Switch Disconnector Fuse

We touch your electricity everyday!

State of the art Manufacturing Facilities

Haridwar, Noida Ph-I
& Noida Ph-II Plant

C&S Electric Ltd.

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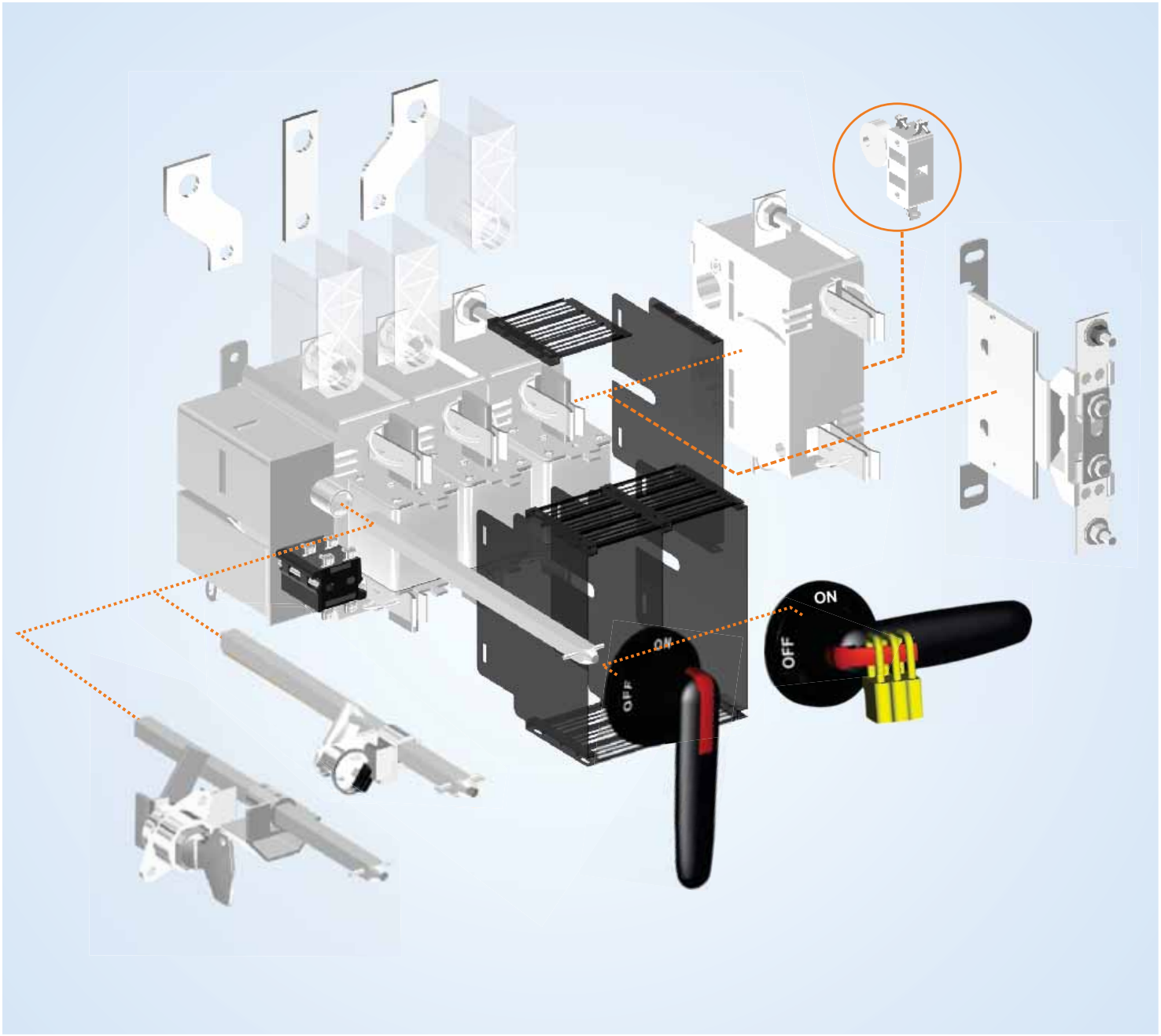
switch disconnector fuse 05 2012

C&S electric

Switch Disconnector Fuse



Integrating end user convenience with installation flexibility

C&S offers Switch Disconnector Fuse units from 32A to 800A ratings, 3 Pole as well as 4 Pole. These have AC23A utilisation category as per IEC 60947 / IS 13947. They are available with DIN as well as BS type fuse holder & suitable for operations upto 690V. They have been tested in independent & internationally acclaimed laboratories of ASTA for compliance to IEC standards, and at CPRI & ERDA for conformity to IS standards.

