

TECHNICAL MANUAL

Changeover switch

PowerSwitch 63-3150 A EKF

1 DESCRIPTION

The changeover switch PowerSwitch 63 A - 3150A EKF is designed for uninterrupted power supply in three-phase AC 50Hz networks at rated voltage up to 660 V in electrical distribution devices. It is used to switch from one supply line to the other one.

The fibreglass-reinforced unsaturated polyester resin envelope features excellent dielectric performance, fire-, impact-, and carbon dioxide resistance and ensures safe operation of the product when used as intended.

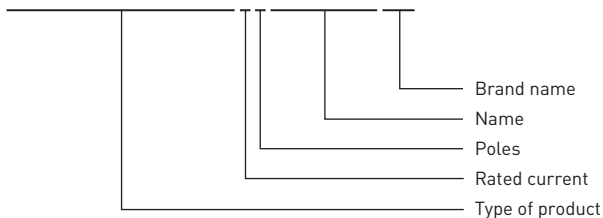
The changeover switch provides double opening to the pole.

All contact materials are silver-plated copper alloys with two separating contact surfaces.

Handle can be padlocked to avoid erroneous activation.

Type code

Changeover switch XX PowerSwitch EKF



2 TECHNICAL DATA

The main technical data are listed in Tables 1 and 2.

Table 1 – Technical performances of changeover switches 63 A – 250 A

Parameters			Values							
Rated thermal current I _{th} , A			63		100		160		250	
Rated current I _n , A			40	63	80	100	125	160	200	250
Rated insulation voltage U _i , V			690	690	690	690	690	690	690	690
Dielectric strength, V			5000	5000	5000	5000	5000	5000	5000	5000
Rated impulse withstand voltage U _{imp} , kV			6							
Rated operating current I _e , A	380 V	AC-21V	40	63	80	80	125	160	200	250
		AC-22V	40	63	80	80	125	160	200	250
		AC-23V	40	50	80	80	125	160	200	250
	660 V	AC-21V	40	50	80	80	125	160	200	250
		AC-22V	32	32	50	50	125	160	160	160
		AC-23V	25	25	40	40	80	80	100	125
Motor power, kW	380 V		18,5	25	40	40	63	80	100	132
	660 V		22	22	33	33	75	75	90	110
Rated short-time withstand current I _{cw} , kA RMS			2	2	2	2	8	8	12	12
Rated breaking capacity I _{cn} , A RMS			320	504	640	800	1000	1000	1600	1600
Rated making capacity I _{cm} , A RMS			400	630	800	1000	1250	1600	2000	2500
Short-circuit current, kA			2,84	2,84	2,84	2,84	13,6	13,6	17	17
Mechanical endurance at 380V, O-C cycles			1700	1700	1700	1700	1400	1400	1400	1400
Electrical endurance at 380V, O-C cycles			300	300	300	300	200	200	200	200
Applied force on operating handle, N*m			1,2	1,2	1,2	1,2	6,5	6,5	10	10
Weight, kg	3 poles		0,37	0,37	0,37	0,37	1,3	1,3	2,2	2,2
	4 poles		0,41	0,41	0,41	0,41	1,5	1,5	2,6	2,6

