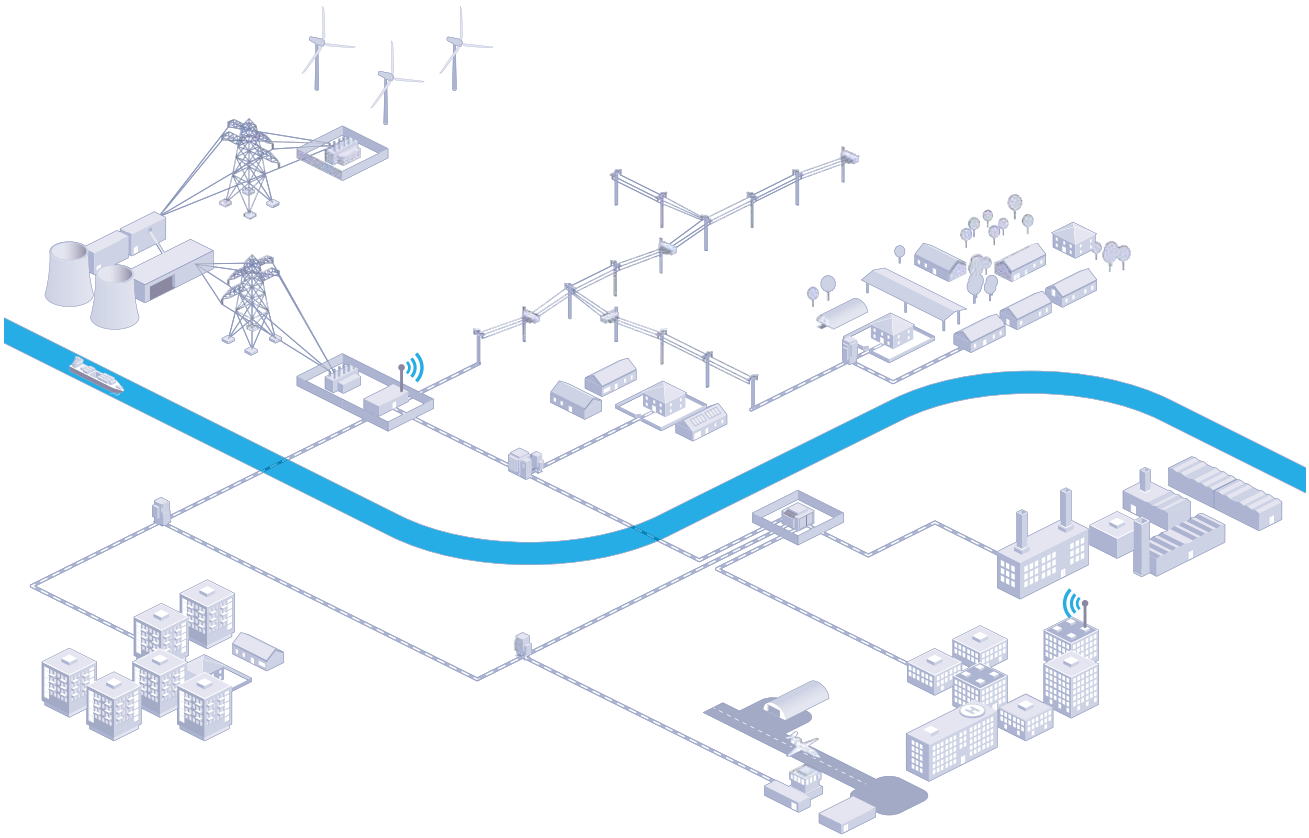
Lucy Electric

THORNE & DERRICK INTERNATIONAL

Thorne & Derrick
+44 (0) 191 410 4292
www.powerandcables.com

Power distribution and automation product portfolio



engineering intelligent solutions

Lucy Electric is a global leader in secondary power distribution solutions with over 100 years' industry experience.

Specialising in high-performance switchgear, we develop and supply intelligent solutions and services for utility, industrial and commercial applications.

This enables the safe and reliable distribution of energy to homes and businesses worldwide.

