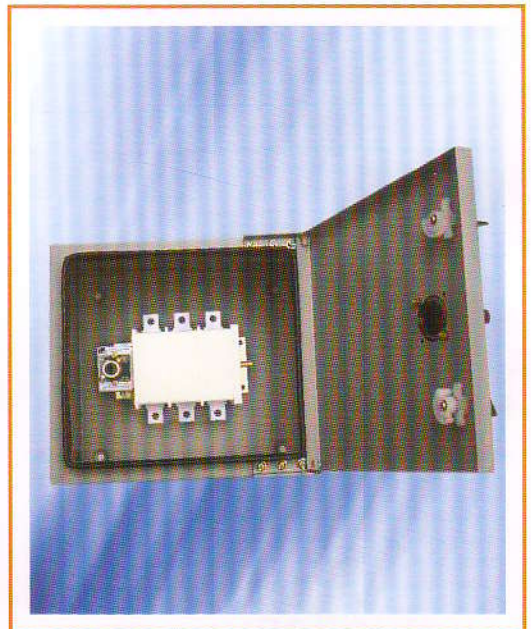
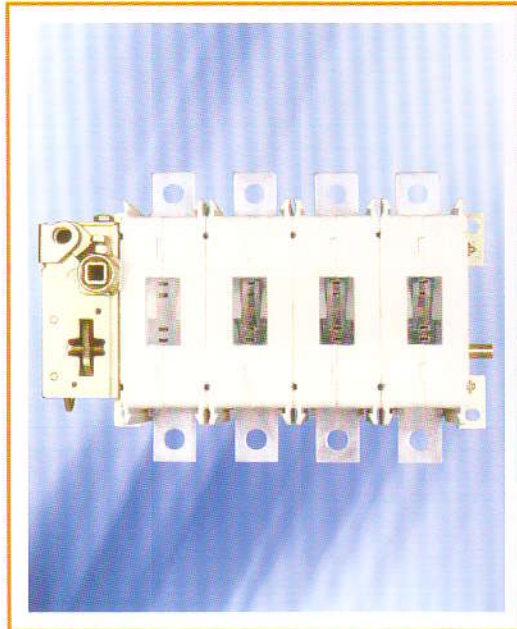
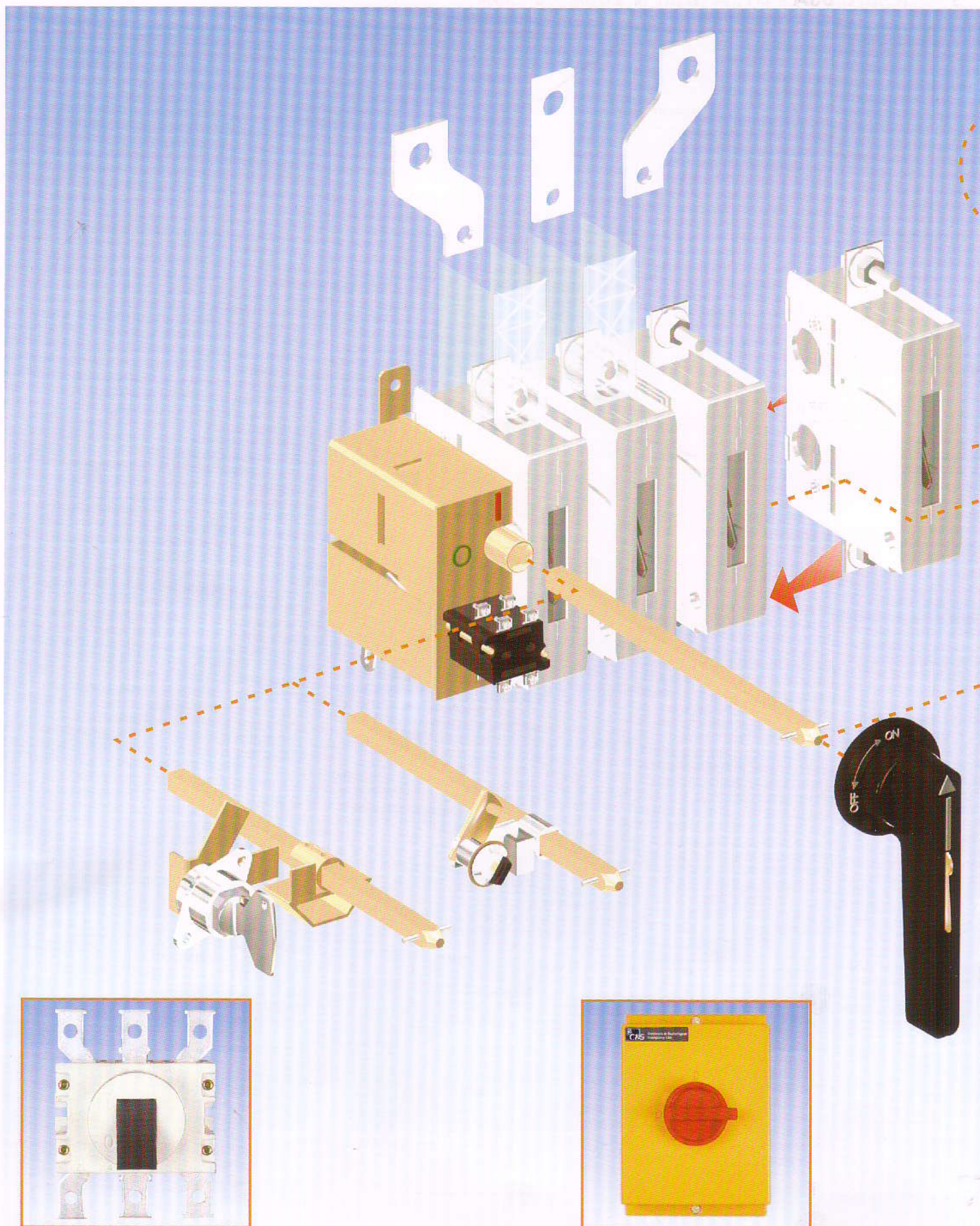


Switch Disconnectors (On-Load Break Switches)

25A 3150A, 690V





Rugged construction, Integrating end user convenience with installation flexibility

Controls & Switchgear offers a wide range of Switch Disconnectors (On Load Break Switches) - 25A to 3150A, suitable for operation upto 690V. Available in 3 Pole as well as 4 Pole, interiors as well as in enclosure, they are suitable for AC23 utilisation category and confirm to IEC 60947 / IS 13947.

63A onwards, these switches have individual phase pole construction, enabling any combination from 1 pole to 8 poles. Thus, modular yet rugged construction, with all poles including the neutral having same 100% rating & reliability.

Modular arrangement also eliminates need for matching standard 3 pole switch to specific installation requirement by adding neutral pole in 3 phase 4 wire AC system or looping poles for DC system. Hence these switches are most suitable & economical switch for all applications like :-

- ✦ Main Service Entrance Switch from Transformers & Busbars,
- ✦ AC or DC Power Distribution System,
- ✦ Switching & Isolating Motors,
- ✦ Switching & Isolating Capacitors,
- ✦ Switching & Isolating Industrial Control Equipment,
- ✦ AC or DC Safety Switch

Their mounting flexibility offers numerous matchless benefits for use in power distribution boards or for standalone mountings. They are compact enough to occupy small panel space yet allowing installation as per convenience and rendering it safe for maintenance.

