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everyday!



CE RoHS
Compliant



**Changeover &
Bypass Switches**



C&S Electric Ltd. is a leading manufacturer of electrical and electronic equipment in India. It is one of India's largest exporters of industrial switchgear & power busbar products. C&S Electric products are used in applications ranging from power generation, transmission and distribution, protection and final consumption.

C&S Electric has the following product verticals:

- LV Switchgear
- LV Switchboards
- LV & MV Bus-Ducts
- LV Busways
- Protection and Measurement Devices

MANUFACTURING FACILITIES



C&S Controlgear Plant at Noida



C&S Switchgear Plant at Noida



World-Class Manufacturing Plants at SIDCUL, Haridwar

MARKET LEADER

C&S is one of the leading supplier in the LV Switchgear business segment and a market leader in the busbar business with more than 50% share in Indian market.

11 MANUFACTURING PLANTS

C&S Electric have 11 state-of-the-art manufacturing facilities in Noida, Haridwar & Guwahati, which are equipped with latest tools and systems to ensure highest level of quality and services.

600+ STOCKISTS

A dedicated network of channel partners, ensuring access to the farthest corners of India, with an obsession for customer services. In addition C&S products are available in 8000+ retail counters nationally.

EXPORTS TO OVER 85 COUNTRIES

C&S exports the entire range of products across all 7 continents, thus reaffirming its position as one of India's largest exporters of industrial electrical products.

5000+ WORKFORCE

5000+ Workforce including over 371 engineers, dedicated sales team of 424 people & millions of satisfied customers.

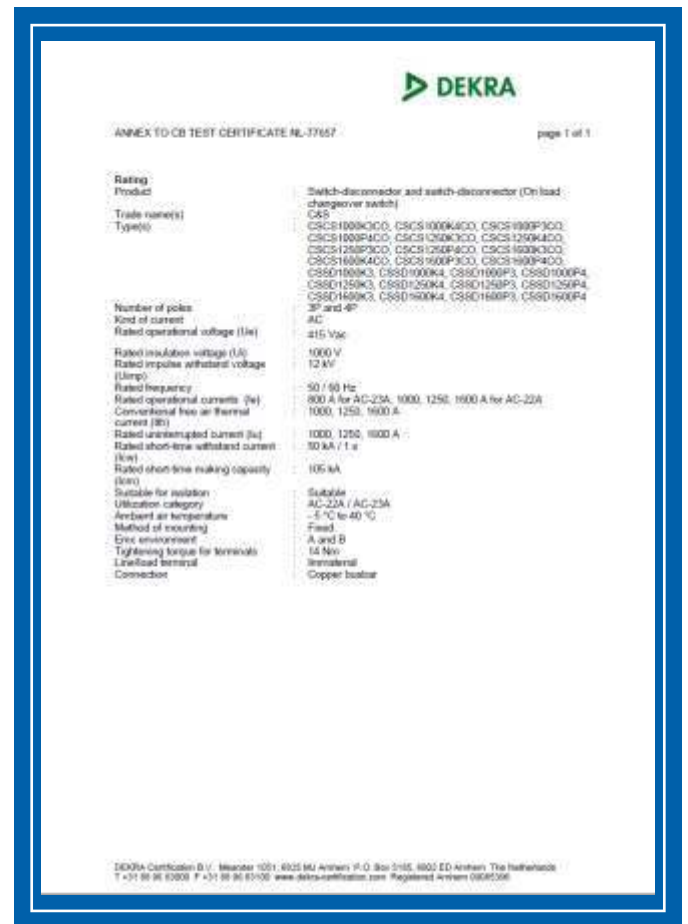
R&D

4 Govt. approved labs/centres, over 20,000 sqft. space dedicated to R&D, 70 R&D engineers, state of the art testing & design facilities ... & most of the all a passion for innovation & excellence.

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Global Certifications



Quality Assurance





Changeover Switches



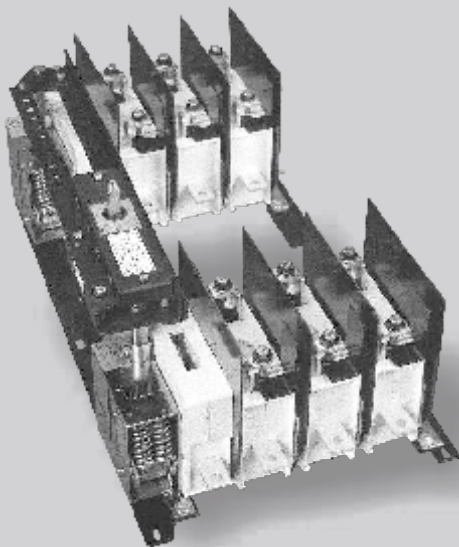
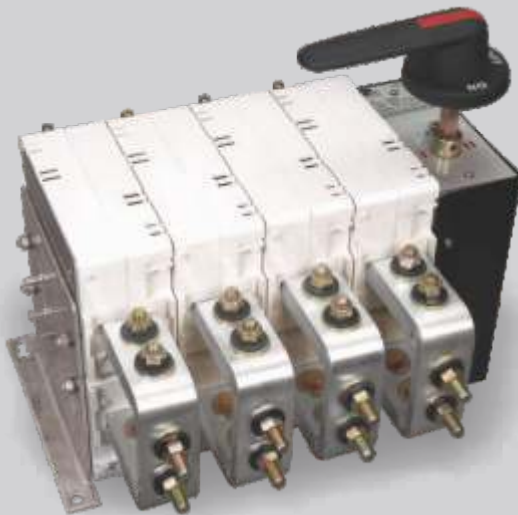
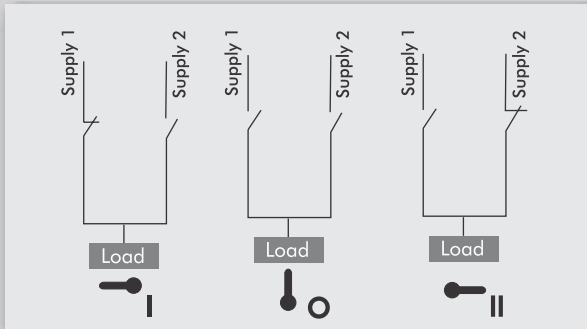
Bypass Switches

Changeover & Bypass Switches



- **Changeover Switches Range: 63A~3150A**
- **Bypass Switches Range: 63A~1800A**
- **Ui upto 1000V**
- **Available in Open Execution and Sheet Steel Enclosure**
- **Available in Open Execution and Sheet Steel Enclosure**
- **Modular Construction**
- **Telescopic shaft**
- **Contact Visibility Window**
- **Suitable for Isolation**
- **Suitable for Capacitor Switching**
- **Suitable upto 3 Padlocks**

On Load Changeover Switches (with & without Fuses)



Salient Features

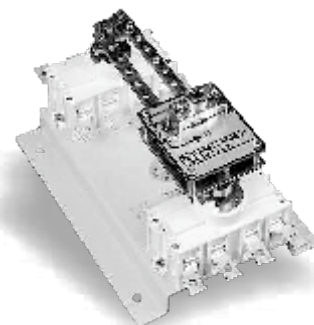
- Modular design in 3 & 4 pole (63A ~3150A), suitable for utilization category AC-23A
- Easy maintenance as each pole can be replaced easily due to modular construction, saving cost of entire switch in case of single pole being burnt or damaged.
- Available in open execution & in sheet steel enclosure. Complies with the latest requirements of IS/IEC 60947- 3 standards.
- Unique self cleaning contact construction with special knife type 200A~3150A , double break switching contacts (63A~160A & 1000A~3150A) & single break (200A~800A). Positive opening operation, with quick make - break and effective arc splitting plates guarantee reliability and long electrical life of the Switch.
- Excellent tracking resistance of isolation material in switch frame prevents flashover between phases even in the most trying & difficult locations.
- Adjustable telescopic shaft
- Compact construction
- Window for visual contact inspection
- Suitable for capacitor switching and as a Main switch
- Handle with in-built padlockable facility in-off position
- Provision for defeating door interlock
- Individual phase barrier can be incorporated without tools, between terminals (200A~800A) .

