



Products and Solutions for OEMs

## ABOUT US



Switchgear Factory, Navi Mumbai



Switchgear Factory, Ahmednagar



Switchgear Factory, Vadodara

Larsen & Toubro is a technology-driven company that infuses engineering with imagination. The Company offers a wide range of advanced solutions in the field of Engineering, Construction, Electrical & Automation, Machinery and Information Technology.

L&T Switchgear, a part of the Electrical & Automation business, is India's largest manufacturer of low voltage switchgear, with the scale, sophistication and range to meet global benchmarks. With over seven decades of experience in this field, the Company today enjoys a leadership position in the Indian market with a growing international presence.

It offers a complete range of products including powergear, controlgear, industrial automation, building electricals & automation, power quality solutions, energy meters, and protective relays. These products conform to Indian and International Standards.



# Products

Motor Protection  
Circuit Breaker  
(MPCB)

Miniature  
Circuit  
Breaker  
(MCB)

Moulded Case  
Circuit Breaker  
(MCCB)

Timing Devices &  
Supply Monitors

Power  
Contactors  
& Relays

Soft Starter

Control  
Contactors

Industrial  
Automation  
Products

PLC

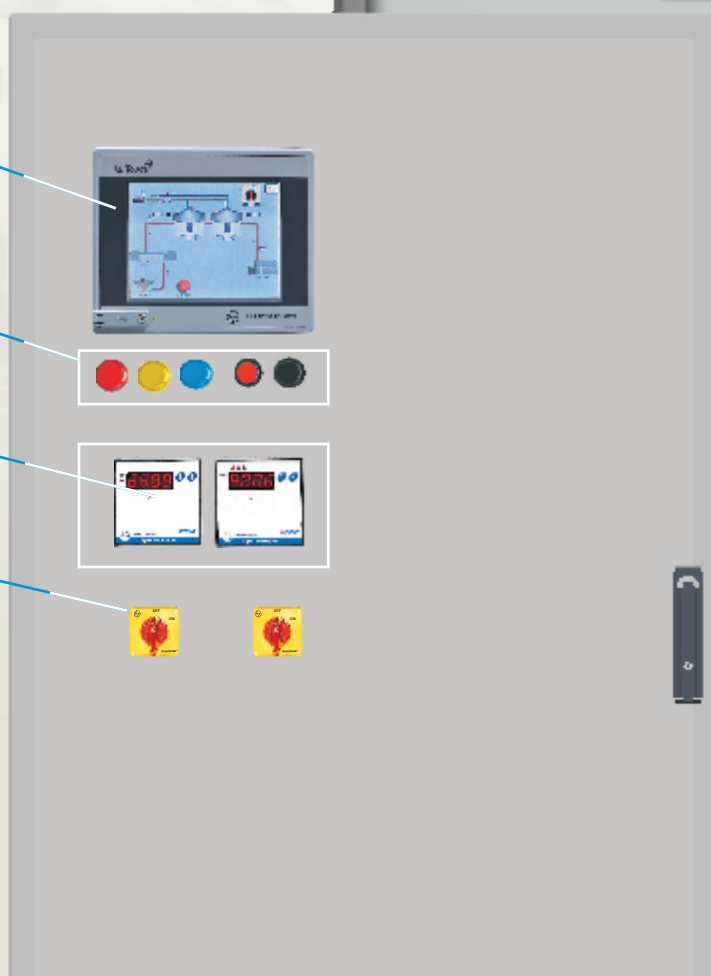
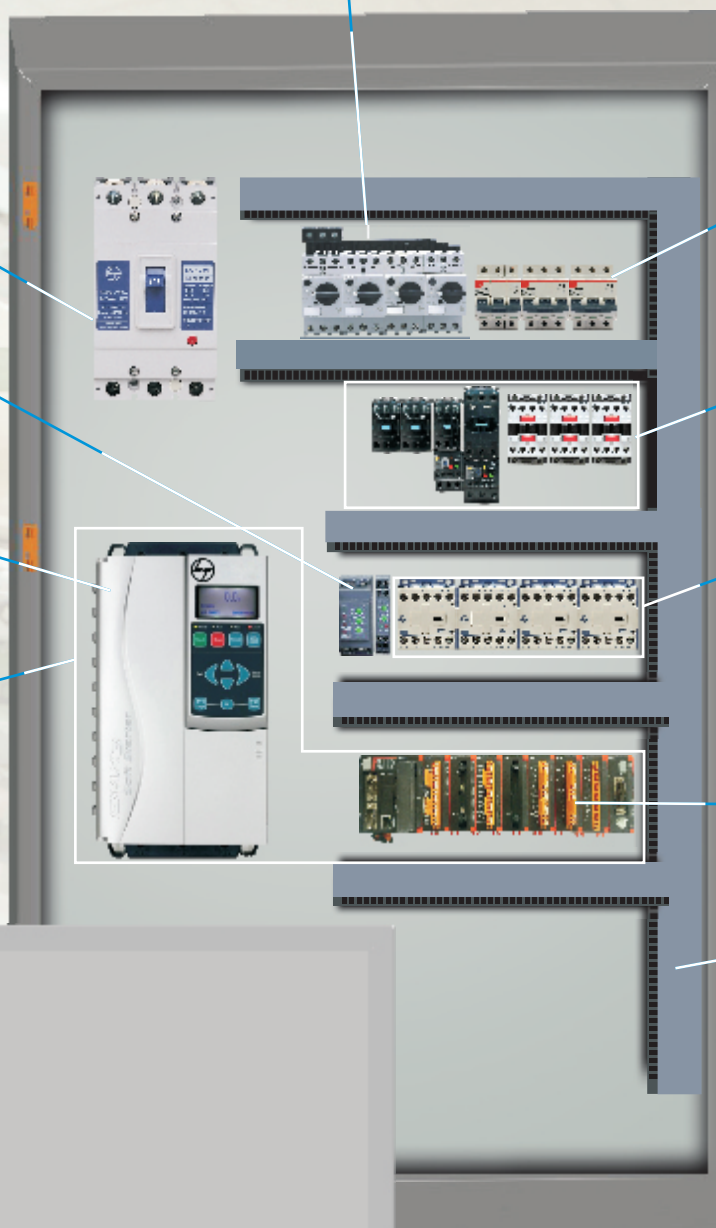
Cable Duct