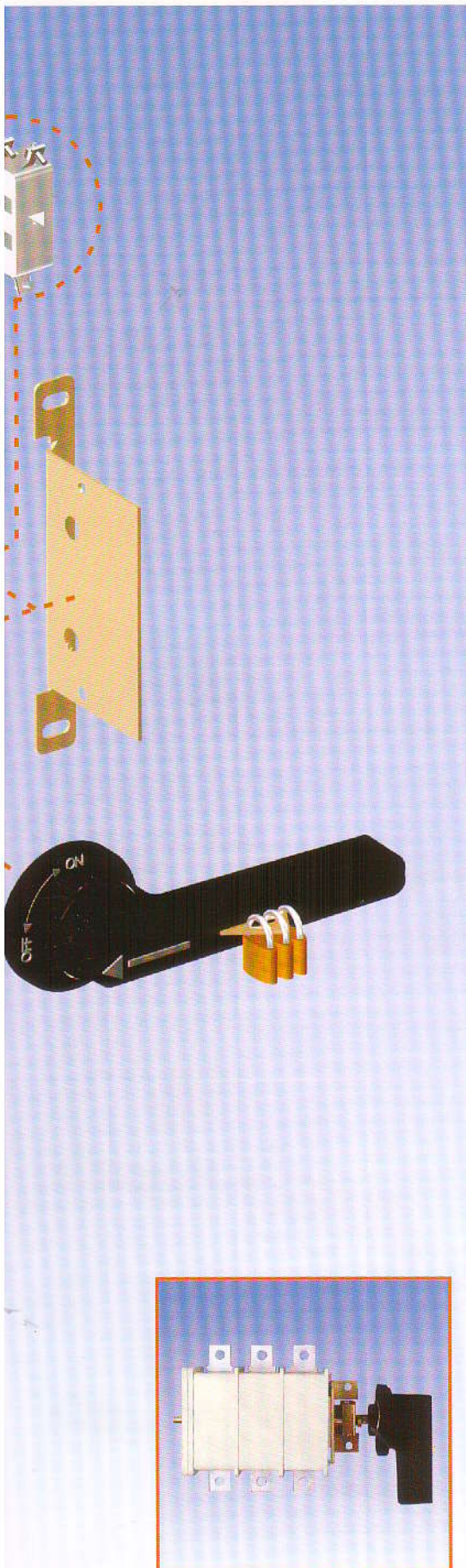
For machine tool or distribution (scattered) installation in buildings, upto 125A switches are also available in plastic enclosure, which are corrosion proof and add to the aesthetic of the installations.

Multiple accessories to suit application requirements also enhance the flexibility of operation and safety level of installation. They also facilitate these switches to match diverse application requirements.

Manufactured in ISO 9001 certified facilities, rugged design combining ease of operation and maintenance, they have stood the test of adverse environments in all types of climate in various countries, including India for more than 15 years.

These switches have established their ingenuity in breaking the stalled motor current in the event of emergency, switching highly inductive loads, capacitor banks, DC loads etc.

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, Machine Tools etc.



Internationally Endorsed

*Tested & Accepted
World over*

C&S Switch Disconnectors 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 Part 3 and CPRI, ERDA for conformity to Indian Standards IS 13947 Part 3. These also conform to the safety regulations adopted in the European Union and carry the CE marking.

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

An ISO 9001 certified manufacturing facilities gives the assurance of quality & consistency of these switches



Flexible Design

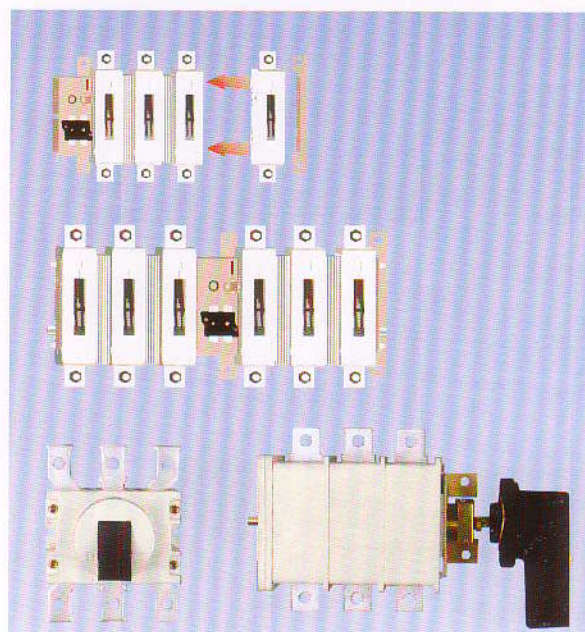
*Modular yet reliable
construction*

C&S Switch Disconnector have a modular assembly for operating mechanism and pole. Contact system, placed in separate housing for individual phase poles, are joined together to form a switch with any number of poles - from 1 pole, upto 8 poles.

Flexibility of this arrangement also permits to place mechanism in between the poles. 63A-315A, switches with side operated mechanism are also offered.

There is no add-on arrangement, each pole has same 100% rating and operates with same reliability. As each pole is independent of other, its maintenance or replacement is easy & economical in the event of damage.

Switches can hence be ordered as per installation requirement 2 pole for DC; 3 pole for 3 phase, 3 wire system; 4 pole for 3 phase, 4 wire system or 6 pole for Star Delta motors.



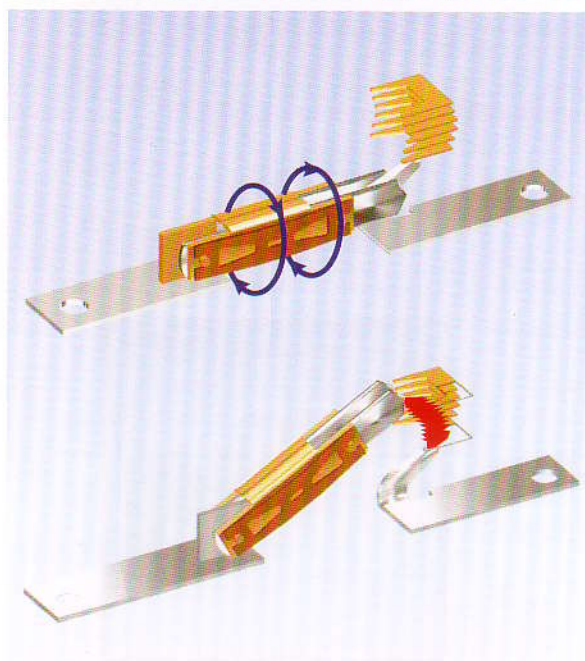
Unique Contact Mechanism

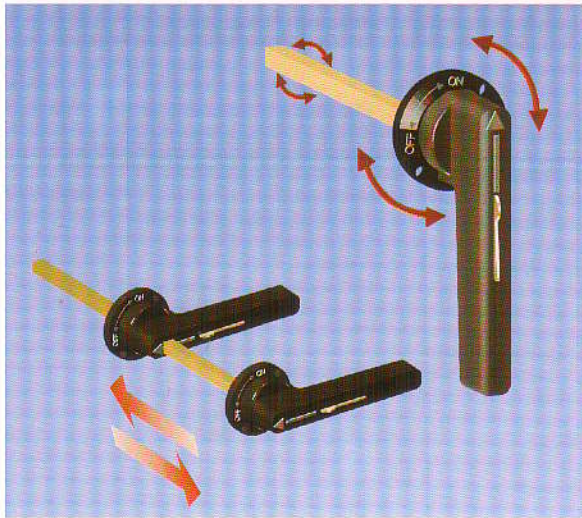
*Efficient Switching
& Long life*

Switch Disconnectors of rating 200A and above employ unique Knife Contact Mechanism, which uses magnetic attraction principle in iron circuit on the moving contacts. As current increases, automatically the contact force too increases, 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 results in separate arcing and current carrying surfaces. It again ensures that current carrying surface remains unaffected by arcing, maintaining same contact pressure and enhancing electrical life. Special shape of fixed contacts also help blow out the Arc into Arc - Chute where it is swiftly extinguished under controlled conditions, safely.