Function

- These products are manually operated changeover switches
- They are used to switching, transfer of sources on loads and their safety disconnections

Accessories

- Auxillary contact (early break type) 1NO + 1NC or 2NO + 2NC is available
- Key & Castle lock facility



Compact On Load Bypass Switch

Salient Features

- Range 63A ~ 1800A, 4 Pole.
- Complies with the latest requirement of IS/IEC 60947- 3 Standard
- AC ~ 23A utilization ratings available.
- Bypass Switch is designed to customers specific need in IT industries and sites where UPS and Servo stabilizer provides main source of supply
- All other features are same as of On Load Changeover Switches

Operation

C&S Compact On Load Bypass switch is operated manually with single handle comfortably. It provides three stable positions :

Position	Operation
O	Loads are open circuited
I	Loads are connected to the stabilized supply
II	Loads are connected to the normal supply

Auxiliary Contacts

Auxiliary contact (early break type) 1NO +1NC or 2NO+2NC

Single Line Diagram

When Bypass switch is selected at position 'O' all the contacts of isolator are open circuited and provide total isolation.

In position 'I' both isolator I & III are closed and stabilized supply is connected to the load. At position II only isolator II is closed & isolators I & II are open thus bypassing UPS & connecting normal supply directly to load

Switch Construction

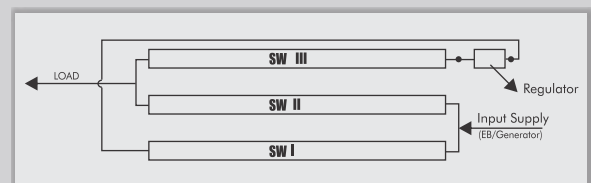
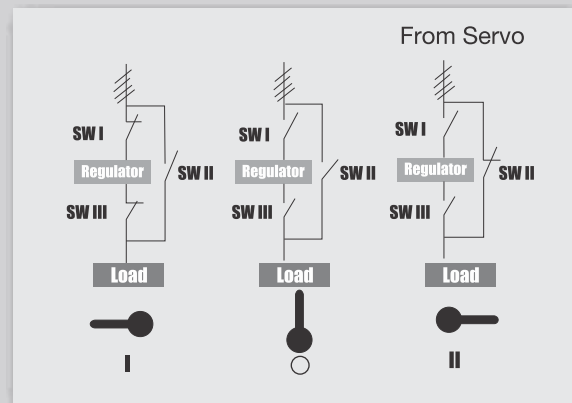
Safety Built-in

C&S pioneered the concept of positive isolation in case of welding of contacts. In the event of extremely high current leading to welding of contacts, the handle will not turn beyond 45° from the ON position, clearly indicates that the supply is ON and contacts get welded.

Convenience of easy contacts visibility, permits contact inspection, without removing the switch from installation, thus saving down 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 any accidental mishap. As a standard upto 3 padlocks are provided in the OFF position to prevent closing the circuit during maintenance work. Using a suitable gasket alongwith handle enhances ingress protection level to IP54.



Common Characteristics		
Conformity to Standards	-	IS/IEC 60947-3
No. of Poles	-	3P / 4P
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 Temperature	°C	40

Technical Parameters Compact On Load Changeover Switch / Compact On Load Bypass Switch

Charateristics				63
Rated insulation and operational voltage AC-20 & DC-20	Pollution degree 3	50 /60 Hz	V	1000
Dielectric strength			kV	3.5
Rated impulse withstand voltage			kV	8
Rated thermal current in ambient 40°C	In open air	-	A	63
	In Enclosure	-	A	63
Min. cable cross section	-	Cu	mm ²	16
Rated operational current AC -21 A		upto 415V	A	63
		440-690V	A	63
		1000V	A	-
Rated operational current AC -22 A		upto 415V	A	63
		440-500V	A	63
		690V	A	63
		1000V	A	-
Rated operational current AC -23 A		upto 415V	A	63
		440V	A	63
		500V	A	63
		690V	A	50
		1000V	A	-
Rated operational current/poles in series DC - 21 A		48V	A	63/2
		110	A	63/3
		220	A	63/3
		440	A	-
Rated operational current/poles in series DC - 22 A		48V	A	63/2
		110V	A	63/3
		220V	A	63/3
		440V	A	-
Rated operational current/poles in series DC - 23 A		48V	A	63/2
		110V	A	63/3
		220V	A	63/3
		440V	A	-
Rated operational power AC- 23	The KW - ratings are accurate for three-phase 1500 R.P.M. standard asynchronous motors	220-240V	kW	15
		400-415	kW	25
		440V	kW	25
		500 V	kW	25
		690 V	kW	-
Rated breaking capacity in category AC -23		upto 415V	A	504
		440V	A	504
		500V	A	504
		690V	A	400
Rated breaking capacity/poles in series in category DC -23		upto 48 V	A	252/2
		110V	A	252/3
		220V	A	252/3
		440V	A	-
Rated conditional short circuit current r.m.s and corresponding cut off current of the fuse in single phase test according to IEC 269	Cut Off/Back up fuse Rating	50KA/415V	kA	8/63
		50KA/500V	kA	8/63
		50KA/690V	kA	8/63
		80KA/500V	kA	10/63
Rated short time withstand current	r.m.s. value Icw	690V 0.2 sec	kA	-
		690V 1 sec	kA	5
Rated short circuit making capacity	Peak value Icm	690/500 V	kA	8
Rated capacitor power	The capacitor rating are limited by the fuse link	400~415 V	kVAr	50
Power loss/ pole	at rated operational current		W	4
Mechanical endurance	Divided by two for operational cycle		Oprs.	20000
Electrical Endurance	At 0.65pf		Oprs.	5000
Weight without accessories	with handle and shaft	4 pole	kg	3.5
Terminal bolt size	Metric thread diameter x length		mm	M8x25
Terminal tightening torque	counter torque required		Nm	10-17
Operating Torque			Nm	5

1. Ambient Temperature 60° C derating 20%. Mounting on "ceiling" derating 10%. Mounting on wall, horizontal fuses : derating 8%

