

# Technical Parameters

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
IP Level after mounting	-	IP 54



## Technical Parameters Compact On Load Changeover Switch / Compact On-Load By Pass Switch

Characteristics				DM type											
				63	80	100	125	160	200	250	315	400			
Rated insulation and operational voltage AC-20 & DC-20	Pollution degree 3	50 / 60 Hz	V	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	
Dielectric strength			kV	3.5	3.5	3.5	6	6	6	10	10	10	10	10	
Rated impulse withstand voltage			kV	8	8	8	8	8	12	12	12	12	12	12	
Rated thermal current in ambient 40°C	In open air	-	A	63	80	100	125	160	200	250	315	400	400	400	
	In Enclosure	-	A	63	80	100	125	160	200	250	315	400	400	400	
Min. cable cross section	-	Cu	mm <sup>2</sup>	16	25	35	50	70	95	120	185	240	240	240	
Rated operational current AC -21 A	upto 415V		A	63	80	100	125	160	200	250	315	400	400	400	
	440-690V		A	63	80	100	125	160	200	250	315	400	400	400	
	1000V		A	-	-	-	-	-	200	250	315	400	400	400	
			A	-	-	-	-	-	200	250	315	400	400	400	
Rated operational current AC -22 A	upto 415V		A	63	80	100	125	160	200	250	315	400	400	400	
	440-500V		A	63	80	100	125	160	200	250	315	400	400	400	
	690V		A	63	80	100	125	160	200	250	315	400	400	400	
	1000V		A	-	-	-	-	-	200	250	315	400	400	400	
Rated operational current AC -23 A	upto 415V		A	63	80	100	125	160	200	250	315	400	400	400	
	440V		A	63	70	70	70	100	200	250	315	400	400	400	
	500V		A	63	70	70	70	100	200	250	315	400	400	400	
	690V		A	50	50	50	50	63	200	250	315	400	400	400	
	1000V		A	-	-	-	-	-	125	125	125	125	125	125	
Rated operational current/poles in series DC - 21 A	48V		A	63/2	80/2	100/2	125/2	160/2	200/2	250/2	315/2	400/2	400/2	400/2	
	110		A	63/3	80/3	100/3	125/3	160/3	200/2	250/2	315/2	400/2	400/2	400/2	
	220		A	63/3	80/3	100/3	125/3	160/3	200/2	250/2	315/2	400/2	400/2	400/2	
	440		A	-	-	-	-	-	200/3	250/3	315/3	400/3	400/3	400/3	
	750		A	-	-	-	-	-	-	-	-	-	-	-	
			A	-	-	-	-	-	-	-	-	-	-	-	
Rated operational current/poles in series DC - 22 A	48V		A	63/2	80/2	100/2	125/2	160/2	200/2	250/2	315/2	400/2	400/2	400/2	
	110V		A	63/3	80/3	100/3	125/3	160/3	200/2	250/2	315/2	400/2	400/2	400/2	
	220V		A	63/3	80/3	100/3	125/3	160/3	200/2	250/2	315/2	400/2	400/2	400/2	
	440V		A	-	-	-	-	-	200/3	250/3	315/3	400/3	400/3	400/3	
	750V		A	-	-	-	-	-	-	-	-	-	-	-	
			A	-	-	-	-	-	-	-	-	-	-	-	
Rated operational current/poles in series DC - 23 A	48V		A	63/2	80/2	100/2	125/2	160/2	200/2	250/2	315/2	400/2	400/2	400/2	
	110V		A	63/3	80/3	100/3	125/3	160/3	200/2	250/2	315/2	400/2	400/2	400/2	
	220V		A	63/3	80/3	100/3	125/3	160/3	200/2	250/2	315/2	400/2	400/2	400/2	
	440V		A	-	-	-	-	-	200/3	250/3	315/3	400/3	400/3	400/3	
	750V		A	-	-	-	-	-	200/4	250/4	315/4	400/4	400/4	400/4	
			A	-	-	-	-	-	200/4	250/4	315/4	400/4	400/4	400/4	