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





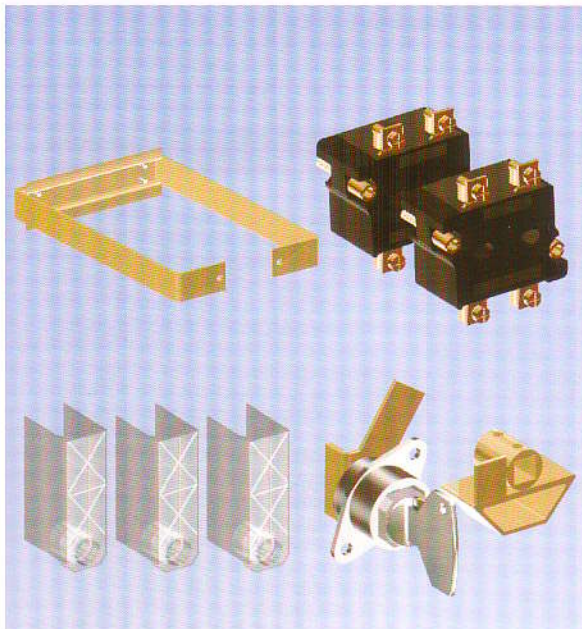
Easy Installation

Convenient, Swift & Economical

The handle in the C&S switch disconnectors 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 on either side 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

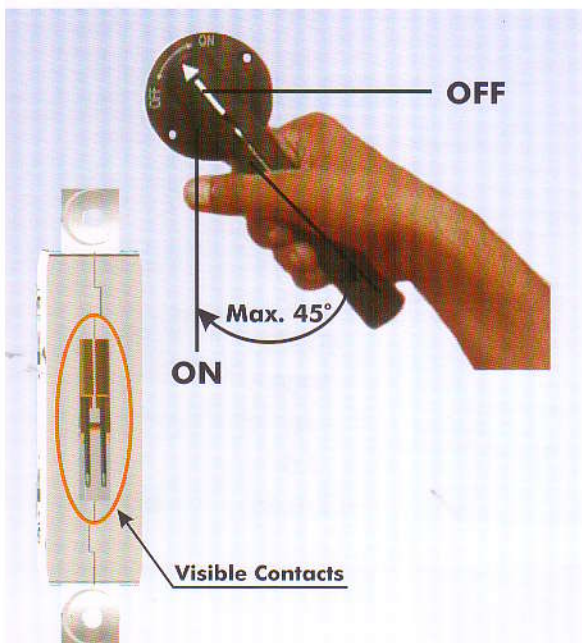
Flexibility to suit Application

Multiple accessories increase these switches suitability for diverse application, enhance operational flexibility and improve installation safety.

Handle mounting kit lets complete Switch mounted inside enclosure door so that it can be operated only after opening the door. Door mounting kit lets fixing complete switch on to the door, doing away with need for fixing switch on base plate & aligning with 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 by positive break forced opening of contacts. In the event of high current and fuse failing to operate, leading to welding of contacts, the handle will not turn beyond 45° from the ON position, clearly indicating that the contacts are welded.

Convenience of contacts visibility, permits contact position inspection, without removing the switch from installation, thus enhancing reliability and saving time.

Self extinguishing fibre glass re-inforced insulating body of poles has very high tracking index. Large gap between fixed and moving contacts in OFF position, make them suitable for isolation function.

Door interlocking prevents 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 along with handle enhances ingress protection level to IP 54.

Common Characteristics

Conformity to Standards
Rated Operational Voltage (Ue)
Rated Operational Frequency
Suitability for Isolation (— —)
Pollution Degree as per IEC / IS
Ambient / Cubicle Service Temp.
IP Level after mounting
Number of Poles (4th Pole always 100% rated in 4 Pole switches)

-
V
Hz
-
-
°C
-
-

IEC 60947 Pt.3 &
IS 13947 Pt.3

415

50 / 60

YES

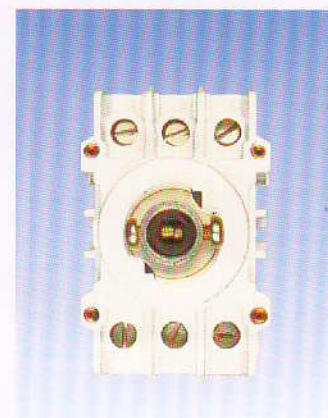
3

55

IP 54

3P / 4P

1P to 8P on request



Catalogue Reference

Rated Operational Current (Ie)
Max. Operational Voltage without derating
Rated Insulation Voltage (Ui)
Impulse Withstand Voltage (Uimp)
Conventional Enclosed Thermal Rating @ 45°C (Ithe)
AC22A Utilisation Category Rating @ 415V
AC23A Utilisation Category Rating @ 415V
DC23A Utilisation Category Rating @ 220V, 2 Poles in series
Rated Operational Power, AC3 @ 415V
Rated Capacitor Power @ 415V, 50 / 60 Hz
Rated AC Making Capacity, 415V, 0.35 pf
Rated AC Breaking Capacity, 415V, 0.35 pf
Rated DC Making/Breaking Capacity, 220V, L/R 15ms, 3P in series
Rated Conditional (Fused) Short Circuit Current, RMS
Back up Fuse Rating
Corresponding max. cut-off permitted
Short Circuit Making Capacity (Icm)
Rated Short Time Withstand Current (Icw) 1 sec.
Endurance, Mechanical
Endurance, Electrical @ 0.65 pf
Terminals suitable for Cable Lug of size
Tightening Torque
Approx. Weight of Interior Unit, TPN / 4P

A
V
V
kV
A
A
A
A
kW
kVAR
A
A
A
kA
A
kAp
kAp
KA
Cycles
Cycles
Sq. mm
N - m
kg.

