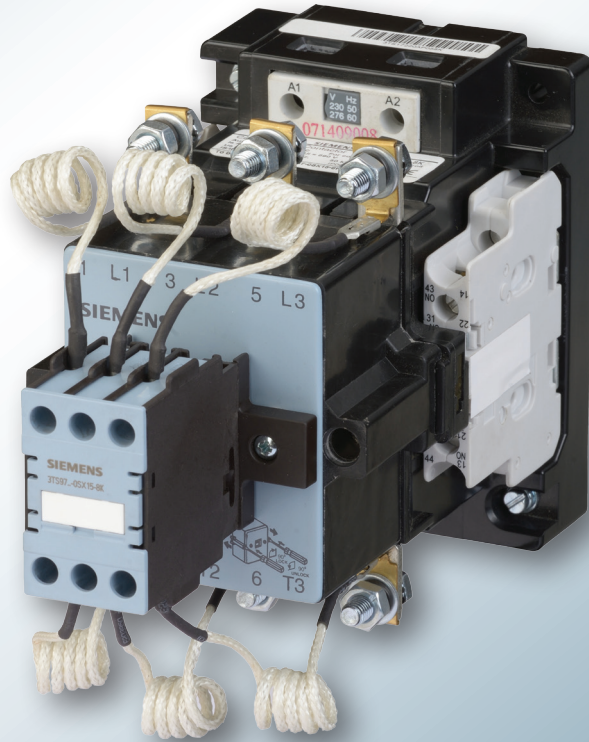
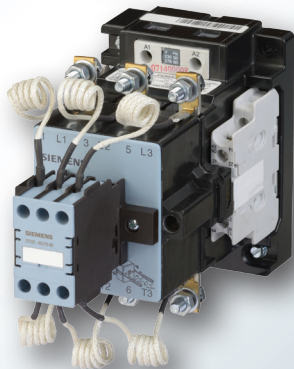
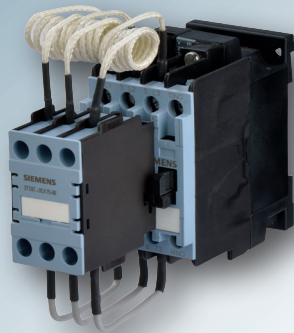


SIEMENS



3TS Capacitor duty contactors

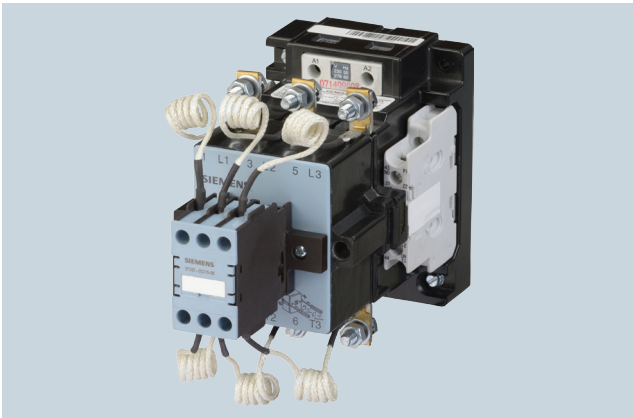
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Answers for industry.

Overview:

For more than 125 years, Siemens has been developing and manufacturing industrial control products. We offer a wide product range which caters to fulfill the demand of our esteemed customers with satisfactory performance level and improved reliability. The new range of capacitor duty contactor has been launched to provide a reliable and economical solution for capacitor switching applications.

Capacitor Duty Contactor



Range:

- 7kVAR - 50kVAR

Features:

- Delatching operating principle
- SIGUT Termination technique
- Finger touch proof terminals ⁵
- Compact Dimensions
- DIN / Screw mounting

Benefits:

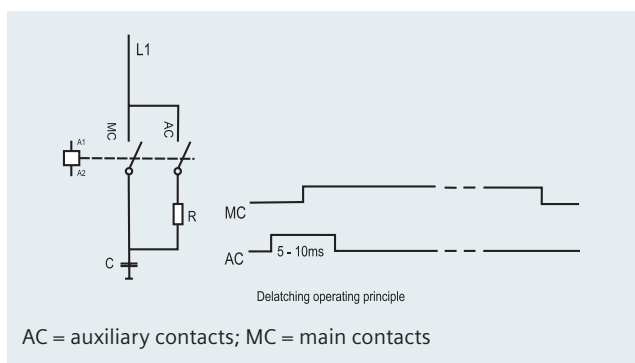
- Reliable switching of capacitor banks
- Ease of wiring (can obviate use of lugs)
- Operator Safety
- Space saving
- Flexible mounting

