

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: 0452-2537404 / 2521068
Fax: 0452-2537552
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
e-mail: esp-sur@LNTEBG.com

Radhadaya Complex
Old Padra Road
Near Charotar Society
Vadodara 390 007
Tel: 0265-6613610 / 1 / 2
Fax: 0265-2336184
e-mail: esp-bar@LNTEBG.com

Door No. 49-38-14/3/2, 1st floor,
NGGO's Colony, Akkayyapalem,
Visakhapatnam - 530 016
Tel: 0891-2791126 / 2711125
Fax: 0891-2791100
Email: esp-viz@LNTEBG.com

Product improvement is a continuous process. For the latest information and special applications, please contact any of our offices listed here.

L&T SWITCHGEAR
SAFE & SURE

L&T LARSEN & TOUBRO

Larsen & Toubro Limited, Electrical Standard Products
Powai Campus, Mumbai 400 072

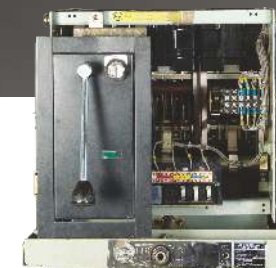
Customer Interaction Center (CIC)
BSNL / MTNL (toll free): 1800 233 5858 Reliance (toll free): 1800 200 5858
Tel: 022 6774 5858 Fax: 022 6774 5859 Email: cic@Lntebg.com
Web: www.Lntebg.com

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

SP 50766

L&T LARSEN & TOUBRO

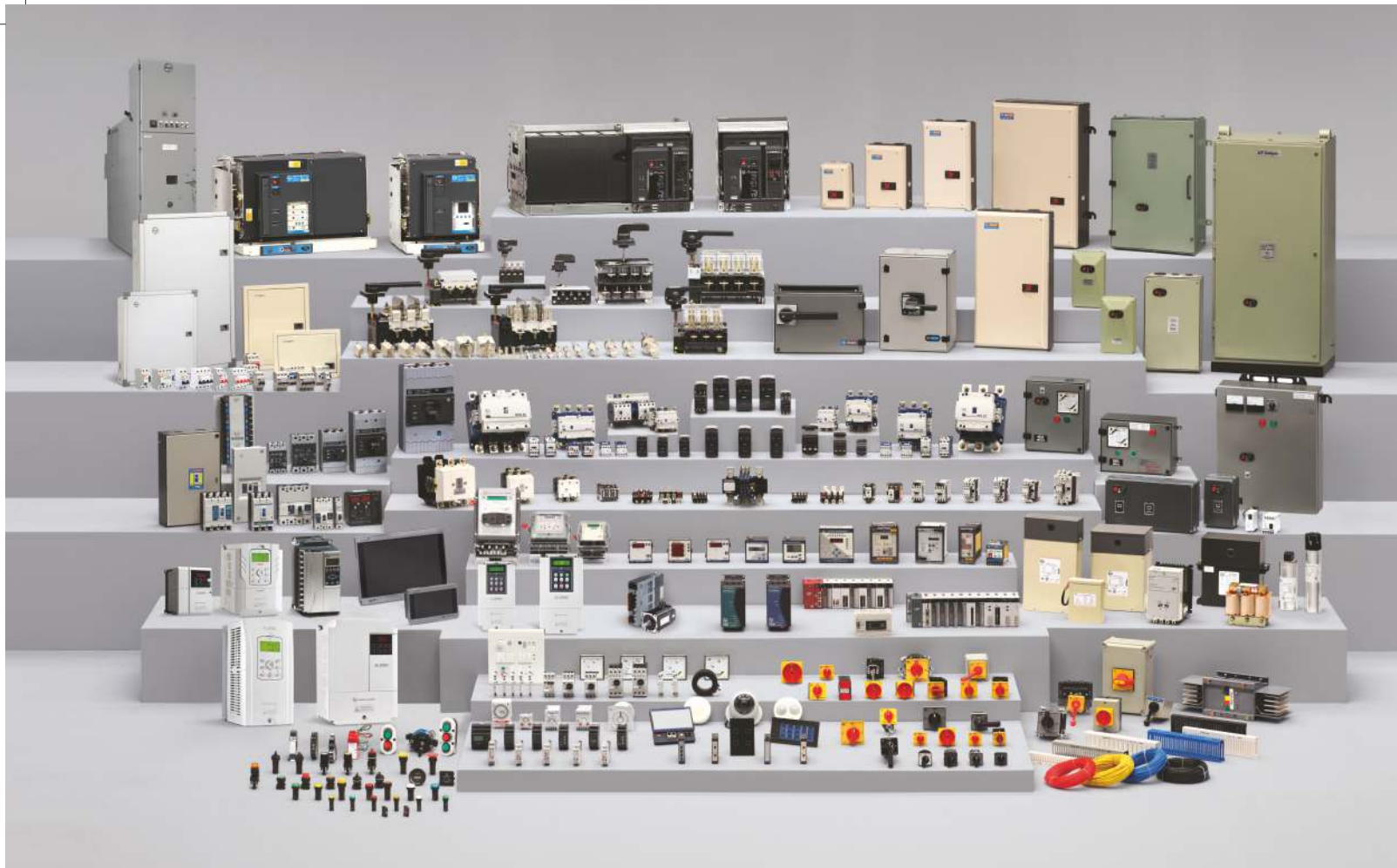
Retrofit Advanced Technology with Minimal Modification.