CSDD25

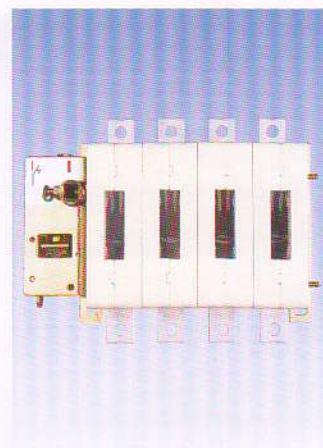
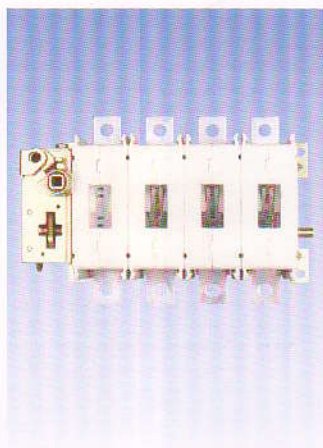
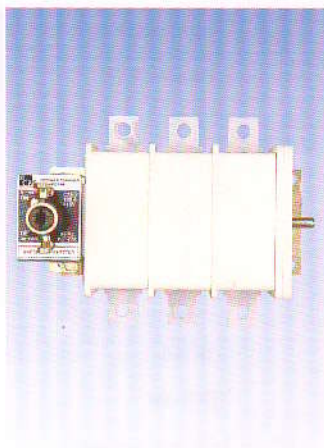
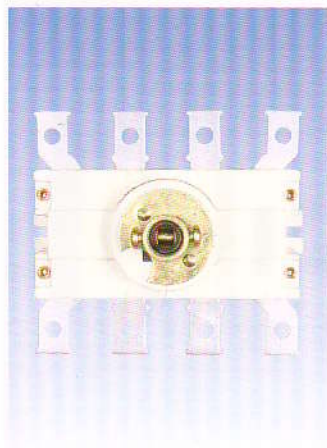
CSDD40

25	40
690	690
750	750
8	8
25	40
25	40
25	63
25	40
7.5	11
10	12.5
250	400
200	320
100	160
50	50
40	50
4.5	5
1.9	2
0.9	1
40000	40000
5000	5000
16	25
3.5	5.5
0.2/0.25	0.2/0.25

Auxiliary Contacts Ratings

Thermal Rating
AC15 @ AC 415V
DC13 @ 220V

A
A
A



CS5D63

CS5D125

D/K Type

CS5D100

CS5D125

CS5D160

DM Type

CS5D200

CS5D250

CS5D315

DM Type

CS5D200

CS5D250

CS5D400

63	125	100	125	160	200	250	315	200	250	400
690	690	690	690	690	690	690	690	690	690	690
750	750	1000	1000	1000	1000	1000	1000	1000	1000	1000
8	8	12	12	12	12	12	12	12	12	12
63	125	100	125	160	200	250	315	200	250	400
63	125	100	125	160	200	250	315	200	250	400
63	75	100	125	160	200	250	315	200	250	400
63	75	100	125	160	200	250	315	200	250	400
25	37	37	45	75	90	132	160	90	132	200
30	35	40	50	60	90	115	145	90	115	250
630	750	1000	1250	1600	2000	2500	3150	2000	2500	4000
504	600	800	1000	1280	1600	2000	2520	1600	2000	3200
252	300	400	500	640	800	1000	1260	800	1000	1600
50	50	80	80	80	100	100	100	100	100	100
80	125	100	125	160	200	250	315	200	250	400
8	10	8	10	18	30	30	30	30	30	36
2.7	3.6	8	10	18	30	30	30	30	30	36
1.5	2.5	3.2	3.2	5	8	8	8	8	8	24
40000	40000	40000	40000	10000	10000	10000	10000	10000	10000	10000
5000	5000	5000	5000	1000	1000	1000	1000	1000	1000	1000
25	70	70	95	120	240	240	300	240	240	300
5.5	12	9	12	16	45	30	35	25	30	45
0.3/0.4	0.3/0.4	1.6/2.1	1.6/2.1	1.8/2.25	3.0/3.7	3.0/3.7	3.2/3.9	3.5/4.2	3.5/4.2	4.5/5.4

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Common Characteristics

Conformity to Standards		IEC 60947 Pt.3 & IS 13947 Pt.3
Rated Operational Voltage (Ue)	V	415
Rated Operational Frequency	Hz	50 / 60
Suitability for Isolation (—/d—)	-	YES
Pollution Degree as per IEC / IS	-	3
Ambient / Cubicle Service Temp.	°C	55
IP Level after mounting	-	IP 54
Number of Poles	-	3P / 4P
(4th Pole always 100% rated in 4 Pole switches)		1P to 16P on request



Catalogue Reference

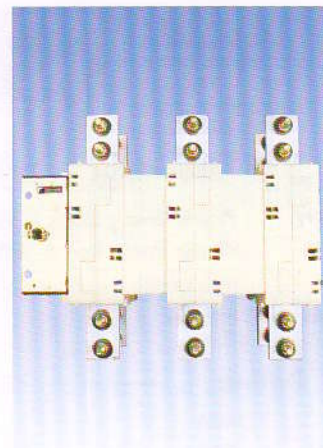
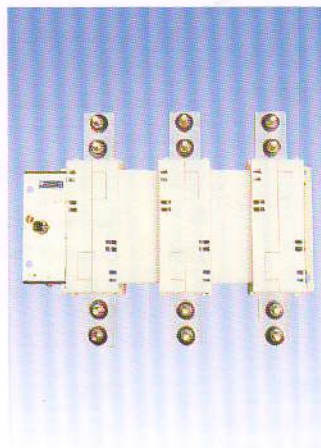
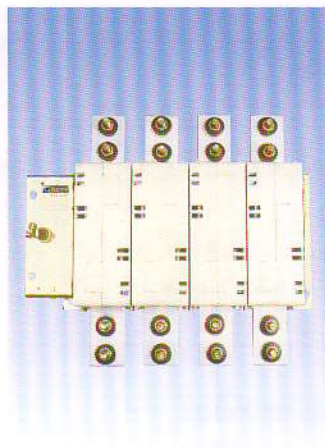
CSSD630

Rated Operational Current (Ie)	A	630
Max. Operational Voltage without derating	V	690
Rated Insulation Voltage (Ui)	V	1000
Impulse Withstand Voltage (Uimp)	kV	12
Conventional Enclosed Thermal Rating @ 45°C (Ithe)	A	630
AC22A Utilisation Category Rating @ 415V	A	630
AC23A Utilisation Category Rating @ 415V	A	630
DC23A Utilisation Category Rating @ 220V, 2 Poles in series	A	630
Rated Operational Power, AC3 @ 415V	kW	315
Rated Capacitor Power @ 415V, 50 / 60 Hz	kVAR	300
Rated AC Making Capacity, 415V, 0.35 pf	A	6300
Rated AC Breaking Capacity, 415V, 0.35 pf	A	5040
Rated DC Making/Breaking Capacity, 220V, L/R 15ms, 3P in series	A	2520
Rated Conditional (Fused) Short Circuit Current, RMS	kA	80
Back up Fuse Rating	A	630
Corresponding max. cut-off permitted	kAp	36
Short Circuit Making Capacity (Icm)	kAp	36
Rated Short Time Withstand Current (Icw) 1 sec.	KA	24
Endurance, Mechanical	Cycles	10000
Endurance, Electrical @ 0.65 pf	Cycles	500
Terminals suitable for Cable Lug of size	Sq. mm	400
Tightening Torque	N - m	50
Approx. Weight of Interior Unit, TPN / 4P	kg.	5.2/6.1

Auxiliary Contacts Ratings

Thermal Rating	A
AC15 @ AC 415V	A
DC13 @ 220V	A

On request

**CSDD800****CSDD1000****CSDD1250****CSDD1600****CSDD1800****CSDD2500****CSDD3150**

800

1000

1250

1600

1800

2500

3150

690

690

690

690

690

690

690

1000

1000

1000

1000

1000

1000

1000

12

12

12

12

12

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800

1000

1250

1600

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3200

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5.4/6.5

11.5/15

12/15.5

15.6/20

16/20.5

36.2/45

36.8/46

10

4

1

Accessories

<div>E-</div>	CSSD	<div>1250</div>	<div>D</div>	<div>3</div>	<div>-</div>
Mounting		Switch Type		Mechanism Type	
EABW	Plastic Encl., Black & White	D	Old Series, upto 250A	Blank	Front Opr.
EACL	Plastic Encl., Red & Yellow	DM	Compact Series, upto 63A-315A	SO	Side Opr., 63 - 160A
E	In SS Encl.	K	400A & above, also 63A, 3 pole	TM	Toggle Type, 25 - 125A
Blank	Interior				
Rating		No. of Poles			
40	40A	3	3 Pole		
800	800A	4	4 Pole		
2500	2500A				