Standards:

- IEC 60947-4-1

Approbations:

- CE marking



\$ upto 25kVAR

Operating Principle:

In Low Voltage industrial installations, capacitors are mainly used for reactive power correction (raising the power factor). When these capacitors are energized, overcurrents of high amplitude and high frequencies (3 to 15 kHz) occur during the transient period (~1 ms).

The amplitude of these current peaks, also known as “inrush current peaks”, depends on the following factors:

- The network inductances.
- The transformer power and short-circuit voltage.
- Type of power factor correction: fixed or automatic.
- Harmonics present in the system.

The in-rush current of such high magnitudes is undesirable and it is likely to weld main contacts of any standard contactor. Therefore, contactor for capacitor bank switching must be designed to withstand :

- Permanent current that can reach 1.5 time the nominal current of capacitor bank.
- Short but high peak current on pole closing.

Hence, capacitor duty switching device requires careful selection. It is always recommended to use dedicated capacitor duty switching contactor for switching capacitor bank, which optimizes the switchgear cost & enhances the equipment life.

Siemens 3TS capacitor duty contactor works on mechanical delatching operating principle, which ensures reliable switching of capacitors as per AC-6b utilization category at optimum cost.

Delatching operating principle:





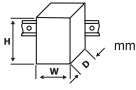


The front-mounted block mechanism of the 3TS capacitor duty contactors ensures:

- early making of the auxiliary contacts “AC” with respect to the main contacts “MC”
- automatic return to the open position of the auxiliary contacts after the main contacts are closed.

When the coil is energized, the early making auxiliary contacts connect the capacitor to the network via the set of 3 resistors. The damping resistors attenuate the first current peak and the second inrush current when the main contacts begin to make. Once the main contacts are in the closed position, the auxiliary contacts automatically break.

When the coil is de-energized, the main contacts break ensuring the breaking of the capacitive current. The contactor can then begin a new cycle.

Technical specifications:

									
Type		3TS11	3TS12	3TS13	3TS14	3TS15	3TS17		
Size		1	2	3	3	3	4		
Dimensions (H x D x W) including auxiliary switches and connecting cables		H x D x W	H x D x W	H x D x W	H x D x W	H x D x W	H x D x W	H x D x W	
• Screw-type terminals	mm	115 x 125 x 45	115 x 136 x 45	120 x 148 x 55	120 x 148 x 55	120 x 148 x 55	117x177x90		
General technical specifications									
Conformance to		IEC-60947-4-1							
Approvals		CE							
Degree of protection acc. to IEC 60529	IP	IP 20	IP 20	IP20 for Aux block IP00 contactor	IP20 for Aux block IP00 contactor	IP20 for Aux block IP00 contactor	IP 00		
Storage temperature	°C	-25 to +55							
Operating temperature	°C	-25 to +40							
Altitude of site (without technical restrictions)	m	2000							
Type of mounting		DIN / Screw						Screw	
Main Circuit									
Rated insulation voltage Ui	V	690							
Rated operational voltage Ue	V	415 / 440							
Rated operational Current Ie (Harmonic & Safety factor excluded)	A	9.7	17.4	22.3	27.8	34.8	69.6		
Impulse withstand voltage Uimp	kV	6							
Rated frequency	Hz	50							
Capacitor rating at rated power (utilization category AC-6b) 415/440 V, 50Hz	kVar	7	12.5	16	20	25	50		
Max. switching frequency	Cycles per hour	180					100		
Coil operating range		0.85 to 1.1Us							
Auxiliary contacts mounted		1 NO	-				2 NO + 2NC		
Auxiliary contacts mountable		1NO or 1NC					-		
Short-circuit protection device for contactors With Fuse - Operational class gG - Type 1 co-ordination (3NA7)	A	20	32	50	50	63	125		
Connecting characteristics									
Main conductors		 Screw terminals							
Terminal screw size		M3.5	M4				M6		
Screw head type		Slotted Cheese Head						Hex Head	
Tightening torque Recommended	N-m	0.8 to 1.4	1 to 1.5	2.5 to 3			4 to 6		
Conductor cross-section									
Solid	mm ²	1 x (1 to 2.5)	1 x (2.5 to 6)	1 x (1 to 16)					
Finely stranded with end sleeve	mm ²	1 x (0.75 to 2.5)	1 x (1.5 to 4)	1 x (1.5 to 16)					
Finely stranded	mm ²	-	-	1 x (1.5 to 16)					
Finely stranded with pin end connector	mm ²	1 x (0.75 to 2.5)	1 x (1.5 to 4)	1 x (1.5 to 16)					
Finely stranded with ring type lug	mm ²					-		1 x35, 2 x 16	
Busbar (max width)	mm					-		12	
Auxiliary conductors (built-in auxiliary terminals + coil terminals)		 Screw terminals							
Screw head type		Slotted Cheese Head							
Tightening torque Recommended	N-m	0.8 to 1.4							
Conductor cross-section									
Solid	mm ²	2 x (0.5 to 1, 1 to 2.5), 1 x 4							
Finely stranded with end sleeve	mm ²	2 x (0.75 to 2.5)							
Finely stranded with pin end connector	mm ²	2 x (0.75 to 2.5)							