Table 2 - Technical performances of changeover switches 630 A – 3150 A

Parameters		Values											
Rated thermal current I _{th} , A		630				1600			3150				
Rated current I _n , A		315	400	500	630	1000	1250	1600	2000	2500	3150		
Rated insulation voltage U _e , V		1000											
Dielectric strength, V		8000				10000							
Rated impulse withstand voltage U _{imp} , kV		6											
Rated operating current I _e , A	380 V	AC-21V	315	400	500	630	1000	1250	1600	2000	2500		
		AC-22V	315	400	500	630	1000	1250	1600	1000	1250	1600	
		AC-23V	315	400	500	630							
	660 V	AC-21V	315	400	400	500	1000	1000	1600	710			
		AC-22V	315	315	315	315	800	800	800	750			
Motor power P, kW	380 V	160	220	280	315	560			710				
	660 V	185	185	185	185	475			750				
Rated short-time withstand current I _{cw} , kA RMS		25				50							
Rated breaking capacity I _{cn} , A RMS		2520	3200	4000	5040	3000	3750	4800	6000	7500	9450		
Rated making capacity I _{cm} , A RMS		3150	4000	5000	6300	3000	3750	4800	6000	7500	9450		
Short-circuit current, kA		40				70			105				
Mechanical endurance at 380V, O-C cycles		800				500			300				
Electrical endurance at 380V, O-C cycles		200				100							
Applied force on operating handle, N*m		14.5				37		60	60				
Weight, kg	3 poles	4,3		4,7		10,5		16	25,5		31		
	4 poles	5,4		6		13		20	37,5		51,5		

The changeover switches correspond to the standards:

- IEC 60947-1:2020 «Low-voltage switchgear and controlgear - Part 1: general rules»;
- IEC 60947-3:2020 «Low-voltage switchgear and controlgear - Part 3: switches, disconnectors, switch-disconnectors and fuse-combination units».

Design

Use the rotary handle to switch in the manual mode.

The rotary handle to operate the changeover switch inside the enclosure is included in the standard scope of delivery. To operate the changeover switch PowerSwitch 100-3150A EKF through the enclosure door use a pistol handle external.

Model features:

- rated operating current of changeover switches: 100 A, 160 A, 250 A, 630 A, 1600 A, 2000 A, 2500 A, 3150 A;
- two positions of the handle;
- three- or four-pole version;
- high electrical and mechanical endurance;
- operation with the rotary handle;
- possible handle locking;
- indication of contact position;
- simple design and easy to install.

The handle can be installed either directly to the panel or with an extension shaft.

3 OVERALL AND INSTALLATION DIMENSIONS

The overall and installation dimensions of the changeover switches are shown in figures 1-4.

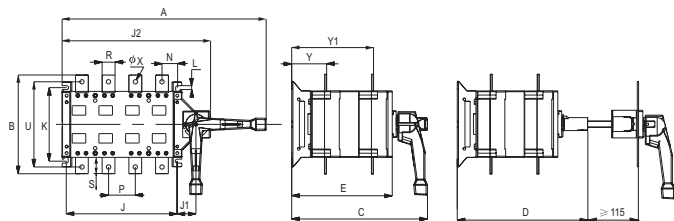


Figure 1 - Installation dimensions of changeover switches 63 A - 630 A

Table 3 - Dimensions of changeover switches 63 A - 630 A

Specification	Overall dimensions															Installation dimensions		
	A	B	C	D	E	J1	J2	N	P	R	S	U	φx	Y	Y1	J	K	L
100A - 160A/3	273	135	212	221	153	29	195	28	36	20	25	115	8,5	55	120	120	95	7
100A - 160A/4	303	135	212	221	153	29	225	22	36	20	25	115	8,5	55	120	150	95	7
200A-250A/3	345	170	251	250	182	30	235	33	50	25	30	140	11	64	144	160	116	9

200A-250A/4	395	170	251	250	182	30	285	33	50	25	30	140	11	64	144	210	116	9
400A/3	436	240	327	311	243	45	298	42	65	32	40	206	11	84	197	210	179	9,5
400A/4	496	240	327	311	243	45	358	38	65	32	40	206	11	84	197	270	179	9,5
630A/3	436	260	327	311	243	45	298	42	65	40	50	220	13	84	197	270	179	9,5
630A/4	496	260	327	311	243	45	358	38	65	40	50	220	13	84	197	270	179	9,5

