TransNet
Your Partners in Power

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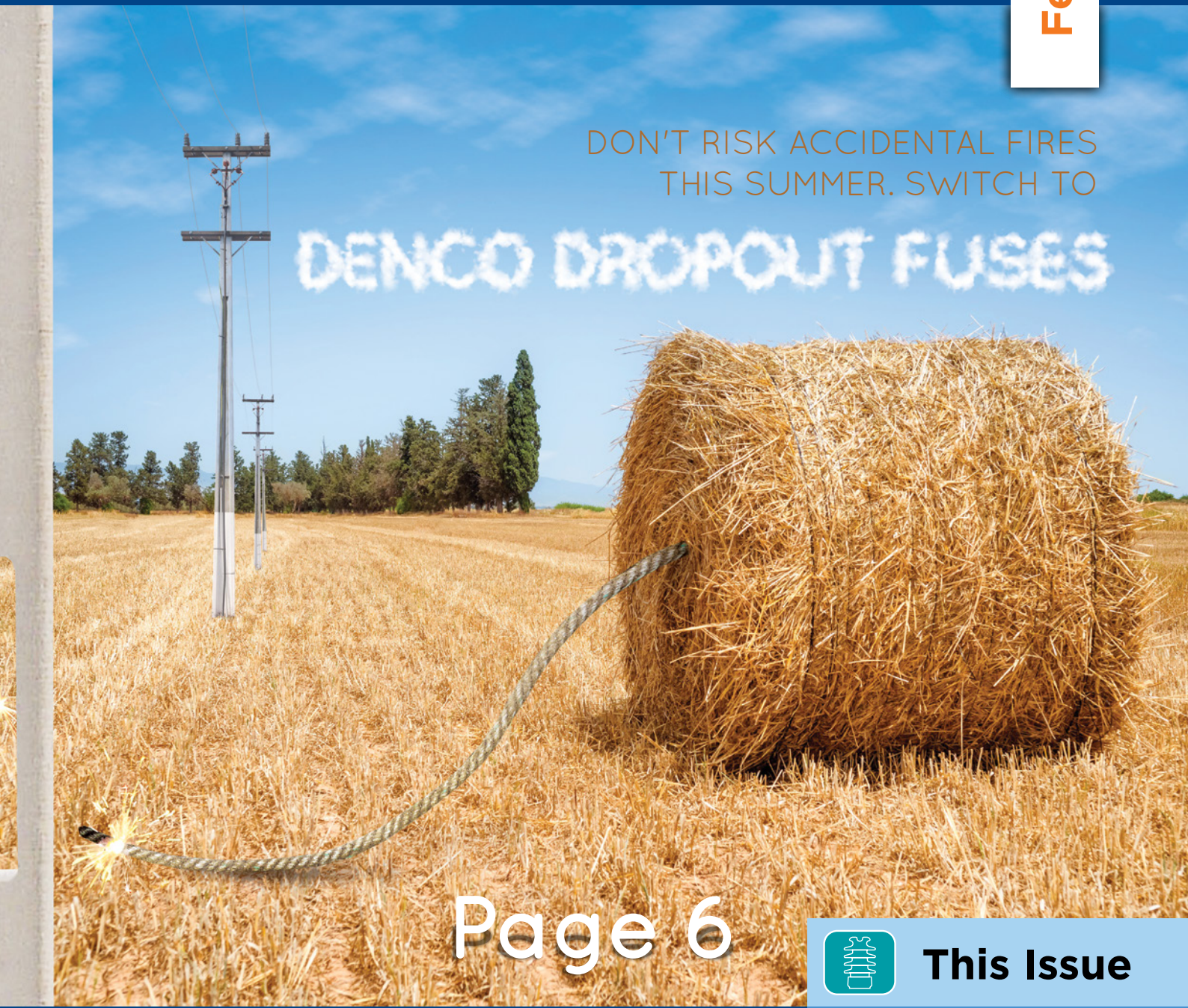
HV JUICE

Feb/Mar 2019



Page 6

This Issue

Marigold Insulating Gloves

PAGE 8

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100% NEW ZEALAND

G&W ACCUSENSE® VOLTAGE SENSORS

G&W's Accusense® Voltage Sensors are a metering-class voltage-sensing solution that enables users to collect critical voltage data needed for optimizing grid power delivery and reliability.

