

LISTED AND RECOGNIZED COMPONENTS

Most commonly used in the
Installation of
Neon and Channel Letters

Manufacturers' Websites

The following is a list of the web sites for the products we mention in this section. Refer to each manufacturer's site for complete details on products, conditions of acceptability, installation instructions, and service procedures. The list is not complete and does not endorse or recommend any product over another.

www.electrobits.com
www.allanson.com
www.atoglas.com
www.paigelp.com
www.neonpowerpro.com
www.egl-neon.com
www.fmsneon.com
www.sheffieldplastics.com
www.westrimproducts.com
www.abasco.com
www.spartech.com
www.transco-neon.com
www.capital-electric.com
www.masterstechnology.com
www.gestructuredproducts.com
www.signletters.com

For a complete up-to-date list, you can access the ul.com site, select Standards Certifications from the home page, from that directory select UL Category Code/ Guide Information, enter PWIK or PWIK2 in category code box then select search. Select the companies guide information and it will tell you their products.

Splice and Connections: Wet ☔



Listed rain tight box
(Masters shown)



Listed rain tight box
(Power Pro shown)

Must be used with liquid tight (Seal Tight), rigid or EMT conduit with rain tight connectors. **Flexible metal conduit may NOT be used.**

Splice and Connections: Dry ☀

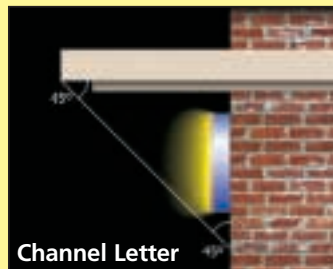


Take up box

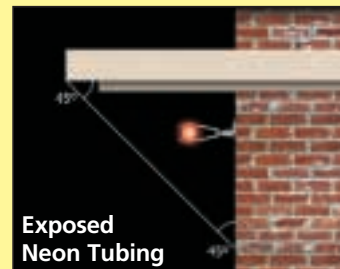
NOTE: Used with (PK type housing) metal clad receptacle to take up slack in secondary GTO wiring between letters to avoid having to use high voltage connection boxes.

(Cover plate not shown).

Damp Conditions Shown



Channel Letter



Exposed
Neon Tubing

Splice & Connections: Damp/Dry ☀☔



Electrobits high
voltage connector



High volt box
(Westrim shown)



High volt box
(Transco shown)



High volt box
(Masters shown)

Transformer Boxes: Wet ☔



Transformer / power supply
Wet, Damp or Dry

Must be used with liquid tight (Seal Tight), rigid or EMT conduit with rain tight connectors. **Flexible metal conduit may NOT be used.**

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Transformer Boxes: Damp/Dry ☀️



Transco



Westrim

Standard Neo-Lite not shown

Cable Supports



Porcelain wire supports used to support high voltage wiring and maintain spacing

Tube Supports



Standard Neo-Lite, EGL tube supports, FMS tube supports, Westrim tube supports, Electrobites tube supports, Transco tube supports, Mr. Neon (listed polycarbonate)

Electrode Receptacles: Glass Wet 💧



Absko Glass cup w/CPA



CPA assembly

Installation instructions on the complete system must be used in a wet location

Refer to: www.absko.com



Housing cap required



Westrim PK housing shown

Installation instructions on the complete system and Listed cap must be used in a wet location
Refer to websites
Standard Neo-Lite not shown

Electrode Receptacles: Glass Wet 💧

... continued



PK shown

Picture shows the bonding requirements to maintain continuity in the system because of the two rubber seal washers required.

See www.westrimproducts.com for complete installation instructions.



Westrim & Standard Neo-lite glass housings

Glass housing must have Listed cap when used in a Wet Location. Igloo cap must be used if the correct 1 1/2" spacing in the enclosure cannot be maintained.



Listed cap



Igloo cap

Electrode Receptacles: Porcelain Wet 💧



Metal clad housing (Transco shown)

Installation instructions on the complete system and a Listed cap must be used in a Wet Location. Igloo cap must be used if the correct 1 1/2" spacing in the enclosure cannot be maintained.



Listed cap



Igloo cap

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Electrode Receptacles: Porcelain Wet

... continued



Installation instructions on the complete system and a Listed cap must be used in a Wet Location. Igloo cap must be used if the correct 1 1/2" spacing in the enclosure cannot be maintained.