2. Utilization category B

Changeover & Bypass Switches



	DM type					
	125	160	200	250	3 15	400
100	1000	1000	1000	1000	1000	1000
3.5	6	6	10	10	10	10
8	8	8	12	12	12	12
100	125	160	200	250	315	400
100	125	160	200	250	315	400
35	50	70	95	120	185	240
100	125	160	200	250	315	400
100	125	160	200	250	315	400
-	-	-	200	250	315	400
100	125	160	200	250	315	400
100	125	160	200	250	315	400
100	125	160	200	250	315	400
-	-	-	200	250	250	250
100	125	160	200	250	315	400
70	70	100	200	250	315	400
70	70	100	200	250	315	400
50	50	63	200	250	315	315
100/2	125/2	160/2	200/2	250/2	315/2	400/2
100/3	125/3	160/3	200/2	250/2	315/2	400/2
100/3	125/3	160/3	200/2	250/2	315/2	400/2
-	-	-	200/3	250/3	315/3	400/3
100/2	125/2	160/2	200/2	250/2	315/2	400/2
100/3	125/3	160/3	200/2	250/2	315/2	400/2
100/3	125/3	160/3	200/2	250/2	315/2	400/2
-	-	-	200/3	250/3	315/3	-
100/2	125/2	160/2	200/2	250/2	315/2	400/2
100/3	125/3	160/3	200/2	250/2	315/2	400/2
100/3	125/3	160/3	200/2	250/2	315/2	400/2
-	-	-	200/3	250/3	315/3	400/3
18	30	45	55	75	90	132
25	55	75	90	132	160	200
25	45	75	110	132	160	200
25	45	75	132	160	200	250
	45	75	170	200	250	250
800	1000	1280	1600	2000	2520	3200
560	560	800	1600	2000	2520	3200
560	560	800	1600	2000	2520	3200
400	400	504	1600	2000	2520	2520
400/2	500/2	640/2	800/2	1000/2	1260/2	-
400/3	500/3	640/3	800/2	1000/2	1260/2	-
400/3	500/3	640/3	800/2	1000/2	1260/2	-
-	-	-	800/3	1000/3	1260/3	-
10/100	13/125	18/160	25/200	27/250	30/315	36/400
10/100	13/125	18/160	25/200	27/250	30/315	36/400
12/100	10/125	10/160	25/200	27/250	30/315	36/400
14/100	15/125	20/160	-	-	-	-
			17.5	17.5	17.5	17.5
5	5	5	8	8	8	8
8	8	8	14	14	14	14
50	50	60	90	110	140	180
5	6.3	9	3.5	5.5	8.5	12
20000	20000	20000	16000	16000	16000	10000
5000	5000	500	5000	1000	1000	1000
3.5	3.5	3.5	9.1	9.3	9.5	9.6
M8x25	M8x25	M8x25	M8x25	M10x30	M10x30	M10x40
10-17	10-17	10-17	10-17	15-27	15-27	15-27
5	5	5	9	9	9	9

Common Characteristics		
Conformity to Standards	-	IS/IEC 60947-3
No. of Poles	-	3P / 4P
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 Temperature	°C	40

Technical Parameters Compact On Load Changeover Switch / Compact On Load Bypass Switch

Characteristic				
				400
Rated insulation and operational voltage AC-20 & DC-20	pollution degree 3	50 / 60 Hz	V	1000
Dielectric strength			kV	10
Rated impulse withstand voltage			kV	12
Rated thermal current in ambient 40°C	In open air		A	400
	In Enclosure		A	400
Min. cable cross section		Cu	mm ²	240
Rated operational current AC -21 A		upto 415V	A	400
		440-690V	A	400
		1000V	A	400
Rated operational current AC -22 A		upto 415V	A	400
		440-500V	A	400
		690V	A	400
		1000V	A	400
Rated operational current AC -23 A		upto 415V	A	400
		440V	A	400
		500V	A	400
		690V	A	350
		1000V	A	125
Rated operational current/poles in series DC - 21 A		48V	A	63/2
		110	A	63/3
		220	A	63/3
		440	A	-
Rated operational current/poles in series DC - 22 A		48V	A	400/1
		110V	A	400/2
		220V	A	400/2
		440V	A	400/3
Rated operational current/poles in series DC - 23 A		48V	A	400/1
		110V	A	400/2
		220V	A	400/2
		440V	A	400/3
Rated operational power AC- 23	The KW - ratings are accurate for three-phase 1500 R.P.M. standard asynchronous motors	220-240V	kW	132
		400-415	kW	200
		440V	kW	315
		500 V	kW	315
		690 V	kW	315
Rated breaking capacity in category AC -23		upto 415V	A	3200
		440V	A	3200
		500V	A	3200
		690V	A	3200
Rated breaking capacity/poles in series in category DC -23		upto 48 V	A	1600
		110V	A	1600
		220V	A	1600
		440V	A	1600
Rated conditional short circuit current r.m.s and corresponding cut off current of the fuse in single phase test according to IEC 269	Cut Off/Back up fuse Rating	50KA/415V	kA	36/400
		50KA/500V	kA	36/400
		50KA/690V	kA	36/400
		80KA/800V		42/400
Rated short time withstand current	r.m.s. value I _{cw}	690V 0.2 sec	kA	
		690V 1 sec	kA	17
Rated short circuit making capacity	Peak value I _{cm}	690/500 V	kA	34
Rated capacitor power	The capacitor rating are limited by the fuse link	400-415 V	kVAr	250
Power loss/ pole	at rated operational current	-	W	13
Mechanical endurance	Divided by two for operational cycle	Oprs.	10000	10000
Electrical Endurance	At 0.65pf	Oprs.	Oprs.	1000
Weight without accessories	with handle and shaft	4 pole	kg	13
Terminal bolt size	Metric thread diameter x length		mm	M10x40
Terminal tightening torque	counter torque required		Nm	15..27
Operating Torque			Nm	20

1. Ambient Temperature 60° C derating 20%. Mounting on "ceiling" derating 10%. Mounting on wall, horizontal fuses : derating 8%

2. Utilization category B

Changeover & Bypass Switches



K type		P/K type					
630	800	1000	1250	1600	2000	2500	3150
1000	1000	1000	1000	1000	1000	1000	1000
10	10	8	8	8	8	8	8
12	12	12	12	12	12	12	12
630	800	1000	1250	1600	2000	2500	3150
630	720	1000	1250	1600	2000	2300	2600
2x185	2x240	2x(60x5)	2x(80x5)	2x(100x5)	3x(100x5)	4x(100x5)	3x(100x10)
630	800	1000	1250	1600	2000	2500 ²⁾	3150 ²⁾
630	800	1000	1250	1600	2000	2500 ²⁾	3150 ²⁾
630	630	1000	1250	1600	1000	1000 ²⁾	1000 ²⁾
630	800	1000	1250	1600	1600	1600 ²⁾	1600 ²⁾
630	800	1000	1250	1600	1600 ²⁾	1600 ²⁾	1600 ²⁾
630	800	-	-	-	-	-	-
630	630	-	-	-	-	-	-
630	720	800	800	800	-	-	-
590	670						
580	600						
350	350						
150	150						
400/1	630/1	800/1	1000/1	1250/1	1600/1	1600/1	1600/1
400/2	630/2	800/2	1000/2	1250/2	1600/2	1600/2	1600/2
400/2	630/2	800/2	1000/3	1250/3	1600/3	1600/3	1600/3
400/3	630/3	800/3					
630/1	800/1						
630/2	800/2						
630/2	800/2						
630/3	800/3						
630/1	800/1						
630/2	800/2						
630/2	800/2						
400/3	400/3						
180	200	250	250	250	250	250	250
315	355	400	400	400	400	400	400
355	355	400	400	400	400	400	400
355	355	450	450	450	450	450	450
355	355						
5040	5760	6400	6400	6400			
4720	5360						
4640	4800						
2800	2800						
2520	3200						
2520	3200						
2520	3200						
1600	1600						
54/630	63/800						
54/630	63/800						
54/630	63/800						
60/630	70/800						
38	38						
17	17	50	50	50	50	50	50
34	34	105	105	105	105	105	105
300	330	-	-	-	-	-	-
22	40	27	40	67	72	90	140
10000	6000	6000	6000	1200	1200	1200	
500	500	500	500	500	100	100	100
16.1	16.6	45.5	47	52.2	116	121	139
M12x40	M12x40	M12x60	M12x60	M12x60	M12x60	M12x60	12x60
20..35	20..35	20..35	20..35	20..35	20..35	20..35	20..35
20	20	44	44	44	70	70	70

3. Max. distance between busbar support and switch terminal - 70mm



Compact On Load Switch Disconnecter Fuse Changeover

Salient Features

- Suitable for utilization category AC-23A & comply to IS/IEC 60947-3
- Protection against overload & short circuit faults by HRC fuse links
- Compact & standardized size for range 125A~800A & space saving for panel builders
- Protection for two modes with backup fuse

Function

- C&S Compact On Load Changeover is manually operated 4 Pole switch disconnecter fuse with position I-O-II with backup HRC fuses fitted in phases. The switch offers protection in position-I as well as in position-II to the load connected through common outgoing.