HMI

LED  
Indicators  
& Push  
Buttons

Metering  
Devices

Rotary  
Switches



# Control Solution

## MO Contactors- Complete Solution for OEMs



- Compact - lesser panel space requirement
- DIN rail mounting facility for entire range - enabling faster installation
- In-built surge suppressor for protection from voltage surges
- Common and click fit accessories like, add on block, mechanical interlock kit, for entire range - less inventory & faster installation
- Low VA consumption, lower control transformer size
- Direct mounting thermal overload relay
- Environment friendly - RoHS compliant, future ready
- AC Coil voltages:- 24V, 42V, 48V, 110V, 220V, 240V, 360V, 380V 415V, 440V, 525V

\* standard coil voltages 24V, 110V, 220V, 240V, 415V, 440V AC

### Compact

9-18A with  
1NO+1NC



45mm

25-45A



45mm

50-70A



55mm

80-110A



70mm

Inbuilt surge  
suppressor to  
prevent voltage  
surges in control  
supply

### Common & Click Fit Type Accessories



### Mechanical Latch

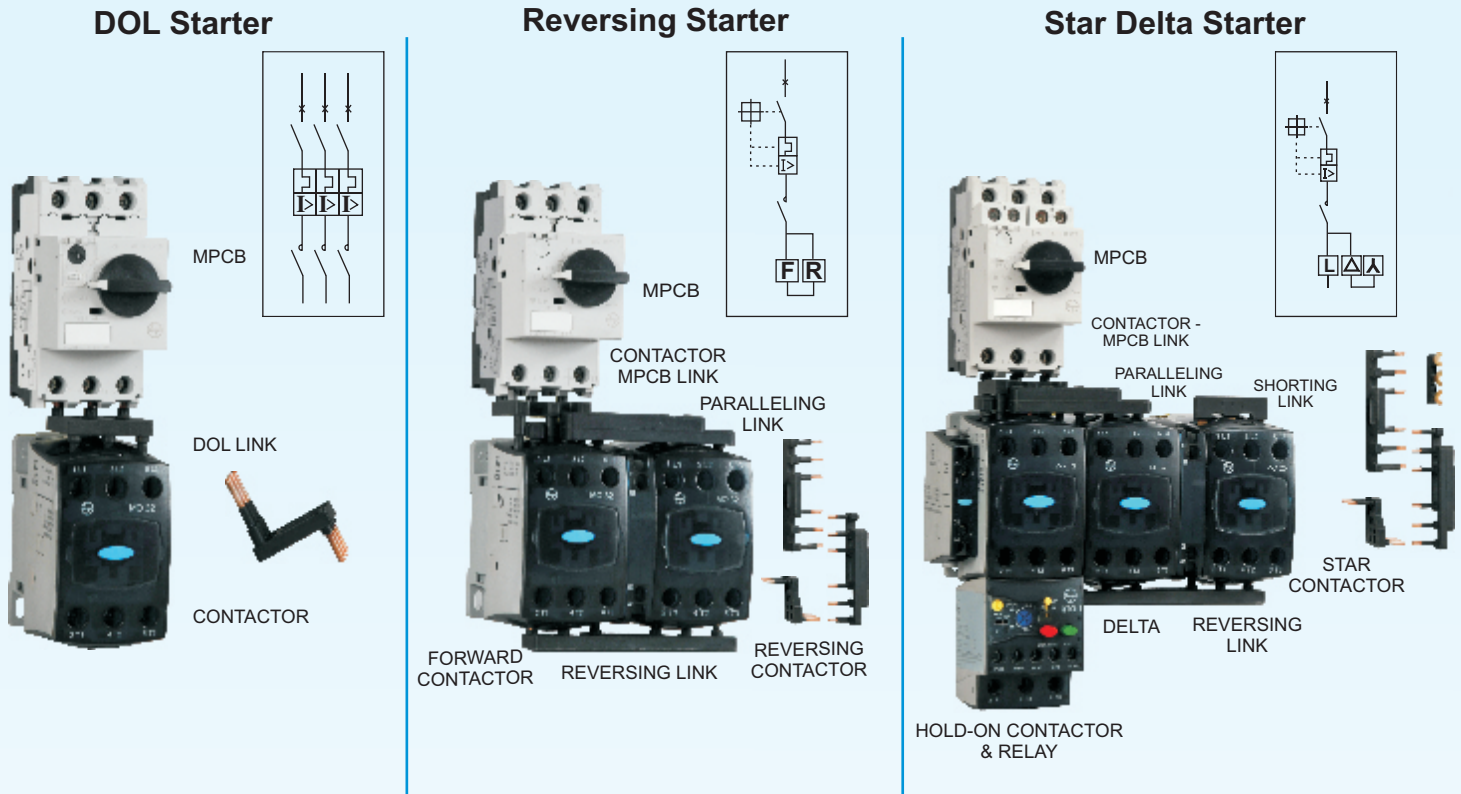
Keeps contactor in closed condition  
even after removal of coil supply



- Ideal for logical operations
- Preferred in places of voltage fluctuation
- Saves energy as coil supply can be removed once contactor is picked up



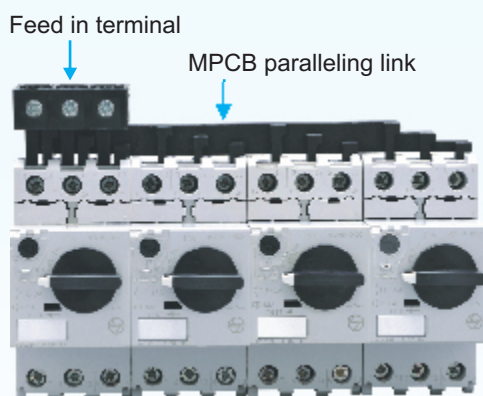
