

VRAJ LINK

HOUSE OF ON LOAD CHANGEOVER SWITCH & AUTOMATIC TRANSFER SWITCH

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ASCO Power Technologies

VERITEK

HPL
The Power of Technology

HALONIX
The Right Light



Power of Technology

Admin Off.: Shop No. 17 Electric Crematorium 66/74, Chandan Wadi, Marine Lines(E),
Mumbai-400 002. Tel. No. 022-22076173.

Email: vrajlink05@gmail.com / sales@vrajlink.com Website : www.vrajlink.com

On Load Changeover Switches from 63A to 3150A



- Arc Chute
- Terminal Shroud
- Phase Separator



On Load Changeover Switches



HIGHLIGHTS

- » Conforms to IS/IEC:60947-3
- » Available in 6 frame sizes... rated current from 63A to 3150A
- » Compact Design
- » Quick Make & Quick Break mechanism (spring loaded contact)
- » Clear indication of 'ON', 'OFF' and 'ON' Position (I-O-II)
- » High Mechanical & Electrical life
- » Arc chute plates to enhance contact life
- » 100% Neutral rating... true 4 pole switch
- » Line load reversibility
- » Vertical or lateral mounting
- » Suitable for both aluminum & copper termination
- » Total safety : All moving and live parts covered
- » Terminal cover, source separator, phase barrier as standard feature
- » ROHS Compliant
- » Wide range of accessories

Application

The HPL make Onload Changeover Switch is 4 Pole manually operated, consisting of two sets of terminals for connecting to two incoming supply sources. It ensures safe changeover from one source to another and is suitable for use in individual enclosures, switch boards, lighting and power panels etc. with following features:-

- Suitable for incoming and outgoing feeders
- 3 stable positions (I – O – II)
- Fully visualized breaking
- Bridging bars mounted on all ratings as standard feature
- Pre equipped terminal cover, source separator, phase barrier with all ratings
- Compact design - saves panel space / supports easy maintenance
- Quick Make & Break type irrespective of human torque
- Resistant to Tropical conditions & polluted environment
- High thermal & dynamic withstand capacity
- Self extinguishing fiberglass re-inforced insulating body
- Available in Open execution, Steel sheet Enclosure & Direct Mounted type
- AC 23 A Category
- Bounce free contacts
- Any pole can be used as Neutral pole... true 4 pole switch
- Unique Safety Handle with built in door padlock facility
- 3 lock pad lock, lockable in ON & OFF positions
- Castle lock, interlocking schemes with MCCB/ACB
- High Electrical & Mechanical life

Approvals & Test

- Time tested
- Customer Accepted
- CPRI Tested
- ISO 9001 Certified



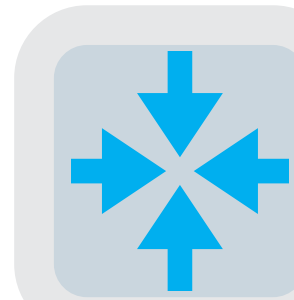
Globally Accepted
exporting to over
25 countries



On Load Changeover Switches



Advantages



Compactness

It is very compact in size and hence helps in saving space in the enclosures, panels etc. Due to its slim size uses the distribution space very efficiently regardless of fact whether it is in residential or funtional buildings.



Simplicity

Its handling is easy and simple. Its simplicity and ease in use allows the user for quick installation. Any pole can be used as Neutral pole. Line load reversibility supports user in comer and out going design. Plugin auxiliary contact kit easy to mount on the switch. Grove to insert safety shield



Total Safety

Its is very safe to use. all moving parts and live parts are covered eliminating possibilities of casualties & electric shocks. The insulation property of the material used is highly reliable, self extinguishing with high insulating properties and remains intact in even critical conditions. arch chute chamber evades fire in surges

Isolation Function:

These Onload changeover switches are **Suitable for Isolation** as per IS/IEC 60947-3. Isolation function highlights the following points:-

- Position of main contact is indicated clearly by a separate mechanical indicator.
- No residual current



