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Technical Brochure

Enclosure Enclosure Overview

Enclosure

Enclosure Overview



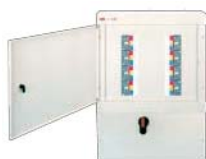
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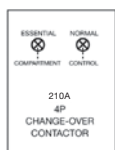
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Greater comfort, full protection

Applications for the detached house



Protection of the entry phone line and other telecommunication systems

In this kind of application normally different voltage level and/or different frequencies are used. To ensure the correct working of these circuits, cable protection must be provided to prevent overloading of the cable. There is a limit to the current carrying capacity for all cables! ABB MCBs protect you and your installation in the best way - easy and safe installation is possible. Make your choice.



Protection of security systems, bell circuits or electrical shutters

To ensure the correct working of these auxiliary circuits with maybe different voltage-level cable protection must be provided to prevent overloading of the cable by short-circuits or even an overload e.g. due to obstruction of the shutter.

Without suitable cable protection the cable installed in the wall behind the loads becomes charred and maybe needs to be replaced or even the devices get damaged.



Sauna and swimming pool residual current protection.

To ensure continuity of service and avoid nuisance tripping due to the natural earth leakage currents that are common in a wet environment, it's a best practice to protect individually the sauna and the swimming pool circuits with a dedicated DS201 RCBO for each line.



Mains disconnection

E200 switch disconnecter is installed upstream whole electric distribution system ensuring and it is suitable for commanding loads.



Burner and venting control

ESB and EN contactors provide efficient load control, for single and three phase loads up to 63 A of rated current. Thanks to their endurance and high switching capacity ESB and EN are ideal in automation of frequently operating loads.



Object metering

Heating and ventilation pumps are obvious candidates for object metering in the home, and these can be joined by appliances such as electronic equipment, washing machines, dishwashers as well as sauna. And don't forget outdoors.

Garden terrace heaters space and lighting plus the pond pump are all significant 'energy thieves'. The actual consumption is easy to measure with EQ meters. EQ meters A-series measures in two directions, so it is suitable for a residential PV application.



One complete solution for your home

Electrical enclosures for the residential applications coordinate between all technical elements that make up the interior essential in today's homes.

The compact distribution boards from ABB response this trend about an ever increasing offer of products for home installations. ABB offers with cabinets one complete solution for all electrical installation requirement in your home.

Consumer Unit - ACM

Product Description / Order Information



ACM 20



Full Neutral Type



Split Bar Type

ABB new generation of fully metallic Consumer Unit - the ACM Series. ACM with hinged metal flap is designed for easy surface mounting for indoor installations.

The Consumer Unit is factory-built and type tested to IEC60439-3. Neutral, PE terminals and DIN-rail are preassembled for mounting wide range of ABB miniature circuit breakers, residual current devices and Din-rail components of different specific requirements. An extensive selection of optional accessories for connection and installation is available for different needs.

The Metalclad Consumer Unit Type ACM is available in 6 standard sizes, suitable for 8 to 23 modules in split bar and full neutral type.

Technical Data

- Standard : IEC60439-3, BS EN 60439-3
- Max. Current : 100A
- Rate Voltage : 250V / 50Hz
- Degree of Protection : IP41 (IP42 on request)
- Colour : RAL 7035 (Light grey)
- Enclosure thickness : 1.2mm (1.6mm on request)

Order Information

ACM (Full Neutral Type) for SH200 MCB / DS251 RCBO

Type	No. of Ways Outgoing MCB	Dimensions (mm)			
		A	B	C	D
ACM08	6	213	177	86	222
ACM10	8	248	212		
ACM13	11	300	265		
ACM16	14	353	317		
ACM20	18	423	387		
ACM23	21	476	440		

ACM (Split Bar Type) for SH200 MCB / FH200 RCD

Type	No. of Ways Outgoing MCB	Dimensions (mm)			
		A	B	C	D
ACM08 (2+1)	2+1	213	177	86	222
ACM10 (3+2)	3+2	248	212		
ACM13 (5+3)	5+3	300	265		
ACM16 (8+3)	8+3	353	317		
ACM20 (10+5)	10+5	423	387		
ACM23 (10+8)	10+8	476	440		

Full Neutral Type : E202 DP
 Split Bar Type : E202 DP, FH202 DP
 (Flush Mounted Type on request)

Consumer Unit - ACM

Technical Data for SH200 / S200M



Type	SH200		S200M	
Standards	IEC60898 / GB10963		VDE 0641 Part 11, UL 1077 CSA22.2 No.235, IEC60898	
Electrical features				
Poles	1P, 1P+NA, 2P, 3P, 3P+NA, 4P			
Rated current I_n	A	$6 \leq I_n \leq 63A$	$0.5 \leq I_n \leq 63A$	
Rated operational voltage U_e	IEC 1P, 1P+NA	V	230	
	IEC 2P, 3P, 3P+NA, 4P	V	230 / 400	
Rated insulation voltage U_i	V	250 (phase to ground), 500 (phase to phase)		
Max. power frequency recovery voltage U_{max}	IEC 1P, 1P+NA	V	253 AC	
	IEC 2P, 3P, 3P+NA, 4P	V	440 AC	
	IEC 1P	V	72 DC	
	IEC 2P	V	125 DC	
Min. power operating voltage U_{min}	V	12 AC - 12 DC		
Rated frequency	Hz	50 - 60		
Rated breaking capacity acc. to IEC/EN 60898	I_{cn}	kA	6	10
Rated ultimate breaking capacity	I_{cu}	kA	-	$\leq 40A : 15kA, 50 / 63A : 10kA$
acc. to IEC/EN 60947-2 1P, 1P+N@230VAC 2P, 3P, 3P+N, 4P@400VAC	I_{cs}	kA	-	$\leq 40A : 11.2kA, 50 / 63A : 7.5kA$
Rated impulse withstand voltage (1.2/50) U_{imp}	kV	4 kV (test voltage 6.2 kV at sea level, 5 kV at 2,000 m)		
Dielectric test voltage	kV	2	3	
Overvoltage category	III			
Pollution degree	2			
Reference temperature for tripping characteristics	B : $3 I_n \leq I_m \leq 5 I_n$	■	■	
	C : $5 I_n \leq I_m \leq 10 I_n$	■	■	
	D : $10 I_n \leq I_m \leq 20 I_n$	■	■	
	K : $10 I_n \leq I_m \leq 14 I_n$	-	■	
	Z : $2 I_n \leq I_m \leq 3 I_n$	-	■	
Mechanical features				
Toggle	black sealable in ON-OFF position			
Mechanical life	20,000			
Electrical life	10,000			
Protection degree	housing	IP4X	IP4X	
	terminals	IP2X	IPXXB	
Shock resistance	30 g - 3 shocks - 11 ms			
Vibration resistance acc. to IEC/EN 60068-2-6	5g - 20 cycles at 5...150...5 Hz with load 0.8l			
Tropicalization acc. to IEC/EN 60068-2	humid heat	°C/RH	28 cycles with 55/90-96 and 25/95-100	
Environmental conditions	°C		30 (K, Z : 20)	
Ambient temperature	°C		-25 ... +55	
Storage temperature	°C		-40 ... +70	
Installation				
Terminal type	U Type terminal		Failsafe bi-directional cylinder-lift terminal (shock protected)	
Terminal size top/bottom for cable	IEC	mm ²	35 / 35	
	UL/CSA	AWG	18 - 4	
Terminal size top/bottom for busbar	IEC	mm ²	10 / 10	
	UL/CSA	AWG	18 - 8	
Tightening torque	IEC	N*m	2.0	2.8
	UL/CSA	in-lbs.	25	25
Tool	No. 2 Pozidrive			
Mounting	on DIN rail EN 60715 (35 mm)			
Mounting position	any			
Connection	from top and bottom			
Dimensions (H x D x W)	mm		88 x 69 x 17.5	

Consumer Unit - ACM

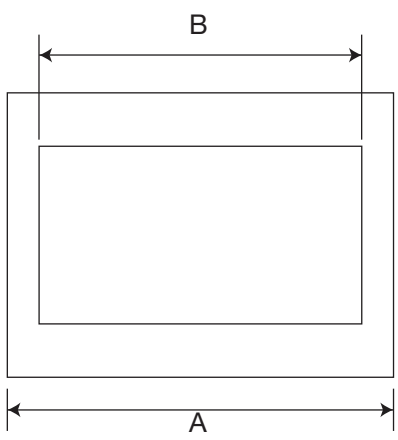
Technical Data for Residual Current Devices (RCD)

Type	GSH201	DS251	DS271	DS201	FH200 / F200
Standards	IEC61009	IEC61009, BSEN 61009-2-2		IEC61009	IEC/EN61008
Pole	1P + N	1P + N	1P + N	1P + N	2, 4
Tripping Characteristics	B, C, D	C	B, C	B, C	-
Tripping Type	Electronic Type			Electro-Magnetic Type	
Rated voltage U_n / AC	230V	230 / 240V	230 / 240V	230V	230 / 400V
Rated current I_n	6 - 63A	6 - 32A	6 - 32A	6 - 40A	25 - 63A (FH200) 80 - 100A (F200)
Type (waveform of Earth leakage series)	AC	AC	AC	AC	AC
Rated sensitivity $I_{\Delta n}$ mA	30	30	10, 30, 100, 300 (for type C)	30, 100, 300	30, 100, 300
Frequency Hz	50 - 60				
Rated residual making and breaking capacity $I_{\Delta m}$	6kA	6kA	10kA	6kA (DS201) 10kA (DS201-M)	1000A
Rated conditional short-circuit current I_{nc}	6kA	6kA	10kA	6kA (DS201) 10kA (DS201-M)	6kA (FH200) 10kA (F200)
Mechanical Life no. of operation	20,000				
Protection degree					
Terminals	IP2X				
Housing	IP4X				
Ambient temperature					
Operating Temperature °C	-25...+55	-25...+55		-25...+55	
Storage Temperature °C	-40...+70	-25...+70		-35...+70	
Tropicalization (IEC 60068-2)					
constant climate conditions [°C/RH]	23/83, 40/93, 55/20				
variable climate conditions [°C/RH]	25/95, 40/93				
Terminal Size mm ²	0.75 - 35	1 - 25 (Line side) 1 - 10 (Load side)		1 - 16	1 - 25
Tightening Torque Nm	2	2 (Line side) 1.2 (Load side)		2	

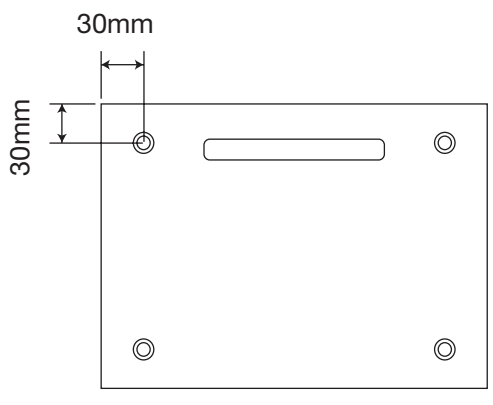
Consumer Unit - ACM

Dimensions (mm)

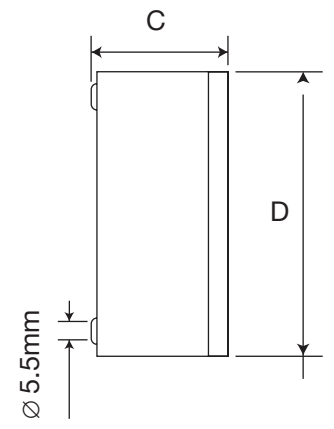
Consumer Unit



front view



back view



side view

Distribution Board - SDB

Product Description / Technical Data



SDB-DB 506 SHCL(100A)

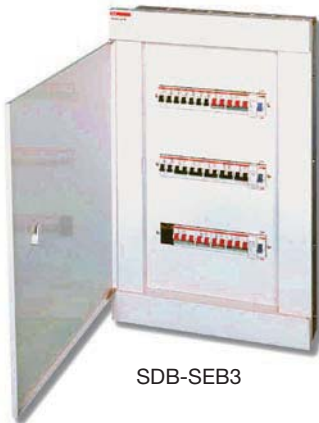
ABB distribution boards together with the MCBs SH200 range and other components from the System proM range such as time clock, RCCBs, contactors, etc. can be used for many applications both for new installations. Many features are incorporated in the ABB distribution boards to make them a practical and useful solution for designers and consultants.

