

Euroload Changeover Switch



Catalogue 2012

Euroload Changeover Switch

Features:

- Quick make & quick break mechanism.
- High electrical & mechanical endurance.
- Advance neutral.
- Enclosed housing to avoid dust ingress.
- Staggered terminals upto 800A.
- Load and Line reversibility.
- Provision of phase separators, add-on auxiliary switch
- Door interlock and padlock facility.
- Extended outgoing terminals.
- Available in open execution & in sheet steel enclosure.

Range :

- 40A to 3150A in 7 frame sizes in 4 Pole.

Specification :

IS / IEC 60947-1 & 3.

Euroload Changeover Switches find a wide application scope wherever the reliability of electrical supply from the utilities is low and are used in lighting/ motor circuits wherever continuity of supply is necessary, for switching to an alternative source from main supply and vice versa. They are switch disconnectors with independent manual operation capable of making, carrying and breaking currents under normal circuit conditions which may include operating overload conditions and also carrying currents under specified abnormal circuit conditions such as those of short circuit for a specified time. These switches are modular in construction, compact in size and suitable for stringent utilization category AC-23A.





Construction

4



Euroload Changeover Switch has unique modular construction. The module comprises of two load switch disconnectors coupled together and mechanically interlocked with a common outgoing and operable by a single handle having I-O-II position.

The switching mechanism is quick make, quick break type independent of the speed of the operation. There are four breaks per pole thereby resulting into faster quenching of arc. The load and line can be connected on either side by virtue of isolation on both the sides. The entire switching mechanism alongwith the fixed and moving contact assembly are housed in a fiber glass reinforced Polyester, moulded frame/cover, having high dielectric strength & thermal withstand capacity.



Contact Mechanism

The contact mechanism is knife blade type with self cleaning action during operation. The fixed contact terminals in each phase have separate main and arcing contacts. The moving contact assembly has four sets of contacts on moving carrier and the entire assembly rests on three guides on moving carrier itself, which assists in its true movement during making and breaking.

The moving contact mates with the fixed contact by slide movement of the moving contact assembly. The contact is first made with the arcing contact and thereafter with the main contact. During breaking, the arc formation is across the arcing contacts thereby protecting the main contacts which results into enhanced life of the switch. The arc is effectively quenched & confined in arc barrier in each phase.

The switches can be mounted inside a panel either in horizontal or vertical mode without any effect on the performance.



Operating Mechanism

The operating mechanism consists of single side from operated handle which drives the spring assisted toggle mechanism, inturn operating the switch. Position indication provided on front of switch, i.e. on the operating shaft.

In position 'I', supply I (Main) is connected to the load, supply II is off.

In position 'O', supply I & II are both disconnected from the load.

In position 'II', supply II (Standby) is connected to the load, supply I is off.

Hence in none of the cases, supply I & II are connected simultaneously.



Technical Information

Frame Size 00



Frame Size		Size 00				
Rated operated Current at 40°C	I_e	A	40	63	80	100
Nos. of Poles			4	4	4	4
Rated Operational Voltage ac	U_e	V	415	415	415	415
Rated Insulation Voltage	U_i	V	1000	1000	1000	1000
Rated Impulse Voltage	$U_{imp.}$	kV	8	8	8	8
Rated Frequency		Hz	50	50	50	50
Design temp./ Ambient Temp. Deg. C			40	40	40	40
Utilization Category			AC23A			
Rated Enclosed Thermal Current		A	40	63	80	100
Rated Motor Power		KW	15	20	22.5	25
Making Capacity AC23A		A	400	630	800	1000
Breaking Capacity AC23A		A	320	504	640	800
Conditional Short ckt current		KA_{rms}	80	80	80	80
Fuse Ratings gG		A	40	63	80	100
Electrical Endurance		opers.	1500	1500	1500	1500
Mechanical Endurance		opers.	10000	10000	10000	10000
Temperature withstand range (Ambient)		°C	-5 to 50	-5 to 50	-5 to 50	-5 to 50
Min. Cu cable section		Sq,mm	10	16	25	35
Min. Al. cable section		Sq,mm	16	25	35	50
Terminal Bolt Size Metric thread diameter x length			M6 X 16			
Overall Dimensions H X W X D		mm	136.5 X 144 X 158			
Weight	Open Execution	kg.	1.5	1.5	1.6	1.6
	In Enclosure	kg.	4.5	4.5	4.6	4.6