To find out more about us, visit:
www.lucyelectric.com

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Product panorama

Applications

Energy

i) Generation: wind power, solar power

ii) Distribution: compact substations, distribution networks

Infrastructure

i) Tunnels, airports, ports, metro railway stations

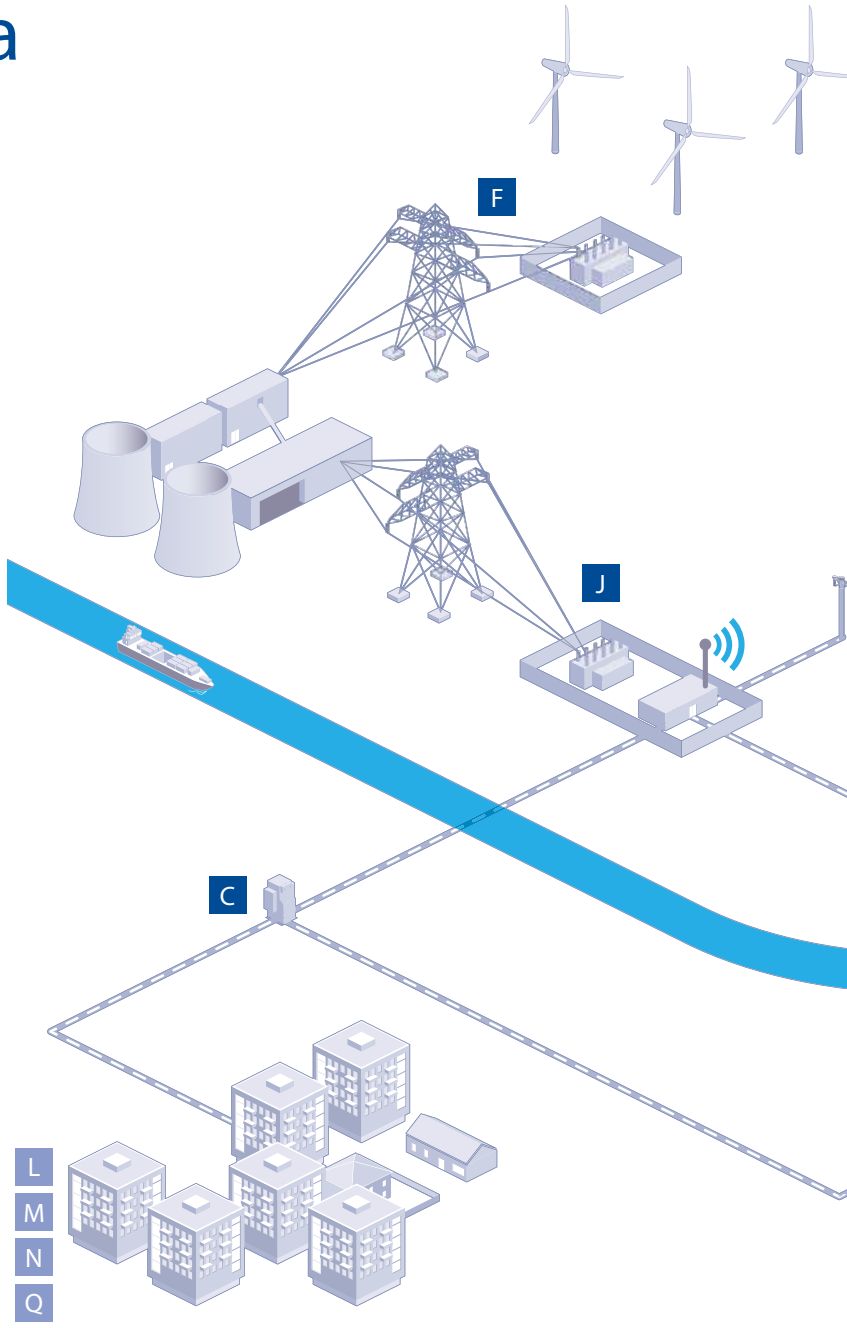
Buildings

i) Commercial buildings: hospitals, shopping centers, hotels, office buildings, data centers, warehouses, schools

ii) Residential buildings: houses, apartments

Industries

i) Water and waste water, mining, minerals, automotive, iron and steel, pulp & paper, cement and petroleum



Ring main units

- A Aegis Plus
- B Sabre
- C Trident
- D Scimitar

Switch disconnectors

- E Rapier AX
- F Rapier DSB
- G Rapier GX
- H Isolating links
- I Dropout (Expulsion) fuses

Automation

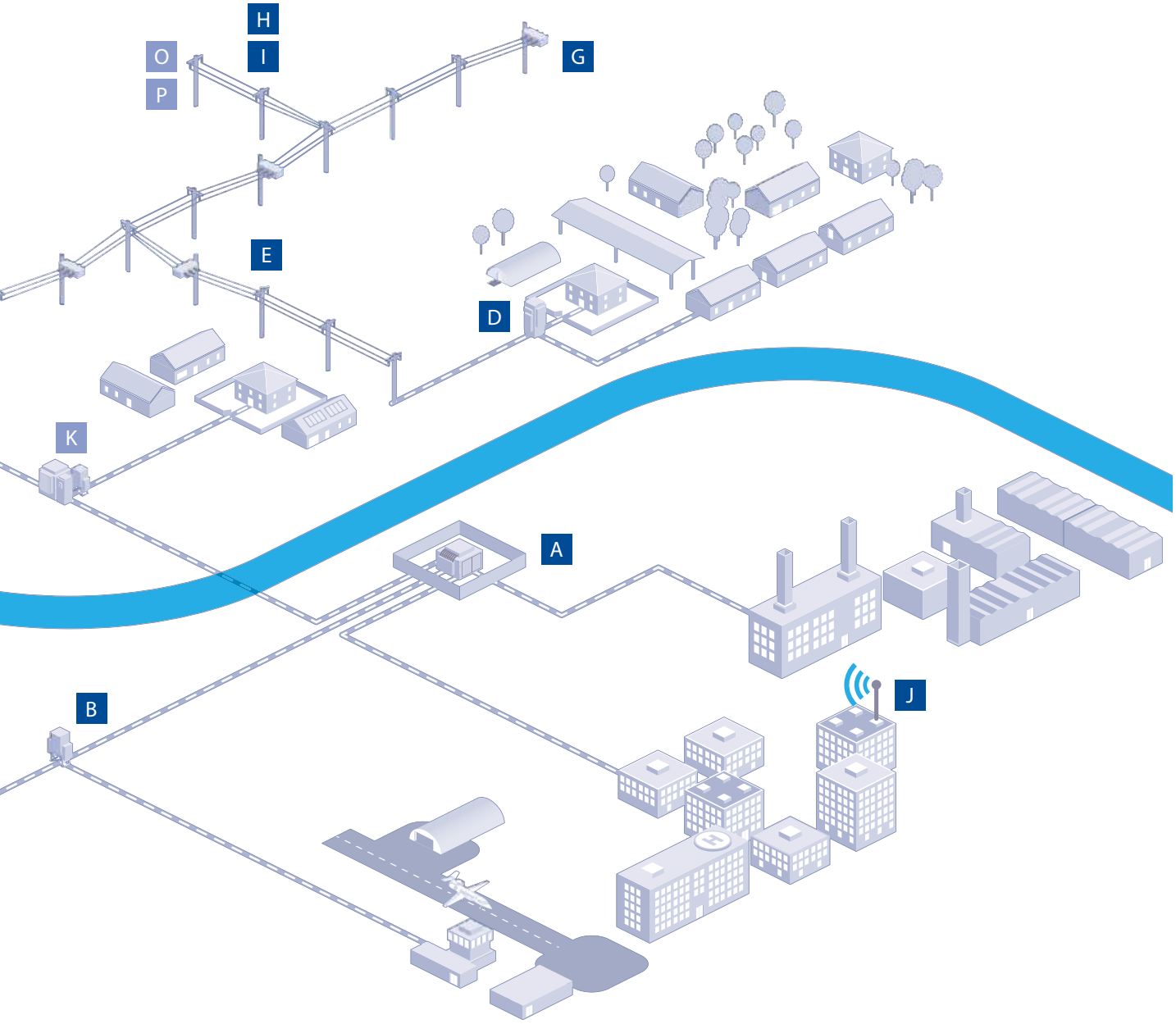
- J Gemini

Distribution cabinets

- K AcuLok (BS fuses)
- L MSDB

Cut outs

- M Heavy duty cut outs
- N Integrated CT metering and heavy duty cut out
- O Pole mounted cut out
- P ABC distribution box
- Q House service cut outs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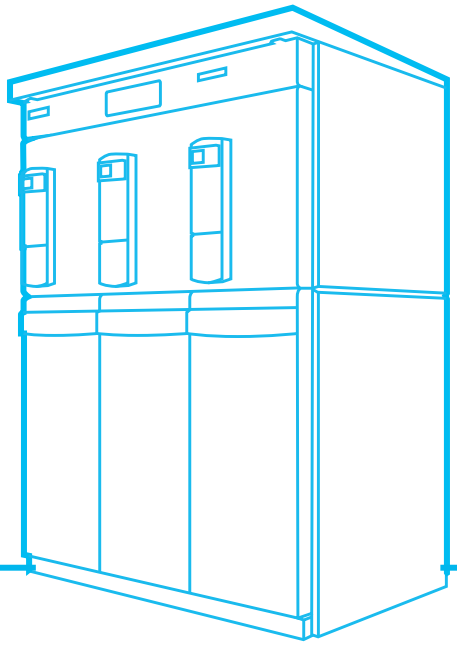
Medium voltage

Ring main units

Lucy Electric is a market leader in the design and manufacture of high-performance medium voltage SF6 gas and oil insulated RMUs for transformer or ground mounted applications.

All RMUs are suitable for both indoor and outdoor locations and can operate in even the most extreme environmental conditions.



