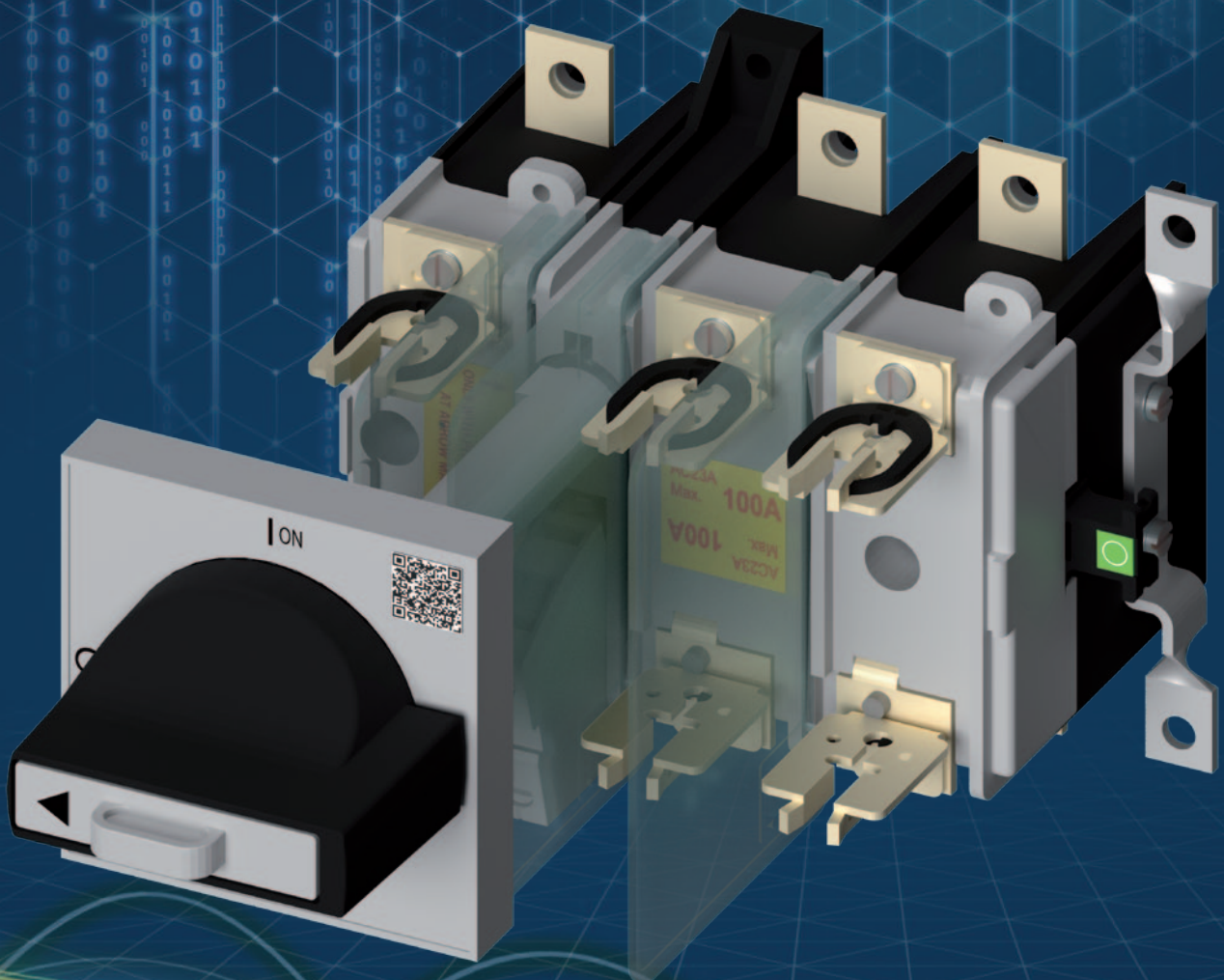


SIEMENS

Ingenuity for life



SENTRON

Superswitch

Power Distribution Redefined

www.siemens.co.in/superswitch3k



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Safe. Reliable. Efficient.

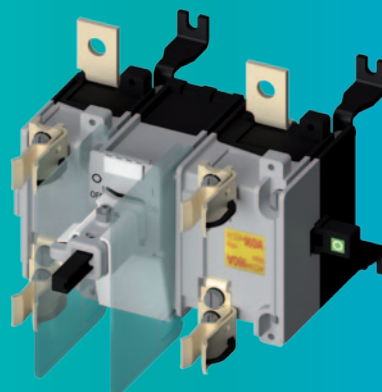


Superswitch 3KL8/ 3KA8

Product Features

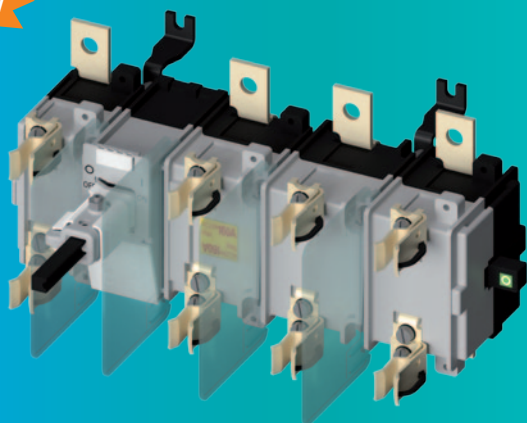
Compact 2P

- SDF from 20A to 800A
- SDF suitable for DIN/ BS/ NFC fuses
- SD from 63A to 1600A



New

New

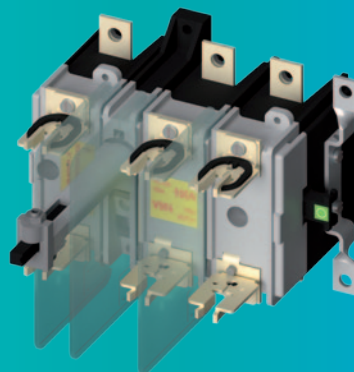


True 4P

- SDF from 20A to 800A
- SDF suitable for DIN/ BS/ NFC fuses
- SD from 63A to 1600A
- Interchangeable neutral (100% rated) in 4-pole variant

Unique: Size1 up to 100A

- SDF suitable for DIN fuses in 2P, 3P+N and 4P variant
- SD in 3P+N and 4P variant



New

Superswitch 3KL8/ 3KA8

Product Features


Moving roller contacts
Self Cleaning
reduces contact erosion resulting in high electrical life.



Positive OFF indication
Indicates physical position of moving contacts




Multiple Parallel roller contacts
Current sharing offers High Short-circuit breaking & withstand capacity





Compatible with Semiconductor fuses (DIN/BS fuse type)
Selection chart is available with SITOR fuses



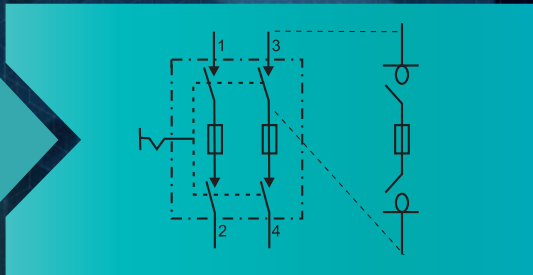
Adjustable shaft
Quick adaption to varying panel depth



Provision for connecting fuse monitor
Easy and ready connection possible with tap on Lyra contacts



■ **Positive Isolation**
Superswitch satisfies the isolation requirements of IS/IEC 60947 standards. This is to ensure that the contacts inside the Switch are in physically isolated position when it is in the OFF position. This is tested as per IS/IEC 60947-3.



■ **Certification & Standards**
Superswitch is tested in accordance with IEC 60947-3 and is also CE marked

■ **Availability of Type 2 tested Combinations**
3KL8 range of SDFs is truly type tested for type 2 combinations with 3TF/3RT contactor And 3UA/3RU birelay

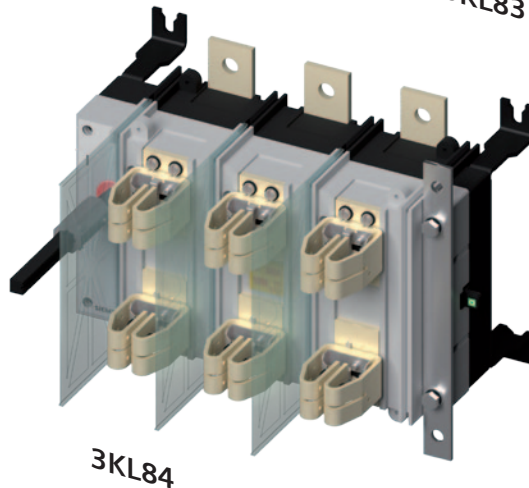
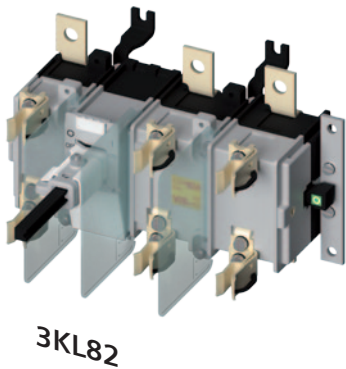
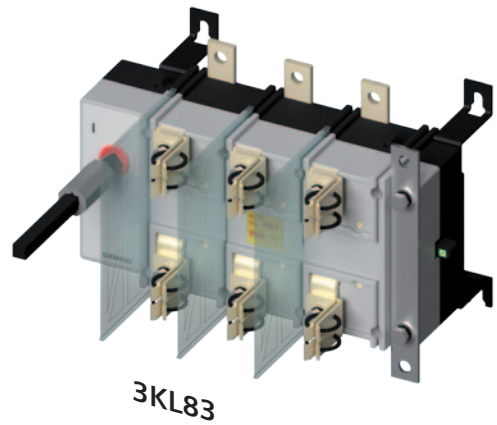
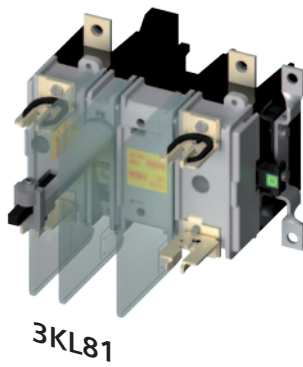
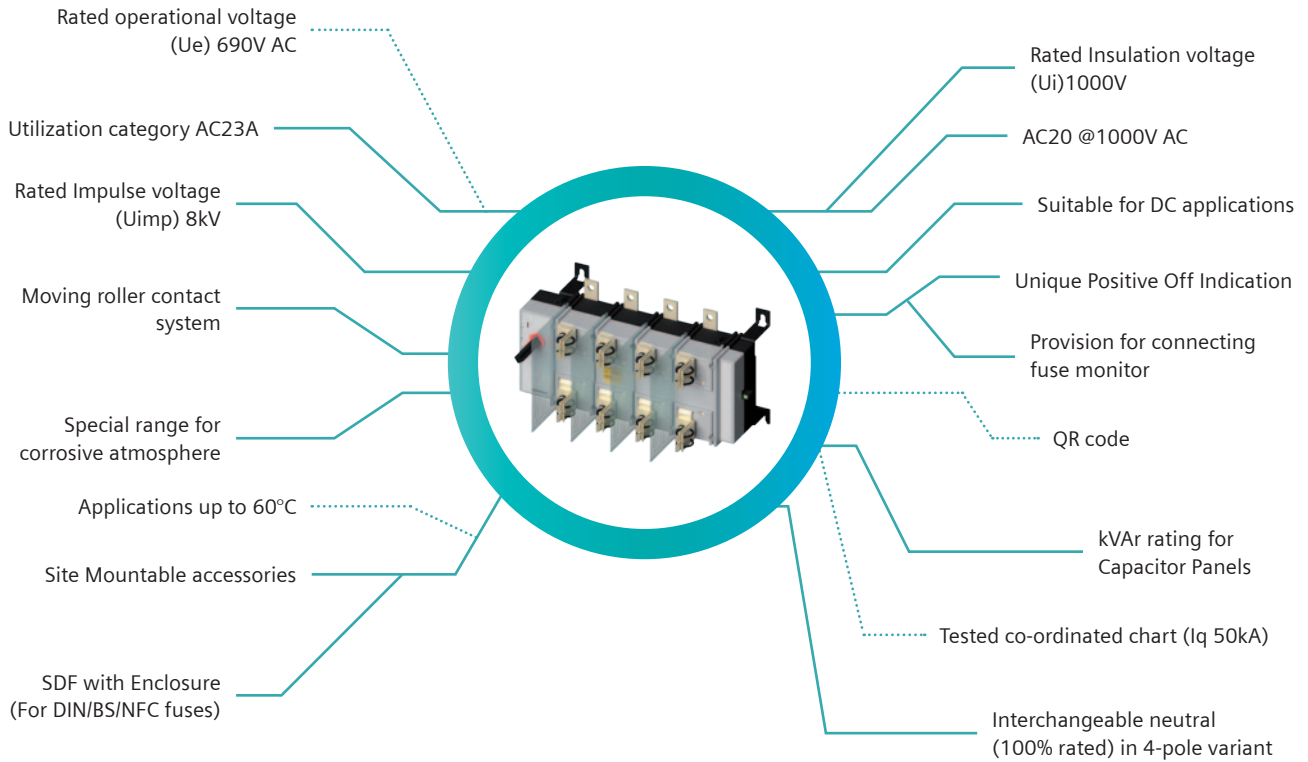
This helps in easy selection of switchgear for motor feeders and enhances reliability of the system.