Rated operational power AC- 23	The KW - ratings are accurate for three-phase 1500 R.P.M. standard asynchronous motors	220-240V	kW	15	15	18	22	45	55	75	90	132	132	132	
	400-415	kW	25	25	25	37	75	110	132	160	200	200	200	200	
	440V	kW	25	25	25	37	75	110	132	160	200	200	200	200	
	500 V	kW	25	25	25	37	75	132	160	200	200	200	200	200	
	690 V	kW	25	25	25	37	75	132	170	200	250	250	250	250	
		kW	25	25	25	37	75	132	170	200	250	250	250	250	
Rated breaking capacity in category AC -23	upto 415V		A	504	640	800	1000	1280	1600	2000	2520	3200	3200	3200	
	440V		A	504	560	560	560	800	1600	2000	2520	3200	3200	3200	
	500V		A	504	560	560	560	800	1600	2000	2520	3200	3200	3200	
	690V		A	400	400	400	400	504	1600	2000	2520	3200	3200	3200	
			A	400	400	400	400	504	1600	2000	2520	3200	3200	3200	
Rated breaking capacity/poles in series in category DC -23	upto 48 V		A	250/2	320/2	400/2	500/2	640/2	800/2	1000/2	1260/2	1260/2	1260/2	1260/2	
	110V		A	250/3	320/3	400/3	500/3	640/3	800/2	1000/2	1260/2	1260/2	1260/2	1260/2	
	220V		A	250/3	320/3	400/3	500/3	640/3	800/2	1000/2	1260/2	1260/2	1260/2	1260/2	
	440V		A	-	-	-	-	-	800/3	1000/3	1260/3	1260/3	1260/3	1260/3	
	750V		A	-	-	-	-	-	800/4	1000/4	1260/4	1260/4	1260/4	1260/4	
			A	-	-	-	-	-	800/4	1000/4	1260/4	1260/4	1260/4	1260/4	
Rated conditional Short Circuit current r.m.s		690V/500V	kA												
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	8/80	10/100	13/125	18/160	25/200	27/250	30/315	36/400	36/400	36/400	
		50KA/500V	kA	8/63	8/80	10/100	13/125	18/160	25/200	27/250	30/315	36/400	36/400	36/400	
		50KA/690V	kA	8/63	12/80	12/100	10/125	10/160	25/200	27/250	30/315	36/400	36/400	36/400	
		80KA/500V	kA	10/63	60/630	14/100	15/125	20/160	-	-	-	-	-	-	-
			kA	10/63	60/630	14/100	15/125	20/160	-	-	-	-	-	-	-
Rated short time withstand current	r.m.s. value I <sub>cw</sub>	690V 0.2 sec	kA						17.5	17.5	17.5	17.5	17.5	17.5	
		690V 1 sec	kA	5	5	5	5	5	8	8	8	8	8	8	
Rated short circuit making capacity	Peak value I <sub>cm</sub>	690/500 V	kA	10	10	10	10	10	35	35	35	35	35	35	
Rated capacitor power	The capacitor rating are limited by the fuse link	400-415 V	kVAr	50	50	50	50	60	90	110	140	180	180	180	
Power loss/ pole	at rated operational current		W	4	5	5	6.3	9	3.5	5.5	8.5	12	12	12	
Mechanical endurance	Divided by two for operational cycle		Ops.	20000	20000	20000	20000	20000	16000	16000	16000	10000	10000	10000	
Electrical Endurance	At 0.65pf		Ops.	5000	5000	5000	5000	500	5000	1000	1000	1000	1000	1000	
Weight without accessories	with handle and shaft	3 pole	kg	0.6	0.6	0.6	1.6	1.68	3	3	3	3.3	3.3	3.3	
		4 pole	kg	1	1	1	2	2.25	3.7	3.7	3.7	4	4	4	
Terminal bolt size	Metric thread diameter x length		mm	M8x25	M8x25	M8x25	M8x25	M8x25	M8x25	M10x30	M10x30	M10x40	M10x40	M10x40	
Terminal tightening torque	counter torque required		Nm	8	8	8	8	8	30.44	30.44	30.44	30.44	30.44	30.44	
Operating Torque	3-pole switch disconnecter		Nm	2.5	2.5	2.5	2.5	2.5	8.2	8.2	8.2	8.2	8.2	8.2	

