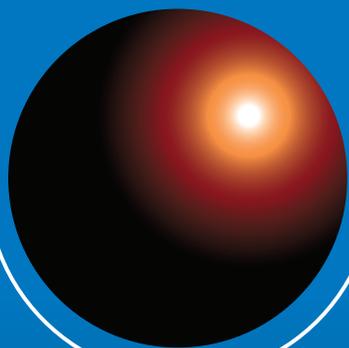


MIDSUN GROUP



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INTRODUCTION

Organized in 1992, Midsun has experienced steady growth each year to date. Our goal every year has been simple; to become the very best product and services resource for the power utility, telecommunications and manufacturing industries. Within the relatively narrow niche that is our business focus, we strive to excel in terms of product, services, price, performance and delivery.

We provide utilities worldwide with services and products which increase reliability and save utility companies millions of repair dollars. Midsun Group Inc. not only manufactures a line of no outage products known as E/Products, but also provides turnkey installations with a no outage warranty, hands on demonstrations and training, and formal technical lectures.

If we do not have what you want we can get it for you. If what you want does not exist we will find a way to create it. Midsun can design custom products to meet your specific needs. We own the patents on many of the unique products that we distribute and we enjoy the challenge of finding unique and cost effective solutions for our customers.





*Yellow coloring indicates areas that Midsun Group has worked in or provided products to.

CONTENTS

E/PRODUCTS & ANIMAL MITIGATION..... 1 - 18

DISTRIBUTION COVERS..... 19 - 26

E/COATINGS

• MIDSUN HVIC..... 28 - 29

• SILPROCOAT CORROSION PROTECTION.... 30 - 31

• E/PAINTABLE INSULATION..... 32 - 33

HIGH VOLTAGE ENERGIZED CLEANING..... 34 - 35

INDEX..... 36

CONTACTS..... 37





Common animals known to cause outages:



Damaged substation equipment caused by wildlife contact.

E/PRODUCTS FOR ANIMAL MITIGATION

One of the most common issues that many utility companies come across is an inadvertent contact outage. Animals cause hundreds of thousands of dollars in damage by coming in contact with energized equipment. According to the US Department of Energy, the US loses approximately \$80 billion* due to power outages annually. The Edison Electric Institute estimates that 11%** of those outages are due to wildlife contact.

Midsun's E/Products are carefully engineered to prevent weather and animal related outages throughout your substations and distribution lines. Midsun can provide turnkey operations for our E/Products. Installing our products can save your company hundreds of thousands of dollars in repairs.



*<http://economyincrisis.org/content/power-outages-highlight-americas-aging-infrastructure>

**http://www.dieselserviceandsupply.com/Causes_of_Power_Failures.aspx

Silicone Self Fusing Tape

Original & High Insulation Self-fusing silicone tape which forms a void-free electrical insulation protection system when applied to any connector, bus or cable.

Midsun Silicone Self Fusing Tape is a non-adhesive, custom formulated self-fusing silicone rubber tape. Its self bonding properties make application a snap for flexible cable, expansion joints and odd shaped connectors, while offering electrical protection under the most extreme types of conditions. The custom formulation helps resist heat (FR rated), moisture, corrosives and weathering while maintaining the electrical properties that are key to a long term avoidance of animal caused outages. Midsun self fusing silicone tape can be easily removed compared to the labor intensive removal of heat shrink tapes. Its adhesive self-fusing properties ensure that it will not gum up or leave a messy residue when the tape is removed for periodic testing, as with vinyl tapes.

Midsun self fusing silicone tape is offered in a **30 mil thickness (E/Fusing Tape)** or an **80 mil thickness (High Insulation E/Fusing Tape)**

80 MIL - High Insulation E/Fusing Tape

Offer up to 35 kV phase-to-ground insulation with a 2/3 overlap and 10% stretch. A second 2/3 overlap, wrapped in the opposite direction, will achieve a 50 kV phase-to-ground insulation rating. Part numbers & description are listed below. (Currently only available in gray)

Part Number:	Product Description:	Metric Lengths
E/FTP - 25080 - 35kV	E/Tape 2.5" x 15', 80 mil - Gray	25.4 mm x 10.9 m
E/FTP - 480 - 35kV	E/Tape 4" x 15', 80 mil - Gray	63.5 mm x 10.9 m

30 MIL - E/Fusing Tape

Offer up to 15 kV phase-to-ground insulation with a 2/3 overlap and 10% stretch. A second 2/3 overlap, wrapped in the opposite direction, will achieve a 30 kV phase-to-ground insulation rating. Part numbers & description are listed below.

Part Number:	Product Description:	Metric Lengths
E/FTP - 100G	E/Tape 1" x 36', 30 mil - Gray	25.4 mm x 10.9 m
E/FTP - 250G	E/Tape 2.5" x 36', 30 mil - Gray	63.5 mm x 10.9 m
E/FTP - 400G	E/Tape 4" x 36', 30 mil - Gray	101.6 mm x 10.9 m
E/FTP - 100R	E/Tape 1" x 36', 30 mil - Red	25.4 mm x 10.9 m
E/FTP - 250R	E/Tape 2.5" x 36', 30 mil - Red	63.5 mm x 10.9 m
E/FTP - 400R	E/Tape 4" x 36', 30 mil - Red	101.6 mm x 10.9 m

*Stretch beyond 10% may decrease dielectric strength.

**Shelf life: One year from manufacture date.

Checklist for proper Silicone Self Fusing Tape application:

- When applying using a 10% stretch with a 2/3 overlap.
- A second 2/3 overlap, should be wrapped in the opposite direction.
- Keep tape clean – Dust, dirt and moisture on hands or tape will prevent tape from adhering to itself.
- Prevent any air pockets from developing by firmly pressing down on the tape.
- Stretching the tape over 10% will affect its dielectric properties.
- Fusing tape can possibly hold water – Allow a place for water to egress out.
- Must overlap 100% when starting and terminating so as to not have any “flagging”.

To view our E/Fusing Tape
Installation video visit us at
[youtube.com/user/MidsunGroup](https://www.youtube.com/user/MidsunGroup)



E/INSULATION

Silicone rubber split line hose for distribution lines and substation cables and buses.



E/Insulation is a silicone hose used to protect a variety of distribution and substation equipment up to 20 kV phase-to-ground. The E/Insulation is manufactured with a split seam to allow for an easy application without the need of breaking electrical connections. The hose is simply pulled and split apart allowing it to be quickly slipped over the cable or bus being protected. There is no heat shrinking required for application and no tools other than a cutting tool for proper length are needed.



The custom formulated silicone material remains pliable even in the most extreme cold temperatures but it is robust enough to allow for rough handling, the abuse of line trucks and hundreds of on and off applications. It is also flame, arc, UV, and ozone resistant so it will not crack over time.

E/Insulation is manufactured in round, angle and flat stock.

PRODUCT DESCRIPTION

Conductor Size (AWG or kcmil)	Conductor OD (inches)	E/Insulation Part #
6	0.198 (5.03 mm)	E/INS - 025 - G
4, 2, 1/0, 2/0	0.25 - 0.447 (6.35 mm - 11.35 mm)	E/INS - 050 - G
3/0, 4/0, 266.8 - 336.4	0.502 - 0.741 (12.75 mm - 18.82 mm)	E/INS - 075 - G
397.5, 447, 556.5, 605, 636	0.806 - 1.00 (20.47 mm - 25.40 mm)	E/INS - 100 - G
666.6, 715.5, 795, 900, 954	1.00 - 1.196 (25.40 mm - 30.38 mm)	E/INS - 125 - G
1033.5, 1113, 1192.5, 1272, 1351.5, 1431	1.25 - 1.427 (31.75 mm - 36.25 mm)	E/INS - 150 - G
1590, 1780, 2156, 2167	1.504 - 1.735 (38.20 mm - 44.07mm)	E/INS - 175 - G
2312, 2515	1.760 - 1.980 (44.70 mm - 50.29 mm)	E/INS - 200 - G

*E/INS-025 - E/INS-175 – Available in 50 ft. lengths/increments (15.2 m)

*(E/INS-200 (1 per box) - E/INS-175 (2 per box) - Available in 25 ft. lengths/increments (7.6 m)

