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New 3TF 34/35

SIEMENS

SICOP

Power Contactors Type 3TF

Tried Tested Trusted

Siemens contactors are readily accepted by end-users, consultants, OEMs and other customers all over the world, thanks to their reliable and trouble-free performance in tough and diverse applications for over 50 years now.

The SICOP 3TF series of contactors called are performing in the Indian industry for over 10 years now and have won the trust of users. It is this trust that has made SICOP the most popular contactor among the users in the Indian Industry.

Standards

SICOP contactors conform to these standards :

IEC 947 and IS 13947.

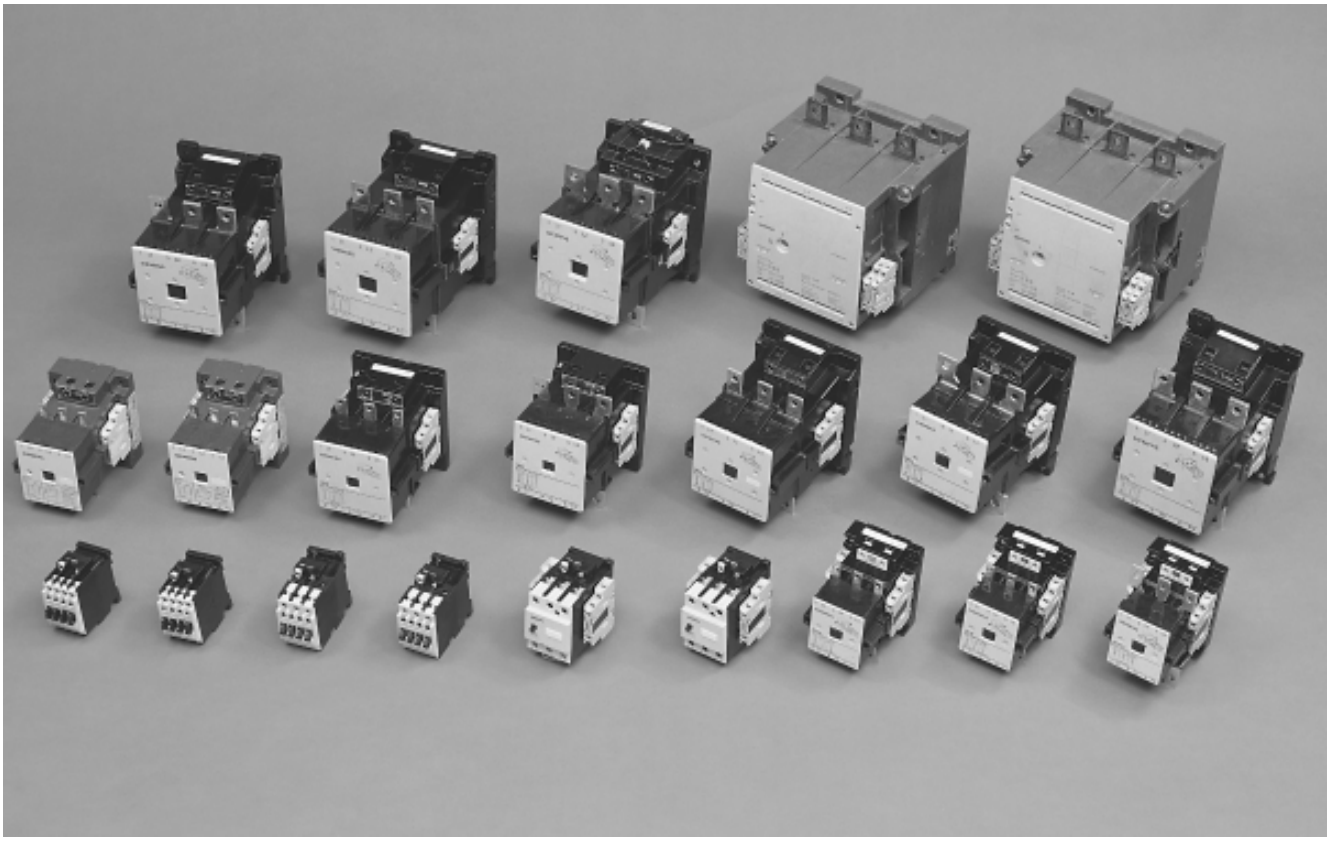
They also carry the CE mark.

Applications

3TF power contactors are suitable for switching and controlling squirrel cage and slip-ring motors as well as other AC loads, such as solenoids, capacitors, lighting loads, heating loads and transformer loads.

SICOP contactors and bi-relays have been tested for type-2 co-ordination at Iq = 50kA, 415V, 50Hz as per IS:13947, for both fuse protected as well as fuseless motor feeders.

We also offer special application specific contactor. For details of these contactor please contact our nearest Sales Office.



Range :

Ratings : SICOP comes in a total of 21 ratings upto 820A. These are :

9, 12, 16, 22, 32 and 38A – Air break contactor with DIN channel mounting / screw mounting facility

45, 63, 70, 75, 85, 110, 140, 170, 205, 250, 300, 400 and 475A – Air break contactor, with screw mounting facility

630A and 820A – Vacuum contactor with screw mounting facility

The customer gets the right rating contactor for every application, thereby reducing costs.

Auxiliary contacts :

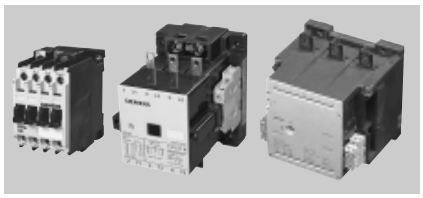
Contactor	Aux. contacts on basic unit	Permissible add-on contact blocks
9A / 12A	1 NO	Upto 4NO or 4NC
9A / 12A	1 NC	Upto 4NO or 2NC
16A/22A	–	Upto 4NO or 4NC
32A/38A	–	Upto 4NO or 4NC
45A to 475A	2NO+2NC	2 x (1NO+1NC)
630A/820A	4NO+4NC	–

Coil Voltages :

AC : 24, 42, 110, 220, 240, 415 V

DC : 24, 42, 48, 110, 220 V

(Other coil voltages upon request.)

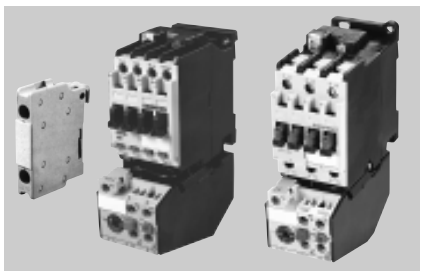


9A to 38A contactors

In addition to the above mentioned benefits, the recently introduced 3TF30/31/32/33/34/35 offer the facility to add-on auxiliary contact blocks on the basic unit. The auxiliary contact blocks are available as 1NO / 1NC / 1NOext. / 1NCext.

This offers flexibility to the customer in planning and selection of auxiliary contacts. Also modification at sites is possible.

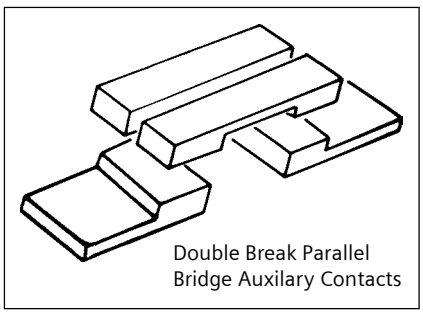
The customer can order the desired number of auxiliary contacts thereby reducing cost.



Benefits :

High on performance / reliability

- SICOP contactors have been designed to operate even in severe operating conditions.
- Suitable for operation in service temperature upto 55°C without derating. Ratings at higher temperatures available upon inquiry. Hence there is no need to select a higher rated contactor, thereby reducing cost. ***e.g. for service temperatures upto 55°C, one can use 16A contactor of Siemens instead of 22/25A contactors of other make for 10h.p motor which means a saving of approx. 20%***
- Superior design of current carrying parts, contact system and the magnet system increases the reliability by offering higher electrical and mechanical endurance.
- SICOP contactors have a high short-time rating, which makes them suitable for applications having high starting currents and long run-up times.
- SICOP contactors, upto 38A are suitable for operating voltages upto 690V and the higher ratings upto 1000V. High insulation voltage and impulse withstand voltage capacity ensures reliable performance during occasional abnormal increases in supply voltage.
- **Double break parallel bridge** contact mechanism for auxiliary contacts. This ensures reliable contact at low voltage and low currents (5mA at 17VDC). Secondly it offers unmatched reliability. (chances of 2 mal-operations in 100 mill. operations as against 4460 for single bridge contacts)

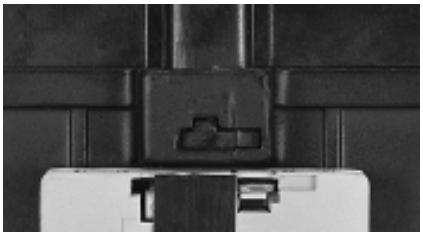


Double Break Parallel Bridge Auxilary Contacts

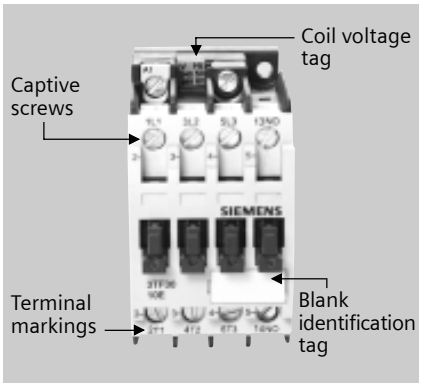
These benefits are appreciated by our customers as they result in high system up-time leading to increased productivity.

High on operator safety

- Power contactors upto 85A (for 3TF46/47/48/49, box type terminal available 3TX7 460 0E) and auxiliary contacts for the entire SICOP range have **SIGUT®** termination technique. This protects against accidental contact with live parts thereby ensuring operator safety.



- Contactors 3TF46 and above (45A and above), have an **Arc Chamber Interlock** mechanism, which prevents the contactor from switching ON if the arc chamber is not fitted properly. (If power contactors of larger ratings are operated without arc chambers, it can cause serious accidents to plant and personnel).
- Closed construction of 3TF arc chambers ensures that there is no emission of arc by-products on the surrounding equipment.

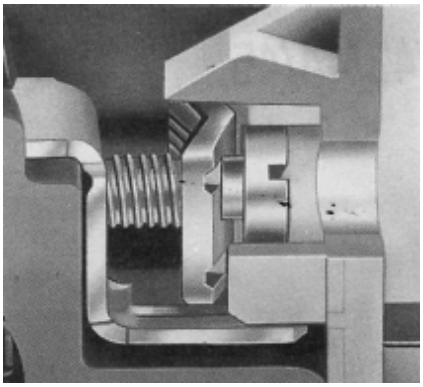


- 3TF contactors satisfy the conditions **for positively driven operation** between the main power contacts and the NC contacts. NC contacts positively open before the main contact closes. This is extremely important when power contactors are used in safety circuits of critical applications.

The customer is the best judge of the value offered by these safety features. Operator safety is a must for every industry and SICOP contactors serve this cause admirably.

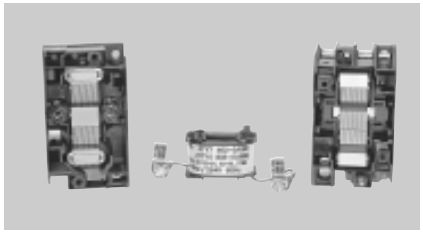
User friendly/Ease of maintenance

- **SIGUT® Termination.** SICOP power contactors with SIGUT® termination (upto 85A and auxiliary contacts) have been acknowledged worldwide to be highly user friendly. The benefits are:



- **Ready to wire**. The contactors are supplied with loose screws, which reduces installation time. Funnel shaped cable entries, cable end stops and predetermined insertion depths reduces the termination time considerably.
- **Captive screws**. This feature prevents the screws from falling down thereby reducing maintenance time.
- Funnel shaped cable entries, cable end stops and predetermined insertion depths reduces wiring time considerably.
- **Clearly marked power and auxiliary terminal** markings in accordance with IS / IEC standards minimize wiring errors.

- Overload relays type 3UA for direct mounting on contactors upto 3TF50 (110A). This reduces the panel space.
- For quick identification of the coil voltage, coloured tags are provided on each coil. Also the coil rating is clearly visible from the front of the contactor.



- Blank identification tag on every contactor for marking by user for identification.
- Mechanical switching position indicator visually indicates the ON or OFF state of the contactor
- Surge suppressors are available as accessory to limit the voltage surges. Thus, the contactors can be safely used in conjunction with electronic circuits. The surge suppressors snap fit on the contactor and are easy to install.
- power contactors upto 38A are also suitable for mounting on a 35mm DIN rail. This reduces installation time.