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

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
IP Level after mounting	-	IP 54



## Technical Parameters Compact On Load Changeover Switch / Compact On-Load By Pass Switch

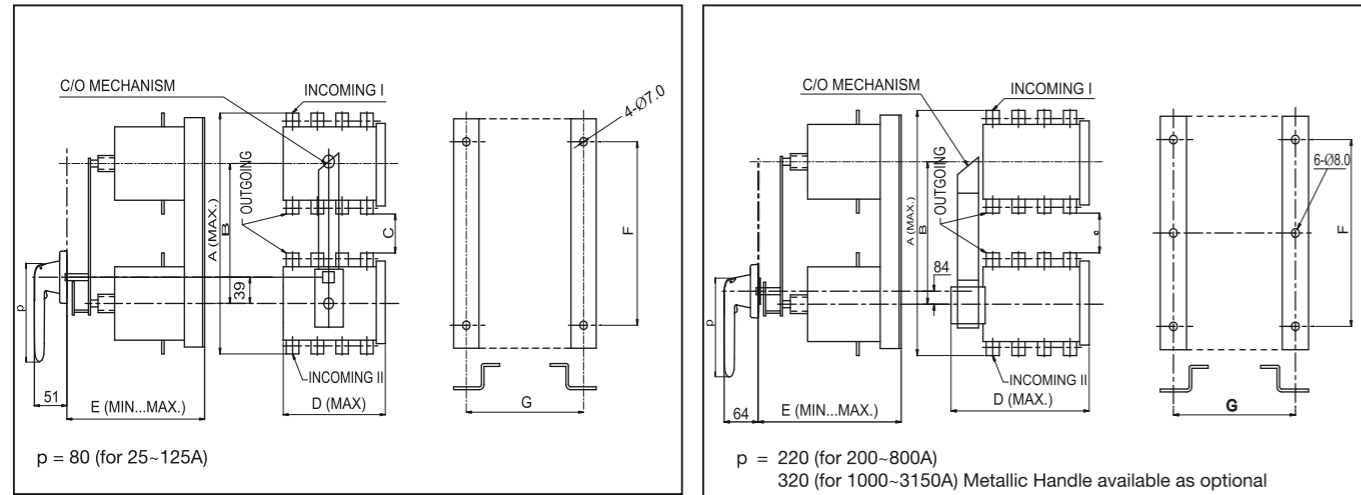
Characteristic					K type			P/K type				
					400	630	800	1000	1250	1600	2500	3150
Rated insulation and operational voltage AC-20 & DC-20	pollution degree 3	50 / 60 Hz	V	1000	1000	1000	1000	1000	1000	1000	1000	1000
Dielectric strength			kV	10	10	10	8	8	8	8	8	8
Rated impulse withstand voltage			kV	12	12	12	8	8	8	8	8	8
Rated thermal current in ambient 40°C	In open air		A	400	630	800	1000	1250	1600	2500	3150	
	In Enclosure		A	400	630	720	1000	1250	1600	2300	2600	
Min. cable cross section	Cu	mm <sup>2</sup>		240	2x185	2x240	2x(60x5)	2x(80x5)	2x(100x5)	4x(100x5)	3x(100x10)	
Rated operational current AC -21 A	upto 415V	A		400	630	800	1000	1250	1600	2500 <sup>1)</sup>	3150 <sup>1)</sup>	
	440-690V	A		400	630	800	1000	1250	1600	2500 <sup>1)</sup>	3150 <sup>1)</sup>	
	1000V	A		400	630	630	1000	1250	1600	1000 <sup>2)</sup>	1000 <sup>2)</sup>	
Rated operational current AC -22 A	upto 415V	A		400	630	800	1000	1250	1600	1600 <sup>2)</sup>	1600 <sup>2)</sup>	
	440-500V	A		400	630	800	1000	1250	1600	1600 <sup>2)</sup>	1600 <sup>2)</sup>	
	690V	A		400	630	800	-	-	-	-	-	
	1000V	A		400	630	630	-	-	-	-	-	
Rated operational current AC -23 A	upto 415V	A		400	630	720	1000	1000	1000	1000	1000	
	440V	A		400	590	670						
	500V	A		400	580	600						
	690V	A		350	350	350						
	1000V	A		125	150	150						
Rated operational current/poles in series DC - 21 A	48V	A		63/2	400/1	630/1	800/1	1000/1	1250/1	1600/1		
	110	A		63/3	400/2	630/2	800/2	1000/2	1250/2	1600/2		
	220	A		63/3	400/2	630/2	800/2	1000/3	1250/3	1600/3		
	440	A		-	400/3	630/3	800/3	-	-	-		
	750	A		-	-	-	-	-	200/4	250/4	315/4	
		A		-	-	-	-	-	-	-	-	
Rated operational current/poles in series DC - 22 A	48V	A		400/1	630/1	800/1						
	110V	A		400/2	630/2	800/2						
	220V	A		400/2	630/2	800/2						
	440V	A		400/3	630/3	800/3						
	750V	A		-	-	-						
Rated operational current/poles in series DC - 23 A	48V	A		400/1	630/1	800/1						
	110V	A		400/2	630/2	800/2						
	220V	A		400/2	630/2	800/2						
	440V	A		400/3	630/3	800/3						
	750V	A		-	-	-						
Rated operational power AC- 23	The KW - ratings are accurate for three-phase 1500 R.P.M. standard asynchronous motors											
	220-240V	kW		132	180	200	250	250	250	250	250	
	400-415	kW		200	315	355	400	400	400	400	400	
	440V	kW		315	355	355	400	400	400	400	400	
	500 V	kW		315	355	355	450	450	450	450	450	
	690 V	kW		315	355	355						
Rated breaking capacity in category AC -23	upto 415V	A		3200	5040	5760	8000	8000	8000	8000	8000	
	440V	A		3200	4720	5360						
	500V	A		3200	4640	4800						
	690V	A		3200	2800	2800						
		A		-	-	-						
Rated breaking capacity/poles in series in category DC -23	upto 48 V	A		-								
	110V	A		-								
	220V	A		-								
	440V	A		-								
Rated conditional Short Circuit current r.m.s												
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											
Rated short time withstand current	r.m.s. value l <sub>cw</sub>											
	690V 0.2 sec	kA			38	38						
	690V 1 sec	kA		17	17	17	50 <sup>3)</sup>	50 <sup>3)</sup>	50 <sup>3)</sup>	80 <sup>3)</sup>	80 <sup>3)</sup>	
	690/500 V	kA		65	80	80	105	105	105	105/140	105/140	
	400-415 V	kVAr		250	300	330	-	-	-	-	-	
Rated capacitor power	The capacitor rating are limited by the fuse link											
Power loss/ pole	at rated operational current		W	13	22	40	27	40	67	90	140	
Mechanical endurance	Divided by two for operational cycle	Oprs.		10000	10000	6000	6000	6000	1200	1200		
Electrical Endurance	At 0.65pf	Oprs.		1000	500	500	500	500	100	100		
Weight without accessories	with handle and shaft		kg	5.2	6.2	6.2	16.3	16.3	17.5	37	37	
			kg	6.4	7.6	7.6	20.5	20.5	22.5	47	47	
Terminal bolt size	Metric thread diameter x length		mm	M10x40	M12x40	M12x40	M12x60	M12x60	M12x60	M12x60	12x60	
Terminal tightening torque	counter torque required		Nm	30..44	50..75	50..75	50..75	50..75	50..75	50..75	50..75	
Operating Torque	3-pole switch disconnecter		Nm	17	21	21	21	21	21	50	50	