The combination is available for entire range.

2P = 2-pole; 3P = 3-pole; 3P+N = 3-pole+Neutral Link; 4P = 4-pole

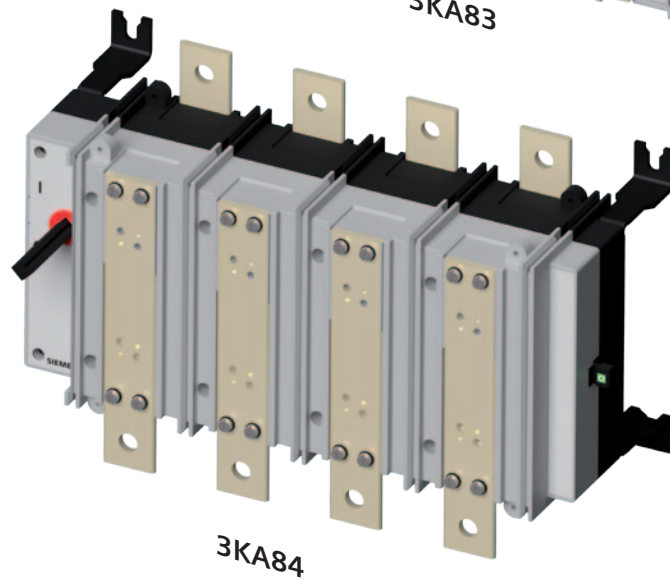
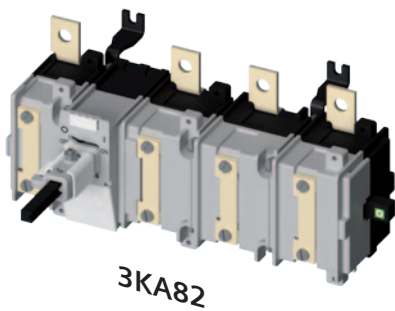
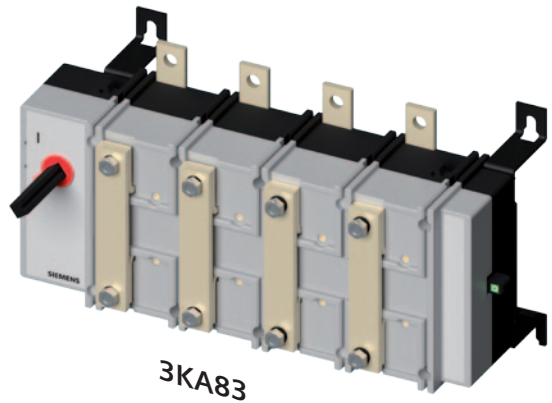
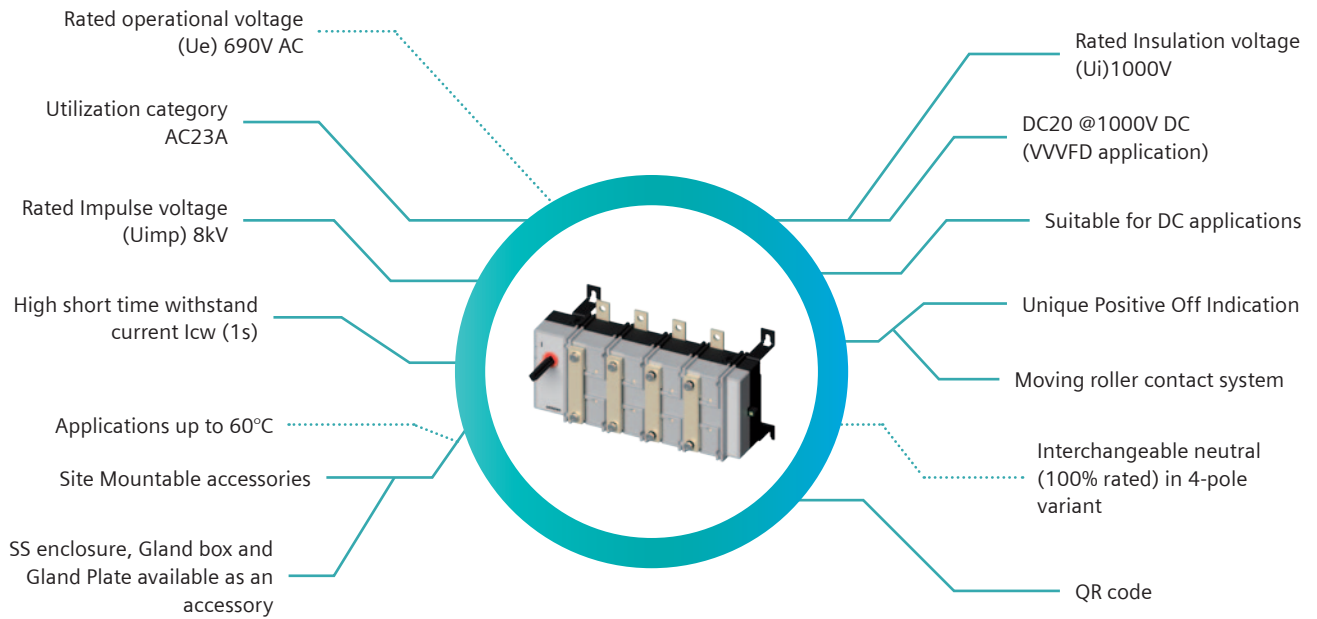
Superswitch 3KL8 Switch Disconnecter Fuse

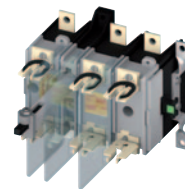
Range 20A - 800A in 2P, 3P, 3P+N and 4P variant



Superswitch 3KA8 Switch Disconnecter

Range 63A-1600A in 2P, 3P+N and 4P variant





Superswitch 3KL8 Switch Disconnecter Fuse

General Technical Information

Superswitch 3KL8 - Conforms to IS/IEC 60947-3	Size 1	3KL811	3KL812	3KL815	3KL817
No. of Poles *		2P/ 3P/ 3P+N/ 4P			2P/ 3P+N/ 4P
Rated operational voltage U_e @ 50/60 Hz	V	690	690	690	690
Rated insulation voltage U_i **	V	1000	1000	1000	1000
Rated impulse voltage U_{imp}	kV	8	8	8	8
Rated Operational Current I_e at AC23A @ 690V AC	A	20	32	63	100 # New
Mechanical endurance - no. of cycles		25,000	25,000	25,000	25,000
Suitable for max. capacitor bank	kVAr	12	14	29	37.5
Rated Conditional S/C current (rms) with fuses @ 690V AC	kA	80	80	80	80
Rated Conditional S/C current (rms) with fuses @ 500V AC	kA	100	100	100	100
Degree of Protection with Fuse & Terminal cover (from front - panel door open)		IP20	IP20	IP20	IP20

Superswitch 3KL8 - Conforms to IS/IEC 60947-3	Size 2	3KL821	3KL822	3KL823
No. of Poles *		2P/ 3P/ 3P+N/ 4P		
Rated operational voltage U_e @ 50/60 Hz	V	690	690	690
Rated insulation voltage U_i **	V	1000	1000	1000
Rated impulse voltage U_{imp}	kV	8	8	8
Rated Operational Current I_e at AC23A @ 690V AC	A	100	125	160
Mechanical endurance - no. of cycles		25,000	25,000	25,000
Suitable for max. capacitor bank	kVAr	46	58	58
Rated Conditional S/C current (rms) with fuses @ 690V AC	kA	80	80	80
Rated Conditional S/C current (rms) with fuses @ 500V AC	kA	100	100	100
Degree of Protection with Fuse & Terminal cover (from front - panel door open)		IP20	IP20	IP20

Superswitch 3KL8 - Conforms to IS/IEC 60947-3	Size 3	3KL831	3KL832	3KL833	3KL834
No. of Poles *		2P/ 3P/ 3P+N/ 4P			
Rated operational voltage U_e @ 50/60 Hz	V	690	690	690	690
Rated insulation voltage U_i **	V	1000	1000	1000	1000
Rated impulse voltage U_{imp}	kV	8	8	8	8
Rated Operational Current I_e at AC23A @ 690V AC	A	200	250	315	400
Mechanical endurance - no. of cycles		20,000	20,000	20,000	20,000
Suitable for max. capacitor bank	kVAr	95	116	145	186
Rated Conditional S/C current (rms) with fuses @ 690V AC	kA	80	80	80	80
Rated Conditional S/C current (rms) with fuses @ 500V AC	kA	100	100	100	100
Degree of Protection with Fuse & Terminal cover (from front - panel door open)		IP20	IP20	IP20	IP20

Superswitch 3KL8 - Conforms to IS/IEC 60947-3	Size 4	3KL841	3KL842	3KL843
No. of Poles *		2P/ 3P/ 3P+N/ 4P		
Rated operational voltage U_e @ 50/60 Hz	V	690	690	690
Rated insulation voltage U_i **	V	1000	1000	1000
Rated impulse voltage U_{imp}	kV	8	8	8
Rated Operational Current I_e at AC23A @ 690V AC	A	500	630	800[§]
Mechanical endurance - no. of cycles		12,000	12,000	12,000
Suitable for max. capacitor bank	kVAr	294	294	374
Rated Conditional S/C current (rms) with fuses @ 690V AC	kA	80	80	80
Rated Conditional S/C current (rms) with fuses @ 500V AC	kA	100	100	100
Degree of Protection with Fuse & Terminal cover (from front - panel door open)		IP20	IP20	IP20

Auxiliary Switch: General Data for 3KL8 Switch Disconnecter Fuse		3KL8 1/2	3KL8 3/4
Rated Insulation Voltage AC	V	660	500
Rated Insulation Voltage DC	V	-	600
Continuous Current	A	10	10
Rated Operational Current I_e at AC12	A	10A@230V AC	10A@230V AC
Rated Operational Current I_e at DC12	A	1.6A@110V DC	1.6A@110V DC
Maximum Fuse rating for S/C Protection - delayed action cartridge type	A	10	10

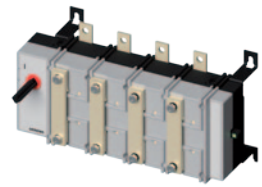
* 3P+N = 3-pole + Neutral link

** Pollution degree 3

With DIN type fuse

§ AC23A @690V AC: 710A with fuse cover

Superswitch 3KA8 Switch Disconnecter



General Technical Information

Superswitch 3KA8 - Conforms to IS/IEC 60947-3	Size 1, 2	3KA815	3KA817	3KA821	3KA822	3KA823
No. of Poles *		2P/ 3P+N/ 4P				
Rated operational voltage U_e @ 50/60 Hz	V	690	690	690	690	690
Rated insulation voltage U_i **	V	1000	1000	1000	1000	1000
Rated impulse voltage U_{imp}	kV	8	8	8	8	8
Rated uninterrupted current I_u	A	63	100	100	125	160
Rated Operational Current I_e at AC23A @ 690V AC	A	63	100#	100	125	160
Mechanical endurance - no. of cycles		25,000	25,000	25,000	25,000	25,000
Rated Short time withstand current I_{cw} (1s)	kA	2	2	3.2	3.2	3.2
Rated Conditional S/C current (rms) with fuses @ 690V AC	kA	80	80	80	80	80
Rated Conditional S/C current (rms) with fuses @ 500V AC	kA	100	100	100	100	100