## Smart Links for easy and quick installation of motor feeder



## MPCB (Motor Protection Circuit Breaker)

Compact motor feeder

### Smart link for MPCB paralleling



- Range upto 63A
- Two ranges available -
  - Overload and short circuit protection
  - Only short circuit protection
- DIN rail mounting facility for entire range
- Comprehensive range of accessories like aux. contact block, trip alarm contacts, under-voltage release, shunt trip, external operating handle etc are available
- Padlock without external handle
- Positive isolations for operator safety



MPCB

Circuit  
Breaker

Thermal  
Overload  
Relay



Optimum solution  
for your  
applications

## MI, 3 Pole Contactor 6-150A

- DIN rail mounting facility upto 80A
- Coil on top design for 95A and above
- All accessories are available like aux add on block, surge suppressor and MIL kit
- Spares available for entire range
- Complementing MN thermal overload relay
- AC Coil voltages:- 110V, 220V, 240V, 415V,



Power contactor  
with DC coil

## MDX, 3 Pole DC Contactor

- Range 9-110A
- DIN rail mounting facility for entire range
- In-built surge suppressor upto 38A
- Compact design
- Low VA consumption
- Ideal for DC control applications such as
  - Battery charging
  - UPS installations
  - Telecom
  - PLC equipped machineries
- DC coil voltages:- 24V, 48V, 110V and 220V



