

Progressive Energy



Product Catalogue

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Company Profile

Progressive Energy (Pty) Ltd, was established in 2004 and is a reputable and credible supplier of equipment into the electrical industry.

Our main focus is the medium voltage field, defined as the 3000 to 42000 Volt range, however items up to 132 kV can be supplied. We supply products to transformer manufacturers, municipalities, mining industry, Eskom, Railways and electrical construction contractors. We are involved in large reticulation projects, substations, wind and solar farms.

The company has grown substantially over the years, requiring it to move premises several times in order to accommodate our growing product range. We are a customer and quality focused company, delivering on time and to our customer`s quality standards.

Progressive Energy, a BBE 1 rated company is committed to the training and development of its staff and supports the policy of black economic empowerment.

Our in-house manufacturing involves wiring harnesses to various designs, and MV transformer cable connections. We represent quality product manufacturers both locally and overseas, and keep significant stock available of these products.

Progressive Energy`s high voltage, partial discharge testing facility, allows for the final quality check on our medium voltage products.

We pride ourselves to offering reliable and efficient service and advice to our customers.

Our Vision

With an entrepreneurial spirit, we are striving to be a leader in the supply of MV equipment and cable accessories in our region within the next 5 years. This will provide an opportunity for financial security to our employees and deliver profitable growth to our shareholders.

Our Mission

Is to ensure customer satisfaction, by delivering quality products in line with our customers required specifications. To be able to do this, we believe in training and skilling our employees with the best possible knowledge.

Ecology & Social Responsibility

Progressive Energy is the founding sponsor of *The EcoNature Trust*, a non-profit organization committed to the conservation of dwindling fauna and flora on our planet. It also creates awareness and education about conservation of endangered species, and is involved in funding and undertaking ecological research projects. For further info, visit: www.econature.org.za



Inner Cone Connectors



- Screened inner cone connector up to 42 kv, for switchgear and transformer bushings, according to EN 50180 / 50181
- Size 2, Continuous nominal current = 800 Amps. Impulse withstand voltage = 200 kv
- Size 3, Continuous nominal current = 1250 Amps. Impulse withstand voltage = 250 kv
- Meet the electrical requirements according to CENELEC HD 629.1S1
- No special tools required for installation

CPI 2/5005	11 kv, 120 – 300mm ² Cables	Ø of core insulation = 21.2 – 33.6mm
CPI 2/5005	22 kv, 70 – 240mm ² Cables	Ø of core insulation = 21.2 – 33.6mm
CPI 2/5005	33 kv, 50 – 120mm ² Cables	Ø of core insulation = 21.2 – 33.6mm
CPI 2/5024	11 kv, 240 – 300mm ² Cables	Ø of core insulation = 25.4 – 37.8mm
CPI 2/5024	22 kv, 120 – 300mm ² Cables	Ø of core insulation = 25.4 – 37.8mm
CPI 2/5024	33 kv, 50 – 240mm ² Cables	Ø of core insulation = 25.4 – 37.8mm
CPI 2/5027	22 kv, 300mm ² Cables	Ø of core insulation = 28.9 – 40.0mm
CPI 2/5027	33 kv, 300mm ² Cables	Ø of core insulation = 28.9 – 40.0mm
CPI 3/20	11 kv, 185 – 300mm ² Cables	Ø of core insulation = 21.2 – 33.6mm
CPI 3/20	22 kv, 95 – 185mm ² Cables	Ø of core insulation = 21.2 – 33.6mm
CPI 3/20	33 kv, 50 – 150mm ² Cables	Ø of core insulation = 21.2 – 33.6mm
CPI 3/27	11 kv, 400 – 500mm ² Cables	Ø of core insulation = 28.9 – 37.8mm
CPI 3/27	22 kv, 240 – 300mm ² Cables	Ø of core insulation = 28.9 – 37.8mm
CPI 3/27	33 kv, 150 – 240mm ² Cables	Ø of core insulation = 28.9 – 37.8mm
CPI 3/31	11 kv, 630mm ² Cables	Ø of core insulation = 34.0 – 45.6mm
CPI 3/31	22 kv, 400 – 630mm ² Cables	Ø of core insulation = 34.0 – 45.6mm
CPI 3/31	33 kv, 300 – 500mm ² Cables	Ø of core insulation = 34.0 – 45.6mm
CPI 3/37	33 kv, 630mm ² Cables	Ø of core insulation = 39.1 – 51.0mm
CPI 3/S	33 kv, 800 - 1000mm ² Cables	Ø of core insulation = 45.5 – 57.8mm