Accusense voltage-sensing technology is an alternative to traditional metering class voltage-transformers and is available as a stand-alone voltage metering system or with the Viper-ST as a site-ready solution.

FEATURES/BENEFITS

- Metering class, 0.5% voltage-sensing accuracy
  - Key component in optimizing power delivery and reliability
- No Ratio Correction Factors (RCFs) required
- One ratio for all voltages (5000:1)
- Eliminates the need for voltage transformers used in high-accuracy voltage measurement applications
  - Easy to install, lightweight
  - Safe, Low Energy Analog (LEA) output
  - Cannot back-feed, output isolated from primary
- Phase Measurement, better than ±0.2°
- Site-Ready Solution
  - Factory installed and tested
- Compact
- Capacitive voltage-sensing technology
  - Maintains accuracy and phase angle performance with long cable lengths (advantage over resistive divider technology)
- Silicone rubber insulation construction
  - Field-proven material with excellent hydrophobic properties
- Compatible with SEL-651R and 42-pin control cable

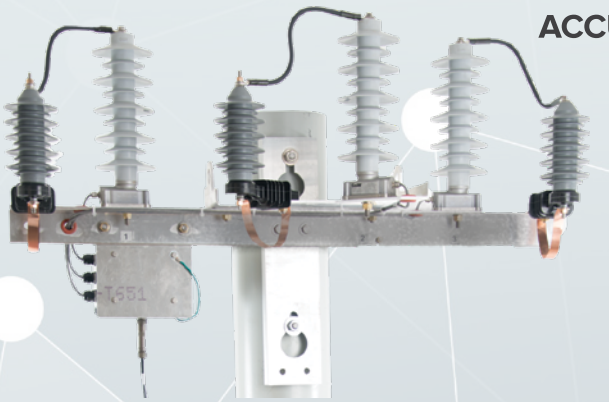
APPLICATIONS

- Intelligent metering Viper reclosers
  - High accuracy power quality measurement
- Retrofit to reclosers installed in the field
  - Fault location, isolation, service restoration (FLISR)
- Stand-alone, high accuracy voltage metering
- Meter at feeder, capacitor banks, end of line, and interties
- Conservation Voltage Reduction (CVR) & Volt-VAR Optimization (VVO)
- Volt-VAR Compensation (VVC)
- Power Quality
- Sync Check

ACCUSENSE
by G&W ELECTRIC

38kV Accusense® Voltage Sensor

Viper-ST paired with Accusense® Voltage Sensors



Accusense® Voltage Metering System (independent mount)

Specifications		
VOLTAGE RATING	15/27KV	38KV
WITHSTAND TEST VOLTAGE	60KV, 1 MIN	70KV, 1 MIN
BASIC IMPULSE LEVEL (BIL)	170KV	225KV
WEIGHT	4LB	9LB
ACCURACY CLASS	0.5 CLASS (±0.5% MAGNITUDE, ±0.344° PHASE)	
RATIO	5000:1 (V:V)	
OUTPUT	LOW ENERGY ANALOG (LEA), 8V AC (MAX)	
TEMPERATURE RANGE	-40°C TO +65°C	
STANDARD	IEC 60044-7:1999, IEEE C37.92-2005	

G&W
Engineered to order. Built to last.