**Positive isolation
no room for surges**



On Load Changeover Switches



Compact Design Total Safety

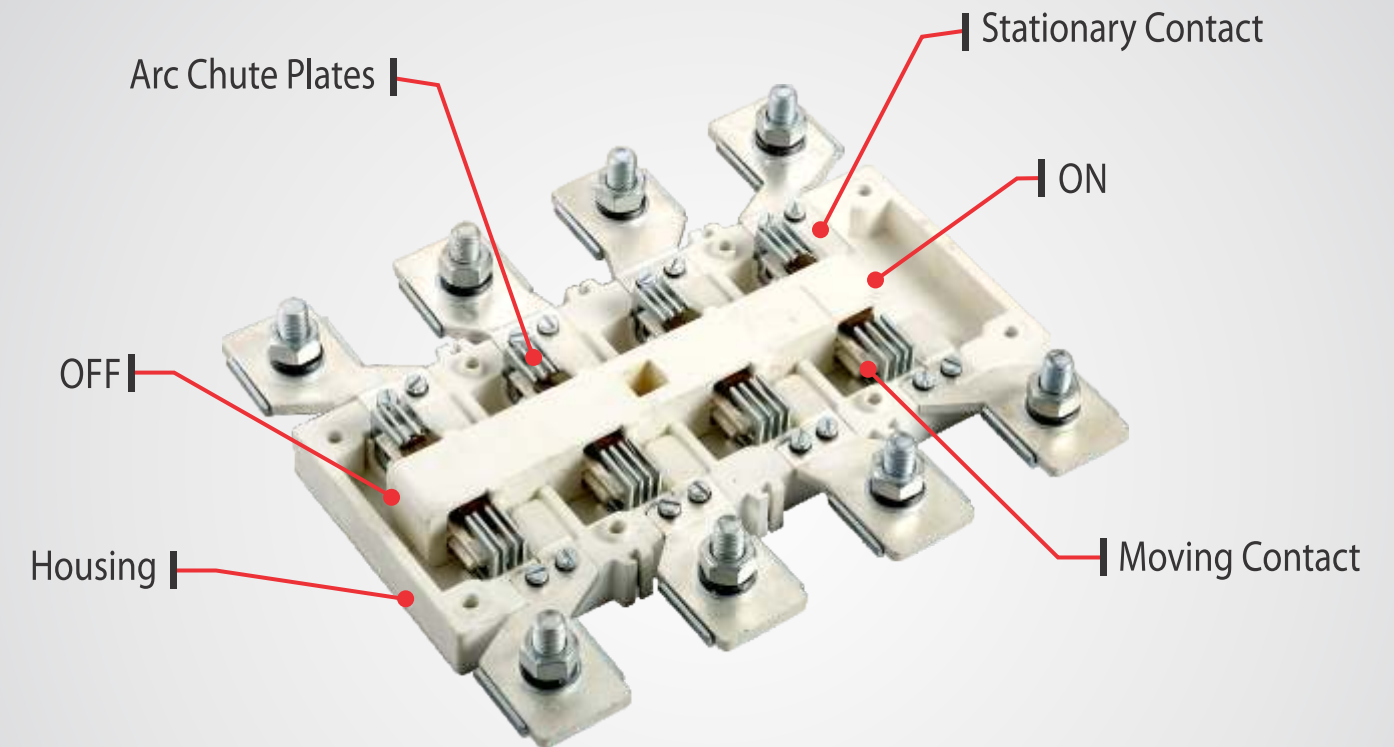


On Load Changeover Switches



Working Principle:

Stationary contacts for R, Y, B, N Phase are fixed to the moulded housing. 4 sets of moving contacts housed in a carrier are moved towards right for ON or left for OFF. The moving contacts slide on to the stationary contacts to make the circuit.



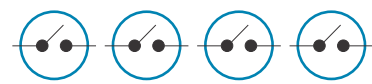
Total Safety

- Source Cover, Terminal Shroud & Phase barrier as standard design product
- Enclosed operating rod
- Self extinguishing fiberglass re-inforced insulating body
- 3 lock pad lockable handle in both ON & OFF positions



Self Fire Extinguishing

- High thermal and dynamic withstand capacity with self extinguishing fiberglass insulating body



Positive Isolation

- Fully visualised breaking
- Emergency breaking
- safe isolation of downstream loads for maintenance



Load Line Reversibility

- Quick make quick break
- All poles rated 100%
- In coming and outgoing easily interchangeable at site

The Technology for Onload Changeover Switch

1. Arc Chamber

The Arc Chamber is specially designed and provided with arc chute plates with an arc channel as a flow guide to reduce the arc length, there by improving the capability of extinguishing the arc. This enhances the life of the moving & stationary contacts thereby increasing the life of the product.

2. Body

Body parts are made of superior quality of thermoset plastics to withstand the stringent short circuit conditions where it has to see very high thermodynamic stresses. Its high insulation strength avoids any damage to the product.



On Load Changeover Switches



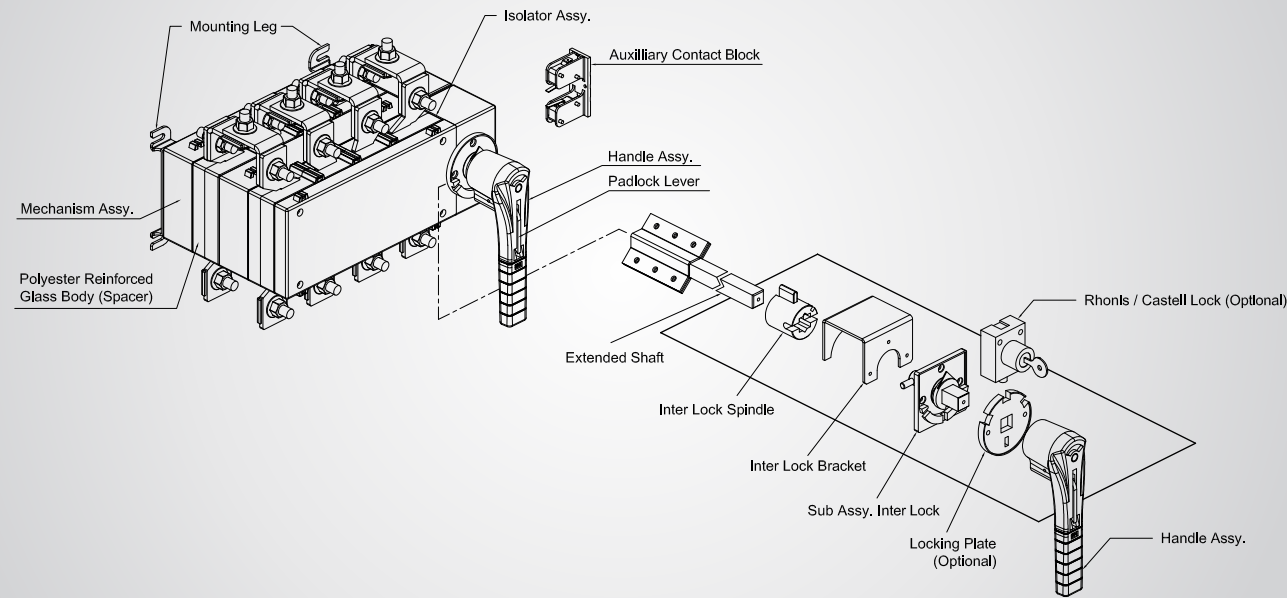
Overview (Operations)