Superswitch 3KA8 - Conforms to IS/IEC 60947-3	Size 3	3KA831	3KA832	3KA834
No. of Poles *		2P/ 3P+N/ 4P		
Rated operational voltage U_e @ 50/60 Hz	V	690	690	690
Rated insulation voltage U_i **	V	1000	1000	1000
Rated impulse voltage U_{imp}	kV	8	8	8
Rated uninterrupted current I_u	A	200	250	400
Rated Operational Current I_e at AC23A @ 690V AC	A	200	250	400
Mechanical endurance - no. of cycles		20,000	20,000	20,000
Rated Short time withstand current I_{cw} (1s)	kA	14	14	20
Rated Conditional S/C current (rms) with fuses @ 690V AC	kA	80	80	80
Rated Conditional S/C current (rms) with fuses @ 500V AC	kA	100	100	100

Superswitch 3KA8 - Conforms to IS/IEC 60947-3	Size 4	3KA842	3KA843	3KA844	3KA845	3KA846
No. of Poles *		2P/ 3P+N/ 4P				
Rated operational voltage U_e @ 50/60 Hz	V	690	690	690	690	690
Rated insulation voltage U_i **	V	1000	1000	1000	1000	1000
Rated impulse voltage U_{imp}	kV	8	8	8	8	8
Rated uninterrupted current I_u	A	630	800	1000	1250	1600
Rated Operational Current I_e at AC 21A @ 690V AC	A	630	800	1000	1250	1400
Rated Operational Current I_e at AC 22A @ 500V AC	A	630	800	1000 ^{\$}	1250 [^]	1600 [^]
Mechanical endurance - no. of cycles		5,000	5,000	5,000	5,000	5,000
Rated Short time withstand current I_{cw} (1s)	kA	50	50	50	50	50
Rated Conditional S/C current (rms) with fuses @ 690V AC	kA	80	80	80	80	80
Rated Conditional S/C current (rms) with fuses @ 500V AC	kA	100	100	100	100	100

Auxiliary Switch: General Data for 3KA8 Switch Disconnecter Fuse		3KA8 1/2	3KA8 3/4
Rated Insulation Voltage AC	V	660	500
Rated Insulation Voltage DC	V	–	600
Continuous Current	A	10	10
Rated Operational Current I_e at AC12	A	10A@230V AC	10A@500V AC
Rated Operational Current I_e at DC12	A	1.6A@110V DC	4A@110V DC
Maximum Fuse rating for S/C Protection - delayed action cartridge type	A	10	10

* 3P+N = 3-pole + Neutral link

** Pollution degree 3

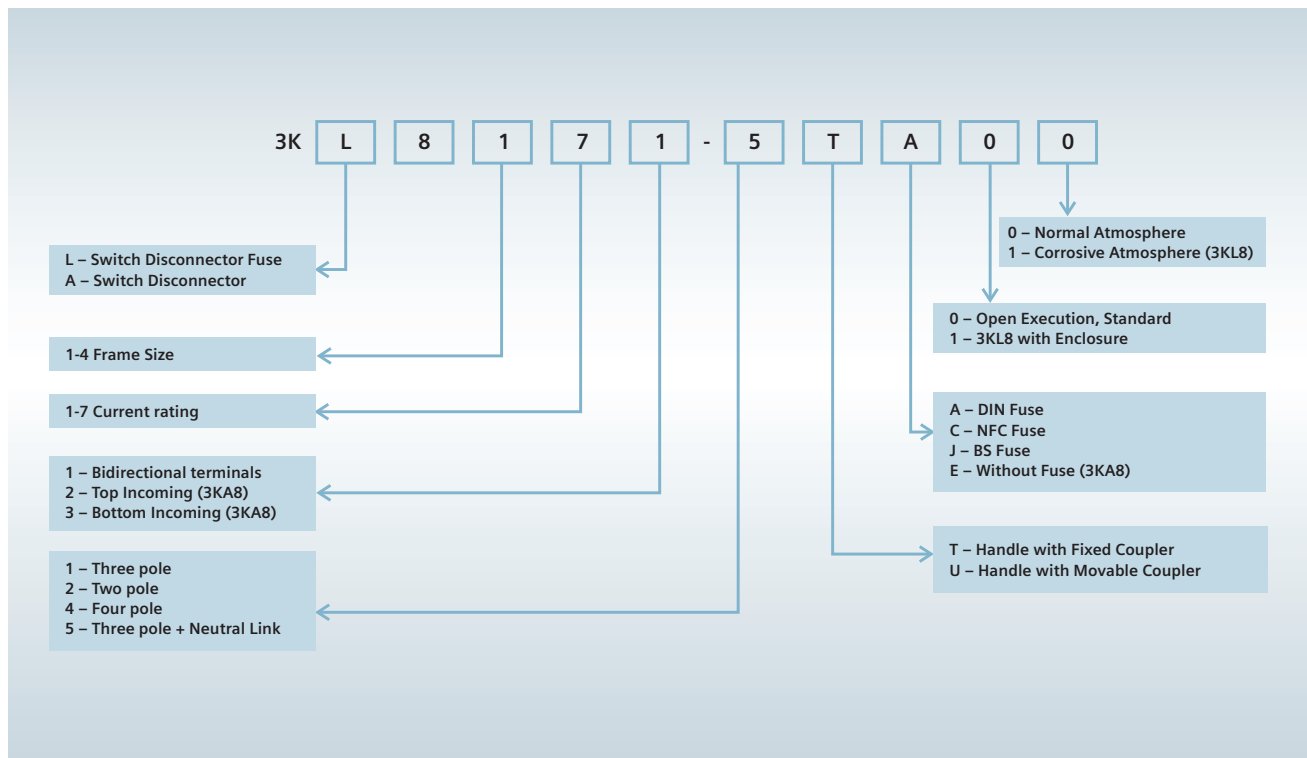
With DIN type fuse

\$ AC22A@415V AC

^ AC21A @500V AC

Superswitch 3KL8/ 3KA8

Ordering code structure



Fuse Selection Guide

Rated current I_e	SDF type	DIN fuse size	DIN fuse type	BS fuse size	BS fuse type	NFC fuse size
20A	3KL8111	00/000	3NA78	A2/A3	TSA/TIA	14X51
32A	3KL8121	00/000	3NA78	A2/A3	TSA/TIA	14X51
63A	3KL8151	00/000	3NA78	A3	TIS/TSS	14X51
100A	3KL8171	00/000	3NA78	-	-	-
100A	3KL8211	00/000	3NA78	A4	TCP	-
125A	3KL8221	00/000	3NA78	A4	TFP/TSFP	-
160A	3KL8231	00/000	3NA78	A4	TFP/TSFP	-
200A	3KL8311	1 - 2	3NA71, 72	B2/B3/B4	TSF/TF	-
250A	3KL8321	1 - 2	3NA71, 72	B2/B3/B4	TSF/TF/TKF/TSK	-
315A	3KL8331	1 - 2	3NA72	B2/B3/B4	TSF/TF/TKF/TSK	-
400A	3KL8341	1 - 2	3NA72	B2/B3/B4	TSF/TF/TKF/TSK/TMF	-
500A	3KL8411	3	3NA33	C1/C2	TTM	-
630A	3KL8421	3	3NA33	C1/C2	TTM	-
800A	3KL8431	3	3NA33	C1/C2	TSL5	-

Superswitch 3KL8/ 3KA8

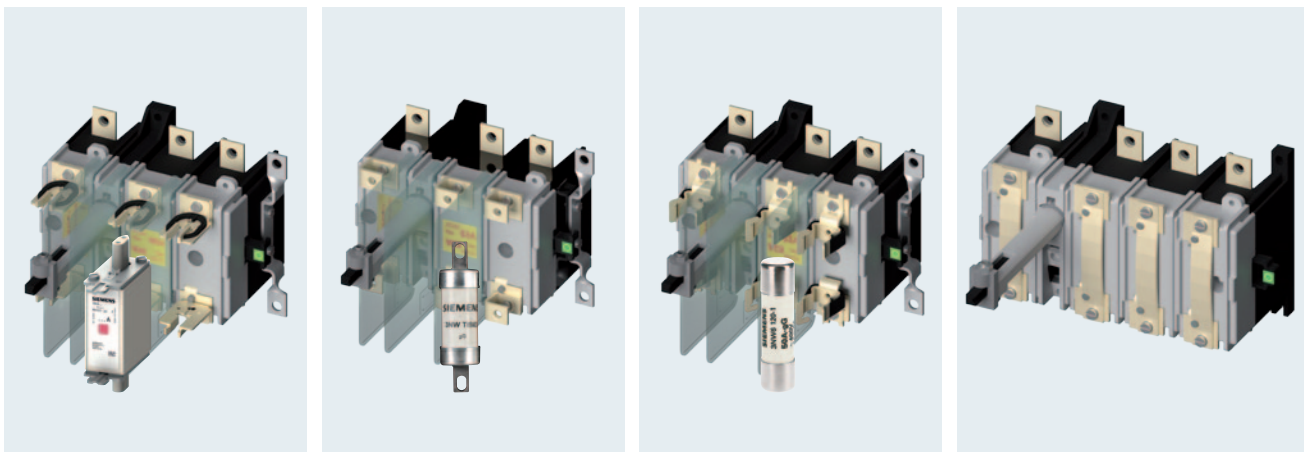
General Ordering Information

3KL8 Switch Disconnecter with fuse					3KA8 Switch Disconnecter				
I _e @ 690V 50Hz	Order Code				I _e @ 690V 50Hz	Order Code			
20A	3KL8111-	_	T	_	0	63A	3KA8151-	_	TE00
32A	3KL8121-	_	T	_	0	100A [#]	3KA8171-	_	TE00
63A	3KL8151-	_	T	_	0	100A	3KA8211-	_	TE00
100A	3KL8171-	_	T	_	0	125A	3KA8221-	_	TE00
100A	3KL8211-	_	T	_	0	160A	3KA8231-	_	TE00
125A	3KL8221-	_	T	_	0	200A	3KA8311-	_	UE00
160A	3KL8231-	_	T	_	0	250A	3KA8321-	_	UE00
200A	3KL8311-	_	U	_	0	400A	3KA8341-	_	UE00
250A	3KL8321-	_	U	_	0	630A*	3KA842	_	UE00
315A	3KL8331-	_	U	_	0	800A*	3KA843	_	UE00
400A	3KL8341-	_	U	_	0	1000A*	3KA844	_	UE00
500A	3KL8411-	_	U	_	0	1250A*	3KA845	_	UE00
630A	3KL8421-	_	U	_	0	1600A*	3KA846	_	UE00
800A	3KL8431-	_	U	_	0	Top Incoming 2 2 Two pole (2P) Bottom Incoming 3 4 Four pole (4P) 5 Three pole+Neutral Link (3P+N)			
Three pole (3P)		1	A	DIN Fuse					
Two pole (2P)		2	J	BS Fuse					
Four pole (4P)		4	C	NFC Fuse					
Three pole+Neutral Link (3P+N)		5	0	Open Execution					
			1	Sheet Steel Housing					

SD (3KA871): Version 3P+N/ 4P
* Utilization category AC21@500V AC

Notes:

- SDF (2P/ 3P+N/ 4P) for NFC (cylindrical) fuse: Range 20A-63A
- SDF (2P) for BS fuse: Range 100-800A
- SDF (2P): Range 20A - 100A is in 3-pole housing
- SDF (3KL8171) for DIN fuse: 2P/ 3P+N/ 4P variants
- SDF (3P) for DIN fuse
- SDF with SS enclosure for DIN/ BS/ NFC fuse: 3P+N/ 4P variants
- SDF for corrosive atmosphere: Please contact nearest Siemens Sales office



Superswitch 3KL8/ 3KA8

Accessories for Superswitch

Castell lock



In addition to the padlocking facility available in Superswitch a castell key interlock can also be installed in them providing an additional layer of safety against unauthorized operation.

SS Enclosure



Sheet Steel enclosure is available as an accessory for the entire range of Superswitch.