**All E/Insulation is available in grey or red. Designated by - G or - R



Angle Bus	Part #:	Drawing #:
3.25 in (82.55 mm)	E/INS - ABC - 325" Tail - G - 60"	232-60-325
4.0 in (101.60 mm)	E/INS - ABC - 4.00" Tail - G - 60"	232-60-400

*Angle Bus - Available in 5 ft. lengths/increments (1.5 m)



Flat Bus	Part #:	Drawing #:
3.25 in (82.55 mm)	E/INS - FLAT325G - 5	256-00-325
4.0 in (101.60 mm)	E/INS - FLAT400G - 5	256-00-400

*Flat Bus - Available in 5 ft. lengths/increments (1.5 m)



Round Bus	Part #:
2.5 in (63.50 mm)	E/INS - 250G
3.5 in (88.90 mm)	E/INS - 350G
4.5 in (114.30 mm)	E/INS - 450G

*Round Bus - Available in 10 ft. lengths/increments (3.0 m)



MIDSUN MOLDED PRODUCTS

E/BUSHING COVER - LARGE

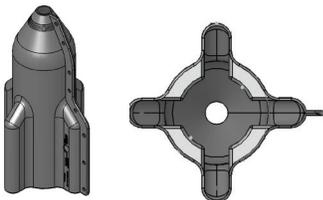
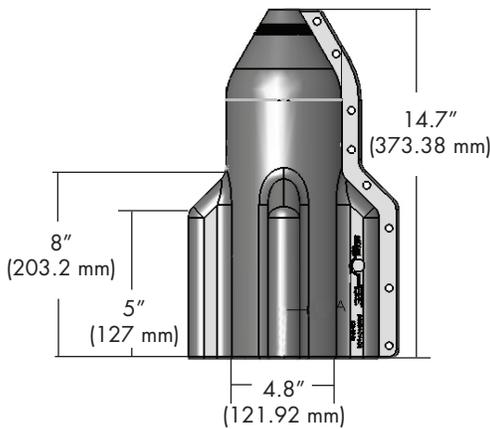
(Part #: E/BC - LG)



The E/Bushing Cover is rated up to 25 kV* phase-to-ground. It is a molded high temperature vulcanized silicone cover that helps prevent animal contact outages. Made from 65 durometer silicone, it will electrically insulate bushing diameters up to 8" (203.2 mm). **

The E/Bushing Cover is flexible and hydrophobic. The flexibility allows for an easy connection between cables and bus to equipment NEMA pads. The E/Bushing Cover bends to allow complete insulation. Unlike other hard plastic covers, cutting holes, making slits and field modifications are virtually eliminated.

The E/Bushing Cover can be used in any environment. The natural hydrophobicity of silicone along with its superior UV and chemical resistant properties, sustain expected life beyond 20 years. Install and forget. In addition, the closure flange is held in position by the same silicone push pins as the cover (See page 14). No more rotted tie wraps that allow other covers to fall off. Our push pins are completely reusable on all of our Midsun E/Products.



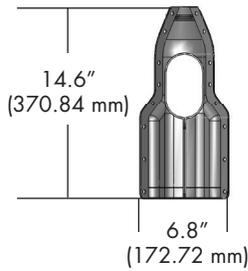
Drawing #: 128-00-01

*Based on ASTM specifications.

**Larger diameters and odd shapes can be accommodated with extensions shown on page 8.

***Other colors available: Call for quote.

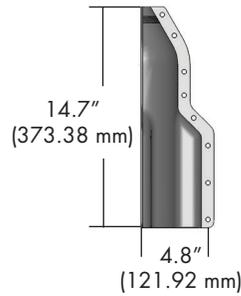
E/BUSHING COVER - LARGE - EXTENSIONS (Part # listed below product description)



Large Bushing Cover right angle extension.

Part #: E/BC - LG - X - WRA - CAP

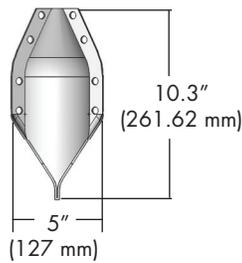
Drawing #: 205-00-01



Large Bushing Cover width extension.

Part #: E/BC - LG - X - W

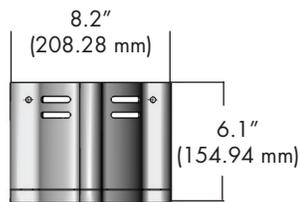
Drawing #: 199-00-01



Large Bushing Cover width top extension.

Part #: E/BC - LG - X - WT

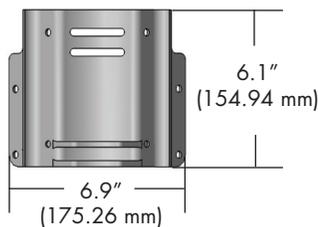
Drawing #: 202-00-01



Large Bushing Cover height extension.

Part #: E/BC - LG - X - H

Drawing #: 201-00-01



Large Bushing Cover height filler extension.

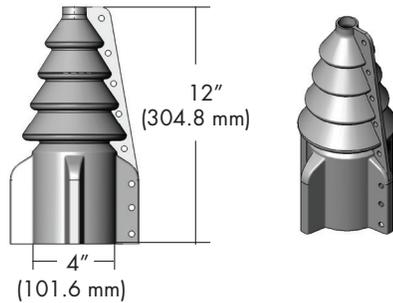
Part #: E/BC - LG - X - H/F

Drawing #: 203-00-01



E/BUSHING COVER - FULL

(Part #: E/BC - FULL)

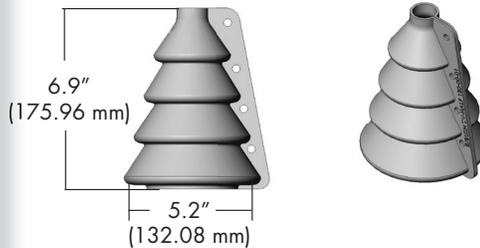


Silicone bushing cover designed to fit **medium** sized transformer breaker and regulator bushings and arrestors. Will fit bushing diameters up to 5" (127 mm).

Drawing #: 129-00-01

E/BUSHING COVER - HALF

(Part #: E/BC - HALF)

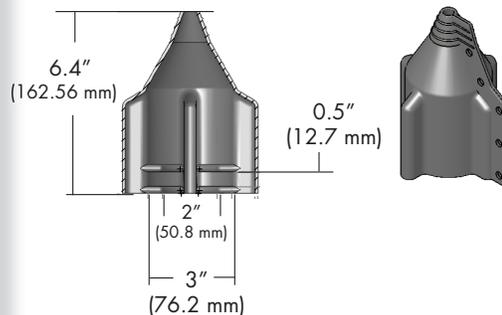


Silicone bushing cover designed to fit **small** station service transformer bushings, PT's and CT's, and pole top transformer bushings.

Drawing #: 130-00-01

E/BUSHING COVER - SMALL

(Part #: E/BC - SMALL)

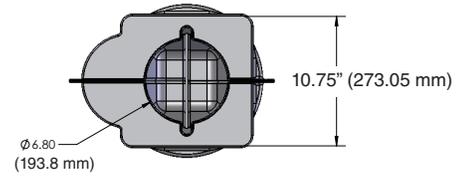
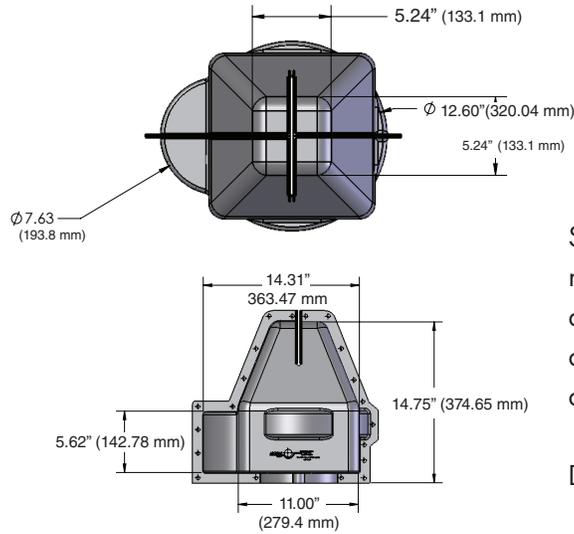


Silicone bushing cover designed to fit **small** station service transformer bushings, PT's and CT's, and pole top transformer bushings.

