



- B-21, Bhan Nagar, Queens Road, Jaipur-302021
- Website: www.aumshivay.com, www.omengineering.in
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CHANGEOVER SWITCH



Changeover Switch; We deals with L&T Changeover Switches combining compactness with high performance & customer convenience, thus, making it a state-of-the-art product in changeover technology. These covers ratings from 63A to 2000A. There are two type of Changeover Switches available in our Stock such as Manual Changeover Switch & Motorised Changeover Switch.

Basic function of Changeover Switches		
POSITION-1	POSITION O	POSITION II
Switch is in ON position with normal supply available at the outgoing terminals	Switch is in OFF position & outgoing terminals are isolated from both supplies (normal & alternate supplies)	Switch is in ON position with alternate supply available at the outgoing terminals.
Onload Changeover S-D consists of two separate sets of terminals for incoming supplies and a set of output terminals to connect the common load. Thus, changeover switch ensures continuity of supply to the load by alternating between normal and alternate supply.		

Performance	
Higher short-time withstand Capacity	Contact system is of double break, knife type having self wiping action with electro-dynamic compensation. This ensures reliable performance during normal as well as short circuit fault conditions, offering higher short-time withstand rating.
Higher life	Changeover switch offers high electrical and mechanical life in compact frame sizes. The electrical and mechanical life are two times the requirement of the standard.
Total flexibility of connection	Factory fitted external shorting links can be easily removed and fitted on the other side as required at site (63A to 2000A). This gives more flexibility at the time of installation.
Maximum termination capacity	Changeover Switch provides generous terminal capacity in its compact size, facilitating aluminum termination.
Higher ground clearance	Higher ground clearance between terminals and mounting base plate ensures adequate clearance even after connecting cables. This eliminates the possibility of phase to ground flash over.
Total safety	Changeover Switch provides complete safety by providing terminal shrouds, source separator and inter-phase barriers.



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MANUAL CHANGEOVER SWITCH



Manual Changeover Switch; The range covers ratings from 63 A to 2000A in 6 frame sizes. These changeover switches are available in open execution, Sheet steel enclosure, fused version (suitable for DIN type fuse - link). The range are covered through 6 frames as shown below.

Frame No.	Ratings (A)		
I	63	100	125
II	125	160	200
III	250	315	-
IV	400	630	-
v	630	800	1000
VI	1250	1600	2000



Features:

- Range 63A to 2000A, 415V, AC 23A, 4P
- Enclosure Version does not require separate cable Gland Box.
- Terminal Shrouds, Source Separator and Phase Barriers included.
- Staggered Terminals make cable termination easy.
- Suitable for horizontal as well as vertical mounting.





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Onload Changeover S-D has 3 stable positions as defined below;