Pre-Engineered Retrofit Solution
Upgrade L&T CNCS ACB to OMEGA ACB



L&T SWITCHGEAR
SAFE & SURE



L&T Electrical and Automation, is a part of Larsen & Toubro, a multi-billion dollar, technology, engineering, construction, manufacturing and services conglomerate, with global operations. It is India's leading switchgear company with over 5 decades of experience.

Today, over 500,000 L&T Air Circuit Breakers (ACBs) are in use across diverse applications – a testimony to our quality and reliability. After almost 2 decades of serving the needs of Indian industry, the time-tested L&T CNCS ACB has been phased out to make way for the cutting-edge OMEGA range of ACBs. Now, you can enjoy higher levels of protection, safety and convenience with the Pre-engineered OMEGA Retrofit Solution.

The L&T Service Advantage

We serve you through pan-India network of Offices, Service Centres and Channel Partners. So no matter where your installation may be, L&T service is close at hand.

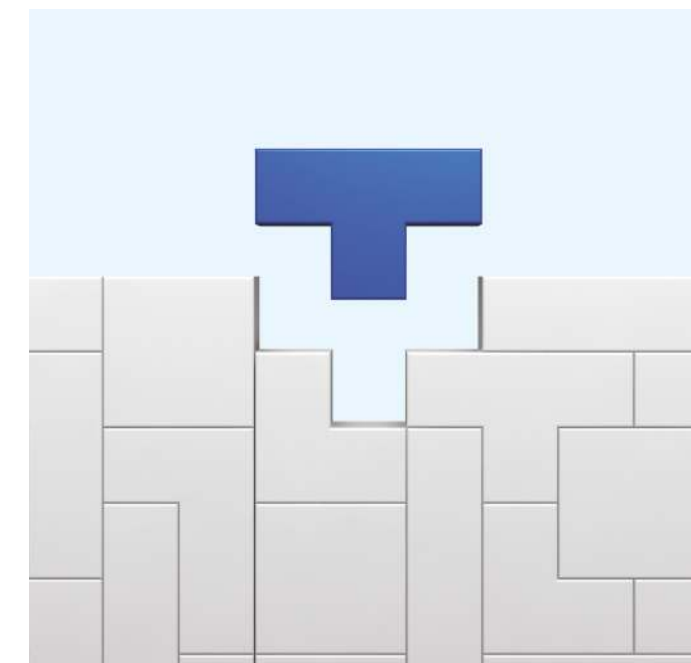


Our Service Network

- 30 Branch Offices
- 45 Service Engineers
- 750 Stockists
- 100 Integrated Solution Providers
- 85 Approved Service Centres
- 185 Service Centre Technicians

Retrofit Greater Protection with Minimal Modification

The unique L&T Pre-engineered OMEGA Retrofit Solution allows you to switch to the modern, compact L&T OMEGA ACB with ease. Not only do you upgrade your protection levels without making any major modifications, you also enjoy a range of other advantages.