Drawing #: 210-00-01



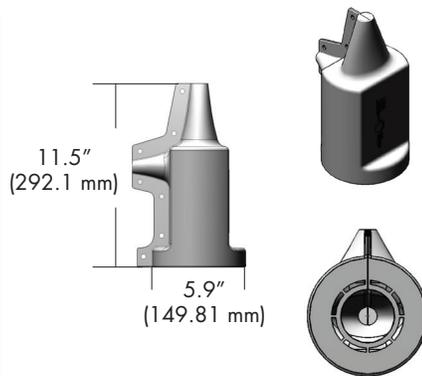
LIGHTNING ARRESTOR CV **NEW PRODUCT** (Part #: E/LAC)



Silicone cover designed to fit multiple substation lightning arrestors. Adapts to different bus and lead connections. Easy on/off application.

Drawing #: 137-10-01

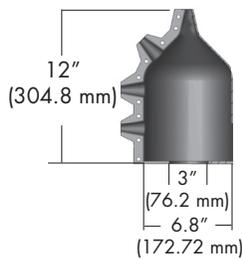
E/BUSHING COVER - SIDE (Part #: E/BC - SIDE)



Silicone cover designed for reclosure bushings. Perforated bottom allows it to fit various sized bushings.

Drawing #: 180-00-02

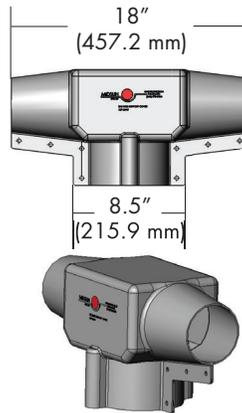
E/MULTIPOINT BUSHING COVER (Part #: E/BC- MULTIPORT)



Silicone cover designed to accommodate bushings with multiple lead connections and larger NEMA pad connections.

Drawing #: 185-00-01

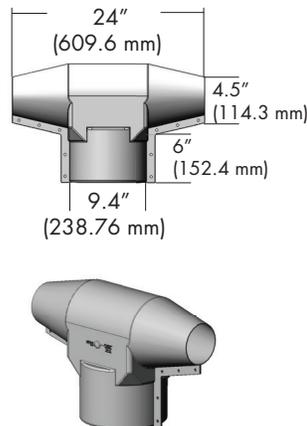
E/BUS SUPPORT COVER - 3.50 (Part #: E/BSC - 350)



Silicone cover designed for bus support insulators. Accommodates round, flat or angle bus ranging from 3" to 4.5" (76.2 mm to 114.3 mm).

Drawing #: 127-20-01

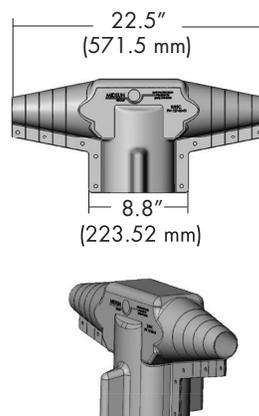
E/BUS SUPPORT COVER - XL (Part #: E/BSC - XL)



Silicone cover designed for bus support insulators. Accommodates round, flat or angle bus ranging from 4.5" to 5.5" (76.2 to 139.7 mm).

Drawing #: 113-00-00

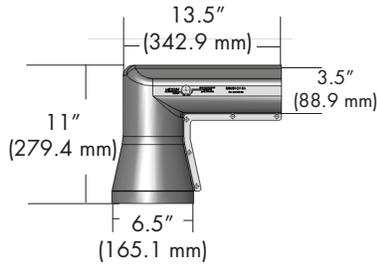
E/BUS SUPPORT COVER (Part #: E/BSC)



Silicone cover designed for bus support insulators. Accommodates round, flat or angle bus ranging from 0.5" to 3" (12.7 to 76.2 mm).

Drawing #: 127-00-01

E/RIGHT ANGLE BUSHING COVER (Part #: E/BC - RA)

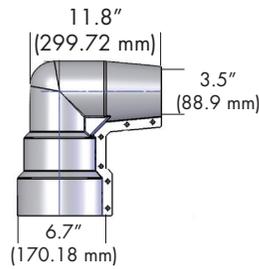


Silicone cover designed to fit large bushings with double right angle lead connections.

Drawing #: 104-00-02

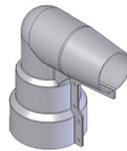


90° RIGHT ANGLE BUSHING COVER (Part #: E/BC - 90RA)

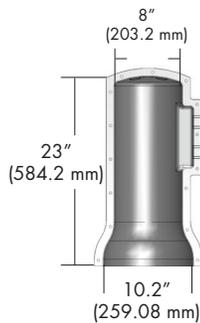


Silicone cover designed to fit larger single or double lead right angle bushing connections.

Drawing #: 236-00-01



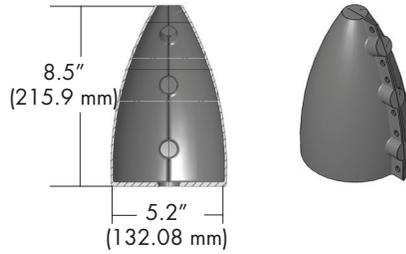
DOUBLE LEAD COVER (Part #: E/BC - DBL - LEAD)



Silicone cover designed to accommodate bushings with multiple lead connections and larger NEMA pad connections.
Drawing #: 155-50-01



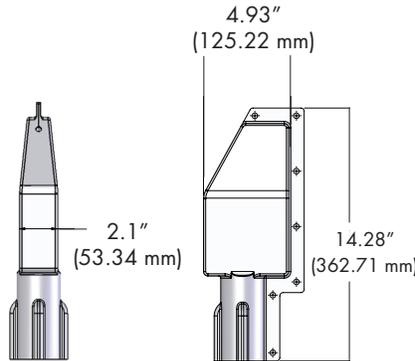
E/TERMINATION COVER (Part #: E/TERM-CV)



Silicone cover designed to cover underground termination bushings.

Drawing #: 164-20-01

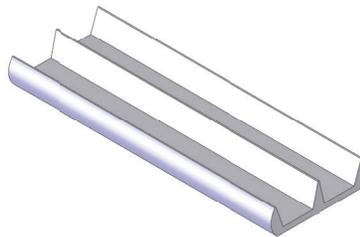
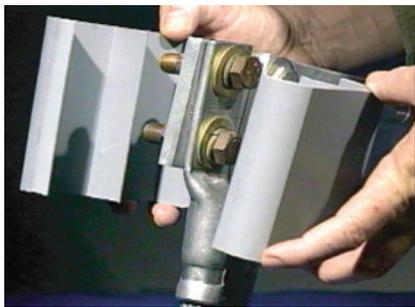
E/SUBSTATION TERMINATION COVER **NEW PRODUCT** (Part #: E/STC)



Silicone termination cover designed to protect various sizes of termination substrates. Allows for a quick on/off application.

Drawing #: 284-00-01

E/NEMA PAD (Part #: E/NEMA PAD)



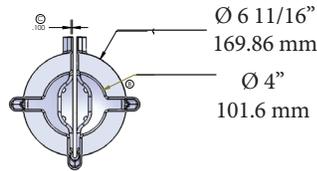
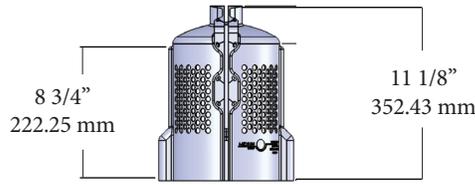
A non-conductive silicone extrusion designed to wrap NEMA pads, providing a waterproof tight seal.