Designed to comply with IEC60439-3, the incoming space offers a choice of isolators, miniature circuit-breakers, residual current devices, terminal blocks or any combination of these units.

The SDB-DB range boards are for surface mount, with maximum current of 200A with up to TPN 18 ways out-going .

Technical Data

- Standard** : IEC60439-3
- Max. Current** : 100A, 160A, 200A
- Rate Voltage** : SPN : 250V / 50Hz
TPN : 440 / 50Hz
- Degree of Protection** : IP41 (IP42 on request)
- Enclosure thickness** : 1.2mm (1.6mm on request)



SDB-SEB3

The SDB-SEB range board are for surface mount, with up to 52 modules space. It can offer ample wiring space and easy installation for contractor. Identification of circuit is also easy for users.

Type A : 1-Pole / 2-Pole / 3-Pole MCB Outgoing

Type	No. of Ways	Dimensions (mm)		
		H	W	D
SDB-SEB2	26	450	385	112
SDB-SEB3	39	650		
SDB-SEB4	52	750		

Distribution Board - SDB-DB

Order Information



SDB-DB 506 SHCL(100A)



SDB-DB 506 SHMS(100A)-E203/100



SDB-DB 508 SHMS(160A)-OT160/3



SDB-DB 508 SHMX(100A)

Type B : Surface Mounting with Door (1/3P MCB Outgoing)

Type	Rated Current (A)	No. of Ways	Dimensions (mm)		
			H	W	D
Without main switch space					
SDB-DB 504 SHCL(100A)	100	4	457	385	112
SDB-DB 506 SHCL(100A)		6	511		
SDB-DB 508 SHCL(100A)		8	565		
SDB-DB 510 SHCL(100A)		10	619		
SDB-DB 512 SHCL(100A)		12	673		
SDB-DB 516 SHCL(100A)		16	781		
SDB-DB 518 SHCL(100A)		18	835		
SDB-DB 504 SHCL(160A)	160	4	457	385	112
SDB-DB 506 SHCL(160A)		6	511		
SDB-DB 508 SHCL(160A)		8	565		
SDB-DB 510 SHCL(160A)		10	619		
SDB-DB 512 SHCL(160A)		12	673		
SDB-DB 516 SHCL(160A)		16	781		
SDB-DB 518 SHCL(160A)		18	835		
SDB-DB 504 SHCL(200A)	200	4	457	385	112
SDB-DB 506 SHCL(200A)		6	511		
SDB-DB 508 SHCL(200A)		8	565		
SDB-DB 510 SHCL(200A)		10	619		
SDB-DB 512 SHCL(200A)		12	673		
SDB-DB 516 SHCL(200A)		16	781		
SDB-DB 518 SHCL(200A)		18	835		
With space for 3-Pole AI Switch (E203)					
SDB-DB 504 SHMS(100A)-E203/100	100	4	457	385	112
SDB-DB 506 SHMS(100A)-E203/100		6	511		
SDB-DB 508 SHMS(100A)-E203/100		8	565		
SDB-DB 510 SHMS(100A)-E203/100		10	619		
SDB-DB 512 SHMS(100A)-E203/100		12	673		
SDB-DB 516 SHMS(100A)-E203/100		16	781		
SDB-DB 518 SHMS(100A)-E203/100		18	835		
With space for 3-Pole Main Switch (OT160, OT200)					
SDB-DB 504 SHMS(160A)-OT160/3	160	4	619	385	112
SDB-DB 506 SHMS(160A)-OT160/3		6	673		
SDB-DB 508 SHMS(160A)-OT160/3		8	727		
SDB-DB 510 SHMS(160A)-OT160/3		10	781		
SDB-DB 512 SHMS(160A)-OT160/3		12	835		
SDB-DB 516 SHMS(160A)-OT160/3		16	943		
SDB-DB 518 SHMS(160A)-OT160/3		18	997		
SDB-DB 504 SHMS(200A)-OT200/3	200	4	619	385	112
SDB-DB 506 SHMS(200A)-OT200/3		6	673		
SDB-DB 508 SHMS(200A)-OT200/3		8	727		
SDB-DB 510 SHMS(200A)-OT200/3		10	781		
SDB-DB 512 SHMS(200A)-OT200/3		12	835		
SDB-DB 516 SHMS(200A)-OT200/3		16	943		
SDB-DB 518 SHMS(200A)-OT200/3		18	997		
With 13 modules space					
SDB-DB 504 SHMX(100A)	100	4	511	385	112
SDB-DB 506 SHMX(100A)		6	565		
SDB-DB 508 SHMX(100A)		8	619		
SDB-DB 510 SHMX(100A)		10	673		
SDB-DB 512 SHMX(100A)		12	673		
SDB-DB 516 SHMX(100A)		16	781		
SDB-DB 518 SHMX(100A)		18	781		

Distribution Board - SDB-DB

Order Information

Type B : Surface Mounting with Door



SDB-DB 508 SHMX(100A)



SDB-DB 506 SHMS(100A)-E203/100



SDB-DB 508 SHMS(160A)-OT160/3

Type	Rated Current (A)	No. of Ways	Dimensions		
			H	W	D
with 13 modules space - Split Bar Type					
SDB-DB 504/502 SHMX(100A)	100	4 + 2	619	385	112
SDB-DB 504/504 SHMX(100A)		4 + 4	673		
SDB-DB 506/502 SHMX(100A)		6 + 2	673		
SDB-DB 506/504 SHMX(100A)		6 + 4	727		
SDB-DB 506/506 SHMX(100A)		6 + 6	781		
SDB-DB 508/504 SHMX(100A)		8 + 4	781		
SDB-DB 508/508 SHMX(100A)		8 + 8	889		
SDB-DB 512/504 SHMX(100A)		12 + 4	889		
with 3-Pole main switch space (for 2P MCB outgoing)					
SDB-DB 506 SHMS-DP(100A)-E203/100	100	6	511	385	112
SDB-DB 512 SHMS-DP(100A)-E203/100		12	673		
SDB-DB 518 SHMS-DP(100A)-E203/100		18	832		
SDB-DB 506 SHMS-DP(160A)-OT160/3	160	6	511	385	112
SDB-DB 512 SHMS-DP(160A)-OT160/3		12	673		
SDB-DB 518 SHMS-DP(160A)-OT160/3		18	835		
SDB-DB 506 SHMS-DP(200A)-OT200/3	200	6	511	420	112
SDB-DB 512 SHMS-DP(200A)-OT200/3		12	619		
SDB-DB 518 SHMS-DP(200A)-OT200/3		18	835		
with individual neutral link					
SDB-DB 504 SHMS(100A)-E203/100 NL	100	4	619	385	112
SDB-DB 504 SHMS(160A)-OT160/3 NL	160	4	673	420	112
SDB-DB 506 SHMS(160A)-OT160/3 NL		6	673		
SDB-DB 508 SHMS(160A)-OT160/3 NL		8	727		
SDB-DB 510 SHMS(160A)-OT160/3 NL		10	835		
SDB-DB 512 SHMS(160A)-OT160/3 NL		12	835		
SDB-DB 504 SHMS(200A)-OT200/3 NL		200	4		
SDB-DB 506 SHMS(200A)-OT200/3 NL	6		673		
SDB-DB 508 SHMS(200A)-OT200/3 NL	8		727		
SDB-DB 510 SHMS(200A)-OT200/3 NL	10		835		
SDB-DB 512 SHMS(200A)-OT200/3 NL	12		835		

Distribution Board

Accessories

SZ-BP 1	Blanking plate for 12 SP MCB
SDB-DC	Door Catch for hinged doors




Type Designation :

SDB-DB	512	SH	MS	DP	(160A) - OT160	/ 3	NL	
Series	No. of ways 4, 6, 8, 10, 12, 16, 18	MCB	Main Switch CL = without main switch space MX = with 13 modules MS = with main switch space	only suitable for output switch of 2P MCB	Busbar 100A 160A 200A	Switch E203/100 OT160 OT200	No. of Pole 3 = 3P	with individual neutral link (not suitable for 2P MCB)

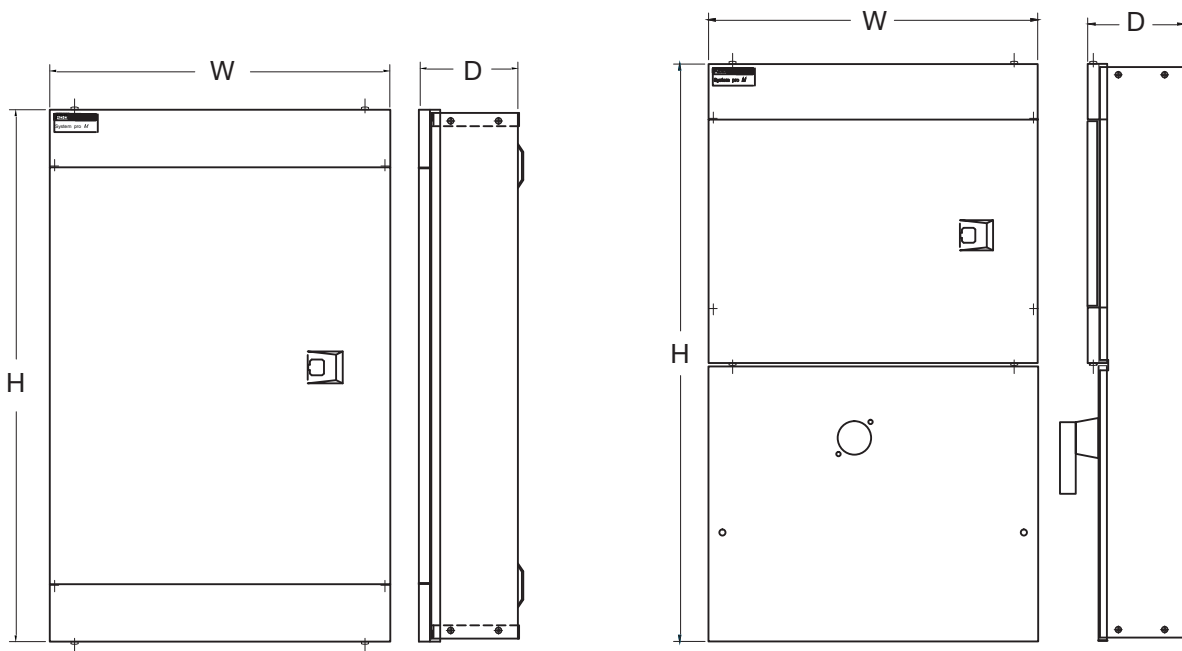
Distribution Board - SDB-DB

Order Information / Dimensions

Accessories (SDB-DB and SDB-SEB)

