



L&T Switchgear* IS NOW
Business



Electrical & Automation

Px3000

Solar Drive Controller



**HARNESS THE SOLAR POWER
TO FUEL YOUR OPERATION WITH
CLEAN ENERGY**



*Under license from Larsen & Toubro Limited. | #Trademark of Schneider Electric Denmark A/S.

Px3000 Solar Drive Controller



The continuously rising demand for energy, along with its limited availability and increasing cost, is making a clarion call to end-users to enhance their energy efficiency. AC Drive systems play a vital role in not only reducing energy consumption but also minimizing wear and tear on mechanical equipment.

With over three decades of experience, we have garnered extensive expertise across diverse industries and applications. This wealth of knowledge empowers us to deliver unparalleled Drive solutions tailored to your specific needs.

The use of renewable energy for a sustainable life is the need of the hour. Solar energy is something that nature provides for free, and it is the ideal solution for powering water pumps and farmlands. Additionally, where grid connectivity is either absent or irregular, solar energy is the perfect alternative.

Px3000 from Lauritz Knudsen Electrical & Automation is a Make-in-India solar drive controller and an innovative solution that harnesses solar energy for pumping applications. The Px3000 Solar Drive Controller efficiently utilizes solar energy to operate the pump/motor while providing complete protection to it.

Px3000 is a true power-based MPPT solar drive controller that is suitable for 415V, 3Ø submersible, and surface pumps/motors with power ratings of 5HP, 7.5HP, and 10HP. Its True MPPT technology ensures maximum utilization of solar energy, resulting in maximum water output at different solar energy levels throughout the day.

Px3000 is a Plug & Play Drive, making it effortless to commission and reducing complexity, which enhances user-friendliness. It is an all-in-one solution, providing users with the convenience of operating the drive with ease.

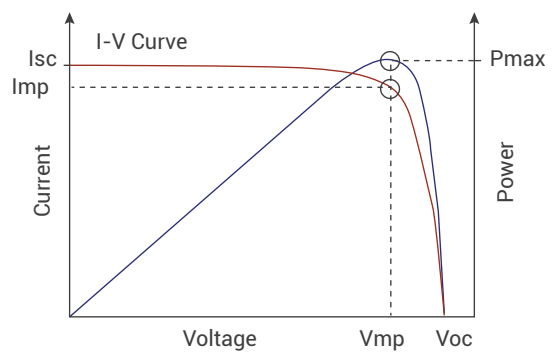


BUILT-IN MPPT

MPPT algorithm enables the generation of maximum output power throughout the day, ensuring higher water discharge.

- › True MPPT with efficiency > 99%
- › Auto MPPT feature automatically computes solar parameter values throughout the day
- › Eliminates the need for manual adjustments, hence reducing human errors

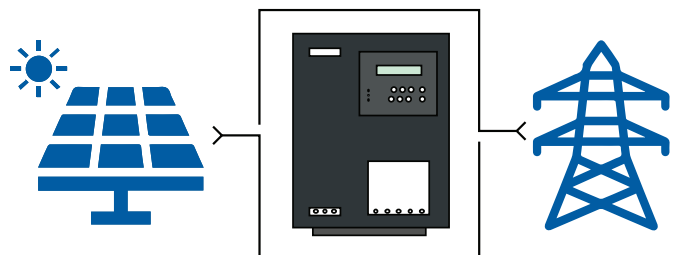
Solar Cell Characteristic Curve



DUAL SUPPLY SOURCE

Px3000 drive is capable of dual mode supply, allowing the use of grid supply - when energy from PV cells is unavailable.

- › Reduces the dependency on grid supply, for places where electricity is unpredictable
- › Easy switching between solar and grid connection



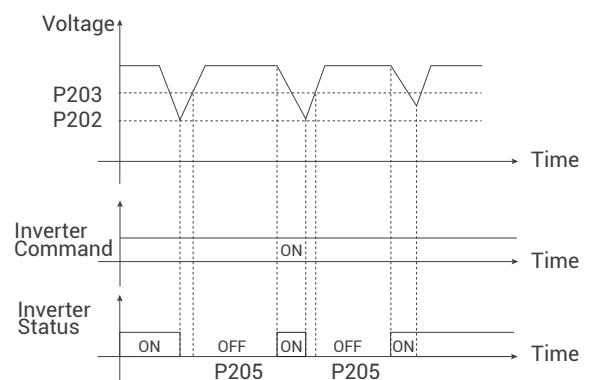
AUTOMATIC START / STOP

Px3000 facilitates automatic START/STOP based on : Solar irradiance availability, Tank water level and fault condition.