Range table - Ring main units and metering units

Ring main units	Rated voltage (up to)	Mode of fault current interruption	Insulation medium	Rated current (up to)	Mounting	Installation condition	Operation	Page
Aegis Plus	24 kV	Vacuum	SF6	630 A	Ground / Transformer	Indoor / Outdoor	Local / Remote	8
Sabre	24 kV	Vacuum	SF6	630 A	Ground / Transformer	Indoor / Outdoor	Local / Remote	9
Trident	15.5 kV	Fuse	Oil	630 A	Ground / Transformer	Indoor / Outdoor	Local / Remote	10
Scimitar	15.5 kV	Fuse	SF6	630 A	Ground / Transformer	Indoor / Outdoor	Local / Remote	11
Metering units								
Air insulated	15.5 kV	Fuse	Air	630 A	Ground / Transformer	Indoor / Outdoor	Local / Remote	12
Oil insulated	15.5 kV	Fuse	Oil	630 A	Ground / Transformer	Indoor / Outdoor	Local / Remote	13

Aegis Plus

SF6 insulated with vacuum circuit breaker protection

Front cable termination, SF6 insulated RMU with up to 5 switching functions in a single stainless steel enclosure

Characteristics

- 12, 17.5 and 24 kV with up to 630 A ratings
- Extensible and Non extensible range with a wide choice of configurations
- Any combination of load break switches and vacuum circuit breakers available
- No on-site SF6 gas handling for installation
- AF, AFL and AFLR internal arc protection
- Intuitive single line mimic diagram
- Horizontal cable terminations with DIN 400 Type C bushings
- Front access earth and test facility
- Integrated motorisation for remote control operation
- Vacuum circuit breaker protection with relays or TLF
- Suitable for Indoor (IP41) and Outdoor (IP54) applications
- Integrated Gemini 3 RTU for easy SCADA connection, with optional automatic transfer scheme (ATS)
- Fully interlocked, anti-reflex mechanisms with padlocks
- Maintenance free with 30 years life expectancy

Technical Data				
Rated voltage	kV	12	17.5	24
Rated current: Ring switch	A	630	630	630
Rated current: Vacuum circuit breaker	A	250 / 630	250 / 630	250 / 630
Impulse withstand voltage	kV	75 / 85	95 / 110	125 / 145
Power frequency withstand voltage	kV	28 / 32	38 / 45	50 / 60
Short time withstand current	kA 3s	21	21	21
Short circuit making current	kA	52.5	54.6	52.5
Short circuit breaking current	kA	21		
Internal arc rating	kA 1s	21		

Range	Extensibility							
	Extensible					Non- extensible		
Configuration	1-way	2-way	3-way	4-way	5-way	3-way	4-way	5-way
Load break switch and/or 250 A circuit breaker	□	□	□	□	□	□	□	□
Load break switch and/or 630 A circuit breaker	□	□	□	□	□	□	□	□

Sabre

SF6 insulated with vacuum circuit breaker protection

Lateral and rear cable termination, SF6 gas insulated RMU, fully weather proof with IP54 for outdoor applications.

Characteristics

- Up to 24 kV and 630 A ratings
- Non extensible, extensible and modular range
- Switching functions enclosed in SF6 gas insulated stainless steel tank sealed for life
- Intuitive single line mimic diagram for simple and safe operation
- Integrated cable earth and test facility
- Choice of TLF (time limit fuses) or self / auxiliary powered relay protection
- Anti reflex mechanism to prevent load break switch opening under fault conditions
- Fully interlocked operation with padlocking facility for maximum operator protection
- Freestanding and transformer mounted units
- Actuators (motorised) for ring switches and circuit breakers
- IP54 for outdoor installation without requiring a kiosk
- Seamless integration with SCADA network for remote operation and control
- Maintenance free with 30 years life expectancy

Technical Data					
Rated voltage	kV	12	17.5	15.5	24
Rated current: Ring switch	A	630	630	400	630
Rated current: Vacuum circuit breaker	A	250/630	250/630	400/630	250/630
Mode of fault current interruption	kV	Vacuum circuit breaker			
Impulse withstand voltage	kVP	75	95	95	125/145
Short circuit making current	kA	50	50	54.6	40
Short circuit breaking current	kA	20	20	21	16
Internal arc rating	kA / 1sec	20	20	21	16

Range		Extensibility			
Product range	**Description**	**Non extensible**	**Left hand extensible**	**Right hand extensible**	**Both ways extensible**
Ring main units	2 ring switches and 250 A vacuum circuit breakers	□	□	□	□
Modular units	2 ring switches and 630 A vacuum circuit breakers	□	□	□	□
	250 A vacuum circuit breaker		□	□	□
	630 A vacuum circuit breaker		□	□	□
	630 A single ring switch		□	□	□
	630 A double ring switch	□	□	□	□

Trident

Oil insulated with fuse protection

Lateral and rear cable termination, oil insulated ring main unit designed for harsh and corrosive environmental conditions.

Characteristics

- Up to 15.5 kV and 630 A ratings
- Non extensible, extensible and modular range
- Intuitive single line mimic diagram for simple and safe operation
- Integrated earth and test facility for easy and safe cable test without removing cable connections
- Anti reflex mechanism to prevent ring switch opening under fault conditions
- Fully interlocked operation with padlocking facility for maximum operator protection
- Freestanding and transformer mounted units
- Actuators (motorised) for ring switches
- Fuse switch fitted with shunt trips for remote tripping
- IP54 for outdoor installation without requiring a kiosk
- Seamless integration with SCADA network for remote operation and control
- Maintenance free with 30 years life expectancy

Technical Data	
Rated voltage	15.5 kV
Rated current: Ring switch	630 A
Rated current: Vacuum circuit breaker	200 A
Mode of fault current interruption	HV fuses
Impulse withstand voltage	95 / 110 kVp
Short circuit making current	50 kA
Short circuit breaking current	20 kA

Range		Extensibility			
Product range	Description	Non extensible	Left hand extensible	Right hand extensible	Both ways extensible
Ring main units	2 ring switches and 200A fuse switch	☐	☐	☐	☐
Modular units	200 A fuse switch		☐	☐	☐
	630 A single ring switch		☐	☐	☐
	630 A double ring switch		☐	☐	☐

Scimitar

SF6 insulated with fuse protection

Lateral and rear cable termination, SF6 gas insulated ring main unit, fully weather proof with IP54 for outdoor applications.