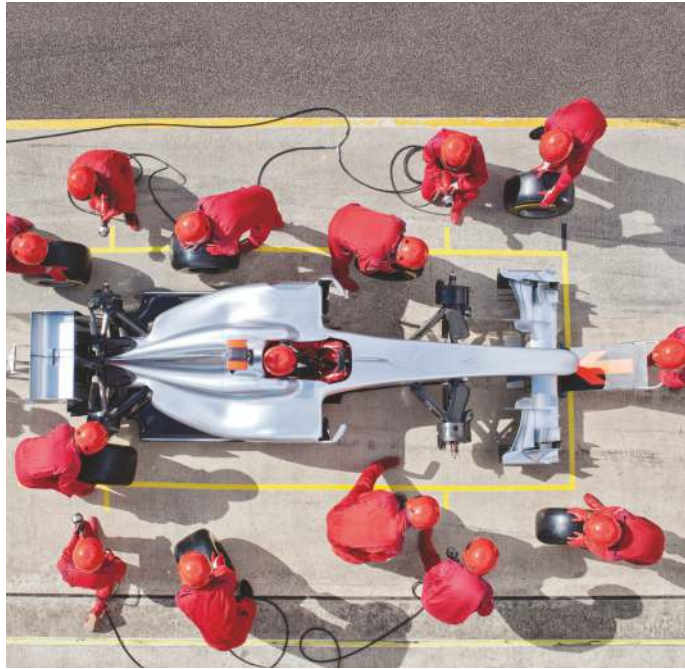
No Busbar Modification

The OMEGA ACB fits into the same panel cubicle with minor link modification, but does not require any busbar modification.

Maximised Protection

The OMEGA ACB is the most advanced ACB available today. A unique range of Matrix Protection Releases provides reliable protection against electrical hazards, coupled with high-speed communication capabilities.





Minimum Shutdown Time

This plug-and-play solution speeds up the retrofitting process and allows you to restart production quicker.

Maximum Safety

Unique features like Arc-Chute Interlock, Password-protected Protection Release, Smart Racking Shutter and Real Time Temperature Protection pre-empt accidents from occurring out of ignorance or carelessness.



Maximum Convenience

From communication-capability to remote operation, the OMEGA ACB offers it all.



Extended Panel Life

In an electrical switchboard, the component that experiences the maximum stress is the ACB. So, replacing the old ACB with a new one helps extend the life of the switchboard.