- › No need to operate or reset the drive manually
- › Reduced need for manpower
- › Contributes to energy conservation and time efficiency

UNDER VOLTAGE PROTECTION	CODE	NAME	DEFAULT	RANGE	UNIT
	P202	Trip Set	250	200-550	V
	P203	Trip Reset	350	250-600	V
	P205	Reset Time	180	0-300	Sec

Automatic Start/Stop



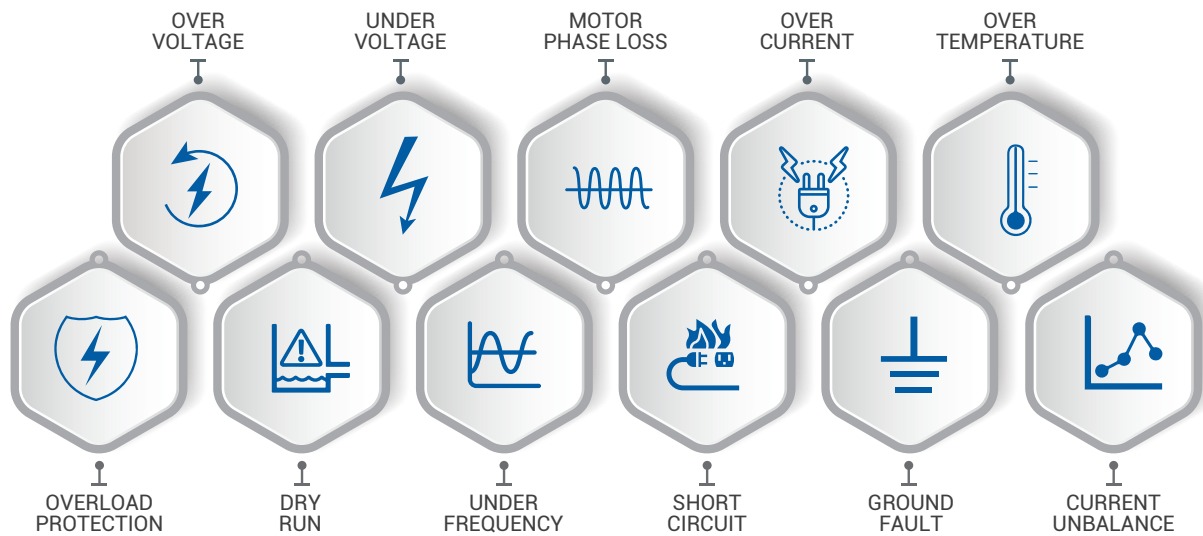
ROBUST DESIGN

- › Wide operating voltage range:
V_{mpp} range: 250V - 750V dc
V_{oc} range: 300V - 850V dc
- › All PCBs are conformally coated
- › Best in class performance at ambient temperature upto 50°C without derating



PROTECTION FUNCTIONS

The in-built protection system facilitates, continuous protection for the application - ensuring safety, reliability and minimum maintenance time.

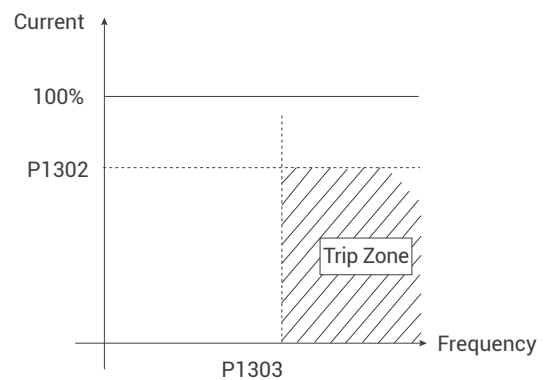


DRY RUN PROTECTION

Dry Run protection is specifically designed for pump applications

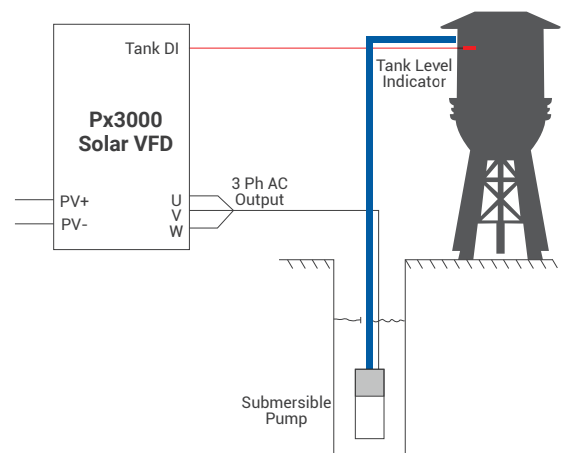
- › It depicts under-load protection
- › Helps in preventing pump damage, when there is insufficient water in the tank