These benefits are best quantified by our customers. Minimum maintenance and that too in minimum time is the need of every industry. This makes SICOP power contactors the right choice.

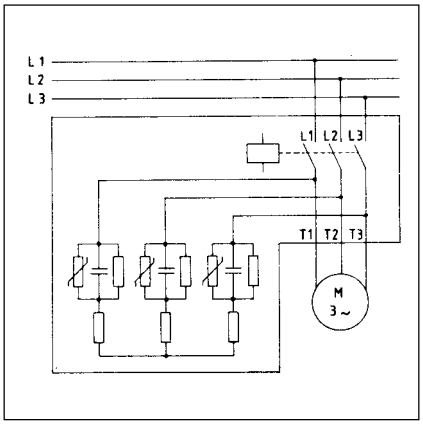
Vacuum Contactors (630/820A)

Many applications involve switching of heavy currents and at high switching frequency. Also some applications need switching in dusty and aggressive atmosphere. Siemens offers vacuum power contactors of 630A & 820A for low voltage applications upto 1000V.



The Vacuum contactors type 3TF68 and 3TF69 offer the following benefits.

- High reliability / operational safety.
- High electrical and mechanical life
- Integral Voltage limiter, which prevents multiple arc re-striking.
- Low coil consumption.
- Suitable for high switching frequency applications.
- Compact design
  - Totally enclosed switching. No chances of arc coming out.
  - No need for arcing clearance on the top or front.
  - Maintenance free vacuum bottle (contacts).
  - Contact erosion indicator indicates the state of contacts.



SICOP vacuum contactors type 3TF68/69 are ideal for rigorous and critical applications like steel plants, power plants, mining industry, crane applications etc.

Mechanically Interlocked contactors

Many applications involve reversing of motors, or supply from two separate sources. For such applications, it is necessary to provide mechanical interlock between the two contactors, so as to ensure only one contactor switches ON at a time

Mechanical interlock kit is available as an accessory (pls. refer page 7 of this datasheet) for the entire range of SICOP power contactors. Hence the same contactor is usable for reversing applications thereby reducing inventory. The benefits are :

- Electrical and mechanical life same as that of the individual contactor
- Frequency of operation remains same
- Ease of operation / maintenance

Contact Life

SICOP contactors have bounce free operation. Electrical life is influenced by the breaking currents. For normal AC3 duty the breaking current is the rated operational current and for AC4 duty, the typical breaking current is 6 times the rated operational current.

In case of mixed duty, the expected life is determined as under

$$X = \frac{A}{1 \frac{C}{100} \frac{A}{B} 1}$$

Where

X = expected life for mixed duty

A = expected life for normal AC3 duty

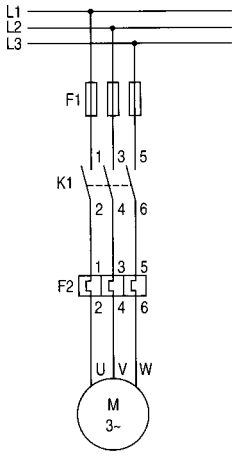
B = expected life for 100% AC4 duty

C = proportion of inching operations as a percentage of total operations.

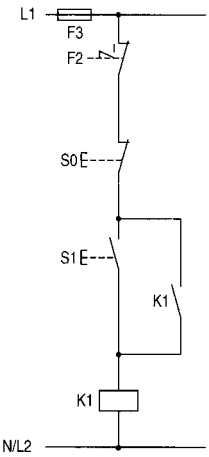
Extended life: Contactors with extended life for all applications involving frequent switching. Ratings given in this datasheet are for extended life

Normal life: Contactors with normal life can be used for applications with less frequent switching (upto 10 /hour)

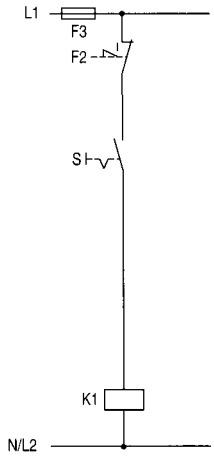
Typical circuit diagram of Direct On Line starter



a) Main circuit



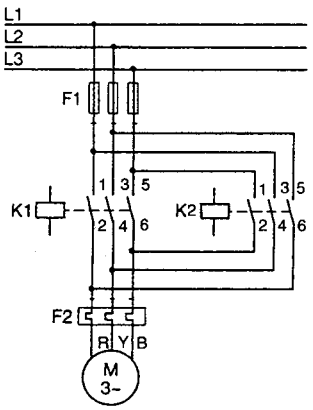
b) Control circuit for momentary-contact control



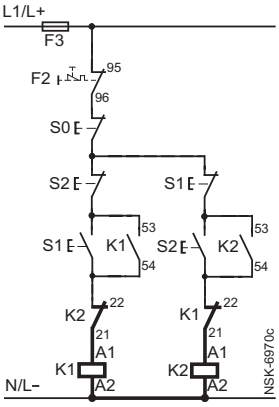
c) Control circuit for maintained-contact control

S0 = 'OFF' Push button
S1 = 'ON' Push button
S = Maintained command switch
K1 = Main contactor
F1 = Main circuit fuse
F2 = Overload relay
F3 = Control circuit fuse

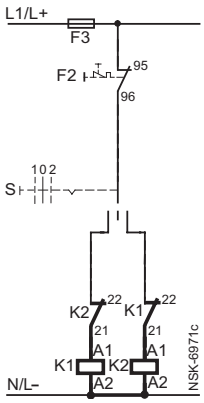
Typical circuit diagram of Forward / Reverse starter (Electrical Interlocking)



Main circuit



Push button control (momentary command)



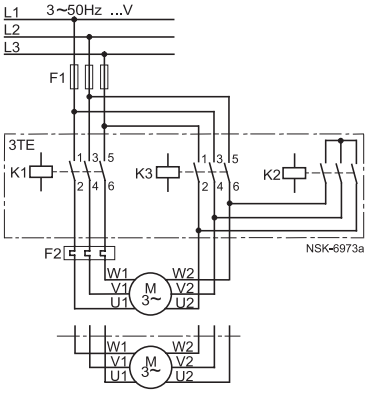
Selector switch control (command needs to be maintained)

S0 : 'OFF' Push button
S1 : 'ON Clockwise' Push button
S2 : 'ON Anti-clockwise' Push button
S : Selector Switch 'Clockwise - OFF - Anti-clockwise'

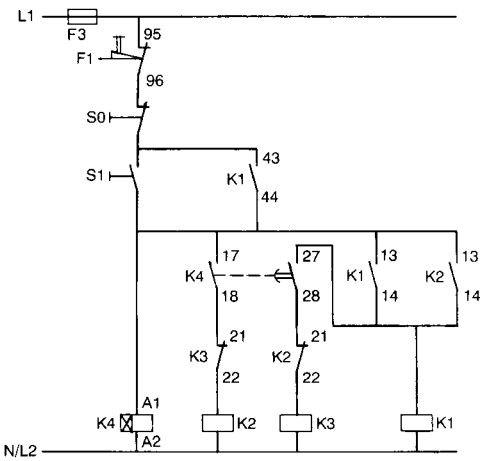
K1 : Clockwise contactor
K2 : Anti-clockwise contactor

F1 : Main circuit fuses
F2 : Overload relay
F3 : Control circuit fuse

Typical circuit diagram of Star Delta starter



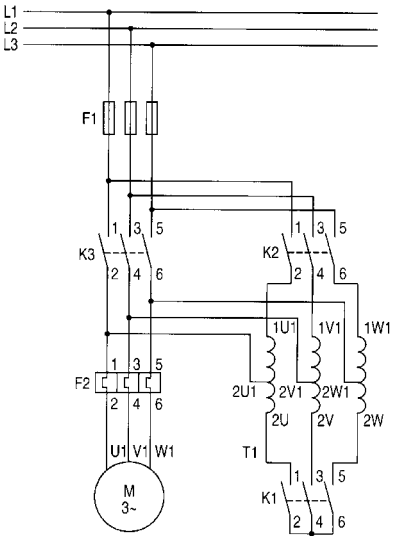
Main circuit



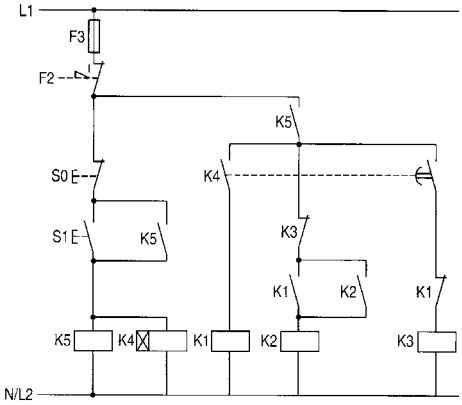
Control circuit for push button control (momentary command)

S0 = 'OFF' Push button
S1 = 'ON' Push button
K1 = Line contactor
K2 = Star contactor
K3 = Delta contactor
K4 = Star delta timer (7PU60 20)
F2 = Overload relay
F1 = Backup fuse
F3 = Control circuit fuse

Typical circuit diagram for Auto Transformer starter



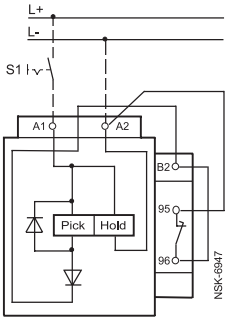
a) Main Circuit



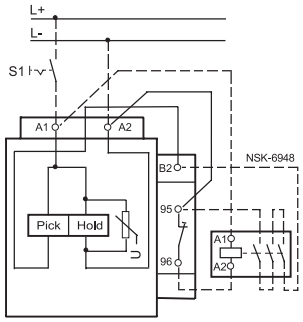
b) Auxiliary circuit for momentary-contact control

S0 = 'OFF' Push button
S1 = 'ON' Push button
K1 = Star contactor
K2 = Transformer contactor
K3 = Main contactor
K5 = Contactor relay (2NO + 2NC)
K4 = Time relay (7PU6020)
F1 = Main circuit fuses
F2 = Overload relay
F3 = Control circuit fuse

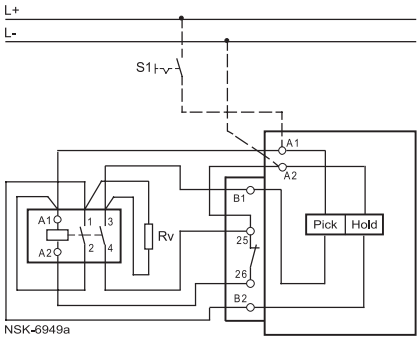
Internal connection diagram for DC coil circuits



K1 : Sizes 3 to 6,
3TF46 to 3TF51



K1 : Sizes 8 to 12
3TF52 to 3TF56
K2 : 3TF30 10 OB.. for 3TF52-55
3TF32 00-OB.. for 3TF56



K1 : Size 12
3TF57
K2 : 3TC44 17 4A..

The control circuits indicated by dotted lines are to be wired by customer.

Categories of duty - as per IEC 947 / IS 13947

Current	Utilisation Categories	Typical Application
AC	AC1	Non-inductive or slightly inductive loads, resistance furnances
	AC2	Slipring motors; starting, switching off
	AC3	Squirrel-cage motors; starting, switching off motors during running(1)
	AC4	Squirrel-cage motors; starting, plugging, inching
	AC5a	Switching of electric discharge lamp controls
	AC5b	Switching of incandescent lamps
	AC6a	Switching of transformers
	AC6b	Switching of capacitor banks
	AC7a	Slightly inductive loads in household appliances and similar applications
	AC7b	Motorloads for household applications
	AC8a	Hermetic refrigerant compressor motor(2) control with manual resetting of overload releases
	AC8b	Hermetic refrigerant compressor motor(2) control with manual resetting of overload releases
DC	DC1	Non-inductive or slightly inductive loads, resistance furnaces
	DC3	Shunt-motors: starting, plugging, inching, dynamic braking of d.c motors
	DC5	Series-motors: starting, plugging, inching, dynamic braking of d.c motors
	DC6	Switching of incandescent lamps

(1) AC3 category may be used for occasional inching (jogging) or plugging for limited time periods such as machine set-up; during such limited time periods the number of such operations should not exceed five per minute or more than ten in a 10-min period. (2) Hermetic refrigent compressor motor is a combination consisting of a compressor and a motor, both of which are enclosed in the same housing, with no external shaft or shaft seals, the motor operating in the refrigent (3) Selection of contactors for utilisation categories from AC-5a to AC-8b and DC6 upon enquiry.

