

The logo consists of the letters 'OHUG' in a bold, black, sans-serif font. The letters are positioned on a bright yellow rectangular background that has a torn, paper-like edge on its right side. This yellow strip is set against a grey background featuring a faint, high-angle photograph of a power transmission tower and its associated power lines.

The power behind electricity

OHUG Product Catalogue

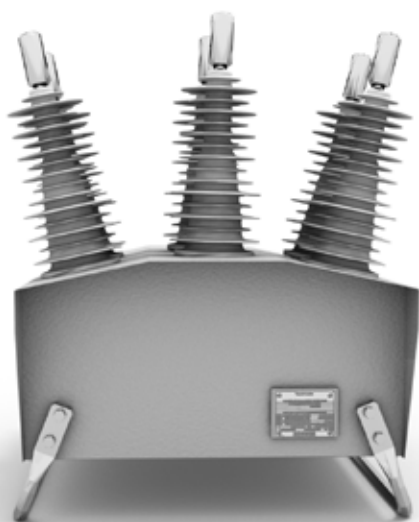
Edition 01

Section 16

Overhead Switchgear, Line Hardware & Insulators

Reclosers/Switches	440
Preformed Wire Products	466
Insulator Pins & Clevis Thimbles	470
Insulators	471
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OSM Recloser - Key Features

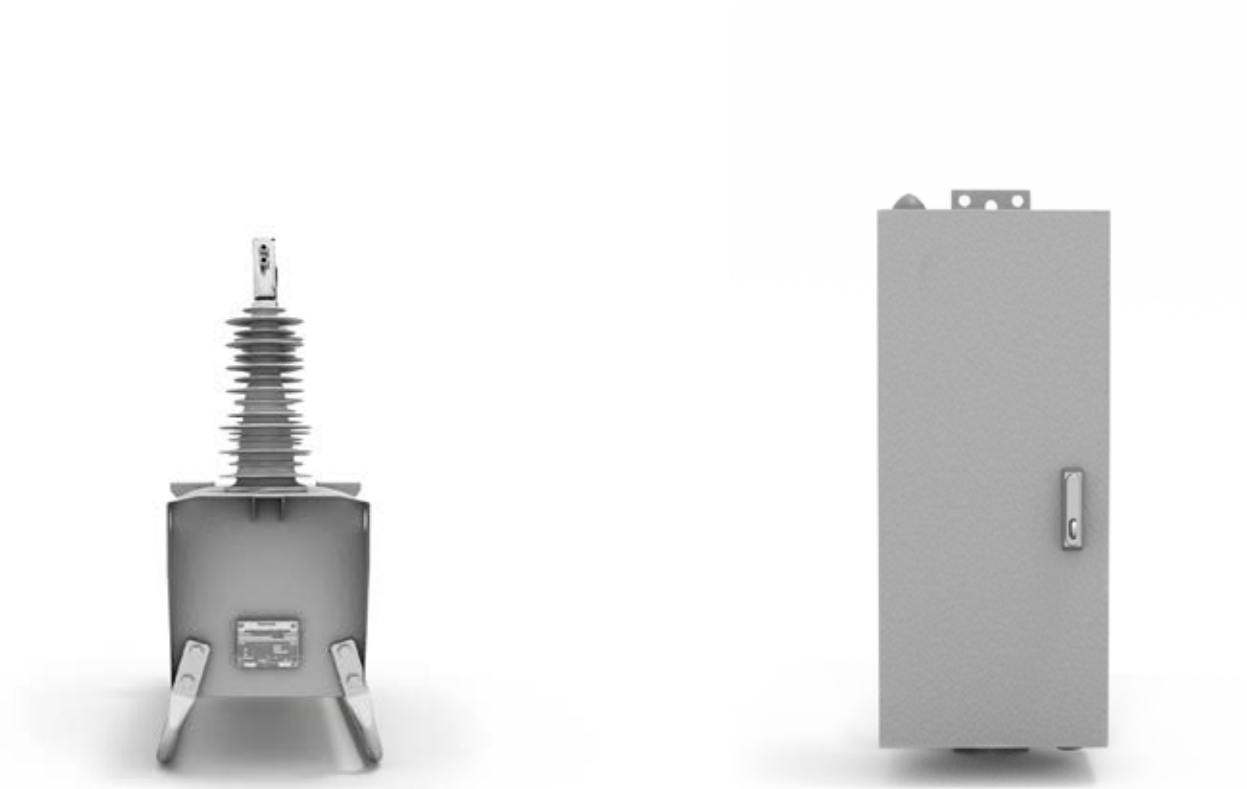


Ultimate Safety and Service

- > The World's Only Arc Fault Vented Solid Dielectric Recloser
- > Designed for a maintenance free life
- > Supported by an international network of Technical Staff
- > Ganged ultra-fast magnetic actuators to provide additional operator safety
- > Hot Line Tag functionality and Mechanical trip interlock directly connected to the OSM tank's operating mechanism
- > Unique and seamless NOJA Power Android and iOS App enhances linesmen comfort and safety
- > Internal double pole position indicator micro switches for added reliability
- > Triple shielded, water blocked and metal conduit protected control cable with military grade IP65 rated connectors
- > Grey powder coated tank to prevent drivers from being blinded by the sunlight reflecting on the tank
- > Only 3 electronic modules in total that can be replaced within 5 minutes with a simple screwdriver
- > Remote and quick firmware upgrades to keep up with the industry changes over time

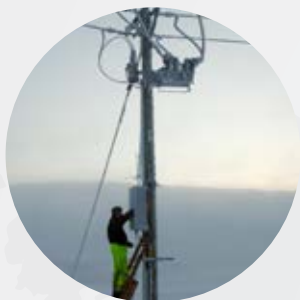
Ultimate Innovation

- > Class Defining Current and Voltage Sensors, included on both load and source side of the device as standard.
- > Full Automation, Logic and Synchronising Feeder Capability as standard
- > Over 100 different protection features, from the simplest Overcurrent and Earth Fault Protection through to Admittance, Fault Locator and Harmonic Protection
- > No Active Electronics in the Recloser Tank – Providing exceptional surge immunity and reliability



Unmatched Reliability

- > Total Stainless Steel External Construction
- > Full Industrial Temperature Range -40°C to +55°C
- > Proven Performance through decades in service
- > 55,000 Reclosers in Service Worldwide and Counting
- > Featuring the most reliable vacuum interrupter (VI) technology in the world today with radial magnetic field contacts to quickly diffuse the arc and maximise the life of the VI
- > Medium Time Between Failures (MTBF) of 850 years for a complete unit
- > Proprietary OSM tank design to eliminate partial discharges and minimise electrical stress
- > Aromatic epoxy poles encapsulated within a stainless steel tank so not exposed to UV radiation
- > Rating of 30,000 operations at full load, 3 times the industry's standard of 10,000 operations
- > Seamless Smart-Grid Interoperability with embedded third party type tested and expert level communication protocol implementations
- > Unique ceramic shielded temperature controlling RC control design
- > On board powerful processor and FPGE running diagnostics 24/7
- > RC control fitted with the industry's most powerful sealed, spill-proof and MAT lead acid 12Vdc and 26Ah battery
- > The RC controller's IP66 rating completely eliminates the need for heaters in cold climates or ventilation in tropical applications
- > EMC shielded Human Machine Interface (HMI) available in several languages and fitted inside an IP66 moisture and dust free RC Controller



Voltage Range, 6kV to 38kV



Sectionaliser



**Underground To
Overhead Connection**



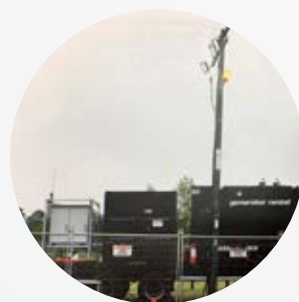
**Mobile Fault
Firing Test Equipment**



Smart Grid Schemes



Auto-changeover Schemes



Mobile Switchgear



Alarm Switch



Remote Switch



Generator Connection

OSM Recloser

One Product - Many Applications

Solving Energy Challenges
all over the Distribution Network



Mine Equipment Protection

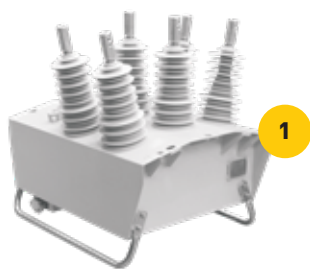
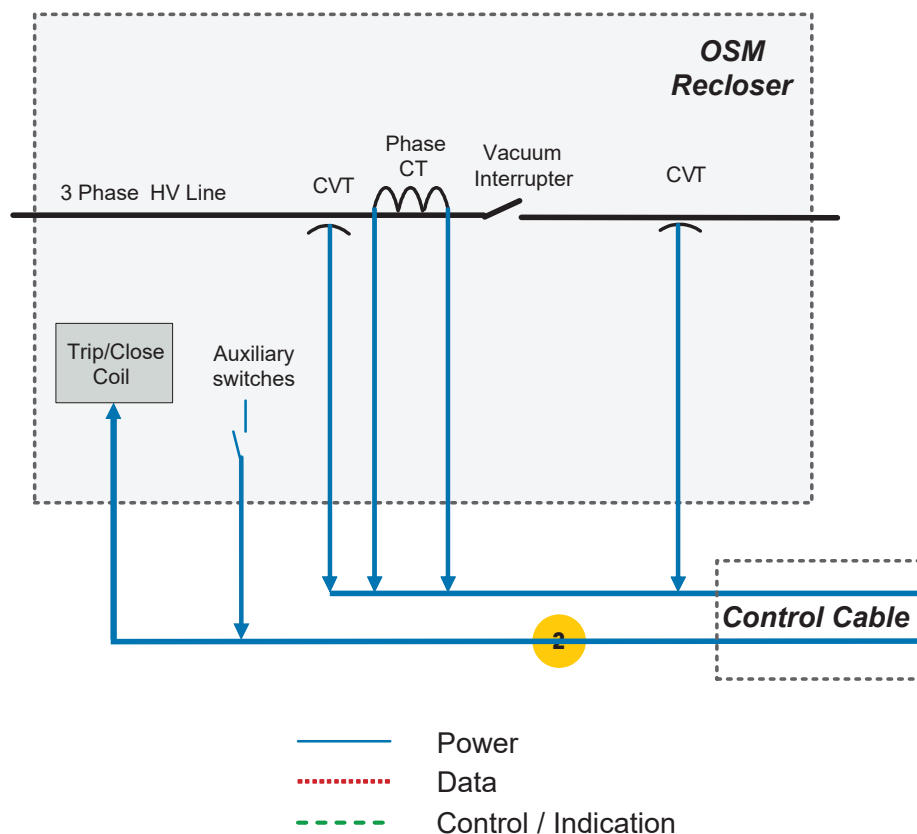