Modular yet rugged construction of the Switch Disconnector Fuse units gives Add – On pole flexibility while maintaining absolute reliability and 100% rating as the main poles. This arrangement is suitable for 3 Phase 3 Wire, 3 Phase 4 Wire as well as any type of Earthing and even for DC installation.

The mounting flexibility offers matchless benefit for use in MCC / PCC distribution boards or for standalone mountings. It is compact enough to occupy small panel space yet allowing installation as per convenience and rendering it safe for maintenance.

Multiple accessories to suit application requirements enhance flexibility of operation and the safety level of installation. It also ensures use in diverse applications.

The entire range of Switch Disconnector Fuse unit integrates end-user convenience with features suiting OEMs & Switchboard builder requirements.

For over 15 years now, with their rugged design combined with ease of operation and maintenance, they have stood the test of adverse environments in all climate of various countries. They have been used successfully in almost every industry, becoming the exclusive choice of every discerning user, be it – Power Plants, Building segments, Telecommunication field or Industries like – Steel, Chemical, Cement, Automobile, etc.

Modular and user friendly

Internationally Endorsed

Tested & Accepted World over

C&S Switch Disconnector Fuse units have been tested for their conformity to International as well as Indian Standards at various independent Laboratories like-ASTA for conformity to International Standards-IEC 60947-3 and CPRI, ERDA for conformity to Indian Standards IS 13947-3. These also conform to the safety regulations adopted in the European Union and carry the CE marking.

OEMs and panel assemblers can be re-assured that the design and quality is being used and exported to many countries world over.

ISO 9001 certified manufacturing facilities assure quality & consistency.

Flexible Design

Modular yet reliable construction

C&S Switch Disconnector Units have a modular assembly design, allowing 1 Pole to a 4 Pole combination. The flexibility of design lets the spring operating mechanism also to be placed in the side or in between the Poles.

Thus all possible combination like the TP / TP + Isolable Neutral / Four Pole in 2 options - Switched Neutral or Fused Neutral are obtainable. And each additional Pole retains the same reliability and 100% rating as the main phase Pole. As each Pole is independent of the other, its maintenance or replacement is easy and economical in the event of damage.

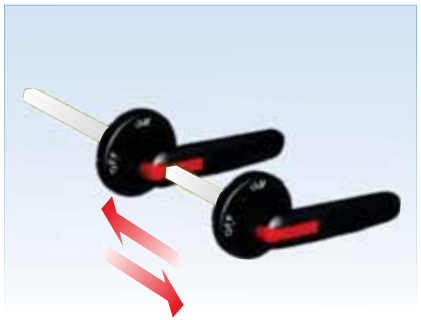
Unique Contact Mechanism

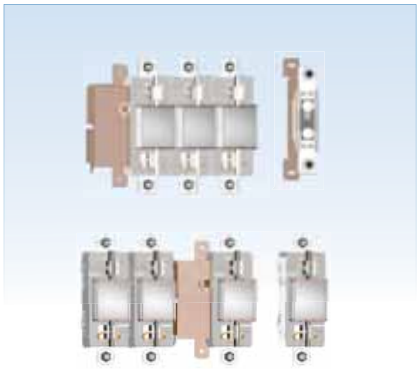
Efficient Switching & Long life

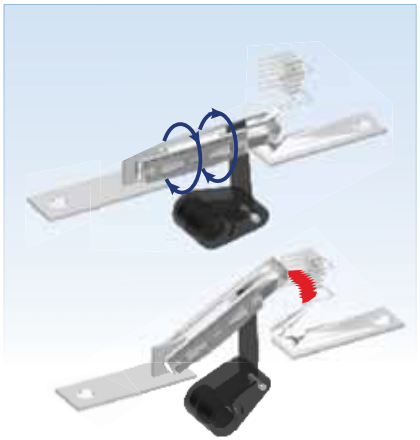
Switch Disconnector Fuse units of rating 200A and above employ unique Knife Contact Mechanism on both sides of the fuse. It uses the magnetic attraction principle in iron circuit on the moving contacts. When current increases, the contact force too increase, ensuring - good contacts at all times, high making and breaking capacity upto 690V and low temperature rise leading to long electrical life.