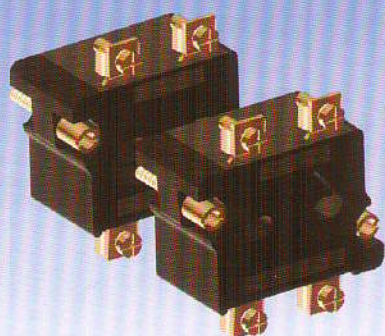
Ratings

25 - 40 Type D

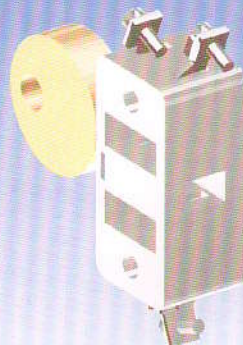
63 Type K/D

125 Type D

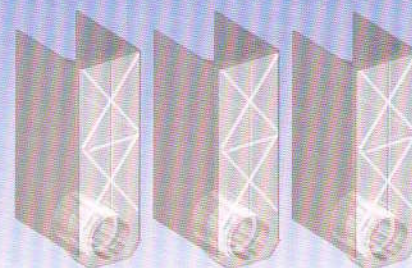
	25 / 40	63	125
Rated Operational Current	CSSDZX 104	CSSDZX 104	CSSDZX 104
Handle	Sq5 x 70	Sq5 x 70	Sq5 x 70
Handle Shaft	-	-	-
Handle Mounting Kit	-	-	-
Door Mounting Kit, 3P / 4P	DMK 1/1A	DMK 1/3	DMK 2/3
Side Operated Mechanism	x	x	x
Toggle Mechanism	✓	✓	✓
Changeover Mechanism	CSSDZW6	CSSDZW6/1	CSSDZW6/1
Auxiliary Contact - 1 NO + 1 NC, 3P / 4P	CSSDZX 49/87	CSSDZX 79/55	CSSDZX 52/55
Auxiliary Contact - 2 NO + 2 NC, 3P / 4P	CSSDZX 50/88	CSSDZX 80/56	CSSDZX 53/56
Terminal Shrouds	-	-	SF701
Extended Terminals, 3P / 4P	-	-	ET325 / ET326
Key Interlock	CSSDZW-16	CSSDZW-16	CSSDZW-16
Castle lock	CSSDZW-15	CSSDZW-15	CSSDZW-15



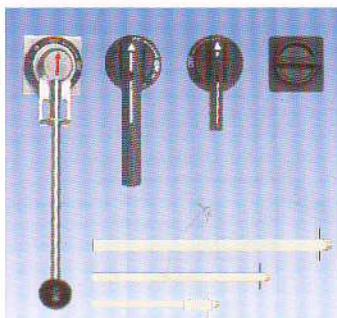
Auxiliary Contacts - 200A & above



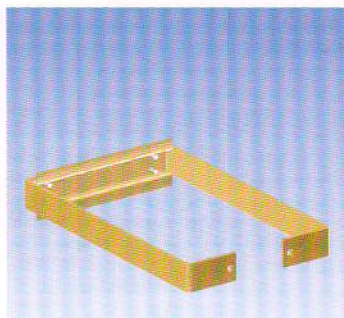
Auxiliary Contacts - 32A to 160A



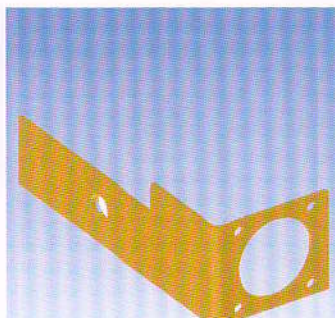
Terminal Shrouds



Handle & Shaft



**Door Mounting Kit
(25A - 125A Type D)**



**Handle Mounting Kit
(200A - 1800A)**



Changeover Mechanism

63 - 160 Type DM

200 - 315 Type DM

200 - 800 Type D/K

1000 - 1800 Type K

2500 - 3150 Type K

63 - 160	200 - 315	200 - 800	1000 - 1800	2500 - 3150
CSDB 20	CSDB 22	CSDB 16	CSDB 28	CSDA 8
Sq6 x 165	Sq8 x 240	Sq12 x 255	Sq12 x 255	Sq12 x 325
-	HMK-2	HMK-1	HMK-3	-
-	-	-	-	-
✓	✓	×	×	×
×	×	×	×	×
CSSDZW6/1	CSSDZW6/1	CSSFZW11	CSSFZW12	CSSFZW12
CSSDFZX 1	CSSDZX 37	CSSDZX 33	CSSDZX 35	CSSDZX 35
CSSDFZX 16	CSSDZX 38	CSSDZX 34	CSSDZX 36	CSSDZX 36
SF702	SF703	SF703(200-400)/SF704(630-800)	-	-
ET327 / ET328	ET329 / ET330	ET329/ET330 (upto 400A)	-	-
CSSDZW-16	CSSDZW-5	CSSDZW-5	CSSDZW-5	CSSDZW-5
CSSDZW-15	CSSDZW-4	CSSDZW-4	CSSDZW-4	CSSDZW-4