Frame Size		Size 0		
Current Rating at 40°C, I _{th}	A	125	160	200
No. of Poles	4	4	4	4
Rated insulation voltage, U _i	V	1000	1000	1000
Rated operational voltage, U _e	V	415V	415V	415V
Dielectric strength, 50 Hz	KV	5	5	5
Rated impulse withstand voltage, U _{imp}	KV	8	8	8
Rated operational current, I _e				
at 415V AC 23A	A	125	160	160
at 500V AC 23A	A	100	140	140
Rated making capacity Amp, 415V AC23A, p.f.- 0.30		1250	1600	1600
Rated breaking capacity Amp, 415V AC23A, p.f.- 0.30		1000	1280	1280
Rated operational power				
Rated Motor Power 415V, 3ø	KW	55	55	100
Fuse protected short circuit with stand				
Rated max. Current of gG fuses	A	125	160	200
Rated conditional short circuit current	KA _{rms}	80	80	80
Max. Allowed cut off current	KA _{peak}	17	18	22
Electrical Durability				
No. of operating cycles AC-23A		1000	1000	1000
Mechanical Durability				
No. of no load operating cycles		8000	8000	8000
Temperature withstand range (Ambient)	°C	-5 to 50	-5 to 50	-5 to 50
Terminal connection				
Al. Cable/Bus Bar cross section	mm ²	70	95	150
Cu. Cable/Bus Bar cross section	mm ²	50	70	95
Weight				
Open Execution	Kg.	3.60	4.00	4.00
In Enclosure	Kg.	8.60	9.00	9.20

Frame Size		Size 1		Size 2	
Current Rating at 40°C, I _{th}	A	250	320	400	630
No. of Poles	4	4	4	4	4
Rated insulation voltage, U _i	V	1000	1000	1000	1000
Rated operational voltage, U _e	V	415V	415V	415V	415V
Dielectric strength, 50 Hz	KV	5	5	8	8
Rated impulse withstand voltage, U _{imp}	KV	8	8	8	8
Rated operational current, I _e					
at 415V AC 23A	A	250	320	400	630
at 500V AC 23A	A	200	250	400	400
Rated making capacity Amp, 415V AC23A, p.f.- 0.30		2500	3200	4000	6300
Rated breaking capacity Amp, 415V AC23A, p.f.- 0.30		2000	2550	3200	5100
Rated operational power					
Rated Motor Power 415V, 3ø	KW	132	160	220	315
Fuse protected short circuit with stand					
Rated max. Current of gG fuses	A	250	320	400	630
Rated conditional short circuit current	KA _{rms}	80	80	80	80
Max. Allowed cut off current	KA _{peak}	27	33	39	55
Electrical Durability					
No. of operating cycles AC-23A		1000	1000	1000	1000
Mechanical Durability					
No. of no load operating cycles		8000	5000	5000	5000
Temperature withstand range (Ambient)	°C	-5 to 50	-5 to 50	-5 to 50	-5 to 50
Terminal connection					
Al. Cable/Bus Bar cross section	mm ²	185	240	300	40 x 8 x 2
Cu. Cable/Bus Bar cross section	mm ²	120	185	240	40 x 5 x 2
Weight					
Open Execution	Kg.	7.50	8.00	15.50	16.50
In Enclosure	Kg.	17.00	17.50	31.20	32.20

For ratings 630A & above Bus Bar Termination Recommended



Frame Size		Size 3		Size 4	
Current Rating at 40°C, I _{th}	A	800	1000	1250	1600
No. of Poles	4	4	4	4	
Rated insulation voltage, U _i	V	1000	1000	1000	1000
Rated operational voltage, U _e	V	415V	415V	415V	415V
Dielectric strength, 50 Hz, V	KV	10	10	10	10
Rated impulse withstand voltage, U _{imp}	KV	8	8	8	8
Rated operational current, I _e					
at 415V AC 23A	A	800	1000	1250	1250
at 500V AC 23A	A	500	800	800	1000
Rated making capacity Amp, 415V AC23A, p.f.- 0.30		8000	10000	10000	10000
Rated breaking capacity Amp, 415V AC23A, p.f.- 0.30		6400	8000	8000	8000
Rated operational power					
Rated Motor Power 415V, 3ø	KW	450	560	560	625
Fuse protected short circuit withstand					
Rated max. Current of gG fuses	A	630/800	1000	1250	-
Rated conditional short circuit current	KA _{rms}	80	80	80	-
Max. Allowed cut off current	KA _{peak}	70	86	100	-
Electrical Durability					
No. of operating cycles AC-23A		500	500	500	500
Mechanical Durability					
No. of no load operating cycles		3000	3000	3000	3000
Temperature withstand range (Ambient)	°C	-5 to 50	-5 to 50	-5 to 50	-5 to 50
Terminal connection					
Al. Cable/Bus Bar cross section	mm ²	50 x 8 x 2	50 x 10 x 2	63 x 12 x 2	50 x 8 x 4
Cu. Cable/Bus Bar cross section	mm ²	50 x 5 x 2	60 x 5 x 2	80 x 5 x 2	100 x 5 x 2
Weight					
Open Execution	Kg.	27.00	46.00	48.00	51.00
In Enclosure	Kg.	44.50	82.00	84.00	87.00