**Renewable and Distributed
Generation Connection**



Substation Circuit Breaker

The standard scope of supply



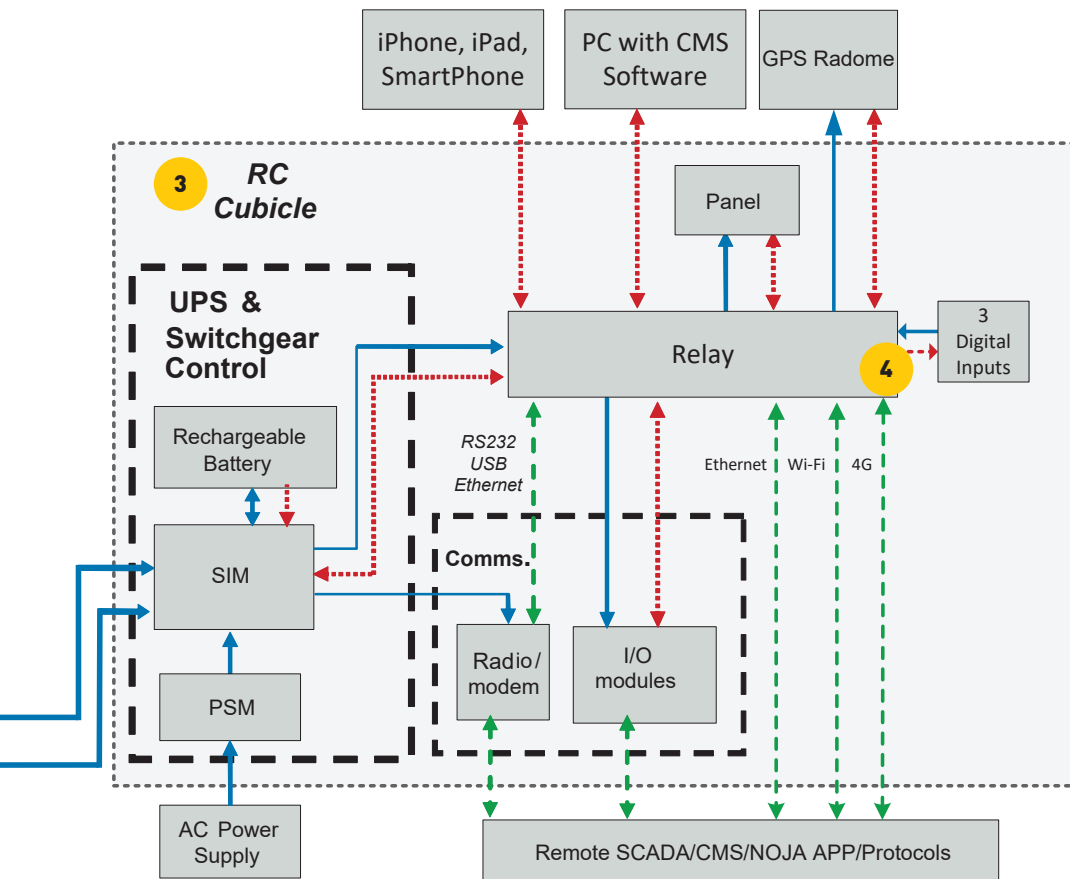
The OSM Recloser

- > Solid Dielectric
- > Vacuum Interruption
- > Oil and SF6 Free
- > Arc Fault Venting
- > 3 Integrated Current Transformers
- > 6 Integrated Voltage Sensors
- > Fully Bidirectional Operation
- > No Active Electronics
- > Hermetically Sealed
- > Stainless Steel Construction
- > Complete with Steel Mounting Bracket



The NOJA Power Control Cable

- > The Connection between Switchgear and Controller
- > Fully Armoured Cable
- > Ruggedized Stainless Steel Switchgear Connection
- > Military Specification Controller Connection
- > Vandal Proof, Sealed Control Cubicle Entry
- > Hand Crafted and Tested in Brisbane Australia
- > Length Options from 4m to 20m



THE RC10 OR RC15 CONTROLLER

Powered by the NOJA Power Relay 10 or Relay 15

- > Class Leading Comprehensive Protection, Communications, Power Quality Monitoring and Automation
- > Integrated GPS for microsecond accurate event timestamping, no communications necessary (RC15 only)
- > DNP3, IEC 61850, IEC 60870-5-101/104 all standard
- > Integrated 4G/3G/2G and WiFi (RC15 only)
- > IP66 Stainless Steel Enclosure
- > -40 C to +55 C