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

2. Utilization category B

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

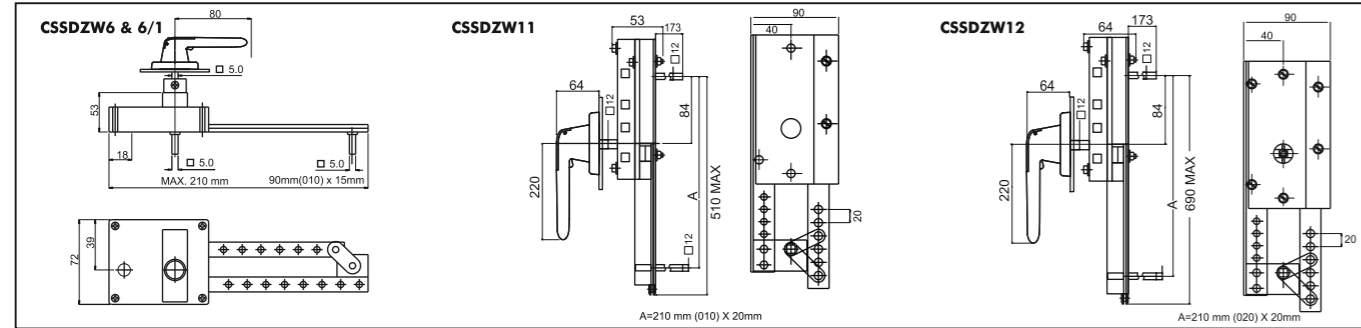
## Dimensional detail for Conventional Changeover Switch Disconnecter