Frame Size		Size 5		
Current Rating at 40°C, I _{th}	A	2000	2500	3150
No. of Poles	4	4	4	
Rated insulation voltage, U _i	V	1000	1000	1000
Rated operational voltage, U _e	V	415V	415V	415V
Dielectric strength, 50 Hz	KV	10	10	10
Rated impulse withstand voltage, U _{imp}	KV	8	8	8
Rated operational current, I _e				
at 415V AC 23A	A	1250	1250	1250
at 500V AC 23A	A	1000	1000	1000
Rated making capacity Amp, 415V AC23A, p.f.- 0.30		12500	12500	12500
Rated breaking capacity Amp, 415V AC23A, p.f.- 0.30		10000	10000	10000
Rated operational power				
Rated Motor Power 415V, 3ø	KW	710	710	710
Electrical Durability				
No. of operating cycles AC-23A		500	500	500
Mechanical Durability				
No. of no load operating cycles		3000	3000	2000
Temperature withstand range (Ambient)	°C	-5 to 50	-5 to 50	-5 to 50
Terminal connection				
Al. Cable/Bus Bar cross section	mm ²	100 x 10 x 3	100 x 10 x 4	150 x 10 x 4
Cu. Cable/Bus Bar cross section	mm ²	100 x 5 x 3	100 x 5 x 4	100 x 10 x 3
Weight				
Open Execution	Kg.	88.00	91.50	98.00

* For ratings 630A & above Bus Bar Termination Recommended

Frame-00

Current Rating (A)	Open Execution Cat. No.	In Enclosure Cat. No.
040	IHCNFO0040	IHCNFE0040
063	IHCNFO0063	IHCNFE0063
080	IHCNFO0080	IHCNFE0080
100	IHCNFO0100	IHCNFE0100

Frame-0

Current Rating (A)	Open Execution Cat. No.	In Enclosure Cat. No.
125	IHCNFO0125	IHCNFE0125
160	IHCNFO0160	IHCNFE0160
200	IHCNFO0200	IHCNFE0200

Frame-1

Current Rating (A)	Open Execution Cat. No.	In Enclosure Cat. No.
250	IHCNFO0250	IHCNFE0250
320	IHCNFO0320	IHCNFE0320

Frame-2

Current Rating (A)	Open Execution Cat. No.	In Enclosure Cat. No.
400	IHCNFO0400	IHCNFE0400
630	IHCNFO0630	IHCNFE0630

Frame-3

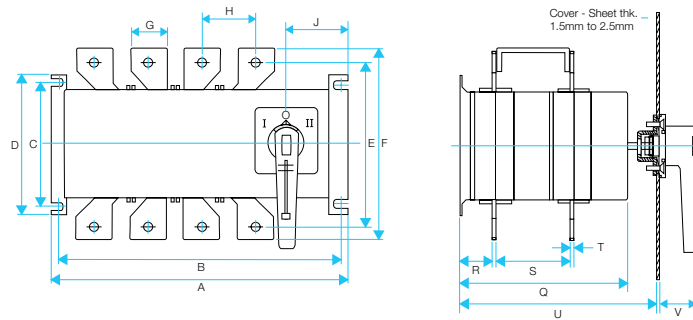
Current Rating (A)	Open Execution Cat. No.	In Enclosure Cat. No.
800	IHCNFO0800	IHCNFE0800

Frame-4

Current Rating (A)	Open Execution Cat. No.	In Enclosure Cat. No.
1000	IHCNFO1000	IHCNFE1000
1250	IHCNFO1250	IHCNFE1250
1600	IHCNFO1600	IHCNFE1600