Surge Arresters

SPI 2 – 12/5	Size 2, continuous voltage 12kv	Discharge current = 5 kA
SPI 2 – 24/5	Size 2, continuous voltage 24kv	Discharge current = 5 kA
SPI 2 – 24/10	Size 2, continuous voltage 24kv	Discharge current = 10 kA
SPI 2 – 36/10	Size 2, continuous voltage 36kv	Discharge current = 10 kA
SPI 3 – 24/10	Size 3, continuous voltage 24kv	Discharge current = 10 kA
SPI 3 – 36/10	Size 3, continuous voltage 36kv	Discharge current = 10 kA

Final Plug Ending

- To insulate unused inner cone bushings. Complete with metal plate
- | | |
|-------|--------------------------------|
| FPI 2 | Maximal system voltage = 42 kv |
| FPI 3 | Maximal system voltage = 52 kv |



Screened Separable Connectors

(For XLPE or Cables with solid insulation)

- Make: NKT -

Interface A Connectors

- Connectors for bushings with Interface A profile, according to EN 50180 / 50181
- With pin contact & bail restraint
- Meet the electrical requirements according to CENELEC HD 629.1S1
- Connectors rated 250Amps, including torque shear lugs
- Non extensible

CE 24-250/16	11kv, 95 - 120mm ² Cables	Ø of core insulation = 16.9 - 25.0mm
CE 24-250/16	22kv, 25 - 95mm ² Cables	Ø of core insulation = 16.9 - 25.0mm
CSE-A-24250-02	11kv, 25 - 95mm ² Cables	Ø of core insulation = 13 - 22mm
CSE-A-24250-02	22kv, 10 - 50mm ² Cables	Ø of core insulation = 13 - 22mm



Interface C Connectors

- Connectors for bushings with Interface C profile, according to EN 50180 / 50181
- With bolted contact
- Meet the electrical requirements according to CENELEC HD 629.1S1
- Connectors rated 630Amps or 1250 Amps, including torque shear lugs
- Interface B & F available upon request
- Extensible
- With capacitive test point

CB 24-630/02	11kv, 25 - 150mm ² Cables	Ø of core insulation = 12.7 - 25.0mm
CB 24-630/02	22kv, 25 - 70mm ² Cables	Ø of core insulation = 12.7 - 25.0mm
CB 24-630/03	11kv, 185 - 300mm ² Cables	Ø of core insulation = 21.2 - 34.6mm
CB 24-630/03	22kv, 95 - 300mm ² Cables	Ø of core insulation = 21.2 - 34.6mm
CB 36-630/5005	33kv, 50 - 150mm ² Cables	Ø of core insulation = 21.2 - 33.6mm
CB 36-630/5024	33kv, 95 - 240mm ² Cables	Ø of core insulation = 25.4 - 37.8mm
CB 36-630/5027	33kv, 150 - 300mm ² Cables	Ø of core insulation = 28.9 - 40.0mm
CB 36-630/5031	33kv, 300 - 400mm ² Cables	Ø of core insulation = 34.0 - 44.0mm
CB 36-1250/31	22kv, 400 - 630mm ² Cables	Ø of core insulation = 34.0 - 45.6mm
CB 36-1250/31	33kv, 400 - 500mm ² Cables	Ø of core insulation = 34.0 - 45.6mm
CB 36-1250/37	33kv, 500 - 630mm ² Cables	Ø of core insulation = 39.1 - 51.0mm
CB 42-1250/7042	33kv, 630 - 1000mm ² Cables	Ø of core insulation = 45.5 - 57.8mm
CB 42-1250/7042	42kv, 630 - 800mm ² Cables	Ø of core insulation = 45.5 - 57.8mm