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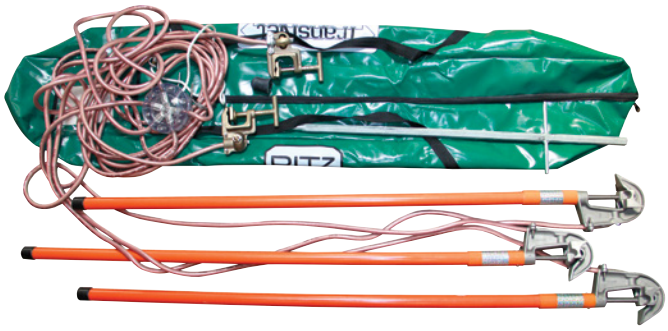
STAYING SAFE

Ritz Temporary Earth Sets offer protection to Linemen from accidental livening and offer a direct path to earth for any current that should accidently enter the work site.The fully insulated hotsticks are permanently attached to the clamps, giving an even greater visual reference of the earthed zone. Easy to install, simply position the clamp and tighten onto the conductor using the attached hotstick.

These earths are a well known and extensively used design here in New Zealand.



TEREX | RITZ

Cat No.	Description
CAR/ST-NZ-HG14880	35MM^2, 1 PIECE STICKS
CAR/ST-NZ-HG14880-5	50MM^2, 1 PIECE STICKS
TN11-33KV/SET	35MM^2, 2 PIECE STICKS

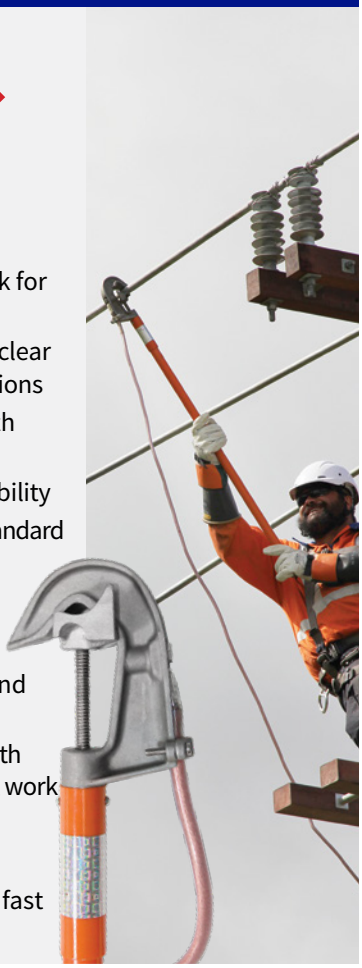
RITZ TEMPORARY EARTH SETS

Features

- Attached earth stick
- Reflector at the top of each stick for night time visual check
- Flexible Copper conductor with clear sheath for ease of visual inspections
- Factory test report supplied with every set
- Unique serial number for traceability
- Inspected & tested to IEC 61230 standard

Set includes:

- 3x 3m leads attached to fully insulated line clamp hotsticks
- 1x 9m lead from cluster to ground with ground clamp
- 1x 1m lead from cluster to pole with ground clamp to bond pole metal work
- 1x heavy duty storage bag
- 1x 1m earth stake
- 1x Acrylic cluster cover for easy fast inspection of connections



TN277NZHP HIGH VOLTAGE DETECTOR

Features

- Non-contact detection of live voltage
- Detect residual & induced voltages
- Sturdy tough case
- Meets requirements of EEA Technical Guide: Portable Equipment for Work On or Near Conductors
- Meets requirements of ASTM F1796-09, IEC 61243-1 & IEC 61243-2
- Use for checking grounding equipment
- 2 ranges for selection:
  LOW : 50V~1.5kV
  HIGH : 1.5kV~132kV
- Circuit test function
- Low power consumption

CAT NO. TN277NZHP

Operating Temp	0°C ~50°C
Dimensions	318 (L) x 75 (W) x 71 (D)mm
Weight (incl. battery)	Approx. 277g
Power Source	9V (6LF22) x 1 Alkaline battery
Safety Standards	EN 61326- 1 EN 61000-4-2 EN 61000-4-3
Accessories	Instruction Manual, Carry Case, Battery

TNPD PROVING DEVICE

FOR TESTING NON-CONTACT VOLTAGE DETECTORS

As per the EEA Guide To Portable Equipment For Work On Or Near Conductors, Voltage Detection Devices (VDDs) shall be supplied with or incorporate a proving device. The TNPD is the perfect solution, giving peace of mind that worker safety is taken care of.