Compact solution  
for motor feeder

## MX Mini Power Contactor

- Available in 6, 9 & 12A, AC-3 ratings
- Compact power contactor
- Available in AC and DC coil voltage
- In-built surge suppressor with DC contactor
- Direct mounting thermal overload relay
- AC coil voltages:- 24V, 110V, 120V, 220V, 240V, 380V 415V
- DC coil voltages:- 24V, 30, 48V, 110V, 125V, 220V



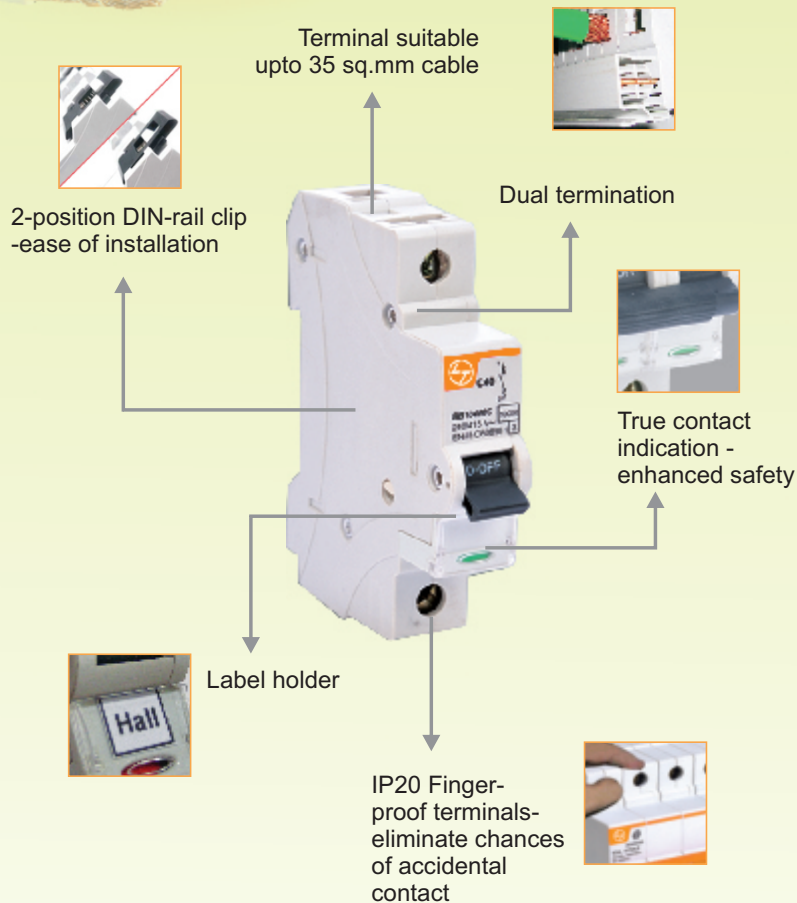
Compact & reliable  
control solution

## MX Mini Control Contactor

- Compact control contactor
- Available in AC and DC coil voltage
- 4 pole control design
- Aux contacts extendable upto 8 with top add on block
- In-built surge suppressor with DC contactor
- Ideal for applications with complex control logic
- AC coil voltages:- 24V, 110V, 120V, 220V, 240V, 380V 415V
- DC coil voltages:- 24V, 30, 48V, 110V, 125V, 220V







## MCB

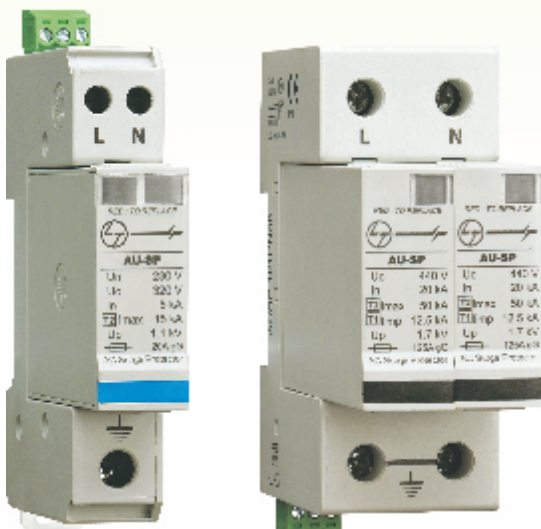
### For AC application

- Range 0.5A to 63A with breaking capacity of 10kA
- Range - 80A, 100A & 125A at 15kA
- Tripping curves - B, C & D in SP, DP, TP & FP
- Protection degree - IP20
- Availability of wide range of accessories