Selection and ordering data:

Capacitor duty contactor - 3TS

For switching capacitor banks with AC coils

Capacitor kVAr 415V, 3ph, 50Hz	Built-in aux. contacts	Type ¹⁾	Std. pkg. (nos.)
7 kVAr	1 NO	3TS1110 -0A..5-8K †	1
12.5 kVAr	-	3TS1200-0A..5-8K †	1
16 kVAr	-	3TS1300-0A..5-8K †	1
20 kVAr	-	3TS1400-0A..5-8K †	1
25 kVAr	-	3TS1500-0A..5-8K †	1
50 kVAr	2 NO + 2 NC	3TS1722-0A..5-8K	1

† Facility to add one contact block of 1NO / 1NC

1) AC 50Hz coil code - Please enter coil codes from table below

	For 3TS contactors		
Code	F0	P0	R0
Coil voltage (V)	110	230	415

For wide band AC 50 Hz coils, please check with sales office.

Accessories for capacitor duty contactor - 3TS

Auxiliary contact blocks

For contractor	Description	Type	Std.pkg. (nos.)
3TS11 to 3TS15	1NO	3TX4 010-2A	10
	1NC	3TX4 001-2A	10

Spares for capacitor duty contactor - 3TS

Pre-charge resistor + Contact block kit

Contactor kVAr	Description	Type	Std. pkg. (nos.)
12.5 kVAr	Pre-charge resistor + early making contact block kit + main contacts kit	3TS9762-0SX15-8K	1
16 kVAr		3TS9763-0SX15-8K	1
20 kVAr		3TS9764-0SX15-8K	1
25 kVAr		3TS9765-0SX15-8K	1
50 kVAr		3TS9767-0SX15-8K	1

Note: Pre-charge resistor + early making contact block kit + main contacts should be replaced simultaneously