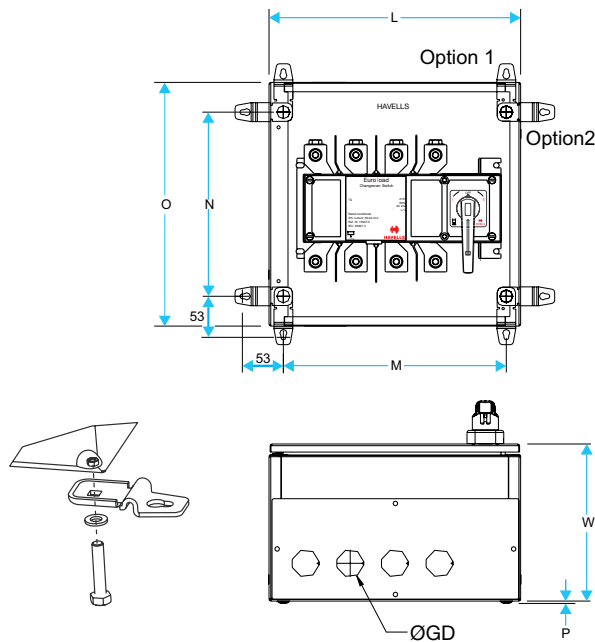
Frame-5

Current Rating (A)	Open Execution Cat. No.	In Enclosure Cat. No.
2000	IHCNFO2000	IHCNFE2000
2500	IHCNFO2500	IHCNFE2500
3150	IHCNFO3150	IHCNFE3150



Dimensions (in mm) - Open Execution

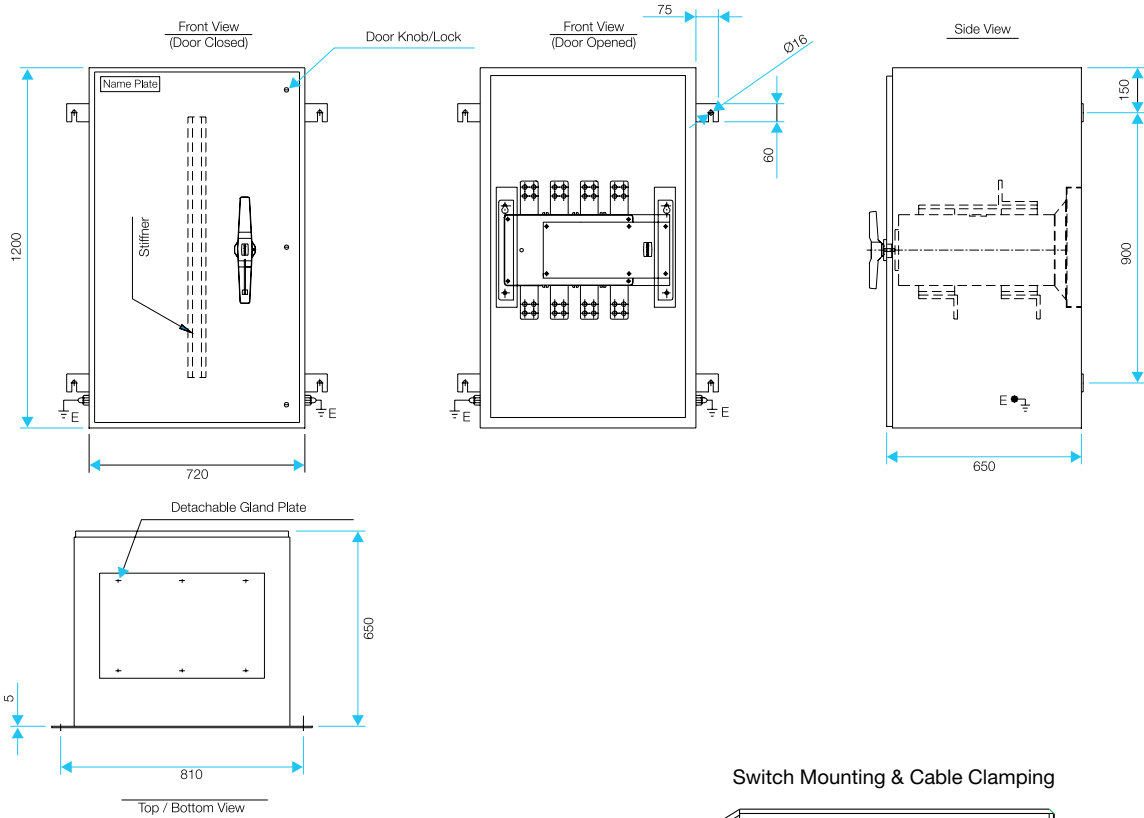
Current (A)	A	B	C	D	E	F	G	H	J	Q	R	S	T	U	V
40A-100A	144	128	95	111	96.5/106.5	126	12	26	21	125	26	51	2.5	156	44
125A-200A	220	207	113	132	122	148	20/24	46	34	174	54	69	3.2	215	62
250A-320A	315	306	134	156	147/165	177/198	28/35	58/63	54	220	57	89	4	260	62
400A-630A	405	378	184	206	221/241	251/281	40/55	80	76	270	67	110	5	308	62
800A	464	430	212	234	280	330	45	97	76	292	71	120	8	342	62
1000A-1600A	575	530	290	315	331	380	70	100	85	362	100	143	13	416	62
2000A-3150A	575	530	290	315	420	470	75	100	68.5	570	66/68.5	120	12/15	620	62