Coupling Connectors

CC 24-630/02	11kv, 25 - 150mm ² Cables	Ø of core insulation = 12.7 - 25.0mm
CC 24-630/02	22kv, 25 - 70mm ² Cables	Ø of core insulation = 12.7 - 25.0mm
CC 24-630/03	11kv, 185 - 300mm ² Cables	Ø of core insulation = 21.2 - 34.6mm
CC 24-630/03	22kv, 95 - 300mm ² Cables	Ø of core insulation = 21.2 - 34.6mm
CC 36-630/5005	33kv, 50 - 150mm ² Cables	Ø of core insulation = 21.2 - 33.6mm
CC 36-630/5024	33kv, 95 - 240mm ² Cables	Ø of core insulation = 25.4 - 37.8mm
CC 36-630/5027	33kv, 150 - 300mm ² Cables	Ø of core insulation = 28.9 - 40.0mm
CC 36-630/5031	33kv, 300 - 400mm ² Cables	Ø of core insulation = 34.0 - 44.0mm
CC 36-1250/31	22kv, 400 - 630mm ² Cables	Ø of core insulation = 34.0 - 45.6mm
CC 36-1250/31	33kv, 400 - 500mm ² Cables	Ø of core insulation = 34.0 - 45.6mm
CC 36-1250/37	33kv, 500 - 630mm ² Cables	Ø of core insulation = 39.1 - 51.0mm
CC 42-2500/7042	33kv, 630 - 1000mm ² Cables	Ø of core insulation = 45.5 - 57.8mm
CC 42-2500/7042	42kv, 800 - 1000mm ² Cables	Ø of core insulation = 45.5 - 57.8mm



Coupling Surge Arrestors

- Metal Oxide surge arresters in a screened silicone housing
- For parallel coupling with CB & CC Connectors
- With capacitive test point

CSA 12/5	Continuous operating voltage = 12 kv	Nominal discharge current = 5 kA
CSA 24/5	Continuous operating voltage = 24 kv	Nominal discharge current = 5 kA
CSA 24/10	Continuous operating voltage = 24 kv	Nominal discharge current = 10 kA
CSA 36/10	Continuous operating voltage = 36 kv	Nominal discharge current = 10 kA

Accessories

EAS 630 Type C	End insulating plug for CB 12 / 24 / 36 connectors, interface C profile
CBC 36-630	End cover for bushing type C, up to 36kv without capacitive test point
CBC 40.5-630	End cover for bushing type C, up to 40kv, with capacitive test point
PAKM12-310	Test adapter, 310mm length, for AC, DC & VLF testing through CB + CC connectors
PAKM12-460	Test adapter, 460mm length, for AC, DC & VLF testing through CB + CC connectors
PAKM16-460	Test adapter, 460mm length, for AC, DC & VLF testing through CB + CC connectors



HV Outdoor Terminations

APSEA 52 – 72KV

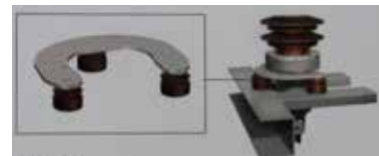
- Modular termination, mountable at any angle
- Modules & stress relief cone made of leakage current resistant rubber
- Meets requirements of SS & IEC

APSEA 521-5 U	52 kv	Ø of core insulation = 33 - 54mm	Creepage distance = 1150mm	A = 580mm
APSEA 526-7 U	52 kv	Ø of core insulation = 54 - 66mm	Creepage distance = 1250mm	A = 650mm
APSEA 721-4 U	72 kv	Ø of core insulation = 33 - 48mm	Creepage distance = 1420mm	A = 690mm
APSEA 725-7 U	72 kv	Ø of core insulation = 48 - 66mm	Creepage distance = 1790mm	A = 870mm