Type	Model name	Packing unit
SZ-BP 1 	Blanking Plate (also for ACM)	1 pc (for 12 ways)
SDB-DC 	Door Catch	10 pcs
SA 1 	Locking device (for MCB only)	10 pcs

Dimensions (mm)

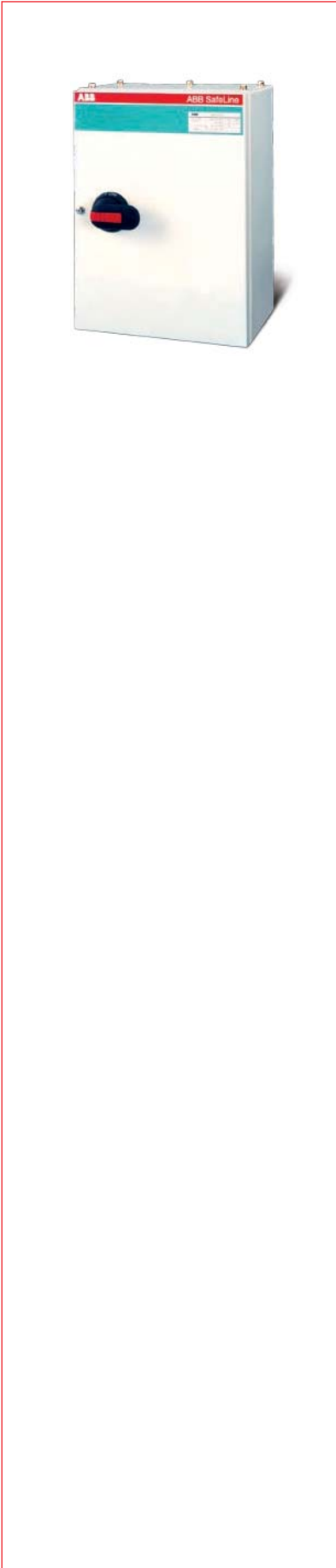


With / Without main switch space
(for 100A TPN MCB Board)

With main switch space
(for 160A / 200A MCB Board)

Enclosed Switch-disconnectors and Fuse Switches

Technical Specifications



Standard : IEC 60947 - 1, 3

Degree of Protection : IP41 (IP54 on request)

Offer ample wiring space and easy installation

High quality electro-galvanised steel with epoxy powder coating

Enclosed Load Break Switch (LSB)

Type		Rated Operational Current (A)		Dimensions (W x H x D) mm				
3-Pole (with removable neutral link)	4-Pole	AC-22A up to 415V	AC-23A up to 415V	W	H	D1	D2	Ø
LSB-OT63F-3P(IP41)	LSB-OT63F-4P(IP41)	63	63					9
LSB-OT80F-3P(IP41)	LSB-OT80F-4P(IP41)	80	75	140	200	100	145	
LSB-OT125F-3P(IP41)	LSB-OT125F-4P(IP41)	125	90					
LSB-OT160EV-3P(IP41)	LSB-OT160EV-4P(IP41)	160	160					
LSB-OT200E-3P(IP41)	LSB-OT200E-4P(IP41)	200	200	300	400	200	245	
LSB-OT250E-3P(IP41)	LSB-OT250E-4P(IP41)	250	250					
LSB-OT315E-3P(IP41)	LSB-OT315E-4P(IP41)	315	315					
LSB-OT400E-3P(IP41)	LSB-OT400E-4P(IP41)	400	400					
LSB-OT630E-3P(IP41)	LSB-OT630E-4P(IP41)	630	630	500	600	250	295	
LSB-OT800E-3P(IP41)	LSB-OT800E-4P(IP41)	800	800					
LSB-OT1000E-3P(IP41)	LSB-OT1000E-4P(IP41)	1000	1000	600	800	300	380	

Enclosed Switches

Enclosed Fuse Switches (FSB) - without Fuse Link

Type		Rated Operational Current (A)		Dimensions (W x H x D) mm				
3-Pole (with removable neutral link)	4-Pole (with neutral link)	AC-22A up to 500V	AC-23A up to 500V	W	H	D1	D2	Ø
FSB-OS32GB-3P(IP41)	FSB-OS32GB-4P(IP41)	32	32					9
FSB-OS63GB-3P(IP41)	FSB-OS63GB-4P(IP41)	63	63	350	300	200	245	
FSB-OS100GB-3P(IP41)	FSB-OS100GB-4P(IP41)	100	100					
FSB-OS160GB-3P(IP41)	FSB-OS160GB-4P(IP41)	160	160					
FSB-OS200B-3P(IP41)	FSB-OS200B-4P(IP41)	200	200	400	500	250	295	
FSB-OS250B-3P(IP41)	FSB-OS250B-4P(IP41)	250	250					
FSB-OS315B-3P(IP41)	FSB-OS315B-4P(IP41)	315	315	500	600	250	295	
FSB-OS400B-3P(IP41)	FSB-OS400B-4P(IP41)	400	400					
FSB-OS630B-3P(IP41)	FSB-OS630B-4P(IP41)	630	630	600	800	300	345	
FSB-OS800B-3P(IP41)	FSB-OS800B-4P(IP41)	800	800					

Enclosed Switch-disconnectors (LSB)

Technical Data for Switch-disconnectors (OT)

The switch-disconnector series comply with the major international standards and have a comprehensive range of approvals.

Tested according to IEC60947-3





- Switch-disconnectors
- Motor circuit switches
- Main switches
- Local safety switches
- Special switches
- Busbar couplers



Type				OT63F	OT80F	OT125F	OT160EV
Switch Disconnecter	3 pole			OT63F3	OT80F3	OT125F3	OT160EV03P
	4 pole			OT63F4N2	OT80F4N2	OT125F4N2	OT160EV04P
Rated insulation voltage and Rated operational voltage AC-20 and DC-20	Pollution degree 3	V		750	750	750	1000
Rated thermal current and Rated operational current AC-20 / DC-20 (ambient 40°C)	In open air	A		63	80	125	200
	In enclosure	A		63	80	125	160
Rated operational current	AC-21A	<415 V	A	63	80	125	200
		<500 V	A	63	80	125	200
		<690 V	A	63	80	125	160
	AC-22A	<415 V	A	63	80	125	200
		<500 V	A	63	80	125	200
		<690 V	A	63	80	125	160
	AC-23A	<415 V	A	63	75	90	160
		<500 V	A	45	58	70	160
		<690 V	A	20	20	50	160
Rated operational power	AC-23	220-240 V	kW	11	22	22	48
		400/415 V	kW	22	37	45	80/88
		500/690 V	kW	22/15	37/18.5	45	112/144
Rated breaking capacity in category AC-23	<415 V	A		360	640	720	1280
	<500 V	A		360	464	560	1280
	<690 V	A		160	160	400	1280
Rated conditional short-circuit current I_p (r.m.s.) and corresponding max allowed cut-off current \hat{I}_c	I_p 50 kA, 415 V	\hat{I}_c kA		13	13	16.5	-
	Max OFA_fuse size gG/aM	A		100/80	100/80	125/125	-
The cut-off currents \hat{I}_c refers to values listed by fuse manufacturers (single phase test acc. to IEC60269)	I_p 100 kA, 500 V	\hat{I}_c kA		-	-	-	40.5
	Max OFA_fuse size gG/aM	A		-	-	-	315/315
Rated short-time withstand current I_{CW} (r.m.s.)	690 V, 1s	kA		1	1.5	2.5	-
	1000 V, 1s	kA		-	-	-	8
Rated short circuit making capacity I_{CM} (peak)	690 V	kA		1.4	2.1	3.6	-
	1000 V	kA		-	-	-	30
Cable Size (cu-wire size suitable for terminal clamps)		mm		1.5-35	1.5-35	10-70	-
Terminal bolt size				-	-	-	M8x25

1) The value is 92 kA for 4-pole switch-disconnectors

2) Acc. to IEC60947-1, § 6.1.1

								
	OT200E	OT250E	OT315E	OT400E	OT630E	OT800E	OT1000E	
	OT200E03P	OT250E03P	OT315E03P	OT400E03P	OT630E03P	OT800E03P	OT1000E12P	
	OT200E04P	OT250E04P	OT315E04P	OT400E04P	OT630E04P	OT800E04P	OT1000E22P	
	1000	1000	1000	1000	1000	1000	1000	
	200	250	315	400	630	800	1000 ²⁾	
	200	250	315	400	630	800	1000 ²⁾	
	200	250	315	400	630	800	1000	
	200	250	315	400	630	800	1000	
	200	250	315	400	630	800	1000	
	200	250	315	400	630	800	1000	
	200	250	315	400	630	800	1000	
	200	250	315	400	630	800	1000	
	200	250	315	400	630	800	1000	
	60	75	100	132	200	250	-	
	110	140/145	160/180	220/230	355	450	560	
	132/200	170/250	220/315	280/400	400/630	560/800	710/1000	
	1600	2000	2520	3200	5040	6400	10000	
	1600	2000	2520	3200	5040	6400	10000	
	1600	2000	2520	3200	5040	6400	10000	
	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	
	40.5	-	61.5	-	90	-	106	
	315/315	-	500/450	-	800/1000	-	1250/1250	
	-	-	-	-	-	-	50	
	8	-	15	-	20	-	-	
	-	-	-	-	-	-	110 ¹⁾	
	30	-	65	-	80	-	-	
	-	-	-	-	-	-	-	
	M8x25	-	M10x30	-	M12x40	-	M12x50	



Enclosed Fuse Switches (FSB)

Technical Data for Fuse Switches (OS)

Fuse Switches range from 32A to 800A, 690 V

Tested according to IEC60947-3

- Main switches
- Motor circuit switches
- Isolator switches
- Local safety switches
- Special switches



Type		OS32GB	OS63GB	OS100GB	OS160GB	
Fuse Switches	3 pole	OS32GB03P	OS63GB03P	OS100GB03P	OS160GB03P	
	4 pole	OS32GB04N1P	OS63GB04N1P	OS100GB04N1P	OS160GB04N1P	
Rated insulation voltage and Rated operational voltage AC-20 and DC-20	Pollution degree 3 V	1000	1000	1000	1000	
Dielectric strength	50Hz 1min kV	10	10	10	10	
Rated impulse with standard voltage	kV	12	12	8	8	
Rated thermal current in ambient 35°C and temporarily 40°C ⁵⁾ /max. fuse power dissipation ¹⁾	In open air A/W	32/7.5	63/7.5	100/12	160/12	
	In enclosure ²⁾ A/W	32/7.5	63/7.5	100/12	160/12	
Rated operational current AC-21A / AC-22A / AC-23A	<500 V A	32/32/32	63/63/63	100/100/100	160/160/160	
	690 V A	32/32/32	63/63/63	100/100/100	160/160/160	
Rated breaking capacity in category AC-23	≤690 V A	504	504	1280	1280	
Rated conditional short-circuit current I _p (r.m.s.) and corresponding max. allowed cut-off current I _c . <small>The cut-off currents I_c refers to values listed by fuse manufacturers (single phase test acc. to IEC60269)</small>	I _p 50 kA, 415 V I _c kA	13.5	13.5	23.5	23.5	
	Max BS fuse size gG/gM A	(80/63)	(80/63)	(160/160)	(160/160)	
	I _p 80 kA, 690 V I _c kA	11.5	11.5	20.5	20.5	
	Max BS fuse size gG/gM A	(50/50)	(50/50)	(125/160)	(125/160)	
Rated operational power, AC-23A ⁴⁾	230 V kW	7.5	18.5	30	45	
The kW-ratings are accurate for three-phase 1500 R.P.M. standard asynchronous motors	400 V kW	15	30	55	75	
	415 V kW	15	30	55	75	
	500 V kW	18.5	37	55	90	
	690 V kW	22	55	90	132	
Fuse Type, IEC 60269-2-1						
Size of fuse link bolts (BS88-2)		A2-A3 ⁶⁾	A2-A3 ⁶⁾	A2-A4 ³⁾	A2-A4 ³⁾	
Distance of fuse link bolts	mm	M5/73	M5/73	M5/73, M8/94	M5/73, M8/94	

Remark : Some fuse links limit these figures further. Starting current characteristics must be considered separately.