Enhanced Reliability

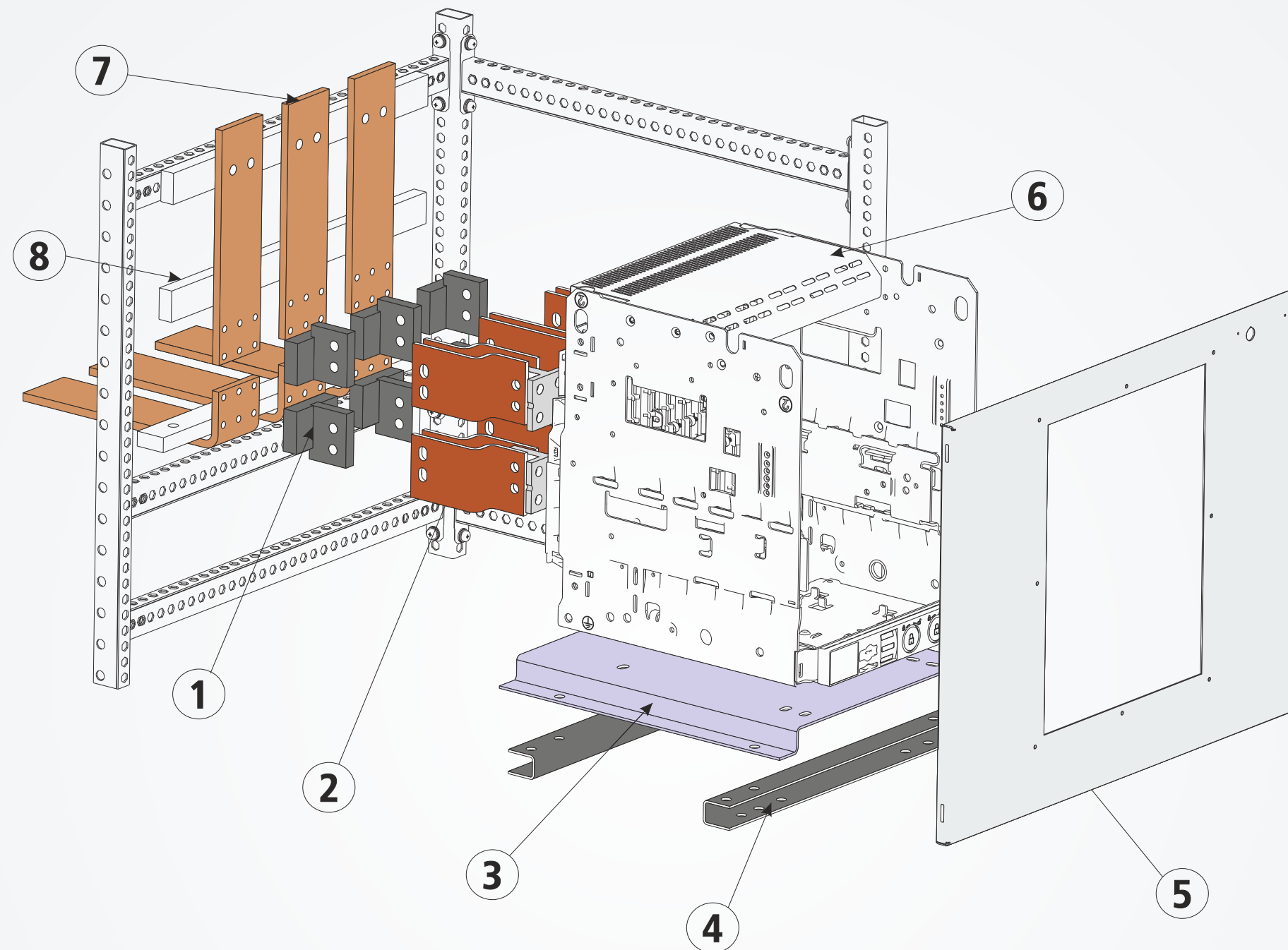
L&Ts Omega Pre-engineered Retrofit Solutions are designed to match the loading of the breaker and site conditions. All installations are executed by an approved service centre with engineering support and training by L&T.



Minimised Retrofitting Cost

The minimal modification requirement ensures that you save on most modification costs including panel and busbar replacement.

Pre-Engineered OMEGA Retrofit Solution with ETP Grade Copper links with Silver Plating



Components supplied in the Kit

- ① Retrofit Adaptors
- ② Retrofit Links
- ③ Mounting Plate
- ④ Channels

Other Components included:

- 4 x Link Supports
- Wire Harness

Components of the existing panel

- ⑤ Panel Door
- ⑦ Panel busbars
- ⑧ Busbar supports

To be ordered separately

- ⑥ OMEGA Cradle & Breaker

RATING		CNCS ACB			OMEGA ACB					
Amp	Frame	Dimensions (WxDxH) (mm)	Pole Pitch (mm)	Breaking Capacity (@500V) (kA)	Frame	Dimensions (WxDxH) (mm)	Pole Pitch (mm)	Breaking Capacity (@400-415V) (kA)	Breaking Capacity (@500-550V) (kA)	Retrofit Links (Per Terminal) (WxTxR) mm x mm x nos
800	CN-CS 2	399 x 600 x 459	98	50	Frame 1-N/S	347 x 421 x 433	100	50/65	42/55	80 x 6.3 x 1
1000			55	55	Frame 1-N*/S			50/65	42/55	65 x 5 x 2
1250		487 x 600 x 459	115	55	Frame 1- S/H			50/65	42/55	80 x 6.3 x 2
1600			130	55				50/65	42/55	80 x 6.3 x 2
2000		555 x 600 x 459	150	60	Frame 2- S/H			65/80	55/70	80 x 6.3 x 3
2500	555 x 610 x 459	60		60	65/80	55/70	80 x 6.3 x 4			
3200#	CN-CS 3	711 x 663 x 600	200	75	Frame 2-S**/H	447 x 421 x 433	133	65/80	55/70	100 x 10 x 3

* Order for 50kA fault level. **Order for 65kA fault level. #Solution also available with OMEGA Frame-3. Please consult us for selection
 Note: CNCS ACBs are available in 3Pole drawout configuration only. CNCS to OMEGA solution is available up to 3200A.



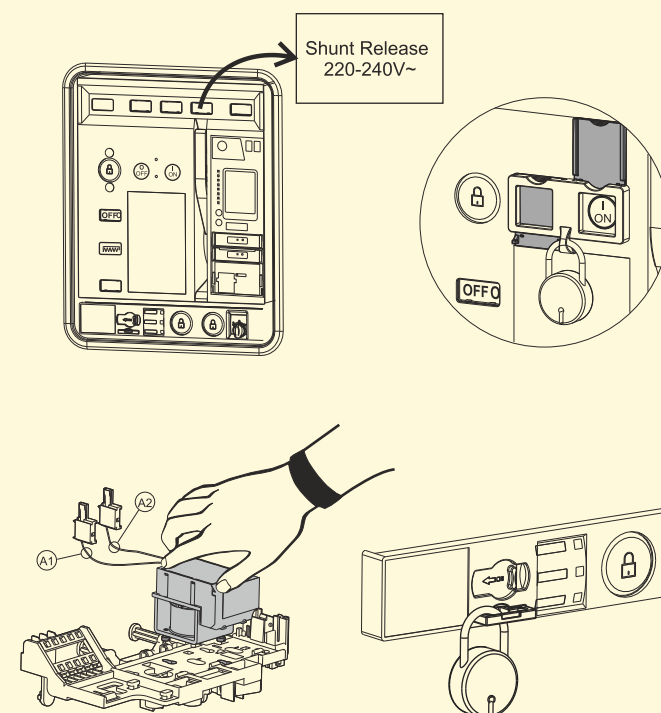
Get the OMEGA ACB Advantage

Salient Features:

- Current rating from 400A to 6300A in 3 frame sizes
- Available in 3 Pole/4 Pole, manually & electrically operated, fixed / draw-out versions
- Common height and depth across the range
- High short-time fault withstand capacity
- High mechanical and electrical operating life
- Neutral pole rating: 100% and 200%
- Available in both NRYB and RYBN configuration in 4 Pole ACBs
- In-built electrical and mechanical anti-pumping
- Includes the world's most compact ACBs - 50% width and volume
- Complete range conforms to IS / IEC 60947-2 & IEC 60947-2