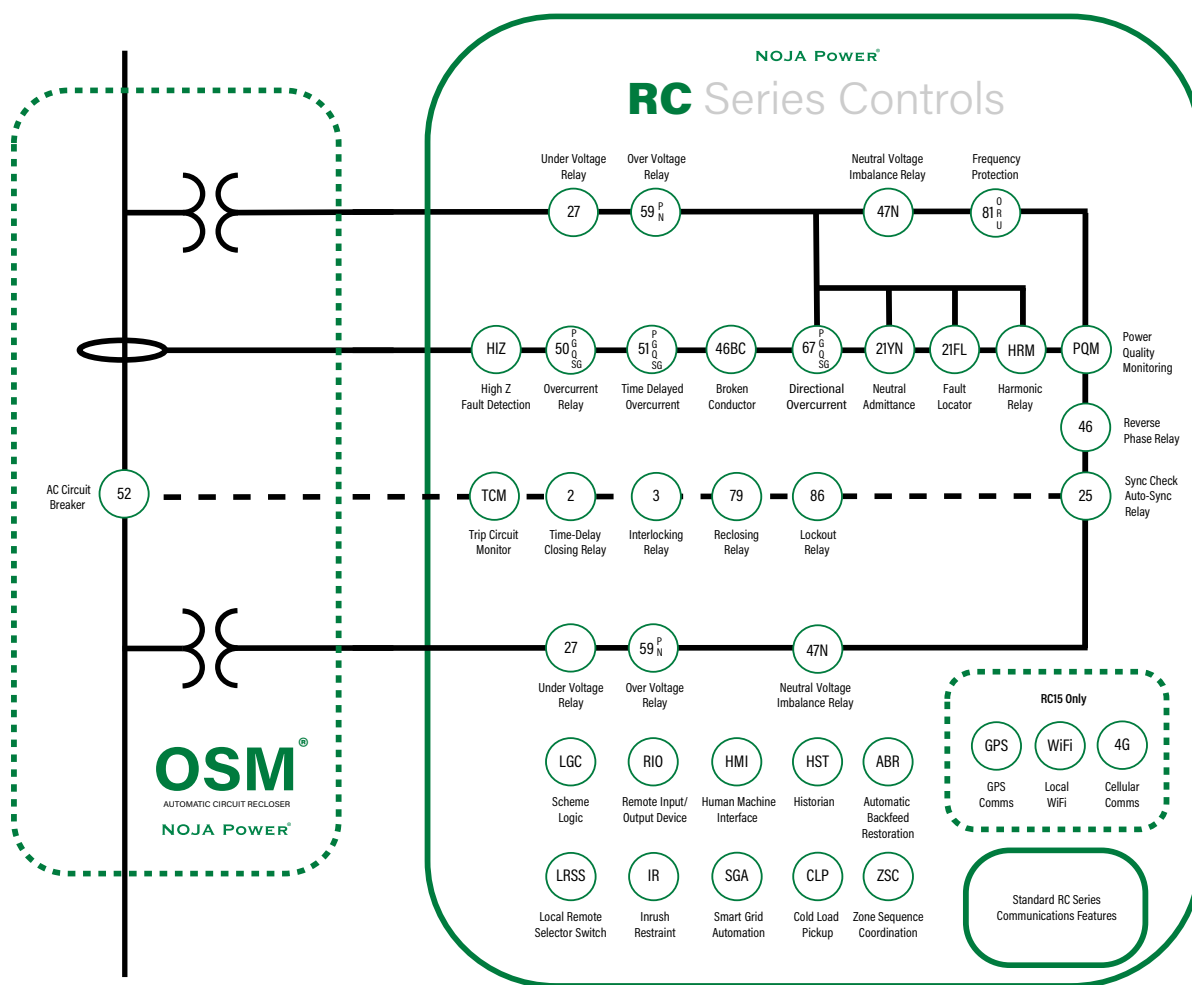
THE NOJA POWER RELAY 15

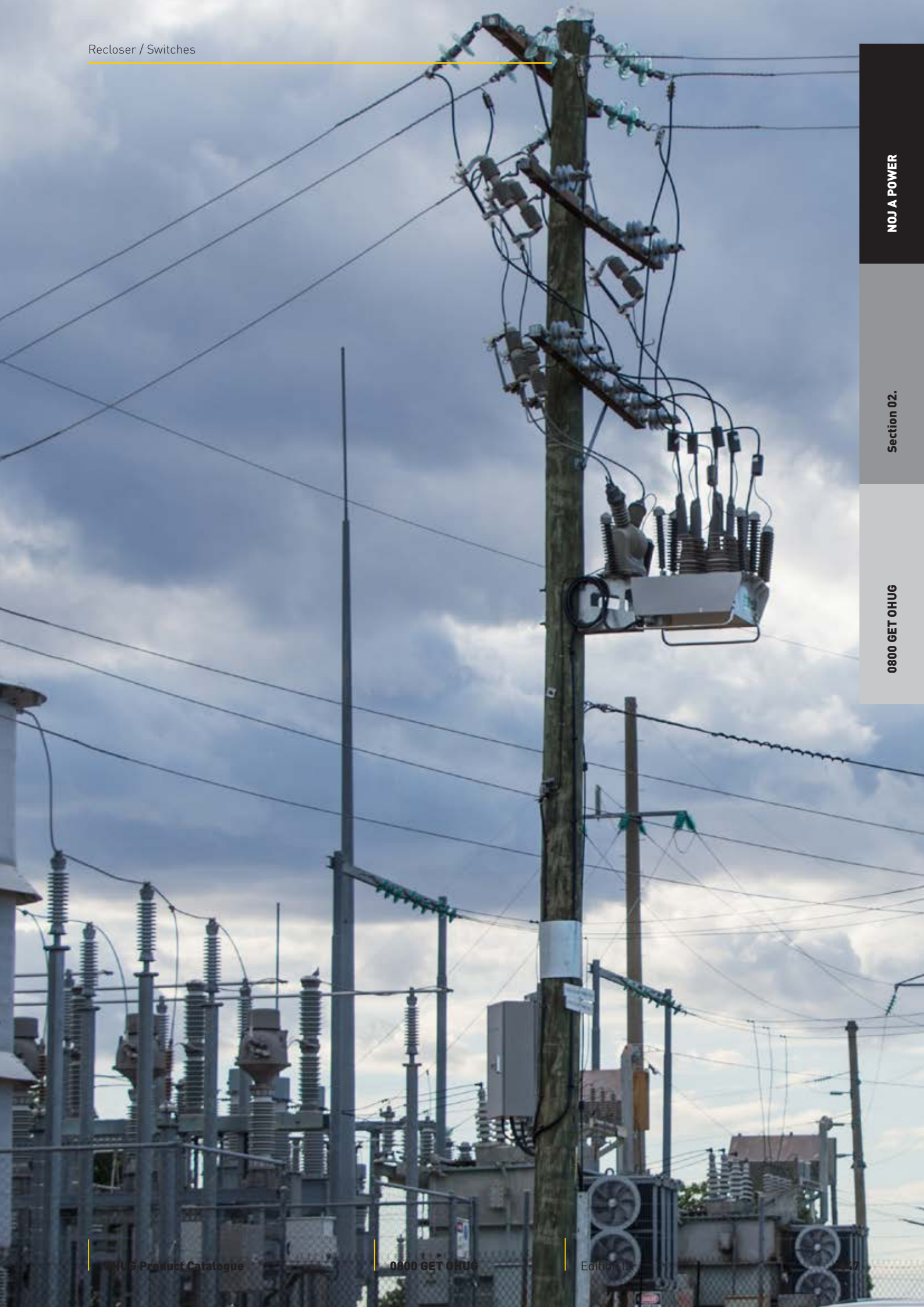
At the core of the RC15 Controller

- > Advanced Industrial Computer with Multiple Processors
- > Separate FPGA Signal Processing and Protection CPU
- > Native Ethernet, USB, GPS, WiFi, RS232, 4G/3G/2G and Automotive tier MOLEX Connections
- > Class Leading Protection, Automation and Communications Protocol Functionality
- > Comprehensive Power Quality Monitoring
- > Unrivalled Custom Logic Programming

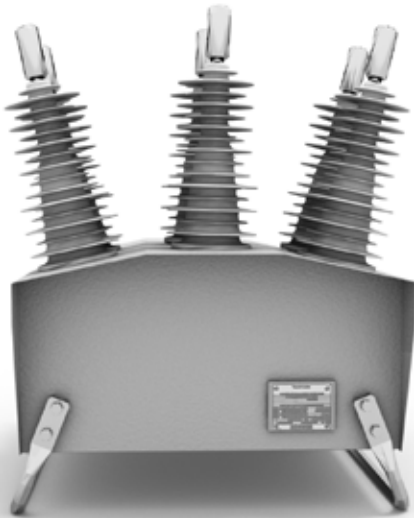
OSM Recloser System

ANSI Standard Protection Diagram

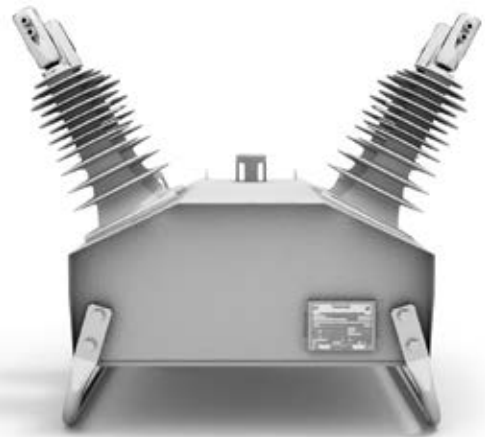




OSM Recloser - Switchgear Phase Variants



OSM Three Phase

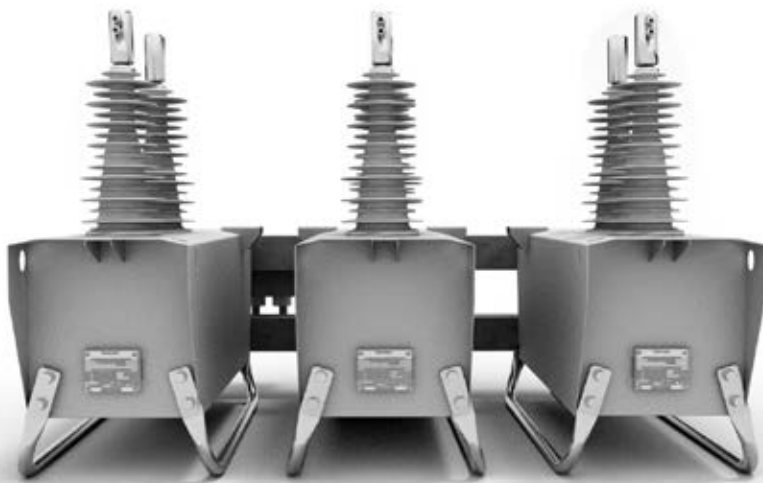


OSM Two Phase

The key interrupter architecture of the OSM Recloser can be deployed in four different variants. Ganged three-phase for 3-wire distribution systems, Two phase for 2 Wire Single Phase applications, Single Phase for Single Wire Earth Return (SWER) Applications, and un-ganged Three phase (Single Triple) for 4-wire overhead distribution systems.



OSM Single Phase



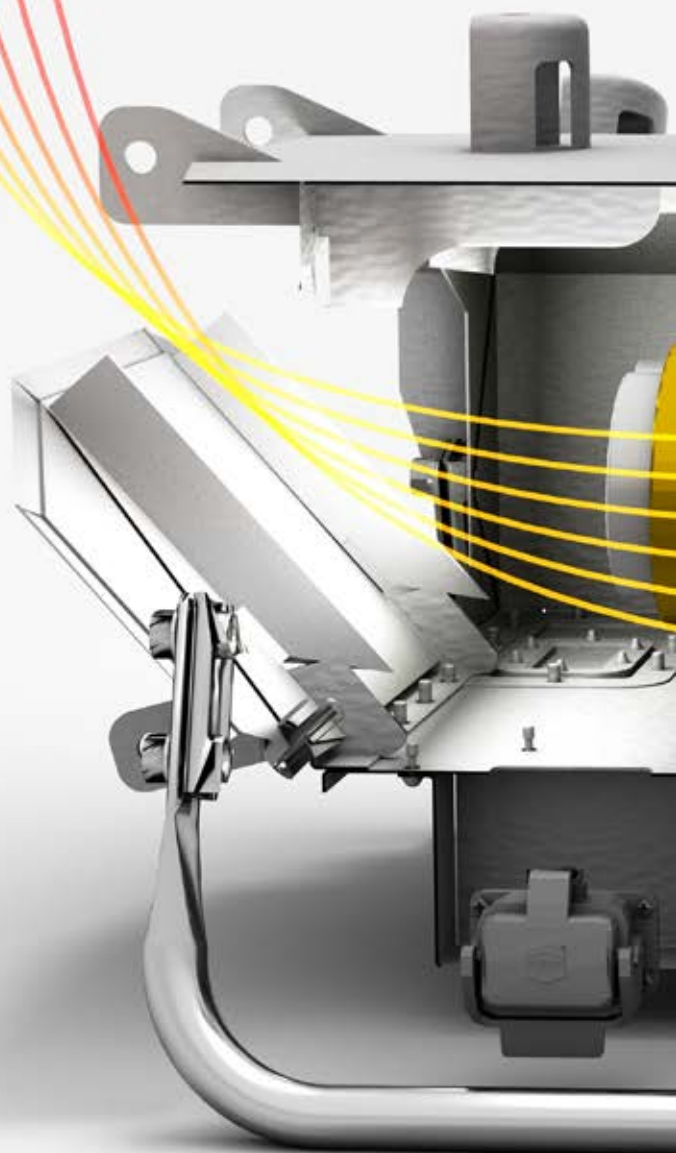
OSM Single Triple

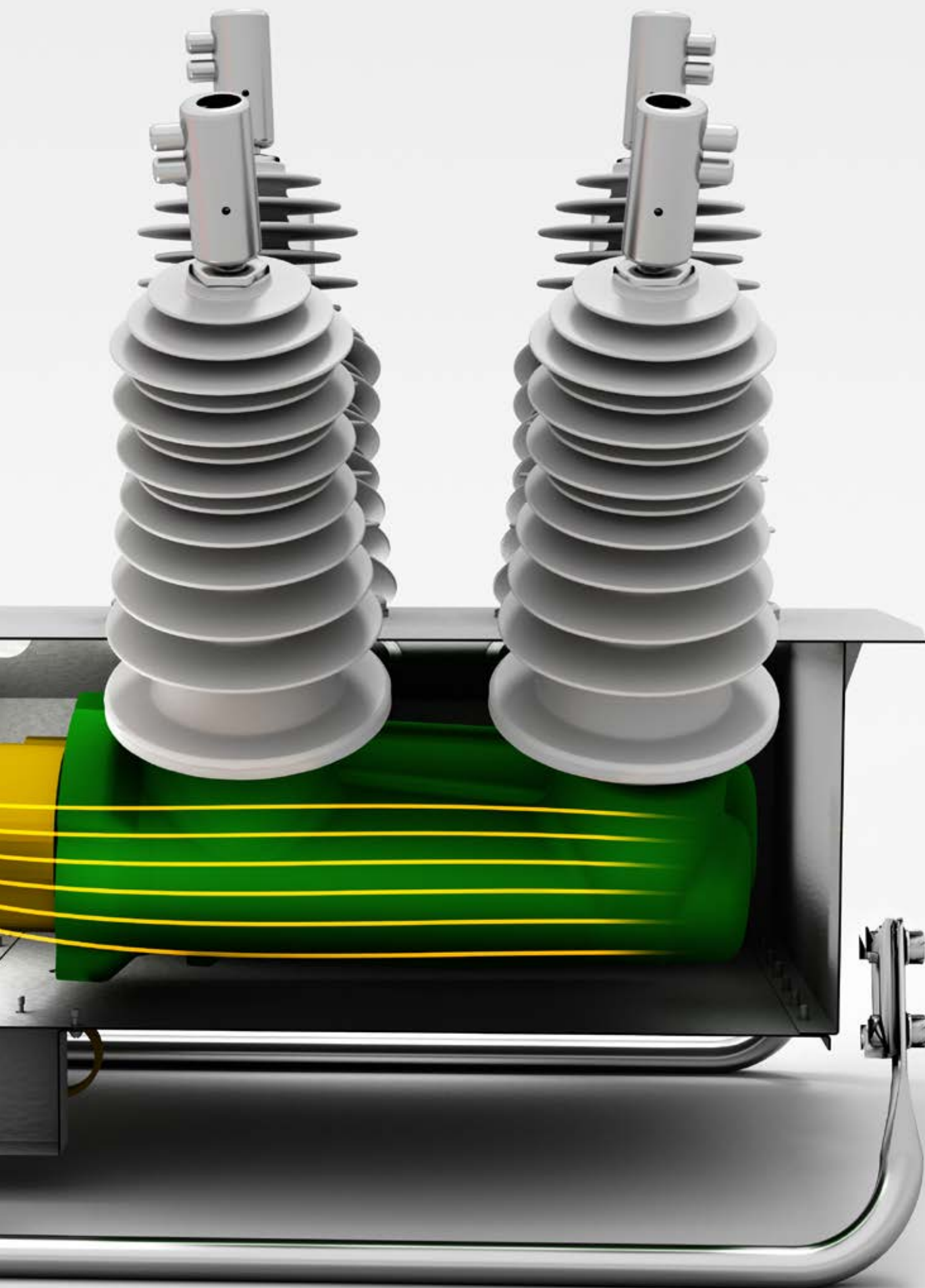
Class	Voltage Range	Rated Continuous Current	Fault Make Capacity RMS	Impulse Across Interrupter
OSM38-16	38kV	630A/800A	16kA	200kV
OSM15	15kV	630A/800A	16kA	110kV
OSM27	27kV	630A/800A	12.5kA	150kV
OSM38	38kV	630A/800A	12.5kA	170kV