CODE	NAME	DEFAULT	RANGE	UNIT
P1302	Trip Set	60	50-90	%
P1303	Dry Freq	45	10-50	Hz
S308	Motor Amp	18	0-25	A



WATER LEVEL INTERFACE

- › One of the Digital Inputs in Px3000, is programmed for water level sensing
- › With a float switch, the drive can automatically turn ON & OFF based on the water level in the tank



BUILT-IN RS485

RS-485 enables external communication with RMU through Modbus protocol.

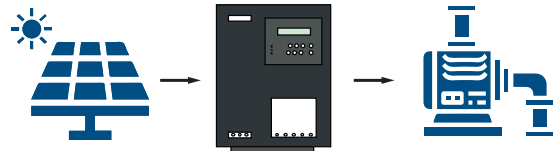
- › Monitors and configures drive parameters from remote location
- › Reduces the need for frequent site visits for drive operation & maintenance

Modbus-RTU



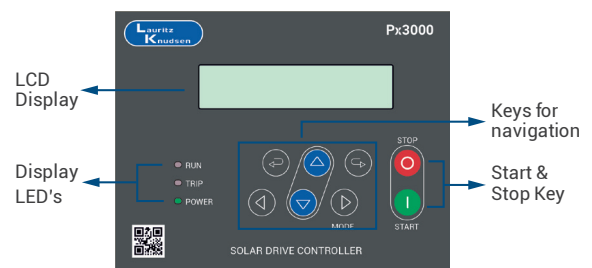
COMPATIBILITY

- › Px3000 is suitable for 415V, 3φ Submersible & Surface pumps
- › Compatible with IE2 and IE3 motors
- › The solar drive can operate on a wide voltage range of solar panels



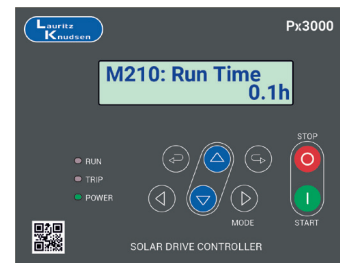
LCD DISPLAY

- › In-built 16x2 LCD display
- › Enables easy and simple programming of drive, improving ease of user operation



RUN-TIME MEASUREMENT

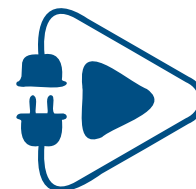
- › Px3000 helps in monitoring the operational duration of the drive
- › The run-time period is displayed in hours



USER FRIENDLY

Px3000 is a **Plug & Play drive**. Users can initiate the drive operation, by making the required connections. No additional parameter setting is required, as the drive can operate with default parameters.

- › Easy to choose, install & maintain
- › Eco-friendly & Economical
- › RoHS certified