Features

- 150W Can-Sized Power Inverter
- Plugs into the cigarette lighter socket and outputs 230 V AC
- Able to power a variety of 230 V AC equipment from a battery chargers to laptop power supplies
- Powered by cigarette lighter socket adaptor
- USB port with 2.1A output
- Electrical isolation prevents sudden mains voltage at cigarette lighter socket
- Modified sine wave
- Input: 12 V DC, USB Output: 5 V DC, 2.1 A
- Dimensions: 165(L) x 60(Dia.) mm

CAT NO. TNPD

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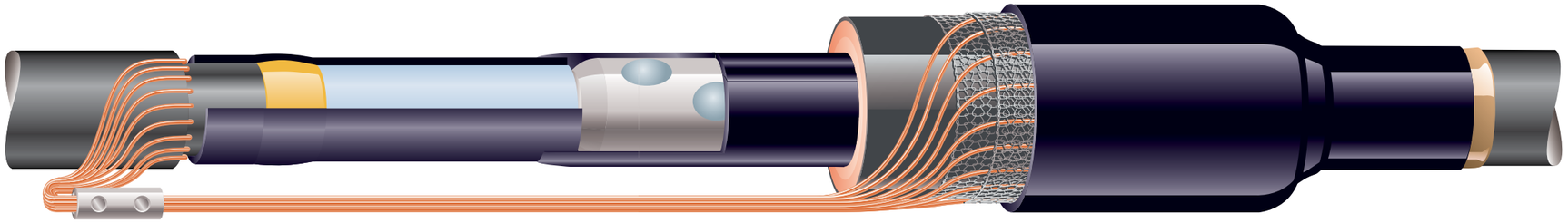
WHY RAYCHEM FOR POLYMERIC INSULATED CABLES

MXSU FEATURES

- Can be designed to network specific requirements
- Screen termination products can be included according to network specifications and cable fault current ratings if required
- Mechanical connectors for conductor and wire shield are supplied with the kit
- Kits are widely range taking and cover most conductor constructions including tolerances
- No crimping tools or tool maintenance required
- Short and space saving design for installation
- Improves installation reliability
- Unlimited shelf life, reduces cost
- Avoids bulky waste and costly waste disposal
- Exceeds international performance standards including CENELEC HD 629 or IEC 60502-4 for joints

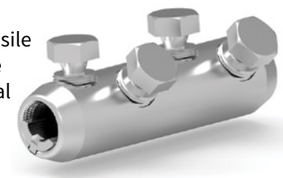
MXSU JOINTING SYSTEM FOR POLYMERIC INSULATED CABLES



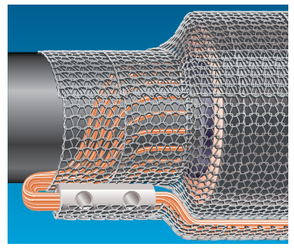
SHEAR BOLT CONNECTORS
All joint kits incorporate a Raychem screw connector with shear head bolts to ensure a reliable pre-engineered electrical connection. The pre-set shear torque of the bolts ensures that the correct contact pressure is always achieved. The specially designed contact surface on the inside of the connector breaks up any conductor oxide layer and ensures reliable service over the entire life time of the joint. The connectors have been tested in accordance with IEC 61238-1 class A.

BSM TYPE CONNECTORS FOR ALU & CU CONDUCTORS

- Pre-set shear torque provides safe & reliable installation
- Removable half shell insert provides core centering
- Tin-plated and greased contact surface for corrosion protection
- Shorter length compared to compression connectors
- Excellent tensile performance due to special bolt tip design



SHIELD CONTINUITY
Typical shield wire cross sections up to 35mm² can easily be connected with the mechanical connector supplied in the kit. Positioned at the oversheath cut back, the connection provides a smooth profile and resists mechanical damage. There is no need for a crimping tool and its maintenance. Two shear bolts provide the required contact force in order to ensure safe installation and reliable performance during load cycling in service as well as during short circuit conditions. An additional layer of copper mesh is applied around the joint to provide satisfactory shielding and protection.