Drawing #: 190-00-01

E/BUSHING C-BAR COVER (Part #: E/C - BAR - CV)

Silicone cover designed to fit large bushings with double right angle lead connections.
CALL US FOR ADDITIONAL INFORMATION. Drawing #: 135-10-01

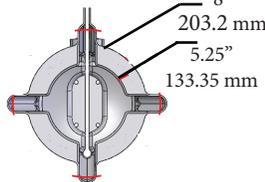
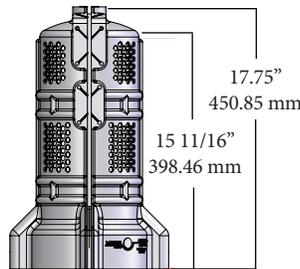
E/BIRDCAGE - MEDIUM - BUSHING COVER New Product (Part #: E/BIRDCAGE-MED)



Silicone cover designed to fit a medium bushing with a double or single lead connection. The semi-exposed walls allow for easy inspection and visibility of apparatus.

Drawing #: 302-00-01

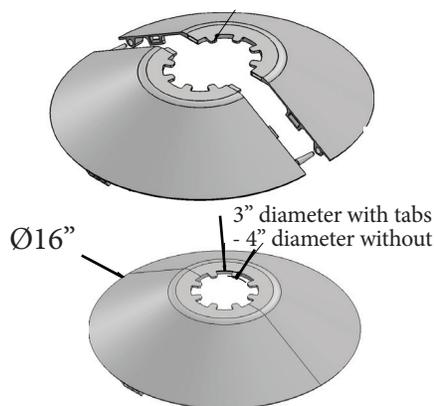
E/BIRDCAGE - LARGE - BUSHING COVER New Product (Part #: E/BIRDCAGE-LGE)



Silicone cover designed to fit a large bushing with a double or single lead connection. The semi-exposed walls allow for easy inspection and visibility of apparatus.

Drawing #: 302-00-02

30° Anti-Nesting Barrier New Product (Part #: E-Anti-Nest-Bar)



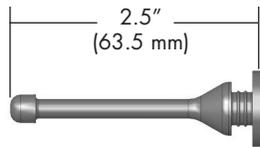
Polycarbonate barrier designed with a 30° angle to discourage or prevent bird nesting and animal contact.

* APPROVED FOR ENERGIZED APPLICATION

Drawing #: 299-00-01

ACCESSORIES

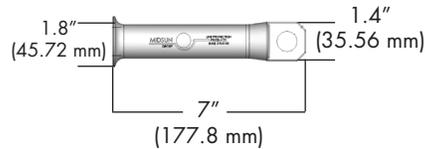
E/SILICONE PUSH PINS (Part #: E/PUSH PINS)



Silicone pins used to secure Midsun molded covers. Pins are designed for easy glove applications, with a life expectancy to match the molded cover. (50 per bag)

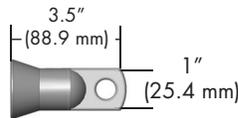
Drawing #: 147-00-01

E/GROUND STUD COVERS (Part # listed below)



Silicone cover that allows for easy on/off application with a hot stick. Designed to protect ground stud connectors allowing for 100% maximum protection.

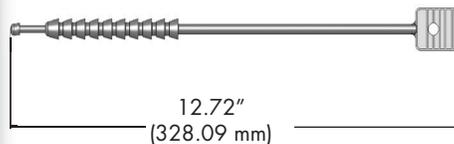
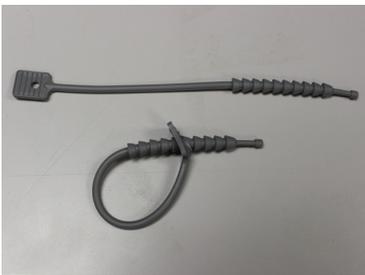
Part #: E/GSC - LONG
Drawing #: 163-00-01



Part #: E/GSC - SHORT
Drawing #: 204-00-01

*Grounding studs for sale upon request.

E/SILICONE TIE WRAPS (Part #: E/SILICONE TIE WRAP - 13 - G)



Silicone tie wraps can be used in place of temporary plastic tie wraps. Silicone ties offer a long life expectancy, a secure hold, and an easy on/off application. (10 per bag)

Drawing #: 161-00-01

E/BARRIER

A de-energized applied polycarbonate barrier used to prevent inadvertent contact by animals and birds on distribution and substation equipment.

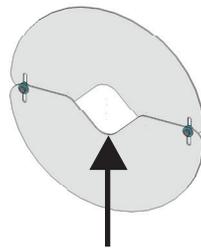


The E/Barrier is a round disc that can be used to block climbing animals from contacting phase-to-ground conductors. The Midsun E/Barriers are constructed from an engineered polycarbonate thermoplastic.

The E/Barrier is a transparent sheet featuring a proprietary surface finish for enhanced Ultra Violet resistance, with the strength unmatched by even the impact modified acrylics.

They offer high voltage puncture resistance, superior strength and weatherability, which makes them suited for applications that are very demanding.

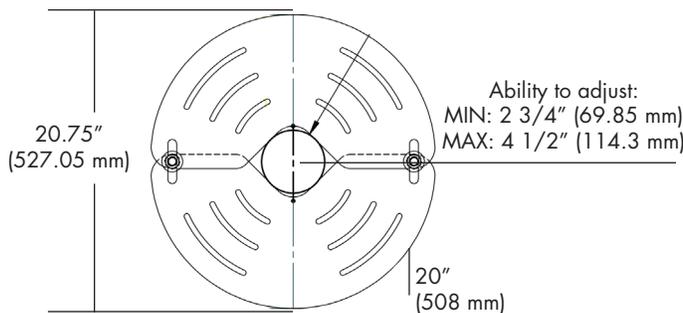
Midsun Group can also make modifications to the design to meet Utility Engineer specific requirements. Contact your Midsun Sales Representatives for more details on designing a barrier to meet your needs.



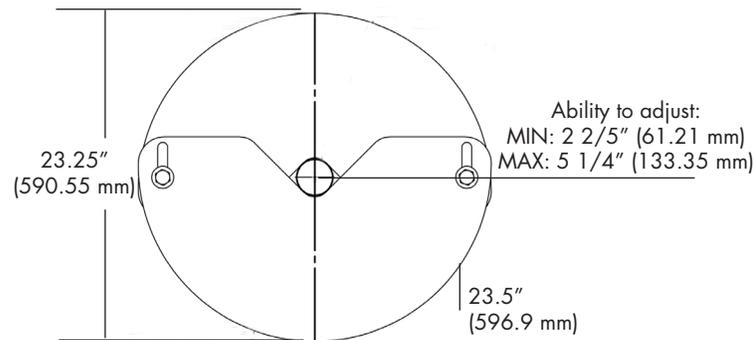
Adjusts to fit multiple diameters

*Standard E/Barriers size = 20" - 23.5" Diameter (508 - 596.9 mm)

E/Barrier (Part #: E/BAR SETS - [No Slot/Slotted])



E/Bird Barrier (Part #: E/BB)



Part #:

E/BAR SETS - No Slots

E/BAR SETS - Slotted

E/BB

Drawing #:

EBPC-2000-450-125-3A

EBSC-2000-450-125-3A

EBPC-2350-525-187

Product Description

Standard Polycarbonate E/Barriers w/o slots

Standard Polycarbonate E/Barriers w/ slots

Standard Polycarbonate E/Bird Barrier



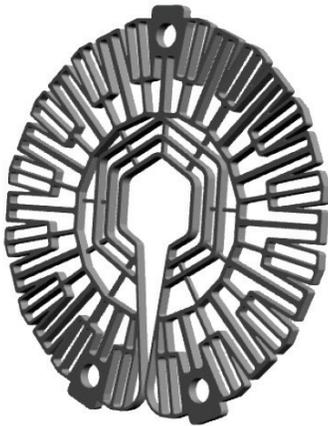
E/FLEX BARRIER

A barrier to prevent inadvertent contact by animals and birds on distribution and substation equipment.



The E/Flex Barrier is a one piece disc-shaped barrier that prevents squirrels, birds and other wildlife from causing phase-to-ground contact.

It is a track resistant, flame retardant material with enhanced UV resistance. It installs easily and safely with a common shot gun stick, without service interruption. All E/Flex Barriers are designed to prevent wind chatter and minimize wind load issues.



The design of the E/Flex Barrier allows the barrier to slide smoothly between adjacent skirts of an insulator and then hold the barrier securely in place. This forms a long term barrier on substation equipment, such as disconnects, switch insulators, arrestor and bus support terminators, and insulators.