Characteristics

- Up to 17.5 kV and 630 A ratings
- Non extensible, extensible and modular range
- Intuitive single line mimic diagram for simple and safe operation
- Switching functions enclosed in SF6 gas insulated steel tank sealed for life
- Fully sealed, environment independent fuse compartment mounted outside SF6 filled tank (in air)
- Integrated Earth and Test facility for easy and safe cable test without removing cable connections
- Anti reflex mechanism to prevent ring switch opening under fault conditions
- Fully interlocked operation with padlocking facility for maximum operator protection
- Freestanding and transformer mounted units
- Actuators (motorised) for ring switches
- Fuse switch fitted with shunt trips for remote tripping
- IP54 for outdoor installation without requiring a kiosk
- Seamless integration with SCADA network for remote operation and control
- Maintenance free with 30 years life expectancy

Technical Data				
Rated voltage	kV	12	15.5	17.5
Rated current: Ring switch	A	630	630	400
Rated current: Vacuum circuit breaker	A	200	200	200
Mode of fault current interruption		HV fuses		
Impulse withstand voltage	kVP	95	95	95
Short circuit making current	kA	62.5	62.5	54.6
Short circuit breaking current	kA	20	20	20
Internal arc rating	kA / 1sec	21	21	21

Range		Extensibility			
Product range	Description	Non extensible	Left hand extensible	Right hand extensible	Both ways extensible
Ring main unit	2 ring switches and 200 A fuse switch	□	□	□	□
Modular unit	200 A fuse switch		□	□	□

Air metering unit

Air insulated metering unit designed for Sabre ring main unit range

Characteristics

- Up to 17.5 kV and 630 A ratings
- Freestanding and RMU mounted version
- Voltage transformer (VT) isolation for HV testing
- Bus bar metering and tee off metering options
- Trip lock out relay for RMU / AMU combinations for emergency tripping
- Wide range of CT and VT to suit various application needs
- IP54 for outdoor installation without requiring a kiosk

Technical Data				
Rated voltage	kV	12	15.5	17.5
Rated current	A	250 / 630	250 / 630	400
Short time withstand current	kA / 3sec	20	20	21
Bushings		Din 400 type C		
Impulse withstand voltage	kVP	75	95	95
Short circuit making current	kA	50	50	54.6
Cable connection		3 single core cables / single 3 core cable		

Range		Connection	
Product range	Description	RMU tee off metering	Bus bars metering
Air metering unit	250 / 400 / 630 A air insulated metering unit	□	□

Oil metering unit

Oil insulated metering unit designed for Trident ring main unit range

Characteristics

- Up to 15.5 kV and 630 A ratings
- Freestanding and RMU mounted version
- Voltage transformer (VT) isolation for HV testing
- Bus bar metering and tee off metering options
- Trip lock out relay for RMU / AMU combinations for emergency tripping
- Wide range of CT and VT to suit various application needs
- IP54 for outdoor installation without requiring a kiosk

Technical Data	
Rated voltage	12 / 15.5 kV
Rated current	250 / 400 / 630 A
Short time withstand current	20kA / 3sec
Bushings	Din 400 type C
Impulse withstand voltage	75 / 95 kVp
Short circuit making current	50 kA
Cable connection	3 single core cables / single 3 core cable

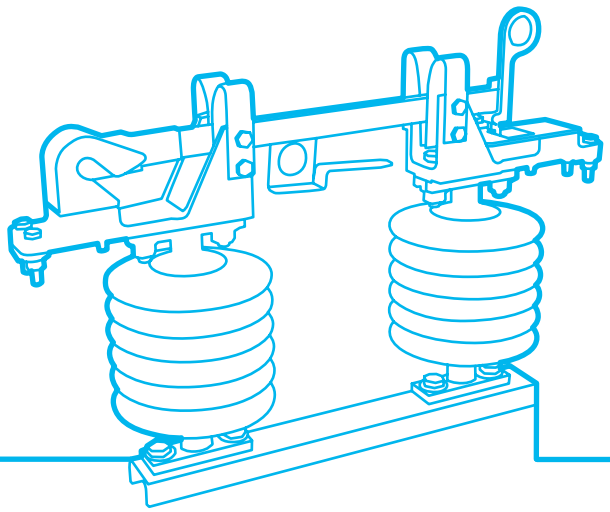
Range		Connection	
Product range	Description	RMU tee off metering	Bus bars metering
Oil metering unit	250 / 400 / 630 A air insulated metering unit	□	□

High / Medium voltage

Switch disconnectors

Lucy Electric's range of high and medium voltage switch disconnectors include pole or structure mounted air break disconnectors and air and gas load break switches.

These switch disconnectors provide best-in-class solutions and are designed to anticipate the evolving technical and market demands of our customers.



Range table - Switch disconnectors

Switch disconnectors	Rated voltage (up to)	Mode of fault current interruption	Insulation medium	Rated current (up to)	Mounting	Installation condition	Operation	Page
Rapier AX	36 kV	–	Air	800 A	Pole	Outdoor	Local / Remote	16
Rapier DSB	145 kV	–	Air	2500 A	Structure	Outdoor	Local / Remote	17
Rapier GX	38 kV	–	SF6	630 A	Pole	Outdoor	Local / Remote	18
Isolating links	36 kV	–	Air	400 A	Pole	Outdoor	Local	19
Dropout fuses	36 kV	Fuse	Air	100 A	Pole	Outdoor	Local	20

Rapier AX

Air break switch disconnector

The Rapier AX air break switch disconnector range is compact and robust, providing a reliable, lightweight and flexible solution for network isolation and reinstatement.

Incorporating a modular design switch that can be configured to suit a variety of applications, the range combines high performance and reliability and is particularly suited to rural environments.

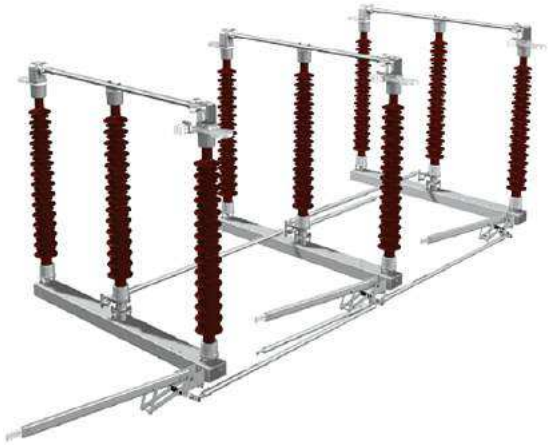
Characteristics

- 12 / 15.5 / 24 / 36 kV options
- Lightweight, universal base design for all voltages
- Horizontal or vertical mounting on standard steelwork both pole top and underline
- Fully type tested and compliant with IEC, ENATS and other standards
- Silicon insulators
- Dependent Manual (DM) and Independent Manual Spring (IMS) assisted hookstick mechanism, and down pole handle variants
- AX can be supplied with full remote control for automation (AX-A) or the automation can be retrofitted at a later date
- Optional load break capabilities
- Optional earth blades
- Can be fitted with expulsion fuses (vertical mounting only)
- Enhanced dielectric values

Technical Data					
Rated voltage	kV	12	15.5	24	36
Rated current	A	630	630	630	630 / 800
STC withstand	kA / 3 sec	25	25	25	25
Peak withstand current	kA	62.5	62.5	62.5	62.5
Making current	kA	13.1	10	13.1	10
Peak making current	kA	32.75	25	32.75	25
Load break current	A	630 (800)	630 (800)	630 (800)	800

Rapier DSB

Double side break switch disconnector



The Rapier double side break disconnector range provides a powerful and cost effective solution for isolating circuits and equipment in substation applications. Based on open terminal air break technology, the range combines robustness and alignment reliability.