Extended Terminals

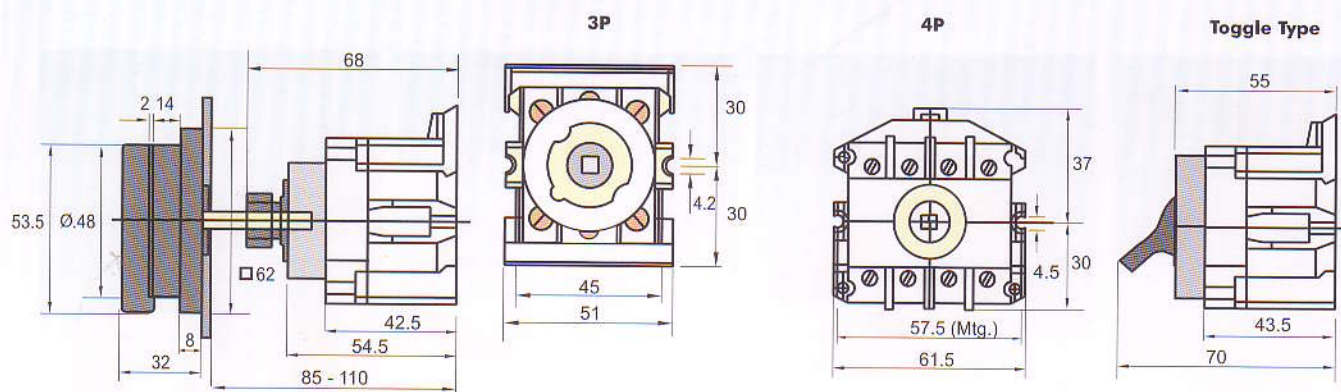


Key Lock

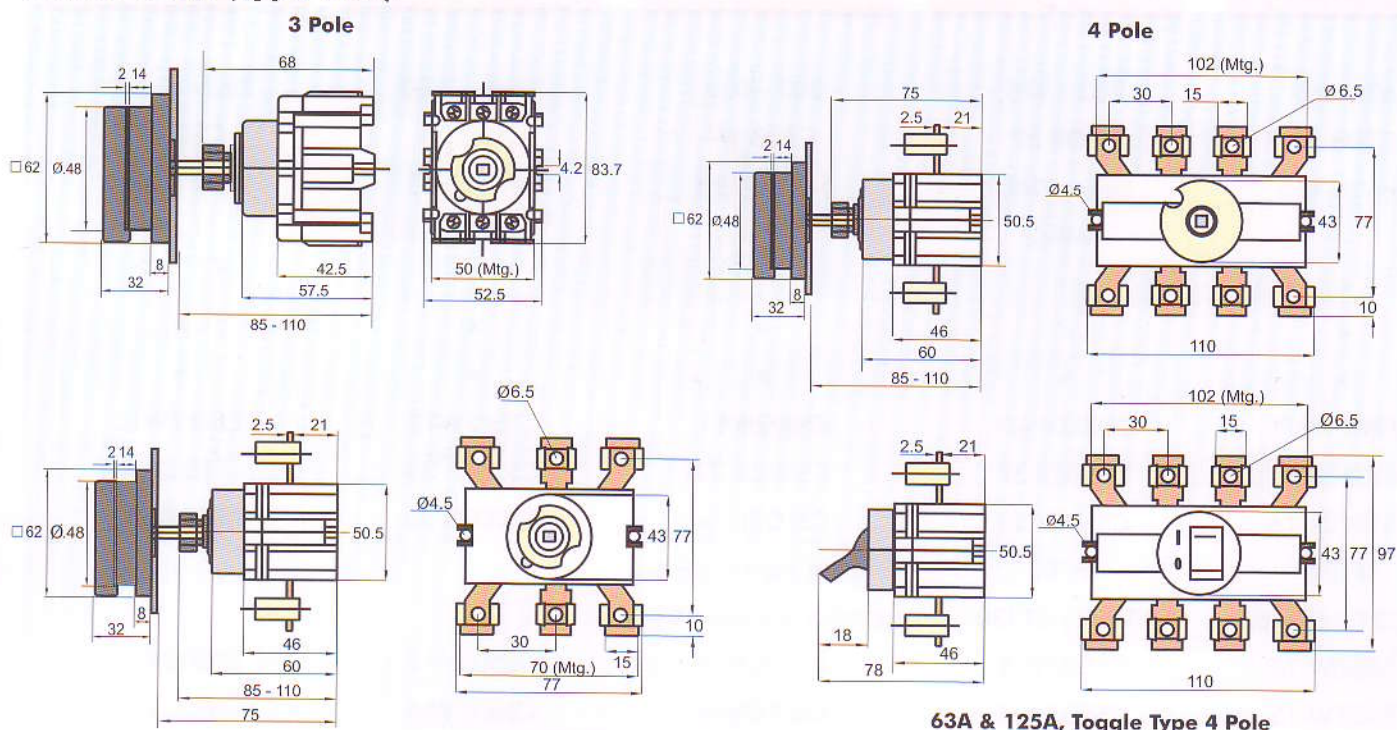


Castle Lock

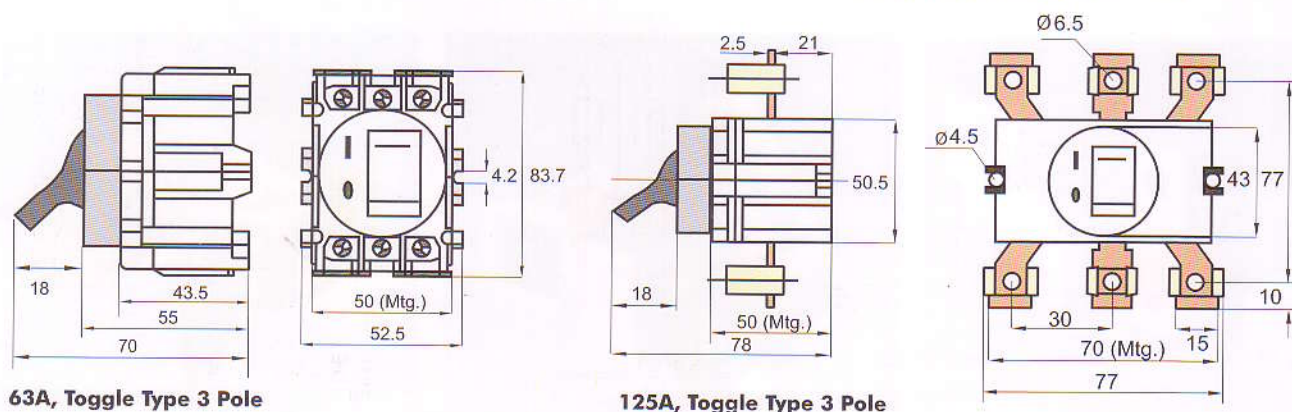
25A & 40A



63A & 125A (Type D/K)



63A & 125A, Toggle Type 4 Pole



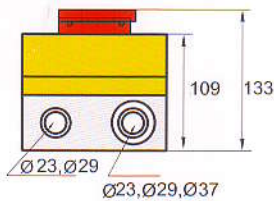
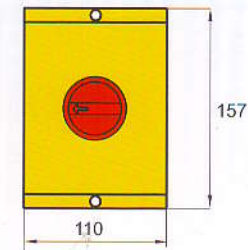
63A, Toggle Type 3 Pole

125A, Toggle Type 3 Pole

ILLUSTRATIONS NOT TO SCALE

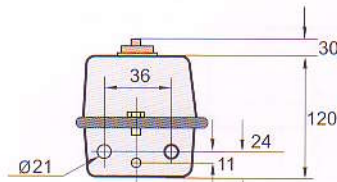
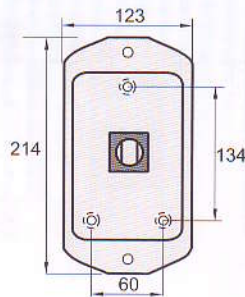
Enclosures CSDD25A - 125A

For 25A-40A 3P/4P
& 63A 3P



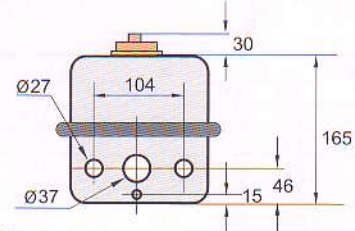
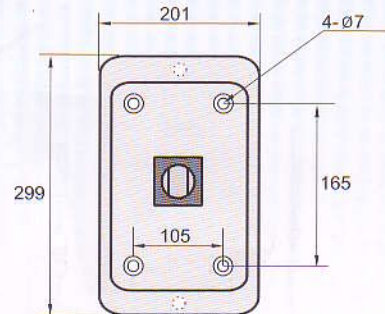
Plastic Enclosures