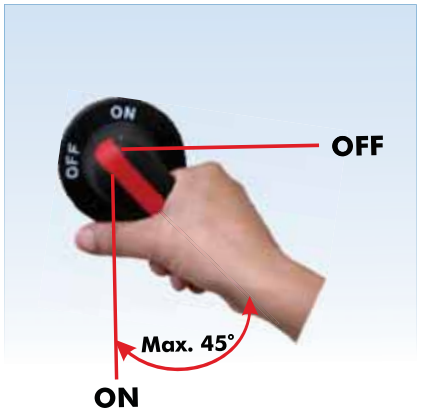
The special form of fixed contacts alongwith Arc – Chute fins blows away the arc in the Arc-Chute where it is swiftly extinguished under controlled conditions making it safer.

With every switching, the knife contacts clean themselves. This makes them perfectly suited for applications like Motors and capacitor switching. All these qualities makes them ideally suited for Indian conditions in general and for high pollution and corrosive conditions as in Chemical Plants, Cement Plants, Steel Plants, etc.









Easy Installation

Convenient, Swift & Economical

The handle in the C&S switch disconnector fuse unit has a telescopic shaft. The handle & shaft assembly adjusts to wide depth of the panel so there is no need to place a bracket below the switch while aligning it with enclosure door. It permits installation of the same switch in installations of different depths, without any modification or addition to the enclosures. Four hole handle fixing on the door permits last minute rotation of the switch inside the panel by 90 degrees or 180 degrees as per convenience, again without any modification to the door.

These time saving features increase the ease and flexibility of installation, and also reduce installation cost.

Accessories

Flexibility to suit Application

These units came with a multiple accessories to increase their suitability for diverse application, to enhance operational flexibility and to improve installation safety.

Handle mounting kit permits fixing complete Switch Disconnector unit inside the enclosure door so that switch can be operated only after opening the door. Auxiliary contacts permit electrical interlocking, remote indication and Alarm. Key Lock and Castle Lock help interlocking with different category of products.

Extended terminals allow further liberal termination or termination of large number of cables with higher clearances. Shrouds encase the terminals so that no falling hardware may get embedded between the terminals resulting in flashovers.

Switch Construction

Safety Built-in

C&S design introduced the concept of protection in case of welded contacts. In the event of high current and fuse fails to operate, this leads to welding of contacts. In C&S switches, the handle will not turn beyond 45 degrees from the ON position, which clearly indicates that the supply is ON and contacts get welded.

In OFF position, the fuse is discharged from both sides, permitting safe inspection or removal.

The individual pole is housed in fibreglass re-inforced insulating material that is self-extinguishing and can withstand high temperatures. The high tracking index makes these switches almost flashover proof and highly safe.

Door interlocking prevents it's opening in the ON position, guarding the operator against an accidental mishap. As a standard upto 3 padlocks are provided in the OFF position to prevent closing the circuit during maintenance work. They can also be provided for the ON position. Using a suitable gasket alongwith handle enhances ingress protection level to IP 65.

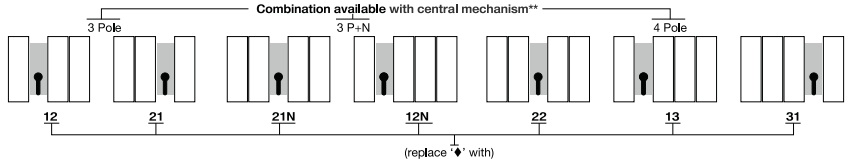
Technical Data

Common Characteristics

Conformity to Standards	-	IEC 60947-3 / IS 13947-3
Rated Operational Voltage (Ue)	V	415
Rated Operational Frequency	Hz	50 / 60
Suitability for Isolation	-	YES
Pollution Degree as per IEC / IS	-	3
Ambient / Cubicle Service Temp.	°C	45
IP Level after mounting	-	IP 54
Number of Poles (4P Neutrals-100%)	-	3P/TPN/4P