Selection Table

Contactors with AC/DC coils

Contactor size	Rated current AC3 (A) at 415V, 50Hz, 3ph		Motor kW at 415V 50Hz, 3ph		With AC coil		With DC coil	
	Extended life	Normal life	**Extended life**	Normal life	Auxiliary contacts	**Type†**	Auxiliary contacts	**Type†**
0	**9**	12	**4**	5.5	1NO$ 1NC$	**3TF30 10-0A.. 3TF30 01-0A..**	1NO$ 1NC$	**3TF30 10-0B.. 3TF30 01-0B..**
	12	16	**5.5**	7.5	1NO$ 1NC$	**3TF31 10-0A.. 3TF31 01-0A..**	1NO$ 1NC$	**3TF31 10-0B.. 3TF31 01-0B..**
1	**16**	22	**7.5**	10	–$	**3TF32 00-0A..**	–$	**3TF32 00-0B..**
	22	30	**11**	15	–$	**3TF33 00-0A..**	–$	**3TF33 00-0B..**
2	**32**	40	**18.5**	22	2NO + 2NC	**3TF34 00-0A..**	–$	**3TF34 00-0B..**
	38	45	**22**	25	2NO + 2NC	**3TF35 00-0A..**	–$	**3TF35 00-0B..**
3	**45**	53	**22**	30	2NO + 2NC$	**3TF46 02-0A..ZA01**[1)]	2NO + 2NC	**3TF46 02-0D..ZA01**[1)]
	63	75	**30**	37	2NO + 2NC$	**3TF47 02-0A..ZA01**[1)]	2NO + 2NC	**3TF47 02-0D..ZA01**[1)]
	70	80	**37**	45	2NO + 2NC$	**3TF47 72-0A..**	2NO + 2NC	**3TF47 72-0D..**
4	**75**		**42**		2NO + 2NC$	**3TF48 22-0A..ZA01**[1)]	2NO + 2NC	**3TF48 22-0D..ZA01**[1)]
	85		**49**		2NO + 2NC$	**3TF49 22-0A..ZA01**[1)]	2NO + 2NC	**3TF49 22-0D..ZA01**[1)]
6	**110**	140	**55**	75	2NO + 2NC$	**3TF50 02-0A..**	2NO + 2NC	**3TF50 02-0D..**
	140	160	**75**	90	2NO + 2NC$	**3TF51 02-0A..**	2NO + 2NC	**3TF51 02-0D..**
8	**170**	205	**90**	110	2NO + 2NC$	**3TF52 02-0A..**	2NO + 2NC	**3TF52 02-0D..**
	205	250	**110**	132	2NO + 2NC$	**3TF53 02-0A..**	2NO + 2NC	**3TF53 02-0D..**
10	**250**	300	**132**	160	2NO + 2NC$	**3TF54 02-0A..**	2NO + 2NC	**3TF54 02-0D..**[2)]
	300	325	**160**	160	2NO + 2NC$	**3TF55 02-0A..**	2NO + 2NC	**3TF55 02-0D..**[2)]
12	**400**	400	**220**	220	2NO + 2NC$	**3TF56 02-0A..**	2NO + 2NC	**3TF56 02-0D..**[2)]
	475	500	**250**	250	2NO + 2NC$	**3TF57 02-0C..**	2NO + 2NC	**3TF57 02-0D..**[2)]
14	**630**	–	**360**	–	4NO + 4NC	**3TF68 44-0C..**	4NO + 4NC	**3TF68 33-1D..**
	820	–	**450**	–	4NO + 4NC	**3TF69 44-0C..**	4NO + 4NC	**3TF69 33-1D..**

† Please fill in the coil code (from appropriate table below) in the blank space above (..)

1) For box type (SIGUT) terminals, order 2 nos **3TX7 460-0E**.

2) Please use recommended connection diagram for 3TF54 to 57 DC coil circuit

$ For more auxiliary contacts, please see table given below.

Coil voltage code AC 50Hz : 3TF30 to 3TF35, 3TF44 to 3TF56

Coil voltage (V)	24	42	**110**	**220**	**240**	**415**
Code	B0	D0	**F0**	**M0‡**	**U0**	**R0**

‡P0 (instead of M0) for 3TF48/49

Coil voltage code AC 50/60 Hz : 3TF57, 3TF68/69

Coil voltage (V)	110-132	220-240	380-460
Code	F7	M7	Q7

Coil voltage code DC : 3TF30 to 3TF35, 3TF44 to 3TF57, 3TF68/69

Coil voltage (V)	24	42	48	110	220
Code	B4	D4	W4	F4	M4

Aux. contact blocks

For Contactor	Description	**Type**
3TF30 to 35	1NO 1NC 1NO ext 1NC ext	**3TX4 010-2A** **3TX4 001-2A** **3TX4 010-4A** **3TX4 001-4A**
3TF46 to 57	Second 1NO+1NC Left Second 1NO+1NC Right	**3TY7 561-1K** **3TY7 561-1L**

Accessories

Mechanical interlocking kits

For Contactor		Type
AC3 Rating	Type	
9/12/16/22	3TF30/31/32/33/34/35	**3TX4 091-1A**
32A	3TF44	**3TX7 446-1YA0**
38A	3TF45	**3TX7 456-1YA0**
45/63/70A	3TF46/47/47-7	**3TX7 466-1YA0**
75/85A	3TF48/49	**3TX7 486-1YA0**
110/140A	3TF50/51	**3TX7 506-1YA0**
170/205A	3TF52/53	**3TX7 526-1YA0**
250/300A	3TF54/55	**3TX7 546-1YA0**
400A	3TF56	**3TX7 566-1YA0**

Adaptor plates for replacing 3TA

Adaptor plates, to replace	Type
3TA61-0A by 3TH80/82-0A	**3TX6 406-0A**
3TA67/21 by 3TH80/82 3TA67/21 by 3TF30/31 & 3TA21/11 by 3TF32/33	**3TX21 43 1YA0**
3TA22/13 by 3TF32/33/44/45	**3TX22 42 1YA0**
3TA24 by 3TF46/47/477	**3TX24 46 1YA0**
3TA24/16 by 3TF48/49	**3TX16 48 1YA0**
3TA16 by 3TF50/51	**3TX16 50 1YA0**
3TA28 by 3TF50/51	**3TX28 50 1YA0**
3TA28 to 3TF52/53	**3TX28 52 1YA0**

Surge suppressor (Varistor) for 3TF30 to 3TF35

Coil Voltage		Type
AC	DC	
24 - 48 V	24 - 70V	**3TX7 402-3GY1**
48 - 127V	70 - 150V	**3TX7 402-3HY1**
127 - 240V	150 - 250V	**3TX7 402-3JY1**
240 - 400V	–	**3TX7 402-3KY1**
400 - 600V	–	**3TX7 402-3LY1**

Surge suppressor (Varistor) for 3TF46-56

Coil Voltage		Type
AC	DC	
Less than 48V	24 - 70V	**3TX7 462-3GY1**
48 - 127V	70 - 150V	**3TX7 462-3HY1**
127 - 240V	150 - 250V	**3TX7 462-3JY1**
240 - 400V	–	**3TX7 462-3KY1**
400 - 600V	–	**3TX7 462-3LY1**

Surge suppressor (RC unit) for 3TF30 to 3TF33

Coil Voltage		Type
AC	DC	
24 - 48V	–	**3TX6 406-0D**
110 - 220V	–	**3TX6 406-0C**
220 - 240V	–	**3TX6 446-0B**

Spares

Aux. contact blocks

For Contactor	Description	Type
3TF30-33	1NO 1NC 1NO ext 1NC ext	**3TX40 10-2A** **3TX40 01-2A** **3TX40 10-4A** **3TX40 01-4A**
3TF44-57	1NO+1NC Left 1NO+1NC Right 1NO + 1NC (Extd) Right	**3TY7 561-1A** **3TY7 561-1B** **3TY7 561-1E**
3TF46-57	Second 1NO+1NC Left Second 1NO+1NC Right	**3TY7 561-1K** **3TY7 561-1L**
3TF46/47/477	Special block for DC Coil Circuit	**3TY7 461-1F**
3TF48 to 57	Special block for DC Coil Circuit	**3TY7 481-1F**

Spares

For contactor type (AC3 rating)	**Main contact kits** (6 fixed & 3 moving contacts)	**Arc chambers**	**AC coils**[2)]	**DC coils**[2)]
3TF30 (9A)	–	–	**3TY7 403-0A..**	**3TY4 803-0B..**
3TF31 (12A)	–	–		
3TF32/42 (16A)	**3TY7 420-0A**	–		
3TF33/43 (22A)	**3TY7 430-0A**	–		
3TF34 (32A)	**3TY7 340-0C**	**3TY7 342-0C**	**3TY7 443-0A..**	**3TY7 443-0B..**
3TF35 (38A)	**3TY7 350-0C**	**3TY7 352-0C**		
3TF46 (45A)	**3TY7 460-0YA**	**3TY7 462-0YA**	**3TY7 463-0A..**	**3TY7 463-0D..**
3TF47 (63A)	**3TY7 470-0YA**	**3TY7 472-0YA**		
3TF477 (70A)	**3TY7 477-0YA**	**3TY7 477-0YD**		
3TF48 (75A)	**3TY7 480-0A**	**3TY7 482-0A**	**3TY7 483-0A..**	**3TY7 483-0D..**
3TF49 (85A)	**3TY7 490-0A**	**3TY7 492-0A**		
3TF50 (110A)	**3TY7 500-0YA**	**3TY7 502-0YA**	**3TY7 503-0A..**	**3TY7 503-0D..**
3TF51 (140A)	**3TY7 510-0YA**	**3TY7 512-0YA**		
3TF52 (170A)	**3TY7 520-0YA**	**3TY7 522-0YA**	**3TY7 523-0A..**	**3TY7 523-0D..**
3TF53 (205A)	**3TY7 530-0YA**	**3TY7 532-0YA**		
3TF54 (250A)	**3TY7 540-0YA**	**3TY7 542-0YA**	**3TY7 543-0A..**	**3TY7 543-0D..**
3TF55 (300A)	**3TY7 550-0YA**	**3TY7 552-0YA**		
3TF56 (400A)	**3TY7 560-0YA**	**3TY7 562-0YA**	**3TY7 563-0A..**	**3TY7 563-0D..**
3TF57 (475A)	**3TY7 570-0YA**	**3TY7 572-0YA**	**3TY7 573-0C**	**3TY7 573-0D..**
3TF68 (630A)	**3TY7 680-0B**[1)]	–	**3TY7 683-0C..**	**3TY7 683-0D..**
3TF69 (820A)	**3TY7 690-0B**[1)]	–	**3TY7 693-0C..**	**3TY7 693-0D..**

[1)] Set of 3X vacuum bottles

[2)] Please fill in the coil code (from appropriate table on page 6) in the blank space above (..)