### For DC application

- Available in current ratings of 6A to 63A
- Rated voltage : 130V DC (for SP), 250V DC (for DP)
- Breaking capacity of 6kA, 10kA
- Protection degree - IP20
- Availability of wide range of accessories

## Surge Protection Device (SPD)



- Available in Type 2 and Type 1+2
- Type 2 : Protection against indirect lightning and switching surges
  - Maximum discharge current - I<sub>max</sub> 40kA and 15kA
  - Protection level U<sub>p</sub> - 1.1kV
- Type 1+2 : Protection against direct and indirect lightning surges
  - Nominal discharge current - I<sub>n</sub> 20kA
  - Maximum discharge current - I<sub>max</sub> 50kA
  - Protection level U<sub>p</sub> - 1.7kV





## Isolator

- Suitable for AC22-A utilization category
- Available in DP, TP and FP versions in 40A, 63A, 80A and 100A ratings
- Protection degree- IP20
- CE and KEMA certified



## RCD

Available in Type AC & Type Adi

- **RCCB** Available in 25A to 100A ratings with 30mA, 100mA & 300mA sensitivity in DP and FP
- **RCBO**  
Wide range of current ratings - 6A to 63A with 10mA to 300mA sensitivity in DP and FP

\*Adi (Added immunity)-For installations with presence of pulsating DC along with transients and harmonics

## Moulded Case Circuit Breaker (MCCB)

**No Load Line Bias:**  
Either side of MCCB terminals can be used as load or line

**Wide Range of Accessories:**  
Auxiliary contact  
trip alarm contact  
shunt release  
UV release

**Positive Isolation:**  
Indicates the true position of the contacts - ensures operator safety

**Current Limiting:**  
Specially designed arc suction effect & speedo quench contact system ensures very low let through energy

**Compact Size:**  
Common depth throughout the range, suitable for DIN rail mounting

**Finger Proof Terminals:**  
Provides human safety

- Range: 16A to 1250A
- No. of poles: 1P, 2P, 3P and 4P
- Breaking capacities:  
10kA/18kA/25kA/36kA/50kA/70kA/100kA
- Microprocessor and thermal magnetic protection
- MCCBs for motor back up protection
- MCCBs for distribution and SD versions
- Suitable for DC application
- Manual, rotary or motorized versions
- Wide range of common internal and external accessories

## Metering Devices



- 1 Ph & 3 Ph voltmeter, 1 Ph & 3 Ph ammeter, frequency meter, VAF+PF meter
- Wide operating range of auxiliary supply
- Field programmable CT/PT ratio with password protection
- Auto scaling of kilo and mega
- Displays average and phase quantities\*
- Auto and manual scrolling \*
- Phase indication of displayed parameter through LED\*
- Ammeter with secondary currents of 1A and 5A.

\* Applicable to 3 phase meters.

## Timing Devices & Supply Monitors



- Accurate switching and reliable operation
- Solution for wide variety of applications
  - ON delay timer
  - True OFF delay timer
  - Star delta timer
  - Multifunction timer
  - One shot timer
  - Asymmetrical ON/OFF & OFF/ON timer

### Supply Monitors

- Reliable detection of phase parameters such as phase loss, phase sequence, phase unbalance, neutral loss protection and wide range of selectable under voltage and over voltages protection
- Earth leakage relay monitors, detects and protects power systems from earth leakage faults with wide selectable range of 30mA to 30A



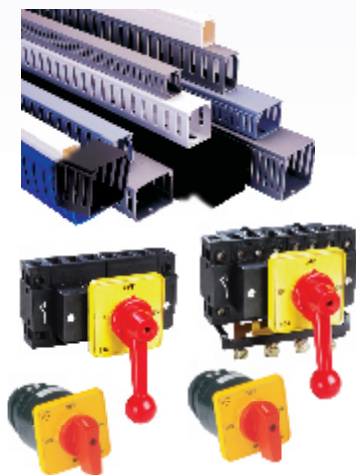
16 mm compact LED also available,  
Ideal for OEM panel



## LED Indicators and Push Buttons

- Actuators and contact blocks with compact design and snap fit arrangement
- Actuators as ready to use solution for OEMs that provides IP65 protection with in-built NO+NC contacts
- Illuminated Push Button actuators with snap fit design for ease of assembly and low power consumption
- LED indicators with 1 lakh burning hours, with surge & low voltage glow protection
- Push Button Stations- robust, easy to grip & assemble
- 8 way Push Button pendant available with hanging provision in single speed mode for crane applications

Switches upto 12 ways & 12 poles  
available for various SPM applications



## Rotary Switches & Cable Ducts

- Isolator switches (ON-OFF switches), Changeover switches (Local Remote , Auto Manual Switches), multistep switches available from a range of 6A-200A
- Ammeter selector switches & voltmeter selector switches
- Load break switches with padlock in AC23 utilization category
- Zero halogen & fire retardant low smoke cable ducts with snap fit and non-slip design.