For side mechanism

Replace '♦' with
- 3 for 3 pole
- 3N for TPN
- 4FN for 4 pole



Replace '●' with 'D' in case of DIN type or 'B' in case of BS type

Parameters		32A	63A	100A	125A	160A	200A	250A	315A	400A	630A	800A
Type - CSSDF without Fuse Covers (side/central mechanism)		CSSDF32●♦	CSSDF63●♦	CSSDF100●♦	CSSDF125●♦	CSSDF160●♦	CSSDF200●♦	CSSDF250●♦	CSSDF315●♦	CSSDF400●♦	CSSDF630●♦	CSSDF800●♦
Type - CSSDF with Fuse Covers (side/central mechanism)		-	-	CSSDF100●♦FCC	CSSDF125●♦FCC	-	CSSDF200●♦FCC	CSSDF250●♦FCC	CSSDF315●♦FCC	CSSDF400●♦FCC	CSSDF630●♦FCC*	-
Rated Operational Current (Ie)	A	32	63	100	125	160	200	250	315	400	630	800
Max. Operational Voltage w/o derating	V	690	690	690	690	690	690	690	690	690	690	690
Rated Insulation Voltage (Ui)	V	750	750	750	750	750	750	750	750	750	750	750
Impulse Withstand Voltage (Uimp)	kV	12	12	12	12	12	12	12	12	12	12	12
Conventional Enclosed Thermal Rating @ 45°C (Ithe)	A	32	63	100	125	160	200	250	315	400	630	800
AC23A Utilisation Category Rating @ 415V	A	32	63	100	125	160	200	250	315	400	630	800
DC23A Utilisation Category Rating @ 220 V, 2 Poles in series	A	32	63	100	125	160	200	250	315	400	630	800
Rated Capacitor Power @ 415 V, 50 / 60 Hz	kVAR	15	30	45	50	60	90	115	145	180	250	310
Rated AC Making Capacity, 415V, 0.35 pf	A	320	630	1000	1250	1600	2000	2500	3150	4000	6300	8000
Rated AC Breaking Capacity, 415V, 0.35 pf	A	256	504	800	1000	1280	1600	2000	2520	3200	5040	6400
Rated DC Making / Breaking Capacity, 220V, L/R 15 ms	A	128	252	400	500	640	800	1000	1260	1600	2520	3200
Rated Conditional (Fused) Short Circuit Current, RMS	kA	80	80	80	80	80	80	80	80	80	80	80
Back up Fuse Rating	A	32	63	100	125	160	200	250	315	400	630	800
Corresponding max. cut-off permitted	kAp	6	10	12	15	18	24	28	32	36	60	65
Mechanical Endurance	Operations	20000	20000	15000	15000	15000	10000	10000	10000	10000	6000	6000
Electrical Endurance @ 0.65 pf	Operations	1500	1500	1000	1000	1000	1000	1000	1000	1000	1000	1000
Terminals suitable for Cable Lug size	Sq. mm	16	25	95	95	120	240	240	300	300	400	625
Tightening Torque	N - m	3.5	5.5	9	12	16	25	30	35	45	50	75
Approx. Weight of Interior Unit, TPN / 4P	kg.	1.6 / 1.9	1.6 / 1.9	2.2/2.5	2.2/2.5	2.2/2.5	7 / 8	7 / 8	7.3 / 8.3	7.8 / 8.8	15.5/19	17/21
Fuse Ratings Available	A	4 - 32	32 - 63	50-100	50- 125	80-160	125 - 200	125 - 250	250- 315	355 - 400	400-630	500-800
Fuse Size as per IEC (DIN / BS)		00/A2	00/A3	00/A4	00/A4	00/B1-B2	1 / B1-B2	1 / B2	2 / B3	2 / B4	3 / C1-C2	3 / C3
Auxiliary Contacts Ratings												
Thermal Rating	A	10	10	10	10	10	10	10	10	10	10	10
AC15 @ AC 415 V	A	4	4	4	4	4	4	4	4	4	4	4
DC13 @ 220 V	A	1	1	1	1	1	1	1	4	1	1	1

* Fuse Cover is not available for CSSDF630A in BS type.
** Central Mechanism option available with 200–630A in DIN type & 200–400A in BS type