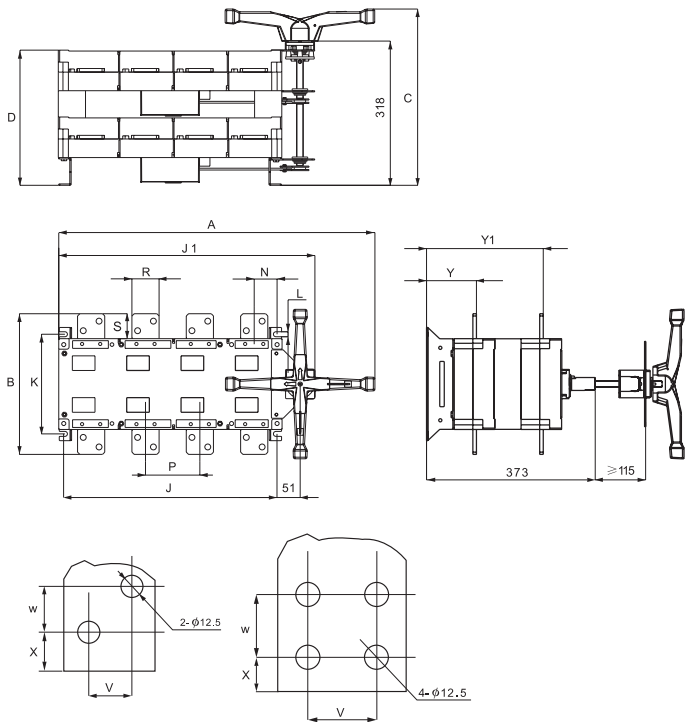


Figure 2 - Installation dimensions of changeover switches 1000 A - 1600 A

Table 4 - Dimensions of changeover switches 1000 A -1600 A

Specification	Overall dimensions														Installation dimensions		
	In	A	B	C	D	J1	N	P	R	S	V	W	X	Y	Y1	J	K
1000A/3	582	308	389	298	450	50,3	120	60	55	35	20	16,5	109	256,5	353	220	11
1000A/4	697	310	389	298	565	50,5	120	60	55	35	20	16,5	110	257,5	471	220	11
1250A/3	582	336	389	298	450	50,3	120	80	68	40	35	16	109	256,5	353	220	11
1250A/4	697	338	389	298	565	50,5	120	80	68	40	35	16	110	257,5	471	220	11
1600A/3	582	336	389	298	450	50,3	120	80	68	40	35	16	110	257,5	353	220	11
1600A/4	697	338	389	298	565	50,5	120	80	68	40	35	16	111	258,5	471	220	11

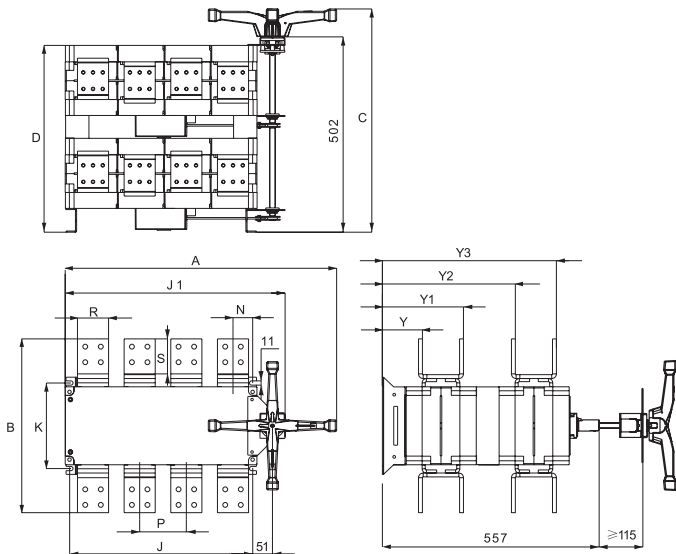


Figure 3 - Installation dimensions of changeover switches 2000 A - 2500 A

Table 5 - Dimensions of changeover switches 2000 A - 2500 A

Speci- fication	Overall dimensions														Installation dimensions			
	In	A	B	C	D	J1	N	P	R	S	V	W	X	Y	Y1	Y2	Y3	J
2000A/3	582	445	574	480	450	53,3	120	80	90	40	40	20	102	207,5	341	446,5	353	220
2000A/4	697	447	574	480	565	50,5	120	80	90	40	40	20	103	208,5	342	447,5	471	220
2500A/3	582	445	574	480	450	53,3	120	80	90	40	40	20	102	207,5	341	446,5	353	220
2500A/4	697	447	574	480	565	50,5	120	80	90	40	40	20	103	208,5	342	447,5	471	220