Technical Data

Contactor		Size	0		1		2		3	
		Type	3TF30	3TF31	3TF32	3TF33	3TF34	3TF35	3TF46	3TF47
Permissible ambient temperature	**Storage**	°C	-55 to +80							
	Service	°C	-25 to 55							
Maximum operating voltage		V	690						1000	
Rated insulation voltage *Ui* (At Pollution Degree 3)[1]		V	690						1000	
Rated impulse strength *Uimp*		kV	8						8	
Mechanical endurance	AC	Cycles	15×10^6				10×10^6		10×10^6	
(make/break operations)	DC	Cycles	15×10^6				10×10^6		3×10^6	
Rating of contactors for AC loads										
AC-1 duty, switching resistive load										
Rated operational current ***Ie***	at 40°C upto 690V	A	21		32		65		90	100
	at 55°C upto 690V	A	20		30		55		80	90
Ratings of three-phase loads										
p.f.=1 at 55°C	at 415V	kW	13		19.7		36		52	52
	500V	kW	17		26		47.5		67	67
	690V	kW	22		34.		62.7		91	91
AC-2 and AC-3 duty										
Rated operational current ***Ie***[2][3]	**upto 415V**	**A**	**9**	**12**	**16**	**22**	**32**	**38**	**45**	**63**
	500V	A	9	12	16	17	32	38	45	63
	690V	A	6.6	8.8	12.2	12.2	27	27.	45	63
Maximum rating of slipring or squirrel-cage motors at 50/60 Hz.	**at 415V**	**kW**	**4**	**5.5**	**8**	**11**	**17**	**20**	**24.6**	**34.4**
	500V	kW	5.5	7.5	10	11	21	25	30	41.4
	690V	kW	5.5	7.5	11	11	23	23.	40	57.2
AC-4 duty (contact endurance approx. $2x10^5$ make-break operations at Ia=6Ie)										
Rated operational current ***Ie***	upto 690V	A	3.3	4.3	7.7	8.5	15.6	18.5	24	28
Rating of squirrel-cage motors at 50/60Hz.	at 415V	kW	1.54	2.1	3.5	4	8.2	9.8	13.1	15.3
	500V	kW	1.7	2.5	4.6	5.2	9.8	11.8	15.8	18.4
Max. permitted rated operational current Ie/AC-4 = Ie/AC-3 upto 500V. Ref. life curve for the life.	690V	kW	2.54	3.45	6	6.6	13	15.5	21.8	25.4
Used as stator contactor (upto 690V)[4] (AC-2 duty)										
Stator currents ***Ies***	20%	A	20	20	25(46*)		85		123	138
On-load factor (ED)[5] with intermittent duty	40%	A	20	20	25(37*)		67		98	110
	60%	A	20	20	25(33*)		60		87	98
* Applicable up to 500V	80%	A	20	20	25(30*)		55		80	90
Used as rotor contactor (upto 690V)[4] (AC-2 duty)										
Rotor current ***Ier***	20%	A	31		73		125		150	219
On-load factor (ED)[5]	40%	A	31		58		106		150	174
with intermittent duty	60%	A	31		52		95		138	155
	80%	A	31		47		87		126	142
Locked rotor voltage Uer	Starting	V	1320		1320		1320		1500	1500
	Plugging / Control	V	660		660		660		750	750
AC-6b duty, switching low-inductance individual three-phase capacitors	415V	kVAR	4		7.5		16.7		30	
at 50/60Hz[6]	500V	kVAR	4		7.5		16.7		35	
(we also offer special capacitor duty contactors)	690V	kVAR	4		7.5		16.7		30	
Thermal loading	10 s current	A	90	96	130	176	400	400	360	500
Power loss per current path at Ie/AC-3		W	0.6	1.1	1	1.6	2	2.5	3.5	6
Rating of contactors for DC loads										
DC-1 duty, switching resistive load (L/R < 1mS)										
Rated operational current ***Ie*** (at 55°C)										
Number of current paths in series connection			1 2 3		1 2 3		1 2 3		1	2
	at 24V	A	20 20 20		30 30 30		55 55 55		80	80
	110V	A	2.1 12 20		4.5 30 30		6 55 55		6	80
	220V	A	0.8 1.6 20		1 5 30		1 6 45		1.2	7
	440V	A	0.6 0.8 1.3		0.4 1 2.9		0.4 1.1 2.9		0.48	1.2
DC-3 and DC-5 duty, shunt & series motors (L/R < 15mS)										
Rated operational current ***Ie*** (at 55°C)										
Number of current paths in series connection			1 2 3		1 2 3		1 2 3		1	2
	at 24V	A	20 20 20		20 30 30		20 55 55		5	80
	110V	A	0.15 0.35 20		0.75 7 30		0.75 7 55		0.75	12.5
	220V	A	- - 1.75		0.2 1 3.5		0.2 1 3.5		0.2	1.1
	440V	A	- - 0.2		0.09 0.27 0.6		0.1 0.27 0.6		0.1	0.27

1) As per IS13947-1 & IEC947-1.
2) Ratings at 1000Vac - upon enquiry.
3) Ratings as per extended life.
4) Ratings for duties 5% % 10% - upon enquiry.

3	4		6		8		10		12		14	
3TF47 7	**3TF48**	**3TF49**	**3TF50**	**3TF51**	**3TF52**	**3TF53**	**3TF54**	**3TF55**	**3TF56**	**3TF57**	**3TF68**	**3TF69**
	-55 to +80 -25 to 55											
	1000											
	1000											
	8											
	10 x 10^6 3 x 10^6										5 x 10^6 5 x 10^6	
100	120	120	170		230	240	325	325	425	600	700	910
90	100	100	160		210	220	300	300	400	550	630	850
52	66	66	105		132	138	195	195	262	381	415	558
67	86	86	138		173	181	260	260	345	476	545	735
91	114	114	183		228	240	340	340	457	657	720	920
70	**75**	**85**	**110**	**140**	**170**	**205**	**250**	**300**	**400**	**475**	**630**	**820**
70	75	85	110	140	170	205	250	300	400	475	630	820
70	75	75	110	110	170	170	250	250	400	400	630	820
38.2	**42**	**49**	**63.3**	**78**	**98**	**120**	**147**	**174**	**236**	**273**	**360**	**500**
46	50.7	59	76.3	98	118	145	178	210	284	329	434	600
60.1	70	70	105	105	163	163	245	245	392	392	600	800
31	34	42	54	68	75	96	110	125	150	150	300	360
16.9	18.6	23	29.5	38	42	54	63	72	88	88	168	191
20.4	22.4	27	35.5	46	50	65	76	86	107	107	210	250
28.2	30.9	38	49	63	69	90	105	119	147	147	278	335
138	154		246		323	339	462		617	800	970	1307
110	122		195		256	268	367		490	670	768	1039
98	109		174		229	240	327		436	600	690	925
90	100		160		210	220	300		400	550	630	850
219	243		389		510	535	729		972	1336	1530	2065
174	193		309		405	425	579		772	1061	1216	1640
155	172		275		361	378	516		688	946	1083	1462
142	158		253		332	348	474		632	869	995	1343
1500	2000		2000		2000	2000	2000		2000	2000	2000	2000
750	1000		1000		1000	1000	1000		1000	1000	1000	1000
30	50		60		100		150		200		300	
35	62.5		80		130		190		265		400	
30	50		60		100		150		200		300	
500	800	800	880	1140	1360	1640	2500	2500	3400	4200	5040	7000
6	7.5	10	10	14	14	20	16	23	40	40	45	70

3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	–	–
80	100	100	100	160	160	160	200	200	200	300	300	300	400	400	400	–	–
80	12	100	100	18	160	160	18	200	200	33	300	300	33	400	400	–	–
80	2.5	13	100	3.4	20	160	3.4	20	200	3.8	300	300	3.8	400	400	–	–
3	0.8	2.4	6	0.8	3.2	11.5	0.8	3.2	11.5	0.9	4	11	0.9	4	11	–	–
3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	–	–
80	6	100	100	160	160	160	200	200	200	300	300	300	400	400	400	–	–
80	1.25	100	100	2.5	160	160	2.5	200	200	3	300	300	3	400	400	–	–
3.5	0.35	1.75	4	0.6	2.5	160	0.6	2.5	200	0.6	2.5	300	0.6	2.5	400	–	–
0.6	0.15	0.42	0.8	0.17	0.65	1.4	0.17	0.65	1.4	0.18	0.65	1.4	0.18	0.65	1.4	–	–

5) On-load factor (ED) in % = $\frac{\text{ontime x 100}}{\text{cycle time}}$

Max. switching freq. z = 50 per hour. Ratings at higher frequency upon enquiry.

6) Ratings for capacitor - banks in parallel - upon enquiry. Minimum inductance of 6µH required between parallel connected capacitors.

SICOP Power Contactors Technical Data

Contactor		Size	0		1		2		3		
		Type	3TF30	3TF31	3TF32	3TF33	3TF34	3TF35	3TF46	3TF47	3TF47 7
Switching frequency *z*											
(Contactors without overload relay)		Operation									
No load	AC	Cycles/hr	10,000	10,000	5000	5000	5000	5000	5000	5000	5000
	DC	Cycles/hr	1,500	1,500	1,500	1,500	1,500	1,500	1,000	1,000	1,000
at AC-1		Cycles/hr	2,000	2,000	1,500	1,500	1,200	1,200	1,000	1,000	1,000
at AC-2		Cycles/hr	1,000	1,000	750	750	750	600	600	400	400
at AC-3		Cycles/hr	1,000	1,000	750	750	750	600	1200[7]	1000	1000
at AC-4		Cycles/hr	250	250	250	250	250	200	400	300	300
Coil ratings	Supply frequency	Hz	50		50		50		50		
(cold coil 1.0 x Us)											
AC operation 50Hz	Closing	VA	68		68		101		183		
	p.f.		0.79		0.82		0.83		0.6		
	Closed	VA	10		10		12.1		17		
	p.f.		0.29		0.29		0.28		0.29		
DC operation	Closing	W	6.2		6.2		11.7		400		
	Closed	W	6.2		6.2		11.7		2.1		
Coil voltage tolerance	Operation										
	AC/DC		0.8 to 1.1 x Us		0.8 to 1.1 x Us						
	at 24V DC		0.8 to 1.2 x Us								
Operating times at 1 x Us [2]											
AC operation	Closing	ms	10-25		10 - 25		13 - 32		17 - 30		
	Opening	ms	4-18		5 - 20		5 - 10		5 - 25		
DC operation	Closing	ms	30-70		40 - 80		58 -107		22 - 40		
	Opening	ms	12-20		10 - 20		13 - 17		105 - 115		
Auxiliary contacts											
Rated thermal current I_{th} =											
rated operational current *Ie* / AC-12		A	10				10				
Rated operational current ***Ie* / *AC-15/AC-14***											
at rated operational voltage *Ue*	upto 125V	A	10				10				
	220V	A	10				6				
	415V	A	5.5				3.6				
	500V	A	4				2.5				
Rated operational current ***Ie* / *DC12***											
at rated operational voltage *Ue*	upto 48V	A	10				10				
	110V	A	2.1				3.2				
	220V	A	0.8				0.9				
	440V	A	0.6				0.33				
Rated operational current ***Ie* / *DC13***											
at rated operational voltage *Ue*	upto 24V	A	10				10				
	48V	A	5				5				
	110V	A	0.9				1.14				
	220V	A	0.45				0.48				
	440V	A	0.25				0.13				
Conductor cross-sections											
Main conductor											
Solid		mm^2	2 x (0.5 to 1, 1 to 2.5), 1x4		2 x (2.5 to 6)		1 to 16		2 x (6 to 16)		
Finely stranded with end sleeve		mm^2	2 x (0.75 to 2.5)		2 x (1.5 to 4)		1 x (2.5 to 16, 2.5 to 10)		1 x (10 to 35), 2 x (10 to 25)		
Pin end connector		mm^2	1 x (1 to 2.5)		1 x (1 to 6)		2 x (1 to 6)		–		
Solid or stranded		AWG	2 x (18 to 12)		2 x (14 to 10)		2 x (14 to 6)		2 x (10 to 1/10)		
Tightening torque		Nm	0.8 to 1.4		1 to 1.5		2.5 to 3.0		4 to 6		
Finely stranded with cable lug		mm^2							10 to 35		
Terminal bar (max. width)		mm							12		
Solid or stranded		AWG							7 to 1/0		
Tightening torque		Nm							4 to 6		
Auxiliary conductor											
Solid		mm^2	2 x (0.5 to 1, 1 to 2.5), 1 x 4				2 x (0.5 to 1, 1 to 2.5), 1				
Finely stranded with end sleeve		mm^2	2 x (0.75 to 2.5)				2 x (0.75 to 2.5)				
Pin end connector		mm^2	1 x (1 to 2.5)				1 x (1 to 2.5)				
Solid or stranded		AWG	2 x (18 to 12)				2 x (18 to 12)				
Tightening torque		Nm	0.8 to 1.4				0.8 to 1.4				
Short-circuit protection											
Main circuit (Fuse type 3NA3)	Co-ordination										
	Type - 1	A	35	35	63	63	80	80	160	160	160
	Type - 2	A	25	25	32	32	80	80	125	125	160
Auxiliary circuits		A	16								
		A	6,if over-load relay auxiliary contacts are in the contactor coil circuit								

7) With AC coil. With DC coil: 1000 oprs/hr.
8) Including switching contactor.
9) Rated value of the control voltage.
10) The opening time delay increases when the contactor coil is protected against voltage peaks. (e.g. Varistor: +2 to +5ms)

4		6		8		10		12							
3TF48	**3TF49**	**3TF50**	**3TF51**	**3TF52**	**3TF53**	**3TF54**	**3TF55**	**3TF56**	**3TF57**		**3TF68**		**3TF69**	
5000	5000	5000	5000	5000	5000	3000	3000	3000	2000		2000		1000	
1,000	1,000	1000	1000	1000	1000	1000	1000	1000	1000		1000		1000	
900	900	800	800	800	750	800	750	700	500		700		700	
400	350	400	300	300	250	300	250	200	170		200		200	
1000	850	1000	750	700	500	700	500	500	420		500		500	
300	300	300	200	200	130	200	130	150	150		150		150	
50		50		50		50		50	50/60		50/60		50/60	
									Lower[9]	Upper[9]	Lower[9]	Upper[9]	Lower[9]	Upper[9]
330		550		910		1430		2450	1136	1900	1200	1850	600	950
0.5		0.45		0.38		0.34		0.21	1	1	1	1	0.98	0.98
32		39		58		84		115	16	45	13.5	49	12.9	30.6
0.23		0.24		0.26		0.24		0.33	0.34	0.16	0.47	0.15	0.43	0.31
420		500		876[8]		1216[8]		1306[8]	1110[8]		1010		960	
2.7		2.7		11[8]		13.3[8]		14[8]	24[8]		28		20.6	
0.8 to 1.1 x Us														
22 - 35		22 - 37		25 - 50		25 - 40		25 - 40	48 - 70		80 - 100		85 - 100	
5 - 30		8 - 30		10 - 30		10 - 30		8 - 30	80 - 100		70 - 100		70 - 80	
32 - 40		28 - 32		32 - 45		36 - 45		40 - 55	44 - 60		80 - 90		90 - 125	
95 -105		185 - 195		10 - 20		10 - 20		10 - 20	12 - 15		50		19 - 25	