Dimension (in mm) - Enclosure

Ratings	L	M	N	O	P	W	ØGD
40A-100A	210	160	200	256	5	165	22
125A-200A	310	260	260	320	5	217	34
250A-320A	445	397	352	400	5	262	42
400A-630A	524	476	482	530	5	310	80
800A	563	515	552	600	5	345	105
1000A-1600A	705	740	530	630	6	420	-

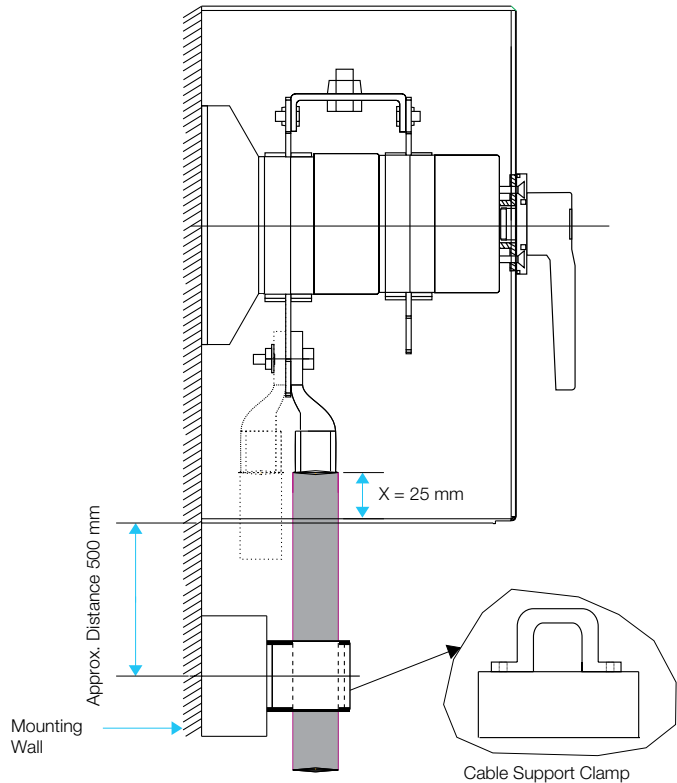
Dimensions (in mm) - with Enclosure for 2000A, 2500A & 3150A



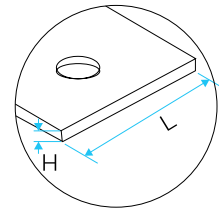
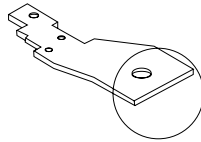
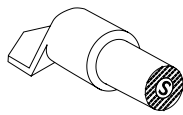
Notes:

1. Type: Wall Mounting
2. Sheet: 16 SWG CRCA Sheet (1.6mm THK.)
3. Paint: Pretreatment Powder Coating
4. Shade: As per Customer Requirement
5. Cable Entry: Top & Bottom

Switch Mounting & Cable Clamping



Note: X is the Min Clearance Between Cable Lug and Enclosure



Aluminium / Copper Cable / Bus Bar Size for External Termination

I_n	ϕT	S max. Nm	S max. (Al)mm ²	H (Cu)mm ²	L (Cu)mm	Switch mounting (Cu)mm	Fastener Size
125 A	M8	9	70	50	3.2	20	M6 x 15
160 A	M8	9	95	70	3.2	24	
200 A	M8	9	150	95	3.2	24	
250 A	M8	9	185	120	4	28	
320 A	M10	48	240	185	4	35	
400 A	M10	48	300	240	5	40	M8 x 15
630 A	M10	48	2x40x8	2x40x5	5	55	
800 A	M12	48	2x50x8	2x50x5	8	45	
1000 A	M12	84	2x50x10	2x60x5	10	70	M10 x 15
1250 A	M12	84	2x63x12	2x80x5	12	70	
1600 A	M12	84	4x50x8	2x100x5	15	70	

Switch mountings and fitments have been detailed in installation sheets which are supplied with every switch.



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