OSM Recloser - Ultimate Safety

The World's Only Arc Fault Vented Solid Dielectric Recloser

NOJA power is committed to improving safety for operators in the field. The NOJA Power OSM Recloser has a patented arc fault venting design, which allows for containment of internal arc faults and safe venting up and away from operators. Type tested and verified, arc fault venting in the OSM Recloser provides operators and the general public with greatly improved safety.





NOJA POWER®

Empower the world.

**Driven by the most advanced controller
available today**

RC Series Controls

Simplicity for operators but power for protection engineers, the integrated nature of the OSM Recloser system provides unparalleled control and automation for engineers yet a device which works immediately, straight out of the box.

NOJA Power's OSM Recloser System is controlled by the world's most advanced Autorecloser Control, the NOJA Power RC. Offered in two variants, the RC10 and RC15 differ only on extended communications capability, with the latter including integrated GPS, Secure WiFi and 4G Modem.

Designed in collaboration with some of the most forward-thinking utilities on earth, NOJA Power's RC10 and RC15 controllers provide the intelligence and precision relied upon by thousands of utility engineers.

When Distribution Networks evolve, the only asset with all the answers is the NOJA Power RC Controller.



RC Controller - Key Features



RC15 Relay Module

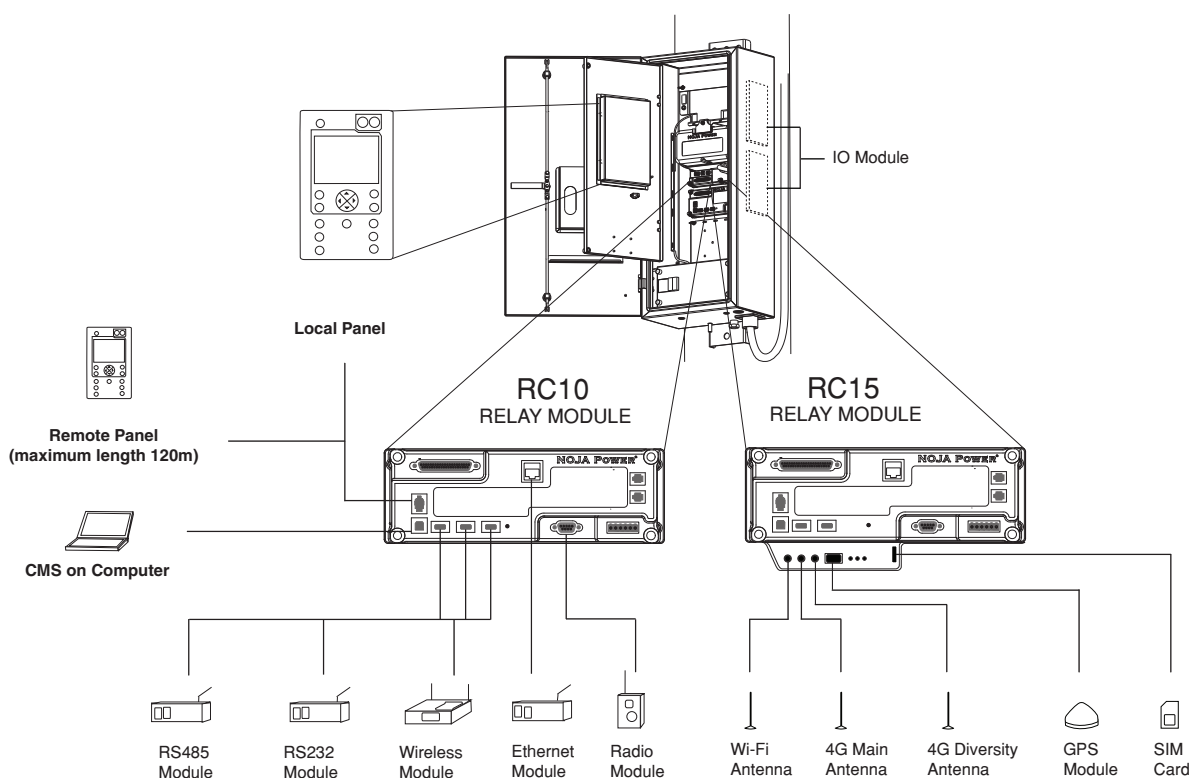
Class Leading Protection

- > Full Directional Protection for Overcurrent, Earth Fault, Negative Phase Sequence and Sensitive Earth Faults, with advanced gate technology for responding to low fault currents
- > ANSI, IEC255 and User Defined Protection curve for ultimate flexibility
- > Instantaneous high set elements and definite time protection
- > The worlds' highest resolution SEF feature at 200mA minimum pickup*
- > Advanced Voltage, Current and Composite Protection such as Broken Conductor, Admittance and Harmonic Protection
- > Complete suite of Power Quality Monitoring and logging tools included as Standard.

Unrivalled Automation

- > Co-Generation functions standard, including ANSI25 Synchrocheck and Auto-Synchroniser
- > Over and Under Voltage Protection providing 3 Phase Load Shedding, Neutral Displacement, Loss of Phase and Loss of Supply Operation for advanced Automation schemes
- > Over and Under Frequency Protection with user programmable pickup range and operating time
- > Fully configurable Logic and Smart Grid Automation based on IEC61499 open source logic design

* A Switchgear model with matched CTs to provide 0.2A SEF sensitivity, is available for all 3 phase and 2 phase tanks.



Peerless Logging, Communications and Data availability

- > An event log for close open and fault protection operations, viewable on the massive 40x17 backlit LCD display. This provides operators with clear and concise field reports on recloser operation, including fault type, fault current and even distance to fault.
- > A detailed event log for all operating history and settings changes viewable through both the local panel or the supplied software
- > Easy loading and retrieval of protection settings using the CMS Software Package
- > Instantaneous Voltage, Current and Power metering viewable on the panel
- > Load profile data logger, logging comprehensive system parameters on a user configurable period
- > Integrated RTU offering DNP3, DNP3-SA, DNP3 over IP, IEC 61850 MMS and GOOSE, IEC 60870-5-101/104 and NOJA Power Proprietary Protocols
- > Best in Class Remote Control and SCADA
- > Innovative Secure Wireless Remote Control

RC15 Only

- > All of the above, plus:
- > Integrated Secure WiFi
- > Integrated GPS for precise timestamping
- > Integrated 4G fallback 3G modem

OSM Recloser - Technical Specification

PART NUMBER	OSM15-16-800	OSM27-12-800	OSM38-12-800	OSM38-16-800 ⁴
Manufacturing Model	311/312/310 ^{1,2}	311/312/310 ^{1,2}	311/302/300 ^{1,2}	301/302/300 ^{1,2}
Current Sensing	3 x Current Transformers ³	3 x Current Transformers ¹	3 x Current Transformers ³	3 x Current Transformers ³
Voltage Sensing	6 x Voltage Screens ³	6 x Voltage Screens ³	6 x Voltage Screens ³	6 x Voltage Screens ³
Rated Maximum Voltage	15.5kV	27kV	38kV	38kV
Rated Continuous Current	800A	800A	800A	800A
Fault Make Capacity RMS	16kA	12.5kA	12.5kA	16kA
Fault Make Capacity Peak	40kA	31.5kA	31.5kA	40kA
Fault Break Capacity	16kA	12.5kA	12.5kA	16kA
Mechanical / Full Load Operations	30,000	30,000	30,000	30,000
Fault Break Capacity Operations	70	140	100	140
Short Time Current Withstand	16kA/3 secs	16kA/3 secs	12.5kA/3 secs	16kA/3 secs

PART NUMBER	OSM15-16-800	OSM27-12-800	OSM38-12-800	OSM38-16-800 ⁴
Mainly Active Breaking Capacity	800A	800A	800A	800A
Cable Charging Current	25A	25A	40A	40A
Line Charging Current	5A	5A	5A	5A
Impulse Withstand Phase to Earth & Phase to Phase	110kV	150kV	195kV	200kV
Impulse Across the Interrupter	110kV	150kV	170kV	170kV
Power Frequency Withstand Phase to Earth (Dry)	50kV	60kV	70kV	70kV
Power Frequency Across the Interrupter	50kV	60kV	70kV	70kV
Ambient Temperature	-40°C to +55°C	-40°C to +55°C	-40°C to +55°C	-40°C to +55°C
Humidity	0-100%	0-100%	0-100%	0-100%
Altitude ⁴	3000m	3000m	3000m	3000m
Weight of the Tank (Three Phase)	100kg	109kg	150kg	150kg