10	10	10
10	10	10
6	6	6
3.6	3.6	3.6
2.5	2.5	2.5
10	10	10
3.2	3.2	3.2
0.9	0.9	0.9
0.33	0.33	0.33
10	10	10
5	5	5
1.14	1.14	1.14
0.48	0.48	0.48
0.13	0.13	0.13

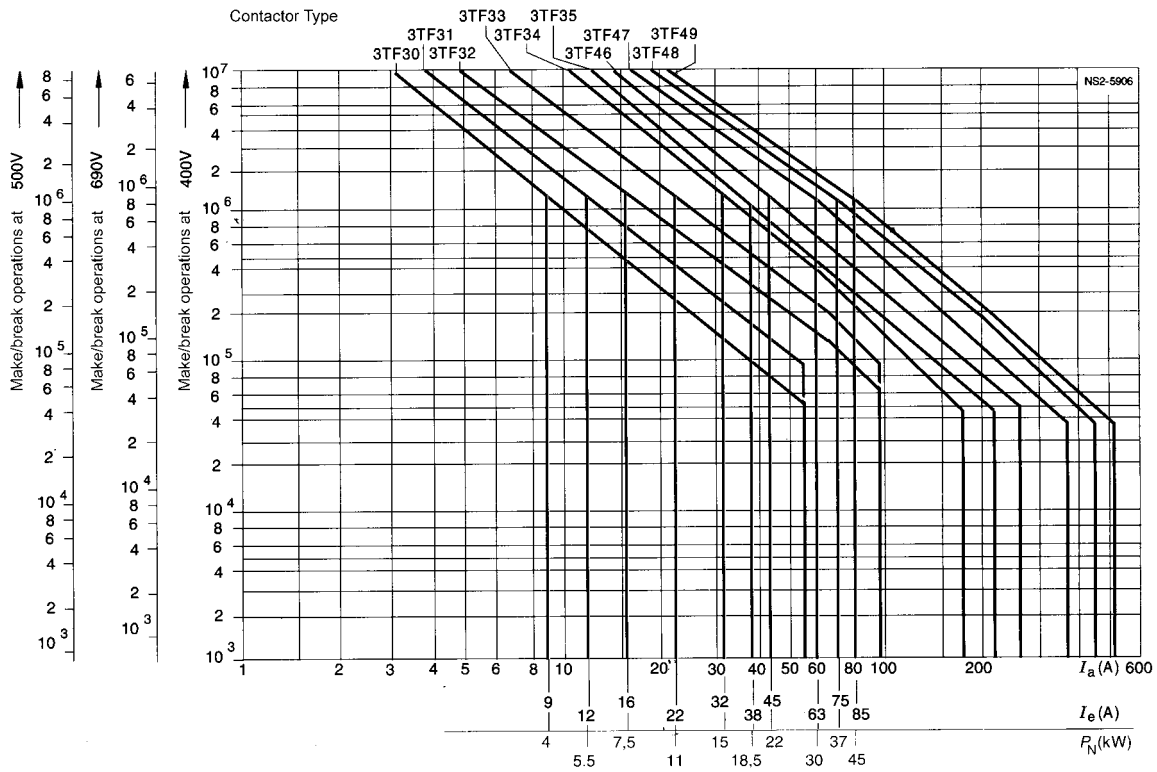
2 x (6 to 16) 1 x (10 to 35), 2 x (10 to 25) – 2 x (10 to 1/0) 4 to 6											
10 to 35	16 to 70	35 to 95	35 to 95	50 to 240	50 to 240	50 to 240	50 to 240	50 to 240	50 to 240	50 to 240	50 to 240
12	15	20	20	25	25	25	25	30	50	50	
7 to 1/0	3 to 2/0										
4 to 6	6 to 8	10 to 14	10 to 14	14 to 24	14 to 24	14 to 24	14 to 24	14 to 24	14 to 24	25 to 35	

2 x (0.5 to 1, 1 to 2.5), 1 x 4 2 x (0.75 to 2.5) 1 x (1 to 2.5) 2 x (18 to 12) 0.8 to 1.4	2 x (0.5 to 1, 1 to 2.5) 2 x (0.75 to 2.5) 1 x (1 to 2.5) 2 x (18 to 12) 0.8 to 1.4	2 x (0.5 to 1, 1 to 2.5) 2 x (0.75 to 2.5) 1 x (1 to 2.5) 2 x (18 to 12) 0.8 to 1.4

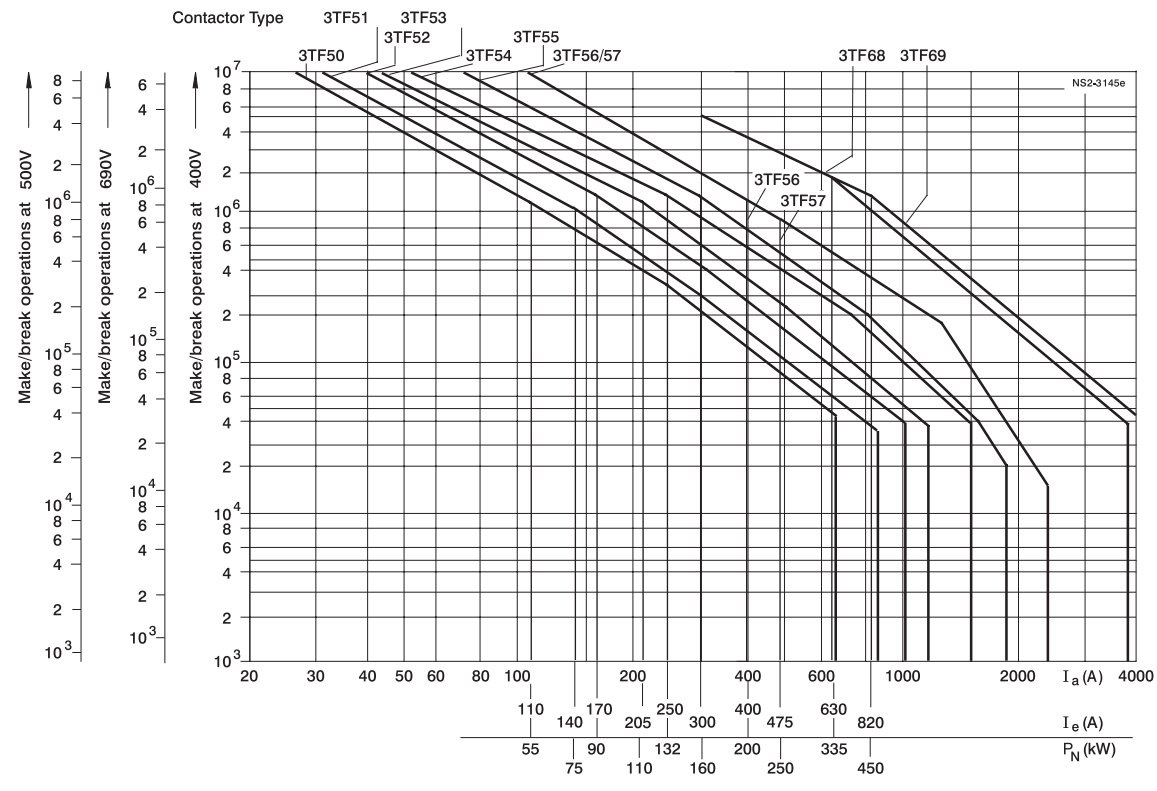
250	250	400	400	400	400	500	500	800	800	1000	1250
160	160	200	250	250	250	400	400	500	500	500	630

Electrical Life Curves

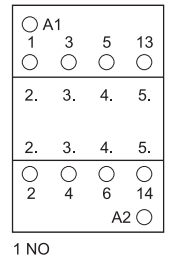
3TF30 to 3TF35 and 3TF46 to 3TF49 contactors



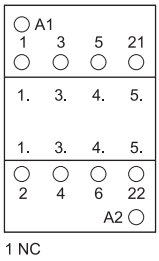
3TF50 to 3TF69 contactors



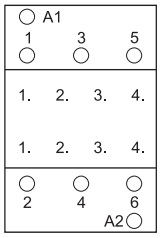
Terminal Designation

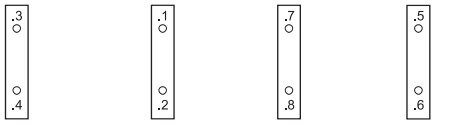


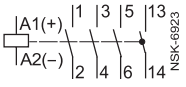
1 NO

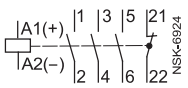


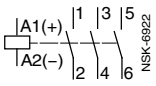
1 NC

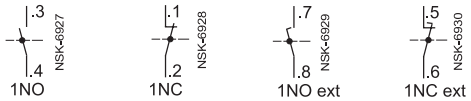








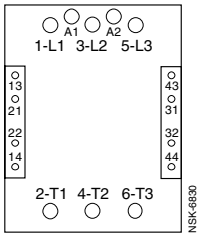


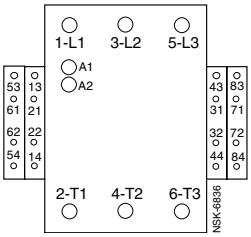


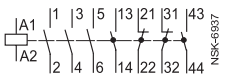
Size 0, 3TF30/31
AC and DC Coil

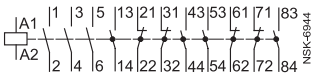
Size 2, 3TF32/33/34/35
AC and DC Coil

Add-on contact block for 3TF30/31/32/33



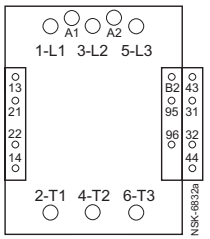


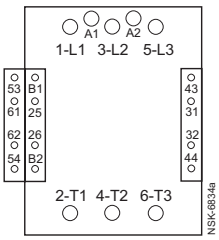


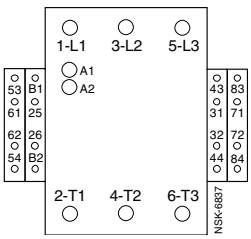


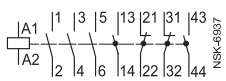
Size 3 to 12, 3TF46 to 3TF57
AC Coil

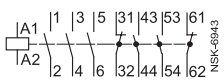
Size 14, 3TF68 and 3TF69
AC Coil

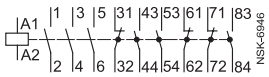










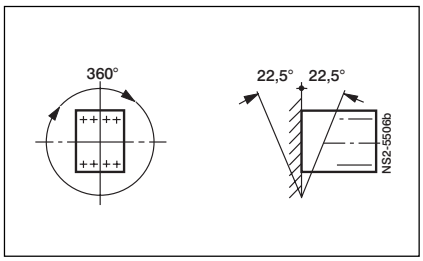


Size 3 to 12, 3TF46 to 3TF56
DC Coil

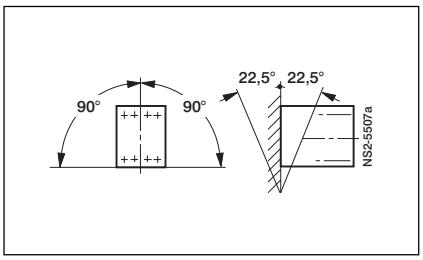
Size 12, 3TF57
DC Coil

Size 14, 3TF68 and 3TF69
DC Coil

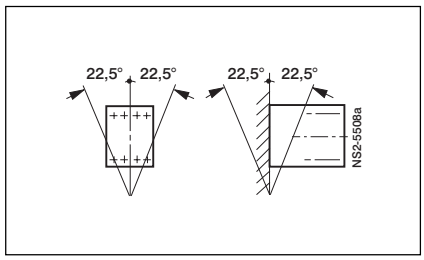
Permissible Mounting Position



3TF30 to 3TF33 - AC operation



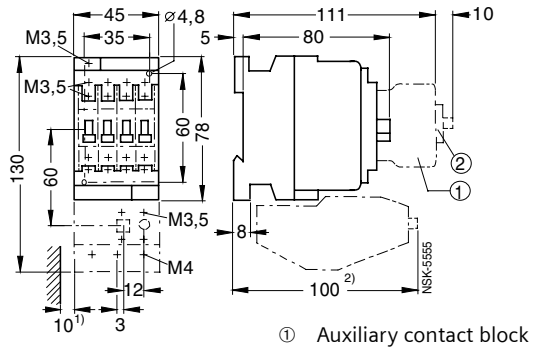
3TF30 to 3TF33 - DC operation
3TF34 to 3TF69 - AC operation
3TF46 to 3TF69 - DC operation