For 25A-40A 3P/4P
& 63A 3P

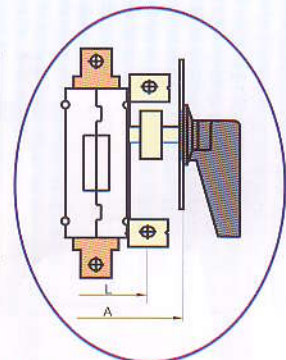
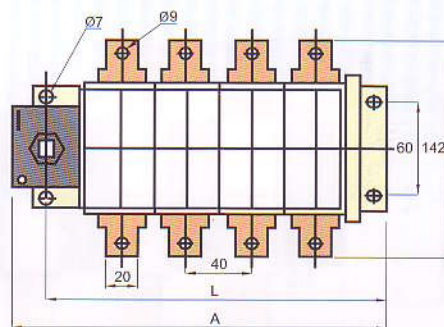
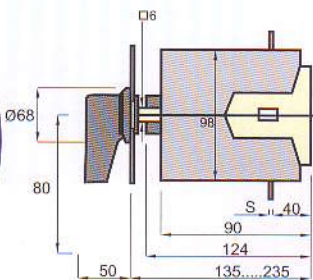
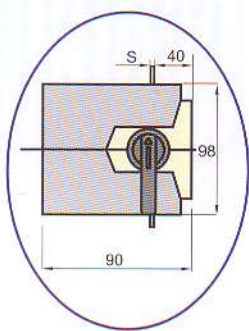


Metallic Enclosures

For 125A 3P/4P & 63A 4P



63A - 160A (DM)



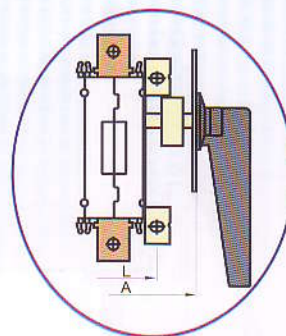
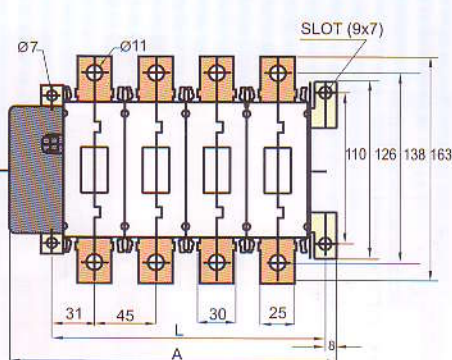
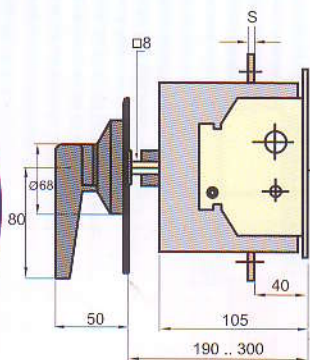
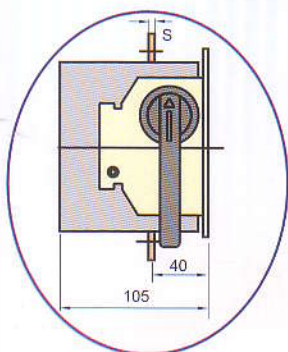
Dimensions Front Operated

Rating	A		L		S
	3P	4P	3P	4P	
63-100A	190	230	160	200	2
100-125A	190	230	160	200	3

Dimensions Side Operated

Rating	A		L		S
	3P	4P	3P	4P	
63-100A	245	205	198	158	2
100-125A	245	205	198	158	3

200A - 315A (DM)



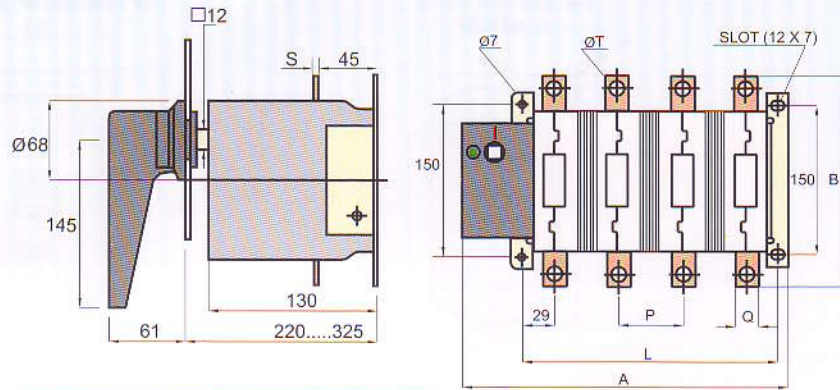
Dimensions Front Operated

Rating	A		L		S
	3P	4P	3P	4P	
200-315A	195	240	155.5	200.5	4

Dimensions Side Operated

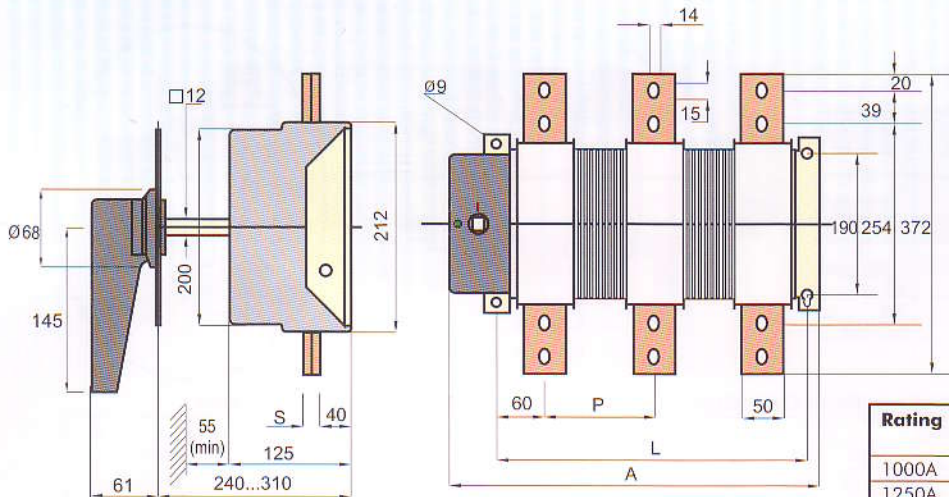
Rating	A		L		S
	3P	4P	3P	4P	
200-315A	217	262	155.5	200.5	4

200A - 800A



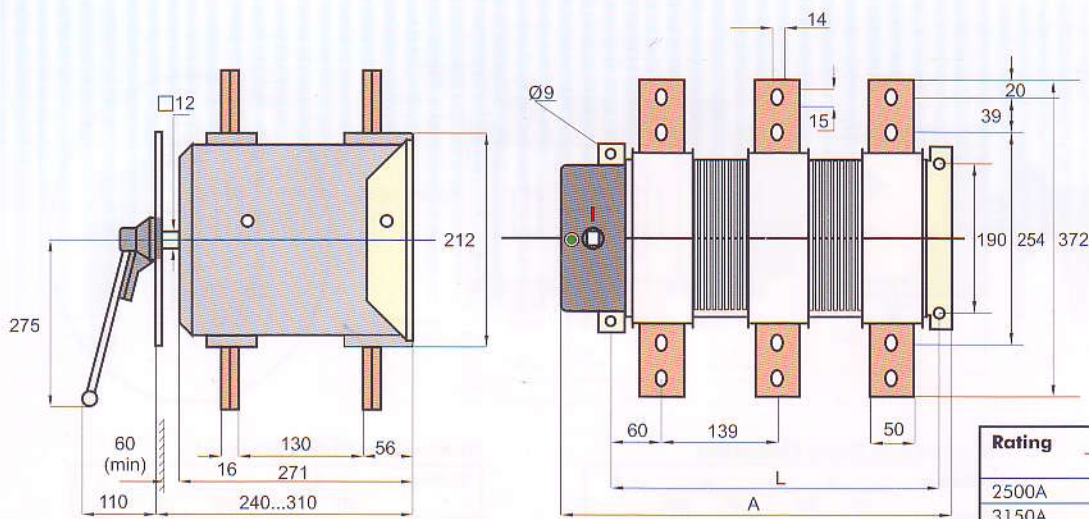
Rating	A		B	L		P	Q	S	T
	3P	4P		3P	4P				
200A	211	257	205	151	197	46	25	4	11
250A	211	257	205	151	197	46	25	4	11
400A	211	257	205	151	197	46	25	4	11
630A	244	306	223	183	245	62	40	5	13.5
800A	260	330	223	199	269	70	40	5	13.5