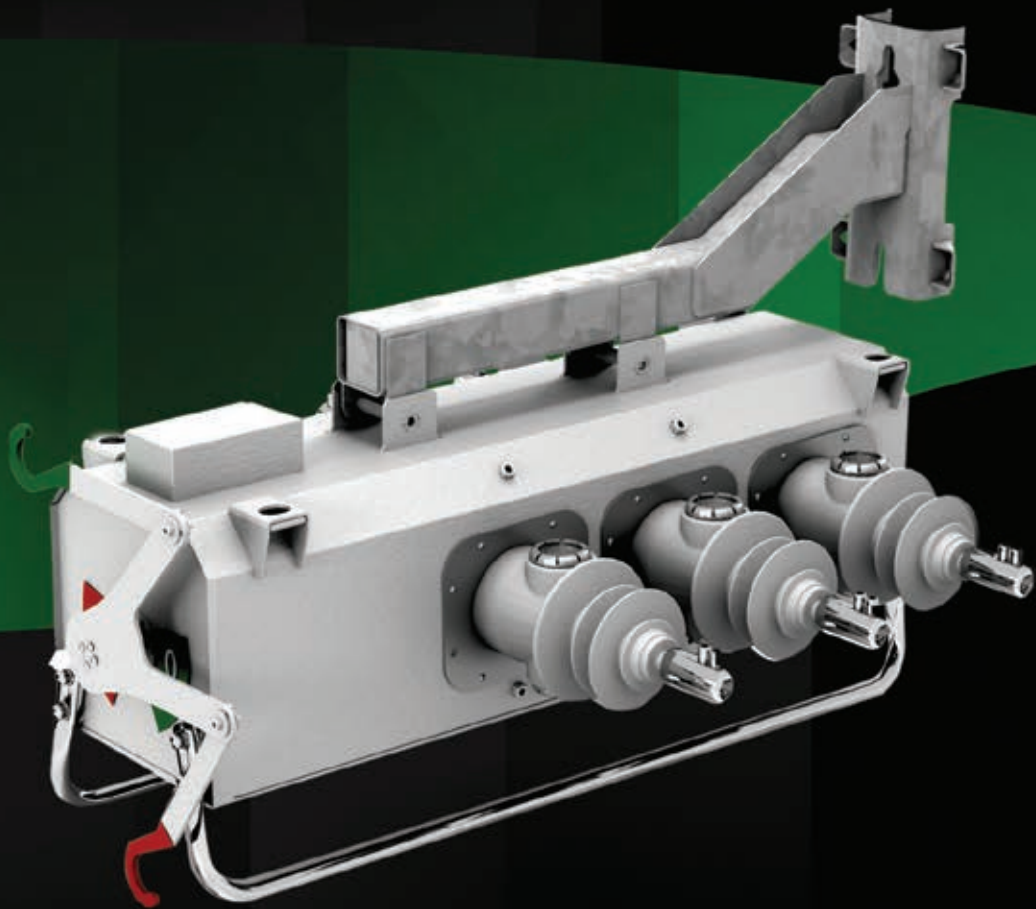
- OSM15-16-800-311, OSM27-12-800-311, OSM38-12-800-301, OSM38-16-800-301 (Single Phase Autorecloser) 1 x Current Transformers, 2x Voltage Screens, OSM15-16-800-312, OSM27-12-800-312, OSM38-12-800-302, OSM38-16-800-302 (Two Phase Autorecloser) 2 x Current Transformers, 4 x Voltage Screens
- OSM38-16-800 tested at 40.5kV for interruption
- Altitudes above 1000m should be corrected in accordance with ANSI C37.60-2012

NOJA POWER®

Empower the world.

VISI-SWITCH® OLB15-16-800 15KV MODEL

VISI-SWITCH



Introduction

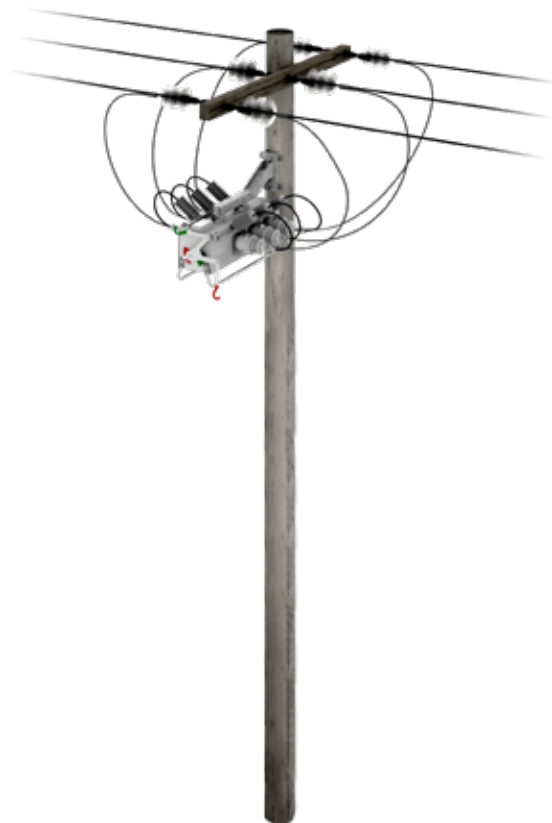
NOJA Power's VISI-SWITCH® is a solid dielectric load break switch designed for manual isolation in a three-phase electricity distribution grid feeder. Unique to this switch, is the viewing window embedded in the bushings, allowing an operator to see the actual point of isolation. Through the viewing window, an operator can see the isolator electrical contacts when the switch is closed and visible isolation when the switch is open, guaranteeing that the circuit is isolated.

It also features vacuum interrupters with solid dielectric insulation and a unique and patent-pending drive mechanism ensuring safe operational sequence.

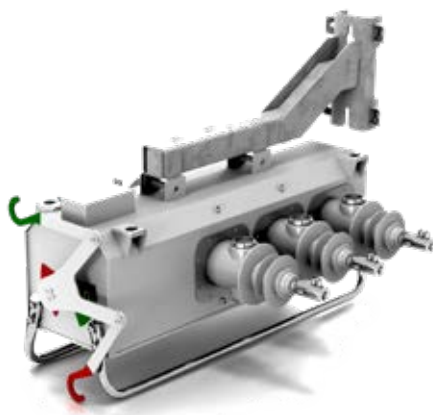
NOJA Power's VISI-SWITCH® OLB15-16-800 has a rated maximum voltage of 15.5 kV, a rated continuous current of 800 A and a short time current withstand of 16 kA (for 3 seconds).

Each phase is comprised of a vacuum interrupter with solid dielectric insulation and a built-in isolator to provide physical isolation in accordance with the requirements of insulation coordination standards IEC 60071-1 Insulation co-ordination – Part 1: Definition, Principles and Rules and IEC 60071-2 Insulation co-ordination – Part 2: Application Guide.

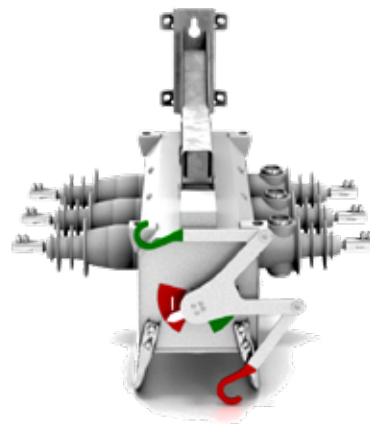
The VISI-SWITCH® features a unique and patent-pending drive mechanism which connects the vacuum interrupters to the isolators and guarantees both parts of the switch will open once operation is initiated. The sequencing of the complete switching operation is



VISI-SWITCH® WITH SURGE ARRESTORS



VISI-SWITCH® SIDE VIEW



VISI-SWITCH® FRONT VIEW

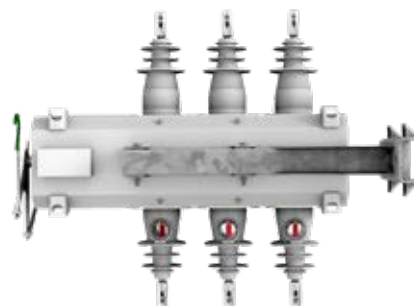
dictated by the drive mechanism which rapidly opens the vacuum interrupters to break the current and then, after a short delay, opens the isolators. The viewing window embedded in the isolator bushings can be seen from the ground allowing maintenance staff to confirm that the switch has been isolated prior to commencing work.

The product has been extensively type tested by independent laboratories to ensure long life and reliability under the harshest environmental conditions. The VISI-SWITCH® can operate in extreme temperatures, over a -40 to 55°C temperature range, 0 to 100 percent humidity, and meets specified ratings up to a height of 1000 m (functional up to 3000 m with derating). The unit is designed to cope with exposure to salt spray, dust, smoke and corrosive gases, vapours and liquids. The viewing window is scratch resistant and can withstand impact such as hail according to IK08.

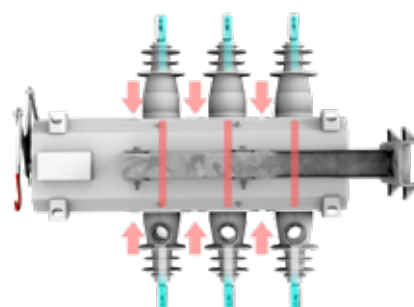
Utilities employ three-phase load break switches to isolate sections of feeders for maintenance work. In recent years, older air break switches, which could not be operated while the feeder was under load have been replaced by gas switches. While enclosed gas switches address the reliability deficiencies of air break switches, it comes at a cost of compromised safety because maintenance staff can no longer visually check that all three phases are isolated before starting work on the feeder. SF₆ has also been identified as the most potent greenhouse gas and utilities will most likely incur the cost of disposing of the SF₆ gas at the end of life of the switch.

NOJA Power's engineers have designed the VISI-SWITCH® to overcome the drawbacks of gas load break switches providing the linesmen with visible break confirmation that the switchgear has isolated the line before commencing work. Furthermore, the units are far more environmentally friendly than existing solutions because the solid dielectric eliminates the use of a potent greenhouse gas. Like all other switchgear products designed and manufactured by NOJA Power it also features controlled arc fault venting.