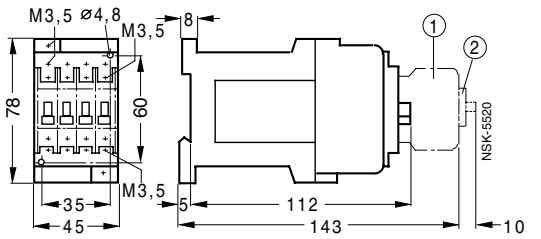
3TF34/35 - DC operation

Dimensions (mm)

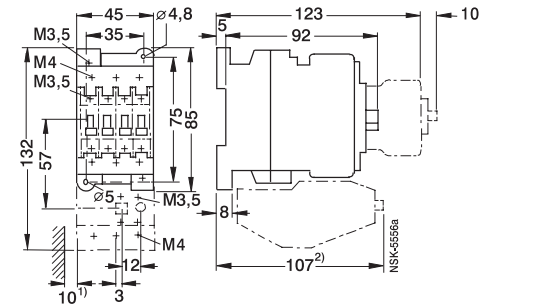
3TF30/31 AC Coil



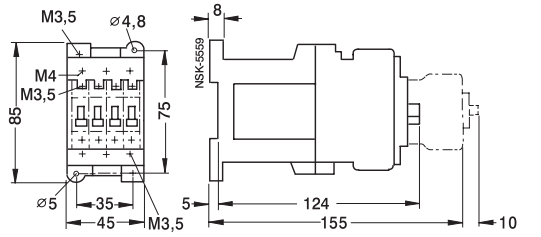
3TF30/31 DC Coil



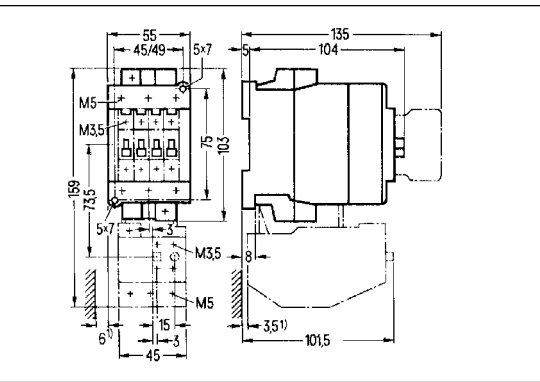
3TF32/33 AC Coil



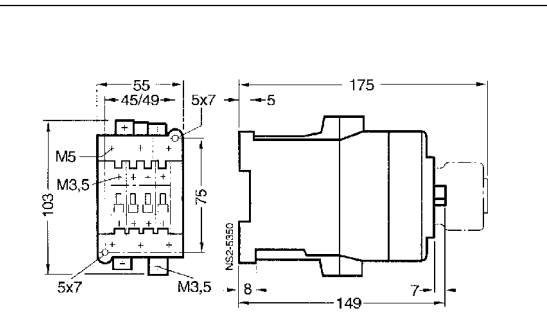
3TF32/33 DC Coil



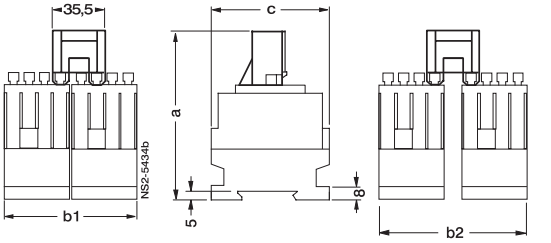
3TF34/35 AC Coil



3TF34/35 DC Coil



3TF30 to 3TF32, with mechanical interlock kit

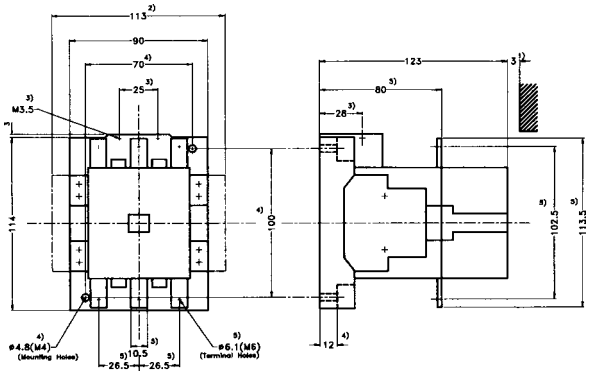


Type	a (AC coil)	a (DC coil)	b1	b2	c
3TF30/31	116	148	90	100	78
3TF32/33	127	159	91	101	85

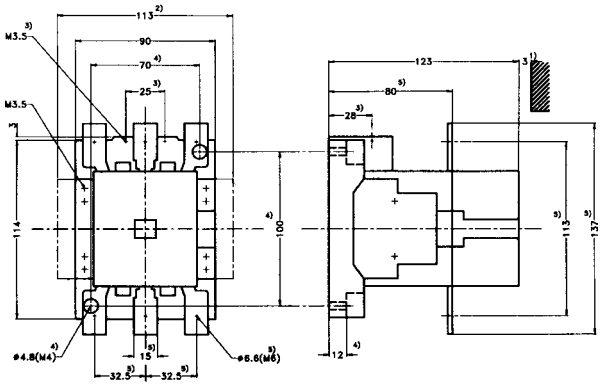
Notes
1) Dimensions for coil terminals
2) Dimensions for mounting terminals
   Minimum clearance from insulated components = 5mm
   Minimum clearance from earthed components = 10mm
3) size of power terminals
4) Size of auxiliary terminals

Dimensions (mm)

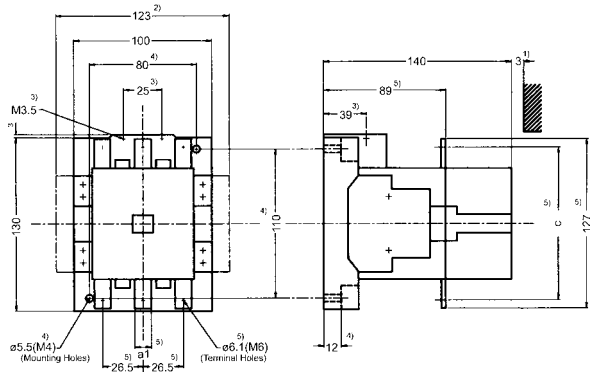
3TF46 and 3TF47



3TF47 7

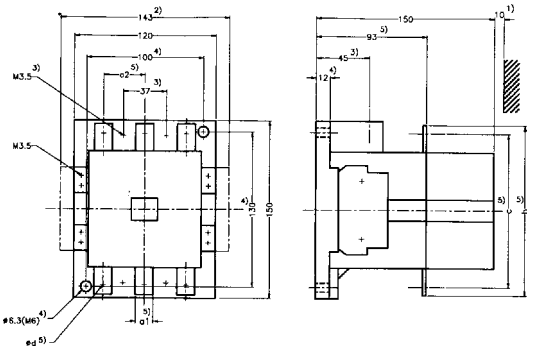


3TF48 and 3TF49



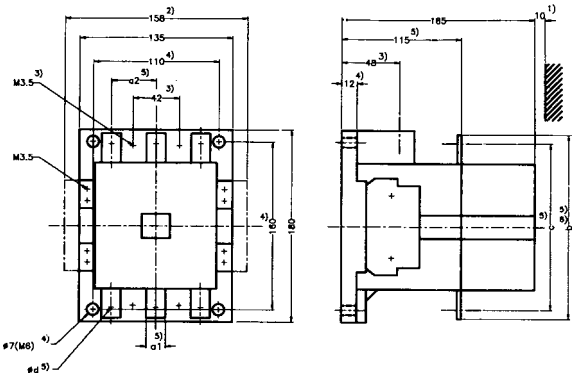
Type	a1	c
3TF48	8	107
3TF49	10.5	116

3TF50 and 3TF51



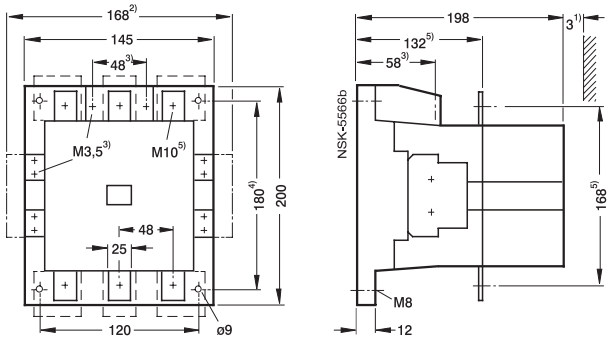
Type	a1	a2	b	c	ϕd
3TF50	15	37	149	134	6.6(M6)
3TF51	20	42	159	139	9(M8)

3TF52 and 3TF53



Type	a1	a2	b	c	ϕd
3TF52	20	42	174	154	6.6(M6)
3TF53	25	48	184	159	9(M8)

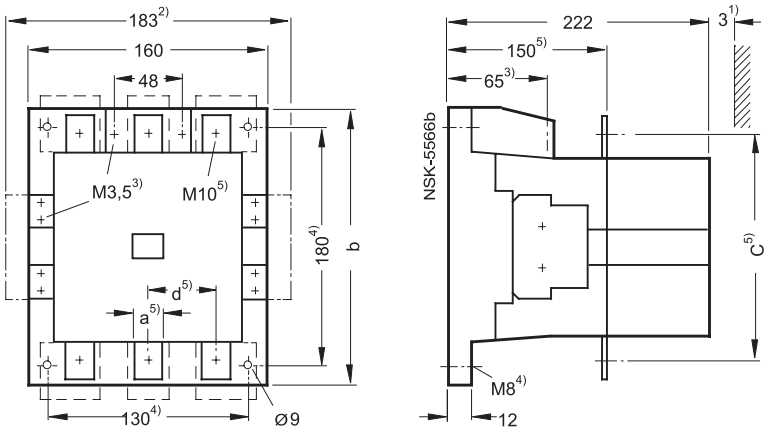
3TF54/55



Notes
1) Minimum clearance from insulated components = 3mm
   Minimum clearance from earthed components = 10mm
2) Dimension with second auxiliary contact block on both sides
3) Dimension for coil terminal.
4) Dimension for mounting.
5) Dimension for power terminal.
6) 3TF53 The conductor bars protrude over the contactor edges on top and bottom by 2mm each.

