SIEMENS

Ingenuity for life

Superswitch

Power Distribution Redefined

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Contents

Safe. Reliable. Efficient.

Superswitch 3KL8/ 3KA8

Highlights

- Switch Disconnector Fuse available from 20A to 800A in 2P, 3P, 3P+N & 3P + Switched Neutral Versions.
- Switch Disconnector available from 63A to 1600A.
- Motor duty as well as Power Distribution Switches.
- Superswitch suitable for applications up to 690V AC.
- Suitable for high temperature applications up to 60°C.
- Option of isolable neutral as well as switched neutral pole for the entire range.
- Increased safety through IP20 Fuse Covers and terminal cover.
- Suitable for Isolation as per IS/IEC 60947-3.
- Unique Positive OFF indication to indicate the true position of contacts.
- Fuse monitoring provision via 3VU1340 fuse monitor.
- Type 2 Coordinated combination available for the entire range.
- Rotary handle with telescopic shaft for depth adjustment.

Application

- Siemens 3K range of Superswitch SDFs are used as short circuit protection device with fuses and main controls switches in industrial switchboards as well as building (residential & commercial) switchboards.
- The switch is also available in Switch Disconnector versions, it ensures making and breaking of the specified rated current with or without load. At the same time, they are used for safety isolating function as isolation device in various low-voltage circuits.
- Superswitch conforms to IS/IEC 60947-3. Superswitch has a very high life compared to the contemporary products offered today.
- Superswitch 3KL8 is suitable for protection & switching Motor feeders as the complete range is Type-2 Coordinated.

Superswitch 3KL8/ 3KA8

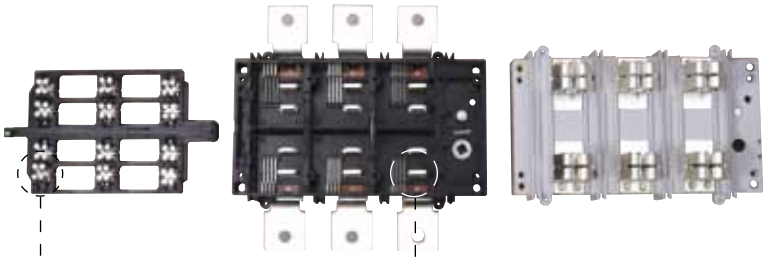
Moving Roller Contacts

Positive OFF Indication

Product Features

- **Moving roller contacts**
  The heart of Superswitch is the self cleaning moving roller contacts comprising multiple silver-plated copper rollers which are spring loaded and free to rotate around their axes and firmly anchored to the moving contact bridge. With each switching operation the roller contacts rotate around their axes and move along the knife type fixed contacts and share the switching current strength.
- **Positive OFF indication**
  High level of safety is offered by Superswitch for the operating personnel with the Unique Positive OFF Indication. A GREEN indication flag is actuated directly with the physical movement of the contacts, and not with the position of the Operating handle which in some cases may give a false indication if contacts are welded inside. The sequence of switching operation with the position of the indicating flag is shown in diagrams below.
- **High Short Circuit Making and Withstand Capacity**
  Due to multiple rollers the sharing of current reduces electro-dynamic force and high closing speed ensures high making capacity. Parallel current paths in roller contacts ensure high short circuit withstand capacity.
- **High Short Circuit breaking Capacity**
  Due to sharing of Current strength by the parallel rollers, high breaking capacity is achieved corresponding to the AC23 utilization category at 550V AC.
- **High Electrical Life**
  Division of current loading leads to reduction of contact erosion and offers high Electrical life.

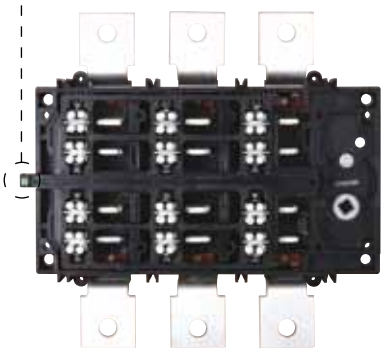
Lyra contacts



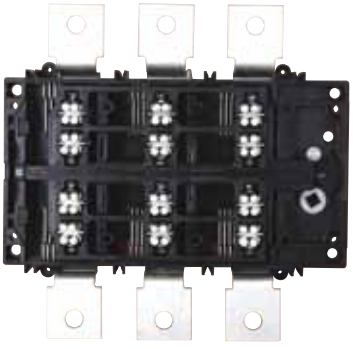
Moving contacts

Fixed contacts

Positive OFF indication

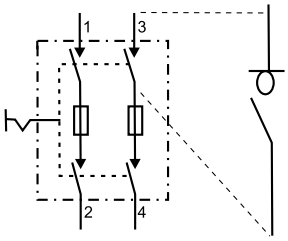


OFF position



ON position

Superswitch 3KL8/ 3KA8



Positive Isolation Feature


Tested type 2 combinations

Product Features

- **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.

  Also in the OFF position the fuses and the lyra contacts are not live as they are isolated from both line as well as load side by the moving roller type contacts. (Please refer to the schematic on the left side).

- **No deration upto 60°C**
  Superswitch is designed with the indian conditions in mind where summer temperature in certain areas can go upto 60°C. 3KL8 can be used without deration upto an ambient temperature of 60°C.This means that the customer does not have to select next higher rating for SDF and offers a great saving in terms of cost and panel space

- **Certifications & Standards**
  Superswitch is tested in accordance with IS/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 contactor and 3UA Birelay.This helps in easy selection of switchgear for motor feeders and enhances reliabiility of the system

Superswitch 3KL8 Switch Disconnector Fuse

Superswitch 3KL8 Switch Disconnector fuses are superior to most other SDFs available in the market. It offers superior quality, superior technical parameters, higher life in terms of switching cycles and much more.

Highlights

- Conforms to IS/IEC 60947-3
- Range – 20A to 800A
- Suitable for application up to 690V AC
- Available in 2P, 3P, 3P+N and 3P + Switched Neutral versions
- Available in Open Execution & SS Enclosure versions
- Utilization category AC23A at 690V AC
- Suitable for DC Application
- IP20 fuse Cover and terminal covers
- Type-2 coordinated combination available at I_q = 50kA
- Suitable for application up to 60°C without deration

Application

3KL8 Switch Disconnector Fuses are suitable for diverse applications up to 690V AC, 50/60Hz in Motor feeders with Direct-on-line, Star-Delta, Soft starters, and VVVF Drive. They are also suitable for, capacitor feeders, motor control centres, and power control centres. 3KL8 switch disconnector fuses are also available in special executions for operations in corrosive environments. Superswitch 3KL8 is also specially designed for higher ambient temperature applications and do not require any de-rating upto 60°C.





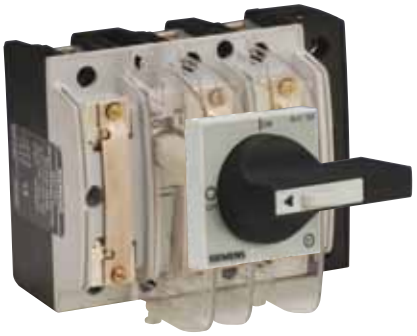
Superswitch 3KA8 Switch Disconnector

Highlights

- Conforms to IS/IEC 60947-3
- Range – 63A to 1600A
- Rated utilization category – AC23A at 690V AC
- Suitable for DC application upto 1000V
- Suitable for application up to 60°C
- Unique Positive Indication Feature
- Unique Roller contact system
- Very High switching Life
- High Short time withstand current

Application:

3KA8 Switch Disconnectors are designed to handle wide ranges of application up to 690V 50Hz AC. 3KA8 can be used as a Main Isolator Switch for Inductive Loads, small motor loads, mixed loads and Power distribution application. These Switches can also be used as Isolators in DC systems up to 1000V.



Superswitch 3KL8

Accessories for Superswitch

Switched 4th Pole

Certain applications demand switching of the neutral pole along with the main poles.For such requirements Switched 4th pole is available as an accessory upto 160A.

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.

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.

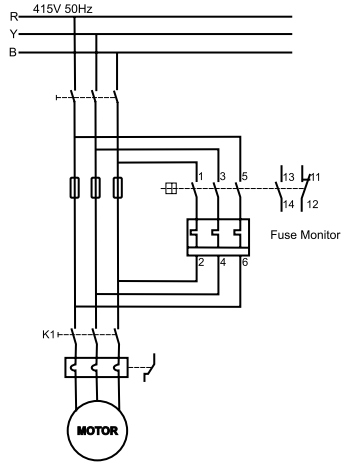
DIN Rail mounting Kit

3KL8 Superswitch upto 63A can be mounted on a 35 mm DIN rail with the help of this accessory.

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.