Direct

The pad lockable handle is mounted directly on the Onload Changeover switch and is lockable in both OFF & ON positions.

External

The pad lockable handle is mounted on the panel door and lockable in both OFF & ON positions. The external front operation ensures that the door is locked in ON position.



Accessories

Handle

The Changeover switch has a single hand operated handle upto 630A & two hand operated handle for ratings 800 Amps and above. The handle offers the following features:

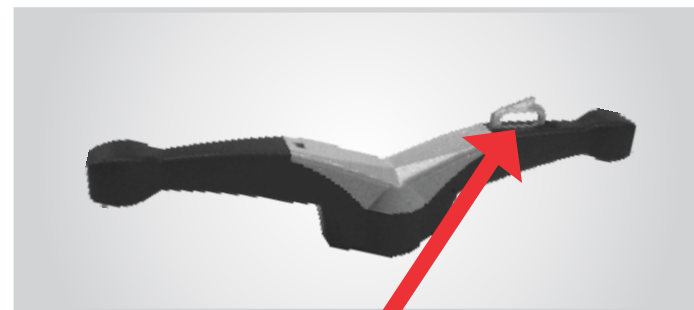
- Provision for providing 3 padlocks in both OFF & ON Positions.
- Telescopic operating shaft for varied depth adjustment.

Handle up to 630A



Handle with padlock lever

Handle for 800A and above



Double Sided Handle with padlock lever



On Load Changeover Switches



Accessories

Auxiliary Contact Kit

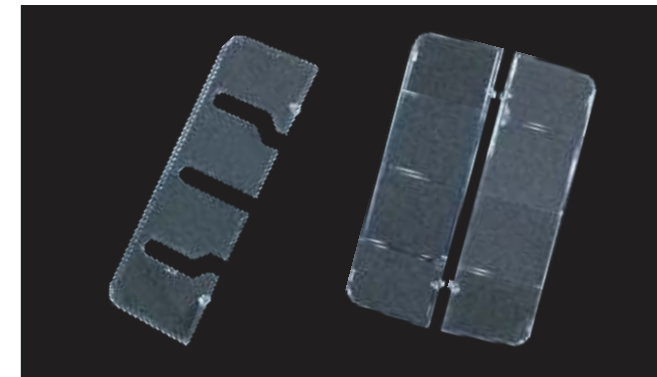
It consists of two auxiliary contacts, each with 1 NO + 1NC. This kit is pre-wired with terminal blocks and can be fitted at the site without increasing overall dimension.



Source Separator & Terminal Shroud

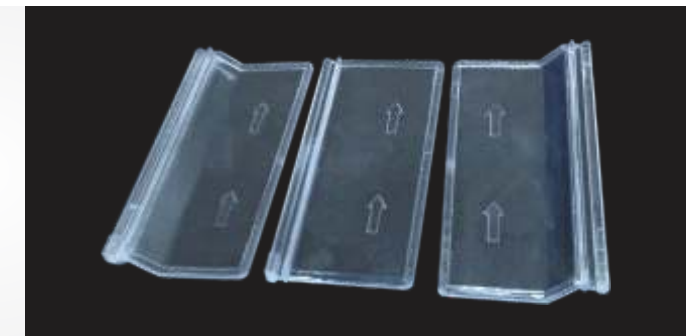
Made of transparent polycarbonate flame retardant material **Source Separator** is used to isolate two incoming supplies and to eliminate possibility of flash over between two supplies due to accidental falling of external objects.

Shrouds provide complete touch proof design and prevent accidental touching of live terminals. They are click fit type. Due to hinge type design terminal, shroud can be turned by 90 degree, hence terminals can be inspected without removing these shrouds.



Inter-Phase Barriers

Made of transparent polycarbonate flame retardant material **Inter-phase barriers** are provided for additional safety to eliminate possibility of inter-phase short circuit.



Bridging Bars

Bridging bars are provided between top and bottom terminal on common side.

Accessories to lock the changeover switch in OFF state and using this can have interlocking schemes with MCCB/ACB.



Castell Lock



Extended Shaft



Door Inter Lock Assy.