1) Ambient temperature 60°C : derating 20%

2) OS160G : Mounting on wall, horizontal fuses : derating 5%

3) Max fuse body diameter : 32mm

4) Some fuse links limit these figures further, starting current characteristics must be considered separately.

5) Acc to IEC60947-1, § 6.1.1. Minimum ambient temperature -5°C. Category B : -5°C...35°C

						
	OS200B	OS250B	OS315B	OS400B	OS630B	OS800B
	OS200B03P	OS250B03P	OS315B03P	OS400B03P	OS630B03P	OS800B03P
	OS200B04N2P	OS250B04N2P	OS315B04N2P	OS400B04N2P	OS630B04N2P	OS800B04N2P
	1000	1000	1000	1000	1000	1000
	10 12	10 12	10 12	10 12	10 12	10 12
	200/17 200/15	250/23 250/20	315/32 315/32	400/45 400/30	630/60 570/50	800/65 720/55
	200/200/200 200/200/200	250/250/250 250/250/250	315/315/315 315/315/315	400/400/400 400/400/400	630/630/630 630/630/630	800/800/800 800/800/800
	1600	2000	3200	3200	6400	6400
	28 (200/200M315)	28 (250/200M315)	44 (400/400M500)	44 (400/400M500)	67 -	67 -
	28 (200/200M250)	28 (250/200M250)	48 (400/400M450)	48 (400/400M450)	55 -	55 -
	60 110 110 132 200	75 140 145 170 250	100 160 180 220 315	132 220 230 280 400	200 355 355 450 630	250 450 450 560 710
	B1-B2 M8/111	B1-B3 ⁷⁾ M8/111	B1-B4 ⁸⁾ M8/111	B1-B4 ⁸⁾ M8/111	C1-C2 M10/133, 184	C1-C3 M10/133, 184

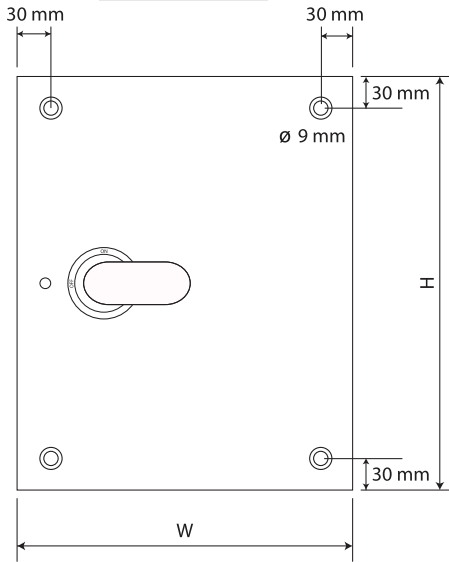
6) Max fuse body diameter : 22mm
7) Max fuse body diameter : 52mm
8) Max fuse body diameter : 62mm

Enclosed Switch-disconnectors and Fuse Switches

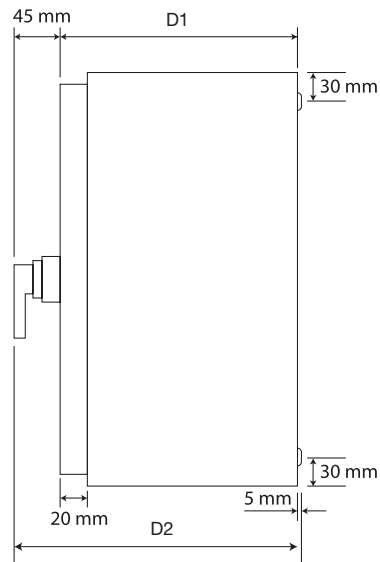
Dimensions (mm)

(4 × Ø DIA Fixing Holes)

Front View



Side View



Cable Entry Box

100 mm

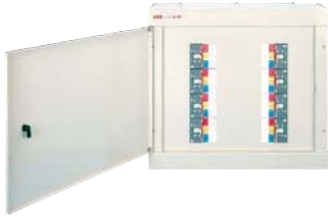
Cable Entry Box

100 mm

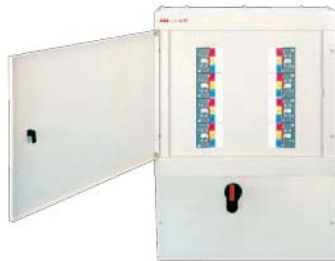
D1 - 20 mm

MCCB Board - MDS

Product Description



MDS-DB-CL



MDS-DB-MS

It mainly applies at or below AC rated voltage of 660V. It is also used for branch distribution or loading control board. The switches installed inside are **ABB Tmax & ABB Formula**. The MCCB board involved the following features: small size, high breaking capacity, compactness, good performance and high reliability. Also, it can be easily installed and safely used. Under ISO9002 quality assurance system, quality with long-term stability of product is ensured during manufacturing. It is in compliance with the technical specification and international standards (IEC60439).

It is widely applied in industry and distribution systems in modernised building such as residential building, high-rise building, hospital, plaza, terminus, entertainment and sport facilities.

Main application : Overload and short circuit protection.

Technical Data

System	: Main TPN power distribution systems and submain systems using MCCBs MCCB distribution panels before the tenants energy meters.
Rated current	: - main busbar or incoming MCCB rating higher than 630A on request - Up to 630A - outgoing MCCB outgoing circuit other rating also available on request - 10A - 160A
Rated insulation voltage	: 690V, 50 / 60Hz
Number of ways	: Up to 16 ways (other ways on request)
Technical data	: - rated short time withstand current of main busbar : 50kA, 1 second - rated short time withstand current of main busbar to neutral busbar : 30kA, 1 second - rated prospective current of main busbar (peak value) : 105kA - dielectric strength : 2500V, 60 seconds
Standard	: IEC 60439 Part 1
Degree of Protection (P)	: Standard : IP41 (IP42 on request)
Temperature rise test	: Complies with IEC 60439-1, EN 60439-1 requirements
Enclosure	: The enclosure is manufactured and tested at 1.5mm gauge galvanised steel sheet, 2.0mm gauge galvanised steel sheet available on request. The whole panel is coated with RAL 7035 polyester-epoxy powder.
Busbars	: The conductors of the boards are made of hard drawn, high conductivity, electrolysed tin-plated copper busbars with BS EN 13601 standards.
Installation	: Indoor, surface mounting (floor mounting on request)
Ambient temp	: -5 to +40°C

MCCB Board - MDS (Tmax)

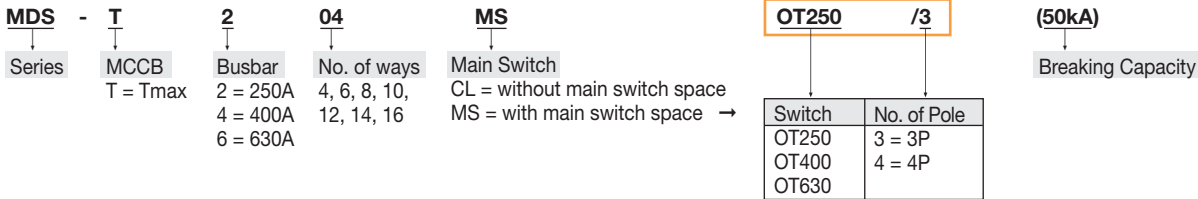
Order Information / Dimensions

It is suitable for the control of loading equipment or sub-distribution board. **Tmax & FORMULA** MCCB can be mounted on it.

Outgoing : Tmax T2/XT2 MCCB

MCCB Board		No. of Ways	Dimensions (mm)		
400A	630A		H	W	D
with Main Switch Space					
MDS-T404 MS-OT400/3 (50kA)	MDS-T604 MS-OT630/3 (50kA)	4	810	660	168
MDS-T406 MS-OT400/3 (50kA)	MDS-T606 MS-OT630/3 (50kA)	6	900		
MDS-T408 MS-OT400/3 (50kA)	MDS-T608 MS-OT630/3 (50kA)	8	990		
MDS-T410 MS-OT400/3 (50kA)	MDS-T610 MS-OT630/3 (50kA)	10	1080		
MDS-T412 MS-OT400/3 (50kA)	MDS-T612 MS-OT630/3 (50kA)	12	1170		
MDS-T414 MS-OT400/3 (50kA)	MDS-T614 MS-OT400/3 (50kA)	14	1350		
MDS-T416 MS-OT400/3 (50kA)	MDS-T616 MS-OT630/3 (50kA)	16	1440		
without Main Switch Space					
MDS-T404 CL (50kA)	MDS-T604 CL (50kA)	4	540	660	168
MDS-T406 CL (50kA)	MDS-T606 CL (50kA)	6	630		
MDS-T408 CL (50kA)	MDS-T608 CL (50kA)	8	720		
MDS-T410 CL (50kA)	MDS-T610 CL (50kA)	10	810		
MDS-T412 CL (50kA)	MDS-T612 CL (50kA)	12	900		
MDS-T414 CL (50kA)	MDS-T614 CL (50kA)	14	1080		
MDS-T416 CL (50kA)	MDS-T616 CL (50kA)	16	1170		

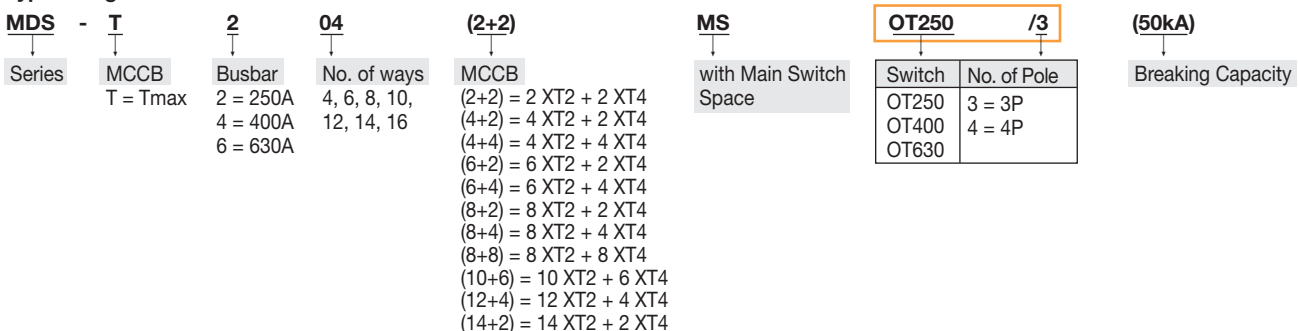
Type Designation :



Mixed Outgoing : Tmax XT2 & XT4 MCCB (with Main Switch Space)