Breaking Capacities

		Icu = Ics = Icw									
Rated current		800A	1000A	1250A	1600A	2000A	2500A	3200A	4000A	5000A	6300A
Frame-1	N : 50kA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	S : 65kA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	H : 80kA	UW1-08	UW1-10	UW1-12	UW1-16	UW1-20	UW1-25				
Frame-2	S : 65kA						✓	✓			
	H : 80kA	UW2-08	UW2-10	UW2-12	UW2-16	UW2-20	UW2-25	UW2-32			
Frame-3	H : 80kA								✓	✓	✓
	V : 100kA	UW3-08	UW3-10	UW3-12	UW3-16	UW3-20	UW3-25	UW3-32	UW3-40	UW3-50	UW3-63



Breaker and Release features:

- Unique breaker front-facia architecture displays the electrical accessories equipped on the ACB
- Modular design and snap-fit accessories
- Ease of on-site convertibility from Manual to Electrical and Fixed to Draw-out version
- Unipolar, snap-fit control terminals for independent 2 termination of 2 wires of up to 2.5 mm each
- ON & OFF buttons can be independently padlocked to prevent unauthorized access
- Up to 3 breakers can be mechanically interlocked using Bowden cable.

Matrix Protection & Control Unit

Salient Features:

- Models available: MTX 1.0/1G/1.5G, MTX 2.5/2.5G, MTX 3.5/3.5EC & MTX 4.5
- Unique O-LED display for wider viewing angle
- Touch Screen technology to provide ease in navigation in MTX 4.5
- Pluggable Communication and Power metering modules for customization and future upgradation
- Dual time-based protection set-groups and Password protection
- Soft-rating plug for precise protection at lower load currents
- Protection against temperature rise through TM module
- Switchable neutral overload protection (50% to 200% in steps of 5%)
- Advance protection - ZSI, TCS, REF, EL
- Provision for on-load self-diagnosis of releases
- Modbus, Profibus & Zigbee communication protocols
- Power and Harmonics measurement
- Easy to integrate with HMI & PLC
- Energy monitoring and control through Energy Management System
- Smart Card module for ease of parameterization
- Oscillographs to display pre and post-fault current and voltage in MTX 4.5
- Protection releases conform to EMI/EMC standards