Auxiliary Switch



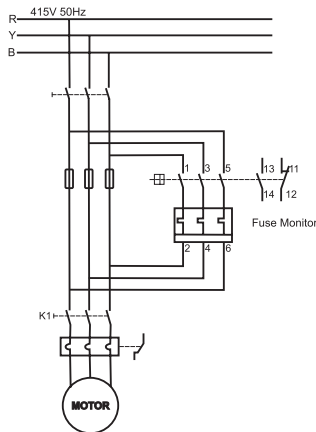
Auxiliary switches can be used for signalling and as part of control circuit of feeders. We can install maximum of 1NO+1NC contacts in switches upto 63A and 2NO+2NC contacts in switches upto 800A. They conform to IS 60947-5.

Fuse Safety barrier



Fuse safety barrier provides additional safety in the field as it prevents removal of fuse in ON condition even if the door interlock is defeated.

Fuse monitoring system for Superswitch



The motor protection circuit breaker type 3VU1340-1MS00 is offered with Superswitch for Fuse monitoring application. Alternatively, 3RV16110BD10 + 3RV2901-1E can also be used.

The three poles of this Circuit Breaker are connected in parallel to the fuses. If any of the fuses blow, the Circuit Breaker gets actuated through its release and offers tripping signal through its auxiliary contacts. Thus the motor is not subjected to single phasing and costly motor burn-outs are prevented.

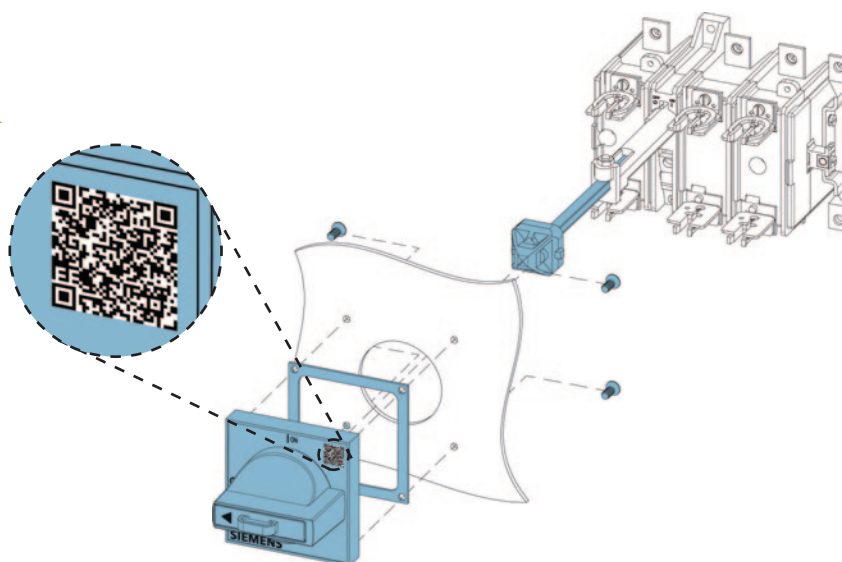


8UC6 Rotary Operating Mechanism for Superswitch

Features

- The retractable locking device integrated in the handles is suitable for padlocks with shackle diameters of 4.5 mm to 8.5 mm.
- Door interlock in OFF position when padlocked
- Door interlock in ON position with defeat.
- Adjustable shaft helps the user to readily use it for varying panel depth
- IP 65 degree of protection when installed on Panel door

New



Ordering info

	3KL8/ 3KA8	Front drive (Handle)*	Shaft Cross Section** (in mm)
	20A - 100A	8UC6114-1BB00	6 x 6
	100A - 160A	8UC6214-1BB00	8 x 8
	200A - 400A	8UC6314-1BB00	12 x 12
	500A - 800A	8UC6414-1BB00	12 x 12

8UC6 ROH is supplied as standard with Superswitch

* inclusive of coupler

** Operating Shafts are also available as spare

SuperSwitch 3KL8/ 3KA8

Accessories for SuperSwitch

Image	Description	Pole	Fuse	3KL81 11/21/51/71 3KA81 51/71	3KL82 11/21/31 3KA82 11/21/31	3KL83 11/21/31/41 3KA83 11/21/41	3KL84 11/21/31 3KA84 2/3/4/5/6
	Fuse Cover	2P	DIN BS	3KX8150-OAE	3KX8230-OJF 3KX8230-OHF	3KX8340-OAF	3KX8430-OJF 3KX8430-OHF
		3P	DIN BS		3KX8230-OJE 3KX8230-OHE	3KX8340-OAE	3KX8430-OJE 3KX8430-OHE
		4P	DIN BS	3KX8150-OAG	3KX8230-OJG 3KX8230-OHG	3KX8340-OAG	3KX8430-OJG 3KX8430-OHG
	Terminal Cover	2P	–	3KX8151-OAE	3KX8231-OAF	3KX8341-OAF	3KX8431-OAF (3KL84)
		3P	–		3KX8231-OAE	3KX8341-OAE	3KX8431-OAE (3KL84)
		4P	–	3KX8151-OAG	3KX8231-OAG	3KX8341-OAG	3KX8431-OAG (3KL84)
	Phase Barrier	–	DIN/ BS/ NFC	3KX8153-OAE	3KX8153-OAE (DIN fuse)	3KX8343-OAE	3KX8433-OAE
					3KX8233-OJE (BS fuse)		
	Fuse cover phase barrier kit			–	–	3KX8340-9AE	3KX8440-9AE
	Auxiliary Switch (1NO+1NC)			3SB5400-0A	3KX3522-1YC	3KX3552-1YC	3KX3582-1YC
	Auxiliary Switch (2NO+2NC)			–	3KX3522-1YD	3KX3552-1YD	3KX3582-1YD
	Auxiliary switch cover			3KX8154-0AC	3KX8234-0AC	–	–
	Front Drive (Handle)			8UC6114-1BB00	8UC6214-1BB00	8UC6314-1BB00	8UC6414-1BB00

SuperSwitch 3KL8/ 3KA8

Accessories for Superswitch

Image	Description	3KL81 11/21/51/71 3KA81 51/71	3KL82 11/21/31 3KA82 11/21/31	3KL83 11/21/31/41 3KA83 11/21/41	3KL84 11/21/31 3KA84 2/3/4/5/6
	Operating shaft (300mm)	8UC6031	8UC6032	8UC6034	8UC6034
	Key interlock	-	-	3KX3588-1YP(.) #	3KX3588-1YP(.) #
	Castell Interlock*	8UC6070-0YQ..	8UC6070-1YQ..	8UC6070-2YQ..	8UC6070-2YQ..
	Depth setting template	8UC60462			
	Fuse Monitor	3VU1340-1MS00/ 3RV1611-0BD10+3RV2901-1E			
	Fuse safety Barrier	3KX8150-1AC	3KX8230-1AC	-	-
	SS Enclosure	3KX8235-4AC		3KX8345-4AC ^{\$}	3KX8435-4AC [^] ^{\$}
	Gland Box with 1 Gland Plate	3KX8235-4DC		3KX8345-4DC ^{\$}	3KX8435-4DC [^] ^{\$}
	Gland Plate	3KX8235-4GC		3KX8345-4GC ^{\$}	3KX8435-4GC [^] ^{\$}

* The 11th and 12th place of the type reference will indicate the alphabet type of lock & key. Combinations available are A, B, C, D, A-, -B, -C, AB, AC. 11th place will be A, B, C, D for castell lock type A, B, C, D respectively. 11th and 12 place will be A0, 0B, 0C, AB, AC for castell lock type A-, -B, -C, AB, AC respectively.

Type of keys are Type A-F depending on the last digit (.) to be replaced by letters A-F.

^ Above 800A, recommended to be used along with gland box 3KX8435-4DC

\$ For 200A-1600A , 4-pole please contact Siemens sales office

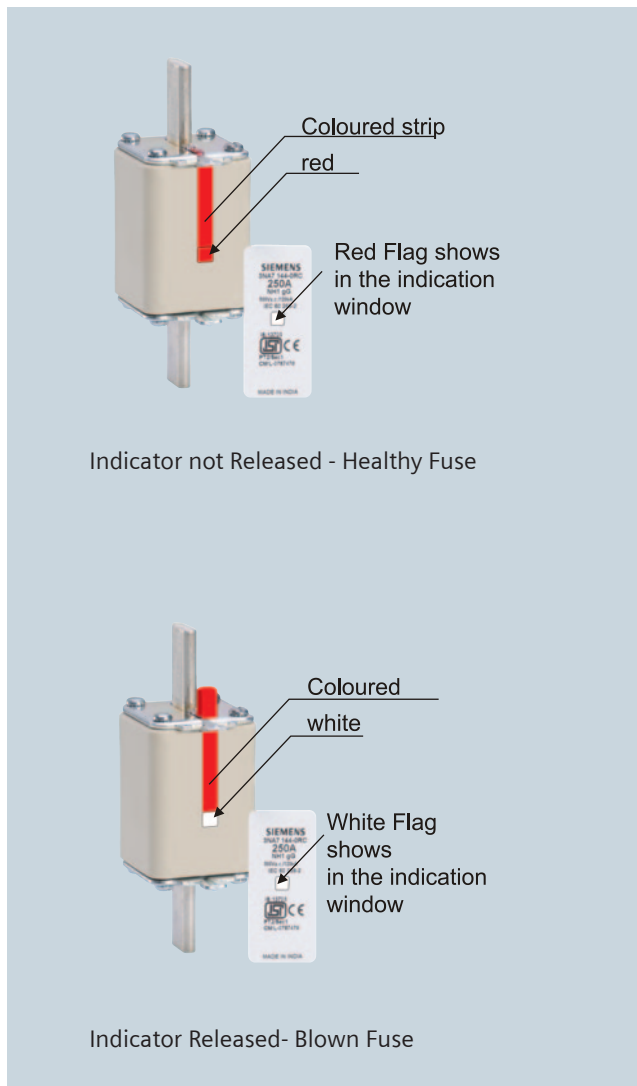
LV HRC Fuses

DIN Type Fuse

Short data description: 3NA7 LV HRC Fuses	
Standards	IS 13703 Part 2 Section 1(1993); IEC 269
Dimensions	IS 13703; IEC 269
Operating class	gG
Rated Voltage	AC 500V / DC 440V upto 630A (DC 250V for size 00)
	AC 690V/DC 440V (DC 250V for size 00)
Rated Current Range	2 to 800A: (500 Vac) 800A@415V.
	40 to 500 A (690 Vac)
Rated Breaking Capacity	AC 120kA / DC 25kA
Mounting position	as desired but preferably vertical
Resistance to climate	-30° C to +50° C at 95% relative humidity

LV HRC Fuses

During installations, when the conventional HRC Fuses are mounted on the fuse bases or Switch Disconnecter Fuse Units in panels as in Fuse Rails above certain height, it is very difficult to identify the status of the fuse link



whether healthy or blown. This necessitates requirement of additional front indication.

The combination indicator Fuse has two indicators as against one indicator in conventional fuses. One indicator is on top cover plate similar to conventional fuses and other indicator is at the centre of the ceramic body of the fuse link. This helps in clear identification of status of fuse even from front side.

3NA7 LV HRC Fuses are available in 5 different sizes from 2 to 800A. The main part of the LV HRC fuses is the fuse element of high-grade copper. The important factors are the resistance value per meter, the material thickness and the dimensional accuracy. Three criteria decisive in the production of the fuse elements are:

- Accurate cutting and punching
- Precise application of the solder deposit
- Accurate and concentric insertion of the fuse-element in the fuse body.

Where several fuse elements are involved, these are fitted exactly parallel to each other in the fuse body. This ensures adequate cooling of the individual arcs. The precision of the parallel arrangement can be verified by observing the beads of molten metal after the fuse has switched off a short circuit. The fuse-element must not be too close to the wall of the fuse body as otherwise there is no protective layer of sand. If the arc were to touch the wall of the fuse body, the fuse might burst or blow.

The fuse elements of 3 NA7 fuses are of operating class gG and of copper. The use of silver-plated or pure silver fuse-elements is not required for physical reasons.

Oxidation, also called scaling of copper, which reduces the cross-section of the fuse-element, occurs only at a temperature of approx. 350° C. In the time/current range within which a fuse operates, however, only temperatures of 180° C to 240° C are attained. Hence safe tripping is ensured with this fuse element.