The E/Flex Barrier's innermost rings are easily clipped with a set of standard lineman pliers to allow it to fit virtually all insulator core diameters.

It also allows for easy on/off applications and re-use without the worries of the barrier breaking.

Part #:

E/FLEX BAR - G - 16" (406.4 mm)
E/FLEX BAR - G - 20" (508 mm)
E/FLEX BAR - G - 24" (609.6 mm)
E/FLEX BAR - R - 16" (406.4 mm)
E/FLEX BAR - R - 20" (508 mm)
E/FLEX BAR - R - 24" (609.6 mm)

Product Description:

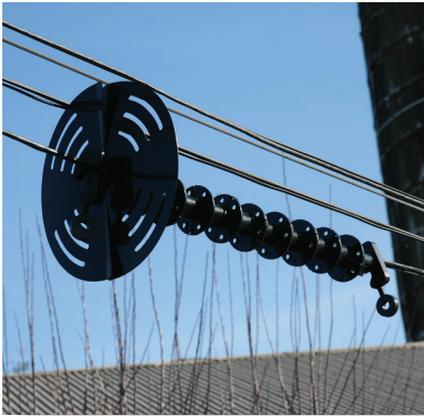
E/Flex Barrier - Energized - 16" (406.4 mm) Gray
E/Flex Barrier - Energized - 20" (508 mm) Gray
E/Flex Barrier - Energized - 24" (609.6 mm) Gray
E/Flex Barrier - Energized - 16" (406.4 mm) Red
E/Flex Barrier - Energized - 20" (508 mm) Red
E/Flex Barrier - Energized - 24" (609.6 mm) Red

Drawing #:

138-16-01
138-20-01
138-24-01
138-16-01
138-20-01
138-24-01

E/GETAWAY GUARD

Wildlife guard to prevent animals from gaining access to substations through overhead power lines.



The initial step to stop outages from occurring is to keep animals out of substations. The E/Getaway Guard is designed to reduce the risk of animal induced outages in open-air substations by preventing climbing animals, such as squirrels, access through the overhead power lines.

The E/Getaway Guard consists of 1 large disc assembly and 10 small collars. All discs allow for a free rotation, making it virtually impossible for a squirrel to enter the substation. Installation is quick and easy, and can be applied on de-energized lines or on energized line with a hot stick and energized tool.

The E/Getaway Guard is made with a UV, flame and arc resistant material designed to withstand essentially all weather conditions and to be environment-proof for long-term protection.

Use an E/Getaway Guard on each overhead power line, guy wire and cable conductor entering the substation for the most effective animal protection.



Getaway Guard energized installation tool

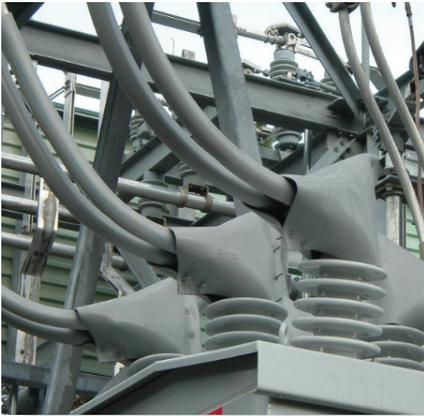
Part #:	Drawing #:	Product Description:
E/GETAWAY GUARD	101-00-00	E/GETAWAY GUARD

Includes: (1) Large Disc (Must assemble right and left half),
(2) Clamps, (10) Small Collars, (6) Push in Plugs



E/SILICONE SHEET

A distribution and substation class silicone sheet used to make custom covers.
Rated up to 25 kV phase-to-ground to prevent animal induced outages.



The E/Silicone Sheet is a high temperature vulcanized custom compound silicone sheet with a polyester fabric reinforcement. Made from 65 durometer silicone, almost 1/8" thick, it is a roll that allows you to custom cut covers for unique phase-to-phase and phase-to-ground areas of substation and distribution equipment.

The sheets are hydrophobic, flexible and customizable. They can be easily field modified to cover and insulate the most awkward and difficult shapes in your energized system. E/Silicone Sheets offer up to 25 kV phase-to-ground insulation.



The E/Silicone Sheets can be used in any environment. The natural hydrophobicity of silicone along with its superior UV and chemical resistant properties sustain expected life beyond 20 years. Install and forget. No other plastisol, polypropylene, polyethylene or heat shrink cover has the long-term life of the E/Silicone Sheets. In addition, the custom made cover can be held together by our push pins or by E/Fusing Tape.

Part #:	Product Description:
E/SS	24" x 120" Silicone Sheet (609.6 x 3048 mm)
E/SS - 30	30" x 120" Silicone Sheet (762 x 3048 mm)

*Push Pins and Tape sold separately.



Midsun Group Material Data and Specifications for Silicone Covers and E/Insulation

Midsun Group Silicone Products are manufactured from a 65 durometer high temperature vulcanized silicone rubber, similar to the polymer insulators used today, making the covers virtually puncture resistant. Rate up to 20 kV phase - to - ground insulation. Not only is the silicone material flame and arc resistant, it is also UV resistant preventing the degradation caused by ultra violet sunlight radiation, it will not chalk, crack or become brittle. The hydrophobic features of the material will help prevent tracking caused by contamination build up. The silicone material is flexible enough or it can be easily field modified to allow for the covers to fit over most odd shaped connections. All covers are held closed with the standard Midsun silicone push pins, which unlike tie wraps, will not break down making the cover weak and an unreliable animal contact protection system.

Properties

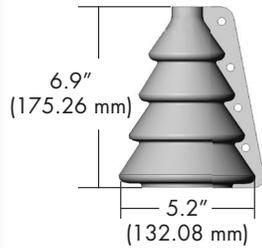
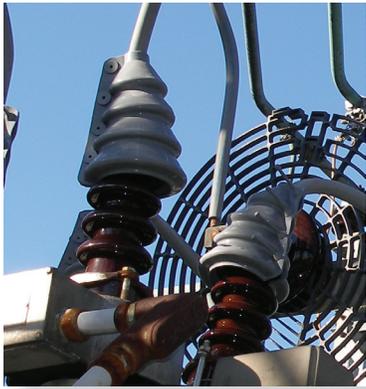
Colors	Gray, Orange
Durometer (ASTM D2240)	65 ± 10
Tensile Strength, P.S.I. (ASTM D412)	600
% Elongation @ Break (ASTM D412)	300
Breaking Strength	Excellent
Brittle Point, F (ASTM D74C)	-90
Dielectric Strength (ASTM D149) v/mil	550
U.V. Weathering/5000 hours (ASTM G154)	No Significant Change
Chemical Resistance	Excellent
Fire Retardant (UL94)	Self Extinguished in 15 sec.

DISTRIBUTION COVERS

These products, as their names implies, were designed to protect distribution circuits from animal and weather induced outages.

As is the case with many of our previous covers, they are designed to be multi functional for applications other than Distribution Pole Top protection. Many times it is the size and/or shape of specific equipment that dictates which cover will work for animal contact protection. We at Midsun design our covers so that they will meet the wide variety of products offered by the manufacturers in today's market. These covers are designed to meet all specifications required to ensure a maximum level of protection during the life of your equipment.

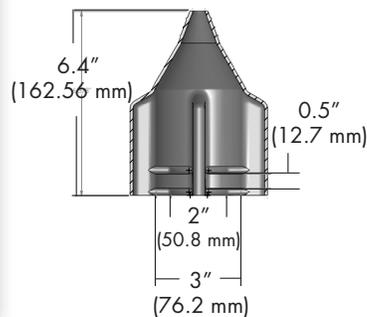
E/BUSHING COVER - HALF (Part #: E/BC - HALF)



Silicone bushing cover designed to fit **small** station service transformer bushings, PT's and CT's, and pole top transformer bushings.

Drawing #: 130-00-01

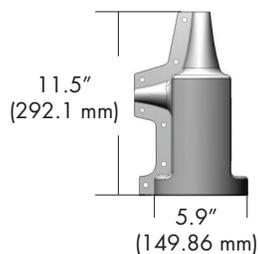
E/BUSHING COVER - SMALL (Part #: E/BC - SMALL)



Silicone bushing cover designed to fit **small** station service transformer bushings, PT's and CT's, and pole top transformer bushings.