## AC Drive

- Range: 0.75kW to 90kW
- V/F, sensorless vector control, slip compensation
- Input voltage range 380 VAC to 480 VAC ( -15% to + 10%)
- Built-in brake control
- Built-in PLC functionality
- Built-in PID
- Conformal coating complying to IEC 60721-3-3 class 3C2
- Built-in communication RS485 modbus RTU
- Built-in braking chopper till 30kW
- Ambient temperature 50°C
- Approvals: CE, UL RoHS



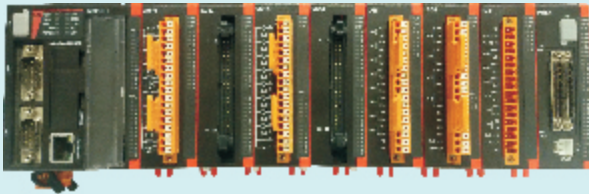
## Soft Starter

- Range : 23A to 1600A
- Built-in bypass contactor
- XLR-8 adaptive acceleration & deceleration control for pumps
- Large LCD keypad
- Power through operation allows to run soft starter even with one SCR shorted
- Conformal coated PCB
- Electronic motor overload protection
- 99 event logs with time stamping, last 8 trip logs
- Ambient temperature 50°C
- Communication options available
- Comprehensive motor protection
- Fully programmable overload trip
- Built-in RTD & thermistor inputs
- Auto detection of inline or inside delta power connection approval: CE



## PLC

2560 I/O points  
on small PLC



- Expandable I/O module like remote I/O
- Support 4 x comm. port:
  - EtherNet , USB, 2 x RS232/485
  - Built-In etherNet 10/100 Mbps
  - Built-In USB port
  - Built-in 2 channels high speed serial port
- Web monitoring
- Supports various communication protocols
  - Ethernet based protocols: EtherNet/IP, Modbus/TCP, HTTP (web) server
  - Serial protocol: Modbus/RTU, ASCII
- Large memory:
  - 987KByte program memory
  - 128KByte data memory
- Supports 4G SD memory card
  - Backup to SD card (data log, program), recipe
- Built-in PID, HSC, PTO
- Data log, recipe
- 3 Step powerful password
  - LXGPC – Programming software
    - \* Online editing
    - \* Support multi-languages
    - \* Support win XP/vista/7(32/64bit)

High image quality



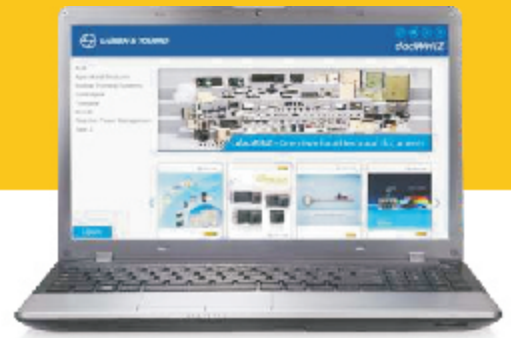
## HMI

- Available from 4" to 15"
- High performance processor
  - 32bit RISC (ARM) processor
  - High speed(400MHz), reliable
- Mass memory
  - 26MB screen memory, 256KB back up memory
- High-definition TFT color LCD
  - 65,536 color, 4.3" wide, 480x272
- Various built-in interface
  - USB host/device, serial, ethernet, CF card, SD card

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## Select the switchgear your customer needs with **ProductWhiz**

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**Save effort:** Share the selection via SMS or e-mail  
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Scan this through your mobile to download ProductWhiz now!



# Get the Switchgear Training Edge!

Aimed at maximizing productivity, conserving energy, minimizing costs and enhancing safety, our Electrical & Automation training programmes have benefitted over 1.35 Lakh professionals in the last 28 years. These training programmes are highly beneficial as they provide right exposure and impart knowledge on selection, installation, maintenance and testing of Electrical & Automation Products.