Rating (A)	Unit	Frame-1			Frame-2			Frame-3		Frame 4		Frame 5			Frame 6		
		63A	100A	125A	125A	160A	200A	250A	315A	400A	630A	630A	800A	1000A	1250A	1600A	2000A
Reference Standards	IS/ IEC 60947-3, EN 60947-3																
Type designation	-	C01-63	C01-100	C01-125	C02-125	C02-160	C02-200	C03-250	C03-315	C04-400	C04-630	C05-630	C05-800	C05-1000	C06-1250	C06-1600	C06-2000
No. of Poles	-	4 Pole	4 Pole	4 Pole	4 Pole	4 Pole	4 Pole	4 Pole	4 Pole	4 Pole	4 Pole	4 Pole	4 Pole	4 Pole	4 Pole	4 Pole	4 Pole
Rated operational voltage (U _e)	(V)	415	415	415	415	415	415	415	415	415	415	415	415	415	415	415	415
Rated frequency	(Hz)	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60
Rated insulation voltage (U _i)	(V)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Rated impulse withstand voltage (U _{imp})	(kV)	8	8	8	12	12	12	12	12	12	12	12	12	12	12	12	12
Pollution degree	-	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Conventional free air thermal current, I _{th} at 40°C	(A)	63	100	125	125	160	200	250	315	400	630	630	800	1000	1250	1600	2000
Conventional enclosed thermal current, I _{the} at 40°C	(A)	63	100	125	125	160	200	250	315	400	630	630	800	1000	1250	1600	2000
Rated operational current, I _e AC-21A / AC-22A / AC-23A	(A)	63	100	125	125	160	200	250	315	400	630	630	800	1000	1250	1600/1250	2000/1250
Rated operational power for AC-23A*	(kW)	37	50	65	65	85	85	132	160	225	315	315	400	450	710	710	710
Rated breaking capacity for AC-23A	(A)	504	800	1000	1000	1280	1600	2000	2520	3200	5040	5040	6400	8000	10000	10000	10000
Rated making capacity for AC-23A	(A)	630	1000	1250	1250	1600	2000	2500	3150	4000	6300	6300	8000	10000	12500	12500	12500
Short time withstand, I _{sw}	1 sec	(kA rms)	4	5	5	8	8	8	16	18	22	26	35	50	50	50	50
	0.2 sec	(kA rms)	7	10	10	18	18	18	28	28	35	35	70	85	85	85	85
Short-circuit making capacity, I _{cm}	(kA peak)	5.9	7.7	7.7	14	14	14	32	36	46	55	73.5	105	105	105	105	105
Endurance (Category-A)	Mechanical	(O-I-O-II-O Cycle)	20000	20000	20000	16000	16000	16000	16000	16000	10000	10000	10000	10000	10000	10000	10000
	Electrical	(O-I-O-II-O Cycle)	3000	3000	2000	2000	2000	2000	2000	2000	2000	2000	2000	1000	1000	1000	1000
Type and size of fuse	DIN/ Cylin	-	14 x 51	NA	NA	0	0	NA	1	1	2	NA	3	3	NA	NA	NA
Rated fused short-circuit current at 415 V, 50/60 Hz	DIN/ Cylin	(kA rms)	80	NA	NA	100	100	NA	100	100	100	NA	100	100	NA	NA	NA
Termination Capacity																	
Maximum Al. cable with lug	(sq mm)	25	50	70	95	95	150	185	240	2x300	2x300	2x400	2x400	2x400	2x12x63	4x8x50	3x10x100
Maximum link width	(mm)	16	22	22	30	30	30	40	40	50	50	60	60	60	80	80	100
Maximum link thickness	(mm)	2	4.7	4.7	5	5	5	8	8	8	2 x 8	2 x 10	2 x 10	2 x 10	3 x 12	3 x 12	3 x 12
Termination tightening torque	(N-m)	4.5	4.5	4.5	10	10	10	20	20	27	27	35	35	35	55	55	55
Operating torque center / side operating	(N-m)	4.5	4.5	4.5	10/13	10/13	10/13	20/25	20/25	28/32	28/32	30 / 40	30 / 40	30 / 40	55	55	55
Weight (without accessories)	(Kg)	2	2.5	2.7	4	4	4	6.5	7	14	14.5	20	22	22	52	57	75

* These values are for 4 pole squirrel cage induction motors and are provided only for guidance and may vary as per the motor manufacturer.
 # Rated operational current, I_e AC-21A/AC-22A. ◊Type cylindrical fuse.
 \$ Claimed Impulse withstand voltage with use of source separator and inter phase barriers.





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Features :

- Complete touch proof design, with help of terminal shroud, source separator and inter-phase barriers
- Staggered terminals provide clear access to all terminals from the front, ensuring ease of termination
- Patented dual dead center mechanism enables the user to toggle between central or side positions for operating handle. This can be easily converted on site as required.
- Multi featured operating handle:
 - Unique flip-able handle for rating 400A and above which enables the user to operate the switch with two hands
 - Provision for padlocking in OFF position with three padlocks
 - Defeat feature in both ON states and auto restoration of panel door
 - IP54 with extended type operating handle.