Advantages

- Consistently high quality LV HRCfuses
- Least stresses to downstream equipments during short circuit due to lower let through current
- Low power losses resulting in high economy and minimal heating.
- Safe and reliable breaking capacity from the smallest and dangerous overload current upto the largest short-circuit current.
- Finely graded selectivity level for the optim use of cable cross sections
- High resistance to ageing thus avoids unnecessary operational faults
- Constant characteristics even under different temperature conditions

LV HRC Fuses





DIN Type Fuse

LV HRC fuse links

- According to IEC 60269/IS 13703
- Rated voltage: 500 V AC / 415 V AC for 800 A
- Rated voltage (DC): 440 V DC, upto 630A (250 V for size 000/00)
- Utilization Category gG[#]
- Rated breaking capacity : 120 kA (AC), 25 kA (DC)

Selection & Ordering Data

LV HRC fuses: 500V AC

	Size	Rating A	Order Code	
	000	2	3NA7802-ORC	
		4	3NA7804-ORC	
		6	3NA7801-ORC	
		10	3NA7803-ORC	
		16	3NA7805-ORC	
		20	3NA7807-ORC	
		25	3NA7810-ORC	
		32	3NA7812-ORC	
		40	3NA7817-ORC	
		50	3NA7820-ORC	
		63	3NA7822-ORC	
		80	3NA7824-ORC	
		100	3NA7830-ORC	
		00	125	3NA7832-ORC
160	3NA7836-ORC			
	1	50	3NA7120-ORC	
		63	3NA7122-ORC	
		80	3NA7124-ORC	
		100	3NA7130-ORC	
		125	3NA7132-ORC	
		160	3NA7136-ORC	
1	1	200	3NA7140-ORC	
		224	3NA7142-ORC	
		250	3NA7144-ORC	
	2	200	3NA7240-ORC	
		250	3NA7244-ORC	
	2	2	315	3NA7252-ORC
			400	3NA7260-ORC
	3	315	3NA3352-ORC	
		400	3NA3360-ORC	
		500	3NA3365-ORC	
		630	3NA3372-ORC	
		*800	3NA3375-4RC	

* 800A fuses - Rated Voltage at 415V AC.

LV HRC Fuses






DIN Type Fuse

LV HRC fuse links

- According to IEC 60269/IS 13703
- Rated voltage: 690V AC
- Rated voltage (DC): 440V DC, (250V for size 00)
- Utilization Category gG[#]
- Rated short circuit breaking capacity: 120kA (AC), 25kA (DC)

Selection & Ordering Data

LV HRC fuses : 690V AC

	Size	Rating A	Order Code
	00	40 50 63 80 100	3NA7817-6RC 3NA7820-6RC 3NA7822-6RC 3NA7824-6RC 3NA7830-6RC
	000	2 4 6 10 16 20 25 32 35	3NA78026 3NA78046 3NA78016 3NA78036 3NA78056 3NA78076 3NA78106 3NA78126 3NA78146
	1	125 160 200	3NA7132-6RC 3NA7136-6RC 3NA7140-6RC
	2	250 315	3NA7244-6RC 3NA7252-6RC
	3	400 425 500	3NA3360-6RC 3NA3362-6RC 3NA3365-6RC

Utilization category as per VDE 0636/IEC 60269

Semiconductor aR, gR, gS

Cable & Conductor gG

Switchgear / Motor aM

1st letter

a = Partial range of protection (accompanied fuses)

g = Complete range protection (general purpose fuses)

2nd letter

G(-L) = Cable & conductor protection (general purpose fuses)

M = Switchgear / Motor protection (Motor Circuit Protection)

R, S = Semiconductor protection

3NW Cylindrical Fuses


Cylindrical Fuse

LV HRC fuse links

- According to IEC 60269/IS 13703
- Rated voltage: 690V AC, 500V AC (40A & 50A)
- Size: 14 x 51
- Utilization Category gG[#]
- Rated short circuit breaking capacity: 100kA

Selection & Ordering Data

LV HRC fuses : 690V / 500V AC

	Rated Current (A)	Size	Voltage (V)	Order Code
	4	14 x 51	690	3NW6104-1
	6			3NW6101-1
	8			3NW6108-1
	10			3NW6103-1
	12			3NW6106-1
	16			3NW6105-1
	20			3NW6107-1
	25			3NW6110-1
	32			3NW6112-1
	40			3NW6117-1
	50	3NW6120-1		
			500	



LV HRC Fuses

BS Type Fuse



General

Siemens low voltage HRC fuses of BS type have been developed for industrial applications. Due to the special design, they provide high rupturing capacity combined with low temperature rise under normal load conditions. The quick acting characteristics of the fuses ensure that under the worst fault conditions, cut off occurs before the peak value of fault current is reached. This ultimately reduces the electromagnetic stress and fire risk, thus avoiding premature failure of the downstream equipment.

Construction

The fuse links consist of one or more elements contained in ceramic barrel of exceptional strength and filled by carefully graded, chemically purified silica quartz sand. The end of cartridges are closed by electro-tinned/ silver plated end caps which are forced on to the ground barrel under pressure, thus entirely eliminating the use of cement with its attendant disadvantages.

The fuse elements are made of pure copper/ silver composite type and manufactured to very close tolerance to ensure that the characteristics of the fuses are consistent. All fuse links are manufactured under strict quality control and tested as per relevant standards.

Applications

The fuses are ideally suited for general industrial applications as well as protection of lighting and heating circuits.

Short Data Description

BS Fuses - Type 3NW

Rated Voltage	:	415V AC, 240V DC
Rated Current	:	2A to 800A
Rated short circuit breaking capacity	:	80kA (AC), 40kA (DC)
Utilization Category	:	gG
Fusing Factor	:	1.6
Fuse fixing arrangement	:	Blade Tag, Offset Tag, Centre Tag
Relevant Standards	:	IS13703-2 (1993), BS 88 Part 1 & 2 (1988), IEC 60269 –2-1(1987)

LV HRC Fuses

BS Type Fuse

Selection & Ordering Data

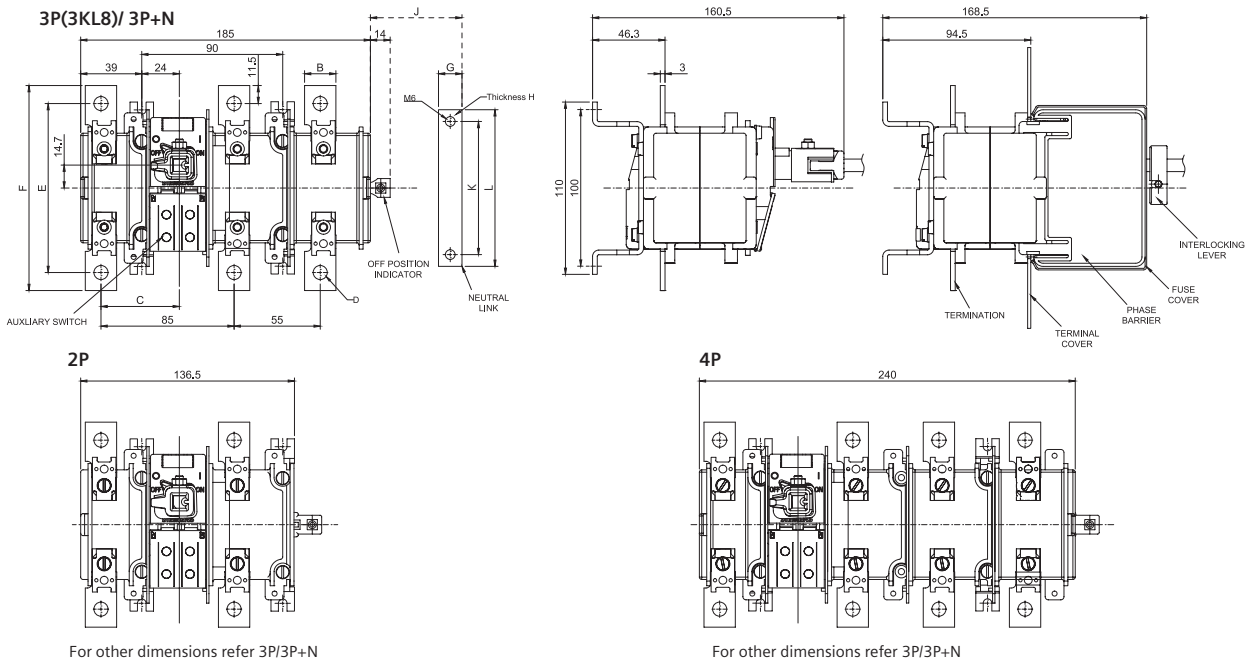
Type	Rated Current (A)	Type Reference	Rated Power Dissipation (Watts)
Offset Tag	2	3NW TIA2	1.5
	4	3NW TIA4	2.7
	6	3NW TIA6	3.3
	10	3NW TIA10	2.8
	16	3NW TIA16	3.3
	20	3NW TIA20	3.1
	25	3NW TIA25	3.6
Offset Tag	32	3NW TIA32	3.8
	6	3NW TSA6	1.8
	10	3NW TSA10	2.1
	16	3NW TSA16	1.8
	20	3NW TSA20	1.8
Offset Tag	25	3NW TSA25	2.0
	32	3NW TSA32	2.9
	40	3NW TIS40	4.7
Offset Tag	50	3NW TIS50	4.9
	63	3NW TIS63	5.6
	Offset Tag	36	3NW TSS36
40		3NW TSS40	4.7
50		3NW TSS50	4.9
63		3NW TSS63	5.6
Offset Tag	80	3NW TCP80	7.2
	100	3NW TCP100	8.2
Offset Tag	80	3NW TSDS80	7.2
	100	3NW TSDS100	8.5
Offset Tag	125	3NW TSFP125	11.0
	160	3NW TSFP160	13.0
	200	3NW TSFP200	14.0
Offset Tag	125	3NW TFP125	10.0
	160	3NW TFP160	13.9
	200	3NW TFP200	16.0

Type	Rated Current (A)	Type Reference	Rated Power Dissipation (Watts)
Centre Tag	80	3NW TSDC80	7.2
	100	3NW TSDC100	8.5
Centre Tag	80	3NW TC80	7.2
	100	3NW TC100	8.2
Centre Tag	125	3NW TF125	10.0
	160	3NW TF160	13.0
	200	3NW TF200	16.0
Centre Tag	125	3NW TFS125	11.0
	160	3NW TFS160	13.0
	200	3NW TFS200	14.0
Centre Tag	250	3NW TKF250	19.0
	315	3NW TKF315	25.0
Centre Tag	250	3NW TSK250	18.0
	315	3NW TSK315	22.0
Centre Tag	355	3NW TSMS355	24.0
	400	3NW TSM5400	29.0
Centre Tag	355	3NW TMF355	24.0
	400	3NW TMF400	29.0
Centre Tag	450	3NW TSTS450	31.0
	500	3NW TSTS500	39.0
Centre Tag	500	3NW TTM500	38.0
	630	3NW TTM630	50.0
Centre Tag	560	3NW TSL560	38.0
	630	3NW TSL630	44.0
	800	3NW TSL800	68.0
Centre Tag	710	3NW TLM710	53.0
	800	3NW TLM800	64.0



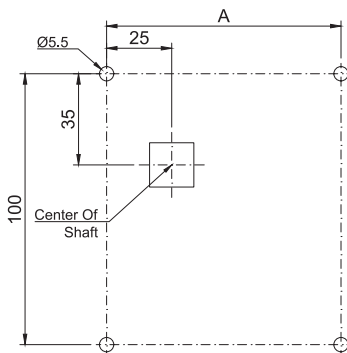
Dimensional Drawings

Dimension Details: Superswitch 3KL8/ 3KA8 - Size 2



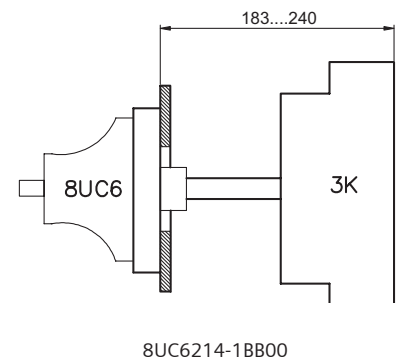
Type	B	C	D	E	F	G	H	J	K	L
3KL/ 3KA 821/ 822	15	45	Ø6.5	108	131	12	2	15	74	90
3KL/ 3KA 823	20	50	Ø9	91	106	15	3	17	85	100