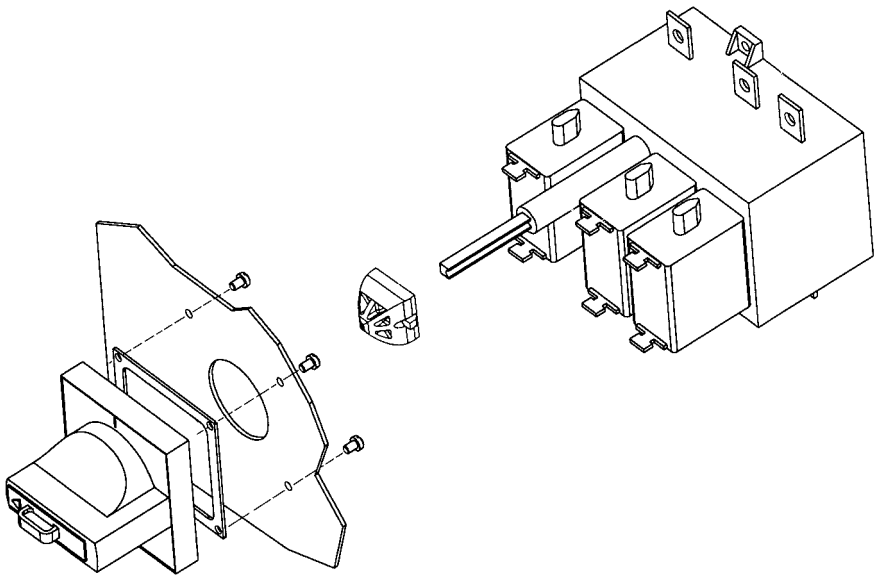
The three poles of this Circuit Breaker are connected in parallel to the fuses. If any of the fuses blow, the Circuit Breaker gets actuated through its release and offers tripping signal through its auxiliary contacts. Thus the motor is not subjected to single phasing and costly motor burn-outs are prevented.

3VU1340-1MS00

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 ON position with defeat.
- Door interlock in OFF position when padlocked
- Telescopic extension shaft helps the user to readily use it for varying panel depth
- IP 65 degree of protection when installed on Panel door



Ordering info

	Switching device	Handle*	Shaft Cross Section** (in mm)
	3KL 3KA Size 1	8UC616	6 x 6
	3KL 3KA Size 2	8UC626	8 x 8
	3KL 3KA Size 3	8UC6314-1BB00	12 x 12
	3KL 3KA Size 4	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 Switch Disconnector Fuse

General Technical Information

Superswitch 3KL8 - Conforms to IS/IEC 60947-3		3KL811	3KL812	3KL815
No. of Poles		TP/ TPN/ TPSN		
Rated operational voltage U_e @ 50/60 Hz AC	V	690	690	690
Rated insulation voltage U_i	V	800	800	800
Rated impulse voltage U_{imp}	kV	6	6	6
Rated Operational Current I_e at AC23A @ 690V AC	A	20	32	63
Rated Operational Current I_e at AC23A, @ 500V AC	**A**	**20**	**32**	**63**
Mechanical endurance - no. of cycles		25000	25000	25000
Suitable for max. capacitor bank	kVAR	12	14	29
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		3KL821	3KL822	3KL823
No. of Poles		DP/ TP/ TPN/ TPSN	DP/ TP/ TPN/ TPSN	DP/ TP/ TPN/ TPSN
Rated operational voltage U_e @ 50/60 Hz AC	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	125
Rated Operational Current I_e at AC23A, @ 500V AC	**A**	**100**	**125**	**160**
Mechanical endurance - no. of cycles		25000	25000	25000
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		3KL831	3KL832	3KL833
No. of Poles		DP/ TP/ TPN/ TPSN	DP/ TP/ TPN/ TPSN	DP/ TP/ TPN/ TPSN
Rated operational voltage U_e @ 50/60 Hz AC	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	200	250	315
Rated Operational Current I_e at AC23A, @ 500V AC	**A**	**200**	**250**	**315**
Mechanical endurance - no. of cycles		20000	20000	20000
Suitable for max. capacitor bank	kVAR	95	116	145
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		3KL834	3KL841	3KL842	3KL843
No. of Poles		DP/ TP/ TPN/ TPSN	DP/ TP/ TPN/ TPSN	DP/ TP/ TPN/ TPSN	DP/ TP/ TPN/ TPSN
Rated operational voltage U_e @ 50/60 Hz AC	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	315	500	630	710
Rated Operational Current I_e at AC23A, @ 500V AC	**A**	**400***	**500**	**630**	**800**
Mechanical endurance - no. of cycles		20000	15000	15000	15000
Suitable for max. capacitor bank	kVAR	186	294	294	374
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

Auxiliary Switch: General Data for 3KL8 Switch Disconnector Fuse		3KL81/2/3/4
Rated Voltage AC 50Hz	V	500
Rated Voltage DC	V	600
Continuous Current	A	10
Rated Operational Current I_e at AC12 @ 415V AC	A	10
Rated Operational Current I_e at DC12 @ 110V DC	A	4
Maximum Fuse rating for S/C Protection - delayed action cartridge type	A	10

* @ 550V

Superswitch 3KA8 Switch Disconnector

General Technical Information

Superswitch 3KA8 - Conforms to IS/IEC 60947-3		3KA815	3KA821	3KA822	3KA823
No. of Poles		TPN	TPN/TPSN	TPN/TPSN	TPN/TPSN
Rated operational voltage U_e @ 50/60 Hz AC	V	690V	690V	690V	690V
Rated insulation voltage U_i	V	800V	1000V	1000V	1000V
Rated impulse voltage U_{imp}	kV	6kV	8kV	8kV	8kV
Rated uninterrupted current I_u	A	80A	100A	125A	160A
Rated Operational Current I_e at AC23A, @ 690V AC	A	63A	100A	125A	125A
Rated Operational Current I_e at AC21A, @ 500V AC	A	80A	125A	125A	160A
Rated Operational Current I_e at AC21A, AC22A @ 690V AC	A	80A	125A	125A	160A
Mechanical endurance - no. of cycles		25000	25000	25000	25000
Rated Short time withstand current I_{cw} (1s)	kA	2	3.2	3.2	3.2
Rated Conditional S/C current (rms) with fuses @ 690V AC	kA	80kA	80kA	80kA	80kA
Rated Conditional S/C current (rms) with fuses @ 500V AC	kA	100kA	100kA	100kA	100kA

Superswitch 3KA8 - Conforms to IS/IEC 60947-3		3KA831	3KA832	3KA834	3KA835
No. of Poles		TPN/TPSN	TPN/TPSN	TPN/TPSN	TPN/TPSN
Rated operational voltage U_e @ 50/60 Hz AC	V	690V	690V	690V	690V
Rated insulation voltage U_i	V	1000V	1000V	1000V	1000V
Rated impulse voltage U_{imp}	kV	8kV	8kV	8kV	8kV
Rated uninterrupted current I_u	A	250A	315A	400A	630A
Rated Operational Current I_e at AC23A, @ 690V AC	A	200A	250A	400A	630A
Rated Operational Current I_e at AC21A, @ 500V AC	A	200A	250A	400A	630A
Rated Operational Current I_e at AC21A, AC22A @ 690V AC	A	200A	250A	400A	630A
Mechanical endurance - no. of cycles		20000	20000	20000	15000
Rated Short time withstand current I_{cw} (1s)	kA	14	14	20	25
Rated Conditional S/C current (rms) with fuses @ 690V AC	kA	80kA	80kA	80kA	80kA
Rated Conditional S/C current (rms) with fuses @ 500V AC	kA	100kA	100kA	100kA	100kA

Superswitch 3KA8 - Conforms to IS/IEC 60947-3		3KA843	3KA844	3KA845	3KA846
No. of Poles		TPN/TPSN	TPN	TPN	TPN
Rated operational voltage U_e @ 50/60 Hz AC	V	690V	690V	690V	690V
Rated insulation voltage U_i	V	1000V	1000V	1000V	1000V
Rated impulse voltage U_{imp}	kV	8kV	8kV	8kV	8kV
Rated uninterrupted current I_u	A	800A	1000A	1250A	1600A
Rated Operational Current I_e at AC23A, @ 690V AC	A	800A	–	–	–
Rated Operational Current I_e at AC21A, @ 500V AC	A	800A	1000A*	1250A	1600A
Mechanical endurance - no. of cycles		5000	5000	5000	5000
Rated Short time withstand current I_{cw} (1s)	kA	50	50	50	50
Rated Conditional S/C current (rms) with fuses @ 690V AC	kA	80kA	80kA	80kA	80kA
Rated Conditional S/C current (rms) with fuses @ 500V AC	kA	100kA	100kA	100kA	100kA

Auxiliary Switch: General Data for 3KA8 Switch Disconnector		3KA81/2/3/4
Rated Voltage AC 50Hz	V	500V
Rated Voltage DC	V	600V
Continuous Current	A	10A
Rated Operational Current I_e at AC12 @ 415V AC	A	10A
Rated Operational Current I_e at DC12 @ 110V DC	A	4A
Maximum Fuse rating for S/C Protection - delayed action cartridge type	A	10A

* AC22A @ 415V

Superswitch 3KL8/ 3KA8

General Ordering Information

3KL8 SDF (DP)	
I_e @ 690V 50Hz AC	Order Code
100A	3KL8211-2TA00
125A	3KL8221-2TA00
160A[1)]	3KL8231-2TA00
200A	3KL8311-2UA00
250A	3KL8321-2UA00
315A	3KL8331-2UA00
400A[2)]	3KL8341-2UA00
500A	3KL8411-2UA00
630A	3KL8421-2UA00
800A[1)]	3KL8431-2UA00