Characteristics

- Ratings up to 145 kV and 2500 A
- Robust design
- High endurance and reliability
- Suitable for horizontal and vertical installation
- Fault withstand current up to 40 kA / 3sec
- Double side break
- Optional integral earth blades either or both sides
- Manual or motor operation

Accessories

Busbar connectors:

- Up to 145 kV
- Fixed and expansion type
- Available in copper and aluminium

Technical Data				
Rated voltage	kV	36	72	145
Rated current	A	2000	2500	2500
STC withstand	kA / 3 sec	31.5	40	40
Peak withstand current	up to kA	78.75	100	100
Earth blades	kA	31.5	40	40
Bus transfer current	kA	1600	1600	1600
Load break current	A	800	n/a	n/a
Key interlocks		6	6	6

Rapier GX

Enclosed load break switch

The Rapier GX pole-mounted, gas insulated, load break switch has been developed as a complementary alternative to Rapier AX air break switches.

Available up to 38 kV, the GX switch has been designed using SF6 puffer switching technology, delivering high performance and reliability. Whether operated as a simple, manually-independent switch or equipped with fully automated features, the GX switch is suitable for all sectionalising and network automation requirements.

Characteristics

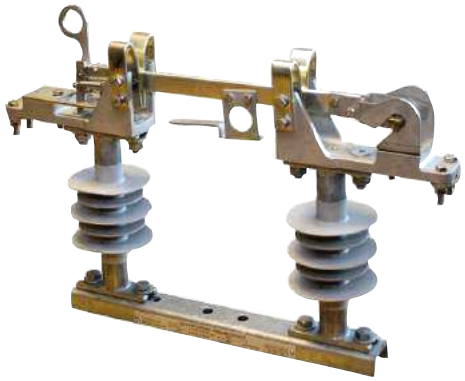
- Stainless steel tank sealed for life
- Hookstick or motor operated
- Suitable for single wood pole mounting (other arrangements available)
- Independent spring operation ensuring consistent opening and closing times

Technical details

- Available in 15, 26 and 38 kV versions
- Current rating of 630 A
- Optional internal VT for 15 kV version
- 20 kA internal arc withstand

Technical Data				
Rated voltage	kV	15	26	38
Rated current	A	630	630	630
STC withstand	kA / 4 sec	20	25	12.5
Short circuit making current	kApk	50	32.5	32.5
Fault making operations	kA	5	5	5
Internal arc withstand	A	20	20	20
Load break current	A	630	630	630
Load break operations		400	400	400
Mechanical endurance		10,000	10,000	10,000

Isolating links



The Lucy Electric range of HV isolating links provide a reliable and economic solution for the isolation of overhead distribution lines and transformers and a visual indication of operation and positive disconnection from supply. Available in 12 kV and 36 kV options, each single phase link unit can be attended from the ground with an insulated operating pole.

Characteristics

- Removable link for safe point of isolation
- Spring-loaded, latched operation
- Hookstick operation
- Porcelain or polymeric insulator options

Technical details

- Voltage range: 12 and 36 kV
- Current rating: 400 A
- Short time current: 16 kA / 3sec at 12 kV; 12.5 kA / 3 sec at 36 kV
- Integral connector terminals suitable for conductor sizes up to 19 mm diameter

Technical Data			
Rated voltage	kV	12	36
Rated current	A	400	400
STC withstand	kA / 3 sec	16	12.5
Peak withstand current	kA	40	31.25

Dropout (expulsion) fuses

The Lucy Electric range of dropout (expulsion) fuses provides a reliable and economic method of protecting circuits and equipment. When used in its trip all phase version, it ensures safe disconnection of supply when a fault occurs on just one phase.

Characteristics

- Fuse assembly with rewirable fuselink
- Hookstick operation
- Visual indication from ground level of blown fuse
- Porcelain or polymeric insulators

Technical Details

- Button type fuselink up to 100 A
- Available in 12, 24 and 36 kV versions
- Spring loaded flipper ensures constant contact pressure
- Optional trip all phase (TAP) three phase unit

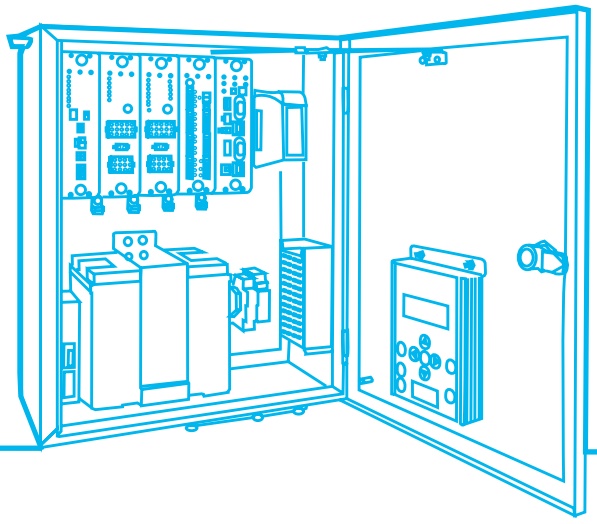
CIRCUIT BREAKER
DISCONNECTOR
SWITCH 2
Lucy
SABRE
VRN2A
Lucy Electric Technologist

Automation

Gemini RTU

Lucy Electric's complete range of automated power distribution products gives customers a choice of automation building blocks which can be tailored to offer a complete smart grid solution.

At the cutting edge of medium voltage switchgear design for both ground and pole-mounted switchgear, the products offer a genuinely systems-engineered approach to smart grid solutions.



Gemini 3

Modular RTU

The Gemini 3 is a flexible Remote Terminal Unit (RTU) platform for advanced feeder automation on electrical distribution networks. It incorporates a range of features allowing customers to build in flexibility and scalability to their network automation.

The Gemini 3 modular design provides a secure operation with built-in diagnostics, continuous status monitoring and indication. The individual modules are rugged, making the device field serviceable, ensuring future proofing of the instillation. The modules currently available in Gemini 3 are:

Master Control Module (MCM) – Contains the main processor and supervises all modules. The MCM handles the protocol communications.

Switch Control Module (SCM) – Provides the inputs and outputs to perform secure interlocked control of a single air break switch.

Single Switch Module (SSM) – Provides the inputs and outputs to perform secure interlocked control of a single gas enclosed switch.

Dual Switch Module (DSM) – Provides the inputs and outputs to perform secure interlocked control of two MV ring switches.

Power Supply Module (PSM) – Works with the switch control modules to provide secure switching operations. The PSM generates regulated power to all other modules and external communication equipment. The PSM also provides the intelligent battery charging function to maintain a secure supply.

Input Output Module (IOM) – General purpose module that covers digital and analogue inputs and relay outputs. It can be used as additional I/O to a multi-switch control RTU or in a monitoring only RTU.