Accessories & Ordering Info

E- CSSDF 250 D 3 - N F

Mounting

E -	In SS Enclosure
Blank	W/o Enclosure

Fuse Type

B	BS Type
D	DIN Type

Mechanism Type

Blank	Front Operated
SO	Side Operated

Fuse

Blank	W/o Fuses
F	With Fuses

Rating

32	32A
800	800A

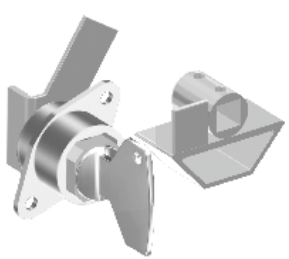
No. of Poles

3	TP / TPN
4	4 Pole

Neutral Type

Blank	TP
N	Isolable
FN	Fused
SN	Switched

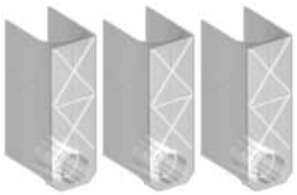
Key Lock



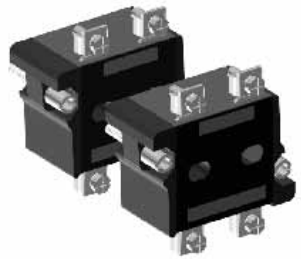
Castle Lock

Handle & Shaft

Parameters	32A	63A	100A	125A	160A	200A	250A	315A	400A	630A	800A
Catalogue Reference with Enclosure	E-CSSDF32	E-CSSDF63	E-CSSDF100	E-CSSDF125	E-CSSDF160	E-CSSDF200	E-CSSDF250	E-CSSDF315	E-CSSDF400	E-CSSDF630	E-CSSDF800
Rated Operational Current	32	63	100	125	160	200	250	315	400	630	800
Handle	CSWH 80 S6		CSWH 80 S6			CSWH 145 S12		CSWH 145 S12		CSWH 220 S12	
Handle Shaft	CSP6 X 165		CSP6 X 165			CSP12 X 255		CSP12 X 255		CSP12 X 255	
Handle Mounting Kit	-		-			HMK-1-2		HMK-1-2		HMK-3-2	
Auxiliary Contact -1 NO + 1 NC	CSSDFZX 46		CSSDFZX 1			CSSDFZX 33		CSSDFZX 33		CSSDFZX 35	
Auxiliary Contact - 2 NO + 2 NC	CSSDFZX 32		CSSDFZX 16			CSSDFZX 34		CSSDFZX 34		CSSDFZX 36	
Extended Terminals, 3P/ 4P	ET323 / ET324		ET327 / ET328			ET329 / ET330		ET329 / ET330		-	
Terminal Shrouds	-		SF702			SF703		SF703		SF704	
Key Interlock	CSSDFZW-16		CSSDFZW-16			CSSDFZW-5		CSSDFZW-5		CSSDFZW-5	
Castle lock	CSSDFZW-15		CSSDFZW-15			CSSDFZW-4		CSSDFZW-4		CSSDFZW-4	
Neutral Links	CSSDF ZX 87		CSSDF ZX 86			CSSDF ZX 85		CSSDF ZX 85		CSSDF ZX 88	
Side Operated Mechanism	Available		Available			Not Available		Not Available		Not Available	