3KL8 SDF (TPN)						
I_e @ 690V 50Hz AC	Order Code					
20A	3KL8111-	_	T	_	_	0
32A	3KL8121-	_	T	_	_	0
63A	3KL8151-	_	T	_	_	0
100A	3KL8211-	_	T	_	_	0
125A	3KL8221-	_	T	_	_	0
160A[1)]	3KL8231-	_	T	_	_	0
200A	3KL8311-	_	U	_	_	0
250A	3KL8321-	_	U	_	_	0
315A	3KL8331-	_	U	_	_	0
400A[2)]	3KL8341-	_	U	_	_	0
500A	3KL8411-	_	U	_	_	0
630A	3KL8421-	_	U	_	_	0
800A[1)]	3KL8431-	_	U	_	_	0
	Isolable Neutral Neutral Link	3		A		DIN Fuse
		5		J		BS Fuse
				C		NFC Fuse*
					0	Open Execution
* 3KL8111/3KL8121/3KL8151					1	Sheet Steel Housing

NFC = Cylindrical Fuses

DP - Two Pole

TP - Three Pole

TPN - Three Pole + Isolable Neutral / Three Pole + Neutral Link

TPSN - Three Pole + Switched Neutral

1) AC23A@ 500V

2) AC23A @ 550V

3) Rating AC21 at 500V, 50Hz AC

4) Switched neutral available as accessory upto 160A

3KL8 SDF (TP)	
Rated current I_e @ 690V AC, 50Hz	SDF suitable for DIN type HRC Fuses
20A	3KL8111-1TA00
32A	3KL8121-1TA00
63A	3KL8151-1TA00
100A	3KL8211-1TA00
125A	3KL8221-1TA00
160A[1)]	3KL8231-1TA00
200A	3KL8311-1UA00
250A	3KL8321-1UA00
315A	3KL8331-1UA00
400A[2)]	3KL8341-1UA00
500A	3KL8411-1UA00
630A	3KL8421-1UA00
800A[1)]	3KL8431-1UA00

3KL8 SDF (TPSN) [4)]	
I_e @ 690V 50Hz AC	Order Code
200A	3KL8311-4UA00
250A	3KL8321-4UA00
315A	3KL8331-4UA00
400A[2)]	3KL8341-4UA00
500A	3KL8411-4UA00
630A	3KL8421-4UA00
800A[1)]	3KL8431-4UA00

3KA Switch Disconnectors (TPN)	
I_e @ 690V 50Hz AC	Order Code
63A	3KA8151-3TE00
100A	3KA8211-3TE00
125A	3KA8221-3TE00
160A[1)]	3KA8231-3TE00
200A	3KA8311-3UE00
250A	3KA8321-3UE00
400A	3KA8341-3UE00
630A	3KA8351-3UE00
800A	3KA843□-3UE00
1000A[3)]	3KA844□-3UE00
1250A[3)]	3KA845□-3UE00
1600A[3)]	3KA846□-3UE00

□ - 2: Top Incoming

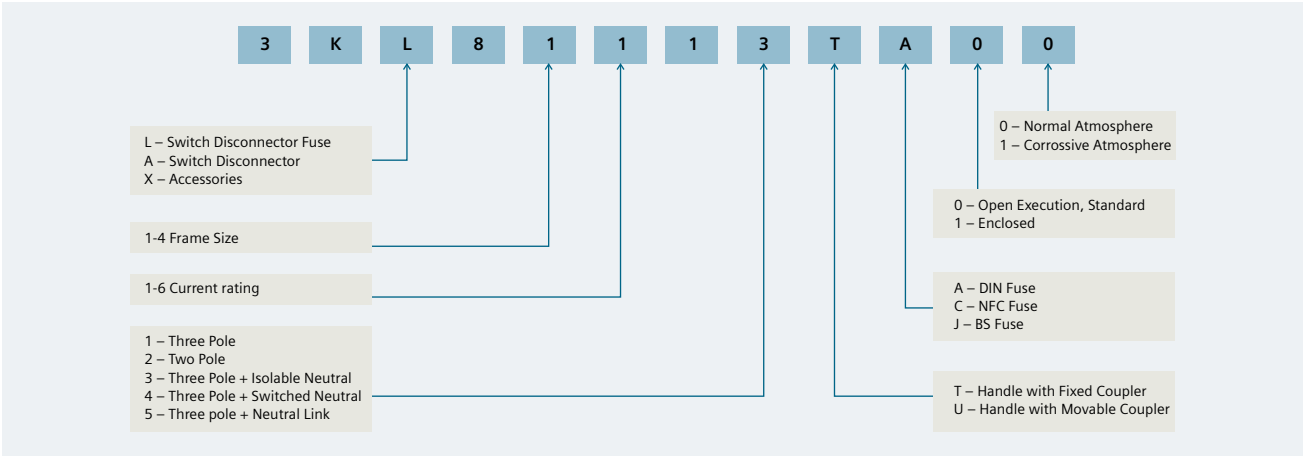
□ - 3: Bottom Incoming

Superswitch 3KL8

Fuse Selection Guide

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	3KL8211	00/000	3NA78	A4	TCP	–
125A	3KL8221	00/000	3NA78	A4	TCP/TSFP	–
160A	3KL8231	00/000	3NA78	A4	TCP/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	TSLS	–

MLFB Structure



SuperSwitch 3KL8/3KA8

Accessories for Superswitch

Image	Description	3KL811/12/15 3KA815	3KL821/22/23 3KA821/22/23	3KL831/32/33/34 3KA831/32/34/35	3KL841/42/43 3KA843/44/45/46
	Fuse Cover	3KX8150-0AC	3KX8230-0AC	3KX8340-0AC	3KX8430-0AC
	Terminal Cover	–	3KX8231-0AC	3KX8341-0AC	3KX8431-0AC
	Isolable Neutral cover	–	3KX8232-0AC	3KX8342-0AC	3KX8432-0AC
	Phase Barrier	3KX8153-0AC	3KX8233-0AC	3KX8343-0AC	3KX8433-0AC
	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)	8UC616	8UC626	8UC6314-1BB00	8UC6414-1BB00
	Add on Switched 4th Pole	3KX8155-5AC	3KX3528-1YN	–	–
	Operating shaft (300mm)	8UC6031	8UC6032	8UC6034	8UC6034

Accessories for Superswitch

Image	Description	3KL811/12/15 3KA815	3KL821/22/23 3KA821/22/23	3KL831/32/33/34 3KA831/32/34/35	3KL841/42/43 3KA843/44/45/46
	Add-on Isolable neutral	3KX8125-6AC (3KL811/ 3KL812)	3KX8225-6AC (3KL821/822) (3KA821/822)	3KX8315-6AC (3KL831) (3KA831)	3KX8425-6AC (3KL841/42) 3KA835
				3KX8335-6AC (3KL832/3) (3KA832)	
		3KX8155-6AC (3KL815/3KA815)	3KX8235-6AC (3KL823) (3KA823)	3KX8345-6AC (3KL834)(3KA834)	3KX8435-6AC (3KL843) (3KA843/4/5/6)
	Key interlock	–	–	3KX3588-1YP(.) #	3KX3588-1YP(.) #
	Castell Interlock[1]	8UC6070-0YQ..	8UC6070-1YQ..	8UC6070-2YQ..	8UC6070-2YQ..
	Depth setting template	8UC60462			
	DIN Rail mounting kit	3KX8155-3AC	–	–	–
	Fuse Monitor	3VU1340-1MS00			
	Adapter Plate to replace old 3KL with 3KL8	3KX8155-1AC	–	–	–
	Fuse safety Barrier	3KX8150-1AC	3KX8230-1AC	–	–
	SS Enclosure	3KX8155-4AC	3KX8235-4AC	3KX8345-4AC	3KX8435-4AC
	Gland Box with 1 Gland Plate	3KX8235-4DC	3KX8235-4DC	3KX8345-4DC	3KX8435-4DC
	Gland Plate	3KX8235-4GC	3KX8235-4GC	3KX8345-4GC	3KX8435-4GC

1 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.

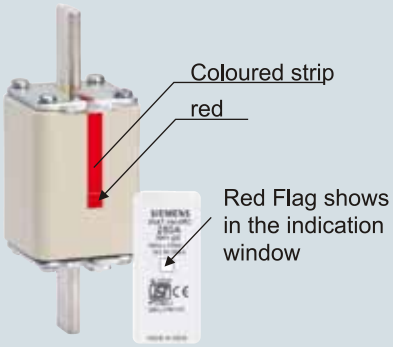
LV HRC Fuses

DIN Type Fuse

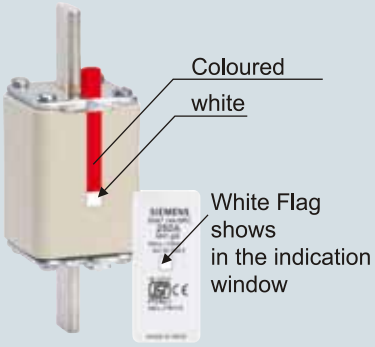
Short data description: 3NA7 LV HRC Fuses	
Standards	IS 13703 Part 2 Section 1(1993); IEC 269
Dimensions	IS 13703; IEC 269
Operating class	gG
Rated Voltage	AC 500V / DC 440V upto 630A (DC 250V for size 00)
	AC 690V/DC 440V (DC 250V for size 00)
Rated Current Range	2 to 800A: (500 Vac) 800A@415V.
	40 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 Disconnector 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.