MCCB Board		No. of Ways	Dimensions (mm)		
400A	630A		H	W	D
MDS-T404 (2+2) MS-OT400/3 (50kA)	MDS-T604 (2+2) MS-OT630/3 (50kA)	4	880	660	168
MDS-T406 (4+2) MS-OT400/3 (50kA)	MDS-T606 (4+2) MS-OT630/3 (50kA)	6	970		
MDS-T408 (4+4) MS-OT400/3 (50kA)	MDS-T608 (4+4) MS-OT630/3 (50kA)	8	1060		
MDS-T408 (6+2) MS-OT400/3 (50kA)	MDS-T608 (6+2) MS-OT630/3 (50kA)				
MDS-T410 (6+4) MS-OT400/3 (50kA)	MDS-T610 (6+4) MS-OT630/3 (50kA)	10	1150		
MDS-T410 (8+2) MS-OT400/3 (50kA)	MDS-T610 (8+2) MS-OT630/3 (50kA)				
MDS-T412 (8+4) MS-OT400/3 (50kA)	MDS-T612 (8+4) MS-OT630/3 (50kA)	12	1240		
MDS-T414 (12+2) MS-OT400/3 (50kA)	MDS-T614 (12+2) MS-OT630/3 (50kA)	14	1420		
MDS-T416 (8+8) MS-OT400/3 (50kA)	MDS-T616 (8+8) MS-OT630/3 (50kA)	16	1510		
MDS-T416 (10+6) MS-OT400/3 (50kA)	MDS-T616 (10+6) MS-OT630/3 (50kA)				
MDS-T416 (12+4) MS-OT400/3 (50kA)	MDS-T616 (12+4) MS-OT630/3 (50kA)				
MDS-T416 (14+2) MS-OT400/3 (50kA)	MDS-T616 (14+2) MS-OT630/3 (50kA)				

Type Designation :



MCCB Board - MDS (Tmax)

Order Information / Dimensions

Outgoing : Tmax T2/XT2 MCCB (with Individual Neutral Link)

MCCB Board			No. of Ways	Dimensions (mm)		
250A	400A	630A		H	W	D
MDS-T204 MS-OT250/3 NL (36kA)	MDS-T404 MS-OT400/3 NL (50kA)	MDS-T604 MS-OT630/3 NL (50kA)	4	630	660	168
MDS-T206 MS-OT250/3 NL (36kA)	MDS-T406 MS-OT400/3 NL (50kA)	MDS-T606 MS-OT630/3 NL (50kA)	6	720		
MDS-T208 MS-OT250/3 NL (36kA)	MDS-T408 MS-OT400/3 NL (50kA)	MDS-T608 MS-OT630/3 NL (50kA)	8	810		
MDS-T210 MS-OT250/3 NL (36kA)	MDS-T410 MS-OT400/3 NL (50kA)	MDS-T610 MS-OT630/3 NL (50kA)	10	900		
MDS-T212 MS-OT250/3 NL (36kA)	MDS-T412 MS-OT400/3 NL (50kA)	MDS-T612 MS-OT630/3 NL (50kA)	12	990		
MDS-T214 MS-OT250/3 NL (36kA)	MDS-T414 MS-OT400/3 NL (50kA)	MDS-T614 MS-OT630/3 NL (50kA)	14	1170		
MDS-T216 MS-OT250/3 NL (36kA)	MDS-T416 MS-OT400/3 NL (50kA)	MDS-T616 MS-OT630/3 NL (50kA)	16	1260		
MDS-T218 MS-OT250/3 NL (36kA)	MDS-T418 MS-OT400/3 NL (50kA)	MDS-T618 MS-OT630/3 NL (50kA)	18	1350		

Type Designation :

MDS	-	T	2	04	MS	OT250 / 3	NL	(50kA)
Series		MCCB T = Tmax	Busbar 2 = 250A 4 = 400A 6 = 630A	No. of ways 4, 6, 8, 10, 12, 14, 16	with Main Switch Space	Switch OT250 3 = 3P OT400 4 = 4P OT630	with Individual Neutral Link	Breaking Capacity

MCCB Boards (1 way)

Type	Rated Current (A)	No. of Ways	Dimensions (mm)		
			H	W	D
3-Pole (with Neutral Link)					
MDS-T101 T2 3P MCCB BD	160	1	350	235	130
MDS-T201 T4 3P MCCB BD	250		450		
MDS-T401 T5 3P MCCB BD	400 / 630		550	305	
MDS-T601 T6 3P MCCB BD	630 / 800		750	455	
4-Pole					
MDS-T101 T1 4P MCCB BD	160	1	350	235	130
MDS-T101 T2 4P MCCB BD	160		350		
MDS-T201 T4 4P MCCB BD	250		450	305	
MDS-T401 T5 4P MCCB BD	400 / 630		550	305	
MDS-T601 T6 4P MCCB BD	630 / 800		750	455	

Incoming Bar (for OT)

Type	Rated Current (A)	Suitable for Main Switch
250A Incoming Bar	250	OT250
400A Incoming Bar	400	OT400
630A Incoming Bar	630	OT630

Remarks : 1) All the above products comply with the standard and received ASTA certificate IEC 60439-1
2) MDS...MS with space for main switch is suitable for load break switch OT250 above

MCCB Board

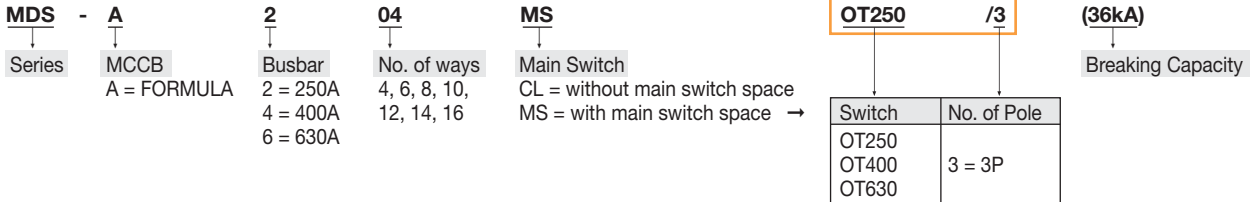
MCCB Board - MDS (FORMULA)

Order Information / Dimensions

Outgoing : FORMULA A1 MCCB

MCCB Board			No. of Ways	Dimensions (mm)		
250A	400A	630A		H	W	D
with Main Switch Space						
MDS-A204 MS-OT250/3 (36kA)	MDS-A404 MS-OT400/3 (36kA)	MDS-A604 MS-OT630/3 (36kA)	4	810	660	168
MDS-A206 MS-OT250/3 (36kA)	MDS-A406 MS-OT400/3 (36kA)	MDS-A606 MS-OT630/3 (36kA)	6	900		
MDS-A208 MS-OT250/3 (36kA)	MDS-A408 MS-OT400/3 (36kA)	MDS-A608 MS-OT630/3 (36kA)	8	990		
MDS-A210 MS-OT250/3 (36kA)	MDS-A410 MS-OT400/3 (36kA)	MDS-A610 MS-OT630/3 (36kA)	10	1080		
MDS-A212 MS-OT250/3 (36kA)	MDS-A412 MS-OT400/3 (36kA)	MDS-A612 MS-OT630/3 (36kA)	12	1170		
MDS-A214 MS-OT250/3 (36kA)	MDS-A414 MS-OT400/3 (36kA)	MDS-A614 MS-OT630/3 (36kA)	14	1350		
MDS-A216 MS-OT250/3 (36kA)	MDS-A416 MS-OT400/3 (36kA)	MDS-A616 MS-OT630/3 (36kA)	16	1440		
without Main Switch Space						
MDS-A204 CL (36kA)	MDS-A404 CL (36kA)	MDS-A604 CL (36kA)	4	540	660	168
MDS-A206 CL (36kA)	MDS-A406 CL (36kA)	MDS-A606 CL (36kA)	6	630		
MDS-A208 CL (36kA)	MDS-A408 CL (36kA)	MDS-A608 CL (36kA)	8	720		
MDS-A210 CL (36kA)	MDS-A410 CL (36kA)	MDS-A610 CL (36kA)	10	810		
MDS-A212 CL (36kA)	MDS-A412 CL (36kA)	MDS-A612 CL (36kA)	12	900		
MDS-A214 CL (36kA)	MDS-A414 CL (36kA)	MDS-A614 CL (36kA)	14	1080		
MDS-A216 CL (36kA)	MDS-A416 CL (36kA)	MDS-A616 CL (36kA)	16	1170		

Type Designation :



MCCB Board - MDS (FORMULA)

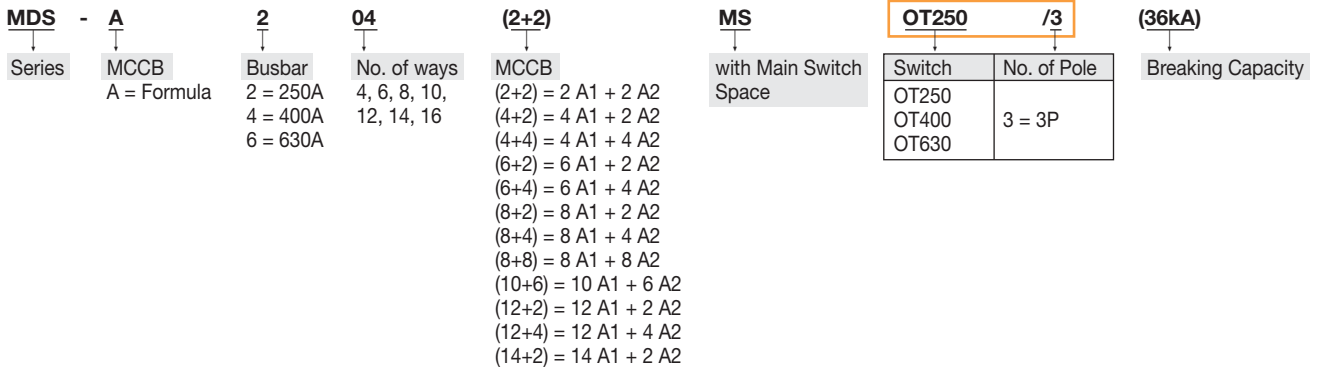
Order Information / Dimensions

Mixed Outgoing : FORMULA A1 & A2 MCCB (with Main Switch Space)