Terminal Shrouds



Auxiliary Contacts - 200A & above

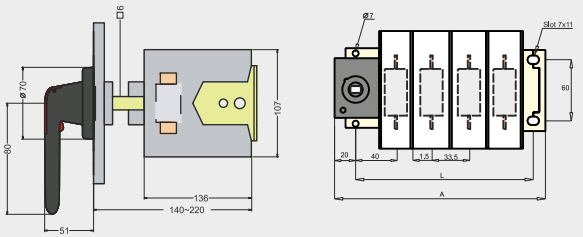
Auxiliary Contacts - 32A to 160A

Manually Isolable Neutral Link

Extended Terminals

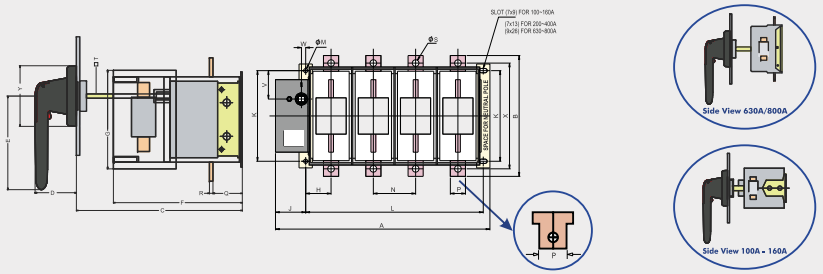
Dimensional Details

32A & 63A, DIN / BS



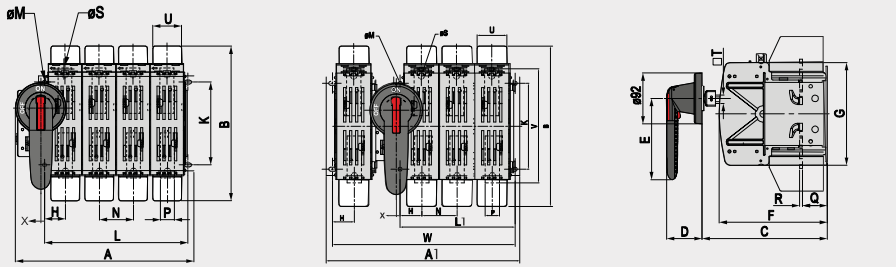
Rating (A)	A	L
TP/TPN	168	138
4 Pole	201	171

100A - 800A, DIN / BS



Rating (A)	A		B	C	D	E	F	G	H	J	K	L		M	N	P	Q	R	S	T	V	W	X	Y
	TPN	4P										TPN	4P											
100 - 125	190	230	142	135 - 225	51	80	134	98	44.5	20	60	160	200	7	40	20	40	2	9	6	30	0	122	70
160	212	260	142	135 - 225	51	80	134	98	44.5	20	60	182	230	7	48	25	40	2	9	6	30	0	122	70
200 - 250	261	323	200	220 - 310	64	145	184	162	38	50	150	199	260	7	62	25	45	4	11	12	47	7	175	92
315	285	355	200	220 - 310	64	145	184	162	42	50	150	223	294	7	70	25	45	4	11	12	47	7	175	92
400	285	355	200	220 - 310	64	145	184	162	42	50	150	223	294	7	70	25	45	5	11	12	47	7	175	92
630 DIN	343	423	320	240 - 310	64	220	223	244	59	52.5	190	278	358	9	80	50	40	6	13	12	95	24.5	266	92
800 DIN	373	463	320	240 - 310	64	220	223	244	59	52.5	190	308	398	9	90	50	40	6	13	12	95	24.5	266	92
630-800BS	403	503	320	240 - 310	64	220	223	244	64	52.5	190	338	438	9	100	50	40	6	13	12	95	24.5	266	92

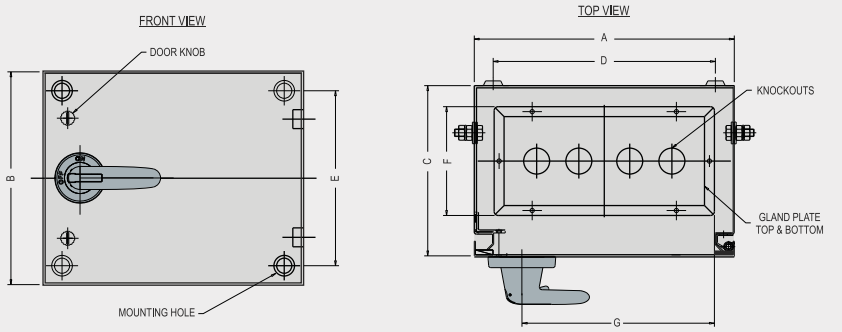
200A -630A, DIN / BS (with fuse cover and terminal shrouds)



Rating (A)	A		A1		B	C	D	E	F	G	H	K	L		L1		M	N	P	Q	R	S	T	U	V	W	X
	3P	4P	3P	4P									3P	4P	3P	4P											
200A~250A	261	323	276	338	280	230~310	64	145	196	186	37	150	198	260	136	198	7	62	25	45	4	11	12	52	200	316	-
315A	285	355	370	370	280	230~310	64	145	196	186	37	150	222	292	152	222	7	70	25	45	4	11	12	52	200	316	-
400A	285	355	370	370	280	230~310	64	145	196	186	37	150	222	292	152	222	7	70	25	45	5	11	12	52	200	316	-
630A	360	440	376	456	444	245~305	64	145	231	250	60	190	278	358	198	278	9	80	40	40	5	13	12	61	290	440	24.5