Indicator not Released - Healthy Fuse



Indicator Released- Blown Fuse

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 reistance 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 scalling 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 LVHRC fuses
- 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

Selection & Ordering Data

LV HRC fuses: 500V AC

LV HRC fuse links

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

	Size	Rating A	Order Code
 	000	2	3NA78020RC
		4	3NA78040RC
		6	3NA78010RC
		10	3NA78030RC
		16	3NA78050RC
		20	3NA78070RC
		25	3NA78100RC
		32	3NA78120RC
		40	3NA78170RC
		50	3NA78200RC
		63	3NA78220RC
		80	3NA78240RC
		100	3NA78300RC
	00	125	3NA78320RC
		160	3NA78360RC
	1	50	3NA71200RC
		63	3NA71220RC
		80	3NA71240RC
		100	3NA71300RC
		125	3NA71320RC
		160	3NA71360RC
	1	200	3NA71400RC
		224	3NA71420RC
		250	3NA71440RC
	2	200	3NA72400RC
		250	3NA72440RC
	2	315	3NA72520RC
		400	3NA72600RC
	3	315	3NA33520RC
		400	3NA33600RC
		500	3NA33650RC
		630	3NA33720RC
		*800	3NA33754RC

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

LV HRC Fuses

DIN Type Fuse

Selection & Ordering Data

LV HRC fuses : 690V AC

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)

	Size	Rating A	Order Code
	00	40 50 63 80 100	3NA78176RC 3NA78206RC 3NA78226RC 3NA78246RC 3NA78306RC
	1	125 160 200	3NA71326RC 3NA71366RC 3NA71406RC
	2	250 315	3NA72446RC 3NA72526RC
	3	400 425 500	3NA33606RC 3NA33626RC 3NA33656RC

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

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)

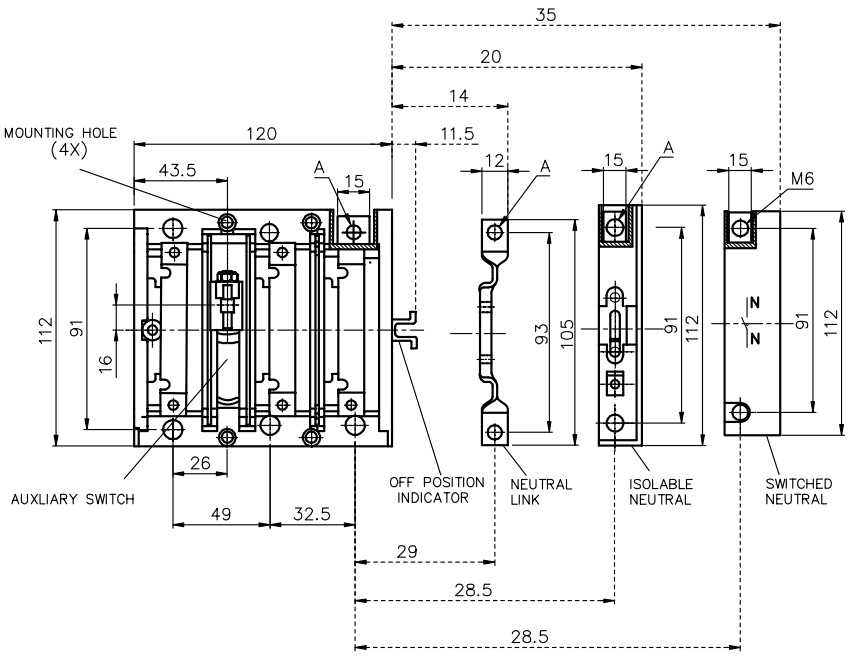
LV HRC Fuses

Selection & Ordering Data

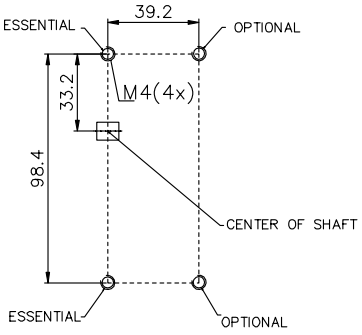
Type	Rated Current (A)	Type Reference	Rated Power Dissipation (Watts)
Offset Tag	2 4 6 10 16 20 25 32	3NW TIA2 3NW TIA4 3NW TIA6 3NW TIA10 3NW TIA16 3NW TIA20 3NW TIA25 3NW TIA32	1.5 2.7 3.3 2.8 3.3 3.1 3.6 3.8
Offset Tag	6 10 16 20 25 32	3NW TSA6 3NW TSA10 3NW TSA16 3NW TSA20 3NW TSA25 3NW TSA32	1.8 2.1 1.8 1.8 2.0 2.9
Offset Tag	40 50 63	3NW TIS40 3NW TIS50 3NW TIS63	4.7 4.9 5.6
Offset Tag	36 40 50 63	3NW TSS36 3NW TSS40 3NW TSS50 3NW TSS63	4.4 4.7 4.9 5.6
Offset Tag	80 100	3NW TCP80 3NW TCP100	7.2 8.2
Offset Tag	80 100	3NW TSDS80 3NW TSDS100	7.2 8.5
Offset Tag	125 160 200	3NW TSFP125 3NW TSFP160 3NW TSFP200	11.0 13.0 14.0
Offset Tag	125 160 200	3NW TFP125 3NW TFP160 3NW TFP200	10.0 13.9 16.0

Type	Rated Current (A)	Type Reference	Rated Power Dissipation (Watts)
Centre Tag	80 100	3NW TSDC80 3NW TSDC100	7.2 8.5
Centre Tag	80 100	3NW TC80 3NW TC100	7.2 8.2
Centre Tag	125 160 200	3NW TF125 3NW TF160 3NW TF200	10.0 13.0 16.0
Centre Tag	125 160 200	3NWTSF125 3NW TSF160 3NW TSF200	11.0 13.0 14.0
Centre Tag	250 315	3NW TKF250 3NW TKF315	19.0 25.0
Centre Tag	250 315	3NW TSK250 3NW TSK315	18.0 22.0
Centre Tag	355 400	3NW TSMS355 3NW TSMS400	24.0 29.0
Centre Tag	355 400	3NW TMF355 3NW TMF400	24.0 29.0
Centre Tag	450 500	3NW TSTS450 3NW TSTS500	31.0 39.0
Centre Tag	500 630	3NW TTM500 3NW TTM630	38.0 50.0
Centre Tag	560 630 800	3NW TSLS560 3NW TSLS630 3NW TSLS800	38.0 44.0 68.0
Centre Tag	710 800	3NW TLM710 3NW TLM800	53.0 64.0

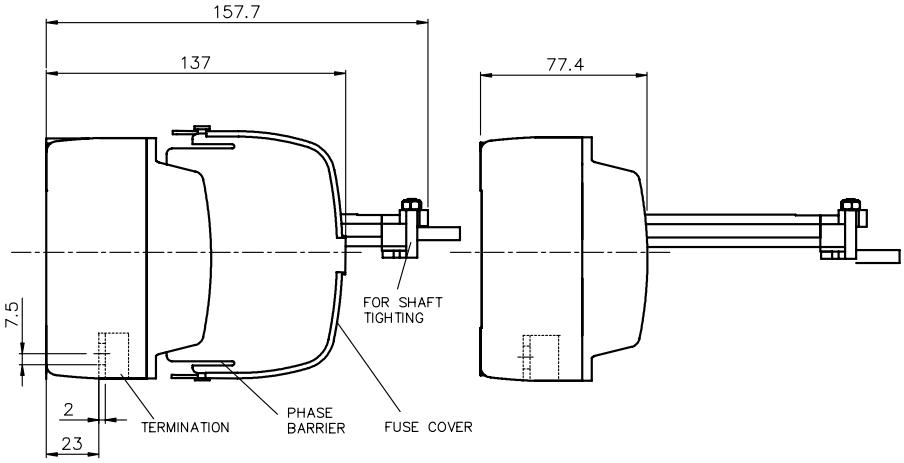
Dimension Details: Superswitch 3KL8/ 3KA8 - Size 1