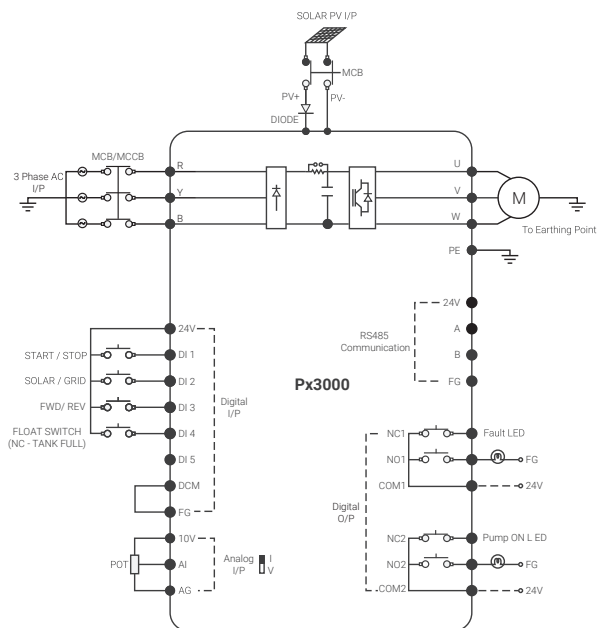
PLUG & PLAY DRIVE



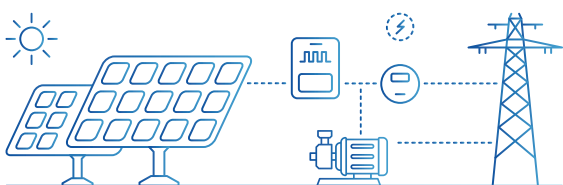
EAVF - P4 □□□□ BAA		009P5	014P0	018P0
Applied Motor	HP	5	7.5	10
	kW	3.7	5.5	7.5
Rated Current (A)	HD @50° C	9.5A	14A	18A
	ND @40° C	11A	17A	23A
Supply Voltage	Grid	380 - 480V, 3-phase, 50/60Hz		
	Solar	300 - 850V DC (Voc)		
MPPT Voltage		250 - 750V DC (Vmp)		
Output Frequency		0 to 50Hz		
Degree of Protection		IP20		
Number of Inputs and Outputs		Digital Inputs - 5		
		Analog Input - 1 (4-20mA / 0-10V)		
		Digital Outputs - 2		
Motor Compatibility		400V class - Three Phase Induction motor		
Control Specifications	Control Method	V/F - Linear, Square		
	Frequency Setting Resolution	Digital command: 0.1Hz ; Analog command: 0.16Hz		
	Overload Capacity	110% of rated current for 60sec		
	Torque Boost	Settable		
	Maximum Output Voltage	0 to Input voltage range		
	Cooling System	Forced air cooling		
Operation Specifications	Operation Mode	Keypad / Terminal / Communication operation		
	Technology	MPPT algorithm with motor speed control		
	Frequency Setting	Analog type: 0-10[V], 0-20[mA] ; Digital type: Keypad		
	Input	Multi - function Terminal	DI 1 - Start / Stop; DI 2 - Solar / Grid; DI 3-Reverse/Forward; DI 4-Tank Full; DI5-Not Used	
		Analog Input	AI- Frequency	
	Output	Multi - function relay terminal	DO1 - Fault ; DO2 - Run Status	
Environment Specifications	Ambient Temperature	-10° C to +50° C		
	Ambient Humidity	95% non-condensing		
	Storage Temperature	- 20° C to +60° C		
	Surrounding Environment	It shall not be exposed to direct sunlight, corrosive air, combustible gas, oil mist, dust and so on.		
	Altitude / Oscillation	Below 1000m, 5.9 / sec² (0.6G)		
	Pressure	70 - 106 kPa		
Environmental specifications		Class C3 (Optional)		



POWER & CONTROL DIAGRAM



* Recommended Diode specification: 50A/1600V (PIV)



FUSE AND REACTOR

Drive capacity (kW)	AC Input Fuse - HRC		AC Reactor	
	Current (A)	Voltage (V)	Inductance (mH)	Current (A)
3.7kW	20A	600V	1.22mH	15A
5.5kW	32A	600V	1.12mH	19A
7.5kW	35A	600V	0.78mH	27A

MCB RATINGS

Pump Rating	Grid		Solar	
	Model	Rating	Model	Rating
5 HP	BB30200C	20A	BB40160B	16A
7.5 HP	BB30250C	25A	BB40200B	20A
10 HP	BB30320C	32A	BB40250B	25A

MCCB RATINGS

Pump Rating	Drive capacity (kW)	MCCB	
		Model	Rating(A)
5 HP	3.7kW	DM100	25
7.5 HP	5.5kW	DM100	25
10 HP	7.5kW	DM100	30

PRODUCT DIMENSIONS

Px3000 Solar Drive Controller	Cat. No.	Overall Dimensions			Mounting Dimensions		Weight (kg)
		W (mm)	H (mm)	D (mm)	A (mm)	B (mm)	
5HP	EAVF-P4009P5BAA	166	239	168.5	230	148	3.8
7.5HP	EAVF-P4014P0BAA	166	239	168.5	230	148	3.8
10HP	EAVF-P4018P0BAA	166	239	168.5	230	148	3.8



Electrical Standard Products (ESP) Offices

HEAD OFFICE

Lauritz Knudsen Electrical & Automation, A/600, Shil-Mahape Road, TTC Industrial Area, MIDC Thane, Navi Mumbai, 400 710, Maharashtra.