ILLUSTRATIONS NOT TO SCALE

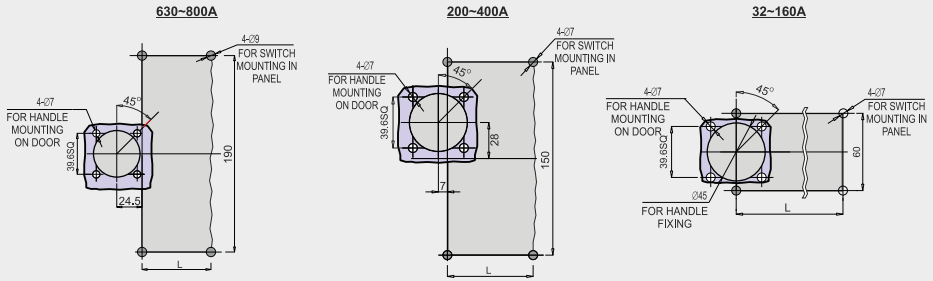
SS Enclosure 32A - 800A



Rating (A)	A	B	C	D	E	F	G	Knockout DIA. (Numbers/Side)
32 - 63A (DIN/BS-3P/4P)	275	225	180	235	185	115	233	∅30(3)
100 - 125A (DIN/BS-3P/4P)	275	275	180	235	235	115	233	∅38(3)
160A (DIN-3P/4P) & (BS-3P)								
160A (BS-4P)	325	275	220	285	235	155	283	∅38(8)
200 - 250A (DIN/BS-3P)	325	400	220	285	360	155	283	∅38(4)
200 - 250A (DIN/BS-4P)	400	400	220	360	360	155	358	∅38(4)
315 - 400A (DIN/BS-3P/4P)								
630A (DIN/BS-3P/4P)	600	500	275	560	460	210	558	∅38(8)
800A (BS-3P/4P)								

SS Enclosure Details	
Gasket Type	EPDM Sponge Rubber
Cover Sheet Thickness	18 SWG
Gland Sheet Thickness	16 SWG
Enclosure Paint Shade	Basalt Grey RAL 7012
Door Paint Shade	Light Grey RAL 7035
IP Level	IP 54
Door Hinges Degree	120 °
Earthing Studs	2

Mounting Details, 32A - 800A

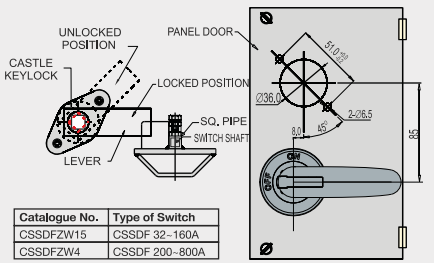


Rating (A)	32-63		100-160DIN		160BS		200-250		315-400		630DIN		630-800BS	
	TPN	4P	TPN	4P	TPN	4P	TPN	4P	TPN	4P	TPN	4P	TPN	4P
L	138	171	160	200	182	235	199	260	223	294	278	358	338	438

Handle Mounting Instructions:

1) Minimum distance from hinge should be 175mm for proper door locking
2) Drill ∅45mm for Handle mounting and take impression from telescopic shaft on inside of the panel door for drilling ∅45 hole.
3) Do not tighten the fixing screws till the panel door is closed and Handle has taken its position.

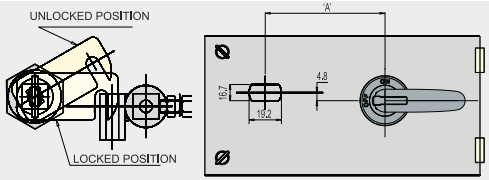
Castle Lock



Catalogue No.	Type of Switch
CSSDFZW15	CSSDF 32~160A
CSSDFZW4	CSSDF 200~800A

Panel Drilling Plan

Key Interlock



Catalogue No.	Type of Switch	'A'
CSSDFZW16	CSSDF 32~160A	60.7 ±0.3
CSSDFZW5	CSSDF 200~800A	66.0 ±0.3

Panel Punching Plan

ILLUSTRATIONS NOT TO SCALE