1000A - 1800A



Rating	A		L		P	S
	3P	4P	3P	4P		
1000A	343	423	278	358	80	12
1250A	343	423	278	358	80	12
1600A	461	600	396	535	139	16
1800A	461	600	396	535	139	16

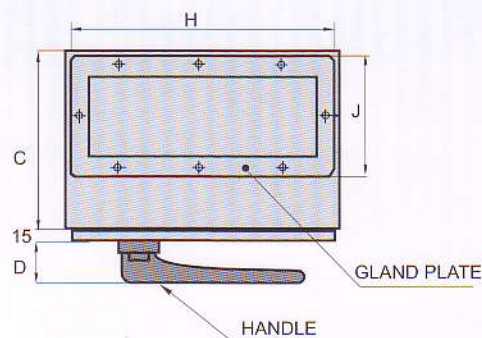
2500A - 3150A



Rating	A		L	
	3P	4P	3P	4P
2500A	468	607	403	542
3150A	468	607	403	542

ILLUSTRATIONS NOT TO SCALE

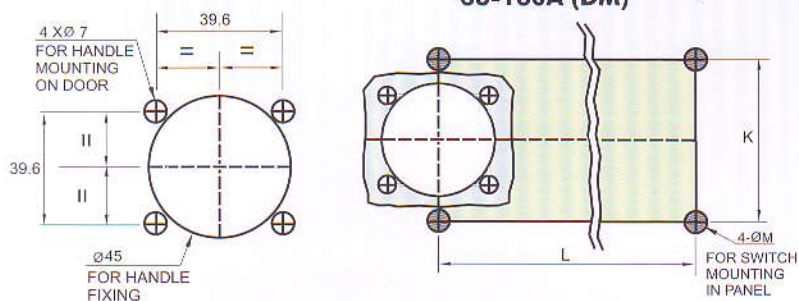
FRONT VIEW



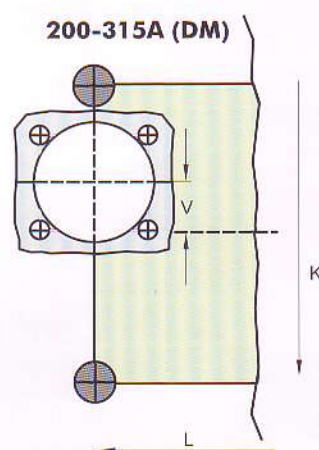
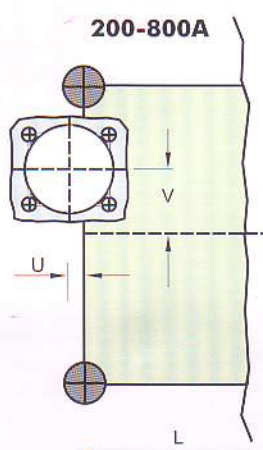
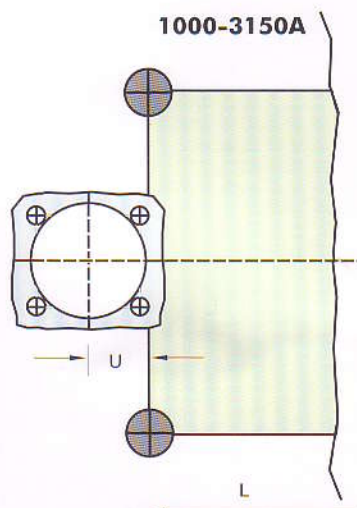
Sheet Thickness 1.6mm

Rating	A	B	C	D	E	F	H	J
63 - 160 (DM)	325	300	200	61	265	240	320	145
200 - 315 (DM)	400	450	250	61	340	390	395	145
200 - 800	400	450	250	61	340	390	395	145
1000 - 1250	600	600	275	110	540	540	595	145
1600 - 1800	800	600	200	110	740	540	795	145
2500 - 3150	800	600	400	100	740	540	795	145

63-160A (DM)

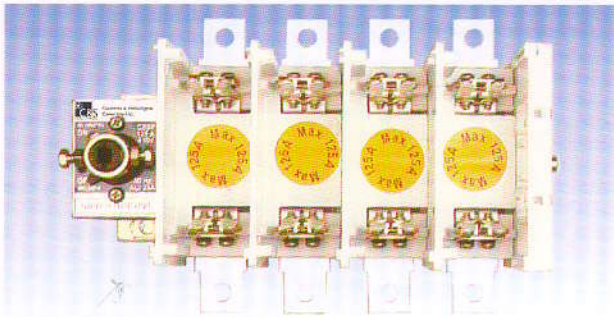


Rating	K	L		M	U	V
		TPN	4P			
63A - 160A	60	200	160	7	-	-
200A - 400A	150	151	197	7	7	28
630A	150	183	245	7	7	28
800A	150	199	269	7	7	28
1000A - 1250A	190	278	358	9	24.5	-
1600A - 1800A	190	396	535	9	24.5	-
2500A - 3150A	190	403	542	9	24.5	-



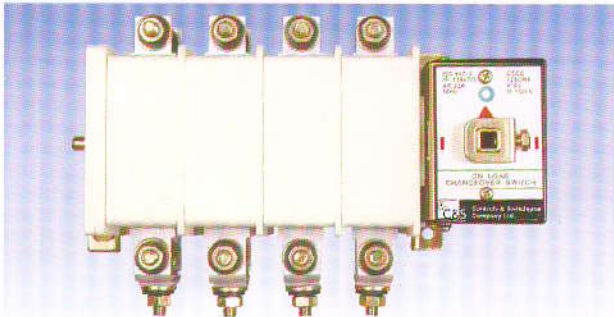
15

Other Products of Switch Group



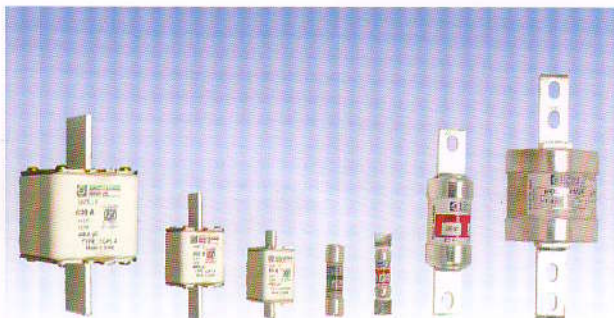
Switch Disconnectors Fuse

- 3/4 Pole, 32A - 800A
- Side operated, 32A - 160A
- Interior as well as in SS enclosure



On-Load Changeovers

- Conventional side by side, 25A - 3150A
- Compact Changeovers, 63A - 1800A
- Compact By-pass Switches, 63A - 1800A
- Compact Switch Fuse Changeovers 63A - 800A



HRC Fuse Links & Bases

- DIN type, 6A - 630A
- BS type, 2A - 800A

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