125M	-
TP 250 MAX	250	31250M	-
TP 400 MAX	400	31400M	314400M
TP 630 MAX	630	31630M	314630M
TP 800 MAX	800	31850M	314850M



Remote control (manual)

5 YEAR WARRANTY *for industrial usage, 3 years warranty

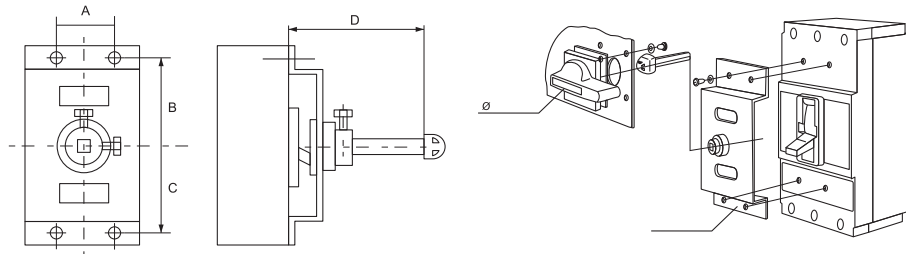
Description:

The device switches off/on the breaker to which manual operative rotary mechanism is mounted

- two operating positions of the executive mechanism fixed at 90°C

Mounting:

The base is mounted with bolts right on the cover (scheme 1 mounting), and the handle is mounted at the door of the distribution box, using an extension axis it is joined to the base



Remote control for MCCB, DS1

Type of the breaker	Dimensions (mm)					Packing/Box (pcs)	Catalogue number
	A	B	C	Dmin	Dmax		
DS1 125A	25	50	50	65	115	1	44967
DS1 160A	30	50	50	65	115	1	44968
DS1 250A	35	70	70	80	130	1	44969
DS1 400A	45	107	107	85	105	1	44970
DS1 630A	70	119	119	110	110	1	44971
DS1 800A	70	119	119	110	110	1	44972

Remote control for MCCB, DS1 MAX

Type of the breaker	Dimensions (mm)					Packing/Box (pcs)	Catalogue number
	A	B	C	Dmin	Dmax		
DS1 MAX 63A	25	50	50	65	115	1	44966M
DS1 MAX 125A	25	50	50	65	115	1	44967M
DS1 MAX 250A	35	70	70	80	130	1	44969M
DS1 MAX 400A	45	107	107	85	105	1	44970M
DS1 MAX 630/800A	70	119	119	110	110	1	44972M



DS1 - 125-160



DS1 - 250-800



DS1 MAX - 63-250

Remote control (electrical)

5 YEARS GUARANTEE *for industrial usage, 3 years warranty

Description:

The device switches off/on the breaker to which manual operative rotary mechanism is mounted

- two operating positions of the executive mechanism fixed at 90°C

Mounting:

The base is mounted with bolts right on the cover (scheme 1 mounting), and the handle is mounted at the door of the distribution box, using an extension axis it is joined to the base

Electrical remote control for MCCB DS1

Type of the breaker	Dimensions (mm)					Packing/Box (pcs)	Catalogue number	
	A	A1	B	B1	H		Operating voltage (V) 230V	400V
DS1 125	103.5	110	30	90	92	1	44912	44907
DS1 160	103.5	110	35	90	92	1	44913	44908
DS1 250	139	-	132	-	105	1	44914	44909
DS1 400	226	-	132	-	132	1	44915	44910
DS1 630	226	-	132	-	132	1	44916	44911
DS1 800	226	-	132	-	132	1	44916	44911

Electrical remote control for MCCB DS1 MAX

Type of the breaker	Dimensions (mm)					Packing/Box (pcs)	Catalogue number	
	L1	B	B	H	H1		Operating voltage (V) 230V	400V
DS1 MAX 63A	116	90	50	77	12,5	1	44917M	44906M
DS1 MAX 125A	116	90	50	77	12,5	1	44912M	44907M
DS1 MAX 250A	116	90	70	77	15	1	44914M	44909M
DS1 MAX 400A	176	130	107	115	27	1	44915M	44910M
DS1 MAX 630/800A	176	130	119	115	31	1	44916M	44911M