Drilling plan for mounting plate



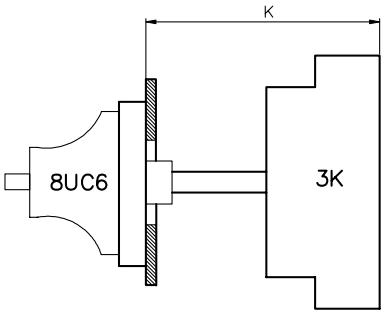
Type	A
3KL 811/12	M5
3KA/3KL 815	M6



3KL
WITH ACCESSORIES

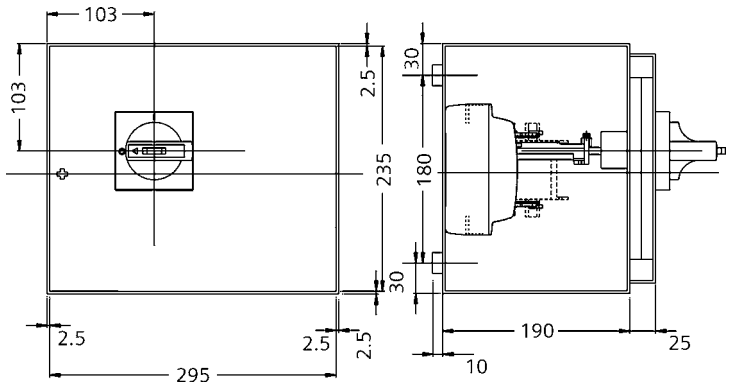
3KA
WITHOUT ACCESSORIES

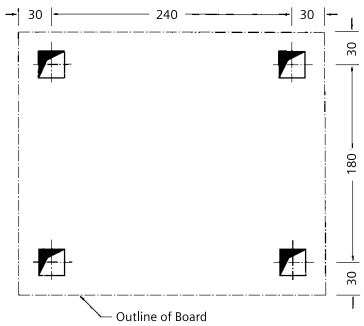
8UC Depth Value



8UC6 Type	K_{min}	K_{max}
8UC616	183	240

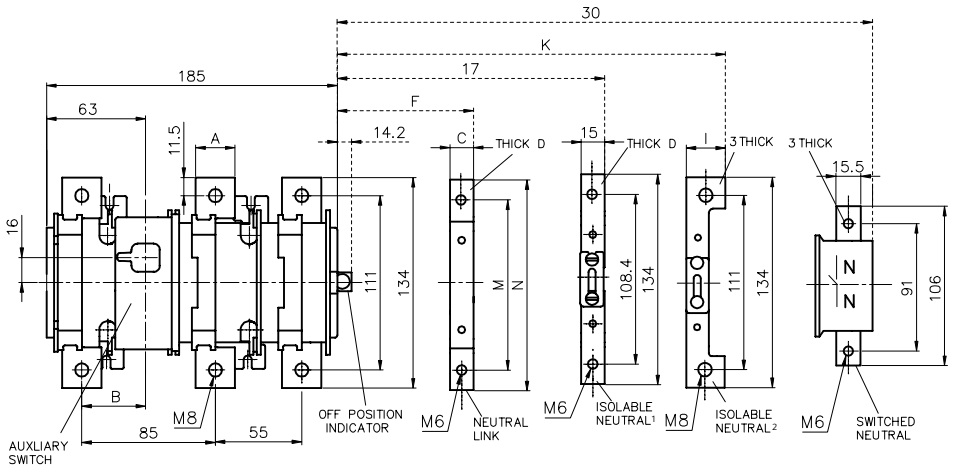
Dimension Details for SDF in Enclosure / Gland Box





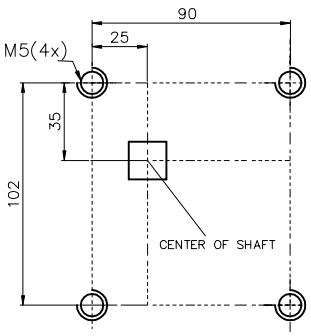
All the dimensions are in mm
All the dimensions are to scale
Terminal Shroud, Fuse Cover, Phase Barrier are standard feature of 3KL DP / TPN isolable / TPSN switches only
Gland box height is 150mm

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

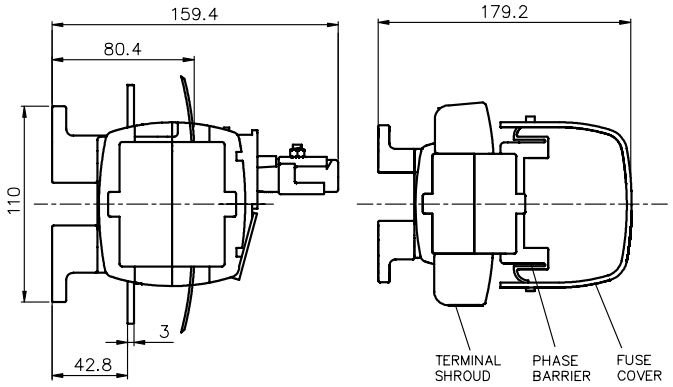


Type	C	D	F	I	K	M	N
ISO Neutral 100A/125A	12	2	14	20	22	74	90
ISO Neutral 160A	15	3	17	25	27	85	100

Drilling plan for mounting plate



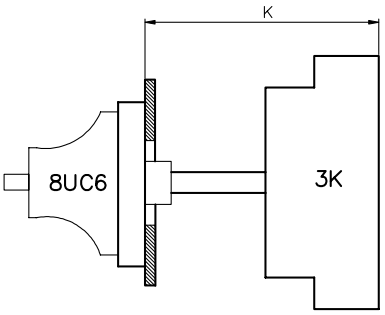
Type	A	B
3KL/3KA 821/822	20	41
3KL/3KA 823	25	43.5



3KA
WITHOUT ACCESSORIES

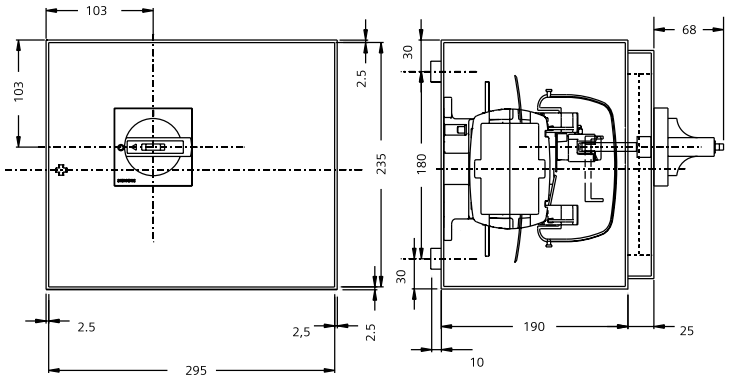
3KL
WITH ACCESSORIES

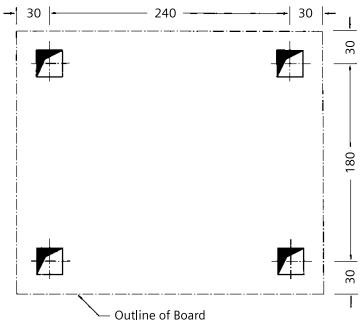
8UC Depth Value



8UC6 Type	K_{min}	K_{max}
8UC626	183	240

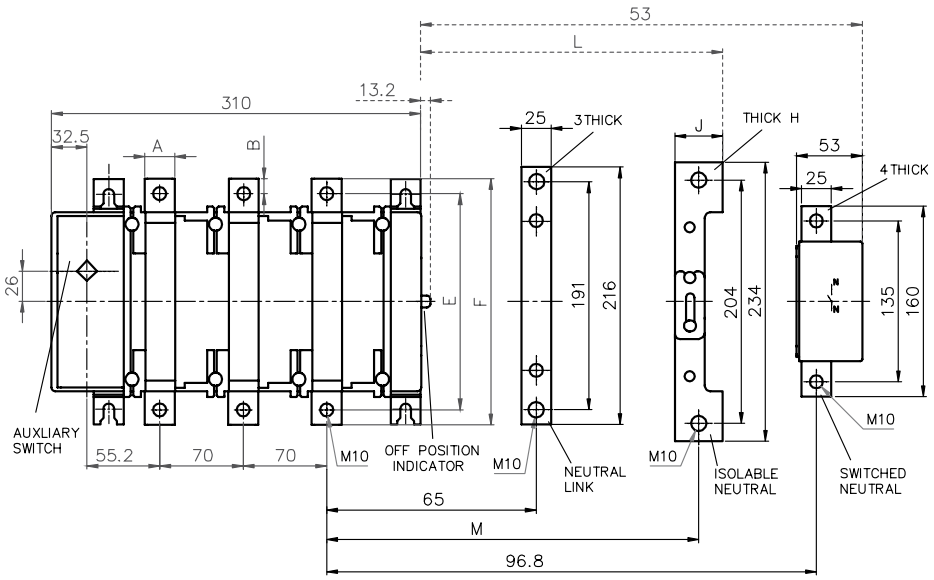
Dimension Details for SDF in Enclosure / Gland Box



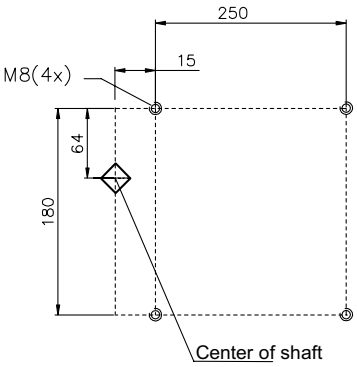


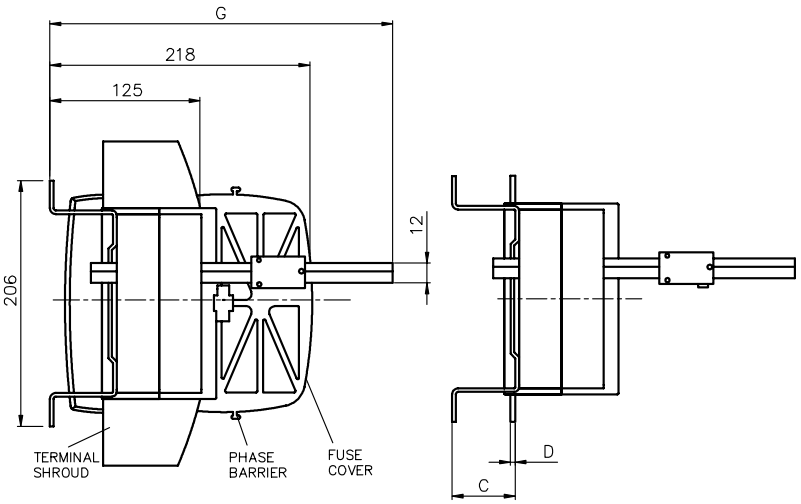
All the dimensions are in mm
All the dimensions are to scale
Terminal Shroud, Fuse Cover, Phase Barrier are standard feature of 3KL DP / TPN isolable / TPSN switches only
1 Supplied as standard with the Switch
2 Available as accessory
Gland box height is 150mm