Drilling plan for mounting plate



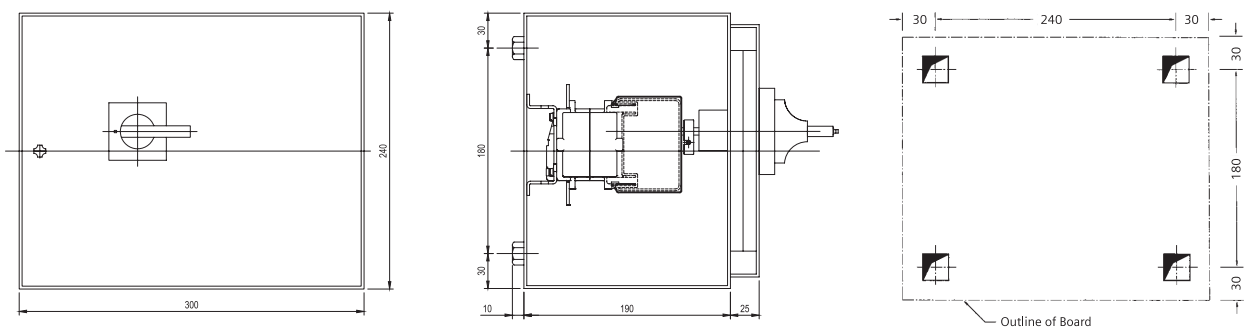
Pole	A
2P	90
3P	90
4P	145

8UC Depth Value



8UC6214-1BB00

Dimension Details for SDF in Enclosure / Gland Box#

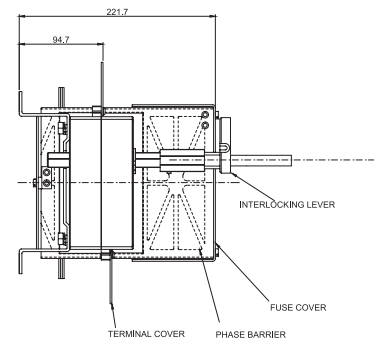
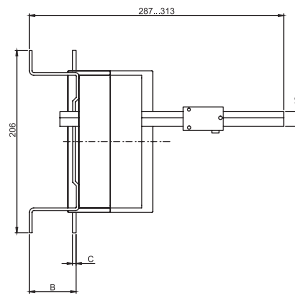
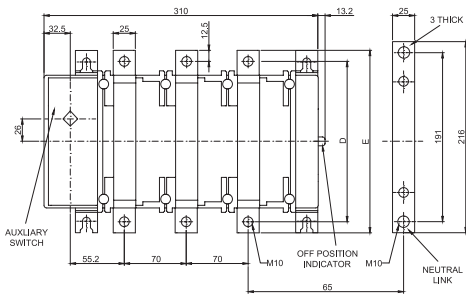


Gland box height is 150mm
All the dimensions are in mm

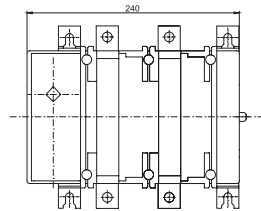
Dimensional Drawings

Dimension Details: Superswitch 3KL8/ 3KA8 - Size 3

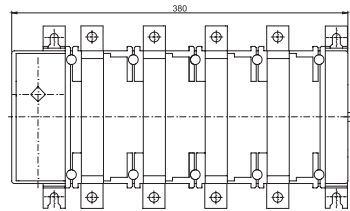
3P(3KL8)/ 3P+N



2P



4P

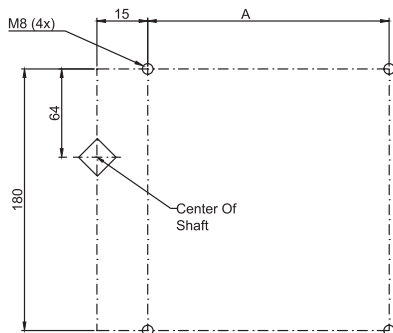


Type	Pole	B	C	D	E
3KL 831/ 832/ 833 3KA 831/ 832/ 834	3P	53.5	4	186.4	211.4
3KL 834	3P	55.5	6	191	216
3KL831/ 832/ 833/ 834 3KA 831/ 832/ 834	2P/4P	55.5	6	191	216

For other dimension refer 3P(3KL8)/ 3P+N

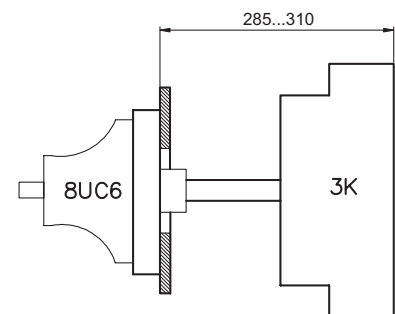
For other dimension refer 3P(3KL8)/ 3P+N

Drilling plan for mounting plate



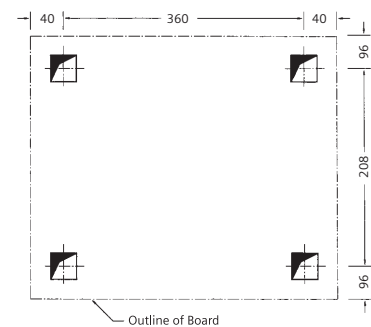
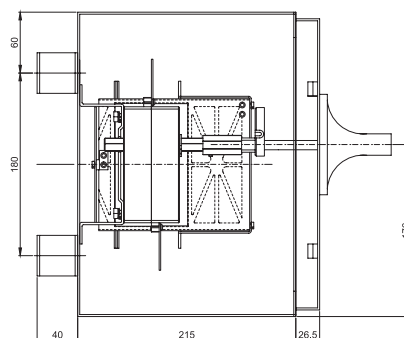
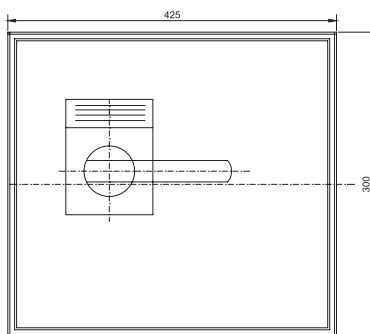
Pole	A
2P	180
3P	250
4P	320

8UC Depth Value



8UC6314-1BB00

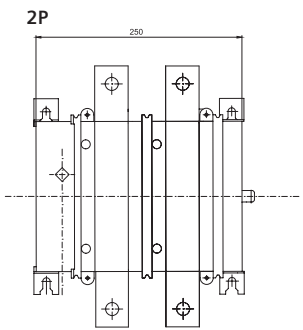
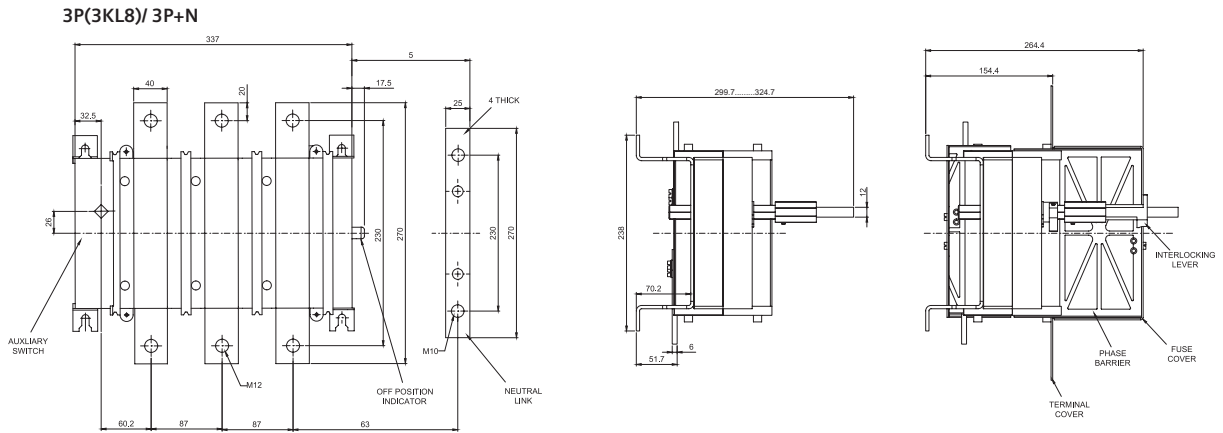
Dimension Details for SDF in Enclosure / Gland Box