KRISTAN





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MOTORISED CHANGEOVER SWITCH



Motorised Changeover Switch; Motorised Changeover Switches are remotely-controlled switches which switch from one supply to another on receipt of signal from an external controller.

Modes of Operation

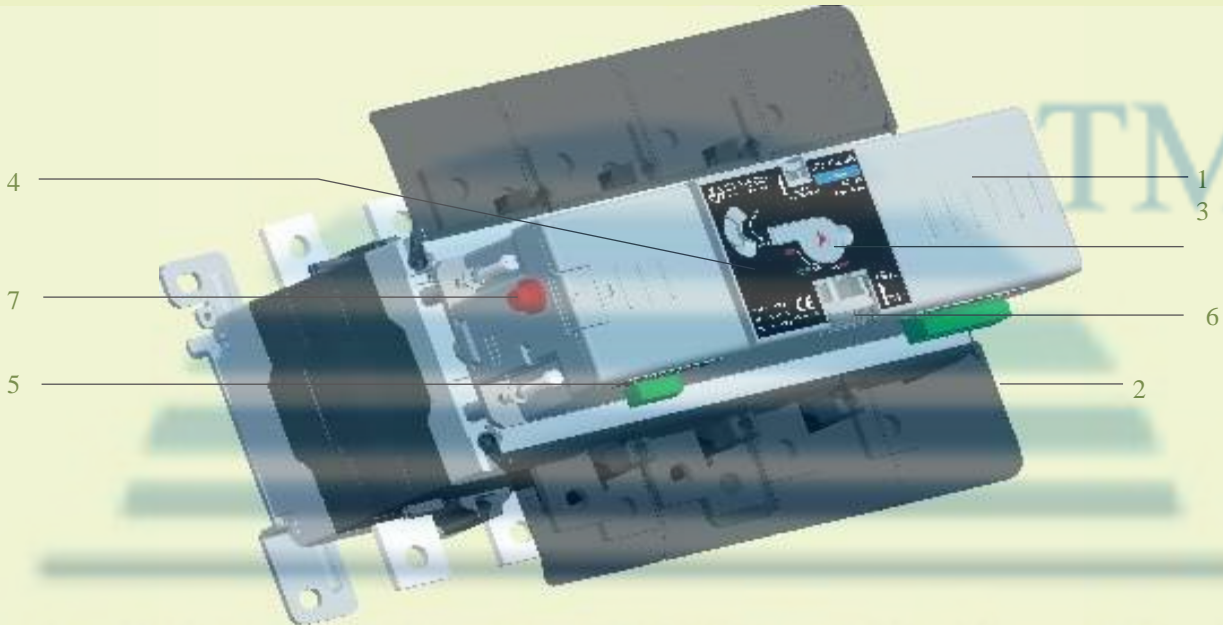
OFF Mode:	In this mode, the automatic control is disabled and the controller does not take any action. All views of the measures and the status of the LEDs remain active. To access the programming/settings menu, it is mandatory to operate in OFF mode. Pressing the OFF-RESET button resets the retentive alarms, provided the conditions that generated the alarm have been removed.
Manual Mode:	In this mode, the MCO can be manually controlled by the pressing the MAN key. Closing/opening operation can be achieved by : - Selecting the switch position - Pressing the p and q buttons, for a minimum time of 300ms, to confirm the closing or opening operation The generators can also be controlled manually by moving on the page start/stop groups.

