L&T SWITCHGEAR
SAFE & SURE

U-POWER system of OMEGA

Air Circuit Breakers

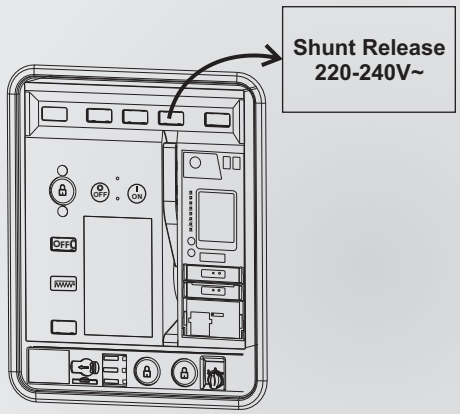
LARSEN & TOUBRO
It's all about Imagineering

U-POWER OMEGA system of Air Circuit Breakers

L&T's new range of compact air circuit breaker U-POWER Omega with next generation of Matrix Protection & Control Unit

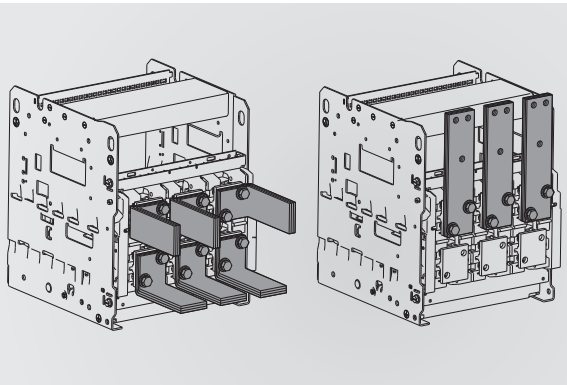
Salient features:

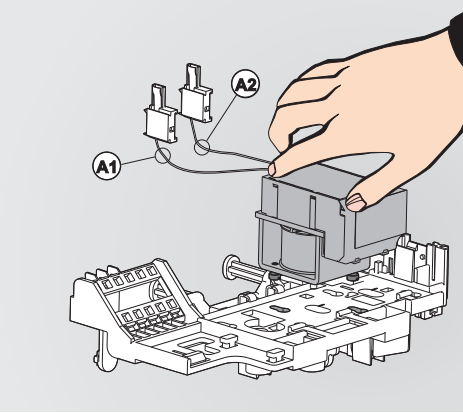
- U-POWER Omega offers complete range from 400A to 6300A in three optimized frame sizes
- Available in 3 & 4 Pole with options of 50%, 100% & 200% Neutral, as manually & electrically operated in both draw-out & fixed versions
- 2500A in Fr-1 & 6300A in Fr-3 are world's most compact air circuit breaker in terms of width & volume
- High electrical life, which can be further extended upto mechanical life by replacing contacts
- Complete range with RoHS compliance



- High short time withstand capacity (Icw) equal to Icu & Ics, to support discrimination, for fault upto Icu
- Superior safety features - arc chute interlock, smart racking shutter, ready to close, key locks, etc.
- Unique facia architecture to provide complete information on electrical accessories mounted on the ACB, without opening the panel door
- Right aligned design to offer better utilization of space, especially in a multi-tier panel design

- Unique low watt loss pole design and volt-metric releases
- High current carrying capacity & no de-rating at higher ambient temperatures
- Dimensions are optimized without compromising terminal width and inter-phase clearances
- Offers flat terminal as standard, which provide flexibility for accommodating various link configurations





- Tool-less fixing & removal of Arc chutes & volt-metric releases
- Easy on-site conversion from fixed to draw-out & manual to electrical versions
- Unipolar, snap-fit control terminals for independent termination of 2 wires of up to 2.5 mm^2 each
- Easy replacement of Main contacts
- Jaw and cradle terminals maintainable from front
- Built-in mechanical & electrical anti pumping

Matrix Protection & Control Unit :

Salient features:

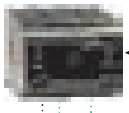
- Available in three versions, providing flexibility for future up gradation
- Communication through - Modbus, Profibus & wireless Zigbee
- Zigbee offers ease of installation & future expansion
- Energy monitoring & control through Energy Management System
- Smart Card offers ease in parameterization and a secure information repository
- Energy Saving Organic LED display with wider viewing angle
- Touch Screen technology to provide ease in navigation
- Protection against temperature rise & harmonics
- Oscillography to display pre & post fault current & voltage, helps to analyse system parameters

Basic Protection & Control Unit

Communication Module

Smart Card

Power & Energy Metering Module

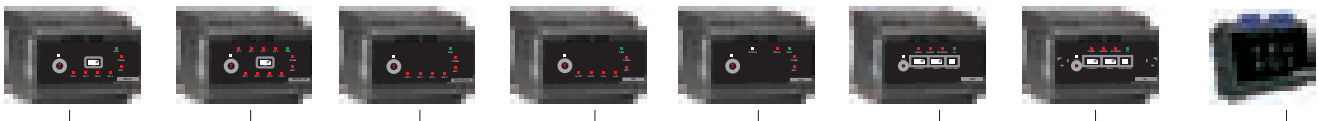


UW-PS
Power Supply (24Vdc)
- Available in 2 input versions (85-265 Vac; 120-375 Vdc)
- DIN rail / Base mountable module