APED 36 – 84kv

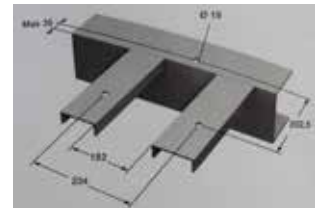
- For fixed connection point and where there is risk of high continuous creepage currents
- Porcelain or composite insulator with aluminium cast box body
- Base to mounted on bracket. Insulated installation available
- Includes synthetic insulating oil & pre-moulded stress cone
- Meets requirements of SS, IEC, IEEE



APED 360 B	12 – 36kv	Porcelain Insulator	Creepage distance 915mm	A = 530mm
APED 521 B	52kv	Porcelain Insulator	Creepage distance 1340mm	A = 645mm
APED 722 B	72kv	Porcelain Insulator	Creepage distance 2200mm	A = 925mm
APED 843 B	84kv	Porcelain Insulator	Creepage distance 2635mm	A = 1040mm
APED 360 P	36kv	Composite Insulator	Creepage distance 950mm	A = 570mm
APED 722 P	72kv	Composite Insulator	Creepage distance 2330mm	A = 950mm

APED – GAP	Rod gap	For protection against over voltage
APED – PIU	Post insulator kit	For insulated earth mounting
JSA *	Earth kit	For cables with metallic sheath (lead)
SCK *	Screen connection	For cables with Al-foil waterproofing

[* = not needed if cable has only copper wire screening]



APEGA 84 – 170kv

- For fixed connection point in gas-insulated switchgear/transformers without separable cable box
- Epoxy insulator on aluminium alloy base with aluminium cast box body
- Insulated mounting & metallic pressure ring
- Includes synthetic insulating oil & pre-moulded stress cone
- Meets requirements of SS, IEC, IEEE

APEGA 841	84kv	Ø of core insulation = 25 – 66mm
APEGA 1703	170kv	Ø of core insulation = 45.5 – 100mm



Top Bolts

A – TBF 30/120-630SKR	For Alu conductor	120-630mm ²	Ø A = 30mm	Ø B = 45 / 50 / 55 / 60mm
A – TBF 40/800-1200SKR	For Alu conductor	800-630mm ²	Ø A = 40mm	Ø B = 65mm
K – TBF 30/120-630SKR	For copper conductor	120-630mm ²	Ø A = 30mm	Ø B = 45 / 50 / 55 / 60mm
K – TBF 40/800-1200SKR	For copper conductor	800-630mm ²	Ø A = 40mm	Ø B = 65mm

Heatshrink MV Terminations & Joint Kits

- Meet requirements of NRS 053:2008, IEC 60055-1 & SANS 60502-4

FOR PILC & XLPE 11kv Cables

Termination, 3 core,	35mm ²	– 95mm ² indoor, 650mm length	o/d – 900mm length
Termination, 3 core,	120mm ²	– 185mm ² indoor, 650mm length	o/d – 900mm length
Termination, 3 core,	240mm ²	– 300mm ² indoor, 650mm length	o/d – 900mm length

Joint Kit, 3 core,	35mm ² – 95mm ²
Joint Kit, 3 core,	120mm ² – 185mm ²
Joint Kit, 3 core,	240mm ² – 300mm ²

Transition joint, 3 core, PILC to XLPE	35mm ² – 95mm ²
Transition joint, 3 core, PILC to XLPE	120mm ² – 185mm ²



Compound Filled Joints for PILC Cables

Cast Iron joint, type 1001	16 - 70mm ²
Cast Iron joint, type 1002	95 - 150mm ²
Cast Iron joint, type 1003	185-300mm ²



Brass Wiping Glands - X-type	90x90mm
Brass Wiping Glands - Y-type	114x123mm



Push On Terminations & Joint Kits

- According to CENELEC HD 629
- Moulded from silicone rubber with integrated stress control
- For use on XLPE or EDPM cables