Technical Parameters Compact Onload Switch Disconnecter Fuse Changeover

Parameters		125A	160A	200A	250A
Onload Switch Disconnecter Fuse C/o without fuse		CSCF 125B4CO	CSCF 160B4CO	CSCF 200B4CO	CSCF 250B4CO
Onload Switch Disconnecter Fuse C/o with fuse		CSCF 125B4COF	CSCF 160B4COF	CSCF 200B4COF	CSCF 250B4COF
Number of poles		4	4	4	4
Current rating at 40° C	I _{th} (A)	125	160	200	250
Rated insulation voltage U _i	V	1000	1000	1000	1000
Max. Rated Operational Voltage (U _e) max	V	690	690	690	690
Rated operational voltage U _e	V	415	415	415	415
Dielectric strength at 50Hz for 1 min.	KV	3.5	3.5	3.5	3.5
Rated impulse voltage U _{imp}	KV	8	8	12	12
Rated operational current I _e at 415 V					
AC 22A	A	125	160	200	250
AC 23A	A	125	160	200	250
Rated making capacity at 415V, 0.35 pf					
AC 23A	A	1250	1600	2000	2500
Rated breaking capacity at 415V, 0.35 pf					
AC 23A	A	1000	1280	1600	2000
Capacitor rating at 415V, 3ph	kVAr	50	60	90	110
Short circuit current with fuses	kA r.m.s	80	80	80	80
Rated short circuit making capacity (peak)	kA	8	8	14	14
Short time current for 1 sec.	kA r.m.s	5	5	8	8
Electrical Endurance	Operations	1000	1000	1000	1000
#Mechanical Endurance	Operations	10000	10000	10000	10000
Fuse Type BS Pattern		B2	B2	B2	B3

Mechanical Endurance also includes Electrical Endurance

1. Ambient Temperature 60 C derating 20%. Mounting on "ceiling" derating 10%. Mounting on wall, horizontal fuses : derating 8%

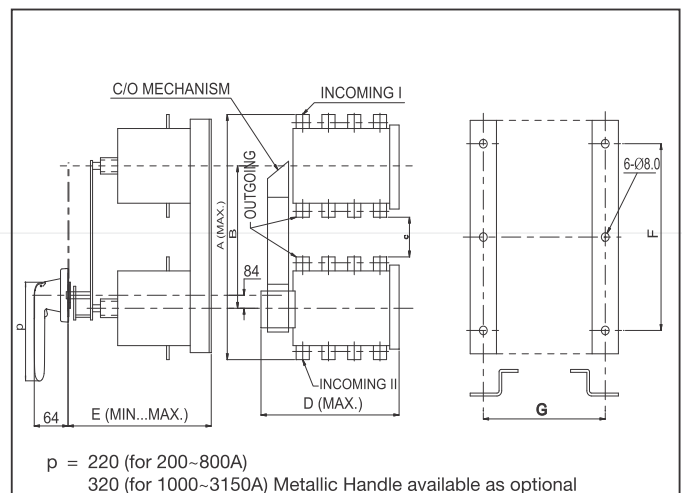
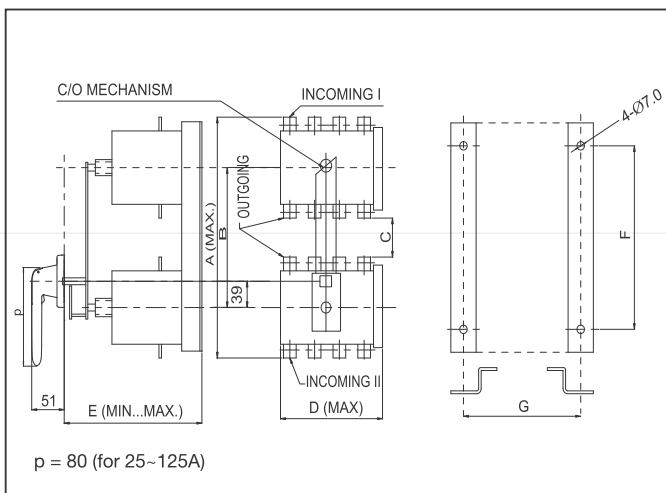
2. Utilization category B

Technical Parameters Compact Onload Switch Disconnecter Fuse Changeover

Parameters		315A	400A	630A	800A
On-Load Switch Disconnecter Fuse C/o without fuse		CSCF 315B4CO	CSCF 400B4CO	CSCF 630B4CO	CSCF 800B4CO
On-Load Switch Disconnecter Fuse C/o with fuse		CSCF 315B4COF	CSCF 400B4COF	CSCF 630B4COF	CSCF 800B4COF
Number of poles		4	4	4	4
Current rating at 40° C	Ith (A)	315	400	630	800
Rated insulation voltage Ui	V	1000	1000	1000	1000
Max. Rated Operational Voltage (Ue) max	V	690	690	690	690
Rated operational voltage Ue	V	415	415	415	415
Dielectric strength at 50Hz for 1 min.	KV	3.5	3.5	3.5	3.5
Rated impulse voltage Uimp	KV	12	12	12	12
Rated operational current Ie at 415 V					
AC 22A	A	315	400	630	800
AC 23A	A	315	400	630	720
Rated making capacity at 415V, 0.35 pf					
AC 23A	A	3150	4000	6300	7200
Rated breaking capacity at 415V, 0.35 pf					
AC 23A	A	2520	3200	5040	5760
Capacitor rating at 415V, 3ph	kVAr	140	250	270	330
Short circuit current with fuses	kA r.m.s	80	80	80	80
Rated short circuit making capacity (peak)	kA	14	34	34	34
Short time current for 1 sec.	kA r.m.s	8	17	17	17
Electrical Endurance	Operations	1000	1000	1000	500
#Mechanical Endurance	Operations	10000	10000	10000	10000
Fuse Type BS Pattern		B3	B4	C2	C3

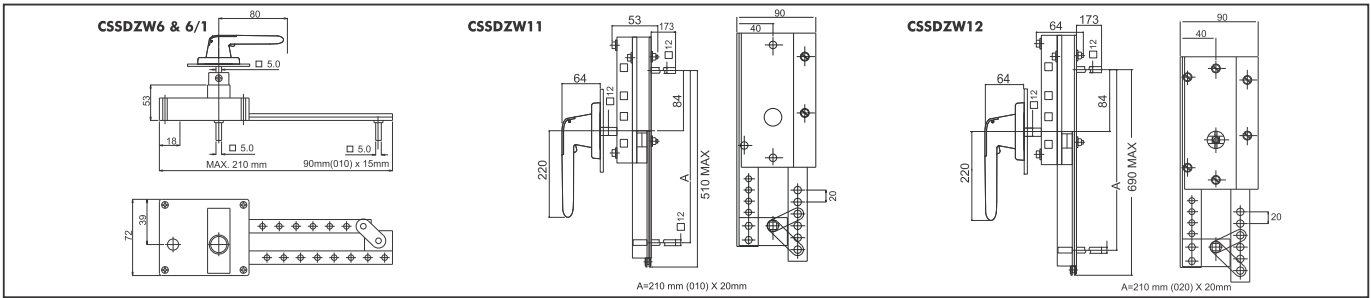
Mechanical Endurance also includes Electrical Endurance