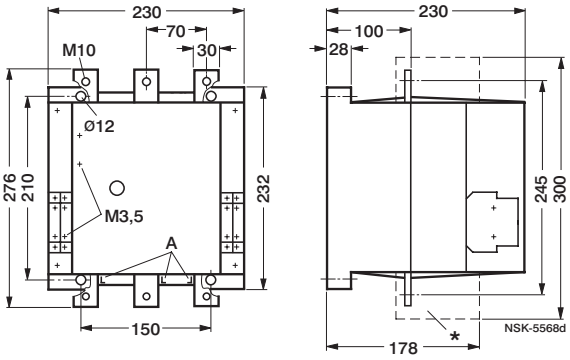
Dimensions (mm)

3TF56/57



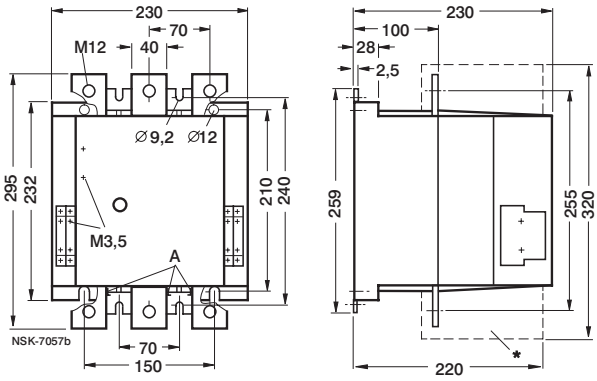
Type	a	b	c	d
3TF56	25	200	178	48
3TF57	30	209.5	182	52

3TF68



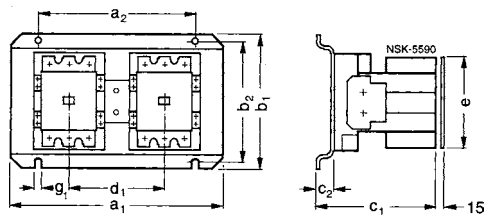
A = Contact erosion indicator for vacuum bottle

3TF69



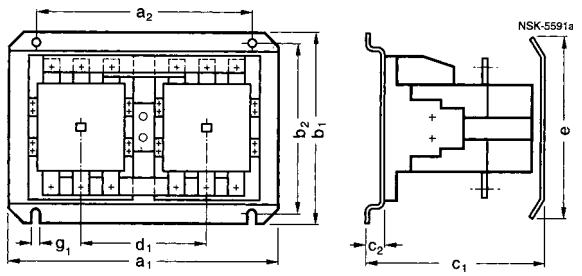
A = Contact erosion indicator for vacuum bottle

3TF46/47/477/48/49 with Mechanical Interlock Kit



For Contactor	a_1	a_2	b_1	b_2	c_1	c_2	d_1	e	g_1
3TF46/47/477	240	180	165	145	141	18	117	150	7 (M6)
3TF48/49	260	200	175	155	158	18	127	160	7 (M6)

3TF50 to 3TF68 with Mechanical Interlock Kit



For Contactor	a_1	a_2	b_1	b_2	c_1	c_2	d_1	e	g_1
3TF50/51	300	240	210	185	160	18	147	260	9 (M8)
3TF52/53	330	270	240	215	203	18	162	315	9 (M8)
3TF54/55	350	290	265	240	219	21	172	375	11 (M10)
3TF56/57	380	310	265	240	243	21	187	385	11 (M10)
3TF68	520	400	310	280	255	25	257	470	13,5 M(12)

Notes
1) Minimum clearance from insulated components = 3mm
   Minimum clearance from earthed components = 10mm
2) Dimension with second auxiliary contact block on both sides
3) Dimension for coil terminal.
4) Dimension for mounting.
5) Dimension for power terminal.

Special purpose contactors

SICOP micro contactor
(Miniature contactor for small loads)

Range:

- Power contactors - 5A & 9A
- Overload relays - upto 10A
- Contactor relay - 4 pole
- Add-on block - 2 pole / 4 pole
- Interface relay - 12VA / 4 pole
- Interface contactor - 1.2VA / 5A

Benefits:

- Small in size
- Low on cost
- High on reliability



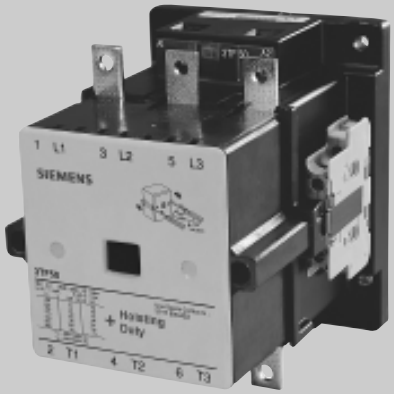
Hoisting duty contactor
(For high switching frequency / inching applications)

Range:

- Upto 400A

Benefits:

- Specially designed contact system, coil.
- High electrical and mechanical life.
- Ideal for hoisting duty and for high frequency switching applications.

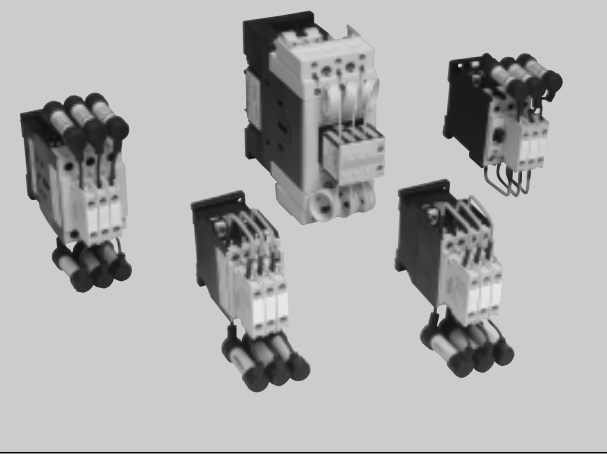


Capacitor duty contactor
(For switching capacitor banks)

Range: 7, 10, 15, 25, 50 kVAR

Benefits:

- Controlled switching of capacitors, hence reduced stress during switching.
- Prevents contact welding during switching
- High electrical & mechanical life
- Ideal for APFC systems which have more than one capacitor in parallel
- Easy handling, installation & maintenance.

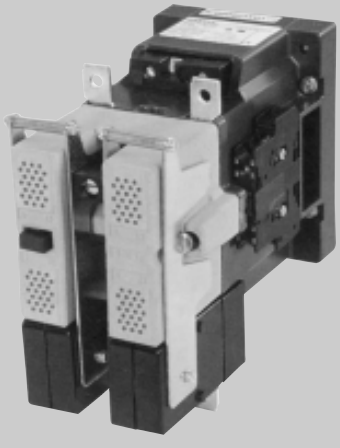


2 Pole DC contactor
(For DC loads)

Range: 32A, 75A (220A, 400A upon enquiry)

Benefits:

- Designed for DC application upto 750V
- High mechanical & electrical life
- Suitable for use in aggressive and tropical atmospheres
- Ideally suited for rugged applications involving frequent switching e.g. steel mills, mining, cranes, battery charger etc.



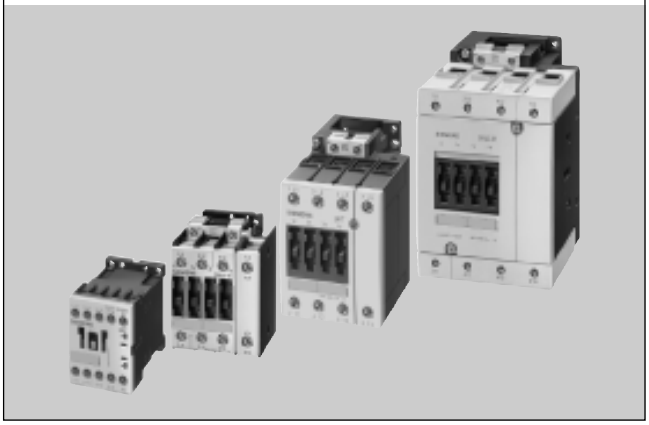
4 Pole contactor
(For Incomer/Changeover applications)

Range:

- Up to 140A AC1

Benefits:

- Cost saving & flexibility due to single add on blocks
- High operator safety due to finger touch proof terminals
- Up to 40% reduction in wiring time due to SIGUT termination



Vacuum contactors 3RT12
(For higher switching frequency/dusty atmosphere)

Range:

- 225 to 400A

Benefits:

- Minimum maintenance due to high electrical life
- Low life cycle cost
- Easy if maintenance due to visible contat erosion indication
- Saving on panel sapce due to less clearances required



Other special purpose contactor

- "Definite Purpose" contactor Type 3TF1 up to 30A AC3
- 3 Pole AC duty contacor
  (for resistive and non-inductive loads)
- 2 Pole AC contactors
  (for single phase and 2 phase applications)
- Single pole contactors
  (for single phase loads)

Recommended substitutes for discontinued 3TA/3UA19

For standard application (AC3 duty)

AC3 rating 415V, 50Hz	Size	Discontinued contactor	Discontinued bi-relay	Size	SICOP contactor	SICOP bi-relay	Motor kW 415V, 50Hz, 3ph.
7.8A	1	**3TA67 3TA76**	**3UA1911**	0	**3TF30**	**3UA5000**	3.8
9A		**3TA21**					4
12A					**3TF31**		5.5
16A				1	**3TF32**	**3UA5200**	7.5
22A		**3TA11**			**3TF33**		11
30A	2	**3TA22**	**3UA1928**	2	**3TF34**	**3UA5500#**	15
32A		**3TA13**					18.5
38A					**3TF35**		20
45A	4	**3TA24[1)]**		3	**3TF46-Z**	**3UA5800-Z1**	22
63A			**3UA1938**		**3TF47-Z**		30
70A					**3TF47-7**	**3UA5800-Z2**	37
105A		**3TA16**		4	**3TF48/49**	**3UA5800-Z1**	45
110A	8	**3TA28-Y**		6	**3TF50**	**3UA5830**	55
140A					**3TF51**	**3UA6230**	75
170A				8	**3TF52**		95
200A		**3TA28**	**3UA66**		**3TF53**		110
250A	12	**3TB56**	**3UA66**	10	**3TF54**		132
300A					**3TF55**		160
400A				12	**3TF56**		220
475A	–	–	–		**3TF57**	**3UA6830**	250
630A				14	**3TF68**		335
820A					**3TF69**	**3RB12**	450

use 3UA50 + 3UX1418 to replace 3UA19 28 (upto 12A) use 3UA52 + 3UX1420 to replace 3UA19 28 (upto 25A)
[1)] For crane/hoisting/inching application, replace 3TA24 with 3TF48/49 contactors

For inching application (AC4 duty)

Discontinued contactor		New contactor	
Size	**Type 3TA**	**Size**	**Type 3TF**
1	3TA21	1	3TF32
1	3TA11	1	3TF33
2	3TA22	2	3TF34
2	3TA13	2	3TF35
4	3TA24	4	3TF48
4	3TA16	6	3TF50
8	3TA28	8	3TF52
12	3TB56	12	3TF56

For crane application (AC2 duty, S3 100% inching)

Discontinued contactor		New contactor	
Size	**Type 3TA**	**Size**	**Type 3TF**
1	3TA21/11	1	3TF33
2	3TA22/13	2	3TF35
4	3TA24	4	3TF49
8	**3TA28**	**8**	**3TF5200***
12	**3TB56**	**12**	**3TF5600***

* Hoisting duty contactors, designed specially for hoisting duty.

Note: Please refer to table on page 7 for details of adaptor plates required to replace 3TA by SICOP...