MCCB Board			No. of MCCB		No. of Ways	Dimensions (mm)		
250A	400A	630A	A1	A2		H	W	D
MDS-A204 (2+2) MS-OT250/3 (36kA)	MDS-A404 (2+2) MS-OT400/3 (36kA)	MDS-A604 (2+2) MS-OT630/3 (36kA)	2	2	4	880	660	168
-	MDS-A406 (2+4) MS-OT400/3 (36kA)	MDS-A606 (2+4) MS-OT630/3 (36kA)	2	4	6	970		
MDS-A206 (4+2) MS-OT250/3 (36kA)	MDS-A406 (4+2) MS-OT400/3 (36kA)	MDS-A606 (4+2) MS-OT630/3 (36kA)	4	2				
MDS-A208 (4+4) MS-OT250/3 (36kA)	MDS-A408 (4+4) MS-OT400/3 (36kA)	MDS-A608 (4+4) MS-OT630/3 (36kA)	4	4	8	1060		
MDS-A208 (6+2) MS-OT250/3 (36kA)	MDS-A408 (6+2) MS-OT400/3 (36kA)	MDS-A608 (6+2) MS-OT630/3 (36kA)	6	2				
MDS-A210 (6+4) MS-OT250/3 (36kA)	MDS-A410 (6+4) MS-OT400/3 (36kA)	MDS-A610 (6+4) MS-OT630/3 (36kA)	6	4	10	1150		
MDS-A210 (8+2) MS-OT250/3 (36kA)	MDS-A410 (8+2) MS-OT400/3 (36kA)	MDS-A610 (8+2) MS-OT630/3 (36kA)	8	2				
MSD-A212 (8+4) MS-OT250/3 (36kA)	MDS-A412 (8+4) MS-OT400/3 (36kA)	MDS-A612 (8+4) MS-OT630/3 (36kA)	8	4	12	1240		
MSD-A212 (10+2) MS-OT250/3 (36kA)	MDS-A412 (10+2) MS-OT400/3 (36kA)	MDS-A612 (10+2) MS-OT630/3 (36kA)	10	2				
-	MDS-A414 (10+4) MS-OT400/3 (36kA)	MDS-A614 (10+4) MS-OT630/3 (36kA)	10	4	14	1420		
MSD-A214 (12+2) MS-OT250/3 (36kA)	MDS-A414 (12+2) MS-OT400/3 (36kA)	MDS-A614 (12+2) MS-OT630/3 (36kA)	12	2				
-	MDS-A416 (8+8) MS-OT400/3 (36kA)	MDS-A616 (8+8) MS-OT630/3 (36kA)	8	8	16	1510		
	MDS-A416 (10+6) MS-OT400/3 (36kA)	MDS-A616 (10+6) MS-OT630/3 (36kA)	10	6				
	MDS-A416 (12+4) MS-OT400/3 (36kA)	MDS-A616 (12+4) MS-OT630/3 (36kA)	12	4				
MSD-A216 (14+2) MS-OT250/3 (36kA)	MDS-A416 (14+2) MS-OT400/3 (36kA)	MDS-A616 (14+2) MS-OT630/3 (36kA)	14	2				

MCCB Board

Type Designation :



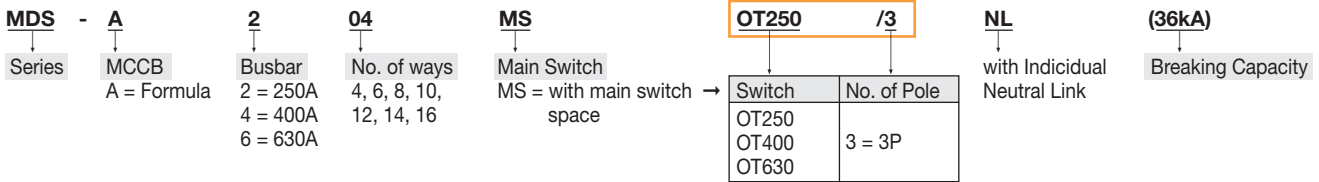
MCCB Board - MDS (FORMULA)

Order Information / Dimensions

Outgoing : FORMULA A2 MCCB (with Individual Neutral Link)

MCCB Board			No. of Ways	Dimensions (mm)		
250A	400A	630A		H	W	D
MDS-A204 MS-OT250/3 NL (36kA)	MDS-A404 MS-OT400/3 NL (36kA)	MDS-A604 MS-OT630/3 NL (36kA)	4	630	660	168
MDS-A206 MS-OT250/3 NL (36kA)	MDS-A406 MS-OT400/3 NL (36kA)	MDS-A606 MS-OT630/3 NL (36kA)	6	720		
MDS-A208 MS-OT250/3 NL (36kA)	MDS-A408 MS-OT400/3 NL (36kA)	MDS-A608 MS-OT630/3 NL (36kA)	8	810		
MDS-A210 MS-OT250/3 NL (36kA)	MDS-A410 MS-OT400/3 NL (36kA)	MDS-A610 MS-OT630/3 NL (36kA)	10	900		
MDS-A212 MS-OT250/3 NL (36kA)	MDS-A412 MS-OT400/3 NL (36kA)	MDS-A612 MS-OT630/3 NL (36kA)	12	990		
MDS-A214 MS-OT250/3 NL (36kA)	MDS-A414 MS-OT400/3 NL (36kA)	MDS-A614 MS-OT630/3 NL (36kA)	14	1170		
MDS-A216 MS-OT250/3 NL (36kA)	MDS-A416 MS-OT400/3 NL (36kA)	MDS-A616 MS-OT630/3 NL (36kA)	16	1260		
MDS-A218 MS-OT250/3 NL (36kA)	MDS-A418 MS-OT400/3 NL (36kA)	MDS-A618 MS-OT630/3 NL (36kA)	18	1350		

Type Designation :



MCCB Boards (1 way)

Type	Rated Current (A)	No. of Ways	Dimensions (mm)		
			H	W	D
3-pole (with Neutral link)					
MDS-A101 A1 3P MCCB BD	125	1	350	235	130
MDS-A201 A2 3P MCCB BD	250		450		
MDS-A401 A3 3P MCCB BD	400		550	305	
MDS-A601 A3 3P MCCB BD	630		550		
4-pole					
MDS-A101 A1 4P MCCB BD	125	1	350	235	130
MDS-A201 A2 4P MCCB BD	250		450		
MDS-A401 A3 4P MCCB BD	400		550	305	
MDS-A601 A3 4P MCCB BD	630		550		

Incoming Bar (for OT)

Type	Rated Current (A)	Suitable for Main Switch
250A Incoming Bar	250	OT250
400A Incoming Bar	400	OT400
630A Incoming Bar	630	OT630

MCCB Board - MDS (Tmax)

Technical Data



Type			Tmax XT2			Tmax XT4			Tmax T5		
Rated uninterrupted current I_u	A		160			250			400/630		
Rated current I_n	A		16...160			16...250			320...630		
Poles	Nr		3/4			3/4			3/4		
Rated operational voltage U_e	(AC) 50-60 Hz	V	690			690			690		
	(DC)	V	500			750			750		
Rated insulation voltage U_i	V		800			1000			1000		
Rated impulse withstand voltage U_{imp}	kV		8			8			8		
Dielectric test voltage at ind. freq. for 1 min.	V		3000			3500			3500		
Breaking capacity			N	S	H	N	S	H	N	S	H
Rated ultimate short-circuit breaking capacity I_{cu}											
	(AC) 50-60 Hz 220/230 V	kA	65	85	100	70	85	85	70	85	100
	(AC) 50-60 Hz 380/400/415 V	kA	36	50	70	36	50	70	36	50	70
Rated service short-circuit breaking capacity I_{cs}											
	(AC) 50-60 Hz 220/230 V	% I_{cu}	100%								
	(AC) 50-60 Hz 380/400/415 V	% I_{cu}	100%								
Rated short-circuit making capacity I_{cm}											
	(AC) 50-60 Hz 220/230 V	kA	143	187	220	154	187	220	154	187	220
	(AC) 50-60 Hz 380/400/415 V	kA	75.6	105	154	75.6	105	154	75.6	105	154
Protection release unit											
Thermal-magnetic			TMD/TMA			TMA			TMA (up to 500 A)		
Electronic with/without Earth Fault			Ekip - LSIG			Ekip - LSIG			PR222DS/P - LSIG		
			Ekip - LS/I			Ekip - LS/I			PR222DS/P - LS/I		
Utilisation category (IEC 60947-2)			A			A			B (400 A) ¹⁾ - A (630 A)		
Standard			IEC 60947-2								
Dimensions (W x D x H)	3P	mm	90 x 82.5 x 130			105 x 82.5 x 160			143 x 103.5 x 205		
	4P	mm	120 x 82.5 x 130			140 x 82.5 x 160			186 x 103.5 x 205		
weight	3P	kg	1.2			2.5			3.25		
	4P	kg	1.6			3.5			4.15		

1) $I_{cw} = 5kA$

MCCB Board - MDS (FORMULA)

Technical Data

MCCB Board



Type		A1				A2		A3	
Rated uninterrupted current I_u	A	125				250		400/630	
Rated current I_n	A	15...125				125...250		320...630	
Rated operational voltage U_e	(AC) 50-60 Hz	550				550		550	
	(DC)	250				250		250	
Rated insulation voltage U_i	V	690				690		690	
Rated impulse withstand voltage U_{imp}	kV	6				6		6	
Mounting		Fixed				Fixed		Fixed	
Breaking capacity		C	N			C	N	N	S
Poles	Nr	3, 4	1	2	3, 4	3, 4	3, 4	3, 4	3, 4
Rated ultimate short-circuit breaking capacity I_{cu}									
240 V 50-60 Hz (AC)	kA	30	25	50	100	50	85	85	100
380 V 50-60 Hz (AC)	kA	25	-	36	36 ⁴⁾	25	36	36	50
415 V 50-60 Hz (AC)	kA	25	-	30	36 ⁴⁾	25	36	36	50
Rated service short-circuit breaking capacity I_{cs}									
240 V 50-60 Hz (AC)	kA	50%	50%	50%	50%	50%	50%	50%	50%
380 V 50-60 Hz (AC)	kA	50%	-	50%	50%	50%	50%	50%	50%
415 V 50-60 Hz (AC)	kA	25% ²⁾	-	25%	25%	50%	50%	50%	50%
Rated short-circuit making capacity I_{cm}									
240 V 50-60 Hz (AC)	kA	63	52.5	105	220	105	187	187	220
380 V 50-60 Hz (AC)	kA	52.5	-	75.6	75.6	52.5	75.6	75.6	105
415 V 50-60 Hz (AC)	kA	52.5	-	63	63	52.5	75.6	75.6	105
Protection Release unit									
Thermal-magnetic TMF		■				■		■ (up to 500A)	
Electronic ELT LI		-				-		■ (630A)	
Utilisation category (IEC 60947-2)		A				A		A	
Standard		IEC 60947-2							
Dimensions (W x D x H)	1P	mm	25.4 x 60 x 130			35 x 60 x 150		-	
	2P	mm	50.8 x 60 x 130			70 x 60 x 150		-	
	3P	mm	76.2 x 60 x 130			105 x 60 x 150		139.5 x 103.5 x 205	
	4P	mm	101.6 x 60 x 130			140 x 60 x 150		186 x 103.5 x 205	
weight	1P	kg	0.245			0.37		-	
	2P	kg	0.47			0.73		-	
	3P	kg	0.7			1.1		3.25	
	4P	kg	0.925			1.45		4.15	

1) 5kA 2) 9kA 3) 2.5kA 4) $I_n = 15A, I_{cu} = 30kA$

Enclosed Auto Transfer Switch - ATS

Order Information / Dimensions



ATS (MCCB)

Enclosed Auto Transfer Switch - ATS (MCCB)

Type	Rated Current (A)	Breaking Capacity (kA)	4P MCCB	Dimensions (mm)		
				H	W	D
Enclosed ATS250S-CB021 (220V) R100 4P HK	100	50	T4S	750	650	400
Enclosed ATS250S-CB021 (220V) R160 4P HK	160			750		
Enclosed ATS250S-CB021 (220V) R200 4P HK	200			850		
Enclosed ATS250S-CB021 (220V) R250 4P HK	250			850		
Enclosed ATS400S-CB021 (220V) R320 4P HK	320		T5S	1200	900	400
Enclosed ATS400S-CB021 (220V) R400 4P HK	400					
Enclosed ATS630S-CB021 (220V) R630 4P HK	630					

Remarks :

Automatic Transfer Switch includes:

- 1 X Enclosure
 - 2 X 4P MCCB
 - 2 X AC Motor
 - 1 X Mechanical Interlock
 - 1 X Automatic Control Module
- (Automatic Control Module built-in undervoltage relay and timers function to control the switching. Solutions for other rating and requirement are available upon request.)