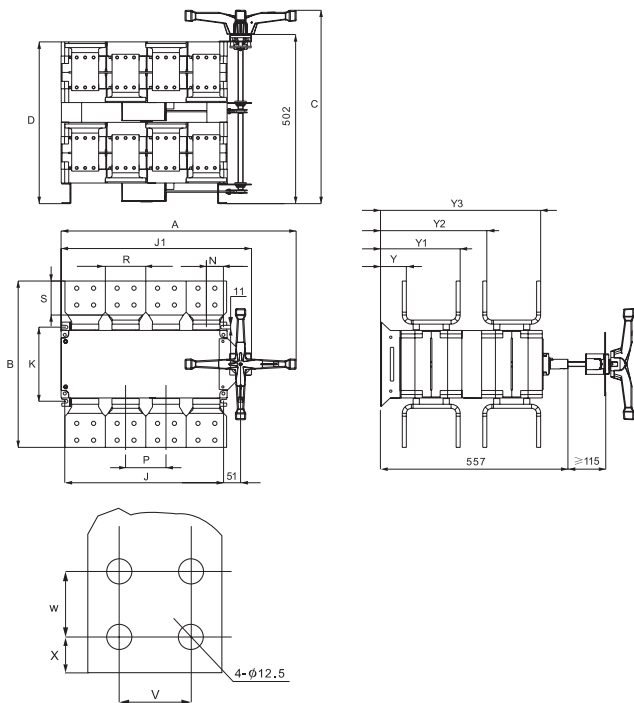


Figure 4 - Installation dimensions of changeover switches 3150 A

Table 6 - Dimensions of changeover switches 3150 A

Speci- fication	Overall dimensions																Installation dimensions	
	A	B	C	D	J1	N	P	R	S	V	W	X	Y	Y1	Y2	Y3	J	K
3150A/3	582	492	574	480	450	53,3	120	120	101	50	50	21	75,5	235,5	314,5	474,5	353	220
3150A/4	697	494	574	480	565	50,5	120	120	101	50	50	21	76,5	236,5	315,5	475,5	471	220

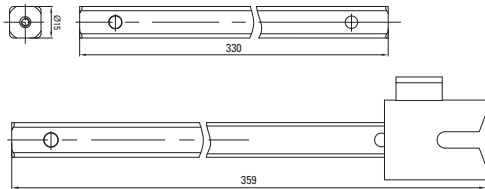


Figure 5 - Overall dimensions of extension shaft

4 WIRING DIAGRAM

The typical wiring diagram of the changeover switch is shown in figure 6.

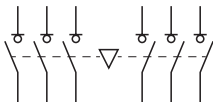


Figure 6

5 INSTALLATION

The changeover switches shall be installed and commissioned only the qualified personnel. The changeover switches shall be mounted on the mounting plate. The operating position of the changeover switches is shown in figure 7.

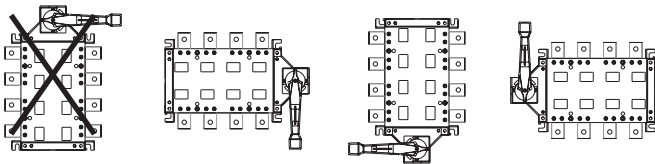


Figure 7 - Operating position of changeover switches

Before installation make sure:

- the switch disconnecter complies with intended purpose.
- there is no visible damage to the device.