Dimensional detail for Conventional Changeover Switch Disconnecter

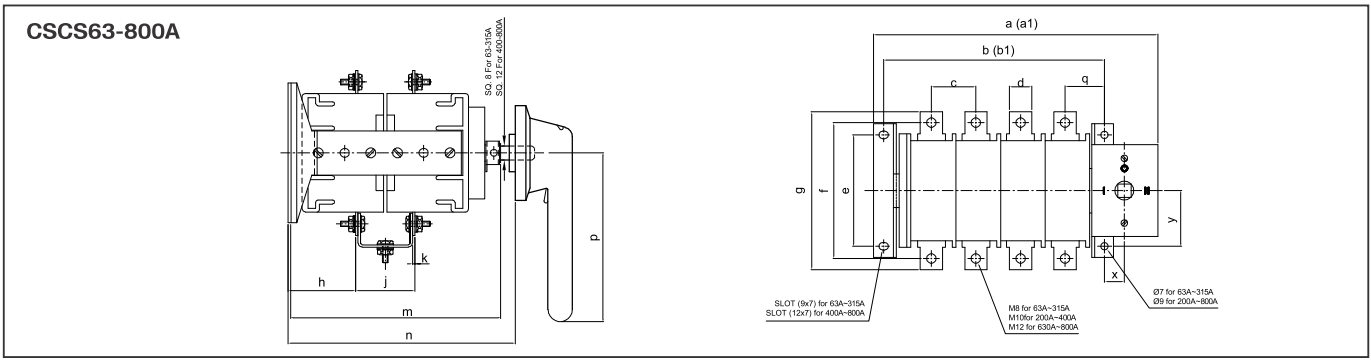


Type of C/o Switches	Dimension							Type of C/o Mechanism
	A	B	C	D	E	F	G	
CSSD 25 D4CO	187	120	52	95	180...210	120	86	CSSD ZW 6
CSSD40 D4CO	187	120	52	95	180...210	120	86	CSSD ZW 6
CSSD63 D4CO	277	180	83	145	180...210	180	145	CSSD ZW 6/1
CSSD125 D4CO	277	180	83	145	180...210	180	145	CSSD ZW 6/1

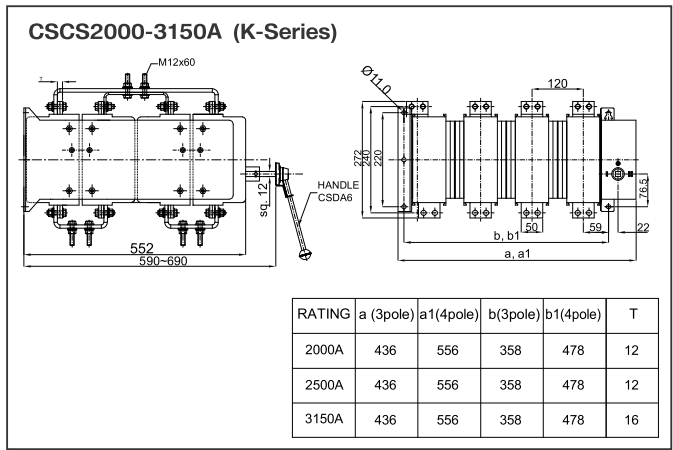
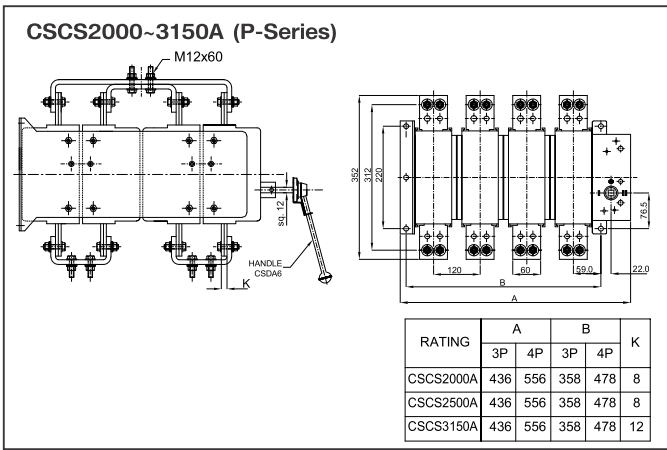
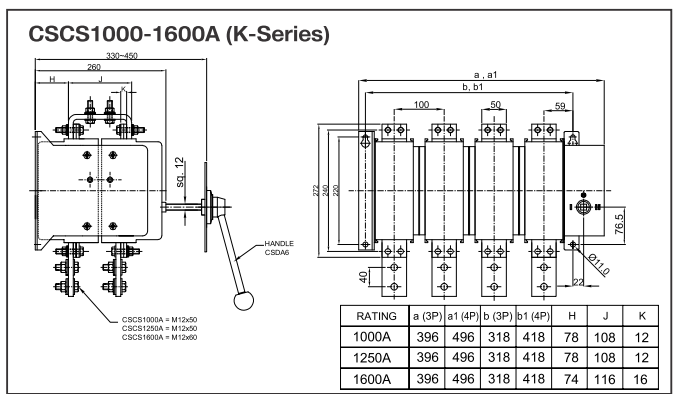
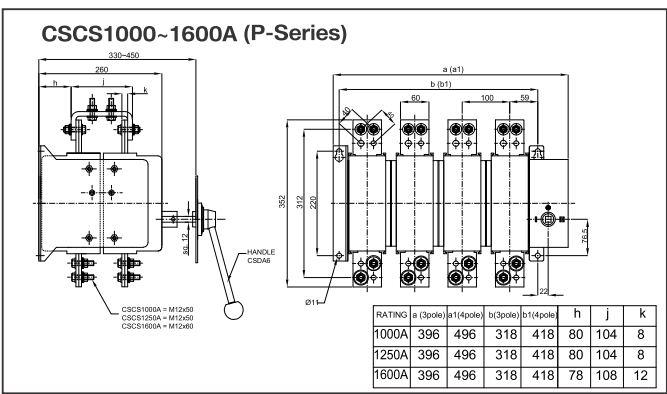
Type of C/o Switches	Dimension							Type of C/o Mechanism
	A	B	C	D	E	F	G	
CSSD200-400DM4CO	605	430	267	318	250-325	540	251	CSSD ZW 11
CSSD400K4 CO	635	430	225	335	250...325	580	251	CSSD ZW 11
CSSD630K4CO	653	430	207	360	250...325	580	299	CSSD ZW 11
CSSD800K4CO	653	430	207	384	250...325	580	323	CSSD ZW 11
CSSD1000/1250K4CO	964	610	240	457	300...350	800	412	CSSD ZW 12
CSSD1600/1800K4CO	964	610	240	635	300...350	800	590	CSSD ZW 12
CSSD2500/3150K4CO	964	610	240	800	445...495	769	624	CSSD ZW 12