## So gain the advantage and go the extra mile with:

- 22 courses on contemporary topics
- Courses applicable to all switchgear brands
- Training Centers in Pune, Lucknow, Coonoor, Vadodara, Delhi & Kolkata
- Blend of theory and practical experience

## The typical training programmes cover:

- Low Voltage & Medium Voltage Switchgear
- Switchboard Electrical Design
- AC Drives & Building Management Solutions
- Protective Relays & Earthing
- Power Quality Solutions

Please contact any of the training centres for participation and detailed training programme schedule.



### Pune

Larsen & Toubro Limited  
Switchgear Training Centre,  
T-156/157, MIDC  
Bhosari,  
Pune - 411 026  
Tel: 020 2712 0037 / 2712 0653  
Fax: 020 2712 2933  
E-mail: stc-pune@Lntebg.com



### Lucknow

Larsen & Toubro Limited  
Switchgear Training Centre,  
C - 6 & 7, UPSIDC  
P. O. Sarojinagar,  
Lucknow - 226 008  
Tel: 0522 247 6015 / 97944 54455  
Fax: 0522 247 6015  
E-mail: stc-lucknow@Lntebg.com



### Coonoor

Larsen & Toubro Limited  
Switchgear Training Centre,  
Ooty-Coonoor Main Road  
Yellanahalli P.O.,  
The Nilgiris - 643 243  
Tel. : 0423 251 7107  
Fax : 0423 251 7158  
E-mail: stc-coonoor@Lntebg.com



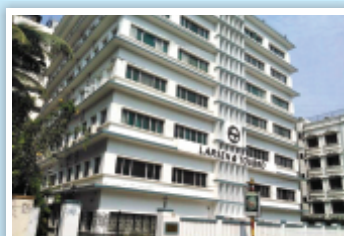
### Vadodara

Larsen & Toubro Limited  
Switchgear Training Centre  
Behind L&T Knowledge City,  
Near Village Ankhol,  
Vadodara - 390019  
Tel: 0265 2457805  
E-mail: stc-vadodara@Lntebg.com



### Delhi

Larsen & Toubro Ltd  
Switchgear Training Centre  
32, Shivaji Marg,  
Near Motinagar Metro Station,  
New Delhi - 110015  
Tel: 011 41419515 / 41419695 / 41419500  
Fax: 011 41419600  
E-mail: stc-delhi@Lntebg.com



### Kolkata

Larsen & Toubro Limited  
Switchgear Training Centre  
4th Floor, 3B, Shakespeare Sarani,  
Kolkata - 700071  
Tel: 033 42005975 / 42005978  
E-mail: stc-kolkata@Lntebg.com



## Electrical Standard Products (ESP) Offices:

### HEAD OFFICE

L&T Business Park,  
Tower 'B' / 3rd Floor  
Saki Vihar Road, Powai  
**Mumbai 400 072**  
Tel: 022-67053229  
Fax: 022-67051112  
e-mail: cic@LNTEBG.com

### BRANCH OFFICES

501, Sakar Complex I  
Opp. Gandhigram Rly. Station  
Ashram Road  
**Ahmedabad 380 009**  
Tel: 079-66304006-11  
Fax: 079-66304025  
e-mail: esp-ahm@LNTEBG.com

38, Cubbon Road, P. O. Box 5098  
**Bengaluru 560 001**  
Tel: 080-25020100 / 25020324  
Fax: 080-25580525  
e-mail: esp-blr@LNTEBG.com

131/1, Zone II  
Maharana Pratap Nagar  
**Bhopal 462 011**  
Tel: 0755-3080511 / 05 / 08 / 13 / 17 / 19  
Fax: 0755-3080502  
e-mail: esp-bho@LNTEBG.com

Plot No. 559, Annapurna Complex  
Lewis Road  
**Bhubaneswar 751 014**  
Tel: 0674-6451342 / 2436690 / 2436696  
Fax: 0674-2537309  
e-mail: esp-bsr@LNTEBG.com

Aspire Towers, 4th Floor  
Plot No. 55, Phase-I  
Industrial & Business Park  
**Chandigarh-160 002**  
Tel: 0172-4646840 / 41 / 42 / 46 / 53  
Fax: 0172-4646802  
Email: esp-chd@Lntebg.com

L&T Construction Campus  
TC-1 Building, II Floor  
Mount-Poonamallee Road  
Manapakkam  
**Chennai 600 089**  
Tel: 044-2270 6800  
Fax: 044-22706940  
e-mail: esp-maa1@LNTEBG.com

67, Appuswamy Road  
Post Bag 7156  
Opp. Nirmala College  
**Coimbatore 641 045**  
Tel: 0422-2588120 / 1 / 5  
Fax: 0422-2588148  
e-mail: esp-cbe@LNTEBG.com