On Load Changeover Switches



Specification Electrical & Mechanical Characteristic

Specification	Current Rating							
	Frame-0			Frame-1			Frame-2	
Frame Sizes	63A	80A	100A	125A	160A	200A	250A	320A
Thermal Current (Ith) 40°C	63	80	100	125	160	200	250	315
Max. Normal rating of fuses	63	80	100	125	160	200	250	315
Insulation voltage Ui (Vac)	750	750	750	1000	1000	1000	1000	1000
Dielectric strength (Vac) 50 Hz 1 minute	4000	4000	4000	5000	5000	5000	5000	5000
Impulse voltage (KV)	6	6	6	6	6	6	8	8

Rated Operational Current Ie (A)								
415 Vac: AC 23A	63	80	100	125	160	200	250	320
500 Vac: AC 23A	55	55	55	100	130	160	200	250
260V dc: DC 21A	63	80	100	125	160	200	250	320
DC 22A	63	80	100	125	160	200	250	320
DC 23A	63	63	63	125	160	160	200	250
440V dc: DC 21A	63	80	100	125	160	200	250	320
DC 22A	63	80	100	125	130	160	200	250
DC 23A	63	63	63	125	130	160	200	250

Motor Power (KW) 415V								
415 Vac without pre break Aux. Contact	30	30	30	63	70	80	132	160
500 Vac without pre break Aux. Contact	30	30	30	60	63	63	140	220
690 Vac without pre break Aux. Contact	22	22	22	50	55	55	90	150
415 Vac with pre break Aux. Contact	30	30	30	63	70	80	132	160
500 Vac with pre break Aux. Contact	30	30	30	70	80	80	160	220
690 Vac with pre break Aux. Contact	35	35	35	100	110	110	110	220
Motor Reactive 415 Vac (kVAR)	25	25	25	50	55	60	100	125

Overload Capacity								
Short circuit current with fuses (kA RMS)	80	80	80	80	80	80	80	80
Fuse Rating	63	80	100	125	160	200	250	315
Peak short circuit making capacity (kA RMS)	15	15	15	20	20	20	30	45
Admissible short time current 1 sec (kA RMS)	5	5	5	7	7	7	13	13

Making & Breaking Characteristics								
Breaking capacity (A RMS) 415 Vac pf=0.35	504	504	504	1000	1280	1600	2000	2520
Making capacity (A RMS) 415 Vac pf=0.35	630	630	630	1250	1600	2000	2500	3150

Endurance								
Mechanical Life (No. of Operations)	10000	10000	10000	8000	8000	8000	8000	5000
Electrical Life (No. of Operations)	2500	1500	1500	1000	1000	1000	1000	1000
Operating Torque (N-m)	3.5	3.5	3.5	9.5	9.5	9.5	11	11

Connection								
Min. Cu. Cable / Bus bar size (mm ²)	16	25	25	50	70	95	120	185
Min. Al. Cable / Bus bar size (mm ²)	25	25X2	25X2	70	95	150	185	240



On Load Changeover Switches



Specification Electrical & Mechanical Characteristic

Specification	Current Rating								
	Frame-3			Frame-4	Frame-5				
Frame Sizes	400A	630A	800A	1000A	1250A	1600A	2000A	2500A	3150A
Thermal Current (Ith) 40°C	400	630	800	1000	1250	1600	2000	2500	3150
Max. Normal rating of fuses	400	630	800	1000	1250	2 x 800	2 x 1000	2 x 1250	2 x 1250
Insulation voltage Ui (Vac)	1000	1000	1000	1000	1000	1000	1000	1000	1000
Dielectric strength (Vac) 50 Hz 1 minute	8000	8000	8000	8000	10000	10000	10000	10000	10000
Impulse voltage (KV)	12	12	12	12	12	12	12	12	12

Rated Operational Current Ie (A)									
415 Vac: AC 23A	400	630	800	1000	1000	1000	1250	1250	1250
500 Vac: AC 23A	315	315	630	1000	1000	1000	1000	1000	1000
260V dc: DC 21A	400	630	800	1000	1250	1600	2000	2000	2000
DC 22A	400	500	800	1000	1250	1250	1250	1250	1250
DC 23A	400	500	800	1000	1250	1250	1250	1250	1250
440V dc: DC 21A	400	500	630	1000	1250	1600	2000	2000	2000
DC 22A	400	500	800	1000	1250	1250	1250	1250	1250
DC 23A	400	500	800	1000	1000	1000	1000	1000	1000

Motor Power (KW) 415V									
415 Vac without pre break Aux. Contact	200	220	450	560	560	560	710	710	710
500 Vac without pre break Aux. Contact	220	220	450	560	560	710	710	710	710
690 Vac without pre break Aux. Contact	150	150	185	400	400	475	475	750	750
415 Vac with pre break Aux. Contact	220	355	450	560	710	710	900	1100	1155
500 Vac with pre break Aux. Contact	280	355	550	710	710	900	900	1100	1100
690 Vac with pre break Aux. Contact	220	295	475	600	600	750	750	900	900
Motor Reactive 415 Vac (kVAR)	150	2 x 125	2 x 150	3 x 150	4 x 125	5x 150	6 x 150	7 x 150	9 x 150

Overload Capacity									
Short circuit current with fuses (kA RMS)	80	80	80	80	80	80	80	80	80
Fuse Rating	400	630	800	1000	1250	2 x 800	2 x 1000	2 x 1250	2 x 1250
Peak short circuit making capacity (kA RMS)	45	45	55	105	105	110	110	110	120
Admissible short time current 1 sec (kA RMS)	13	13	26	50	50	50	50	50	55

Making & Breaking Characteristics									
Breaking capacity (A RMS) 415 Vac pf=0.35	3200	5040	6400	8000	8000	8000	10000	10000	10000
Making capacity (A RMS) 415 Vac pf=0.35	4000	6300	8000	10000	10000	10000	12500	12500	12500