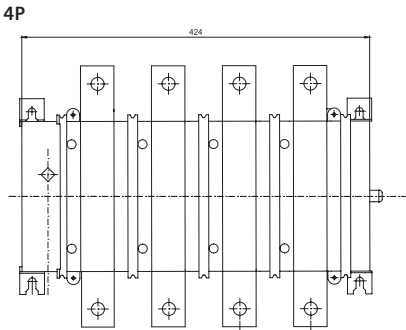
All the dimensions are in mm

Dimensional Drawings

Dimension Details: Superswitch 3KL8 - Size 4

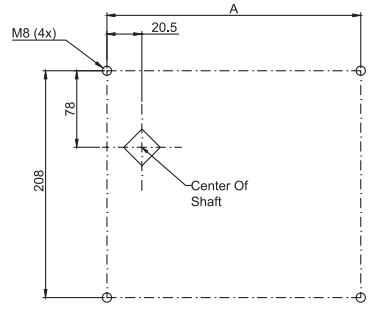


For other dimension refer 3P(3KL8)/ 3P+N

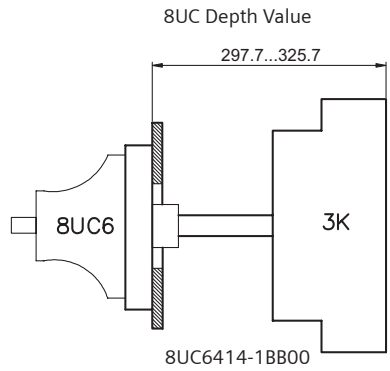


For other dimension refer 3P(3KL8)/ 3P+N

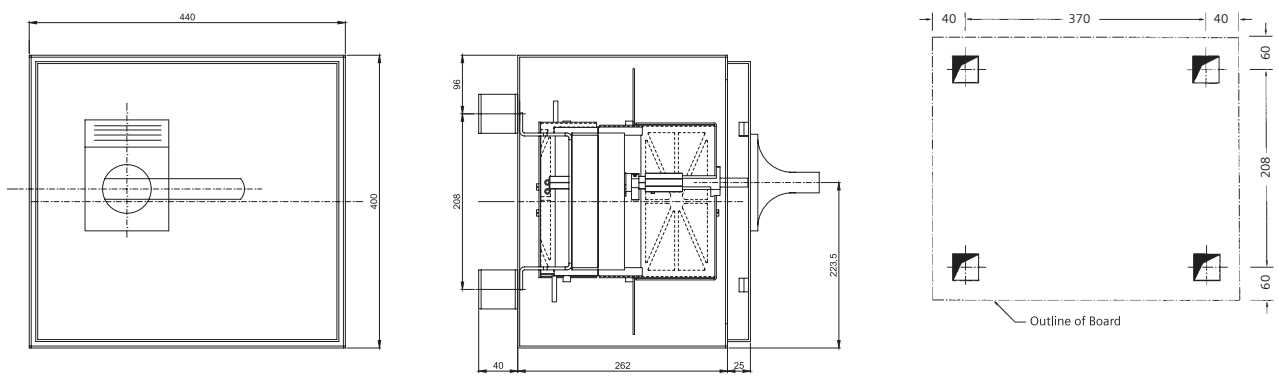
Drilling plan for mounting plate



Pole	A
2P	228
3P	315
4P	402



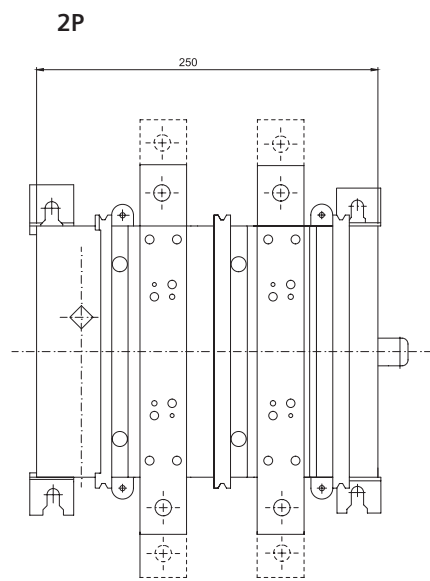
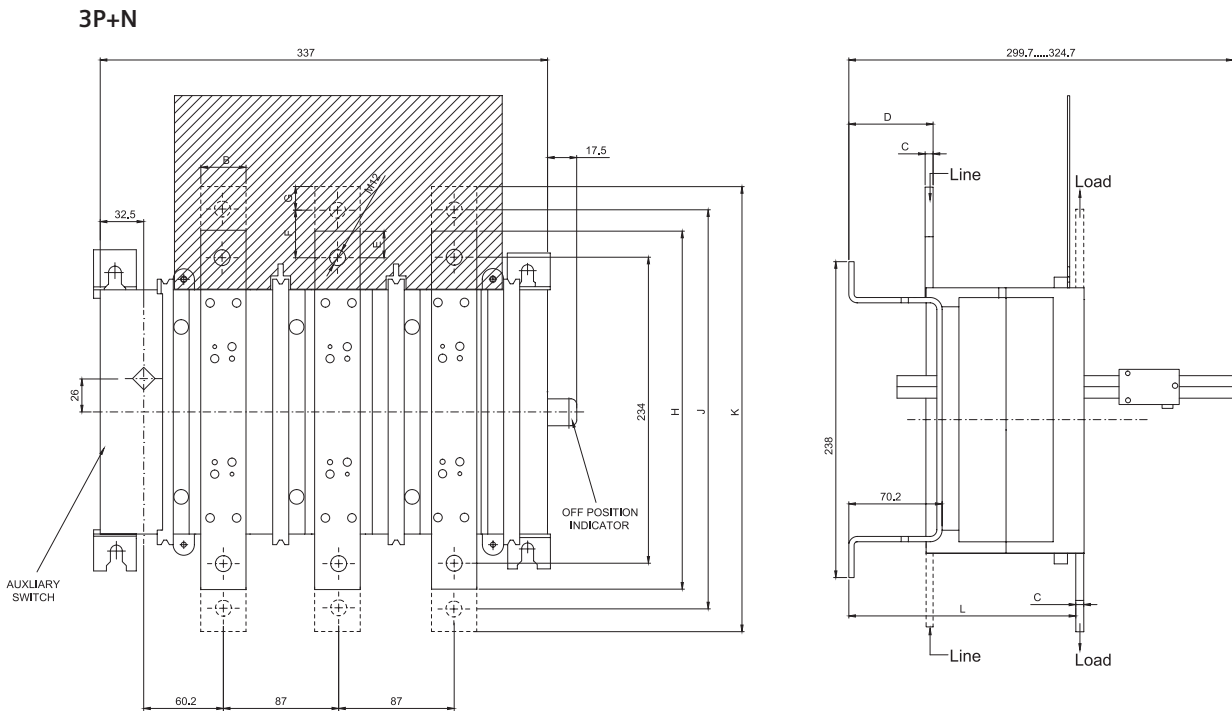
Dimension Details for SDF in Enclosure / Gland Box



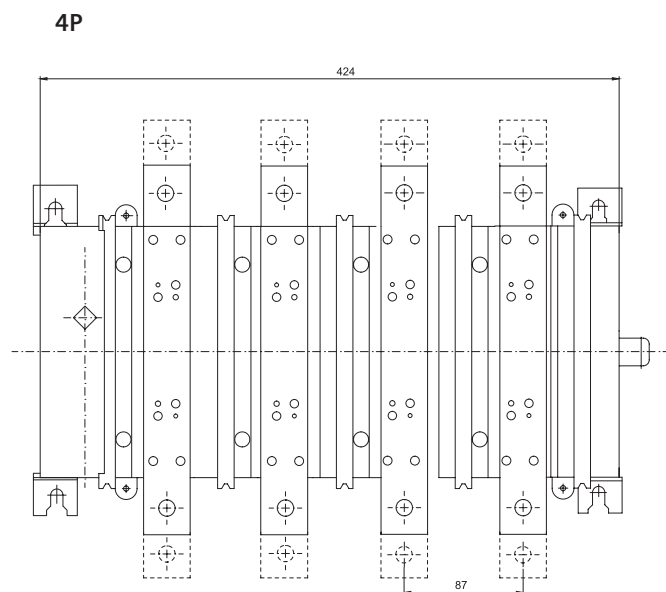
All the dimensions are in mm

Dimensional Drawings

Dimension Details: Superswitch 3KA8 - Size 4



For other dimension refer 3P+N



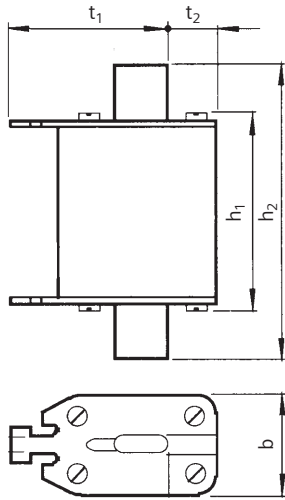
For other dimension refer 3P+N

Type	B	C	D	E	F	G	H	J	K	L
3K□□□□2□□□□□ 3K□□□□□3□□□□□ 3KA 842/ 843/ 844	40	6	64.4	20	-	-	274	-	-	153.9
3K□□□□2□□□□□ 3K□□□□□3□□□□□ 3KA 845/ 846	50	10	58.4	-	40	20	-	314	354	159.9

All the dimensions are in mm

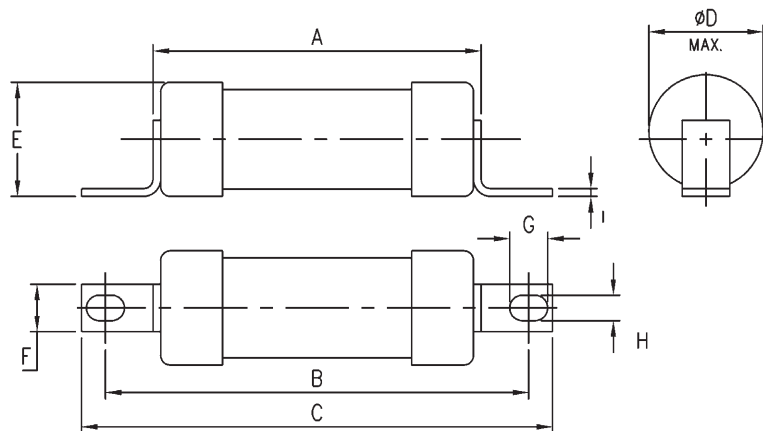
Dimensional Drawings

Dimensional Drawing: DIN Fuse



Sizes	Current Rating Range Amps.	MLFB	b	h_1	h_2	t_1	t_2
000	2 - 100	3NA78...	21	54	80	45	8
00	125 - 160	3NA78...	30	54	80	45	14
1	50 - 160	3NA71...	30	75	137	50	15
1	200 - 250	3NA71...	47	75	137	51	9
2	200 - 250	3NA72...	47	75	151	58	10
2	315 - 400	3NA72...	58	74	151	59	13
3	315 - 800	3NA33...	71.2	74	151	69.5	12.8

Dimensional Drawing: BS Fuse



Type Reference	Current Rating Range Amps.	A	B	C	D	E	F	G	H	I	
Off-Set Tag	3NW TIA	2-32	53.00	73.00	85.00	22.00	22.10	9.20	7.90	5.40	1.00
	3NW TSA	6-32	35.50	73.50	85.00	13.70	14.00	8.70	8.00	5.50	1.20
	3NW TIS	40-63	54.50	73.50	87.00	21.00	22.50	12.70	8.00	5.50	1.20
	3NW TSS	36-63	54.50	73.50	87.00	21.00	22.50	12.70	8.00	5.50	1.20
	3NW TCP	80-100	66.00	94.00	111.00	35.50	37.00	20.00	10.30	8.70	2.64
	3NW TSDS	80-100	54.50	73.00	95.00	21.00	22.50	12.70	8.00	5.50	1.20
	3NW TSFP	125-200	47.00	94.00	110.00	31.00	29.50	19.00	10.00	9.00	3.20
	3NW TFP	125-200	66.00	94.00	111.00	38.00	38.00	19.00	10.00	8.50	2.64

Note: For dimensions of other ratings and types of BS fuses suitable for Superswitch; please refer to the BS Fuse Datasheet.

Type-2 Co-ordination Charts: Superswitch 3KL8

Fuse protected selection type 2, Iq = 50kA, IS/IEC 60947-4-1 (3KL with 3RT & 3RU)

Suitable for IE2 motors

- The selection is valid only for complete Siemens combinations i.e. SDF + DIN Fuse + Contactor + Bi-relay (+ timer).
- In case this combination is changed to accommodate another brand/rating of SDF/DIN Fuse/Contactor/BMR, it shall be the responsibility of the person making such a change to assure type 2 performance.
- Selection is for normal starting conditions (class 10 feeder). (For heavy starting applications e.g. ID/FD fans, reciprocating compressor, ball mills etc., please consult Siemens.)
- The electronic star-delta timer type 3RP should be used in star-delta feeders.
- SDF: Switch Disconnecter Fuse. All fuses are DIN HRC type.
- Tested Type 2 combinations
- Low LCC = Low Life Cycle Cost

Direct-on-line feeder, for Low LCC

SL Motor		SDF		Fuse		Contactor		Bi-Relay	
kW 415V, 3ph, 50/60 Hz	I _L Amps	Type	Amp	Type	Amps	Type	Rating Amps	Type	Set-Range Amp
0.37	1	3KL811	20	3NA78040RC	4	3RT2015	7	3RU2116-0KB0	0.9 ... 1.25
0.55	1.3	3KL811	20	3NA78040RC	4	3RT2015	7	3RU2116-1AB0	1.1 ... 1.6
0.75	1.9	3KL811	20	3NA78010RC	6	3RT2015	7	3RU2116-1BB0	1.4 ... 2
1.1	2.6	3KL811	20	3NA78010RC	6	3RT2015	7	3RU2116-1DB0	2.2 ... 3.2
1.5	3.7	3KL811	20	3NA78030RC	10	3RT2015	7	3RU2116-1EB0	2.8 ... 4
2.2	4.8	3KL811	20	3NA78050RC	16	3RT2015	7	3RU2116-1GB0	4.5 ... 6.3
3.7	7.8	3KL811	20	3NA78070RC	20	3RT2023	9	3RU2126-1JB0	7 ... 10
5.5	11.2	3KL812	32	3NA78100RC	25	3RT2024	12	3RU2126-1KB0	9 ... 12.5
7.5	16	3KL812	32	3NA78120RC	32	3RT2025	17	3RU2126-4AB0	11 ... 16
11	20.8	3KL815	63	3NA78200RC	50	3RT2026	25	3RU2126-4DB0	20 ... 25
15	28	3KL815	63	3NA78220RC	63	3RT2027	32	3RU2126-4EB0	27 ... 32
18.5	34	3KL821	100	3NA78240RC	80	3RT2035	40	3RU2136-4FB0	28 ... 40
22	40	3KL821	100	3NA78240RC	80	3RT2036	50	3RU2136-4GB0	36 ... 45
30	53	3KL821	100	3NA78300RC	100	3RT2037	65	3RU2136-4QB0	47 ... 57
37	65	3KL822	125	3NA78320RC	125	3RT2038	80	3RU2136-4KB0	62 ... 73
45	78	3KL822	125	3NA78320RC	125	3RT2038	80	3RU2136-4RB0	70 ... 80
55	96	3KL823	160	3NA78360RC	160	3RT1054	115	3RU1146-4MB0	80 ... 100
75	132	3KL831	200	3NA71400RC	200	3RT1055	150	3RU2156-5DB10-8K	110 ... 160
90	160	3KL832	250	3NA71440RC	250	3RT1056	185	3RU2156-5EB10-8K	140 ... 200
110	195	3KL832	250	3NA71440RC	250	3RT1064	225	3RU2166-5FB10-8K	180 ... 250
132	230	3KL833	315	3NA72520RC	315	3RT1065	265	3RU2166-5FB10-8K	180 ... 250
160	280	3KL834	400	3NA72600RC	400	3RT1066	300	3RU2166-5GB10-8K	220 ... 320
200	350	3KL841	500	3NA33650RC	500	3RT1075	400	3RU2176-5HB10-8K	280 ... 400
250	430	3KL841	500	3NA33650RC	500	3RT1076	500	3RU2176-5JB10-8K	350 ... 500