Drawing #: 210-00-01

E/BUSHING COVER - SIDE (Part #: E/BC - SIDE)



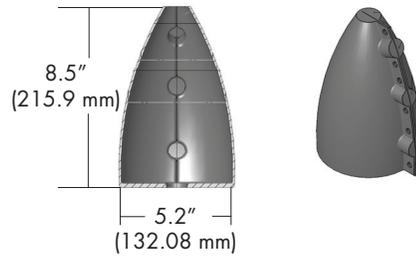
Silicone cover designed for recloser bushings. Perforated bottom allows it to fit various sized bushings.

Drawing #: 180-00-02



TERMINATION COVER

(Part #: E/TERM - CV)

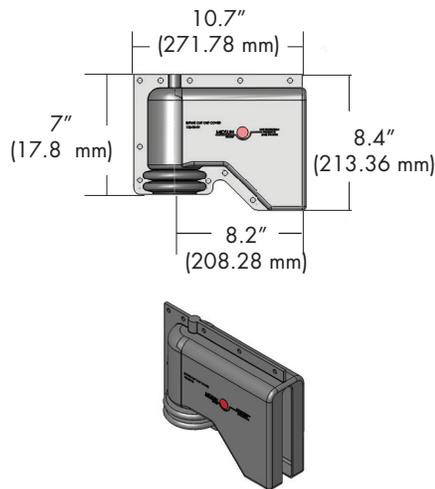
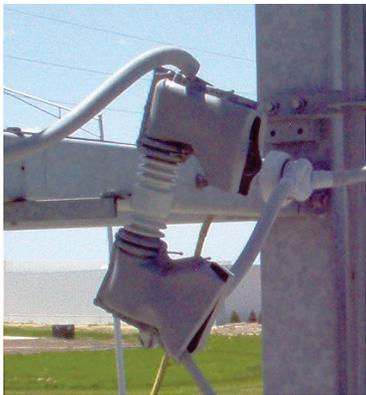


Silicone cover designed to cover underground termination bushings.

Drawing #: 164-20-01

E/FUSE CUTOUT COVER

(Part #: E/FUSE CUT OUT)

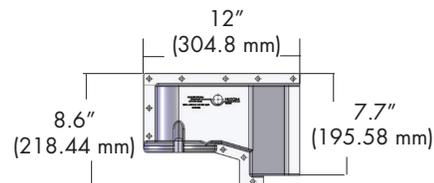


Silicone cover designed for use on fuse cut out switches. Design allows for easy opening and closing of fuse.

Drawing #: 132-00-01

E/FUSE CUTOUT COVER - LARGE

(Part #: E/FUSE CUT OUT - LG)

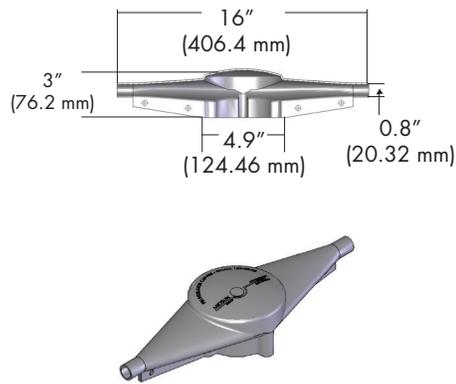


Silicone cover designed for use on larger fuse cut out switches. Design allows for easy opening and closing of fuse.

Drawing #: 260-00-01

PIN INSULATOR COVER - SMALL

(Part #: E/PIN INS CV - SM)



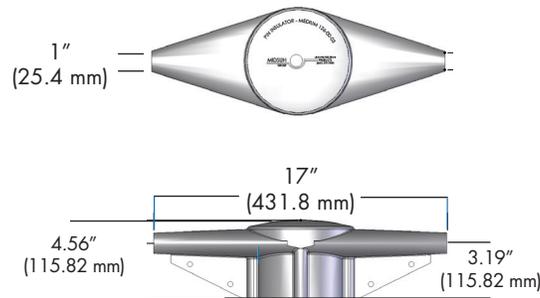
Silicone cover designed to protect against bird and animal contact on standard crossarm pin insulators.

Drawing #: 126-00-02

PIN INSULATOR COVER - MEDIUM

NEW PRODUCT

(Part #: E/PIN INS CV - MED)

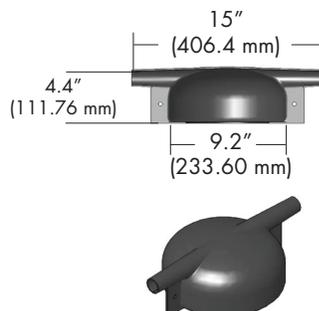


Silicone cover designed to protect against bird and animal contact on standard cross arm pin insulators.

Drawing #: 126-00-03

PIN INSULATOR COVER - LARGE

(Part #: E/PIN INS CV - LG)

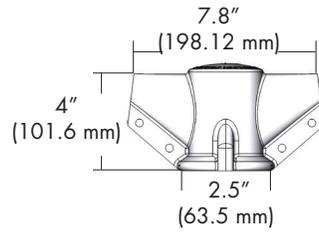


Silicone cover designed to protect against bird and animal contact on large crossarm pin insulators.

Drawing #: 126-00-01

SURGE ARRESTOR COVER (Part #: E/SRG - ARR - CV)

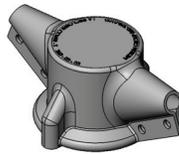
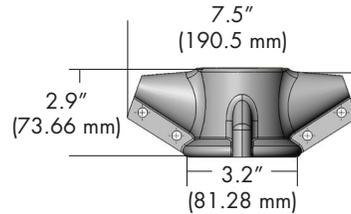
G



Silicone cover designed to fit taller lightning arrestors with a pass through lead or pole top bushings.

Drawing#: 268-00-02

TRANSFORMER LIGHTNING ARRESTOR RECLOSER COVER (Part #: E/PT -T - LA - RECLR - CV)

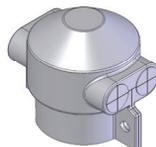
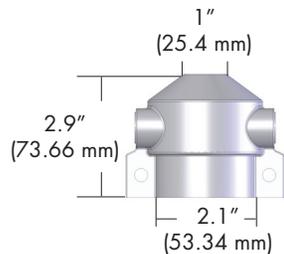


Silicone cover designed to fit either pole top bushings or lightning arrestors with a pass through lead.

Drawing #: 262-00-03

CAPACITOR COVER

(Part #: E/PT - CAPITOR CV)

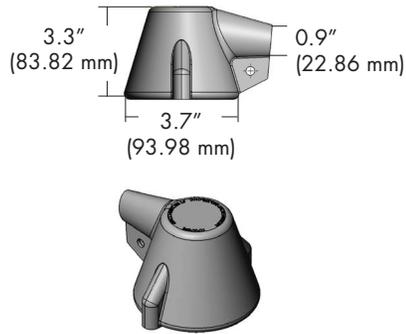


Silicone cover designed to protect energized portion of capacitor bushings.

Drawing #: 227-00-01

POLE TOP LIGHTNING ARRESTOR RECLOSER COVER

(Part #: E/PT-LA RECLR-CV)

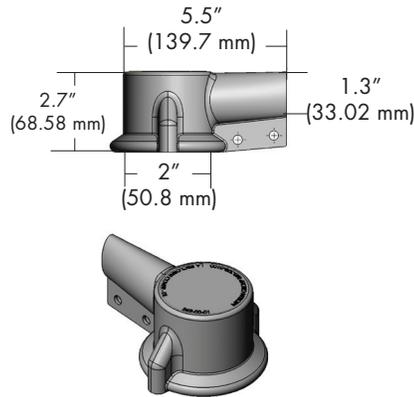


Silicone cover designed for pole top arrestors with a single lead at a right angle. It may also be used for pole top right angle bushings.