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



Drilling plan for mounting plate

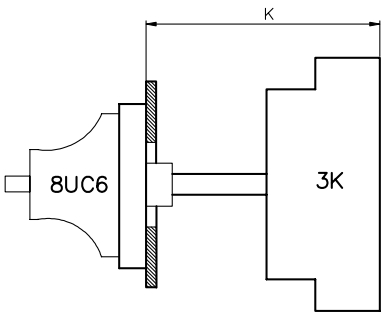




3KL/3KT
WITH ACCESSORIES

3KA
WITHOUT ACCESSORIES

8UC Depth Value



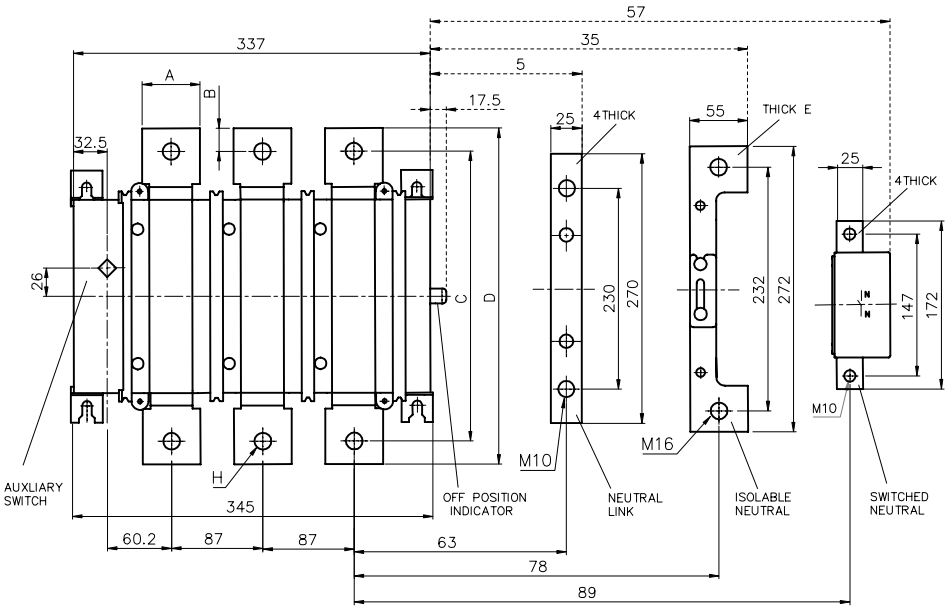
Type	A	B	C	D	E	F	H	J	M	L	G		K	
											min	max	min	max
3K□□□□□3□□□□ 3KL 831/832/833 3KA 831/832	30	12.5	75.5	4	214	239	3	30	72.8	5.5	287	313	285	310
3K□□□□□3□□□□ 3KA 834	40	15	75.5	4	229	259	3	30	72.8	5.5	287	313	285	310
3K□□□□□3□□□□ 3KL 834	40	15	67.5	6	240	270	3	30	72.8	5.5	287	313	285	310
3K□□□□□3□□□□ 3KA 835	40	15	67.5	6	240	270	4	30	72.8	5.5	233	259	231	256
3K□□□□□□□□□ 3KL 831/832/833 3KA 831/832/834 1/5	25	12.5	53.5	4	186.4	211.4	–	–	–	–	233	259	231	256
3K□□□□□□□□□ 3KA 835 3KL 834 1/5	25	12.5	55.5	6	191	216	–	–	–	–	233	259	231	256

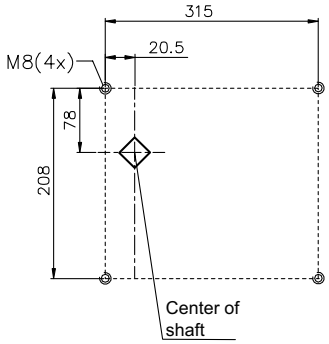
All the dimensions are in mm # All the dimensions are to scale
Terminal Shroud, Fuse Cover, Phase Barrier are standard feature of 3KL DP / TPN isolable / TPSN switches only

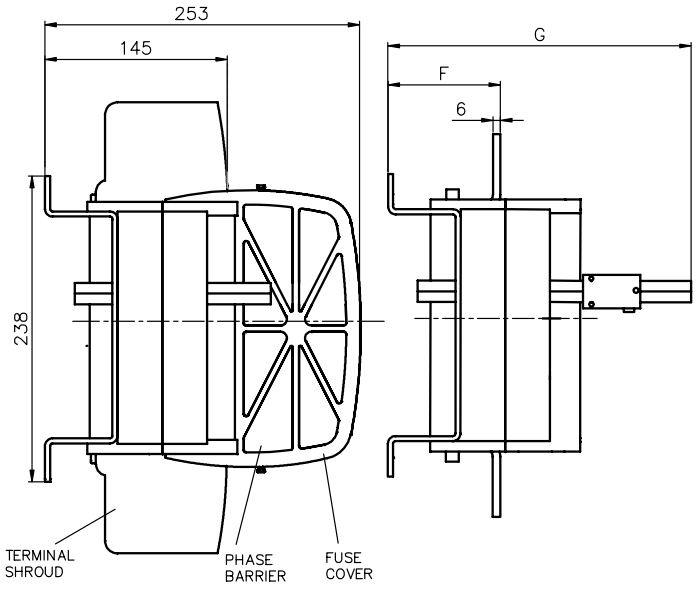
Dimension Details: Superswitch 3KL8 - Size 4

3KL84

Drilling plan for mounting plate

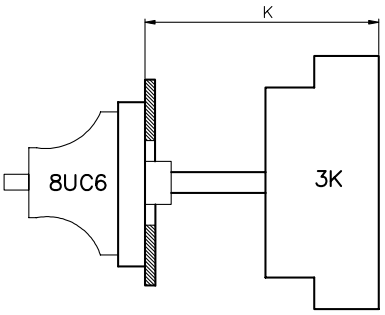






WITH ACCESSORIES WITHOUT ACCESSORIES

8UC Depth Value

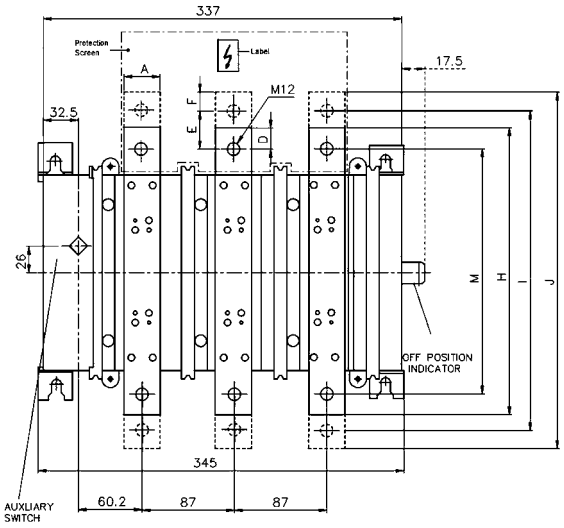


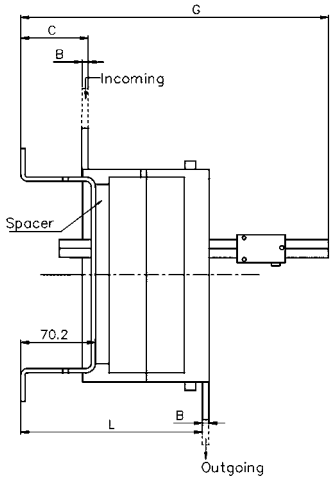
Type	E
ISO Neutral 315A	5
ISO Neutral 400A	5
ISO Neutral 630A	6
ISO Neutral 800A	8

Type	A	B	C	D	F	H	G		K	
							min	max	min	max
3K□□□□□3□□□□ 3KL 841/842/843 3KA 843/844	55	22	288	332	95	M16	287	313	285	310
3K□□□□□□□□□ 3KL 841/842/843 1/5	40	20	230	270	39	M12	287	313	285	310

All the dimensions are in mm # All the dimensions are to scale
Terminal Shroud, Fuse Cover, Phase Barrier are standard feature of 3KL DP / TPN isolable / TPSN switches only

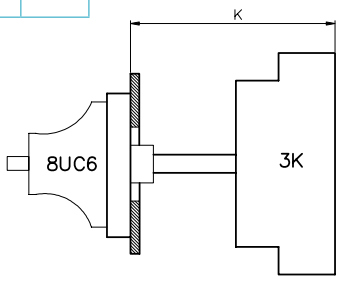
Dimension Details: Superswitch 3KA8 - Size 4