ELECTRICAL STRESS CONTROL
The stress control tubing at each cable end in combination with the yellow stress grading mastic at the screen cut provide a precisely defined impedance characteristic which smoothes the electrical field. For ease of installation, a stress control patch is applied around the mechanical connector to provide a similar function.

ROBUST OUTER SEALING AND PROTECTION
Modern cable laying techniques require a robust oversheath replacement capable of withstanding high mechanical stresses during conventional cable laying as well as mechanical impact occurring during the entire cable life time. The thick-wall heat-shrinkable tubing is internally coated with a hot melt adhesive to ensure an effective moisture seal and corrosion protection for the joint. When installed, the joints provide the similar level of protection and thickness as modern cables with PE oversheath.
All voltage sheath testing commonly used today after cable laying or as control test methods have easily been passed.

CSTI/O cold shrink terminations are made from a high performance, liquid silicone material specially formulated for excellent tracking and split resistance. The extra-long silicone stress cone is integrated within the termination to ensure correct positioning.

All key components are pre-expanded on one holdout system, allowing neat installation in compact environment on the prepared cable.

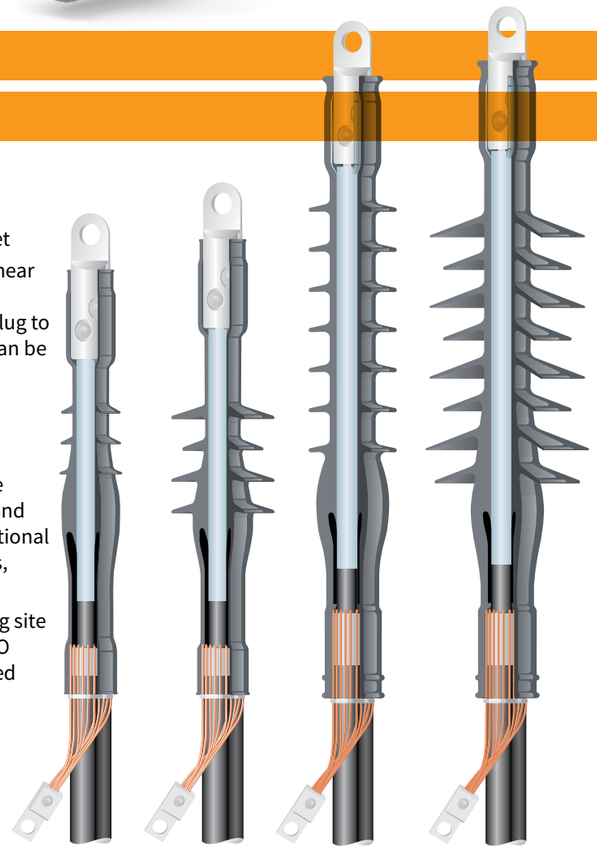
CSTI/O terminations are designed to cover a wide range of applications and accommodate the variety of cable and conductor types used in the networks. Range-taking mechanical lugs ensuring reliable installation.

Raychem
from TE Connectivity

TE connectivity

CSTI/O FEATURES

- Easy to install spiral holdout
- Integrated sealing mastic
- Outstanding weathering, UV and Ozone Resistance
- Chemically resistant
- Resistant to fungi
- Excellent electrical properties, including good tracking resistance and high dielectric strength
- Electrical stress control of the screen cut area using integrated conductive geometrical stress cones
- Hydrophobic (water-repellent)
- Non-flammable
- Self-extinguishing
- Retains performance over wide temperature range ±45 to +150°C
- Excellent resistance to splitting and permanent set
- Mechanical shear bolt lug and compression lug to IEC 61238-1 can be supplied
- CENELEC HD 629.1.S2, requirements which include IEC, BS, VDE and other international specifications, IEEE-48
- Manufacturing site ISO 9001 & ISO 14001 qualified