Fault Passage Module (FPM) – Dual fault passage indicator module which detects and alarms for Overcurrent and Earth Faults. This module also provides 3 phase current measurement for two circuits.

Human to Machine Interface (HMI) – Optional module that allows local control and monitoring without the need for a Computer. It allows local controls to be issued by an authorised Engineer (security enabled) or just provide data to be viewed locally.

General features:

- 32-bit low power consumption microprocessor
- Built-in diagnostics, including temperature monitoring and hardware watchdog.
- Security enabled (firewall, SSL)
- Real time clock
- Communication ports
  - Dual isolated Ethernet ports, For TCP/ IP and VPN connections
  - Dual isolated RS232 ports, for serial transmission
  - Isolated RS485 port, for serial data transmission
- Communication protocols
  - DNP 3.0 TCP/IP or serial
  - IEC 60870-5-101
  - IEC 60870-5-104
  - Modbus TCP or RTU
- Programmabillity
  - Control logic function blocks
  - Dynamic dead-band to avoid unnecessary alarms configured in SCADA
- Supervisory selection and indication (off/ local/ remote)
- Event recording
  - 7000 events
  - 1ms resolution
- LED status indicators

Gemini 2.5 RTU

Remote terminal unit for remote operation and control of power distribution networks

Characteristics

- Embedded auto change over and auto sectionalising functions
- Control and monitoring of up to 4 motorised functions (switches or circuit breakers)
- Inbuilt earth and fault passage indicators
- Advanced monitoring of current, voltage, battery condition, temperature compensation, switching status, automatic cooling system and gas pressure
- Flexible communication through radio, RS232, RS485, packet data network, GSM, GPRS, PSTN, Bluetooth, Ethernet TCP / IP, optical fibre and SMS messaging
- Advanced battery back to operate under mains AC input failure
- Fully tested to ENATS (Energy Network Association Technical Standards), EMC and environmental standards

Technical Data

General	
Enclosure	Stainless steel
Degree of protection	IP54
Operating temperature	-25 to + 60°C
Relative humidity	Up to 95%
Method of mounting	Floor, wall, pole or RMU switchgear
Dimensions	H 600, W 400, D 210 mm

RTU Hardware	
Processor module	ARM9 Microprocessor
Power supply	110 / 230 V AC supply – over and under-voltage protection
Battery type	2 x 12 V DC, sealed lead acid or high temperature NiMH
Battery charger	Temperature compensated, fully protected
Control electronics	PIC based processor with expandable I^2C bus
Inner enclosure	Stainless steel
Ventilation	Microprocessor controlled, long life fan with baffle air intake filter

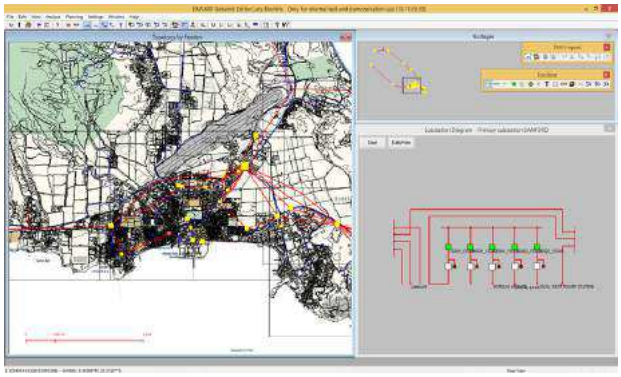
Inputs / outputs	
Digital inputs	14 isolated digital inputs – expandable
Digital outputs	8 isolated digital outputs – expandable
Analogue inputs	3 CT analogue inputs as standard (DIs reduced to 11)
Expansion I / O module	3 AIs / 4 DIs; 7 DIs / 2 DOs

Communications	
Communication interfaces	3 RS-232 for control (Ethernet option), configuration and programming plus one expansion bus
Protocols	DNP3, IEC 60870-5-101 / 104 and Modbus (others on request)
Communication media	RS-232 / 485, UHF / VHF radio, packet data, GSM / GPRS / EDGE, PTSN, leased or twisted pair lines, optical fibre, Ethernet (TCP/ IP) and Bluetooth

Switchgear interface	
Controls	• Membrane push-button for open / close operations in conjunction with activate push-button for up to four switching functions (standard 1, 2, 3 or 4 switch control formats) • Selector control for off, local or remote modes
Indications	• RTU services such as DC / AC supplies, dummy control and debug LEDs • Switch status LEDs for open / closed positions • Control output LEDs (illuminates when active) • Configurable LED indications
Cables	Plug-in, multi-core umbilicals to switchgear

Software	
Configuration	Windows-based software for configuration of: • Protocol parameters including device and I / O addresses • Parameters for the communications device • Parameters for digital, analogue and counter points • Automation sequences • Power saving routines • Battery tests

Gemini SCADA solutions



Lucy Electric offers entire electrical network remote control options via the use of Gemini automation and monitoring products. The technology is at the cutting edge of MV / HV switchgear design and innovation in the fields of both ground and pole-mounted switchgear. With these combined capabilities, Lucy Electric can offer its customers a truly systems-engineered approach to their turnkey MV electrical distribution requirements for the utility, industrial, commercial and infrastructure sectors.

Gemini SCADA provides a dynamic and robust medium for MV networks. It allows the user to have full visual control and information accessibility to any networked system architecture. The software has been developed as "application specific" for the control and monitoring of MV networks.

Characteristics

- Multiple communications to RTUs, IEDs, PLCs or other I / O devices
- DNP3, IEC 60870-5-101 / 104 – others on request
- Full OPC server and client support
- Serial or Ethernet communication channels e.g. radio, GSM or GPRS

Capabilities

- Real-time data collection, database management and real-time dynamic data display
- Historical collection with real-time and historical trending graphs
- Alarm, event, sequence of event management
- Secure operator supervisory control
- User-based security
- On-line configuration

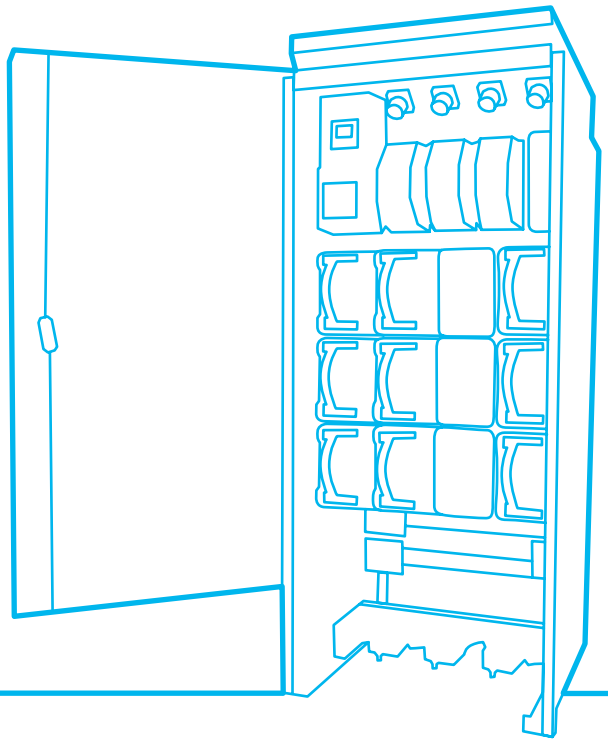
Safety Features

- Select before operate control
- Control timeouts; control fail alarm
- Simultaneous control lock-out
- Control tagging (control lock-out)
- Information tagging

Low Voltage

Distribution cabinets

The comprehensive product portfolio includes wall, ground and transformer mounting cabinets suitable for a variety of different applications. The TMO cabinet features the enhanced safety Aculock fuse handle.