Tel: 022-6722 6300 | Fax: 022-6705 1112 | e-mail: CIC@LK-EA.com

BRANCH OFFICES

Lauritz Knudsen Electrical & Automation
C-201, The First Commercial Complex,
B/S Keshavbaug Party Plot, Vastrapur,
Ahmedabad - 380 015
Phone No: 022-6932 7800
e-mail: CIC@LK-EA.com

Lauritz Knudsen Electrical & Automation
Shri Daneshwari, 1st Floor,
Plot No. 17, 2nd Cross, Near Old Income
Tax Office Road, Vidyanagar,
Hubballi - 580 021
Phone No: 022-6932 7800
e-mail: CIC@LK-EA.com

Lauritz Knudsen Electrical & Automation
No.10, Fortuna Towers, 2nd Floor,
Rana Pratap Marg, Near NBRI,
Lucknow - 226 001
Phone No: 022-6932 7800
e-mail: CIC@LK-EA.com

Lauritz Knudsen Electrical & Automation
A06/A07, Second Floor,
Grand Chandra Complex, Frazer Road
Patna - 800 001
Phone No: 022-6932 7800
e-mail: CIC@LK-EA.com

Lauritz Knudsen Electrical & Automation
Wework Central, #36 Infantry Road,
Bengaluru - 560 001
Phone No: 022-6932 7800
e-mail: CIC@LK-EA.com

Lauritz Knudsen Electrical & Automation
AWFIS Space Solutions, Prestige Phoenix,
4th floor, 1405, Umanagar, Begumpet,
Hyderabad - 500 016
Phone No: 022-6932 7800
e-mail: CIC@LK-EA.com

Lauritz Knudsen Electrical & Automation
El Dorado Building, 3rd Floor, 6,
Venkatraman Street, Chinna Chokkikulam,
Madurai - 625 002
Phone No: 022-6932 7800
e-mail: CIC@LK-EA.com

Lauritz Knudsen Electrical & Automation
UrbanWrk, 5th Floor, Sai Radhe,
Raja Bahadur Mill Road, Behind Hotel
Grand Sheraton, Sangamwadi
Pune - 411 001
Phone No: 022-6932 7800
e-mail: CIC@LK-EA.com

Lauritz Knudsen Electrical & Automation
Under O Launchpad, 4th Floor,
Unit-434, Esplanade 1, Rasulgarh,
Bhubaneswar - 751 010
Phone No: 022-6932 7800
e-mail: CIC@LK-EA.com

Lauritz Knudsen Electrical & Automation
Workie, 214 - 2nd Floor,
Apollo Premier, PU-4,
Scheme No. 54, Vijay Nagar Square,
Indore - 452 010
Phone No: 022-6932 7800
e-mail: CIC@LK-EA.com

Lauritz Knudsen Electrical & Automation
Bestech Business Park,
Tower - A, 2nd floor, Sector - 66
Mohali - 160059
Phone No: 022-6932 7800
e-mail: CIC@LK-EA.com

Lauritz Knudsen Electrical & Automation
Office No. 211 & 212, Pithalia Plaza,
KK Road, Near Fafadih Chowk,
Raipur - 492 001
Phone No: 022-6932 7800
e-mail: CIC@LK-EA.com

Lauritz Knudsen Electrical & Automation,
801 Word Level-8, No. 28,
SIDCO Industrial Estate, Guindy,
Chennai - 600 032
Phone No: 022-6932 7800
e-mail: CIC@LK-EA.com

Lauritz Knudsen Electrical & Automation
Office No. 430, 4th Floor,
Jaipur Electronic Market, Riddhi Siddhi,
Gopalpura Bypass,
Jaipur - 302 018
Phone No: 022-6932 7800
e-mail: CIC@LK-EA.com

Lauritz Knudsen Electrical & Automation
TC II, Tower B, PRIMA BAY Gate No. 5,
Saki Vihar Road Powai,
Mumbai - 400 072
Phone No: 022-6932 7800
e-mail: CIC@LK-EA.com

Lauritz Knudsen Electrical & Automation,
DevX 4th Floor, A Wing, Om 9 Square,
150 Ft Ring Road, Near Nana Mava Circle,
Opp Silver Heights,
Rajkot - 360 001
Phone No: 022-6932 7800
e-mail: CIC@LK-EA.com