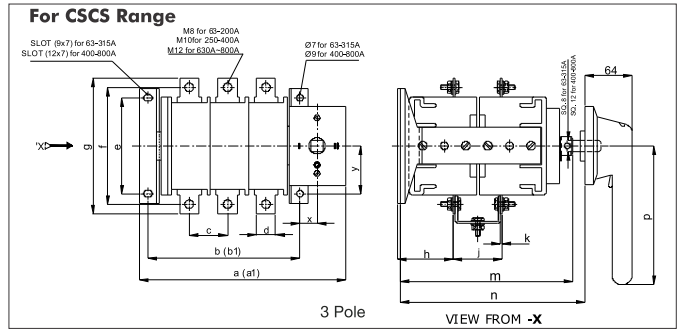
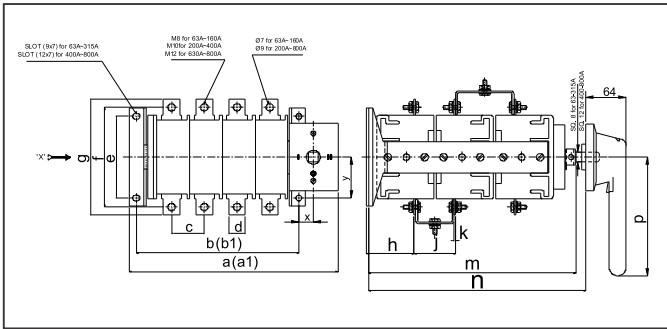
Dimensional detail for Compact On Load Changeover Switches



Rating	a (3Pole)	a1(4Pole)	b(3Pole)	b1(4Pole)	c	d	e	f	g	h	j	k	m	n	p	x	y	q
63A	215.5	255.5	158.5	198.5	40	20	100	122	142	58	51	2.0	182.5	195 ~ 295	145	18	43	35.5
80A	215.5	255.5	158.5	198.5	40	20	100	122	142	58	51	2.0	182.5	195 ~ 295	145	18	43	35.5
100A	215.5	255.5	158.5	198.5	40	20	100	122	142	58	51	2.0	182.5	195 ~ 295	145	18	43	35.5
125A	215.5	255.5	158.5	198.5	40	20	100	122	142	58	51	2.0	182.5	195 ~ 295	145	18	43	35.5
160A	215.5	255.5	158.5	198.5	40	20	100	122	142	58	51	2.0	182.5	195 ~ 295	145	18	43	35.5
200A	248.5	309.5	191	252	61	20	124	138	163	65.5	81	4.0	242	255 ~ 355	145	18	43	34
250A	248.5	309.5	191	252	61	25	124	138	163	65.5	81	4.0	242	255 ~ 355	145	18	43	34
315A	248.5	309.5	191	252	61	25	124	138	163	65.5	81	4.0	242	255 ~ 355	145	18	43	34
400A-DM	248.5	309.5	191	252	61	30	124	150	175	65.5	81	4.0	242	255 ~ 355	145	18	43	34
400A-K	282	352	208	278	70	25	150	180	205	85	96	4.0	262	300 ~ 400	220	26	47	34
630A	282	352	208	278	70	40	150	180	223	85	96	4.0	262	300 ~ 400	220	26	47	34
800A	282	352	208	278	70	40	150	180	223	85	98	5.0	262	300 ~ 400	220	26	47	34



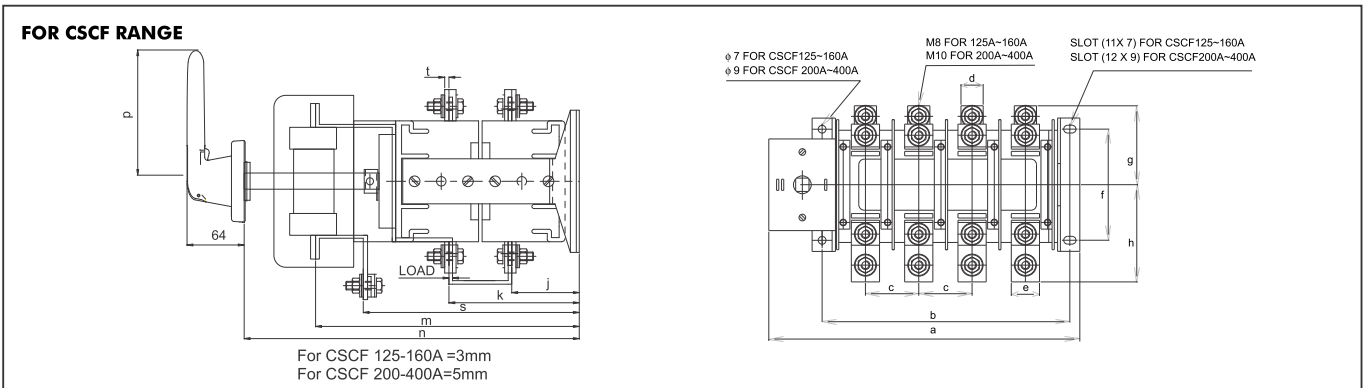
Dimensional detail for Bypass Switches



Rating	a (3Pole)	a1(4Pole)	b(3Pole)	b1(4Pole)	c	d	e	f	g	h	j	k	m	n	p	x	y
63A	215.5	255.5	158.5	198.5	40	20	100	122	142	58	51	2.0	255.5	268-368	145	18	43
80A	215.5	255.5	158.5	198.5	40	20	100	122	142	58	51	2.0	255.5	268-368	145	18	43
100A	215.5	255.5	158.5	198.5	40	20	100	122	142	58	51	2.0	255.5	268-368	145	18	43
125A	215.5	255.5	158.5	198.5	40	20	100	122	142	58	51	2.0	255.5	268-368	145	18	43
160A	215.5	255.5	158.5	198.5	40	20	100	122	142	58	51	2.0	255.5	268-368	145	18	43
200A	248.5	309.5	191	252	61	20	124	138	163	65.5	81	4.0	345	358-458	145	18	43
250A	248.5	309.5	191	252	61	25	124	138	163	65.5	81	4.0	345	358-458	145	18	43
315A	248.5	309.5	191	252	61	25	124	138	163	65.5	81	4.0	345	358-458	145	18	43
400A-DM	248.5	309.5	191	252	61	30	124	150	175	65.5	81	4.0	345	358-458	145	18	43
400A	282	352	208	278	70	25	150	180	205	85	96	4.0	392	430-530	220	26	47
630A	282	352	208	278	70	40	150	180	205	85	96	4.0	392	430-530	220	26	47
800A	282	352	208	278	70	40	150	180	205	85	98	5.0	392	430-530	220	26	47
1000A	396	496	318	418	100	60	220	312	352	80	104	8	390	460-580	205*	22	76.5
1250A	396	496	318	418	100	60	220	312	352	80	104	8	390	460-580	205*	22	76.5
1600A	396	496	318	418	100	60	220	312	352	78	108	10	390	460-580	205*	22	76.5

* Metallic Handle

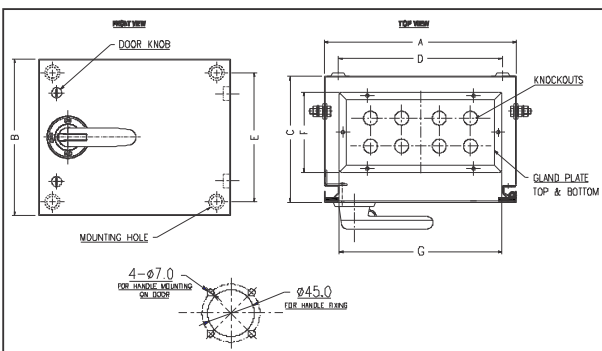
Dimensional detail for Compact Switch Disconnecter Fuse Changeover Switches