Drawing #: 262-00-02

DOUBLE LEAD LIGHTNING ARRESTOR RECLOSER COVER

(Part #: E/PT-DL-LA RECLR CV)

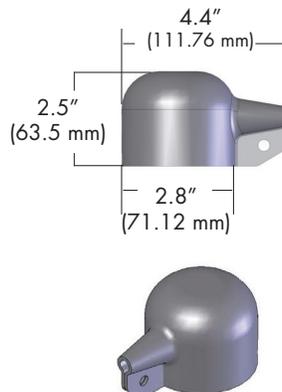


Silicone cover designed for pole top arrestors with double leads at a right angle. It may also be used for pole top right angle bushings.

Drawing #: 262-00-01

POLE TOP LIGHTNING ARRESTOR CAP

(Part #: E/PT-ARRESTOR CAP)



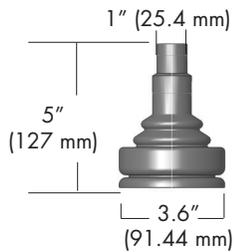
Silicone cover designed for pole top right angle lightning arrester.

Drawing #: 184-00-01



CAPACITOR BOOT

(Part #: E/CAP EMC BOOT)

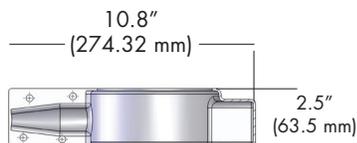


Capacitor boot.

Drawing #: 111-00-01

CAPACITOR CURRENT SENSOR COVER

(Part #: E/CSS - CV)

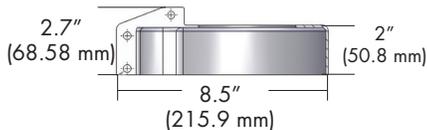


Silicone cover designed to insulate the bottom sensor of a Fisher Pierce current sensor.

Drawing #: 266-00-02

FP* CURRENT SENSOR

(Part #: E/FPS)

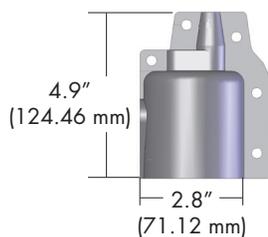


Silicone cover designed to insulate the bottom sensor of a Fisher Pierce current sensor. *Fisher Pierce

Drawing #: 222-00-01

POLE TOP TRANSFORMER COVER

(Part #: E/PT-TRANS-CV)

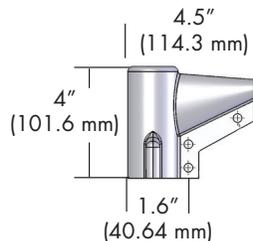


Silicone cover designed to fit pole top bushing with hand wheels. The cover can be applied without having to break hand wheel lug connection.

Drawing #: 186-00-01

L-SENSOR COVER

(Part #: E/L - SENSOR CV)

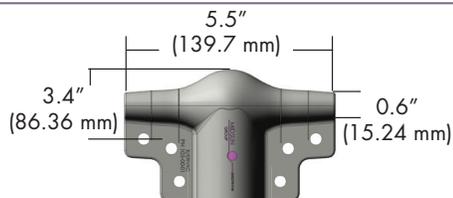


Silicone cover designed for right angle recloser sensors.

Drawing #: 247-00-01

S.* RECLOSER VOLTAGE SENSOR COVER

(Part #: E/SRVSC)



Silicone T-shaped cover designed for use on recloser T-sensors. *Siemens

Drawing #: 103-00-01

MIDSUN E/COATINGS

Midsun Group offers a variety of protective coatings to restore and preserve utility and substation equipment.

The MIDSUN HVIC is a silicone RTV coating that is an essentially maintenance free system that can prevent excessive leakage current, tracking and flash-overs due to contamination.

Silprocoat is a silicone coating with excellent chemical resistance and good adhesion characteristics, that provides an ideal coating material for corrosion protection and lead paint encapsulation.

The E/Paintable Insulation is a silicone coating that protects vulnerable phase-to-phase and phase-to-ground areas. It adds insulation to any structures made with metals, capacitors, transformers, and cable accessories.

Midsun Group's coatings will help protect your utility and substation equipment from corrosion and weather elements, saving you thousands of dollars in repair costs.

*MIDSUN HVIC and Silprocoat coatings are available in VOC compliant formulations.



MIDSUN HVIC

RTV Silicone High Voltage Insulator Coating

Midsun HVIC is a one part RTV silicone high voltage insulator coating that prevents flashovers due to leakage current in contaminated environments. It is not affected by UV light, temperature, corrosive environments, or ATH pitting from dry band arcing. The coating is also highly water repellent, so contaminants cannot film out over the surface. It is a long-term solution to flash-over protection. We offer turnkey live line application applied by Midsun's trained, OSHA certified, applicators.

Protect against flash-over contamination:

- Salt
- Coal Dust
- Cement Dust
- Sugar Cane Carbon
- Fly Ash
- Bird Droppings/Streamers
- Cooling Towers

The coating will eliminate or reduce:

- Regular insulator washing
- Periodic re-application of grease
- Replacement of components damaged by flashovers
- Repair silicone sheds and rod damage on composite insulation systems

* Custom formulations and special tools required for energized applications, call for details.

Domestic Flash Point Temperature.....	73.5°F (23.1°C)*
Dielectric Strength.....	35.9 kV/mm
Dissipation Factor @ 100 KHz.....	0.021
Tracking & Erosion Resistance @ 2.5 kV/min.....	1000 hours withstand
Dielectric Constant @ 100 Hz.....	3.85
Specific Gravity.....	1.32 (± .04)***
Viscosity.....	3500-5500 CPS
Application Temperature Range.....	32-120°F (0-50°C)
Coverage.....	Min. 15 Mils
Est. Skin-over time @ 25°C; 50% relative humidity.....	15 min.
Est. Tack-free time @ 25°C; 50% relative humidity.....	30 min.
Usable Temperature Range.....	-40 - 300°F (-40 to 148°C)
Color.....	Gray or White
Storage Time & Temperature.....	1 year < 77°F (25°C)**

* International Flash Point Temperature: 105° F / 40.5° C

** Store properly out of sun, under dry conditions away from heat sources.

*** Denotes number for solventless coating.



MIDSUN SILPROCOAT

Corrosion protection silicone coating

Midsun Silprocoat is a one part silicone elastomer coating. Silicone elastomer coatings are well known for their excellent chemical and weathering resistance. Combined with good adhesion characteristics, they provide an ideal coating for lead paint encapsulation and corrosion protection of power system apparatuses, metal hardware and structures, oil and gas storage tanks, pipes and metal barriers. Midsun Silprocoat is designed for protecting a wide range of substrates from the effects of moisture and weathering. It is an ideal coating to use in extreme harsh environments such as coastal, industrial, and desert areas.

Midsun Silprocoat RTV Coating has proven superiority over:

- Epoxy systems that become embrittled, chalk and flake
- Alkyds and modified silicone alkyds that peel, chalk, and fade
- Two part systems with indeterminate pot lives and complicated mixing
- High cost encapsulating systems in asbestos and lead paint abatement
- Zinc rich coatings that are difficult to field apply, mud crack and need top coats



MIDSUN E/PAINTABLE INSULATION

Brush, roll, or spray on insulation for your hardest hit areas

Midsun E/Paintable Insulation is a one part paintable silicone coating that protects and insulates vulnerable phase-to-phase and phase-to-ground areas. An application of 30 mils (dry) on metal surfaces provides 10 kV insulation strength. When applied to the surface of electrical insulation such as FRP Barrier Boards, E/Paintable Insulation imparts water repellency and arc-track resistance. It features superb unprimed adhesion to galvanized metal and most plastic materials.

E/Paintable Insulation is a unique formula of silicone rubber technology offering high dielectric strength in a paintable insulation.