Endurance									
Mechanical Life (No. of Operations)	5000	5000	4000	4000	4000	3000	3000	2500	2500
Electrical Life (No. of Operations)	1000	1000	500	500	500	500	500	500	500
Operating Torque (N-m)	17	17	40	40	40	40	60	60	60

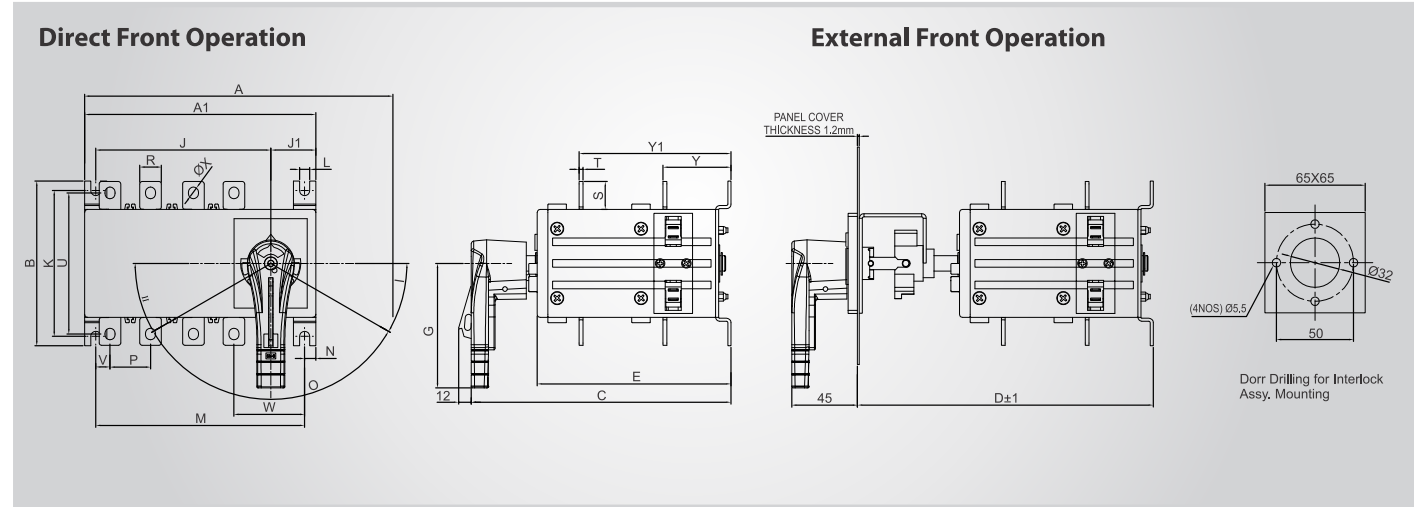
Connection									
Min. Cu. Cable / Bus bar size (mm ²)	30x5x2	40x5x2	50x5x2	60x5x2	80x5x2	100x5x2	100x5x3	100x5x4	100x10x3
Min. Al. Cable / Bus bar size (mm ²)	32x8x2	40x8x2	50x8x2	50x10x2	63x12x2	100x8x2	100x10x3	100x10x4	---