TI 11/2	25mm ² – 70mm ² cables, Ø of ins.	= 12,7mm – 19,2mm
TI 11/3	90mm ² – 240mm ² cables, Ø of ins.	= 17,0mm – 28,4mm
TI 24/5	95mm ² – 240mm ² cables, Ø of ins.	= 21,2mm – 34,6mm
TI 36/5	70mm ² – 120mm ² cables, Ø of ins.	= 21,2mm – 34,6mm
TI 36/27	150mm ² – 240mm ² cables, Ø of ins.	= 28,9mm – 43,0mm
TO 12/3	95mm ² – 240mm ² cables, Ø of ins.	= 17,0 – 28,4mm
TO 24/5	95mm ² – 240mm ² cables, Ø of ins.	= 21,2 – 34,6mm
TO 24/27	400mm ² – 630mm ² cables, Ø of ins.	= 28,9 – 43,0mm
TO 36/20	50mm ² – 120mm ² cables, Ø of ins.	= 21,2 – 34,6mm
TO 36/27	150mm ² – 300mm ² cables, Ø of ins.	= 28,9 – 43,0mm
SOT 326	400mm ² – 630mm ² cables, Ø of ins.	= 38 – 54 mm
JS 24-E/14	25mm ² – 70mm ² cables, Ø of ins.	= 15,0mm – 24,3mm
JS 24-E/20	95mm ² – 185mm ² cables, Ø of ins.	= 21,3mm – 32,6mm
JS 24-E/27	240mm ² – 400mm ² cables, Ø of ins.	= 28,9mm – 37,8mm
JS 36-E/30	240mm ² – 400mm ² cables, Ø of ins.	= 32,4mm – 42,8mm
JS 36-E/20	400mm ² – 630mm ² cables, Ø of ins.	= 38,9mm – 49,5mm



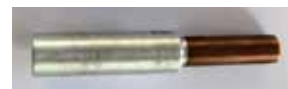
Torque Shear Lugs & Ferrules

- For Alu or Copper conductors (Bi-metallic Lugs & Ferrules available)

Lug	16-95mm ²
Lug	50-240mm ²
Lug	70-300mm ²
Lug	300-630mm ²



Ferrule	10-95mm ²
Ferrule	50-240mm ²
Ferrule	120-300mm ²
Ferrule	300-630mm ²



Insulation Materials

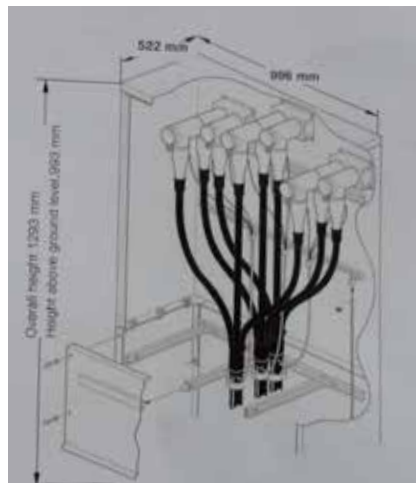
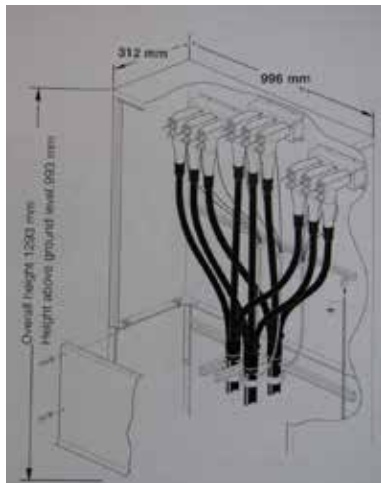
- Flexible unscreened bushing boot, max system voltage 17.5kv
- Interface C profile, unscreened bushing boot, max system voltage 17.5kv
- Right angle, heat shrinkable bushing boot, dielectric strength 15kv/mm
- Silicone rubber, self-amalgamating insulating tape, 9m x 2.5cm roll, 20kv/mm
- Grey mastic butyl tape 10m roll
- Black butyl filler tape 1.2m
- Heat shrinkable anti track tape, 10m roll, 20kv/mm



Cable Cabinets

- For jointing or connectivity up to four XLPE cables together
- 12 – 36kv range, with conductor cross section 25 – 630mm², 630Amps or 250 Amps
- Connecting onto interface C bushing using screened separable connectors
- Cabinet mechanical impact test according to IEC 60439-5
- Cable connectors (SSC) meet the electrical requirements according to CENELEC HD 629.1S1
- Enclosure made of hot – dip galvanized steel. Additional corrosion protection on parts buried underground
- IP rating 54