OTM

Enclosed Auto Transfer Switch - OTM

Type	Rated Current (A)	Dimensions (mm)		
		H	W	D
Enclosed OTM160E4C3D230C	160	700	600	300
Enclosed OTM200E4C3D230C	200			
Enclosed OTM250E4C3D230C	250			
Enclosed OTM315E4C3D230C	315	800	700	400
Enclosed OTM400E4C3D230C	400			
Enclosed OTM630E4C3D230C	630	1000	800	400
Enclosed OTM800E4C3D230C	800			
Enclosed OTM1000E4C3D230C	1000	1200	1000	500
Enclosed OTM1250E4C3D230C	1250			
Enclosed OTM1600E4C3D230C	1600			

Remarks :

Automatic Transfer Switch includes:

- 1 X Enclosure
 - 1 X Motorize Changeover Switch
 - 1 X Mechanical Interlock (built-in)
 - 1 X Automatic Control Module
- (Automatic Control Module built-in undervoltage relay and timers function to control the switching. Solutions for other rating and requirement are available upon request.)

Enclosed Auto Transfer Switch - OTM_C_3D/8D



Technical Data



Acc. to IEC60947-6-1 and IEC60947-3

Type				OTM160C_D	OTM200C_D	OTM250C_D
Rated insulation voltage U_i	50 / 60Hz		V	1000		
Rated impulse withstand voltage U_{imp}			kV	12		
Rated thermal current and rated operating current	AC - 20 / Ambient temperature 40°C	Out box	A	160	200	250
		In box	A			
Minimum cable cross-section			Copper cables mm ²	70	95	120
Rated operational current	AC - 23A	415V	A	160	200	250
	AC - 31B	415V	A			
	AC - 33B	415V	A			
Rated breaking capacity	AC - 33B	415V	A	1280	1600	2000
Rated conditional short-circuit current	I_q (RMS)	50kA, 415V kA		40.5		
	Max. OFA - fuse gG / aM	A/A		355 / 315		
Rated short-time withstand current	I_{cw} (RMS)	690V 0.1s kA		15		
Rated short-circuit making capacity	Peak I_{cm}	415V kA		30		
Conversion time	The controller does not set the delay in the case			s		
				≤ 1.5		
Switch normal max. frequency conversion operation			t/min	1		
Switch short max. frequency conversion operation		≤ 10 times	t/min	10		
Mechanical life	O-I-O-II-O		t	10000		
Operating ambient temperature				°C		
				-5 - + 40		
Storage Temperature				°C		
				-40 - + 70		
Terminal screw size	Metric thread Ø x L		mm	M8 x 25		
Terminal tightening torque				Nm		
				15 - 22		
Operating torque				Nm		
				7		

Enclosed Auto Transfer Switch

							
	OTM315C_D	OTM400C_D	OTM630C_D	OTM800C_D	OTM1000C_D	OTM1250C_D	OTM1600C_D
	1000						
	12						
	315	400	630	800	1000	1250	1600
	185	240	2 x 185	2 x 240	2 x 300	2 x 400	2 x 500
	315	400	630	800	1000	1250	1250
	2520	3200	5040	6400	10000		
	50.5		60		100		
	500 / 500		800 / 1000		1250 / 1250		
	25		38		50		
	65		80		92		
	≤ 1.5		≤ 2		≤ 3		
	1					0.5	
	10					5	
	8000		5000		3000		
	-5 - + 40						
	-40 - + 70						
	M10 x 35		M12 x 40		M12 x 60		
	30 - 44		50 - 75		50 - 75		
	16		27		78		

Enclosed Auto Transfer Switch

Change-over contactors - 4 Pole

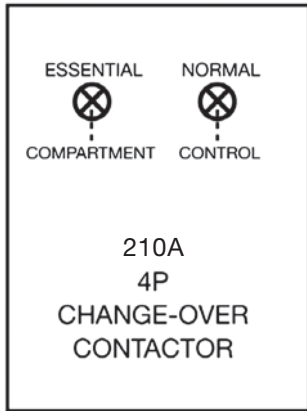
Technical Data



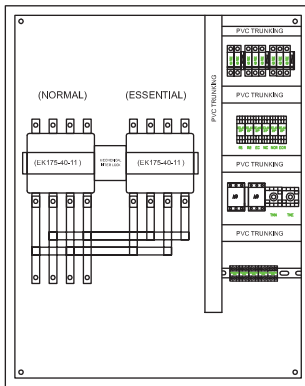
AC Control supply		Type	A45	A75	EK110	EK175	EK370	EK550
DC Control supply		Type	AE45	AE75	EK110	EK175	EK370	EK550
AC / DC Control supply		Type	AF45	AF75	–	–	–	–
IEC AC-1 Rated operational current	$\theta \leq 40^{\circ}\text{C}, 690\text{ V}$	A	70	125	200	300	550	800
		A	60	105	180	270	470	650
IEC AC-3 Utilization Category Ie/Max. rated operational current AC-3	$\theta \leq 55^{\circ}\text{C}, 380\text{-}400\text{ V}$	A	37	75	120	210	400	550
UL/CSA General use rating	600 V	A	80	105	170	250	420	540
With conductor cross sectional area		mm ²	25	50	95	185	2 x 185	2 x 240
Rated operational voltage Ue max.		V	690	690	1000	1000	1000	1000
Auxillary contact blocks	Front mounting		CA5-10 (1 x N.O.) , CA5-01 (1 x N.C.)		–			
	Side mounting		CAL5-11 (1 x N.O. + 1 x N.C.)		CAL16-11 (1 x N.O. + 1 x N.C.)			
Interlocking units (compact reversing contactors)	Mechanical		–				VH800	
	Mechanical / Electrical		VE5-2		VH145	VH300	–	

Enclosed Auto Change-over Contactor Switch Panel - COC

Order Information / Dimensions



COC EK175



COC EK175
(Internal Arrangement)

Auto Change-over Contactor Switch Panel - COC

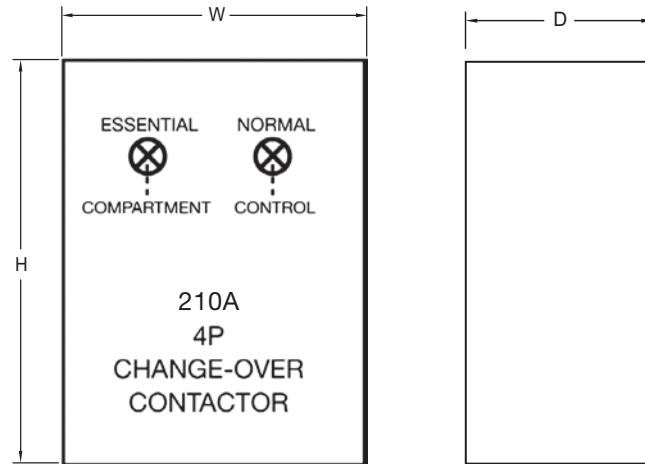
Type	Max. AC 1 $\theta \leq 40^\circ\text{C}$ (A)	Max. AC 3 400 V (A)	Dimensions (mm)		
			H	W	D
COC A45	70	37	500	300	200
COC A75	125	75			
COC EK110	200	120	700	500	300
COC EK150	250	145			
COC EK175	300	210			
COC EK210	350	210			
COC EK370	550	400	800	700	400
COC EK550	800	550			

Remarks :

Auto change-over contactor panel includes:

- 1 X 1.5 mm Enclosure
- 2 X 4P Contactor
- 1 X Mechanical Interlock
- 1 X Automatic Control Circuit
(Automatic Control Circuit includes one undervoltage relay and two timers to control the switching. Solutions for other rating and requirement are available upon request.)

Dimensions (mm)

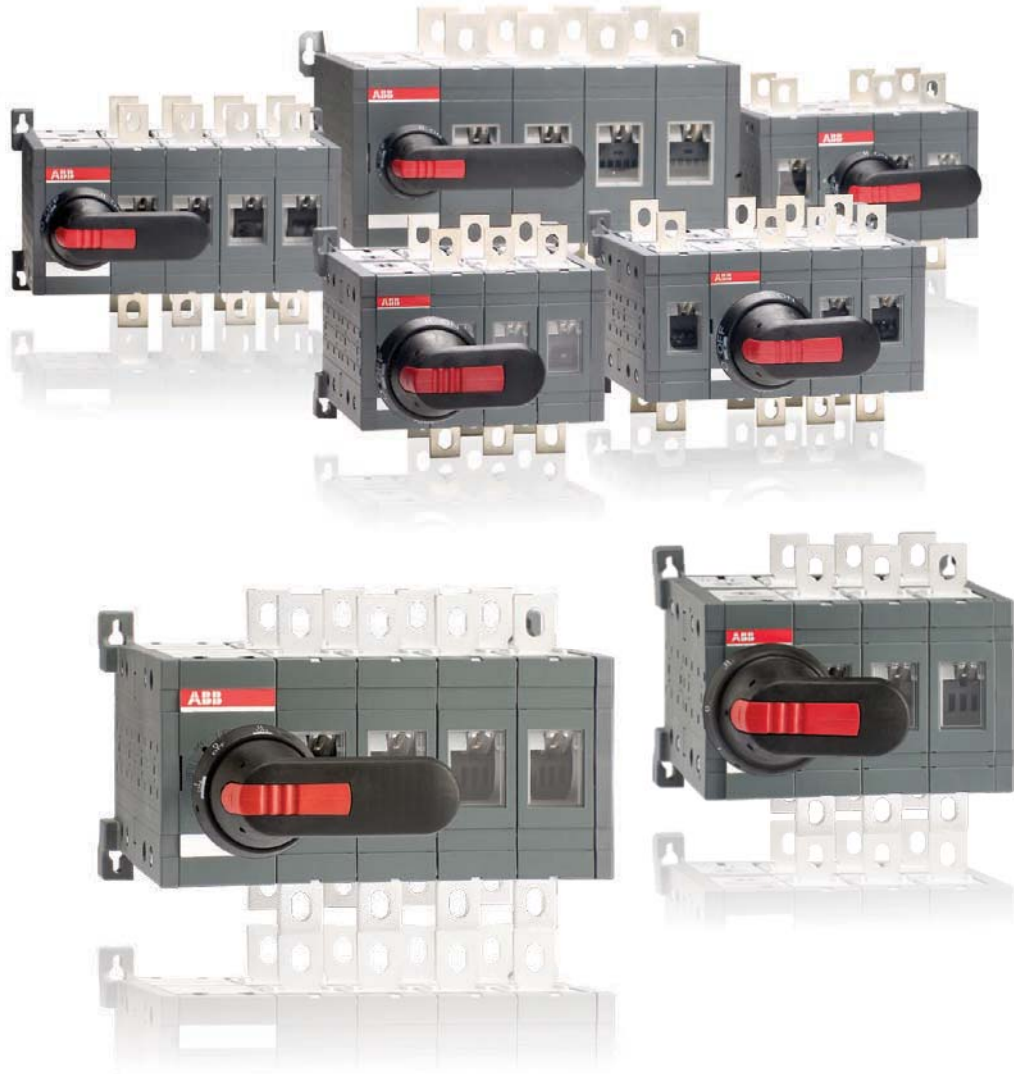


Front view

Side view

Enclosed Auto Change-over contactor

Manual Change-over Switch



Enclosed Manual Change-over Switch - MTS

Order Information / Dimensions



MTS

Manual Change-over Switch - MTS (Open Transition)