BENEFITS

- Pre-expanded termination body with integrated stress control deflector and sealing mastic
- Single piece silicone termination body with optimal mechanical expansion ratio allows a wide application range
- The extra-long silicone stress cone is integrated with the termination and reduces positioning
- Moisture sealing at the lug is integrated – no additional sealing tapes
- Well-known and easy-to-install holdout system, rip cord pulling direction towards the lug not the bottom of the termination
- Easy to install in tight switchgear compartments
- Accommodates mechanical shear bolt lug (included in kit) compression lug

CSTI/CSTO
COLD SHRINK TERMINATIONS FOR POLYMERIC INSULATED CABLES

Cat No.		Voltage (kV)	Number of Cores	Size Range Al or Cu (mm²)
Indoor	Outdoor			
CSTI-3122-ML-1-13	CSTO-3122-ML-1-13	11	1	25–95
CSTI-3132-ML-4-13	CSTO-3132-ML-4-13			95–240
CSTI-3142-ML-6-17	CSTO-3142-ML-6-17			300–400
CSTI-3152-ML-7-17	CSTO-3152-ML-7-17			500–630
CSTI-5122-ML-1-13	CSTO-5122-ML-1-13	22	1	25–95
CSTI-5132-ML-4-13	CSTO-5132-ML-4-13			95–240
CSTI-5142-ML-6-17	CSTO-5142-ML-6-17			300–400
CSTI-5152-ML-7-17	CSTO-5152-ML-7-17			500–630
CSTI-6122-ML-1-13	CSTO-6122-ML-1-13	33	1	50–70
CSTI-6132-ML-4-13	CSTO-6132-ML-4-13			95–150
CSTI-6142-ML-6-17	CSTO-6142-ML-6-17			185–400
CSTI-6152-ML-7-17	CSTO-6152-ML-7-17			500–630
CSTI-6162-ML-8-21	CSTO-6162-ML-8-21			800–1000

CURRENT-LIMITING DROPOUT FUSES BY DENCO

WHY DO YOU NEED A DENCO DROPOUT FUSE?

- **No Sparks or Molten Fragments**
- **No Release of Hot Gases**
- Replace cutout expulsion fuse-links
- Current Limiting
- High Rupture Capacity
- Low Voltage Arc
- Low Watt Loss
- Pure Silver element protected by epoxy resin coated fibreglass tube
- Fuse cavity filled with carefully compacted granulated quartz silica
- Cut Off Time U.R.

SUITABLE FOR:

- Substation networks
- Aerial urban and rural distribution power lines

PARTS EXPELLED FROM FUSE CUTOUTS

Ph 0800 442 182
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ERICO EARTHING SOLUTIONS

CADWELD PLUS ONE SHOT

produces a permanent exothermic connection to a ground rod that won't loosen, corrode or increase in resistance for the life of the installation. The convenient single-use package makes the connection without a mold or starting material, and the refractory ceramic body is more durable than conventional ceramic and resists breaking. Ideal for electrical transmission and distribution, telecommunications and cable television applications.

FEATURES

- Durable disposable ceramic body eliminates the graphite mold and frame
- Permanent connection won't loosen or corrode
- Electronic Control Unit #PLUSCU (sold separately) ensures no starting material is required and easy ignition
- Six foot control unit lead gives increased flexibility in hard to reach areas
- NEC Compliant and UL Listed

ERICO GEM

is a low-resistance, non-corrosive, carbon-based superior conductive material that improves grounding effectiveness, especially in areas of poor conductivity like rocky ground, mountain tops and sandy soil. GEM is also the answer in situations where ground rods can't be driven or where limited land area makes adequate grounding difficult with conventional methods.

WILL NEVER LEACH INTO SURROUNDING SOIL OR GROUND WATER

FEATURES

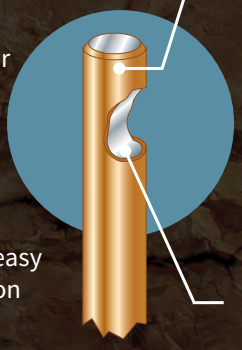
- Dramatically reduces earth resistance and impedance measurements
- Maintains constant resistance for the life of the system once in its set form
- Performs in all soil conditions even during dry spells
- Non-corrosive
- Fully sets in 3 days, fully cures in 28 days
- Reduces vandalism and theft since conductors are hard to remove from concrete
- Easy-to-handle 25 lb (11.3 kg) bags
- Requires one person to install
- Exceeds IEC 62561-7

WHY ERICO COPPER BONDED EARTH RODS?