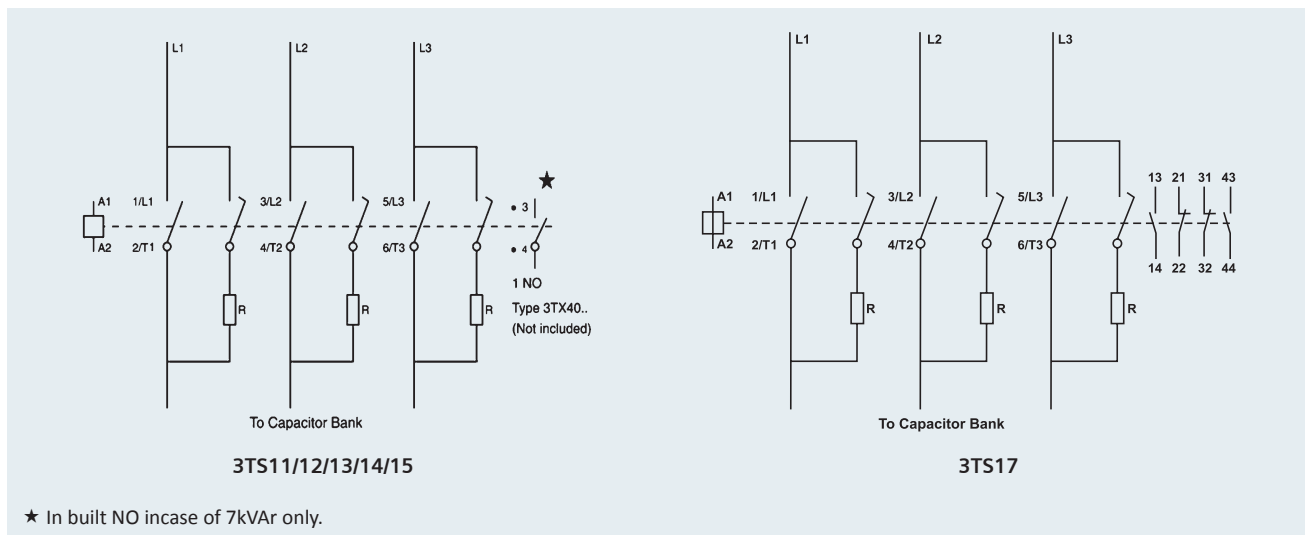
Spare coils

Contactor kVAr	Description	Type ¹⁾	Std. pkg. (nos.)
7 kVAr	AC 50Hz coil	3TY74030A..	1
12.5 kVAr			
16 kVAr		3TY74430A..	1
20 kVAr			
25 kVAr			
50kVAr			

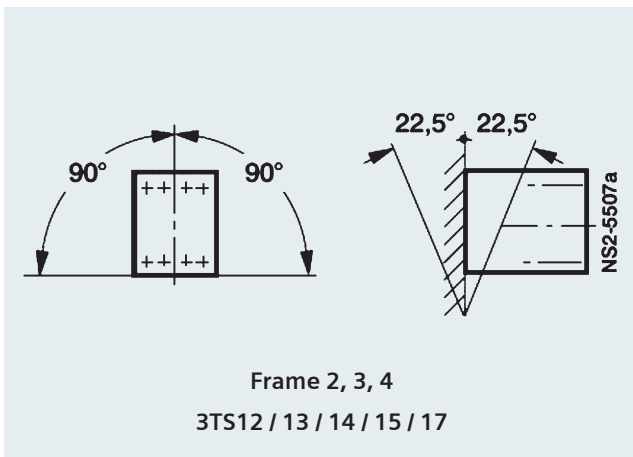
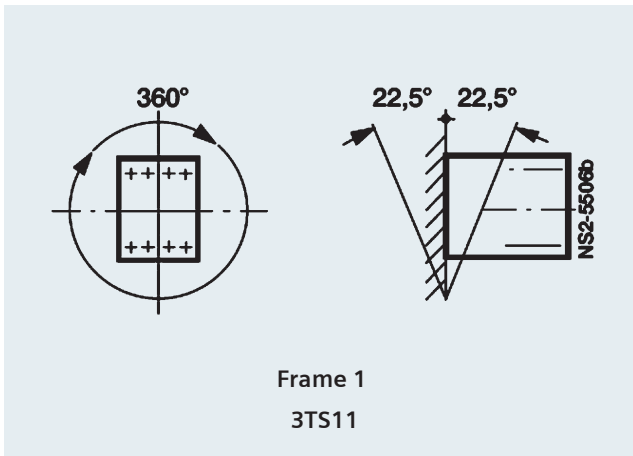
Spare auxiliary contact block

For contractor	Description	Type	Std.pkg. (nos.)
3TS17	Built-in, 1NO+1NC Left/ Right	3TY7 561-1AA00-8K	1