The handle mount when installing the changeover switch inside the enclosure is shown in figure 7.

Handle padlocking is shown in figure 8.

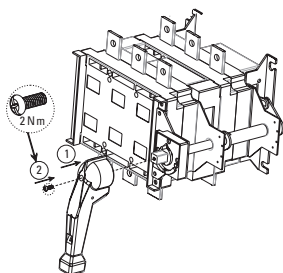


Figure 7 - Handle mount to the housing of the changeover switches

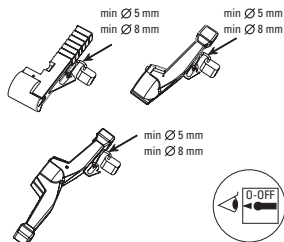


Figure 8 - Handle padlocking

The handle mount to the door of the enclosure is shown in figure 9.

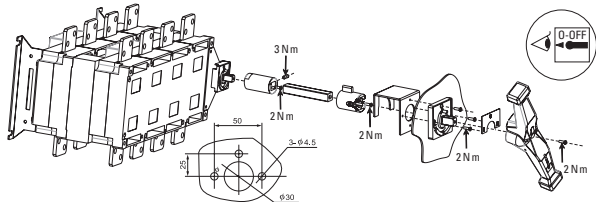


Figure 9 - Handle mount to the door of the enclosure

6 OPERATION

Perform all installation and maintenance works when the power is off!
Under normal operating conditions, visually inspect the switch disconnectors once a year and after every short-circuit currents impact.

The inspection shall include:

- dust and dirt removal;
- screw tightening torque test;
- no load on/off operations of the switch disconnector.

Do not touch clamps and non-insulated live conductors when operating the changeover switches.

7 OPERATION CONDITIONS

The ambient temperature: from - 5°C to + 40°C and relative humidity is max. 95% indoors.

Altitude above sea level is max. 2000 m.

Do not operate changeover switches in corrosive environment.

Do not use the changeover switches in Ex-zone!

8 DELIVERY SCOPE

Changeover switches PowerSwitch 63 A - 3150A EKF are supplied in the group package. For all available documentation, scan the QR-code on the insert or on the inside of the package.

9 TRANSPORTATION AND STORAGE

The changeover switches can be transported by any means of enclosed transport that ensures protection of packed products from mechanical and atmospheric impacts.

The switch disconnectors shall be stored indoors in the original package at the ambient temperature from - 40°C to + 55°C and relative humidity of max. 50% at +40°C.

10 DISPOSAL

Life-expired and failed changeover switches shall be disposed of in compliance with the national and local laws and regulations in force.

11 MANUFACTURER'S WARRANTY

The manufacturer guarantees that the changeover switches comply with the requirements of IEC 60947-1:2020, IEC 60947-3:2020, provided that the consumer follows the operation, transportation and storage conditions.

Warranty period: 7 years from the date of sale specified in the sales receipt.

Shelf life: 7 years from the date of manufacture specified on the product package or housing.

Service life: 10 years.

Manufacturer: for information, refer to the product package.

Importer and EKF trademark service representative: EKF ELECTRICAL SOLUTION – FZCO, Dubai Silicon Oasis, DDP, Building A2, Dubai, United Arab Emirates.

Importer and EKF trademark service representative on the territory

of the Russian Federation: OOO «Electroresheniya», Otradnaya st., 2b bld. 9, 5th floor, 127273, Moscow, Russia. Tel.: +7 (495) 788-88-15.

Importer and EKF trademark service representative on the territory of the

Republic of Kazakhstan: TOO «Energoresheniya Kazakhstan», Kazakhstan, Almaty, Bostandyk district, Turgut Ozal st., 247, apt 4.

12 CERTIFICATE OF ACCEPTANCE

The changeover switches PowerSwitch 63 A - 3150A EKF have been approved for operation.

Date of manufacture:

For information, refer to the product package.

Technical control stamp



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