12/24kv	HDC-A 24250	25 – 95 mm ²
12kv	HDC-A 12630-01	25 – 70mm ²
12kv	HDC-A 12630-02	95 – 300mm ²
12kv	HDC-A 12630-03	400 – 630mm ²
24kv	HDC-A 24630-01	25 – 70mm ²
24kv	HDC-A 24630-02	95 – 300mm ²
24kv	HDC-A 24630-03	400 – 630mm ²
36kv	HDC-A 36630-01	50 – 70mm ²
36kv	HDC-A 36630-02	95 – 300mm ²
36kv	HDC-A 36630-03	400 – 630mm ²



MV Equipment Bushings

- Resin through bushings with integrated screening
- Routine tested & engraved serial number
- According to EN 50181 and IEC 60137
- Material: Exopy, Huntsman CY5977 / HY918



Interface A	24kv	250 Amps
Interface C	24kv	630 Amps
Interface C	24kv	630 Amps
Interface C	36kv	630 Amps
Interface C-C	36kv	630 Amps

With pin contact & bail restraint
 With M16 bolted contact (72mm wall cut out)
 With M16 bolted contact (50mm wall cut out)
 With M16 bolted contact
 With M16 bolted contact both ends

oil to air
 oil to air
 oil to air
 oil to air
 air to air

HV Bushings

- Oil Impregnated paper, transformer oil to air bushings
- 52 – 300 kv, up to 1250 Amps
- Porcelain or composite insulators, with integrated shield
- With or without oil level indication
- Variable internal length to accommodate internal current transformers
- Meets requirements of IEC 60137 & IEEE

GOB	250 – 800	52 kv
GOB	328 – 800	72 kv
GOB	550 – 800	132 kv



MV Switchgear

- Ring Main Units for Substation, miniature substations or outdoor applications
- Internal arc classification, 20kA for 1 sec
- Sealed tank with operating mechanism in SF6
- Circuit breaker current interruption in vacuum bottle
- 11 or 22kv system Voltage
- Self-powered protection relays
- Integrated cable test bushings

CCF	- 2 Isolators & 1 fused unit
CCFF	- 2 Isolators & 2 fused units
CCV	- 2 Isolators & 1 fused unit
CCVV	- 2 Isolators & 2 fused units
Further combinations available	



Bulk Metering Units

- 11kv, compact design
- Mounted in an indoor 3CR12, SS enclosure
- Voltage transformers fitted in same enclosure
- Metering done in LV side-mounted cubicle

CCFV	- Ring Main Unit with one metered feeder
CCFVV	- Ring Main Unit with two metered feeders

Freestanding Outdoor RMU

- Side entry cable boxes
- Cable test bushings
- Interlocking safety features
- Self-powered relays
- Stainless steel housing
- Circuit breaker current interruption in vacuum bottle

CVC	- 2 Isolators & 1 circuit breaker, non-extensible
+CVC+	- 2 Isolators & 1 circuit breaker, extensible
+V+	- Circuit breaker extension unit
+C+	- Isolator extension unit



MV Fuses

- SIBA / BUSSMAN
- Striker pin fuses, 442mm length
- Designed and tested to IEC 60282-1

25 Amps	- for 315 kVA protection
40 Amps	- for 500 kVA protection
50 Amps	- for 630 kVA protection
63 Amps	- for 800 kVA protection
80 Amps	- for 1000 kVA protection
100 Amps	- for 1250 kVA protection
125 Amps	- for 1600 kVA protection



Oil immersed fuse links 11 / 22kV

RMU Extension Base

- 300mm extension base for indoor substation application
- For 3, 4 or 5 way RMU's
- For creating additional cable termination space
- Mild steel, epoxy coated



Current Transformers for Protection Relay

- Ring Core CT's for SEC WIC1 Relay

W2	16 – 56 Amps	315 – 1000 kVA
W3	32 – 112 Amps	630 – 2000 kVA
W4	64 – 224 Amps	1200 – 4000 kVA
W5	128 – 448 Amps	2500 – 6000 kVA