Rating (A)	Unit	Frame-2	Frame-3	Frame 4	Frame 5	Frame 6	
		125 & 200	250 & 315	400 & 630	630 to 1000	1250 to 2000	
Reference Standards	IS/IEC 60947-3, IEC 60947- 3, EN60947-3						
Rated frequency	(Hz)	50	50	50	50	50	
Rated Control Voltage	(V)	240 V ac	240 V ac	240 V ac	240 V ac	240 V ac	
Control Voltage Range	(%)	85% - 110%	85% - 110%	85% - 110%	85% - 110%	85% - 110%	
Pollution degree	-	3	3	3	3	3	
Operating Temperature	(°C)	-5 to + 55	-5 to + 55	-5 to + 55	-5 to + 55	-5 to + 55	
Ingress protection (from front)		IP30	IP30	IP30	IP30	IP30	
Max. current at 240 V ac	(A)	2	2	2	2	2	
Operating Time	0-I/I-0	(Sec)	0.5	0.6	0.7	0.7	0.7
	I-II/II-I	(Sec)	1.4	1.4	1.4	1.4	1.4
Black out time	(Sec)	1.4	1.4	1.4	1.4	1.4	
Control glass fuse current rating	(240 V ac)	(A)	1.25	2	2	2	2
Dimensions of Motorized Kit	Width	(mm)	210	260	310	380	274
	Height	(mm)	84	84	84	84	108
	Depth	(mm)	94	94	94	94	118



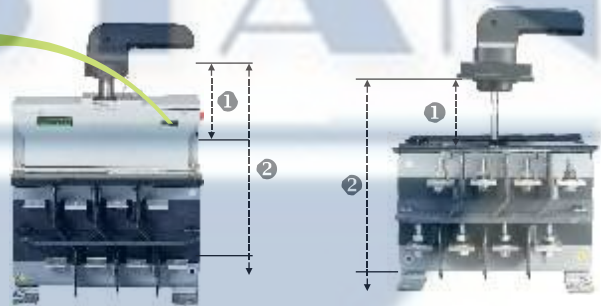
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Motorised Changeover Product Features;



1. Compact design

No change in H x W x D of motorised changeover switch and manual changeover switch.



2. Clear Termination Access

Motorised kit (EOM) fits well within the body of the manual changeover switch, enabling clear access to the terminals even after mounting the motorised kit.



3. Manual override

Manual operation of motorised changeover switch is also feasible through the manual override feature. As a safety feature, the control supply of motorised kit (EOM) is automatically cut off during the insertion of handle.

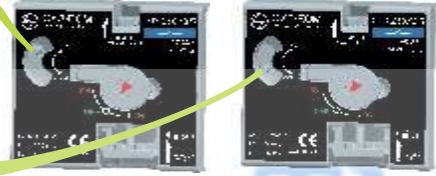




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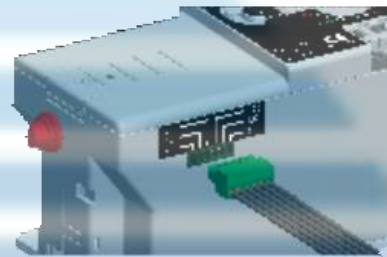
4. Manual and Auto mode selection

The selector switch enables/disables the control supply to motorised changeover switch. Electrical operation is possible only in auto mode while manual mode allows the user to operate the motorised changeover switch manually by using the handle safely. As a safety feature the control supply of motorised changeover is automatically cut off during the insertion of handle.



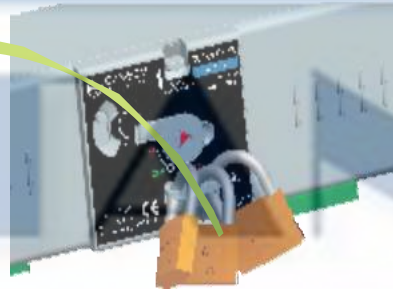
5. Auxiliary contacts

It consists of two sets of changeover contacts one for each S-D. It is prewired and prefitted in motorised changeover switch.



6. Padlocking

Provision for padlocking in OFF position with three padlocks of Ø5 to Ø7. Padlocking is possible in both auto and manual mode.



7. Fuse protection

Inbuilt glass fuse of 5 x 20 size protects the motorised kit (EOM) during abnormalities. Also, spare fuse holder has been provided for storage of fuse.