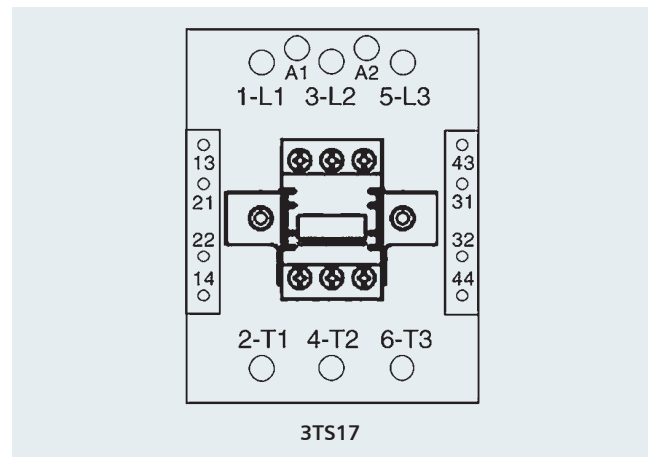
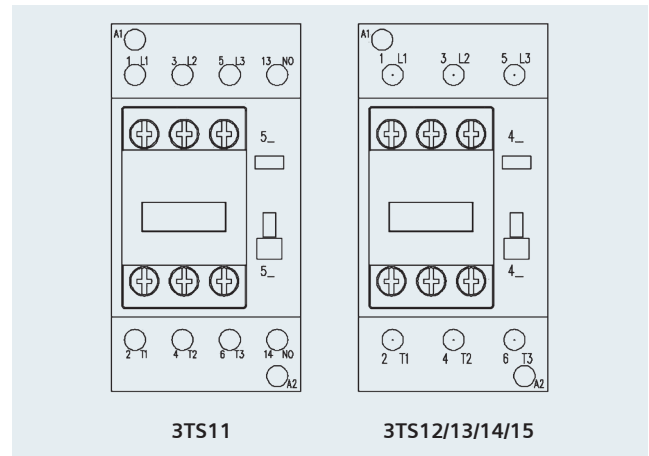
Circuit diagram:



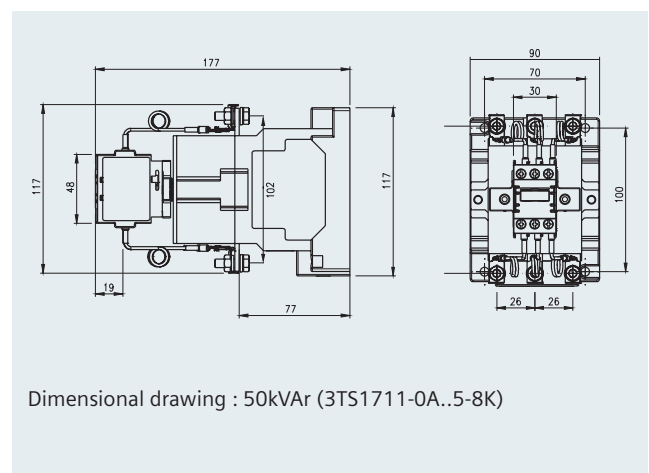
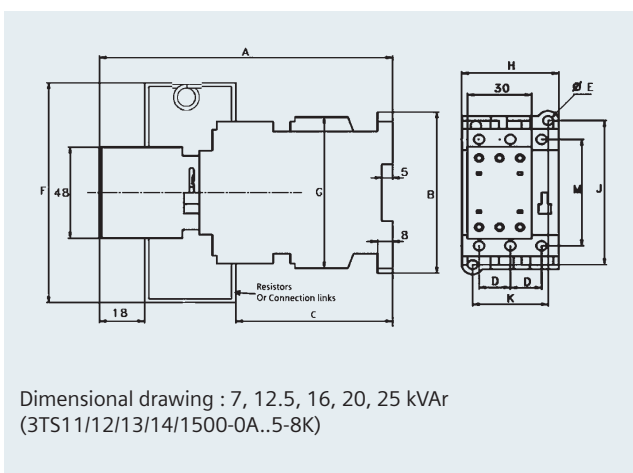
Mounting details:



Terminal drawing:



Dimensional drawing:



Type	A	B	C	D	F	G	H	J	K	øE	M	Term Screw
3TS11	125	74	60	10	115	78	45	60	35	4.8	48	M3.5
3TS12	136	85	70	14.5	115	85	45	75	35	4.8	51	M4
3TS13..15	148	85	63	18	120	103	55	75	45	5	62.5	M4

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Sales offices:

Ahmedabad

3rd Floor, Prerna Arbour
Girish Coldrinks Cross Roads, Navrangpura
Ahmedabad - 390 009
☎ : +91 79 30927600
Fax: +91 79 30927699

Baroda

Ground Floor, Urja Bhavan
Opp.Makarapura Railway Station, Maneja
Vadodara - 390 013
☎ : +91 265 3957701
Fax: +91 265 3039190

Bengaluru

1st Floor, Jyoti Mahal, No. 49, St. Marks Road
Bengaluru - 560 001
☎ : +91 80 33422000
Fax: +91 80 33424131

Bhubaneswar

Creative Plaza, 3rd Floor, Mouza Bomikhal
(Rasulgarh Square), PS Mancheswar
Bhubaneswar - 751 010, Odisha
☎ : +91 674 2581220
Fax: +91 674 2581330

Territory managers:

Aurangabad

Flat No. G1, Chanakyapuri, Phase 2
Darga Sutgirmi Road, Shanoorwadi
Aurangabad - 431001, Maharashtra
Mobile: +91 9049005024
E-mail: amey.pataskar@siemens.com

Belgaum

H.No.713, Narvekar Lane, Shahpur
Belgaum - 590003, Karnataka
☎ : +91 831 2495156
Mobile: +91 9740277991
E-mail: anand.gawade@siemens.com

Bhilai

H.No LIG-47, HUDCO Sector, Bhilai
Durg, Chattisgarh - 490 009
Mobile: +91 7869922211
E-mail: pravin.deshbhratar@siemens.com

Bhopal

Flat No-104, Sagar Home Phase-2
Sarvadharm Society, Sector A, Nayapura Road
Bhopal - 462042, Madhya Pradesh
Mobile: +91 9977228084
E-mail: prajwal.khapekar@siemens.com

Cochin

K.G.Oxford Business Centre
3A, Shreekanth Rd, Ravipuram
Cochin - 682016
☎ : +91 4028611122
Mobile: +91 9387384848
E-mail: sudheer.ts@siemens.com
Mobile: +91 9744511109
E-mail: anish.g@siemens.com

Dehradun

32, Dhronpuri, Main Lane, G.M.S. Road
Deharadun - 248001, Uttarakhand
☎ : +91 135 2528212
Mobile: +91 8650404404
E-mail: shashibhusan.prasad@siemens.com

Durg

Pancham Nivas, B-1, Zone-2, New Adarsh Nagar
Durg - 491001, Chhattisgarh
Mobile: +91 9425016197
E-mail: jitendra.potdar@siemens.com

Goa

Tower B/701-705, ICC Trade Tower
403A, Senapati Bapat Road
Pune - 411016
Mobile: +91 9496370375
E-mail: bipal.jacob@siemens.com

Guwahati

House No. 20, Ushanagar, Dispur Supermarket
Guwahati, Assam - 781006
☎ : +91 361-2230836
Fax: +91 361-2230836
Mobile: +91 9864110684
E-mail: bipalab.datta@siemens.com

Haridwar

6, Nand Puri, Near Arya Nagar Chowk
Jwalapur, Haridwar - 249407, Uttarkhand
☎ : +91 1334 251943
Mobile: +91 9897070133
E-mail: ankur.singh@siemens.com

Haridwar

47, Abhisek Nagar, Kankhal
Haridwar - 249408, Uttarakhand
Mobile: +91 9621083333
E-mail: kumar.pradeep@siemens.com

Chandigarh

SCO 188/191, 3rd Floor, Sector-17 C
Chandigarh - 160 017
☎ : +91 172 4690300
Fax: +91 172 4690399

Chennai

Sathak Centre, No.4, Mahatma Gandhi Road
Chennai - 600034
☎ : +91 44 30474000
Fax: +91 44 30474088

Coimbatore

7th Floor, Global Towers
1057, Avinash Road
Coimbatore - 641 018
☎ : +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

Hospet

Ramanand Residency, Flat No. 204, 1st Main
Nehru Co-op Colony, Hospet - 583203, Karnataka
Mobile: +91 9901400227
E-mail: roy.sanjib@siemens.com