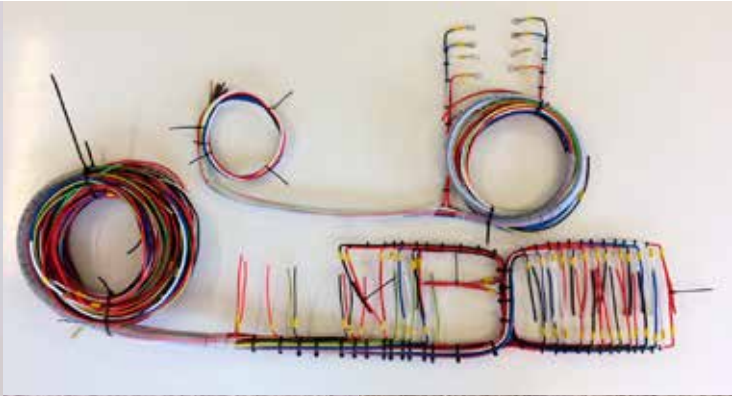
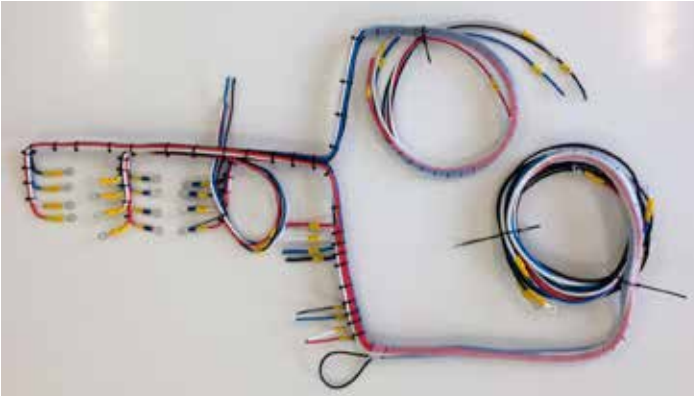


- Ring Core CT's for REJ603 Relay

CT1	8 – 28 Amps	150 – 500 kVA
CT2	16 – 56 Amps	315 – 1000 kVA
CT3	32 – 112 Amps	630 – 2000 kVA
CT4	64 – 224 Amps	1200 – 4000 kVA
CT5	128 – 448 Amps	2500 – 6000 kVA

Wiring Assemblies & Cable Links

- Pre-assembled LV control panel looms
- PVC insulated earth straps
- Tinned copper braided earth straps





- Pre-assembled screened transformer cable links, 11 – 33kv
- Heat shrink, cold shrink or SSC terminations fitted

Trifurcating Kits

- To convert a 3 core XLPE cable to three single cores

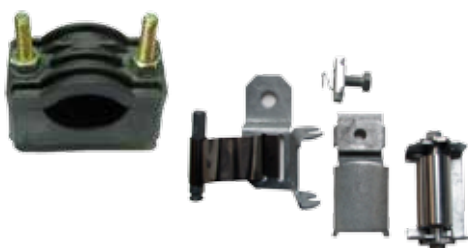
TRIF – 1/24 – 800mm	11 / 24Kv	16 – 95mm ²
TRIF – 2/24 – 800mm	11 / 24Kv	95 – 240mm ²
TRIF – 3/24 – 800mm	11 / 24Kv	185 – 300mm ²
TRIF – 2/36 – 800mm	36Kv	95 – 240mm ²



Cable Clamps & Brackets

- Short circuit tested
- Non magnetic steel with SS band
- Single core or trefoil installation
- Cable dia: 50mm – 75mm
- Cable dia: 75mm – 100mm
- 300mm extension bracket

UKR90	Ø 20 – 90 round profile
UKR200	Ø 50 – 275 round profile



Tools

- Hydraulic Cable spiking tool – CSPT
- Dielectric screen cutting tool
- XLPE insulation stripper
- Insulation cutter





- See our website for Conditions of Sale
- All dimensions to be checked against actual cables sizes to be used