- Prevents power system outages and damage caused by animals
- Has high dielectric strength
- Easy-to-apply one-coat application
- Has excellent atmospheric and chemical resistance
- Becomes a tough, impact-resistant coating



MIDSUN HIGH VOLTAGE INSULATOR CLEANING

Insulator cleaning using dry abrasive medium

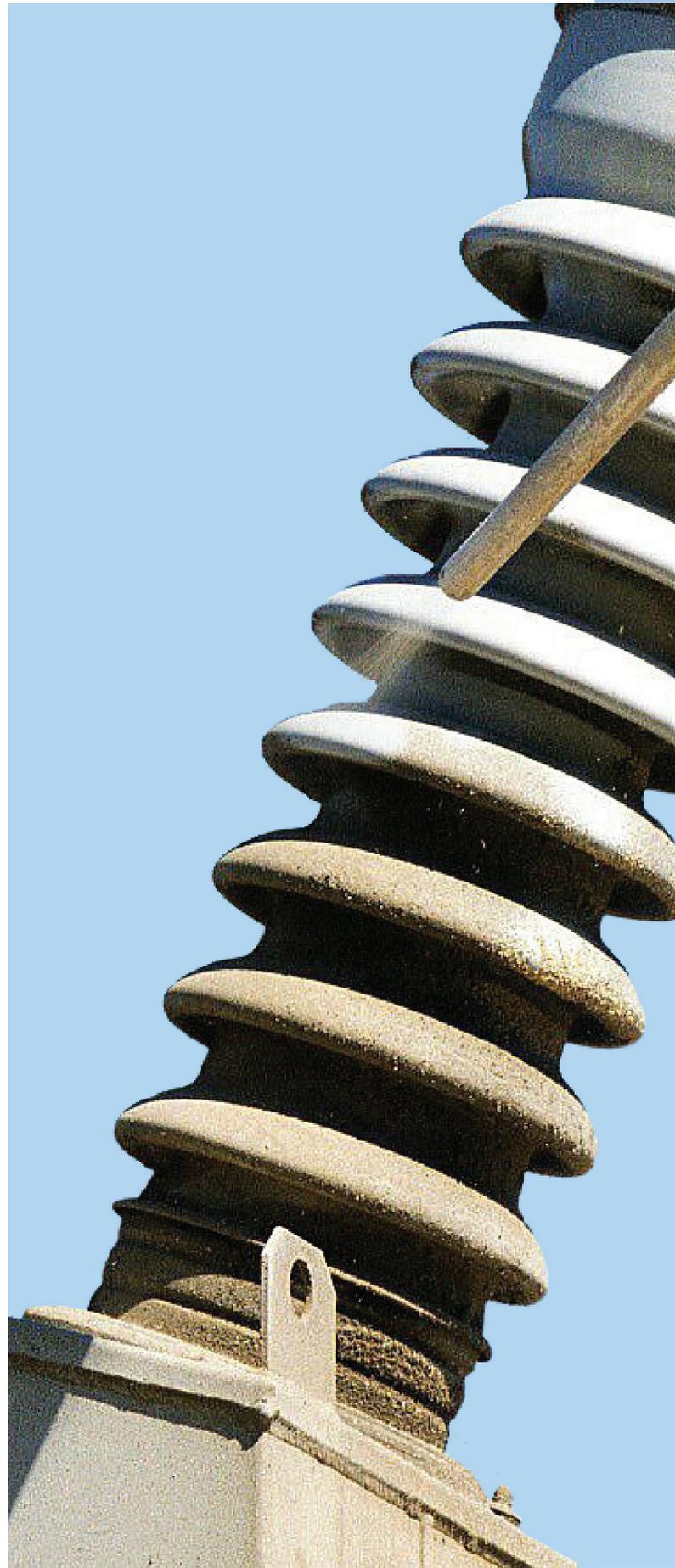
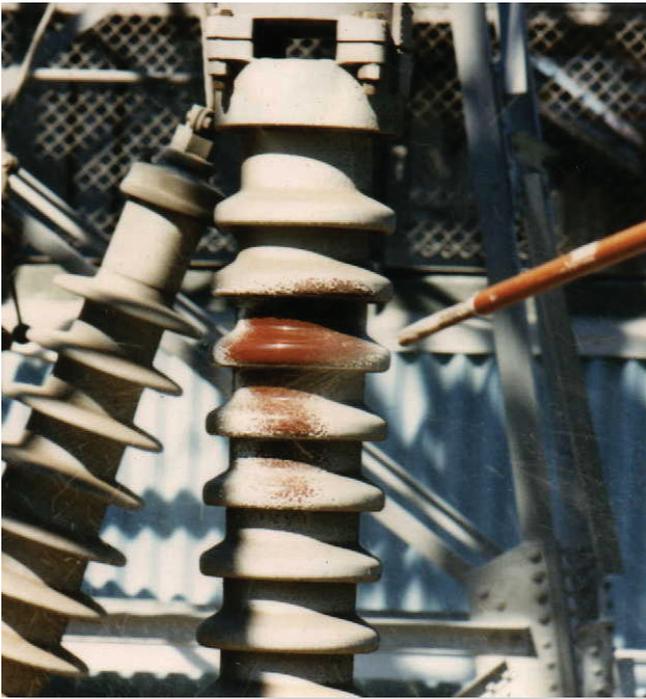
Midsun Group, Inc. offers an energized high voltage insulator cleaning service for electrical and industrial utility companies nationwide. All work is performed by OSHA trained Midsun technicians using a dry abrasive method.

Midsun specializes in the cleaning of high voltage insulators in electrical power plants, distribution substations, transformer substations and on outdoor switchgear.

Periodic cleaning of insulators in highly contaminated areas becomes crucial in the electric utilities. The contamination of high voltage insulators greatly affects the insulating properties needed to protect your electrical equipment, which may lead to costly inadvertent outages and possible equipment damage.

By the use of dry abrasives materials Midsun is able to remove the contaminates that may lead to an electrical discharge which can cause flashovers. Cleaning with these dry abrasive materials is a very effective and efficient way to remove hard deposits such as cement and fertilizers. They are also effective in removing soft, but difficult materials such as insulator grease, without causing damage to the insulator or affecting its properties.

Midsun can mobilize a crew, in most cases with short notice.



Index

Animal Mitigation

Bushing Covers.....	6-9
Small.....	8
Half.....	8
Full.....	8
Large.....	6
Large Bushing Extensions.....	7
Bus Support Covers.....	10
Bus Support Cover.....	10
Bus Support Cover - 3.50.....	10
Bus Support Cover - XL.....	10
Double Lead Cover.....	11
E/Bird Barrier.....	15
Lightning Arrester Cover.....	9
E/Bush- Side.....	9
E/Bushing C-Bar Cover	12
E/Silicone Tie Wraps.....	14
Flex Barrier.....	16
Fusing Tape.....	2
Getaway Guard	17
Ground Stud Covers.....	14
Insulation.....	4-5
Multiport Bushing Cover.....	9
NEMA Pad.....	12
Polycarbonate Barrier.....	15
Push Pins.....	14
Right Angle Bushing Cover.....	11
Silicone Sheet.....	18
Termination Cover.....	12
Substation Termination Cover.....	12
90° Right Angle Bushing Cover.....	11

Distribution

Bushing Covers.....	21
Small.....	21
Half.....	21
Capacitor Boot.....	26

Capacitor Cover.....	24
Capacitor Current Sensor Cover.....	26
Cutout Covers.....	22
Cutout Cover.....	22
Cutout Cover - Large.....	22
Double Lead Lightning Arrester Recloser Cover.....	25
E/Bushing Cover - Side.....	20
Fisher Pierce Sensor Cover.....	26
L-Sensor Cover.....	26
Pin Insulator Covers.....	23
Small.....	23
Medium.....	23
Large.....	23
Pole Top Lightning Arrester Cap.....	25
Pole Top Lightning Arrester Recloser Cover.....	25
Pole Top Transformer Cover.....	26
Siemens Recloser Voltage Sensor Cover (SRVSC)..	26
Surge Arrester Cover.....	24
Termination Cover.....	22
Transformer Lightning Arrester Recloser Cover.....	24

E/Coatings

MIDSUN High Voltage Insulator Coating.....	28-29
Silprocoat Corrosion Protection Coating.....	30-31
E/Paintable Insulation Coating.....	32-33

Services

High Voltage Insulator Cleaning.....	34-35
--------------------------------------	-------

New Products

E/BirdCage Bushing Cover	13
E/Birdcage Medium	13
E/Birdcage Large	13
30° Anti - Nesting Barrier.....	13
High Insulation Fusing Tape	2

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