Hubli

21, Sri Mallikarjuna Nilaya, 1st Floor
Somanagowdara Layout, Bengeri Extension
Hubli - 580023, Karnataka
☎ : +91 836 2282947
Mobile: +91 9880003724
E-mail: kr.purushottam@siemens.com

Indore

Flat No.102, Panchavati Apart.
40 Chandralok Colony, Khajrana Road
Indore - 452001, Madhya Pradesh
Mobile: +91 9926939993
E-mail: prashant.joshi@siemens.com

Indore

Flat No-206, A Block, Shubh Labh Heights
Near Malvi Nagar Chouraha
(Near Velocity Multiplex), MR-9, Ring Road
Indore - 452001, Madhya Pradesh
Mobile: +91 9713013050
E-mail: rohit.seth@siemens.com

Jodhpur

6, Park Street, Opp. Pink City Petrol Pump, M.I.Road
Jaipur - 302 006, Rajasthan
☎ : +91 141 5152108
Fax: +91 141 2370482

Jalandhar

House No.722, 1st Floor, Urban Estate
Phase I, Jalandar - 144022, Punjab
Mobile: +91 9876047929
E-mail: sunil.singla@siemens.com

Jamshedpur

Flat No. AC 17/D, 2nd Floor, Phase - 11
Adarshnagar, Sonari, Jamshedpur - 831011
Mobile: +91 9771498151
E-mail: sumit.sengupta@siemens.com

Jamshedpur

Flat No. B2/D, 9th Phase, Adarshnagar, Sonari
Jamshedpur - 831011, Jharkhand
Mobile: +91 9836311093
E-mail: sumanta.bhattacharya@siemens.com

Kanpur

Flat No. 403, Gulmohar Garden Phase II
Near Mariampur Hospital, Chain Factory
Shastri Nagar, Kanpur - 208005
Mobile: +91 8009900939
E-mail: shagun.gupta@siemens.com

Kolhapur

Flat No.101, Shrushti Mahabharat Apartment
Mahavir Garden To Mahavir College Road
Nagala Park, Kolhapur - 416003
☎ : +91 231 2663330
Mobile: +91 9881465421
E-mail: sachin.chavan@siemens.com

Kota

105, Manglayatan Apartments, Near Jain Mandir
Bhimganj Mandi, Kota - 324002
Mobile: +91 9828419111
E-mail: avinash.mathur@siemens.com

Ludhiana

H.No.92, Lajpat Nagar, Near Bus Stand
Ludhiana - 141002, Punjab
Mobile: +91 9815502480
E-mail: rohit.jagga@siemens.com

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

6, Park Street, Opp. Pink City Petrol Pump, M.I.Road
Jaipur - 302 006, Rajasthan
☎ : +91 141 5152108
Fax: +91 141 2370482

Kolkata

5th Floor, Infinium Digispace
CP - 15, Sector V, Salt Lake
Kolkata - 700091
☎ : +91 33 30171911
Fax: +91 33 30171328

Lucknow

28/45, Ashok Marg, Opp. Indira Bhawan
Lucknow - 226001
☎ : +91 522 4031022, 4031000
Fax: +91 522 4031019

Ludhiana

H.No. D-29, New Kitclu Nagar, Ludhiana
Mobile: +91 9878098612
E-mail: amitoj.singh@siemens.com

Ludhiana

R-125 Sarabha Nagar Extension
Phase-2, Pakhowal Road, Ludhiana, Punjab
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

Mangalore

No. 3, Shreyas Apartment Chandrika Extension
NS Bose Road, Bejai, Mangalore - 575004
Mobile: +91 9632835364
E-mail: joseph.arun@siemens.com

Meerut

H-334, Shastri Nagar, Meerut - 250001
Mobile: +91 9837049091
E-mail: pankaj.chopra@siemens.com

Mysore

#43, Ground Floor, 8th Cross, 3rd Main
1st Stage, "C" Block, J.P. Nagar, Mysore - 570008
Mobile: +91 9900855779
E-mail: niranjan.kv@siemens.com

Nashik

#43, Ground Floor, 8th Cross, 3rd Main
1st Stage, "C" Block, J.P. Nagar, Mysore - 570008
Mobile: +91 9900855779
E-mail: niranjan.kv@siemens.com