ERICO's unique manufacturing process includes drawing the steel rod to size before the copper bonding process begins, resulting in a straighter, harder steel core. They use a continuous electro-plating process over the steel core resulting in a permanent molecular bond which will not slip or tear when drive, nor crack when bent, that provides decades of reliable performance.

FEATURES

- 99.9% pure electrolytic copper coating
- Nickel-sealed high strength steel core
- ERICO® name, length, diameter and part number is roll-stamped within 12" (304,8 mm) of chamfered end
- UL logo and control number where applicable stamped on each rod for easy inspection after installation
- All ERICO® rods are made to meticulous standards and exceed the requirements outlined in AS/NZS 3000:2007 for minimum surface treatment thickness.



ERICO COPPER-BONDED COATING:

- Permanent molecular bond
- Low resistance performance
- High fault current capacity (IEEE® Std 80)
- Will not slip or tear when driven
- Will not crack if rod is bent
- Copper coating may vary to meet required standards
- 10 mil (254 micron) minimum coating on rods listed to UL®467

CARBON STEEL CORE & TIP*:

- Greater Tensile Strength
- Deep driving capability

*ERICO copper-bonded rods

COMPLIANT TO AS/NZS 3000:2007 REQUIREMENTS

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GIVE YOURSELF THE UPPER HAND

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OWNED NEW ZEALAND

Features & Benefits

- Pure latex gloves manufactured under ISO 9001 & ISO 14001
- Dual layer construction
- Certified to EN 60903
- Also available in ASTM D120
- Ergonomically shaped
- Excellent strength & durability
- Supreme feel & flexibility
- Manufactured without the use of solvents & hazardous chemicals utilising a proprietary aqueous dipping process
- Low temperature resistant
- Acid resistant
- Ozone resistant
- Custom designed outer protector gloves also available
- Chlorinated for easy donning & duffing
- Comprehensive range of classes, colours, lengths & sizes, including half sizes
- Various cuff styles available including straight, contour & bell
- Arc Flash certified

balmoral® engineering

How to Measure

Measure around your hand, above the V of the thumb. This gives you the circumference

Class Colour	Max Use* Voltage AC/DC	Illustrative Labelling
00 BEIGE	500/ 750	ANSI ASTM D120 EN60903 MAX USE 500 V AC TYPE 1 10 CLASS 00
0 RED	1,000/ 1,500	ANSI ASTM D120 EN60903 MAX USE 1,000 V AC TYPE 1 10 CLASS 0
1 WHITE	7,500/ 11,250	ANSI ASTM D120 EN60903 MAX USE 7,500 V AC TYPE 1 10 CLASS 1
2 YELLOW	17,000/ 25,500	ANSI ASTM D120 EN60903 MAX USE 17,000 V AC TYPE 1 10 CLASS 2
3 GREEN	26,500/ 39,750	ANSI ASTM D120 EN60903 MAX USE 26,500 V AC TYPE 1 10 CLASS 3
4 ORANGE	36,000/ 54,000	ANSI ASTM D120 EN60903 MAX USE 36,000 V AC TYPE 1 10 CLASS 4

Insulating Gloves and Sleeves must have a colour coded label to meet appropriate ASTM Specifications.

*Max Usage Voltage when worn with leather protectors

How To Order

Example = RIG-4-18-YB-C-10H

A B C D E F

A - Glove Type: RIG (Rubber Insulating Glove)

B - Class: 00/0/1/2/3/4

C - Length: 11/14/16/18 (inches)

D - Colour: R/Y/YB/BY (Red, Yellow, Yellow under Black, Black under Yellow)

E - Cuff: S/C/B (Straight, Contour, Bell)

F - Size: 7/8/8H/9/9H/10/10H/11 (H= ½ sizes)