UW-MTX 2.5G | UW-MTX 3.5EC | UW-MTX 4.5

CAN BUS

CAN BUS



UW-REL
Relay Output
- 4 Prog. contacts of 240V/6A rating for closing, tripping, fault annunciation & maximum demand
- DIN rail / Base mountable module

UW-AO
Analog Output
- 4 Analog output
- Output Analog signals of 4-20mA/ 1-10Vdc
- DIN rail / Base mountable module

UW-TCS
Trip Circuit Supervision
- Monitors healthiness of Shunt Trip Circuit
- DIN rail / Base mountable module

UW-EL
Earth Leakage Protection
- Range 0.3 to 30A
- Needs specified external CTs
- DIN rail / Base mountable module

UW-Digital Input/Output
Digital I/O Module
- 4 Isolated digital inputs
- 4 Relay outputs
- DIN rail / Base mountable module

UW-ZSI
Zone Selective Interlocking
- Intelligent discrimination for short circuit & earth fault
- DIN rail / Base mountable module

UW-REF
Restricted Earth Fault Protection
- Detects zone of Earth fault
- Needs specified external CTs
- DIN rail / Base mountable module

UW-TM
Temperature Rise Protection
- Monitors breaker terminal temperature
- Selectable temperature levels (85°C to 115°C)
- Mounted inside breaker

Features in Matrix Protection & Control Unit :

	Parameter	MTX 2.5	MTX 2.5G	MTX 3.5	MTX 3.5EC	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			*	✓	✓
	Harmonics					✓
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)		✓	✓	✓	✓	✓
Auxiliary Supply (24 Vdc)		✓	✓	✓	✓	✓

* - available as optional.
For detailed information please refer product literature.

Simulation kit for Matrix Protection & Control Unit :

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

U-POWER Omega - Technical details :

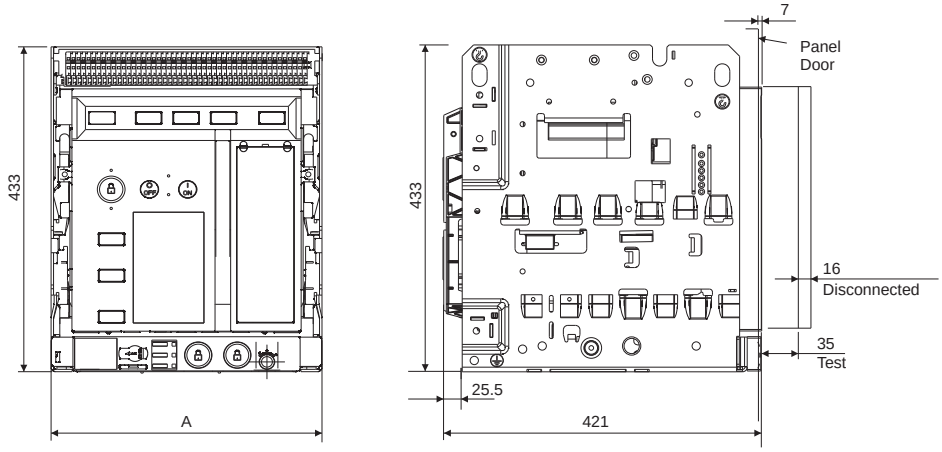
Frame			I							II			III			
Rated Uninterrupted Current (In)			400-1600			2000		2500		400-3200			400-5000		6300	
Version			N	S	H	S	H	S	H	S	H	V	H	V	H	V
Rated Operational Voltage at 50/60 Hz.		Ue	upto 690V													
Rated insulation voltage at 50/60 Hz.		Ui	1000V													
Rated Impulse withstand voltage		Uimp	12kV (Main Circuit)													
Suitability for Isolation			Yes													
Degree of Protection on Breaker front			IP53 Intrinsic, IP55 available													
Pollution degree suitability			3													
Utilization Category			B													
Compliance			IS 13947 (Part-2), EN60947-2, IEC 60947-2													
Rating for 4th Pole			100% & 200%										50% & 100%			
Rated ultimate S.C. Breaking Capacity	Icu (kA)	400/415V	50	65	80	65	80	65	80	65	80	100	80	100	80	100
		500/550V	42	55	65	55	65	55	65	55	65	85	65	85	65	85
		660/690V	36	50	55	50	55	50	55	50	55	75	55	75	55	75
Rated Service S.C. Breaking Capacity	Ics (kA)	400/415V	100% Icu													
		500/550V														
		660/690V														
Rated Short Time Withstand Capacity	Icw (kA)	0.5sec.	50	65	80	65	80	65	80	65	80	100	80	100	80	100
		1.0sec.	50	65	65	65	65	65	65	65	80	85	80	100	80	100
		3.0sec.	26	36	42	36	42	36	42	36	50	57	50	75	50	75
Rated S.C. Making Capacity	Icm (kA)	400/415V	105	143	176	143	176	143	176	143	176	220	176	220	176	220
		500/550V	88	121	143	121	143	121	143	121	143	187	143	187	143	187
		660/690V	76	105	121	105	121	105	121	105	121	165	121	165	121	165
Opening Time (ms)			40													
Closing Time (ms)			60													
Mechanical Life	with maintenance		20000							15000			10000			
Electrical Life	with maintenance		20000							15000			10000			
	without maintenance		10000*					5000		5000			5000		2000	

Note : For selection of protection & control unit refer page 4
*8000 for 1600 N&S version.

Dimensional details :

U-POWER Omega offers common depth (421mm) and height (433mm) 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 III ACB will be 10mm additional with use of equalizer link.
All dimensions in mm