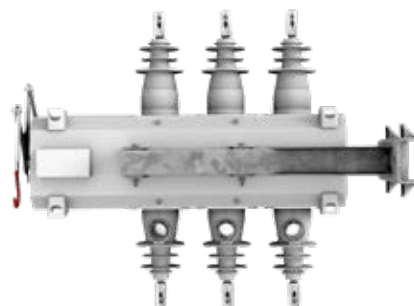
The VISI-SWITCH® demonstrates NOJA Power's ongoing commitment to the environment, quality and safety making the VISI-SWITCH® OLB15-16-800 the ideal choice for today's smart grids.



VISIBLE ISOLATOR CLOSED POSITION



VISIBLE ISOLATOR PULLS BACK INTO OPEN POSITION



VISIBLE ISOLATOR OPEN POSITION

Overview

NOJA Power's VISI-SWITCH® is an enclosed three phase load break switch with visible isolation. It is used to isolate sections of feeders for maintenance work so that work can be carried out in a safe manner.

The VISI-SWITCH® includes an isolator and vacuum interrupter for each phase that are serially interconnected for load break application. A mechanical driving mechanism is provided for driving open and closed each pair of electrical contacts and is configured to control the sequence of the opening and closing of the contacts. The vacuum interrupter is opened first to break current flow and then after a short delay the isolators are opened to disconnect the electrical circuit. When closing, the isolator closes first and then the vacuum interrupter, making the current.

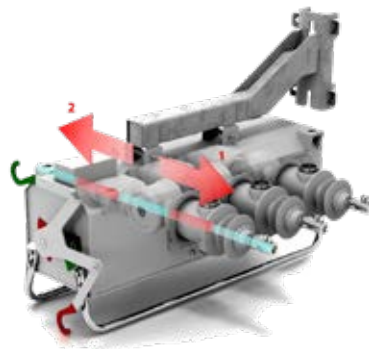
The operator can manually open and close the contacts of both the isolator and interrupter from the ground with a single motion using either an extended hook stick which reaches directly to the switch or a shorter hook stick which connects to an insulated down rod extending from the switch.

The advantage of the switch is that the operator can view the isolator contacts through the viewing window, thereby readily determining the state of the switch from the ground. In particular, the operator can confirm that there is a visible break i.e. the contacts are open and that the associated circuit is safely isolated.

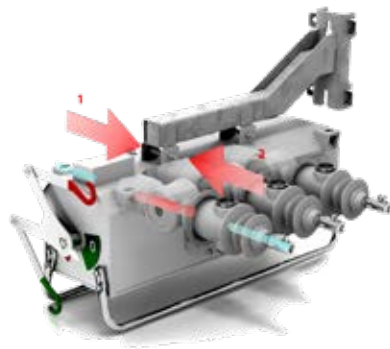
The switch includes isolator bushings in which the electrical isolator contacts are located, a metal tank in which the driving mechanism is located, and interrupter bushings in which the interrupter contacts are located. The bushings and the tank are sealed together and impede the ingress of moisture thereby suiting the assembly to outdoor use. The tank is manufactured from powder coated stainless steel and is arc-fault vented. It has a 30 year operating life and the entire device is rated to IP65.



VISI-SWITCH® FRONT VIEW



VISI-SWITCH® VISIBLE ISOLATOR
CLOSED STATE



VISI-SWITCH® VISIBLE ISOLATOR
OPEN STATE

Visible Break Window

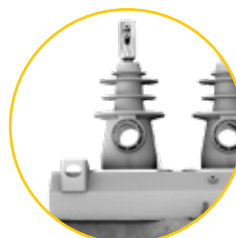
The viewing window allows a clear view of the state of the switch from an operator standing on the ground. The isolator contact is coated with an iridescent/reflective paint in the colour red and can be easily seen through the window even at night with the use of a torch.

The window is designed to remain transparent during the entire life of the switch, without any discolouration. It is scratch resistant and can withstand extreme temperatures and weather conditions such as hailstorms and sandstorms. IK08 impact ratings are met on all parts of the switch including the viewing window.

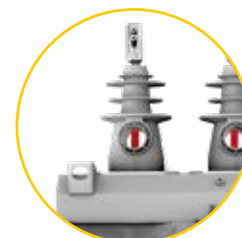
Insulation System

The insulation system consists of the conductor system embedded in solid dielectric. External insulation is provided by silicone bushings outside of the powder coated stainless steel tank. Silicone Rubber Boots fitted over the bushings provide the necessary clearances and creepages required for the various ratings.

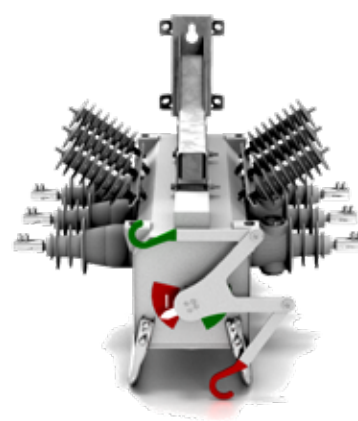
Surge Arrestors can be mounted on all six (6) bushings and earthed through the tank. Explosive tail surge arrestors may be used and there are mounting options for the surge arrestors both at the top and bottom of the switch.



VISI-SWITCH® WITH VISIBLE ISOLATOR IN OPEN POSITION



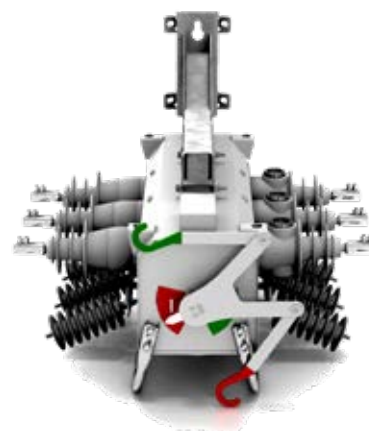
VISI-SWITCH® WITH VISIBLE ISOLATOR IN CLOSED POSITION



VISI-SWITCH® WITH TOP SURGE ARRESTORS ARRANGEMENT



VISI-SWITCH® WITH TOP SURGE ARRESTORS ARRANGEMENT



VISI-SWITCH® WITH BOTTOM SURGE ARRESTORS ARRANGEMENT

Installation

The switch can be mounted on timber poles with a keyhole arrangement or concrete poles using banded straps. The following types of installations are supported:

- Mounted to the pole above the powerline
- Mounted to the pole below the powerline

Prior to mounting on the pole, the switch must be fitted to the mounting bracket and all surge arrestors and cable tails fitted.

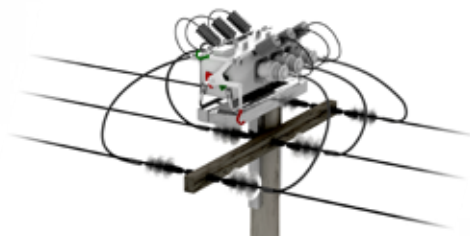
The hanging bracket can be mounted above or below the cross arm depending on the customer's preferred installation location.

The switch is completely symmetrical so it can be mounted with the hook stick operator facing toward the pole or away from the pole.

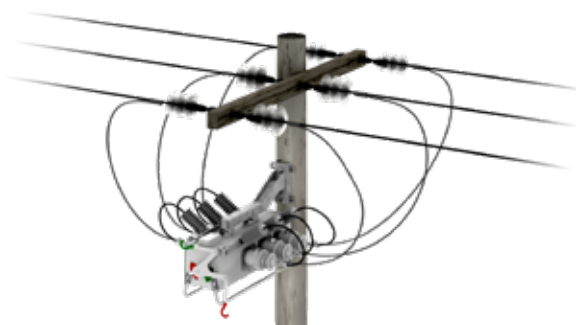
The switch assembly can be fixed to the pole via a crane, pole mounted hoist or EPV. Lifting points are provided to allow for lifting of the assembled switch.

The switch is to remain within 15 degrees of horizontal whilst lifting. An M12 stud on the switch is provided for an earth connection. A minimum thickness of 35mm² copper conductor must be used.

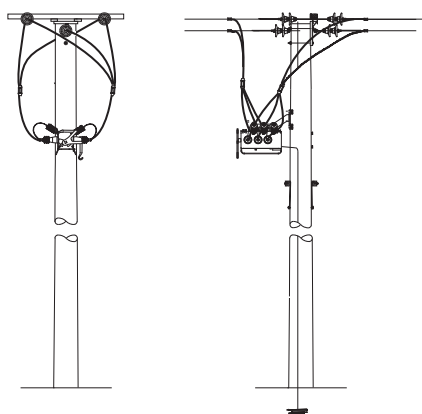
Standard hand tools will be all that is required to complete the installation, namely ring, adjustable spanners or allen key. All fasteners must be capable of withstanding the maximum load applied by a man with a standard spanner.



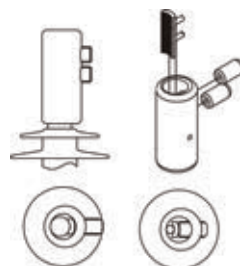
VISI-SWITCH® POLE MOUNTING ARRANGEMENT
(ABOVE THE POWER LINE WITH FEET)



VISI-SWITCH® POLE MOUNTING ARRANGEMENT
(BELOW THE POWER LINE)



VISI-SWITCH® POLE MOUNTING ARRANGEMENT



TUNNEL
CONNECTOR

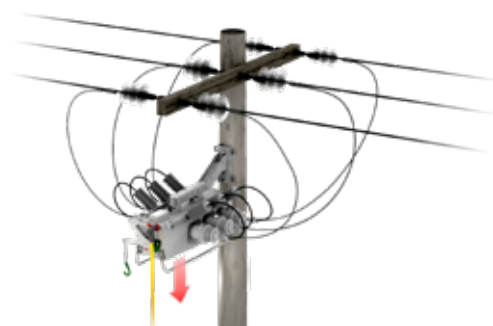


TWO HOLE NEMA
PAD OPTION

Operation

The VISI-SWITCH® can be manually operated from the ground in one single motion using an extended hook stick which reaches directly to the switch.

An insulated down rod, extending from the switch, can be used to move the operating mechanism further down the pole to allow a shorter hook stick to be used.