On Load Changeover Switches

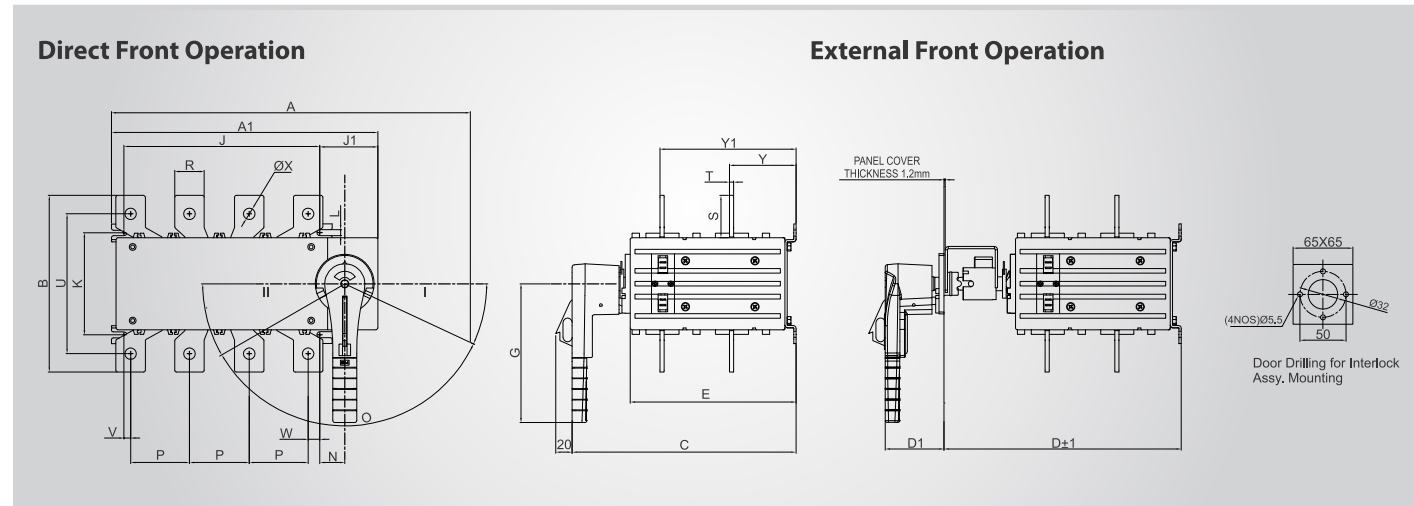


Dimensional Details : Changeover 63A To 100A



	Over All Dimension							Fixing of SW.					Connection Terminal							SW. W.T.					
	Rating	A	A1	B	C	D	E	G	J	J1	K	L	M	N	P	R	S	T	U	V	W	ØX	Y	Y1	Open Ex.
Frame-0	4x63A	190	150	106	183	192	126	80	114	30	95	6.5	135	7.25	27	14	18	2.5	91	9.25	46	6.5	44	99	2 Kg.
	4x80A	190	150	106	183	192	126	80	114	30	95	6.5	135	7.25	27	14	18	2.5	91	9.25	46	6.5	44	99	2 Kg.
	4x100A	190	150	106	183	192	126	80	114	30	95	6.5	135	7.25	27	15	18	2.5	91	9.25	46	6.5	44	99	2 Kg.

Changeover 125A To 630A



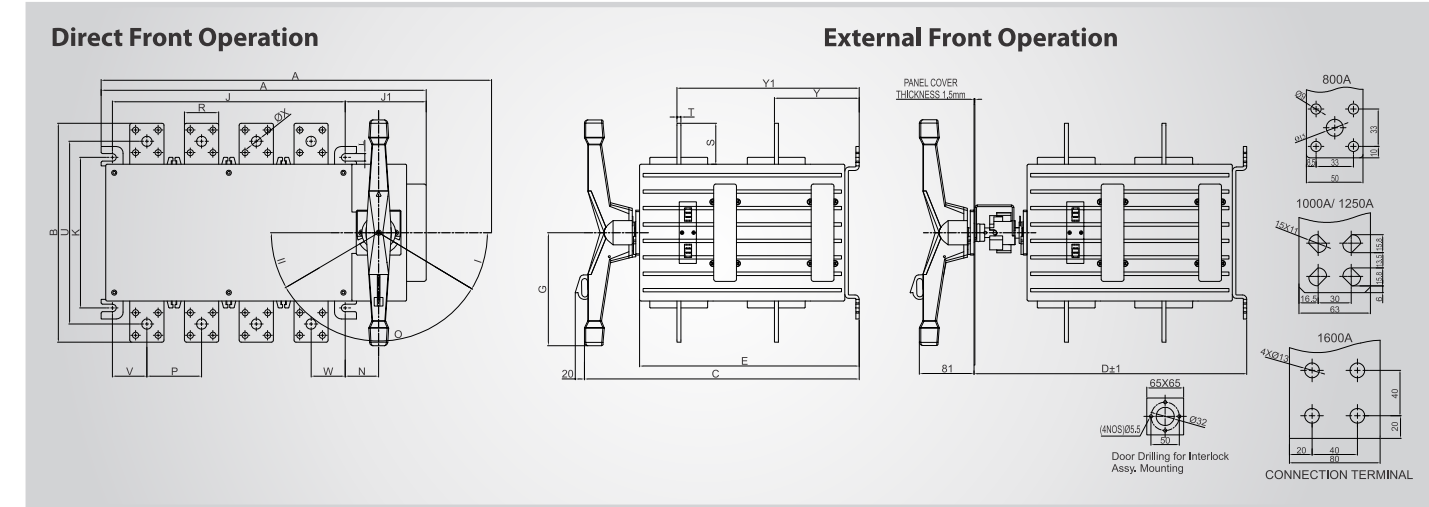
	Over All Dimension							Fixing of SW.					Connection Terminal							SW. W.T.					
	Rating	A	A1	B	C	D	D1	E	G	J	J1	K	L	N	P	R	S	T	U	V	W	ØX	Y	Y1	Open Ex.
Frame-1	4x125A	305	228	141	227	240	65	160	116	162	57	95	6.5	26	44	22	28	3	118	15	15	8.5	64	130	4.0 Kg
	4x160A	305	228	155	227	240	65	160	116	162	57	95	6.5	26	47	25	35	4	123	10.5	10.5	10	64	130	5.0 Kg
	4x200A	305	228	155	227	240	65	160	116	162	57	95	6.5	26	47	25	35	4	123	10.5	10.5	10	64	130	5.0 Kg
Frame-2	4x250A	390	290	192	244	258	65	180	150	217	61	111	6.5	27	64	32	46	4.5	152	9.5	15	12.5	72	148	7.3 Kg
	4x320A	390	290	192	244	258	65	180	150	217	61	111	6.5	27	64	32	46	4.5	152	9.5	15	12.5	72	148	7.3 Kg
Frame-3	4x400A	472	372	240	314	320	65	250	150	280	80	180	9	40	72	40	40	5	206	30	30	11	95	203	14.0 Kg
	4x630A	472	372	270	314	320	65	250	150	280	80	180	9	40	80	55	55	5	230	20	20	14.5	95	203	17 Kg