Type		Rated Operational Current (A)		Dimensions (mm)		
with Pilot light	without Pilot light	AC23A	AC33B	H	W	D
Enclosed MTS-OT160E04CP c/w Pilot Light	Enclosed MTS-OT160E04CP	160	160			
Enclosed MTS-OT200E04CP c/w Pilot Light	Enclosed MTS-OT200E04CP	200	200	600	500	280
Enclosed MTS-OT250E04CP c/w Pilot Light	Enclosed MTS-OT250E04CP	250	250			
Enclosed MTS-OT315E04CP c/w Pilot Light	Enclosed MTS-OT315E04CP	315	315	700	600	300
Enclosed MTS-OT400E04CP c/w Pilot Light	Enclosed MTS-OT400E04CP	400	400			
Enclosed MTS-OT630E04CP c/w Pilot Light	Enclosed MTS-OT630E04CP	630	630	900	800	400
Enclosed MTS-OT800E04CP c/w Pilot Light	Enclosed MTS-OT800E04CP	800	800			

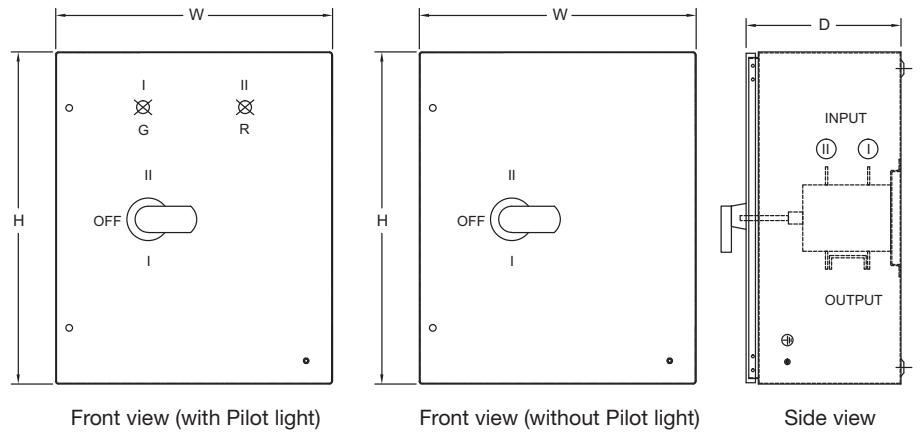
Remarks :

Manual change-over switch includes:

- 1 X 1.5 mm Enclosure
- 1 X Change-over Switch
- 1 X SH202 MCB (for Pilot light)
- 1 X Common Bar (4pcs)
- 2 X OT Auxiliary Contact (for Pilot light)

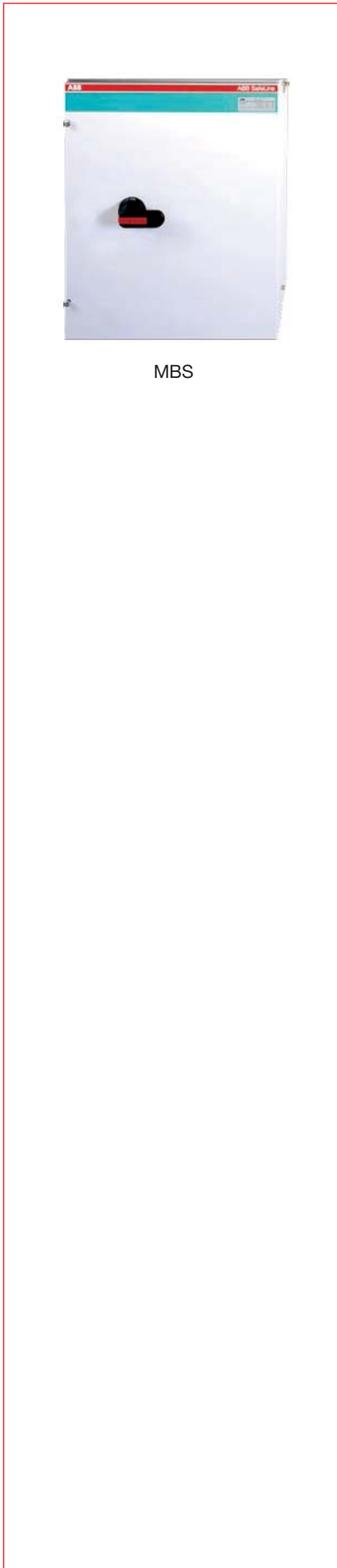
Dimensions (mm)

MTS



Enclosed Manual Change-over Switch - MBS

Order Information / Dimensions



MBS

Maintenance By-Pass Switch (changeover) - MBS (for UPS)

(Closed Transition-make-before-break)

Type		Rated Operational Current (A)		Dimensions (mm)		
with Pilot light	without Pilot light	AC23A	AC33B	H	W	D
Enclosed MBS-OT160E04CLP c/w Pilot Light	Enclosed MBS-OT160E04CLP	160	160			
Enclosed MBS-OT200E04CLP c/w Pilot Light	Enclosed MBS-OT200E04CLP	200	200	600	500	280
Enclosed MBS-OT250E04CLP c/w Pilot Light	Enclosed MBS-OT250E04CLP	250	250			
Enclosed MBS-OT315E04CLP c/w Pilot Light	Enclosed MBS-OT315E04CLP	315	315	700	600	300
Enclosed MBS-OT400E04CLP c/w Pilot Light	Enclosed MBS-OT400E04CLP	400	400			
Enclosed MBS-OT630E04CLP c/w Pilot Light	Enclosed MBS-OT630E04CLP	630	630	900	800	400
Enclosed MBS-OT800E04CLP c/w Pilot Light	Enclosed MBS-OT800E04CLP	800	800			

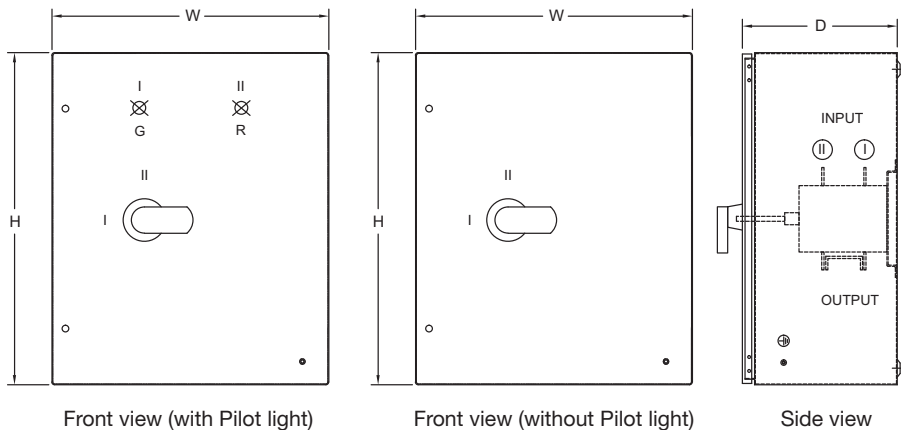
Remarks :

Maintenance By-Pass Switch includes:

- 1 x 1.5mm Enclosure
- 1 X Maintenance By-Pass Switch
- 1 X SH202 MCB (for Pilot light)
- 1 X Common Bar (4pcs)
- 2 X OT Auxiliary Contact (for Pilot light)

Dimensions (mm)

MBS



Enclosed Manual Change-over Switch

Busbar Chamber System - BBS

Technical Data / Order Information / Dimensions

ABB "BBS Busbar Chamber Systems" is made of 1.5mm or 2mm steel plate finished with impact-resistant stove textured grey epoxy powder coating to RAL7032 (standard) or RAL7035 and other alternative colours on request.

The BBS Busbar Chamber is a three phase four wire (Full Neutral) system and suitable to future extension at both side.

All Busbars provided are hard drawn, high conductivity, electro tin-plated copper per phase for 400A or above. The casing of the busbar chamber is part of the earthing as tested (standard production).



Technical Data

ABB "BBS Busbar Chamber Systems" are designed, manufactured and tested in the IEC60439 Part 2, BSEN60439 Part 2 :

- **Rated insulation voltage** : up to 1000VAC and 6kV impulse voltage
- **Rated Current** : 400A, 630A, 800A
(higher current rating can be available on request)
- **Rated operating frequency** : 50Hz / 60Hz
- **Dielectric Power frequency Test** : 2500VAC for 60 sec (standard)
3500VAC for 60 sec (on request)
- **Temperature rise test** : in compliance to BSEN60439-1
- **Degree of Protection** : IP41
- **Short circuit test current** : 40kA 1 sec / 84kA peak for 800A
40kA fused short circuit current for 400A / 630A
- **Enclosure thickness** : 1.5mm (400A), 2mm (630A, 800A)



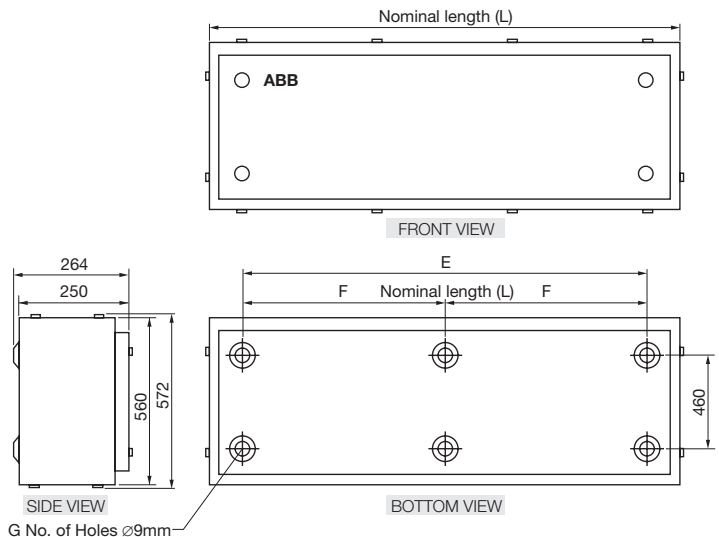
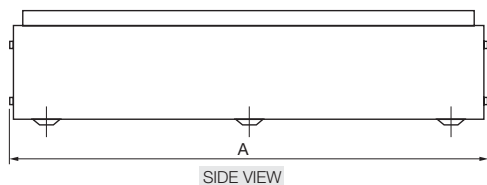
Order Information / Dimensions

Rated Current : 400A, 630A and 800A in 7 nominal lengths as below.

Type	Description	Dimensions (mm)				
		Nominal Length (L)	A	E	F	G (No. of Holes)
BBS 400A	400A Busbar Chamber	570	582	520	-	4
		760	772	660	-	4
		950	962	850	-	4
BBS 630A	630A Busbar Chamber	1140	1152	1040	-	4
		1330	1342	1230	-	4
		1520	1532	1420	710	6
BBS 800A	800A Busbar Chamber	1710	1722	1610	805	6

Tee Off Cable Connector

Type	Rating
CCS 100A	100A
CCS 250A	250A
CCS 400A	400A
CCS 630A	630A
CCS 800A	800A



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In consideration of modifications to standards and materials, the characteristics and overall dimensions indicated in this catalogue may be considered binding only following confirmation by ABB.

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