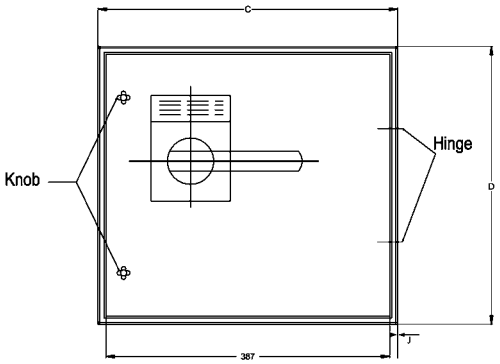


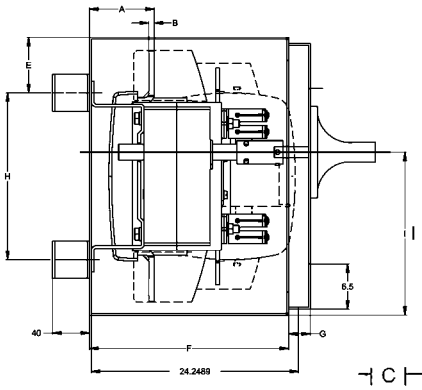
Type	A	B	C	D	E	F	H	I	J	L	M	G		K	
												min	max	min	max
3KA□□□□2□□□□ 3KA□□□□3□□□□ 843/844	40	6	64.4	20	–	–	274	–	–	153.9	234	312.4	338.4	310.4	335.4
3KA□□□□2□□□□ 3KA□□□□3□□□□ 845/846	50	10	58.4	–	40	20	–	314	354	159.9	234	312.4	338.4	310.4	335.4

8UC Depth Value

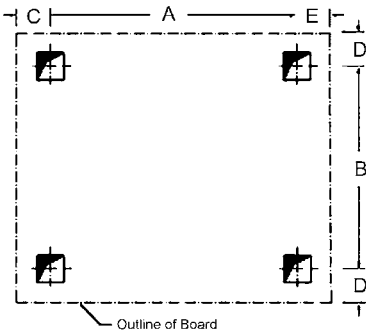


Dimension Details for SDF in Enclosure 3KL831/2/3/4, 3KL841/2/3 / Gland Box





Type of SDF	A	B	C	D	E	F	G	H	I	J
3KL831/2/3	80	4	425	300	60	215	26.5	180	176	6.5
3KL834	75	6	425	300	60	215	26.5	180	176	6.5
3KL841/2/3	95	6	400	400	96	262	25	208	223.5	2.5

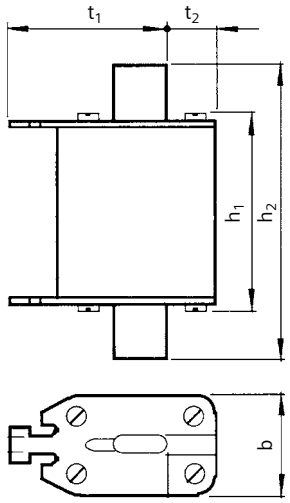


Type of SDF	A	B	C	D	E
3KL831/2/3/4	370	180	15	60	40
3KL841/2/3	320	208	40	96	40

All the dimensions are in mm

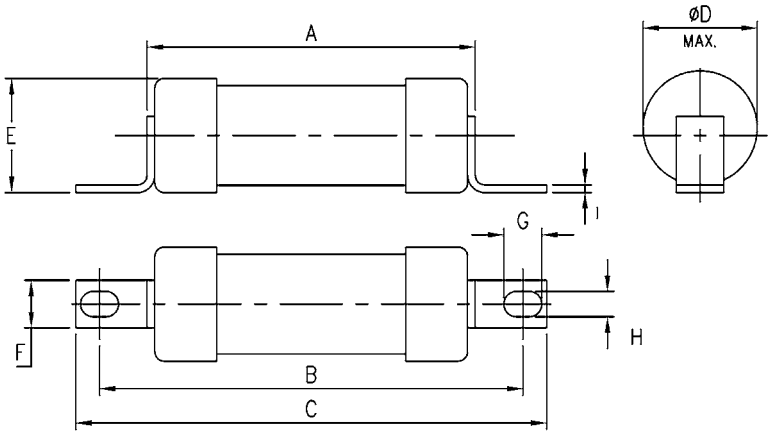
All the dimensions are to scale

Dimensional Drawing: DIN Fuse



Sizes	Rating	MLFB	b	h_1	h_2	t_1	t_2
000	2A - 100A	3NA78...	21	54	80	45	8
00	125A - 160A	3NA78...	30	54	80	45	14
1	50A - 160A	3NA71...	30	75	137	50	15
1	200A - 250A	3NA71...	47	75	137	51	9
2	200A - 250A	3NA72...	47	75	151	58	10
2	315A - 400A	3NA72...	58	74	151	59	13
3	315A - 800A	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 + Birelay (+ 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 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		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	IPh 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 + Birelay (+ 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.	Iph 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	3UA5000-2S	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

Notes

Notes

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Bhubaneswar
Unit: 1102 & 1103, DLF Cyber City
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Chandigarh
SCO 188/191, 3rd Floor, Sector-17 C
Chandigarh - 160 017
☎ : +91 172 4690300
Fax: +91 172 4690399

Chennai
4th Floor, ETA Mount Central
Seethakathi Business Centre, Mount Road
Chennai - 600006
☎ : +91 44 30474000
Fax: +91 44 30474080

Coimbatore
1st Floor, "Senthil Towers", 1078, Avinashi Road
Coimbatore - 641018
☎ : +91 422 3076300
Fax: +91 422 3076310

Gurgaon
Plot No. - 78, Tower - B
Jagatjit Industries Building (JIL)
Opposite SBI Academy, Sector-18
Gurgaon - 122015
☎ : +91 124 2842000, 3810200

Hyderabad
5-9-19, 4th & 5th Floor, Laxmi Narasinh Estate
Opp. Secretariat Road, Saifabad
Hyderabad - 500 004
☎ : +91 40 30922500
Fax: +91 40 30923145

Jaipur
International Business Center, K14 First Floor
Ashok Marg, Ashok Nagar, C Scheme
Jaipur - 302001
☎ : +91 141 5152108
Fax: +91 141 2370482

Jamshedpur
"Roshan Tower", Main Road, Bistupur (2nd Floor)
Jamshedpur - 831001
☎ : +91 657 6682201

Kolkata
3rd Floor, 43, Shanti Palli
Rashbihari Bypass Connector
Kolkata - 700042, India
☎ : +91 33 30939000
Fax: +91 33 30939010

Lucknow
510-511, 5th Floor, Shalimar Titanium
Plot No. TC.G-1/1, Vibhuti Khand
Gomti Nagar, Lucknow
Uttar Pradesh 226010
☎ : +91 522 4031039

Mumbai
Business Centre-1
Thane Belapur Road, Thane - 400 601
☎ : +91 22 39663000
Fax: +91 22 39663721

Nagpur
4th Floor, Land Mark Building
Wardha Road, Ramdas Peth
Nagpur - 440 010
☎ : +91 712 3093000
Fax: +91 712 3093111

Pune
Tower B/701-705, ICC Trade Tower
403A, Senapati Bapat Road
Pune - 411016
☎ : +91 20 30466000
Fax: +91 20 30466060

Vishakhapatnam
2nd Floor, 30-8-47, Lakshmi Narasimha Towers
Banu Street, Daba Gardens
Visakhapatnam - 530 020
Andhra Pradesh
☎ : +91 891 3050200
Fax: +91 891 3050222

Territory managers:

Agra
F7B, ACR Desire Appartment
Near Kargil Petrol Pump, Sikandra
Agra - 282007, U.P.
Mobile: +91 7665590333
E-mail: jain.nitin@siemens.com

Aurangabad
Mobile: +91 9673333024
E-mail: brajesh.rathor@siemens.com

Belgavi
Flat no-201, 2nd Floor, Harimanor Apartment
1st Cross- Bhagya Nagar, Angol Extension, Belgavi
Karnataka 590006
Tel.: +91 0831 2495156
Mobile: +91 9740277991
E-mail: anand.gawade@siemens.com
Mobile: +91 8105254395
E-mail: siddu.mareguddi@siemens.com

Bharuch
Gold B, 804, Samruddhi Residency
Opp. Zadeshwar Bus Stop, Zadeshwar Road
Bharuch - 392011
Mobile: +91 9429037805
E-mail: kalpeshkumar.darji@siemens.com

Bhilai
C/o. Mr. Anil Dhusia
Qtr No. 4A, Street 33, Sector - 4
Bhilai - 490001
Mobile: +91 7869922211
E-mail: pravin.deshbhratar@siemens.com

Bhopal
Flat No. 101, Multi "E"Star
Sagar Royal Villas, Hoshangabad Road
Bhopal (MP) - 462026
Mobile: +91 9677400915
E-mail: dinesh.prajapati@siemens.com

Boisar
Flat No. A-21, Sai Sagar CHS, MAHADA Colony
Chitrayalaya Road, Boisar - 401506
Mobile: +91 9819231892
E-mail: debashis.biswas@siemens.com

Cochin
Jomer Symphony, 33/2317, 5th Floor
Chalikkavattom, Ponnurunni North, Vytilla
Kochi - 682019
Tel.: +91 4028611/22
Mobile: +91 9656690111
E-mail: vinu.pillai@siemens.com

Durgapur
6/15, Bengal Ambuja
(Near Durgapur Cinema Hall), Citi Centre
Durgapur - 713216
Mobile: +91 9051020207
E-mail: sayantan.ghosh@siemens.com