Fuse Protected Selection Type 2, Iq = 50kA, IS13947

- 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, 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 (earlier called fuse switch). **All contactors are with 2NO + 2NC. All fuses are proper DIN HRC type.**
- Truly tested Type 2 combinations at Neutral Authorities
- 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/HP 415V, 3ph, 50Hz	I_L Amp	Type	Rating	Type 3NA3	Amp	Type	Amp	Type (50°C)	Set-Range Amp	Type (60°C)	Available Set-Range Amp
0.37/0.5	1	3KL47	32	3NA3804	4	3TF30	9	3UA5000-0K	0.8 - 1.25	3UA5000-0K	0.8 - 1.17
0.55/0.75	1.3	3KL47	32	3NA3804	4	3TF30	9	3UA5000-1A	1 - 1.6	3UA5000-1A	1 - 1.5
0.75/1	1.9	3KL47	32	3NA3801	6	3TF30	9	3UA5000-1B	1.25 - 2	3UA5000-1C	1.6 - 2.3
1.1/1.5	2.6	3KL47	32	3NA3801	6	3TF30	9	3UA5000-1D	2 - 3.2	3UA5000-1D	2 - 3
1.5/2	3.7	3KL47	32	3NA3803	10	3TF30	9	3UA5000-1E	2.5 - 4	3UA5000-1E	2.5 - 3.7
2.2/3	4.8	3KL47	32	3NA3805	16	3TF30	9	3UA5000-1F	3.2 - 5	3UA5000-1G	4 - 5.9
3.7/5	7.8	3KL47	32	3NA3807	20	3TF30	9	3UA5000-1H	5 - 8	3UA5000-1J	6.3 - 9.4
5.5/7.5	11.2	3KL47	32	3NA3810	25	3TF31	12	3UA5000-1K	8 - 12.5	3UA5000-1K	8 - 11.7
7.5/10	16	3KL47	32	3NA3812	32	3TF32	16	3UA5200-2A	10 - 16	3UA5200-2B	12.5 - 18.7
9.3/12.5	19	3KL49	50	3NA3820	50	3TF34	32	3UA5500-2B	12.5 - 20	3UA5500-2C	16 - 23.4
11/15	20.8	3KL49	50	3NA3820	50	3TF34	32	3UA5500-2C	16 - 25	3UA5500-2C	16 - 23.4
15/20	28	3KL50	63	3NA3822	63	3TF34	32	3UA5500-2D	20 - 32	3UA5500-2D	20 - 30
18.5/25	34	3KL50	63	3NA3822	63	3TF35	38	3UA5500-2Q	25 - 36	3UA5500-2R	32 - 37.4
22/30	40	3KL51	100	3NA3824	80	3TF46	45	3UA5800-2FZ1	32 - 50	3UA5800-2FZ1	32 - 47
30/40	53	3KL51	100	3NA3830	100	3TF47	63	3UA5800-2TZ1	40 - 57	3UA5800-2PZ1	50 - 59
37/50	65	3KL52	125	3NA3832	125	3TF477	70	3UA5800-2VZ2	57 - 70	3UA5800-2VZ2	57 - 65.5
45/60	78	3KL52	125	3NA3832	125	3TF49	85	3UA5800-8YZ1	70 - 95	3UA5800-8YZ1	70 - 88.9
55/75	96	3KL54	200	3NA3136	160	3TF50	110	3UA5830-5C	85 - 105	3UA5830-5C	85 - 98.2
75/100	131	3KL54	200	3NA3140	200	3TF51	140	3UA6230-5A	85 - 135	3UA6230-5B	115 - 168
90/125	156	3KL25	250	3NA3144	250	3TF52	170	3UA6230-5B	115 - 180	3UA6230-5B	115 - 168
110/150	189	3KL25	250	3NA3144	250	3TF53	205	3UA6230-5C	160 - 250	3UA6230-5C	160 - 234
132/180	227	3KL31	315	3NA3252	315	3TF54	250	3UA6230-5C	160 - 250	3UA6230-5C	160 - 234
160/215	271	3KL41	400	3NA3260	400	3TF55	300	3UA6230-5D	200 - 320	3UA6230-5D	200 - 299
200/270	339	3KL61	630	3NA3365	500	3TF56	400	3UA6230-5E	250 - 400	3UA6230-5E	250 - 374
250/335	398	3KL61	630	3NA3365	500	3TF57	475	3UA6830-3F	320 - 500	3UA6830-3F	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/HP 415V, 3ph, 50Hz	I_L Amp.	Iph Amp	Type	Rating	Type 3NA3	Amp	Type	Amp	Type	Amp	Type (50°C)	Set-Range Amp	Type (60°C)	Available Set-Range Amp	Type
2.2/3	4.8	2.8	3KL47	32	3NA3801	6	3TF30	9	3TF30	9	3UA5000-1D	2-3.2	3UA5000-1D	2-3	3RP15
3.7/5	7.8	4.5	3KL47	32	3NA3803	10	3TF30	9	3TF30	9	3UA5000-1F	3.2-5	3UA5000-1F	3.2-4.7	3RP15
5.5/7.5	11.2	6.5	3KL47	32	3NA3805	16	3TF30	9	3TF30	9	3UA5000-1H	5-8	3UA5000-1H	5-7.5	3RP15
7.5/10	16	9.2	3KL47	32	3NA3807	20	3TF31	12	3TF30	9	3UA5000-1J	6.3-10	3UA5000-1J	6.3-9.4	3RP15
9.3/12.5	19	11	3KL47	32	3NA3810	25	3TF31	12	3TF30	9	3UA5000-1K	8-12.5	3UA5000-1K	8-11.7	3RP15
11/15	20.8	12	3KL49	50	3NA3810	25	3TF31	12	3TF30	9	3UA5000-1K	8-12.5	3UA5000-2S	10-13.6	3RP15
15/20	28	16.2	3KL49	50	3NA3812	32	3TF33	22	3TF32	16	3UA5200-2B	12.5-20	3UA5200-2B	12.5-18.7	3RP15
18.5/25	34	19.7	3KL50	63	3NA3820	50	3TF34	32	3TF34	32	3UA5500-2B	12.5-20	3UA5500-2C	16-23.4	3RP15
22/30	40	23.2	3KL50	63	3NA3820	50	3TF34	32	3TF34	32	3UA5500-2C	16-25	3UA5500-2D	22-30	3RP15
30/40	53	30.6	3KL50	63	3NA3822	63	3TF34	32	3TF34	32	3UA5500-2D	20-32	3UA5500-2Q	25-33.7	3RP15
37/50	65	37.5	3KL51	100	3NA3824	80	3TF35	38	3TF34	32	3UA5500-2R	32-40	3UA5500-8M	36-45	3RP15
45/60	78	45	3KL51	100	3NA3830	100	3TF46	45	3TF34	32	3UA5800-2FZ1	32-50	3UA5800-2FZ1	32-47	3RP15
55/75	96	55.4	3KL51	100	3NA3830	100	3TF47	63	3TF34	32	3UA5800-2TZ1	40-57	3UA5800-2PZ1	50-59	3RP15
75/100	131	75.6	3KL54	200	3NA3136	160	3TF49	85	3TF47	63	3UA5800-8YZ1	70-95	3UA5800-8YZ1	70-88.9	3RP15
90/125	156	90.1	3KL54	200	3NA3136	160	3TF50	110	3TF47	63	3UA5830-5B	70-95	3UA5830-5C	85-98.2	3RP15
110/150	189	109	3KL54	200	3NA3140	200	3TF50	110	3TF50	110	3UA5830-5D	95-120	3UA5830-5D	95-112	3RP15
132/180	227	131.1	3KL25	250	3NA3144	250	3TF51	140	3TF50	110	3UA6230-5B	115-180	3UA6230-5B	115-168	3RP15
160/215	271	156.5	3KL31	315	3NA3252	315	3TF52	170	3TF50	110	3UA6230-5B	115-180	3UA6230-5B	115-168	3RP15
200/270	339	195.7	3KL41	400	3NA3260	400	3TF54	250	3TF52	170	3UA6230-5C	160-250	3UA6230-5C	160-234	3RP15
250/335	398	243.1	3KL61	630	3NA3260	400	3TF54	250	3TF54	250	3UA6230-5C	160-250	3UA6230-5D	200-299	3RP15

Siemens Ltd.

Sales Offices:

- **Ahmedabad** - 380009
  1st Floor, Shanti Chamber
  Terapanth Marg, Opp. Dinesh Hall
  Near I.T. Cross Road, Navrangpura
  ☎ +91 79 27546803, 27546172
  Fax +91 79 27546711
- **Bangalore** - 560 001
  No.49, Jyoti Mahal, First Floor
  St. Marks Road
  ☎ +91 80 22042000
  Fax: +91 80 22224131 / 51120735
- **Chennai** - 600034
  4, Mahatma Gandhi Road
  ☎ +91 44 2833 4000
  Fax +91 44 28334088
- **Coimbatore** - 641018
  No 12 Second Floor,
  Addis Street, Grey Town
  ☎ +91 422 2380908, 2380772
  Fax +91 422 2380271
- **Kolkata** - 700042
  43 Shanti Palli, R B Connector
  Eastern Metropolitan Bypass
  ☎ +91 33 24449000, 24428641-47
  Fax:+91 33 24449010 / 13
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- **Secunderabad** - 500025
  9-1-87/119/2 1st Floor, St. John's Road
  ☎ +91 40 27702552, 27704544
  Fax +91 40 27702951

Territory Managers :

- **Aurangabad**
  Mobile: 9822193204
  E-mail: siemens_nsk@sancharnet.in
- **Bhilai** - 490 001
  C/o. Mr. S. H. Siddiqui
  Sector -1, Street- 9,
  Quarter No.1A
  Mobile: 9826127525
  E-mail: siemens_chg@sify.com
- **Bhopal** - 462 023
  C/o. Mr. A.K. Sundrani,
  Sector - D, Plot No. B-204
  Meenal Residency, J.K. Road
  ☎ +91 755 2688662
  Mobile: 9425057945
  E-mail: siemens@sancharnet.in
- **Bhubaneswar** - 751 003
  Flat No. 4C, Aditya Palace
  218/219, Paika Nagar
  ☎ +91 0661 2563124
  Mobile : 9437013124
  E-mail: angshumanrc@yahoo.com
- **Chandigarh** - 134113
  House No.352, Sector 5, Panchkula, Haryana
  ☎ & Fax +91 0172-2585902
  Mobile : 94171 21990
  E-mail: siemenschd@satyam.net.in
- **Cochin** - 682016
  Preethi Building, 1st Floor
  M.G.Road, Ernakulam
  ☎ +91 0484-2380201, 2380506
  Fax +91 0484-2371564
  E-mail: kumchn@satyammail.com
- **Durgapur** - 713 216
  A-39, Moulana Azad Sarani
  1st Floor, City Centre
  ☎ +91 0343-2546777
  Mobile: 9832172046
  E-mail: dgp_sldgp@sancharnet.in
- **Guwahati** - 781003
  G1, Hill View Apartment
  Navagraha Path
  Chenikuthi Hill Side
  ☎ +91 0361-2663988
  Mobile: 98640 37562
  E-mail: konard@vsnl.net
- **Hardwar** - 249 407
  758, 1st Floor, Model Colony
  Awas Vikas, Jwalapur, Uttaranchal
  ☎ +91 01334 265491
  Mobile: 9897070133
  E-mail: siemens_hwd@datainfosys.net
- **Indore** - 452001
  304, 18-19, Yash Tower
  Maha Durga Nagar, Janki Nagar
  Mobile: 9826641970
  E-mail: siemens_indore@yahoo.com
- **Jaipur** - 302016
  Flat No.104, Akshat Kailash Apartment
  Basant Marg, Bani Park, Rajasthan
  ☎ & Fax : +91 0141-2204910
  Mobile: 9829244313
  E-mail: siemens_jpr@dil.in
- **Jallandhar** - 144 004
  46, 2nd Floor, Saraswati Vihar
  Kapurthala Road, Punjab
  ☎ +91 0181 2259099
  Mobile: 9815921211
  E-mail: siemensjal@vsnl.net
- **Jamshedpur** - 831 005
  1511, Kirthar Apartment,
  Vijaya Heritage Uliyan, Kadma
  ☎ +91 657 2311352
  Mobile: 9835182772
  E-mail: bapi_indranil@rediffmail.com /
  Siemens_jsr@yahoo.com
- **Kanpur** - 208001
  Flat No.19-B, 4th Floor, Prabhu Vatika
  7/109, Swarup Nagar, U. P.
  ☎/Fax +91 0512-2548765
  Mobile: 9839102434
  E-mail: siemens_knp@satyam.net.in
- **Kolhapur** - 416001
  Plot No.35, Vasant Smruti, Shivaji Park
  ☎ +91 0231-2536626
  Mobile: 9822848415
  E-mail: siemenskpr@sancharnet.in
- **Lucknow** - 226001
  47, HIG ,1st Floor, Avas Vikas Colony
  Mail Avenue , U.P.
  ☎ +91 0522-2217421
  Mobile: 9415012500
  E-mail: siemens_lko@satyam.net.in
- **Ludhiana** - 141001
  Flat No.5 (GF), HIG Flats, Opp. Milk Plant
  Bhai Randhir Singh Nagar, Ferozpur Road Punjab
  ☎ +91 0161-2457199
  Mobile: 9417045273
  E-mail: siemens_ldh@satyam.net.in
- **Madurai** - 625003
  3/4, 1st Floor, Nehru Nagar 4th Street
  T.V.S Nagar
  ☎ +91 0452-2693705
  Mobile: 9843269370
  E-mail: srinivasan.veeraraghavan@siemens.com
- **Nagpur** - 440 015
  Sai Sadan, Plot No.1
  Near Mount Carmel School
  Ajani Square
  Mobile: 9850300524
  E-mail: siemensnagpur@sify.com
- **Nashik** -
  Mobile: 9822193204
  E-mail: siemens_nsk@sancharnet.in
- **Rourkela** - 769 004
  T-15 Civil Town,
  ☎ +91 0661-2401724
  Mobile: 9437041724
  E-mail: gangulys_sl@yahoo.co.in
- **Shaktinagar** - 231 222
  Room No. 7, Panchvati Guest House
  Kota Basti, Dist. Sonebhadra, U.P.
  ☎ +91 05446-233212, 232044
  Mobile: 9415233345
  E-mail: siemens_upeast@sify.com
- **Vapi** - 396191
  B-603, Parasmani Apt.
  Opp. Post Office
  Besides Hanuman Temple
  ☎ +91 260 2462328
  Mobile: 9825147957
  E-mail: siemens_vapi@yahoo.com
- **Vijayawada** - 520010
  G-2, Shreya Towers
  Moghalrajapuram
  Near Jammichettu Centre
  ☎ +91 0866-5529933
  Mobile: 9849001842
  E-mail: pramod.krishna@siemens.com
- **Visakhapatnam**
  Mobile: 9849715035
  E-mail: veerababu.tirumalasetty@siemens.com

Registered & Corporate Office:

130 Pandurang Budhkar Marg
Worli
Mumbai 400018
Tel +91 22 4931352-57
Fax +91 22 4987000-02

Marketing Office:

Standard Products Division
LV Controls & Distribution Products
Thane Belapur Road
Thane 400601
Tel +91 22 7600079
Fax +91 22 7600076

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