UW - MTX 1.0 / 1G / 1.5G

UW - MTX 2.5 / 2.5G



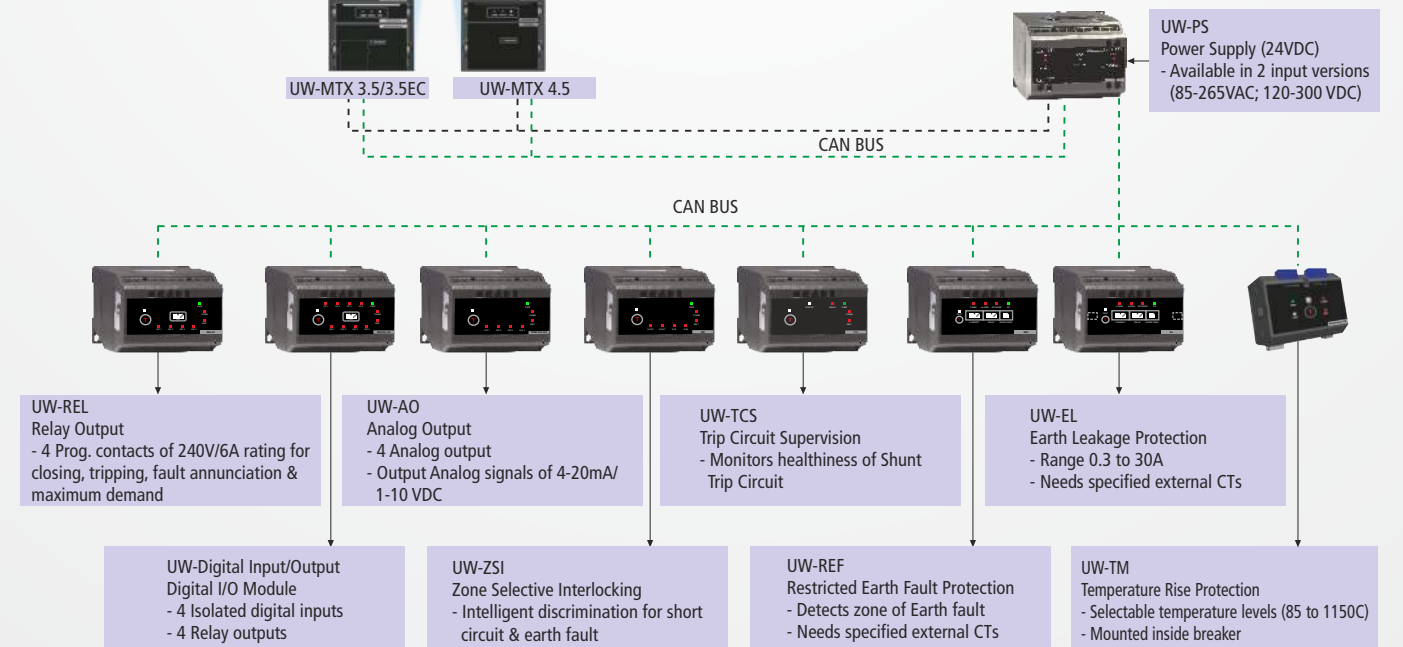
UW - MTX 3.5 / 3.5 EC

UW - MTX 4.5



UW-MTX 3.5/3.5EC

UW-MTX 4.5



Matrix Protection & Control Unit

Features	Parameter	MTX 1.0	MTX 1G	MTX 1.5G	MTX 2.5	MTX 2.5G	MTX 3.5	MTX 3.5SEC	MTX 4.5
Basic Protection	Overload - Phase	✓	✓	✓	✓	✓	✓	✓	✓
	Overload - Neutral		✓	✓		✓	✓	✓	✓
	Short Circuit	✓	✓	✓	✓	✓	✓	✓	✓
	Directional Short Circuit						✓	✓	✓
	Instantaneous	✓	✓	✓	✓	✓	✓	✓	✓
	Earth Fault		✓	✓		✓	✓	✓	✓
Additional Protection	Current						✓	✓	✓
	Voltage						*	✓	✓
	Frequency						*	✓	✓
	Reverse Power						*	✓	✓
	Maximum Demand						*	✓	✓
Trip Records	Last 5 Trip Data				✓	✓	✓	✓	✓
Event Records	Last 10 Event Data				✓	✓	✓	✓	✓
Smart Card							*	*	*
Communication	Modbus						*	✓	✓
	Profibus						*	*	*
	Zigbee (wireless)						*	*	*
							*	*	*
Advance Protection	Trip Circuit Supervision (TCS)						*	*	*
	Zone Selective Interlocking (ZSI)						*	*	*
	Temperature Rise (TM)						*	*	*
	Earth Leakage (EL)						*	*	*
	Restricted Earth Fault (REF)						*	*	*
Additional Features	Relay Output						*	*	*
	Load Management						*	*	*
	Digital Input & Output						*	*	*
	Analog Output						*	*	*
Metering	Current			✓	✓	✓	✓	✓	✓
	% Loading				✓	✓	✓	✓	✓
	Voltage						*	✓	✓
	Power & Energy						*	✓	✓
	Harmonics								✓
Storable Settings (2 sets)				✓	✓	✓	✓	✓	
Power Supply Module (24 VDC)				*	*	*	*	✓	

* available as optional
For detailed information please refer product literature

Simulation Kit:

- Universal test kit for all versions of Matrix P&C Unit
- Generates 3 phase current and voltage with adjustable phase angles
- Graphical display and smart GUI with multi functional key operation
- Portable & hand held device to simulate faults
- Dual Power ON - battery and external supply
- Auto sensing of P&C Unit connectivity
- Stores 10 test records
- Memory card for data storage upto 32 GB
- PC interface through USB and Modbus



U-POWER
OMEGA
Air Circuit Breakers

Technical details:

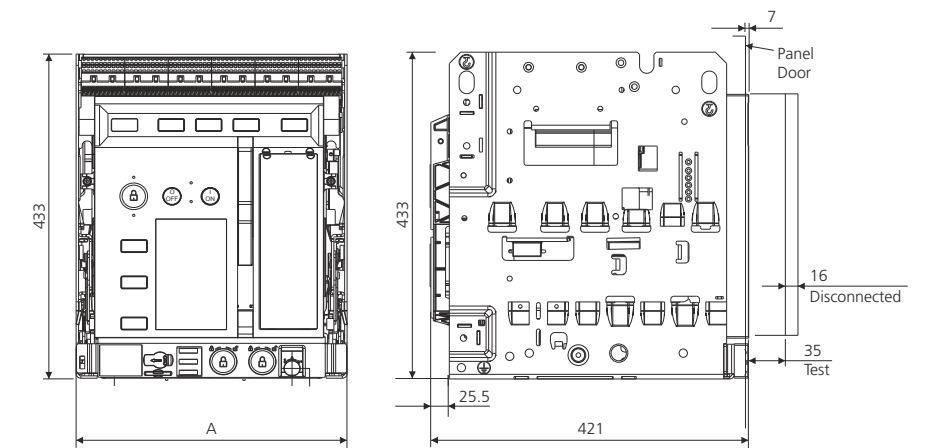
Frame	1						2			3				
Rated uninterrupted current (In) (A) 50°C	400-1600		2000		2500 [§]		400-3200			400-5000		6300 #		
Version	N	S	H	S	H	S	H	N	S	H	H	V	H	V
Rated operational voltage at 50/60 Hz	U _e		upto 690V											
Rated insulation voltage at 50/60 Hz	U _i		1000V											
Rated impulse withstand voltage	U _{imp}		12kV (Main Circuit)											
Suitability for isolation	Yes													
Degree of protection on breaker front	IP40 Intrinsic, IP54 Available													
Pollution degree suitability	3													
Utilization category	B													
Compliance	IS/IEC 60947 (Part-2), EN60947-2, IEC 60947-2													
Rated Ultimate S. C. Breaking Capacity	I _{cu} (kA)	400/415V	50	65	80	65	80	50	65	80	80	100	80	100
		500/550V	42	55	70	55	70	42	55	70	70	85	70	85
		660/690V	36	50	55	50	55	36	50	55	55	75	55	75
Rated Service S. C. Breaking Capacity	I _{cs} (kA)	400/415V	100% I _{cu}											
		500/550V	100% I _{cu}											
		660/690V	100% I _{cu}											
Rated Short Time Withstand Capacity	I _{cw} (kA)	0.5 sec	50	65	80	65	80	50	65	80	80	100	80	100
		1.0 sec	50	65	80	65	80	50	65	80	80	100	80	100
		3.0 sec	26	36	44	36	44	26	42	50	50	75	50	75
Rated S. C. Making Capacity	I _{cm} (kA)	400/415V	105	143	176	143	176	105	143	176	176	220	176	220
		500/550V	88	121	154	121	154	88	121	154	154	187	154	187
		660/690V	76	105	121	105	121	76	105	121	121	165	121	165
Opening time (ms)	40													
Closing time (ms)	60													
Mechanical life	with maintenance	20000						15000			10000			
	without maintenance	10000*						5000			5000			
Electrical life	with maintenance	20000						15000			10000			
	without maintenance	10000*						5000			5000			

*8000 for 1600 N&S version & 5000 for 2000 N version
Rated uninterrupted current (In) (A) 40°C
§ Please consult branch office for selection

Dimensional Details:

OMEGA offers common depth (421 mm) and height (433 mm) across the entire range.

Frame	Poles	A
1	3	347
	4#	447
2	3	447
	4#	581
3**	3	647
	4#	847



Dimensions for 100% N. Contact us for 50% N & 200% N
** Depth of Frame-3 ACB will be 10 mm additional with use of equalizer link

(All dimensions in mm)