Gandhidham
Plot No. 299, Ward 3A, Adipur
Gandhidham - 370205, Gujarat
Mobile: +91 9099010323
E-mail: Vismay.pandya@siemens.com

Gorakhpur
Flat No. 3B, 3rd Floor, Plot No. 298
Near Sawatri Hosiptal, Purdilpur, Vijay Chowk
Gorakhpur - 273001, UP
Mobile: +91 917800960310
E-mail: tiwari.mayank@siemens.com

Guwahati
Shivalaya Housing Society, Flat No. B3A
Bylane 4, Joymati Nagar, Adabari, Pandu
Guwahati - 781012
Mobile: +91-9864110684
E-mail: biplab.datta@siemens.com

Haridwar
Flat No. 204, Shiv Asthaly Appartment
Purshotyam Vihar, Kankhal, Haridwar - 249408
Mobile: +91 9889384222
E-mail: umesh.pandey@siemens.com

Hospet
#727, Lakshmi Narasimha Nilaya
Near Surbhi Kalyana Mantapa, Amaravathi
Hospet - 583203
Mobile: +91 9741114877
E-mail: naveen.sn@siemens.com

Hosur
Plot No. 12 Vishnu Anandam Galaxy
Chittanapalli Nallur Village, Hosur - 635109
Mobile: +91 8971200266
E-mail: dinesh.rajaian@siemens.com

Hubli
Plot No. 8, Abhi Nilay, Manjunath Nagar
Gokul Road, Hubli - 30, Karnataka
Mobile: +91 9945961052
E-mail: kiran.kage@siemens.com

Indore
Mobile: +91 8889911401
Email: bhadauria.amit@siemens.com

Jalandhar
H.No. 140, Ground Floor, Defence Colony
Jalandhar, Punjab - 144001
Mobile: +91 8427979870
E-mail: himanshu.kaushik@siemens.com

Jodhpur
A-240, Shastri Nagar, Jodhpur - 342003
Mobile: +91 9929110493
E-mail: rajendra.kabra@siemens.com

Kanpur
Flat No.702, Pushpi Apartments
Sharda Nagar, Kanpur - 208025, UP
Mobile: +91 8650404404
E-mail: shashibhushan.prasad@siemens.com

Khopoli
Samarthanagar Co-op Hsg. Soc.
Mogalwadi Road, Khopoli
Taluka - Khalapur, Dist. Raigad - 410 203
Mobile: +91 9867748975
E-mail: deshpande.sachin@siemens.com

Kolhapur
RS No. 84-1, Pinac Prasad, Flat No. A-35
New Palace Road, Kolhapur - 416006
Mobile: +91 9850836839
E-mail: vinay.todkar@siemens.com

Kota
406, Manglayatan Appartment
Near Jain Temple, Bhimganj Mandi
Kota - 324002
Mobile: +91 9828419111
E-mail: avinash.mathur@siemens.com

Ludhiana
H.No. 1858, First Floor, Sector - 32 A
Ludhiana - 141008, Punjab
Mobile: +91 9876047929
E-mail: sunil.singla@siemens.com

Ludhiana
R-115, Near DAV School
Sarabha Nagar Ext Ph-2, Pakhowal Road
Ludhiana, Punjab - 142022
Mobile: +91 9888484066
E-mail: padam.sharma@siemens.com

Madurai
Anirudh block, F-Top 3, Vasudhara Apartment
84, TPK Main Road, Andalpuram
Madurai - 625 003, Tamil Nadu
Mobile: +91 9894617776
E-mail: sivaprakasam.r@siemens.com

Maraimalainagar
No.11, Ambedkar Street, SRS Buildings, Upstairs Raga
Dental Clinic, Potheri, Chennai - 603203
Mobile: +91 9840392926
E-mail: shanmuga.v@siemens.com

Meerut
D-205, Ansal Courtyard, Roorkee Bypass
Modipuram, Meerut - 250110, UP
Mobile: +91 7619047999
E-mail: achint.mathur@siemens.com

Mehsana
44, Shubh Residency, Opp Goodluck Party Plot
Nr Panchot By-pass Circle, Mehsana - 384002
Mobile: +91 9909916971
E-mail: paresh.prajapati@siemens.com

Mysore
No. 980, 4th Cross, 6th Main
Bannimantap B layout, SS Nagar
Mysore - 570015
Mobile: +91 9611311645
E-mail: raashid.syed@siemens.com

Naidupeta
Door No. 3-3-140, Raghavaiahpeta
Sriharikota Road, Opp to Race School
Sullurpeta Town & Mandal, SPSR Nellore District
AP - 524123
Mobile: +91 9840255185
E-mail: r.pradeep@siemens.com

Nashik
Flat No 402, "D" Wing, Hari Shrushti
Near Jogging Track, Opposite WNS, Indira Nagar
Nashik - 422009
Mobile: +91 9822193204
E-mail: dhananjay.thorat@siemens.com

Neemrana
Flat No. F111, Anantraj Aashray Apartment
Plot No. 236, Japanese Zone
Neemrana - 301705, Dist.- Alwar
Mobile: +91 9650481919
E-mail: deepak.beniwal@siemens.com

Patna
A-53, 5th Floor, Krishna Apartment, Boring Road
Patna - 800001
Mobile: +91 9641574289
E-mail: rajendra.mitra@siemens.com

Pondicherry
R.A.M. Paradise, II Floor, No.4, 2nd Cross
Kamban Nagar, Reddiarpalayam
Puducherry - 605010
Mobile: +91 9176609374
E-mail: gopalakrishnan.shanmugam@siemens.com

Raipur
103 Risabh Regency, Near Shri Medishine Hospital
New Rajendra Nagar, Raipur (CG) - 492001
Mobile: +91 9425601849
E-mail: raghuraj.bisen@siemens.com

Rajkot
301, Snowhill Apartment
Near Golden Supermarket, Amin Marg
Rajkot - 360007, Gujarat
Mobile: +91 9909904993
E-mail: piyush.thaker@siemens.com

Ranchi
Flat No. A-101, 1st Floor, Sundaram Apartment
Kilburn Colony, Hinoo, Ranchi
Jharkhand - 834002
Mobile: +91 8294052647
E-mail: shyamal.bhattacharyya@siemens.com

Renukoot
Vijay Gupta Bhawan, Swami Vivekanand Colony
Murdhawa, Renukoot - 231217, U.P.
Mobile: +91 9984500021
E-mail: kumardeepak@siemens.com

Rourkela
D/7, Gafoor Colony, Ground Floor
Near LIC Office, Udit Nagar
Rourkela - 769012, Odisha
Mobile: +91 9776967773
E-mail: prakhar.chaturvedi@siemens.com

Rudrapur
Shanti Vihar Colony, Chatarpur Road
Oppsoite – Dr. Pandey Hospital
Rudrapur - 263153, Uttarakhand
Mobile: +91 9839174578
E-mail: girish.pandey@siemens.com

Salem
Rajagiragham, Lumbini Illam, No. 20
Palaniappa Nagar Hasthampatti, Salem - 636007
Mobile: +91 8754922245
E-mail: g.suresh@siemens.com

Siliguri
C/o Radhagobindo Paul
Syed Mustafa Ali Road, Raja Rammohan Roy Road
Hakimpara, Ward Number: XV, Dist - Darjeeling
Siliguri - 741201
Mobile: +91 9932276294
E-mail: dibyojyoti.karmakar@siemens.com

Sonepat
H.No. 1103, 1st Floor, Sector - 14
Sonepat, Haryana - 131001
Mobile: +91 9855526122
E-mail: kumar.manish@siemens.com

Sriperumbudur
C32 Block,3rd Floor, Flat No. 31
TVH Svaya Apartments, Near Vengadu Village
Kundrathur Road, Sriperumbudur - 602105
Mobile: +91 9884102638
E-mail: venkatesh.janakiraman@siemens.com

Surat
A 604, Stuti Universal, Green City Road
Pal-Adajan, Surat - 395009, Gujarat
Mobile: +91 9712445504
E-mail: harshwardhan.mishra@siemens.com

Trichy
Flat No.102, `B' Block, 2nd Floor, Vignesh Empire
Apartments, Salai Road, Woraiyur, Trichy - 620003
Mobile: +91 8056025127
E-mail: ponnivalavan.p@siemens.com

Trissur
Plot No. 12, Cherakekaran House, Unity Nagar
Kuriachira P.O, Thrissur, Kerala - 680006
Mobile: +91 9947957839
E-mail: nobin.babu@siemens.com

Udaipur
A-39, New Ahinsapuri, Fatehpura
Udaipur - 313004
Mobile: +91 9983691888
E-mail: anurag.shah@siemens.com

Vapi
Flat No. 302, 3rd Floor, Samrajya-IV
Royal Residency, Gokul Vihar Township
Charwada Road, Taluka - Pardi, Dist. Valsad
Vapi - 396195
Mobile: +91 9825147957
E-mail: rohit.darji@siemens.com

Vijayawada
Mobile: +91 9948664228
E-mail: naga.ganesna@siemens.com

Siemens Ltd.
Digital Factory
Control Products
R&D Technology Centre
Kalwa Works, Thane Belapur Road, Thane - 400 601
Fax: +91 22 33265627
For more information contact toll free 1800 209 1800
E-mail: lvsgr-mktg.india@siemens.com

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