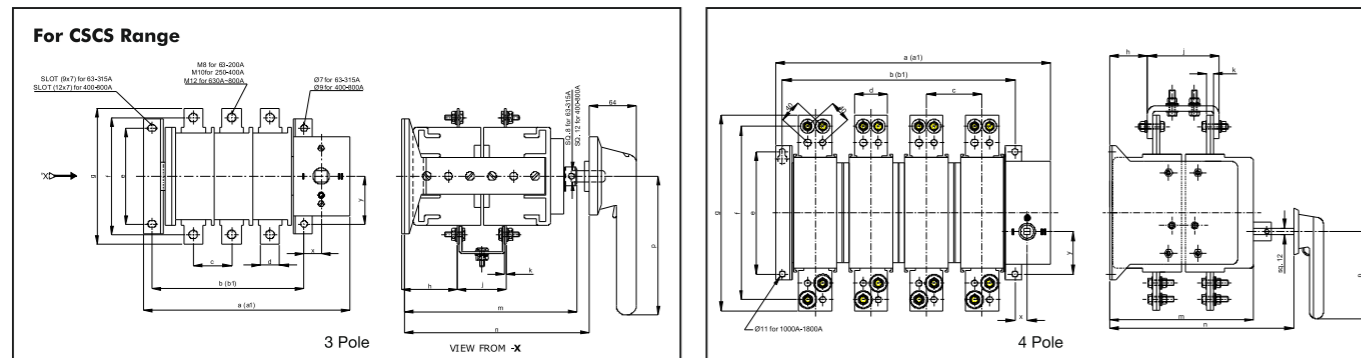
Type of C/o Switches	Dimension							Type of C/o Mechanism
	A	B	C	D	E	F	G	
CSSD 25 D4CO	187	120	52	95	180...210	120	86	CSSD ZW 6
CSSD40 D4CO	187	120	52	95	180...210	120	86	CSSD ZW 6
CSSD63 D4CO	277	180	83	145	180...210	180	145	CSSD ZW 6/1
CSSD125 D4CO	277	180	83	145	180...210	180	145	CSSD ZW 6/1

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



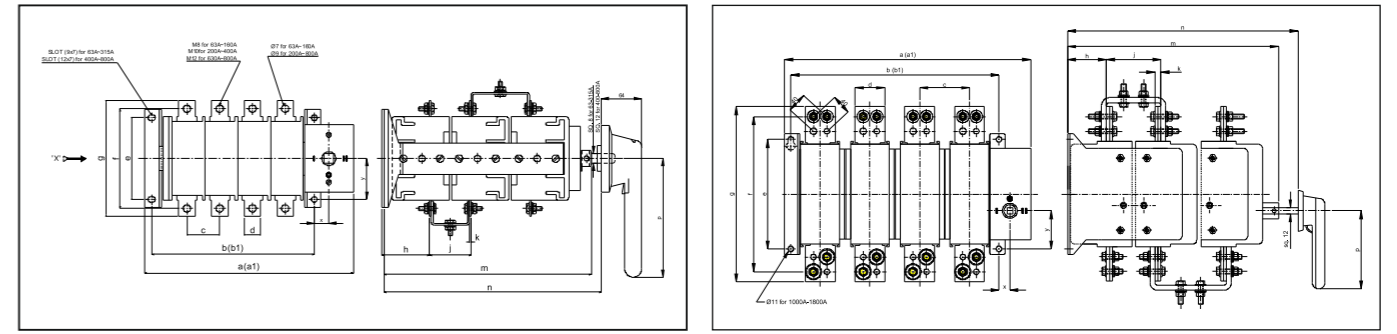
## Dimensional detail for Compact On Load Changeover Switches