Range table - Distribution cabinets

Distribution cabinets	Rated voltage	Busbar rated current	Protection	Fuse type	Number of outgoing fuse ways	Mounting	Installation	Page
AcuLok Transformer Mounted, Outside	400 V	1600 A	Fuse	BS88 J	4 to 8	Transformer mounted	Outdoor	28
MSDB Multi service distribution boards	400 V	630 A	Fuse	BS88 J	Up to 45	Wall / ground	Indoor	29
SMDB Sub mains distribution boards	400 V	630 A	Fuse	BS88 J	Up to 5	Wall	Indoor	30

AcuLok TMO

Transformer distribution cabinet

Transformer mounted BS88 J type fused distribution cabinets. The term AcuLok signifies the accurate and positive locking operation of fuse handles on to the fuse ways in a single movement. The fuse handle has deep skirt shrouding to protect the operator from any arc flash during fuse handle manipulation.

Characteristics

- Innovative, safe and operator friendly AcuLok technology
- Up to 8 outgoing fuse ways with 630 A rating
- Deep skirt shrouding around fuse handle for protecting operators against arc flash
- Independent load make – load break disconnector switches for all three phases
- Insulated Rogowski coil tube per fuse handle
- Multi-functional digital meter with communication options
- Veam Power Lock standby generator sockets with earth for emergency supply
- IP34D protection for indoor and outdoor installation

Technical Data	
Rated voltage	400 V
Rated current outgoing fuse ways	630 A
Rated current load break disconnector	1000 / 2000 A
Mode of fault current interruption	Fuse
Number of outgoing fuse ways	4, 5, 6 or 8
Fuse types	BS88
Mounting options	Transformer mounted with 'F' type flange
Cable connection	3C / 4C, 300 mm^2

Multi service distribution boards (MSDB)

Mild steel wall mounting distribution boards for 3 phase systems configurable with either a single incoming bank of triple pole J type slotted tag fuses or with an additional outgoing bank of triple pole J type fuses for mixed developments requiring a split supply greater than 100 A.

Characteristics

- Up to 45 outgoing 3 phase fuse ways
- 1 J and 2 J versions available in left or right hand layouts
- Top or bottom entry
- 2 door design with segregated access to DNO fuses
- Thumb screw operated fuse handles with 92 mm BS88 J type fuses
- BS7657 outgoing fused ways
- Polyester powder coated steel enclosure
- Suitable for 3C or 4C networks
- Pre-drilled removable gland plates

Technical Data	
Busbar rated current	630 A
Rated voltage	400 V
Rated insulation voltage	690 V
Fuse way maximum rating	630 A
Max incoming cable size	4C, 300 mm^2
Cable connection	Via mechanical shear off connectors

Sub mains distribution boards (SMDB)

Wall mounting cabinets which accept single incoming supply and provide up to 5 outgoing J type triple pole fuse ways for indoor applications only.

Characteristics

- Up to 5 outgoing 3 triple pole fuse ways
- Thumb screw operated fuse handles with 92 mm BS88 J type fuses
- IP2XB internal protection
- Configurable for direct connection to busbar
- Double door cabinets
- Suitable for 3C or 4C networks
- Polyester powder coated steel enclosure

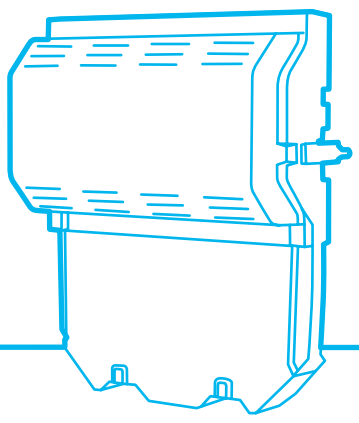
Technical Data	
Busbar rated current	630 A
Rated voltage	400 V
Rated insulation voltage	690 V
Fuse way maximum rating	630 A
Max incoming cable size	4C, 300 mm^2
Cable connection	Via mechanical shear off connectors

Low voltage

Cut outs

Providing a robust and durable solution for the vast majority of LV protection and distribution requirements up to 630 A, the cut out range has kept abreast of market demands in terms of performance and versatility.

With an expected service life often exceeding 20 years, these products can stand the test of time.



Range table - Cut outs

Cut outs	Rated voltage	Busbar rated current	Protection	Fuse type	Number of outgoing fuse ways	Mounting	Installation	Page
Heavy duty	230 / 400 V	630A	Fuse	BS88 J	Three phase	Wall	Indoor	34
Integrated CT metering & heavy duty cut out	400 V	630 A	Fuse	–	Three phase	Wall	Indoor	35
Pole mounted	400 V	400 A	Fuse	BS88 J	Single	Pole	Outdoor	36
ABC distribution boxes	230 / 400 V	200 A	–	–	Up to 9 outgoing unfused ways	Wall or Pole	Outdoor	37
Indoor house service	230 / 400 V	100 A	Fuse	BS1361	Single / Three phase	Wall	Indoor	38
Outdoor house service	230 / 400 V	100 A	Fuse	BS1361	Single / Three phase	Wall	Outdoor	39

Heavy duty cut outs

Wall mounting fused service heads with ratings up to 630 A for indoor applications. Can be fitted with integral CT metering chamber which accepts latest generation smart meters.

Characteristics

- 200, 400 and 630 A versions
- Thumb screw operated fuse handles with 83 mm BS88 J type fuses for 200 A
- Thumb screw operated fuse handles with 92 mm BS88 J type fuses for 400 and 630 A versions
- Transparent internal shrouds over terminations provides IPXXB protection with handles in place
- Soft PVC shrouds for protection of incoming stalks with fuse handles removed
- Suitable for 3C CNE or 4C SNE installations
- Versions with no external earth connection
- Robust thermoplastic enclosure construction
- Sealable covers and cable troughs with interlocked covers
- Choice of shear off mechanical or lug incoming terminations
- Choice of leader clamp, mechanical shear off or lug outgoing terminations

Technical Data	
Busbar rated current	200, 400 or 630 A
Rated voltage	400 V
Rated insulation voltage	690 V
Fuse handle maximum rating	As above
Max incoming cable size (630A)	300 mm^2
Max incoming cable size (200A)	185 mm^2
Cable connection	Via mechanical shear off connectors, lugs (optional leader clamps on outgoing)

Integrated CT metering

& heavy duty cut outs

Wall mounting fused service heads with integrated CT metering having ratings up to 630 A for indoor applications. Accepts smart meters with standard ISO mountings.