Rating	a	b	c	d	e	f	g	h	j	k	m	n	p	s	t
125A	280	223	48	20	25.4	100	71	87.5	57	113	217	290~310	145	170	2.0
160A	280	223	48	20	25.4	100	71	87.5	57	113	217	290~310	145	170	2.0
200A	310	252	61	25	30	124	81.5	99	65.5	151.5	284.5	340~370	145	226.5	4.0
250A	310	252	61	25	30	124	81.5	99	65.5	151.5	284.5	340~370	145	226.5	4.0
315A	310	252	61	25	30	124	81.5	99	65.5	151.5	284.5	340~370	145	226.5	4.0
400A	360	287	70	25	30	150	102.5	114	87	182	338	400~500	220	279	4.0
630A	478	402	100	40	40	150	111.5	117	85	186	350	400~500	220	282	4.0
800A	478	402	100	40	40	150	111.5	117	85	186	350	400~500	220	282	5.0

NOTE: • Dimensions of Changeover Switches with enclosure are available on request • Dimensions of Conventional Switch Disconnecter Fuse Changeover are available on request

Dimensional detail for Enclosures



Size	Rating	A	B	C	D	E	F	G	Knockout Dia Numbers/Side
Enclosure CSCS Compact Onload Changeover									
B	CSCS 63-160A	325	275	220	285	235	155	283	Ø38 (8)
D2	CSCS 200-315A	400	350	275	360	310	210	358	Ø38 (8)
E	CSCS 400-800A	500	400	300	460	360	235	458	Ø38 (8)
I	CSCS 1000-1800A	600	550	300	560	510	235	558	Ø38 (8)
K	CSCS 2000-3150A	800	600	700	760	560	635	758	Ø38 (16)
Enclosure for CSBS Bypass Switches									
B	CSBS 63-160A	350	300	325	310	260	260	308	Ø38 (8)
D2	CSBS 200-315A	400	350	375	360	310	310	358	Ø38 (8)
I	CSBS 400-800A	500	400	425	460	360	360	458	Ø38 (8)
K	CSBS 1000-1600A	600	550	425	560	510	360	558	Ø38 (8)
Enclosure for CSCF Fuse Changeover Switches									
B	CSCF 125-160A	350	300	325	310	260	260	308	Ø38 (8)
D2	CSCF 200-315A	500	350	375	460	310	310	458	-
E	CSCF 400-800A	600	400	500	560	360	435	558	-



NM Type Changeover Switch

- Range: 63A~250A
- Compact Construction
- High Thermal Strength (Fuse short circuit capacity upto 80kA)
- Ui upto 1000V
- Suitable for Capacitor Switching
- Available in Open Execution and Sheet Steel Enclosure

New series of non modular changeover switches introduced in 2 frame sizes. This switch exhibits an impeccable performance engendered in it by the excellence in design and engineering.

Purpose

These changeover switches are used to control and disconnect any kind of circuit –disconnection feeders both resistive and inductive loads.

By means of manual operation, changeover performs circuit switching between two independent circuits –I & II.

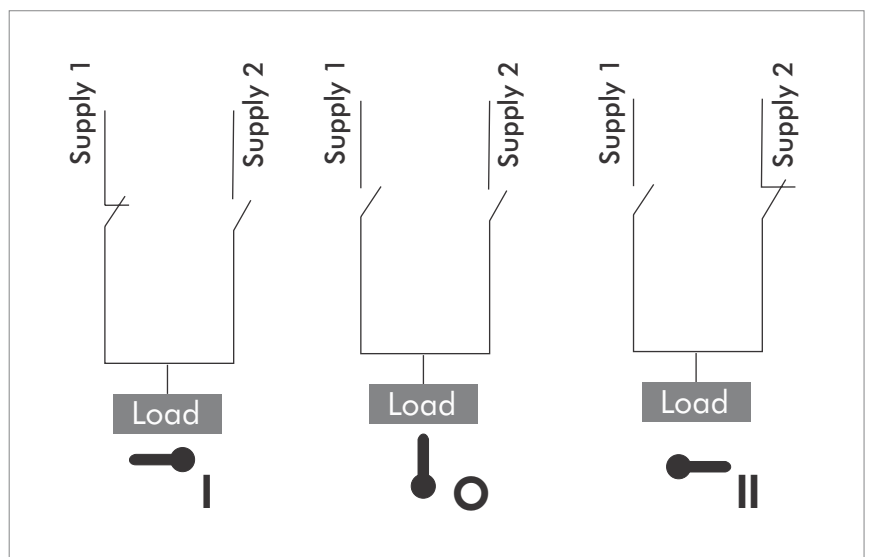
Positions

The changeover switch has three stable positions (I, O & II)

- I is connected to primary source of normal supply i.e. Transformer supply.
- O It is the neutral position between position I and II.
- II is connected to secondary source of alternate supply i.e. Generator supply.

Operation

- I In this position the switch is in ON state with normal (transformer) supply available at the outgoing terminals.
- O In this position the switch is in OFF state with both normal (transformer) and alternate (Generator) supplies isolated from the outgoing terminals.
- II In this position the switch is in ON state with alternate (generator) supply available at the outgoing terminals.



Product Range

Frame	Rating (A)
Frame 1	63, 100
Frame 2	125, 160, 200, 250

Versions

The New Changeover Switches are available in open execution as well as in sheet steel (SS) enclosure.

New Changeover Switch can be commissioned in panels. Apart from open execution the New Changeover Switch is also available in sheet steel enclosure with adequate space of cable terminations so that additional cable entry boxes are not required. The enclosures are available with the degree of protection s required by the application.



Frame 1



Frame 2

Features

Design

- Compact Construction
- Quick make Quick break mechanism
- Positive ON/OFF Indication, indicates true position of contacts
- High thermal and dynamic strength to withstand rated fused short circuit current level of 80kA rms.
- Available in Open execution and in sheet steel enclosure.
- Suitable for Capacitor Switching and as a main switch
- Silver plated copper current carrying parts
- Complete flexibility in termination
- Adjustable telescopic shaft

Operation

- Rated for AC-23A utilization category
- Complies with latest requirements of IS/ IEC-60947-3 standards.
- Provides switching control of two independent circuits (circuit I closing/ circuit II opening and vice versa).

Safety

- Safety of division: clearly apparent operation
- Handle with built in padlocking facility in the "OFF" position
- Provision for defeating door interlock.



Technical Parameters

Conformity to Standard	IS/IEC 60947-3
No. of Poles	3P/4P
Rated operational voltage (Ue)	415V
Rated Operational Frequency	50/60 Hz
Suitability for isolation	Yes
Pollution Degree as per IS / IEC	3
Ambient/Cubical Service Temperature	40°C