Rating	a (3Pole)	a1(4Pole)	b(3Pole)	b1(4Pole)	c	d	e	f	g	h	j	k	m	n	p	x	y
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
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
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
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
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
200A	248.5	309.5	191	252	61	20	124	138	163	65.5	81	4.0	242	255-355	145	18	43
250A	248.5	309.5	191	252	61	25	124	138	163	65.5	81	4.0	242	255-355	145	18	43
315A	248.5	309.5	191	252	61	25	124	138	163	65.5	81	4.0	242	255-355	145	18	43
400A-DM	248.5	309.5	191	252	61	30	124	150	175	65.5	81	4.0	242	255-355	145	18	43
400A-K	282	352	206	276	70	25	150	180	205	85	96	4.0	262	300-400	220	26	47
630A	282	352	206	276	70	40	150	180	223	85	96	4.0	262	300-400	220	26	47
800A	282	352	206	276	70	40	150	180	223	85	98	5.0	262	300-400	220	26	47
1000A*	396	496	318	418	100	60	220	312	352	80	104	8	260	330-450	205*	22	76.5
1250A*	396	496	318	418	100	60	220	312	352	80	104	8	260	330-450	205*	22	76.5
1600A*	396	496	318	418	100	60	220	312	352	78	108	10	260	330-450	205*	22	76.5
2000A*	436	556	358	478	120	60	220	312	352	80	104	8	552	590-690	325*	22	76.5
2500A*	436	556	358	478	120	60	220	312	352	80	104	8	552	590-690	325*	22	76.5
3150A*	436	556	358	478	120	60	220	312	352	78	108	10	552	590-690	325*	22	76.5

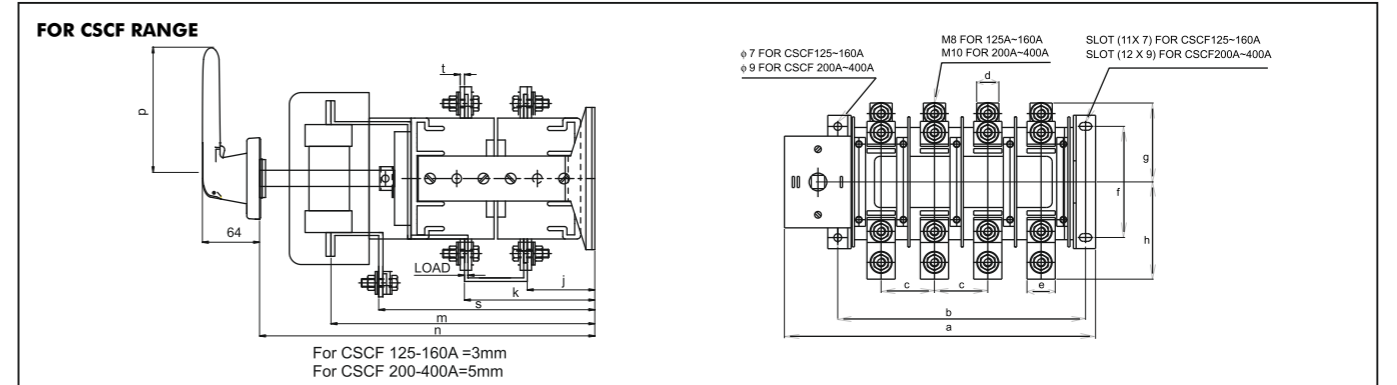
\*P type \* Metallic Handle

## 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	206	276	70	25	150	180	205	85	96	4.0	392	430-530	220	26	47
630A	282	352	206	276	70	40	150	180	205	85	96	4.0	392	430-530	220	26	47
800A	282	352	206	276	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

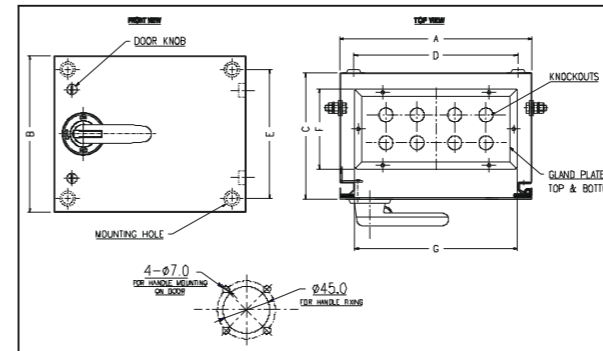
## Dimensional detail for Compact Switch Disconnecter Fuse Changeover Switches



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
<b>Enclosure CSCS Compact Onload Changeover</b>									
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)
<b>Enclosure for CSBS Bypass Switches</b>									
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 1000-1800A	600	550	425	560	510	360	558	Ø38(8)
<b>Enclosure for CSCF Fuse Changeover Switches</b>									
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	-