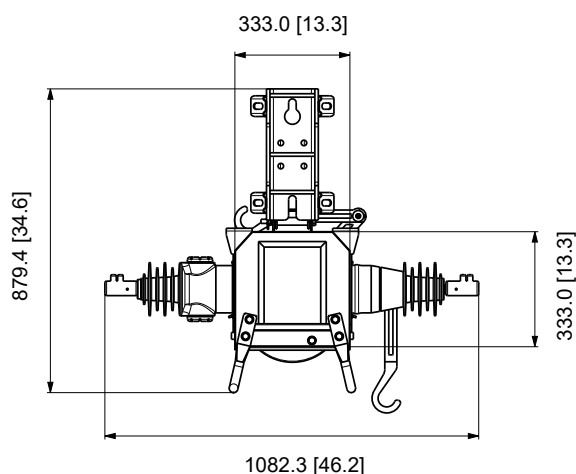


VISI-SWITCH® OPEN STATE

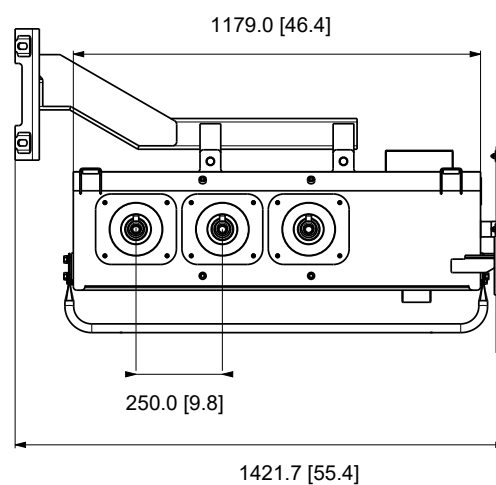


VISI-SWITCH® OPEN STATE

Dimensions



VISI-SWITCH® FRONT VIEW
(DIMENSIONS IN INCHES SHOWN IN BRACKETS)



VISI-SWITCH® SIDE VIEW
(DIMENSIONS IN INCHES SHOWN IN BRACKETS)

Line hardware and Insulators

Preformed Wire Products

Helixon Aluminium Deadends

Order Code	Description	Pack	Qty
8DE-A 0625C	Aluminium Deadend (Squirrel, Namu) 6.3-6.5mm	Each	10
8DE-A 0675C	Aluminium Deadend (Poko) 6.6-6.9mm	Each	10
8DE-A 0750C	Aluminium Deadend (Chlorine) 7.4-7.6mm	Each	10
8DE-A 0900C	Aluminium Deadend (Ferret, Kutu) 8.9-9.3mm	Each	10
8DE-A 1015C	Aluminium Deadend (Fly) 10.1-10.5mm	Each	10
8DE-A 1125C	Aluminium Deadend (Rango) 11-11.5mm	Each	10
8DE-A 1150C	Aluminium Deadend (Grasshopper, Phlox) 11.5-12.3mm	Each	10
8DE-A 1225C	Aluminium Deadend (Racoon) 12.25-12.80mm	Each	10
8DE-A 1280C	Aluminium Deadend (Wasp, Beetle) 12.8-13.5mm	Each	10
8DE-A 1430C	Aluminium Deadend (Iodine, Weke) 14-14.6mm	Each	10
8DE-A 1625C	Aluminium Deadend (Cricket) 15.9-16.5mm	Each	10
8DE-A 1875C	Aluminium Deadend (Neon, Mata) 18.5-19.3mm	Each	10
8DE-A 2100C	Aluminium Deadend (Cockroach) 20.5-21.5mm	Each	10
8DE-A 2275C	Aluminium Deadend (Panther, Lion) 22.3-23.3mm	Each	10
8DE-A 2375C	Aluminium Deadend (Butterfly) 23-24mm	Each	10



Helixon Neoprene Deadends

Order Code	Description	Pack	Qty
8DE-LTN 0585	PVC Deadend (10mm, 16mm2 PVC) 5.9-7.4mm	Each	10
8DE-LTN 0735	PVC Deadend (Namu, Poko) 6.8mm - 8mm 7/2.5	Each	10
8DE-LTN 1035	PVC Deadend (Ladybird, Kutu) 10.4-13.7mm	Each	10
8DE-LTN 1370	PVC Deadend (Rango) 13.7-15.5mm	Each	10
8DE-LTN 1555	PVC Deadend (Weke, Beetle) 15.5-19.5mm	Each	10
8DE-LTN 1950	PVC Deadend (Weta) 19.5-23.9mm	Each	10
8DE-LTN 2215	PVC Deadend (N/Screen single core 50mm) 22-25mm	Each	10
8DE-LTN 2390	PVC Deadend (N/screen single core 70mm2) 23.9-25.5mm	Each	10



Minimum order quantities and box quantities apply.

Helixon Galvanised Steel Guy Grip Deadends

Order Code	Description	Pack	Qty
8DE-S 0480	Guy Grip for 7/1.71 (4.6-5.1mm)	Each	10
8DE-S 0600	Guy Grip 7/14 7/2.00	Each	10
8DE-S 0750	Guy Grip for 7/2.50 (7.5-8mm)	Each	10
8DE-S 0950	Guy Grip for 7/3.15 (9.3-9.7mm)	Each	10
8DE-S 09750	Guy Grip for 7/10 (9.7-10.31mm)	Each	10
8DE-S 1200	Guy Grip for 7/4.0 7/8 (11.8-12.2mm)	Each	10
8DE-S 1255	Guy Grip (12.6-13.0mm)	Each	10



Helixon Galvanised Guy Locks

Order Code	Description	Pack	Qty
8GLS 0600	Steel Guy Lock (6.00mm-6.20mm)	Each	10
8GLS 0765	Steel Guy Lock 7/12 7.65mm (7.65-7.99mm)	Each	10
8GLS 0975	Steel Guy Lock 7/10 9.75mm (9.5-10mm)	Each	10



Aluminium Clad Steel Deadends

Order Code	Description	Pack	Qty
8DE-AC 0480	Aluminium Clad Steel Deadend (Mullet) 4.3-5.1mm	Each	10
8DE-FT 0670AC	Deadend Flounder 2 piece (Special Ali clad inner) 6.7-6.8mm	Each	10



Copper Clad Deadends

Order Code	Description	Pack	Qty
8DE-CC 0400	Copper Clad deadends (10mm ²)	Each	10
8DE-CC 0525	Copper Clad deadends (16mm ²)	Each	10
8DE-CC 0600	Copper Clad deadends (25mm ²)	Each	10
8DE-CC 0825	Copper Clad deadends (35mm ²)	Each	10
8DE-CC 1000	Copper Clad deadends (70mm ²)	Each	10



Minimum order quantities and box quantities apply.

Helixon Aluminium Line Guards

Order Code	Description	Pack	Qty
8LG-A 0480	Line Guard (Mullet)	Each	10
8LG-A 0620	Line Guard (Namu, Squirrel) 6.2-6.6mm	Each	10
8LG-A 0675	Line Guard (Gopher, Flounder) 6.6-6.95mm	Each	10
8LG-A 0695	Line Guard (Gopher, Poko) 6.95-7.35mm	Each	10
8LG-A 0750	Line Guard (Chlorine) 7.3-7.8mm	Each	10
8LG-A 0830	Line Guard (Ladybird) 8.3-8.8mm	Each	10
8LG-A 0900	Line Guard (Ferret, Kutu) 8.8-9.3mm	Each	10
8LG-A 1050	Line Guard (Rango, Mink) 10.5-11.1mm	Each	10
8LG-A 1125	Line Guard (Rango, Grasshopper) 11.1-11.8mm	Each	10
8LG-A 1430	Line Guard (Dog Iodine, Weke) 14-14.9mm	Each	10
8LG-A 1625	Line Guard (Dingo) 16.1-16.6mm	Each	10
8LG-A 1875	Line Guard (Jaguar) 17.9-18.8mm	Each	10
8LG-A 2100	Line Guard (Cockroach) 20.2-21.4mm	Each	10



Helixon Aluminium Armour Rods

Order Code	Description	Pack	Qty
8ARA-0530	Armour Rod (Gemini, Mullet) 5.3-5.6mm	Each	10
8ARA-0620	Armour Rod (Squirrel, Namu) 6.2-6.6mm	Each	10
8ARA-0620XL	Armour Rod (Squirrel, Namu) 6.2-6.6mm Extra Length	Each	10
8ARA-0660	Armour Rod (Flounder) 6.6-6.9mm	Each	10
8ARA-0660XL	Armour Rod (Flounder) 6.6-6.9mm Extra Length	Each	10
8ARA-0690	Armour Rod (Gopher, Poko)	Each	10
8ARA-0750	Armour Rod (Chlorine) 7.3-7.7mm	Each	10
8ARA-0900	Armour Rod (Ferret, Kutu) 8.9-9.5mm	Each	10
8ARA-1050	Armour Rod (Rango, Mink) 10.5-11mm	Each	10
8ARA-1050XL	Armour Rod (Mink)10.5-11mm Extra Length	Each	10
8ARA-1125	Armour Rod (Rango, Grasshopper) 11.0-11.5mm	Each	10
8ARA-1200	Armour Rod (Raccoon, Beaver)11.8-12.4mm	Each	10
8ARA-1280	Armour Rod (Wasp) 12.5-13.3mm	Each	10
8ARA-1350	Armour Rod (Mercury, Hydrogen)	Each	10
8ARA-1430	Armour Rod (Dog, Iodine, Weke)14-14.8mm	Each	10
8ARA-1430XL	Armour Rods (Dog, Iodine, Weke) 14-14.8mm Extra Length	Each	10
8ARA-1625	Armour Rod (Dingo, Cricket) 16-16.8mm	Each	10
8ARA-1750	Armour Rod (Orion, Lutetium, Wolf) 17.2-18mm	Each	10
8ARA-1875	Armour Rod (Jaguar) 18 - 18.5mm	Each	10
8ARA-2100	Armour Rod (Cockroach) 20.7-22mm	Each	10
8ARA-2375	Armour Rod (Butterfly) 23.4-24.3mm	Each	10
8ARA-2625	Armour Rod Centipede	Each	10



Minimum order quantities and box quantities apply.