On Load Changeover Switches

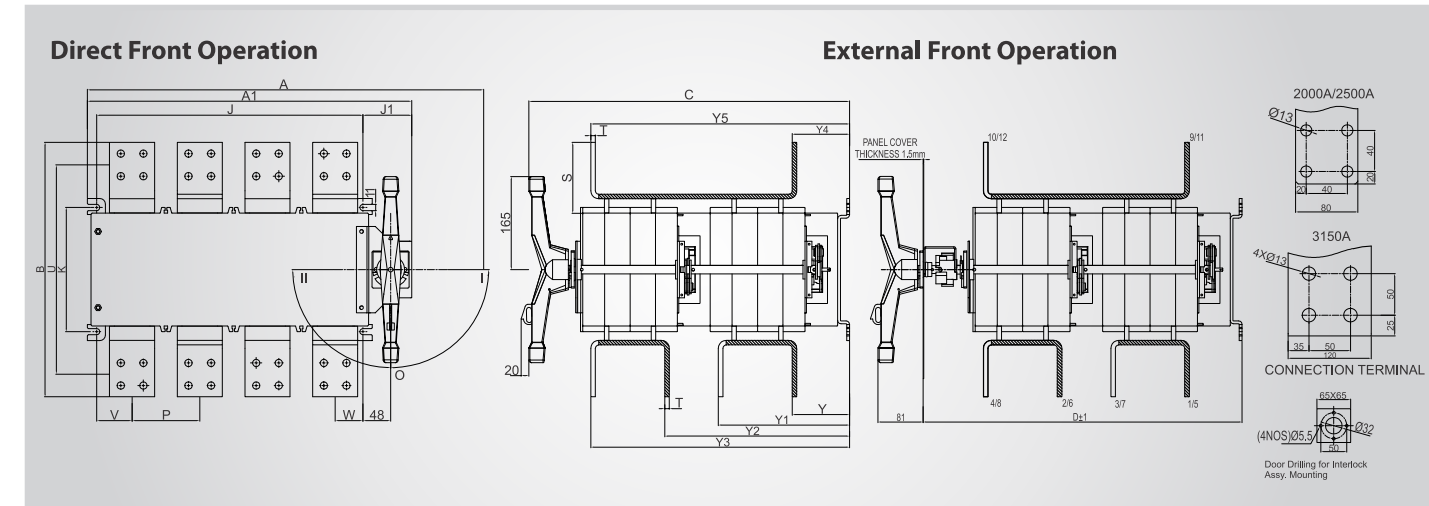


Dimensional Details : Changeover 800A To 1600A



	Over All Dimension							Fixing of SW.					Connection Terminal							SW. W.T.					
	Rating	A	A1	B	C	D	D1	E	G	J	J1	K	L	N	P	R	S	T	U	V	W	ØX	Y	Y1	Open Ex.
Frame-5	4x800A	572	475	320	402	398	81	321	165	340	116	220	11	49	80	50	60	6	267	50	50	15	124	266	27.2 Kg
	4x1000A	624	527	330	402	398	81	321	165	474	116	220	11	49	120	63	65	6	273	63	50	15	124	266	35.3 Kg
	4x1250A	624	527	330	402	398	81	321	165	474	116	220	11	49	120	63	65	7	273	63	50	15	125	267	37.0 Kg
4x1600A	624	527	362	402	398	81	321	165	474	116	220	11	49	120	80	80	15	281	63	50	15	129	271	61.0 Kg	

Changeover 2000A To 3150A



	Over All Dimension							Fixing of SW.					Connection Terminal							SW. W.T.	
	Rating	A	A1	B	C	D	J	J1	K	P	S	T	U	V	W	Y/Y4	Y1	Y2	Y3/Y5	Open Ex.	
Frame-5	4x2000A	703	575	450	570	566	474	85	220	120	125	8	371	64	50	102	233	328	459	72 Kg.	
	4x2500A	703	575	450	570	566	474	85	220	120	125	10	371	64	50	100	237	326	463	77.4 Kg.	
	4x3150A	703	575	450	570	566	474	85	220	120	150	15	401	64	50	94	248	320	474	110 Kg.	



On Load Changeover Switches



OnLoad C/O Enclosed



Function

- On Load manual changeover between 2 sources.
- Emergency Breaking
- Selection between two loads
- Safe isolation of downstream loads for maintenance purpose

General Characteristics

- Black Handle Padlockable in I-O-II position
- CRCA Sheet (Door 1.2 mm & Body 1.6mm)... 63A to 800A
- CRCA Sheet (Door & Body both 2.0mm)... 1000A to 3150A
- RAL 7035
- 2 External earthing points on each side
- Wall mounted with 4 bolts
- Door locking system allows opening of door only in OFF position
- Incoming & outgoing easily interchangeable at site
- Coating of epoxy polyester powder 70 micron
- Removable plate top & bottom
- Door with solid hinges