Star-Delta feeder, for Low LCC

SL Motor			SDF		HRC Fuses		Contactor Line/Delta		Contactor Star		Bi-Relay		Timer
kW 415V, 3ph, 50/60 Hz	I _L Amps	I _{Ph} Amps	Type	Rating Amps	Type	Rating Amps	Type	Rating Amps	Type	Rating Amps	Type	Set-Range Amp	Type
4	7.8	4.5	3KL811	20	3NA78030RC	10	3RT2023	9	3RT2023	9	3RU2126-1FB0	3.5 ... 5	3RP15
5.5	11.2	6.5	3KL811	20	3NA78050RC	16	3RT2023	9	3RT2023	9	3RU2126-1HB0	5.5 ... 8	3RP15
7.5	16	9.2	3KL811	20	3NA78070RC	20	3RT2024	12	3RT2023	9	3RU2126-1JB0	7 ... 10	3RP15
11	20.8	12	3KL812	32	3NA78100RC	25	3RT2024	12	3RT2023	9	3RU2126-1KB0	9 ... 12.5	3RP15
15	28	16.2	3KL812	32	3NA78120RC	32	3RT2026	25	3RT2025	17	3RU2126-4BB0	14 ... 20	3RP15
18.5	34	19.7	3KL815	63	3NA78200RC	50	3RT2027	32	3RT2026	25	3RU2126-4CB0	17 ... 22	3RP15
22	40	23.2	3KL815	63	3NA78200RC	63	3RT2035	40	3RT2026	25	3RU2136-4DB0	18 ... 25	3RP15
30	53	30.6	3KL821	100	3NA78220RC	80	3RT2035	40	3RT2026	25	3RU2136-4EB0	22 ... 32	3RP15
37	65	37.5	3KL821	100	3NA78240RC	80	3RT2035	40	3RT2027	32	3RU2136-4FB0	28 ... 40	3RP15
45	78	45	3KL821	100	3NA78300RC	100	3RT2036	50	3RT2028	40	3RU2136-4HB0	40 ... 50	3RP15
55	96	55.4	3KL821	100	3NA78300RC	100	3RT2037	65	3RT2035	40	3RU2136-4JB0	54 ... 65	3RP15
75	131	75.6	3KL823	160	3NA78360RC	160	3RT2038	80	3RT2037	65	3RU2136-4RB0	70 ... 80	3RP15
90	156	90.1	3KL823	160	3NA78360RC	160	3RT1046	95	3RT1044	65	3RU1146-4MB0	80 ... 100	3RP15
110	195	113	3KL831	200	3NA71400RC	200	3RT1054	115	3RT1054	115	3RU2156-5CB10-8K	90 ... 125	3RP15
132	230	133	3KL832	250	3NA71440RC	250	3RT1055	150	3RT1054	115	3RU2156-5DB10-8K	110 ... 160	3RP15
160	280	162	3KL833	315	3NA72520RC	315	3RT1056	185	3RT1054	115	3RU2156-5EB10-8K	140 ... 200	3RP15
200	350	202	3KL834	400	3NA72600RC	400	3RT1064	225	3RT1056	185	3RU2166-5FB10-8K	180 ... 250	3RP15
250	430	248	3KL841	500	3NA33650RC	500	3RT1065	265	3RT1065	265	3RU2166-5GB10-8K	220 ... 320	3RP15

Type-2 Co-ordination Charts: Superswitch 3KL8

Fuse protected selection type 2, Iq = 50kA, IS/IEC:60947-4-1
(3KL with 3TF & 3UA)

Suitable for IE2 motors

- The selection is valid only for complete Siemens combinations i.e. SDF + DIN Fuse + Contactor + Bi-Relay (+ timer).
- In case this combination is changed to accommodate another brand/rating of SDF/DIN Fuse/Contactor/BMR, it shall be the responsibility of the person making such a change to assure type 2 performance.
- Selection is for normal starting conditions with starting time ≤ 6 seconds. (For heavy starting applications e.g. ID/FD fans, reciprocating compressor, ball mills etc., please consult Siemens.)
- At 60°C service temperature the bi-relay has to be derated. The bi-relay can be used upto the maximum current setting indicated. For example - A bi-relay with setting 32-50A, at 60°C can be used only upto 47A. This however does not mean that at 60°C, the 50A setting corresponds to 47A. It means that, the bi-relay should not be set beyond 47A.
- The electronic star-delta timer type 3RP should be used in star-delta feeders.
- SDF: Switch Disconnector Fuse. All fuses are DIN HRC type.
- Tested Type 2 combinations
- Low LCC = Low Life Cycle Cost

Direct-on-line feeder, for Low LCC

SL Motor	Motor	SDF		HRC Fuse		Contactor		Bi-Relay		Bi-Relay	
kW 415V, 3ph, 50Hz	I _L Amp	Type	Rating	Type	Amp	Type	Amp	Type (50°C)	Set-Range Amp	Type (60°C)	Available Set-Range Amp
0.37	1	3KL811	20	3NA78040RC	4	3TF30	9	3UA5000-0K	0.8 - 1.25	3UA5000-0K	0.8 - 1.17
0.55	1.3	3KL811	20	3NA78040RC	4	3TF30	9	3UA5000-1A	1 - 1.6	3UA5000-1A	1 - 1.5
0.75	1.9	3KL811	20	3NA78010RC	6	3TF30	9	3UA5000-1B	1.25 - 2	3UA5000-1C	1.6 - 2.3
1.1	2.6	3KL811	20	3NA78010RC	6	3TF30	9	3UA5000-1D	2 - 3.2	3UA5000-1D	2 - 3
1.5	3.7	3KL811	20	3NA78030RC	10	3TF30	9	3UA5000-1E	2.5 - 4	3UA5000-1E	2.5 - 3.7
2.2	4.8	3KL811	20	3NA78050RC	16	3TF30	9	3UA5000-1F	3.2 - 5	3UA5000-1G	4 - 5.9
3.7	7.8	3KL811	20	3NA78070RC	20	3TF30	9	3UA5000-1H	5 - 8	3UA5000-1J	6.3 - 9.4
5.5	11.2	3KL812	32	3NA78100RC	25	3TF31	12	3UA5000-1K	8 - 12.5	3UA5000-1K	8 - 11.7
7.5	16	3KL812	32	3NA78120RC	32	3TF32	16	3UA5200-2A	10 - 16	3UA5200-2B	12.5 - 18.7
9.3	19	3KL815	63	3NA78200RC	50	3TF34	32	3UA5500-2B	12.5 - 20	3UA5500-2C	16 - 23.4
11	20.8	3KL815	63	3NA78200RC	50	3TF34	32	3UA5500-2C	16 - 25	3UA5500-2C	16 - 23.4
15	28	3KL815	63	3NA78220RC	63	3TF34	32	3UA5500-2D	20 - 32	3UA5500-2D	20 - 30
18.5	34	3KL815	63	3NA78220RC	63	3TF35	38	3UA5500-2Q	25 - 36	3UA5500-2R	32 - 37.4
22	40	3KL821	100	3NA78240RC	80	3TF46	45	3UA5800-2FZ1	32 - 50	3UA5800-2FZ1	32 - 47
30	53	3KL821	100	3NA78300RC	100	3TF47	63	3UA5800-2TZ1	40 - 57	3UA5800-2PZ1	50 - 59
37	65	3KL822	125	3NA78320RC	125	3TF477	70	3UA5800-2VZ2	57 - 70	3UA5800-2VZ2	57 - 65.5
45	78	3KL822	125	3NA78320RC	125	3TF49	85	3UA5800-8YZ1	70 - 95	3UA5800-8YZ1	70 - 88.9
55	96	3KL823	160	3NA78360RC	160	3TF50	110	3UA5830-5C	85 - 105	3UA5830-5C	85 - 98.2
75	131	3KL831	200	3NA71400RC	200	3TF51	140	3UA6230-5A	85 - 135	3UA6230-5B	115 - 168
90	156	3KL832	250	3NA71440RC	250	3TF52	170	3UA6230-5B	115 - 180	3UA6230-5B	115 - 168
110	189	3KL832	250	3NA71440RC	250	3TF53	205	3UA6230-5C	160 - 250	3UA6230-5C	160 - 234
132	227	3KL833	315	3NA72520RC	315	3TF54	250	3UA6230-5C	160 - 250	3UA6230-5C	160 - 234
160	271	3KL834	400	3NA72600RC	400	3TF55	300	3UA6230-5D	200 - 320	3UA6230-5D	200 - 299
200	339	3KL841	500	3NA33650RC	500	3TF56	400	3UA6230-5E	250 - 400	3UA6230-5E	250 - 374
250	398	3KL841	500	3NA33650RC	500	3TF57	475	3UA6830-5F	320 - 500	3UA6830-5F	320 - 468

Star-Delta feeder, for Low LCC

SL Motor	Motor		SDF		HRC Fuses		Contactor Line/Delta		Contactor Star		Bi-Relay		Bi-Relay		Timer
kW 415V, 3ph, 50Hz	I _L Amp	I _{ph} Amp	Type	Rating	Type	Amp	Type	Amp	Type	Amp	Type (50°C)	Set-Range Amp	Type (60°C)	Available Set-Range Amp	Type
3.7	7.8	4.5	3KL811	20	3NA78030RC	10	3TF30	9	3TF30	9	3UA5000-1F	3.2-5	3UA5000-1F	3.2-4.7	3RP15
5.5	11.2	6.5	3KL811	20	3NA78050RC	16	3TF30	9	3TF30	9	3UA5000-1H	5-8	3UA5000-1H	5-7.5	3RP15
7.5	16	9.2	3KL811	20	3NA78070RC	20	3TF31	12	3TF30	9	3UA5000-1J	6.3-10	3UA5000-1J	6.3-9.4	3RP15
9.3	19	11	3KL812	32	3NA78100RC	25	3TF31	12	3TF30	9	3UA5000-1K	8-12.5	3UA5000-1K	8-11.7	3RP15
11	20.8	12	3KL812	32	3NA78100RC	25	3TF31	12	3TF30	9	3UA5000-1K	8-12.5	3UA5000-2B	10-13.6	3RP15
15	28	16.2	3KL812	32	3NA78120RC	32	3TF33	22	3TF32	16	3UA5200-2B	12.5-20	3UA5200-2B	12.5-18.7	3RP15
18.5	34	19.7	3KL815	63	3NA78200RC	50	3TF34	32	3TF34	32	3UA5500-2B	12.5-20	3UA5500-2C	16-23.4	3RP15
22	40	23.2	3KL815	63	3NA78200RC	50	3TF34	32	3TF34	32	3UA5500-2C	16-25	3UA5500-2D	22-30	3RP15
30	53	30.6	3KL815	63	3NA78220RC	63	3TF34	32	3TF34	32	3UA5500-2D	20-32	3UA5500-2Q	25-33.7	3RP15
37	65	37.5	3KL821	100	3NA78240RC	80	3TF35	38	3TF34	32	3UA5500-2R	32-40	3UA5500-8M	36-45	3RP15
45	78	45	3KL821	100	3NA78300RC	100	3TF46	45	3TF34	32	3UA5800-2FZ1	32-50	3UA5800-2FZ1	32-47	3RP15
55	96	55.4	3KL821	100	3NA78300RC	100	3TF47	63	3TF34	32	3UA5800-2TZ1	40-57	3UA5800-2PZ1	50-59	3RP15
75	131	75.6	3KL823	160	3NA78360RC	160	3TF49	85	3TF47	63	3UA5800-8YZ1	70-95	3UA5800-8YZ1	70-88.9	3RP15
90	156	90.1	3KL823	160	3NA78360RC	160	3TF50	110	3TF47	63	3UA5830-5B	70-95	3UA5830-5C	85-98.2	3RP15
110	189	109	3KL831	200	3NA71400RC	200	3TF50	110	3TF50	110	3UA5830-5D	95-120	3UA5830-5D	95-112	3RP15
132	227	131.1	3KL832	250	3NA71440RC	250	3TF51	140	3TF50	110	3UA6230-5B	115-180	3UA6230-5B	115-168	3RP15
160	271	156.5	3KL833	315	3NA72520RC	315	3TF52	170	3TF50	110	3UA6230-5B	115-180	3UA6230-5B	115-168	3RP15
200	339	195.7	3KL834	400	3NA72600RC	400	3TF54	250	3TF52	170	3UA6230-5C	160-250	3UA6230-5C	160-234	3RP15
250	398	229.8	3KL841	500	3NA72600RC	400	3TF54	250	3TF54	250	3UA6230-5C	160-250	3UA6230-5D	200-299	3RP15

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