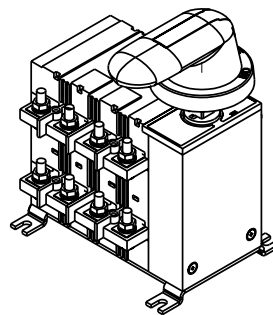
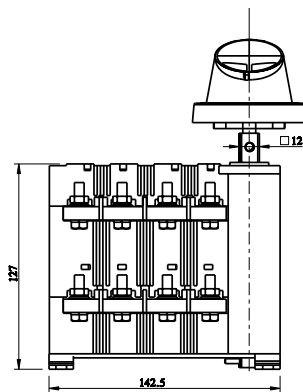
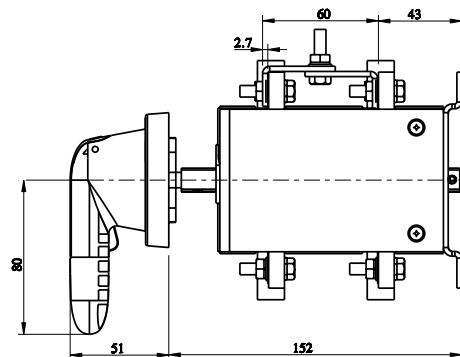
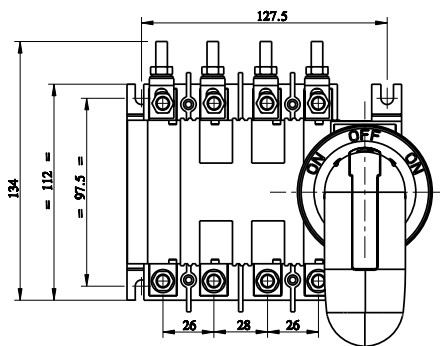
Technical Parameters		63	80	100	125	160	200	250
Current Rating at 40°C (Ith/Ithe)	A	63	80	100	125	160	200	250
Rated Insulation Voltage (Ui)	V	1000	1000	1000	1000	1000	1000	1000
Dielectric Strength of 50 Hz for 1 min	kV	4	4	4	5	5	5	5
Rated Impulse Voltage(Uimp)	kV	8	8	8	8	8	8	8
Rated Operational Current (Ie) at 415V, AC-23A	A	63	63	63	125	160	200	250
Rated Making Capacity at 415V,0,35pf AC-23A	A	630	630	630	1250	1600	2000	2500
Rated Breaking Capacity at 415V,0,35pf AC-23A	A	504	504	504	1000	1280	1600	2000
Capacitor Rating at 415V,3ph AC23A	Kvar	25	25	25	50	50	50	50
Short Circuit Current with Fuses	kA rms	80	80	80	80	80	80	80
Rated short circuit making capacity(peak)	(kAp)	5	5	5	12	12	12	12
Rated Short time withstand current for 1 sec	kA rms	3	3	3	7	7	7	7
Electrical Endurance	Operations	1500	1500	1500	1000	1000	1000	1000
Mechanical Endurance	Operations	10000	10000	10000	10000	10000	10000	10000
Operating Force	Nm	5	5	5	9.5	9.5	9.5	9.5

Connection		63	80	100	125	160	200	250
Min. Cu cable/Bus bar size	(mm ²)	16	25	35	50	70	95	120

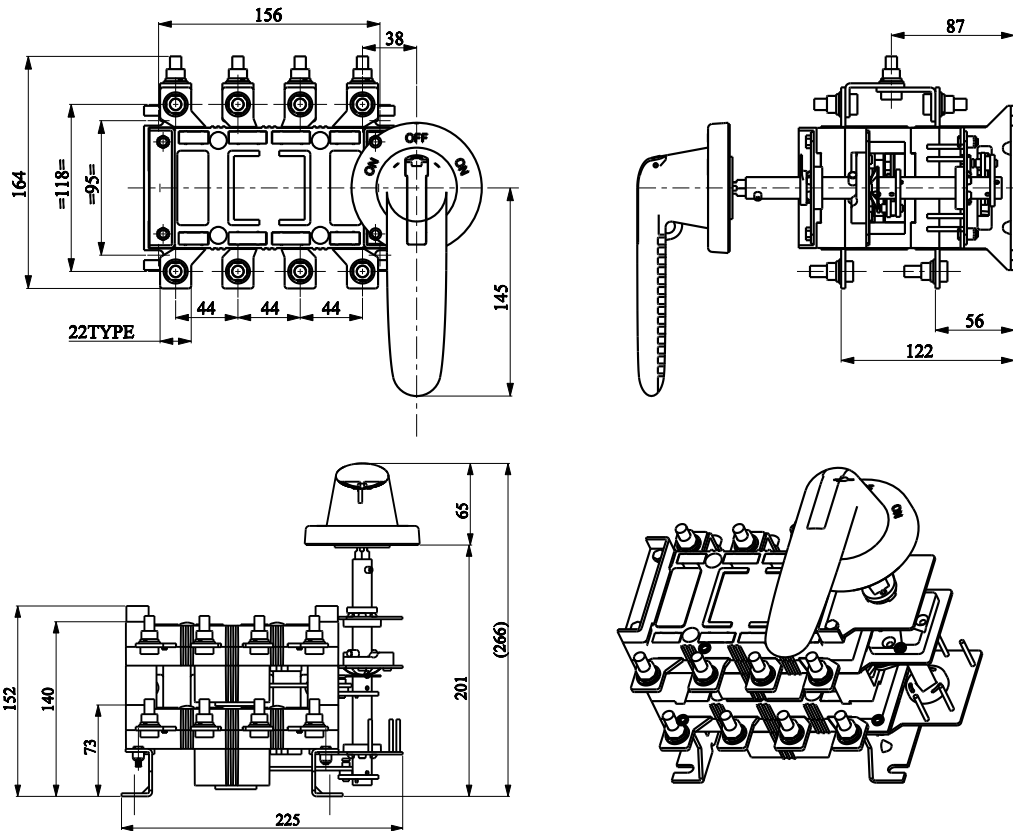
Accessories information

Accessories	Built in Design	Optional
Direct Handle Mounting kit		✓
Door Interlock for external padlocking	Pad locking is available in OFF Position and the panel door is free to open in the off condition even after pad locking.	
Bridging bars between up & down terminals on load side	✓	
Auxiliary switch 1NO + 1NC		✓
Shaft Extension (125,160, 200 & 250)	55mm	
Shaft Extension (63 &100)	52mm	
Auxiliary contact upto 2NO-2NC		✓

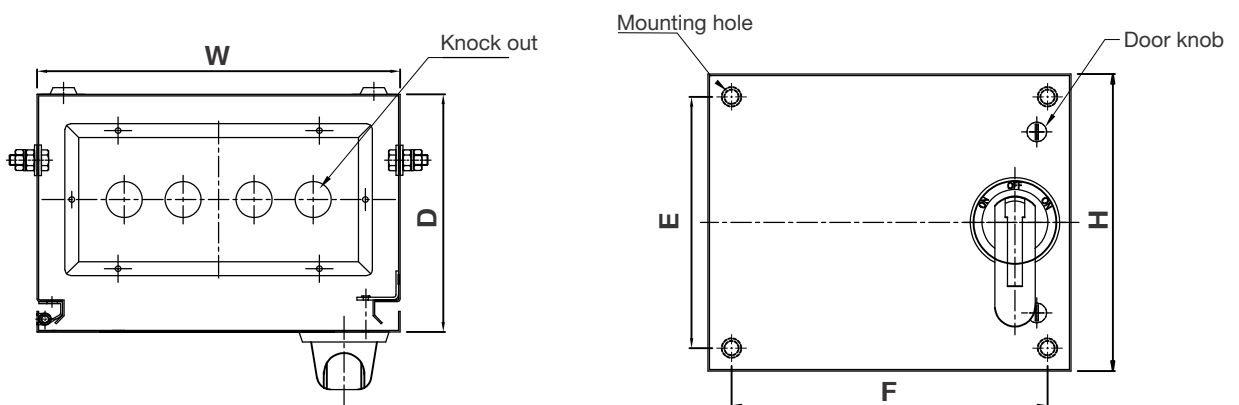
Dimensional Drawing - Frame 1 (63~100A)



Dimensional Drawing - Frame 2 (125~250A)



Dimensional Drawing - Enclosure



S. No.	Rating	W	H	D	E	F
1	CSCS63~100A NM	240	250	180	190	200
2	CSCS125~250A NM	300	300	210	290	230



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