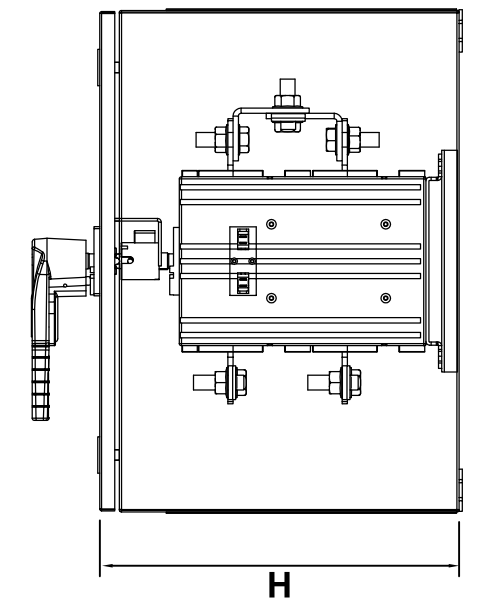
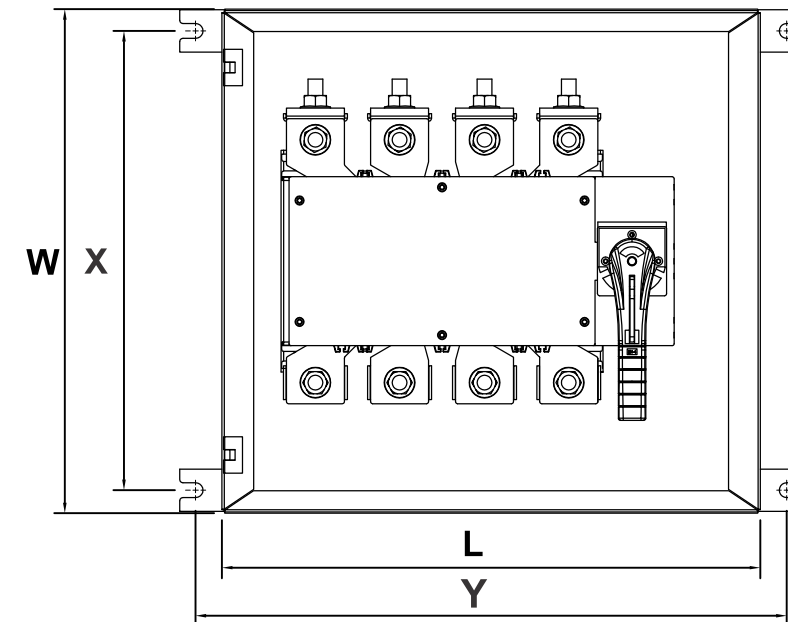


On Load Changeover Switches



References and Dimensions

Rating	Code	L	W	H	X	Y
63A	CDC00634PEAV	215	255	190	215	245
80A	CDC00804PEAV					
100A	CDC01004PEAV					
125A	C01254PEAV	290	365	240	325	320
160A	C01604PEAV					
200A	C02004PEAV					
250A	CO2504PEAV	350	455	258	415	380
320A	C03204PEAV					
400A	C04004PEAV					
630A	C06304PEAV	475	575	325	515	525
800A	C08004PEAV					
1000A	C10004PEAV					
1250A	C12504PEAV	800	655	418	600	825
1600A	C16004PEAV					
2000A	C20004PEAV					
2500A	C25004PEAV	800	750	596	685	825
3150A	C31504PEAV					



Note: All dimensions in mm



On Load Changeover Switches



Other Product Range

Load Break Switch

- Range : 63A - 3150A, 4 Pole, 415V AC
- Conforms to IS / IEC 60947-3
- Tested at CPRI Bhopal for AC-23A duty
- Total Safety- all moving and live parts covered
- Compact design
- Quick make & quick break mechanism
- Unique safety handle with door pad locking
- Available in open execution and sheets steel enclosure



Switch Fuse Changeover

- Range : 125 - 630A, 4 Pole, 415V AC
- Conforms to IS / IEC 60947-3
- Tested at CPRI Bhopal for AC 23A utilisation category
- Total Safety- all moving and live parts covered
- Silver plated current carrying parts
- Flexibility for termination of supply
- Mounting possible in both horizontal & vertical position
- Available in Open Execution / Sheet Steel Enclosure

By Pass Switch

- Range : 125A - 1600A, 4 Pole, 415V AC
- Conforms to IS / IEC 60947-3
- Tested for AC-23A utilization category
- Total Safety- all moving and live parts covered
- Switch is designed for specific need in IT industries where UPS and servo stabilizer provides main source of supply
- Operated manually with double handle comfortably Switch



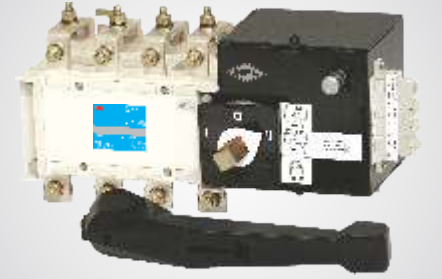
On Load Changeover Switches



Other Product Range

Motorised Changeover Switch

- Range : 125A - 1600A, 4 Pole, 415V AC
- Conforms to IS / IEC 60947-3
- Rated for AC 23A utilization category
- Suitable for AMF Panel / Automatic transfer switch
- Padlocking possible in 'OFF' position only



Digital Programmable Changeover Switch

- Range : 125A - 1600A, 4 Pole, 415V AC
- Programmable and digital display of parameters with the use of ASC30 controller and ASD20 display unit.
- Timer facility for changeover and generator operation

RTS

- Range : 40A - 3200A.
- Compliance with IEC 60947-6-1.
- Intelligent integration of control & electronic protection.
- Easy selection of automatic or manual control.
- Flexible upgradability : plug-in optional modules, dedicated accessories. Also available for DC Voltage.



ATyS M

- Range : 63A - 160A
- Compliance with IEC 60947-6-1
- Fully integrated control & automatic changeover functions. Two power switches mechanically and electrically interlocked
- Enables fast switching operation



Sirco M & MV (Universal Switches)

- Range : 16A - 160A
- Compliance with IEC 60947-3
- Direct operation, external operation, additional poles, auxiliary contacts, terminal shrouds
- Conversion of standard device to 6 or 8 poles switches or changeover switches