Nashik

Building No. 1, Flat No.15, Tirupati Town
Near Akashwani Tower, Gangapur Road
Nashik - 422013
Mobile: +91 9619620068
E-mail: jugal.shah@siemens.com

Patna

Flat No. 105, S.D. Apartment, Kavi Raman Path
Nageshwar Colony, Boring Road, Patna - 800001
Mobile: +91 9771414108
E-mail: vikash.prasad@siemens.com

Pondicherry

"Raghavendra ILLAM", Gnd Floor, No 21
3rd Cross Street, Anna Nagar, Pondicherry - 605005
Mobile: +91 9840143536
E-mail: lakshmanan.s@siemens.com

Raipur

103 Risabh Regency, Near Shri Medishine Hospital
New Rajendra Nagar Raipur (C G) - 492006
Mobile: +91 9425601849
E-mail: raghuraj.bisen@siemens.com

Rajkot

"Vrujraj", Chandanpark Society
Opp. Gyanganga Vidhyapith, Nr. Raiya Circle
Rajkot - 360005, Gujarat
Mobile: +91 9825021026
E-mail: hiren.raythatha@siemens.com

Rourkela

Plot No. LCR 618, 1st Phase Chhend
Rourkela - 769015
Mobile: +91 9438529778
E-mail: samir.chintak@siemens.com

Mumbai

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

Nagpur

5th 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

Rudrapur

Flat No. 63, Tower H8, Metropolis City
Nainital Road, Rudrapur - 263153, Uttarakhand
Mobile: +91 9720999887
E-mail: singh.vineet@siemens.com

Salem

3/25, Santosh Nagar, PACB Backside
Chinnathirupathi, Salem - 8
☎ : +91 427 2401981
Mobile: +91 9894617772
E-mail: rubengerald.s@siemens.com

Surat

Flat No. 202, D-1, Suryam Residence
Cause Way Road, Opp. Hari Darshan
Shinganpor-Dabholi Road, Katargam
Surat - 395004, Gujarat
Mobile: +91 9925001779
E-mail: chandrakant.keshrani@siemens.com

Surat

3/A, Navrachana Society
Opp.D.K.Park, Bhatar Road, Surat - 395001
Mobile: +91 9879510191
E-mail: mitul.kapadia@siemens.com

Trichy

1/1209-B, 6th Cross Street, West Extension
Vasan Nagar, Rettai Vaikkal, Vayalur Road
Trichy - 602102
Mobile: +91 9176609375
E-mail: muthu.kumar@siemens.com

Trivandrum

7th Floor, Global Towers
1057, Avinash Road, Coimbatore - 641 018
Mobile: +91 9387384848
E-mail: sudheer.ts@siemens.com

Udaipur

26-B, Amrudson Ki Badi, Near Ambamata Mandir
Udaipur - 313 001 (Rajasthan)
☎ : +91 294 2430345
Mobile: +91 9829039120
E-mail: ajit.parashar@siemens.com

Vapi

Flat No.401, A Wing, Madhav Gems, Nutannagar
Valsad Road, Vapi (East), Valsad Dist, Vapi - 396191
Mobile: +91 9687668690
E-mail: pandey.abhishek@siemens.com

Vapi

Shubham Tower, No.3, 'C' Wing
Flat No.1008, Chala, Vapi Daman Road, Vapi
Mobile: +91 9825147957
E-mail: s.anand@siemens.com

Varanasi

D 63/12B - 13-14-15
Dayal Enclave Mahmoorganj
Varanasi - 221010
Mobile: +91 9794237349
E-mail: tarun.srivastava@siemens.com

Vijayawada

D. 20-6-164C, Street 4, Ramlingshwaraopeta
Landmark: Near to Lotus Landmark
Vijayawada - 520003
Mobile: +91 9642351144
E-mail: venkateswar.d@siemens.com

Siemens Ltd.
Industry Sector
Control Products
R&D Technology Centre
Kalwa Works, Thane Belapur Road
Thane - 400 601
Fax: +91 22 33265627
E-mail: lvsg-rmktg.india@siemens.com

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Customer Care Toll free no.
1800220987 / 18002090987
Email: ics.india@siemens.com

Product upgradation is a continuous process. Hence, data in this pricelist is subject to change without prior notice. For the latest information, please get in touch with our Sales Offices.