Helixon Galvanised Conductor Splices

Order Code	Description	Pack	Qty
8LS-S 0480	Steel Line splice 7/1.71 4.8mm (4.5-4.9mm)	Each	10
8LS-S 0735	Steel Line splice 7/12 7.35mm	Each	10
8LS-S 0600	Steel Splice 7/2.00	Each	10
8LS-S 0750	Steel Splice 7/2.45	Each	10

Helixon Aluminium Conductor Splices

Order Code	Description	Pack	Qty
8LS-A 0625	Aluminium Line splice (Squirrel, Namu) 6.25-6.55mm	Each	10
8LS-A 0690	Aluminium Line splice (Gopher, Poko) 6.9-7.15mm	Each	10
8LS-A 0735	Aluminium Line splice (Chlorine)	Each	10
8LS-A 0900	Aluminium Line splice (Ferret, Kutu) 9-9.4mm	Each	10
8LS-A 1125	Aluminium Line splice (Mink, Rango) 11-11.5mm	Each	10
8LS-A 1430	Aluminium Line splice (Dog, Weke) 13.9-14.5mm	Each	10
8LS-A 1625	Aluminium Line splice (Dingo) 15.7-16.4mm	Each	10

Helixon Full Tension Line Splices

Order Code	Description	Pack	Qty
8LS-FT 0490	Aluminium Line Splice Full Tension (Mullet)	Each	10

Helixon Vibration Dampers

Order Code	Description	Pack	Qty
9HVD-063	Vibration Damper (Pig Tail) Gopher, Squirrel, Namu. 6.4 - 8.2mm	Each	10
9HVD-083	Vibration Damper (Pig Tail) Ferret, Kutu, Fly, Ladybird, Mink 8.3 - 11.7mm	Each	10
9HVD-117	Vibration Damper (Pig Tail) Dog, Iodine, Weke, Raccoon 11.8-14.4mm	Each	10
9HVD-145	Vibration Damper (Pig Tail) Cricket, Dingo, Wolf, Jaguar 14.5 - 19.5mm	Each	10

Minimum order quantities and box quantities apply.



Insulated Pin and Clevis Thimbles

Pins & Clevis

Order Code	Description	Pack	Qty
21130WPIN	Lead Head Pin 1130W	Each	1
3C/200/11-20	Insulator Pin 20mm	Each	1
31540WPIN	Insulator Pin 1540W	Each	1
OH510PIN	510 Insulator Pin	Each	1
AL750	Aluminium Clevis Thimble 70kN	Each	1
3CTHAL-70	Clevis Thimble 70kN	Each	1
3CTHIL-125	Clevis Thimble 125kN	Each	1
DS70KN	Galvanised Ductile Iron Clevis Thimble 70kN (CAC438Q)	Each	1
3TYC-70	Twisted Clevis Thimble 70kN	Each	1
3TYC-120	Twisted Y Clevis Tongue 120kN	Each	1
3TYC-160	Twisted Y Clevis Tongue 160kN	Each	1
3DSC 0616	Iron suspension Clamp 6mm-16mm	Each	1
OH100	Aluminium Gain Block 100mm	Each	1
OH125	Aluminium Gain Block 125mm	Each	1
3J211CZS	Jostlyn Nylon Head Pin MacLean	Each	1
BC - 70	Ball Clevis	Each	1
M24-25	M20 x 200mm Pin with 180mm thread to suit the R12.5EC200N insulator	Each	1
CT-70H	Clevis Tongue 70kN Cast Iron c/w Hex Pin	Each	1
AS-70	Anchor Shackles	Each	1
AS-120	Anchor Shackles	Each	1
AA23001	Insulator Shackle U 210 HDG	Each	1
AA23002	Insulator Shackle U 205	Each	1

Thimbles

Order Code	Description	Pack	Qty
3SOCT-70	Socket Thimble 70kN	Each	1
3SOCT-160	Socket Thimble 160kN	Each	1
3SOCT-70R	Socket Thimble 70kN (R pin)	Each	1
3SOCT-70W	Socket Thimble 70kN (W pin)	Each	1
3OGT-10	10mm Thimbles Open Neck Galvanised	Each	1
3OGT-20	Thimbles Open Neck Wire (THWO-19)	Each	1

Minimum order quantities and box quantities apply.



OH510 PIN



AL750



OH100



DS70 KN

Porcelain & Glass Insulators

Order Code	Description	Pack	Qty
2205	Insulator 205 LV Bobbin	Box	50
2210	Insulator 210 LV Bobbin	Box	100
2220	Insulator 220 LV Bobbin	Box	100
24490	Insulator 4490 33kV Pin type B/S	Box	1
24494	Insulator 4494 33kV Post Insulator	Each	1
2510	Insulator 510 LV	Box	30
2511	Insulator 511 LV	Box	30
21540W	Insulator 1540W	Each	1
011KVP	11kV Line Post Insulator with M20 stud ext. 190mm	Each	4
033KVP	33kV Line Post Insulator with M20 stud ext. 190mm	Each	2
211KVP	11kV Post Insulator	Box	4
222KVP	22kV Post Insulator	Each	1
233KVP	33kV Post Insulator	Box	2
2ALP/22/450	22KV ALP 22/450	Box	6
2GY2	Porcelain Guy Strain Insulator GY2 11kV	Box	25
2GY3	Porcelain Guy Strain Insulator GY3 33kV	Box	4
2UG70TC-HEX	Glass Disc Insulators	Each	1
C4-170-11-445	Solid-Core Station Post Insulator	Each	1
R11ET200L-487	Tie-Top Type Line Post Insulator	Each	1
R11EH200L-560	Clamp-Top Type Line Post Insulator	Each	1
R12.5EC200N	Clamp-Top Type Line Post Insulator	Each	1
R11EC200N-530	33kV Clamp Top Line Post Insulator with pin and top clamp TSC2538	Each	1



220



205



210



510



11 KVP



GY2/GY3

Cable Crucifix Kits

Order Code	Description	Pack	Qty
PT11 KIT	11kV Pole Top Kit	Each	1
AA18201 Type1	Cable Crucifix 11/33 kV	Each	1

Surge Arresters

SIEMENS Surge Arresters

Order Code	Description	Pack	Qty
3EK7-120-4CD4	Surge Arrester Class 1 11kV	Each	1
3EK7-120-5CD4	Surge Arrester Class 2 11kV	Each	1
3EK7-150-5CD4	Surge Arrester Class 2 11kV	Each	1
3EK7-300-5CH4	Surge Arrester Class 2 22kV	Each	1
3EK7 360-5CJ4	Surge Arrester Class 2 33kV	Each	1
3EK7-120-4CD4D	Disconnect Surge Arrester X Arm Mount Class 1 11kV	Each	1
3EK7-120-4CD4T	Disconnect Surge Arrester Tank Mount Class 1 11kV	Each	1

Minimum order quantities and box quantities apply.



Silicone Insulators

Clamp Top Line Post Insulator

Order Code	Description	Pack	Qty
ARP-LPSC-15SK	15 kV Clamp Top Line Post Insulator	Each	1
ARP-LPSC-25KV	25 kV Clamp Top Line Post Insulator	Each	1
ARP-LPSC-35KV	35 kV Clamp Top Line Post Insulator	Each	1
ARP-LPSC-46KV	46 kV Clamp Top Line Post Insulator	Each	1
ARP-LPSC-69KV	69 kV Clamp Top Line Post Insulator	Each	1



Clamp Top Line Posts

Order Code	Description	Pack	Qty
ARP-LPH-35SK-GB-1	35kV Horizontal Line Post c/w gain base and AL wire clamp 6-38mm	Box	1
ARP-LPB-35SK-GB-1	35kV Vertical Line Post c/w gain base and AL wire clamp 6-38mm	Box	1
ARP-LPH-69SK-GB-1	69kV Horizontal Line Post c/w gain base and AL wire clamp 6-38mm	Box	1
ARP-LPV-69SK-GB-1	69kV Vertical Line Post c/w gain base and AL wire clamp 6-38mm	Box	1
ARP-LPV-15SK-1	15kV Vertical Line Post w/ Aluminum Wire Clamp	Each	1
ARP-LPV-15SK-1 KIT	15kV Vertical Line Post w/ Aluminum Wire Clamp c/w LPP-7-34	Box	1
ARP-LPV-35SK-1	35kV Vertical Line Post and AL wire clamp 6-38m	Box	1
ARP-LPV-69SK-GB-HP-1-2330	69Kv Vertical Line Post c/w gain base and trunnion cable clamp	Each	1
ARP-LPH-69SK-GB-HP-1-2180	69Kv Horizontal Line Post c/w gain base and trunnion cable clamp	Each	1



Line Post Insulators

Order Code	Description	Pack	Qty
ARP-LPCN-15SK	15KV Line Post Insulator w/ C-Neck	Box	1
ARP-LPCN-15SK KIT	15KV Line Post Insulator w/ C-Neck c/w LPP-7-34	Each	1
ARP-LPFN-35SK	35kV Line Post Insulator w/F-Neck	Each	1



Station Post

Order Code	Description	Pack	Qty
ARP-TR205SK	15kV Station Post Insulator (TR205)	Each	1

Minimum order quantities and box quantities apply.



Strain Deadends

Order Code	Description	Pack	Qty
ARP-15SKCE-S	15kV Silicon Strain Dead End Clevis & Eye	Box	1
ARP-15SKCE-S KIT	15kV Silicon Strain Dead End Clevis & Eye c/w AL750	Each	1
ARP-25SKCE-S	25kV Silicon Strain Dead End Clevis & Eye	Each	1
ARP-35SKCE-S	35kV Silicon Strain Dead End Clevis & Eye	Each	1



Cutout

Order Code	Description	Pack	Qty
CS27-AP1-100C	27kV Cutout Switch 100 Amp w/Arc Shortening Rod, Parallel Groove Clamp, Nema A Bracket Type C (interrupting capacity)	Each	1



Accessories

Order Code	Description	Pack	Qty
ARP-LPP-7-34	7" Line post pin shaft 3/4" (20mm) - for 11/22 Kv Insulators	Each	1
ARP-ATC-150	Cast Aluminium Wire Clamp (.25 to 1.5" dia wire)	Each	1
ARP-LPP-10-34	10" Long line post pin shaft 3/4" (20mm) - for 35 Kv Insulators	Each	1

Other

Order Code	Description	Pack	Qty
ARP SBHL021-A3400	69kV Silicone Transmission Insulator Clevis & Tongue 25,000lb Sml	Each	1
ARP-LPE-69SK-SP-GB	69kV Silicone Line Post w/ 2 hole blade & gain base	Each	1
ARP-LPV-69SK-SP	69kV Silicone Vertical Line Post	Each	1
ARP-69SKYC-S	69kV Suspension Insulator c/w Y Clevis and Tongue	Each	1
ARP SBHL030-A3400	115kV Silicone Transmission Insulator Clevis & Y-Clevis & Oval Eye 25,000Lb	Each	1
ARP-LPE-115SK-SP-GB	115kV Silicone Line Post w/ 2 Hole Blade & Gain Base	Each	1
ARP-LPV-115SK-SP	115kV Silicone Vertical Line Post	Each	1

Minimum order quantities and box quantities apply.



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