Khairasol, Degaul Avenue  
**Durgapur 713 212**  
Tel: 0343-2540448 / 2540449 / 2540443  
Fax: 0343-2540442  
e-mail: esp-dgp@LNTEBG.com

5, Milanpur Road, Bamuni Maidan  
**Guwahati 781 021**  
Tel: +91 8876554410 / 8876554417  
Fax: 361-2551308  
e-mail: esp-ghy@LNTEBG.com

II Floor, Vasantha Chambers  
5-10-173, Fateh Maidan Road  
**Hyderabad 500 004**  
Tel: 040-67015052  
Fax: 040-23296468  
e-mail: esp-hyd@LNTEBG.com

Monarch Building, 1st Floor  
D-236 & 237, Amrapali Marg  
Vaishali Nagar  
**Jaipur 302 021**  
Tel: 0141-4385914 to 18  
Fax: 0141-4385925  
e-mail: esp-jai@LNTEBG.com

Akashdeep Plaza, 2nd Floor  
P. O. Golmuri  
**Jamshedpur 831 003**  
Jharkhand  
Tel: 0657-2312205 / 38  
Fax: 0657-2341250  
e-mail: esp-jam@LNTEBG.com

Skybright Bldg; M. G. Road  
Ravipuram Junction, Ernakulam  
**Kochi 682 016**  
Tel: 0484-4409420 / 4 / 5 / 7  
Fax: 0484-4409426  
e-mail: esp-cok@LNTEBG.com

3-B, Shakespeare Sarani  
**Kolkata 700 071**  
Tel: 033-42005982  
Fax: 033-22821025 / 7587  
e-mail: esp-ccu@LNTEBG.com

A28, Indira Nagar, Faizabad Road  
**Lucknow 226 016**  
Tel: 0522-4929905 / 04  
Fax: 0522-2311671  
e-mail: esp-Lko@LNTEBG.com

No: 73, Karpaga Nagar, 8th Street  
K. Pudur  
**Madurai 625 007**  
Tel: 0452-2567405 / 2561068 / 2561657  
Fax: 0452-2567552  
e-mail: esp-mdu@LNTEBG.com

L&T Business Park,  
Tower 'B' / 5th Floor  
Saki Vihar Road, Powai  
**Mumbai 400 072**  
Tel: 022-67052874 / 2737 / 1156  
Fax: 022-67051112  
e-mail: esp-bom@LNTEBG.com

12, Shivaji Nagar  
North Ambajhari Road  
**Nagpur 440 010**  
Tel: 0712-2260012 / 6606421  
Fax: 2260030 / 6606434  
e-mail: esp-nag@LNTEBG.com

32, Shivaji Marg  
P. O. Box 6223  
**New Delhi 110 015**  
Tel: 011-41419514 / 5 / 6  
Fax: 011-41419600  
e-mail: esp-del@LNTEBG.com

L&T House  
P. O. Box 119  
191/1, Dhole Patil Road  
**Pune 411 001**  
Tel: 020-66033395 / 66033279  
Fax: 020-26164048 / 26164910  
e-mail: esp-pnq@LNTEBG.com

Crystal Tower,  
4th Floor, G. E. Road  
Telibandha  
**Raipur - 492 006**  
Tel: 0771-4283214  
e-mail: esp-raipur@LNTEBG.com

3rd Floor  
Vishwakarma Chambers  
Majura Gate, Ring Road  
**Surat 395 002**  
Tel: 0261-2473726  
Fax: 0261-2477078  
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Radhadaya Complex  
Old Padra Road  
Near Charotar Society  
**Vadodara 390 007**  
Tel: 0265-6613610 / 1 / 2  
Fax: 0265-2336184  
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Door No. 49-38-14/3/2, 1st floor,  
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Product improvement is a continuous process. For the latest information and special applications, please contact any of our offices listed here.  
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**Larsen & Toubro Limited, Electrical Standard Products**  
Powai Campus, Mumbai 400 072

### Customer Interaction Center (CIC)

BSNL / MTNL (toll free) : 1800 233 5858 Reliance (toll free) : 1800 200 5858  
Tel : 022 6774 5858, Fax : 022 6774 5859  
E-mail : cic@Lntebg.com / Website www.Lntebg.com

**Registered Office:** L&T House, N. M. Marg, Ballard Estate, Mumbai 400 001, INDIA **CIN:** L99999MH1946PLC004768