Lauritz Knudsen Electrical & Automation
Playworkz Coworking Space
43 & 44, 3rd Cross,
Bharathy Colony, Peelamedu,
Coimbatore - 641 004
Phone No: 022-6932 7800
e-mail: CIC@LK-EA.com

Lauritz Knudsen Electrical & Automation
GDR Siddha, Ground Floor, N Road
Bistupur, Opposite St. Mary's Church,
Jamshedpur - 831 001
Phone No: 022-6932 7800
e-mail: CIC@LK-EA.com

Lauritz Knudsen Electrical & Automation
Unnati Building, 2nd Floor,
Automation Campus, A-600, TTC Industrial
Area Shil-Mahape Road, Mahape,
Navi Mumbai - 400 710
Phone No: 022-6932 7800
e-mail: CIC@LK-EA.com

Lauritz Knudsen Electrical & Automation
10th Floor, Titaanium Business,
Bhimrad Road, Althan
Surat - 395 017
Phone No: 022-6932 7800
e-mail: CIC@LK-EA.com

Lauritz Knudsen Electrical & Automation
3rd Floor, 1&2 Vijay Park,
Main Chakrata Road, Opp. Anandam,
Near Ballapur chowk,
Dehradun - 248 001
Phone No: 022-6932 7800
e-mail: CIC@LK-EA.com

Lauritz Knudsen Electrical & Automation
Business Communication Centre
2nd Floor, Chiramel Chambers,
Kurisupally Road, Ravipuram,
Kochi - 682 015
Phone No: 022-6932 7800
e-mail: CIC@LK-EA.com

Lauritz Knudsen Electrical & Automation
M1 & M2, Mezzanine Floor,
Himalaya Excellency,
Plot No. C-47, Pratap Nagar Square,
Nagpur - 440 022
Phone No: 022-6932 7800
e-mail: CIC@LK-EA.com

Lauritz Knudsen Electrical & Automation
11th Floor, Block-D, Notus IT Park,
Sarabhai Campus, Bhailal Amin Marg,
Vadodara - 390 023
Phone No: 022-6932 7800
e-mail: CIC@LK-EA.com

Lauritz Knudsen Electrical & Automation
Ground Floor, B-27,
Biplab Rashbihari Sarani,
Sector 2A, Bidhan Nagar,
Durgapur - 713 212
Phone No: 022-6932 7800
e-mail: CIC@LK-EA.com

Lauritz Knudsen Electrical & Automation,
207, 2nd floor, Revolution Complex,
Station Road, E Ward,
Next to Pedestrian Bridge,
Kolhapur - 416 001
Phone No: 022-6932 7800
e-mail: CIC@LK-EA.com

Lauritz Knudsen Electrical & Automation,
3rd floor,
Uttam Tower by Viraj Estate ,
Sharanpur Road,
Nasik - 422 002
Phone No: 022-6932 7800
e-mail: CIC@LK-EA.com

Lauritz Knudsen Electrical & Automation
Naga Chambers, 3rd Floor, D/No. 12-1-16,
Plot No. 49, Survey No. 1051, Waltair Main Road,
Visakhapatnam - 530 002
Phone No: 022-6932 7800
e-mail: CIC@LK-EA.com

Lauritz Knudsen Electrical & Automation
6th Floor, Exotica Greens, A Block, 191,
R G Baruah Road, Guwahati Central,
Guwahati - 781 005
Phone No: 022-6932 7800
e-mail: CIC@LK-EA.com

Lauritz Knudsen Electrical & Automation
2nd Floor, BN3, Salt Lake, Sector-V,
Kolkata - 700 091
Phone No: 022-6932 7800
e-mail: CIC@LK-EA.com

Lauritz Knudsen Electrical & Automation
A-25, 1st Floor, Imperia Complex,
Mohan Corporate Industrial Estate,
Near Sarita Vihar Metro Station,
Mathura Road,
New Delhi - 110 044
Phone No: 022-6932 7800
e-mail: CIC@LK-EA.com

Product improvement is a continuous process. For the latest information and special application, please contact any of our offices listed here. Product photographs shown for representative purpose only.



Lauritz Knudsen Electrical & Automation, Electrical Standard Product

A/600, Shil-Mahape Road, TTC Industrial Area, MIDC Thane, Navi Mumbai, 400 710, Maharashtra, Phone No: 022-6722 6300 | Web: www.LK-EA.com

Customer Interaction Center (CIC)

Phone no: 022-6932 7800

Web: www.LK-EA.com | e-mail: CIC@LK-EA.com