Characteristics

- Single ratio metering class 0.5 CTs for all variants
- Pre-wired with loom for direct connection of meter
- VT protection fuses and solid neutral link
- Segregated compartment design giving access firstly to meter check terminals then service connections
- Transparent internal shrouds over terminations provides IPXXB protection with compartment door open
- Suitable for 3C CNE or 4C SNE installations
- Robust thermoplastic enclosure construction mounted on pre-drilled backboard
- Sealable covers
- Choice of shear off mechanical or lug incoming terminations
- Choice of leader clamp, mechanical shear off or lug outgoing terminations

Technical Data	
Busbar rated current	200, 400 or 630 A
Rated voltage	400 V
Rated insulation voltage	690 V
Fuse handle maximum rating	As above
Max incoming cable size (630 A)	300 mm^2
Max incoming cable size (200 A)	185 mm^2
Cable connection	Via mechanical shear off connectors, lugs (optional leader clamps on outgoing)
CT ratios	200 / 5, 400 / 5 and 600 / 5
CT rated burden	5 VA
CT conformity	IEC 60044-1, 1357626 and IEC 185
Backboard fire retardent	Euro Class C

Pole mounted cut outs

Fused 400 A rated cut outs for pole mounting.

Characteristics

- Accepts up to 300 mm^2 aluminium conductors
- High grade engineering thermoplastic for excellent UV resistance
- IP43 rating
- Thumb screw operated fuse handle with brass clamps
- Fixing via single coach screw
- Closed cell foam cable grommets

Technical Data	
Continuously rated current	400 A
Rated voltage	400 V
Wedge clamp material	Brass
Fuse handle maximum rating	400 A
Max incoming cable size (630 A)	300 mm^2
IP rating	IP43
Cable connection	Via mechanical shear off connectors or compression lugs

ABC distribution boxes

200 A rated distribution boxes for pole or wall mounting.

Characteristics

- Up to 9 service ways from a three phase supply
- CNE and SNE versions
- Accepts up to 95 mm^2 incoming ABC type conductors
- High grade engineering thermoplastic for excellent UV resistance
- IP44 rating
- Two M8 pinching screws per conductor
- Grease filled terminal blocks
- Hinged door with restraint
- Foam self-sealing cable entry gasket
- Optional metal frame for mounting to concrete poles

Technical Data	
Continuously rated current	200 A
Rated voltage	400 V
Rated insulation voltage	690 V
Number of outgoing service ways	9
Max incoming cable size	120 mm^2
IP rating	IP44
Cable connection (per conductor)	2x pinching screws in tunnel terminals

Indoor house service cut outs

Fused cut outs in either CNE or SNE formats conforming to BS7657:2010 for the supply of domestic or light commercial installations.

Characteristics

- Dual phase and neutral terminals accept up to 35 mm² conductors
- Three phase CNE / SNE combinations with cable chambers
- 22 mm or 30 mm fuse barrel size depending on amperage
- Reversible mounting (phase on left or right hand side) for all variants
- Special version for legacy installations with PILC cables
- Fire resistant slope board for mounting in meter cupboards
- Two brass M8 pinching screws per conductor
- Interlocked shrouds and covers with sealable fuse handle
- Silver plated phase terminal block

Technical Data	
Current ratings	60 / 80 and 100 A
Rated voltage	230 / 400 V
Fuse type	BS1361 Type IIa and IIb
Supply frequency	50 Hz
Max incoming cable size	35 mm2
Recommended terminal torque	3.25 Nm
Cable connection per conductor	2 x M8 screws in tunnel terminals

Outdoor house service cut outs

Wall mounted insulated enclosures equipped with one single phase or one three phase 100 A house service cut out. Featuring sealable covers for enhanced tamper resistance, the outdoor service units are IP55 rated and are engineered for under eaves installation.

Characteristics

- Tough, weatherproof enclosure
- Removable backplate sub assembly
- External fixing feet for wall mounting
- Versatile glanding arrangements
- Flame retardant material with excellent UV resistance

Technical Data	
Current rating	100 A
Rated voltage	230 / 400 V
Fuse type	BS1361 Type IIa and IIb
IP rating	IP55
Recommended terminal torque	3.25 Nm

Energy Services

Complete product lifecycle solutions

Our aim at Lucy Electric is to ensure that you consistently get the very best from our technology – and your budgets. With our integrated set of product lifecycle services, ranging from after sales support to training and consultancy, we provide incisive expertise and timely assistance throughout the lifecycle of your high performance Lucy Electric products.

Whether you are managing extensive distribution networks, expanding, updating or automating your operation, Lucy Electric has the products and services to give you peace of mind that your assets are being effectively managed and maintained.

Complete product lifecycle solutions

1. Installation and commissioning
A. Offloading and site erection
B. Connections
C. Commissioning

2. Warranties and service package
A. Extended warranties on equipment
B. Wide range of onsite / offsite support packages
C. Up to 60% cost savings on spare parts and labour

3. Site surveys and technical audits
A. Documentation of site equipment
B. Switchgear condition investigation
C. Maintenance scheduling

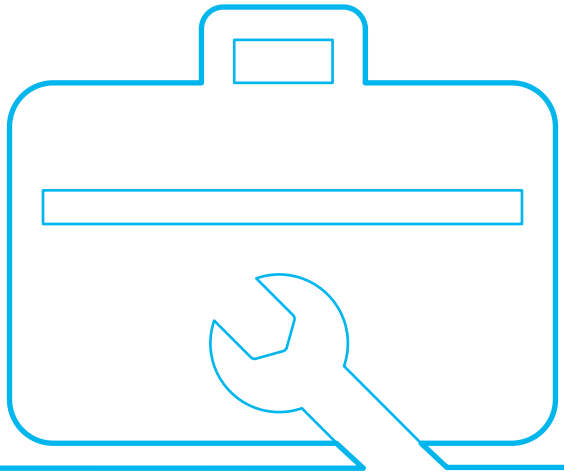
4. Consultancy
A. Consultancy for extension, upgrades and retrofitting of switchgear to maximise asset performance and avoid unexpected failures and production losses

5. Testing
A. Primary and secondary current injection testing
B. Protection relay and TLF testing
C. CT mag curve testing
D. CT polarity and ratio testing
E. TEV and thermal assessment
F. RTU testing
G. FPI testing

6. Training
A. Tailor made courses for supervisors, engineers, technicians, operators, programmers and maintenance teams

7. Retrofitting
A. On site and off site retrofitting and refurbishment of switchgear products
B. Installation of motor retrofit kits

8. De-commissioning
A. SF6 gas handling
B. RMU site removal and disposal
C. Oil site removal and disposal



Thorne & Derrick
+44 (0) 191 410 4292
www.powerandcables.com

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