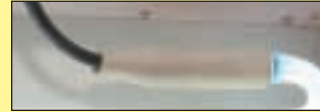


Listed cap

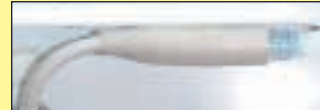


Igloo cap

Electrode Enclosures: Damp/Dry



Westrim boot



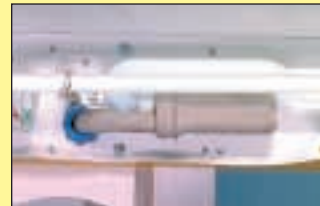
Electrobits boot

Boot and sleeve assemblies must be assembled per their manufacturers' installation instructions;

NOTE: Manufacturers parts are NOT interchangeable

Masters and Lighting Components not shown

Electrode Enclosures: Wet



Masters boot

Installation instructions on the complete system must be used in a wet location

Refer to:

www.masterstechnology.com

Electrode Enclosures: Diagram of Through Wall Housing (PK Shown)

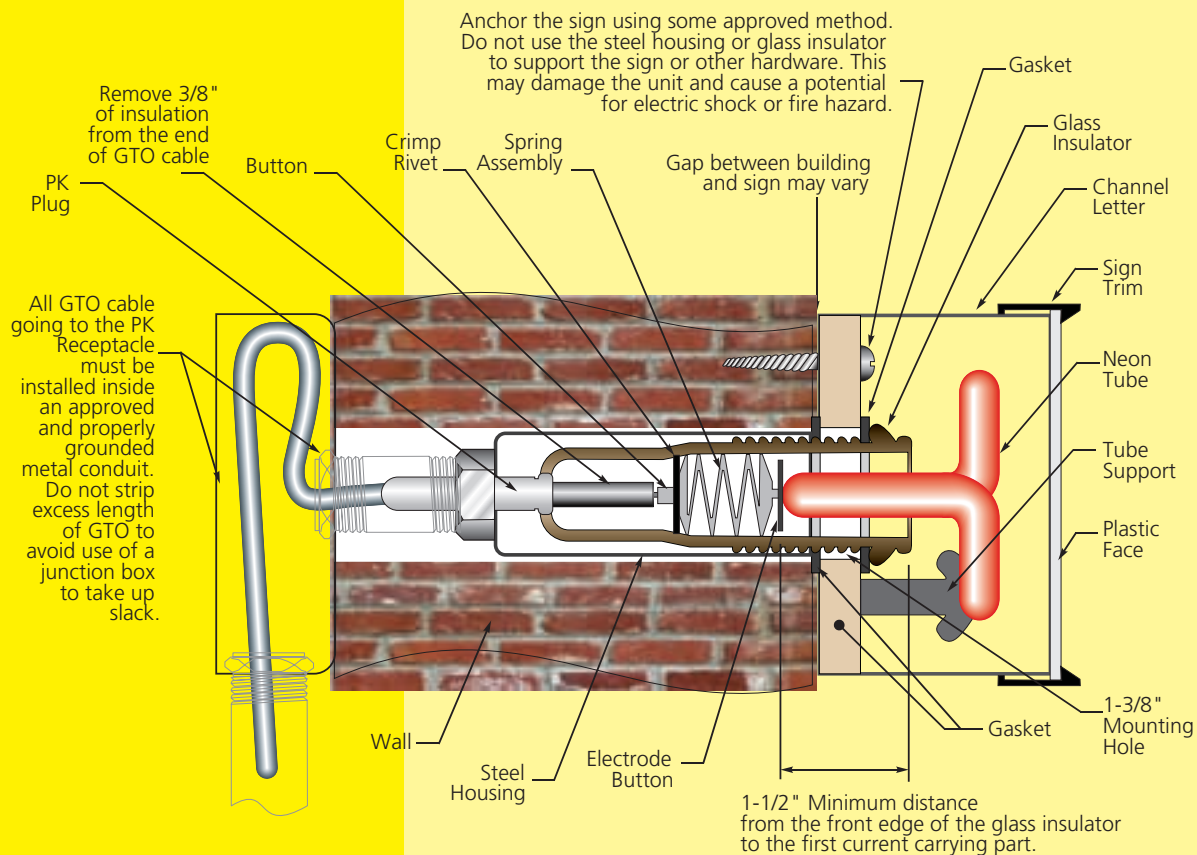


PK housing shown

Through wall
Picture shows the bonding requirements to maintain continuity in the system because of the two rubber seal washers required

Installation instructions for PK housings can be found at:

www.westrimproducts.com



LISTED AND RECOGNIZED COMPONENTS

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Bushings: Raceway



Plastic bushing
(Heyco shown)



Westrim federal bushing
Transco porcelain bushing
similar



Casino bushing
(Absko shown)

GTO Cable



Paige GTO Cable shown
Standard GTO 5,10,15 (manufac-
turers numerous) See UL site for
complete list
Marking required on the jacket of
the GTO cable



With integral sleeving: Westrim
GTO Cable shown
Cable must be marked on the
jacket "integral sleeve"
Paige
Capitol
Westrim



Shown as sign accessory: Neon
Power Pro

Receptacle Caps



Westrim shown



Masters shown

Must be used in all wet locations: Manufacturers: Transco,
Electrobits, Masters (shown), Westrim (shown), Standard Neo-Lite

Receptacle Caps: Igloo Type Insulator



Standard Neo-Lite shown
(Transco, Westrim not shown)
Caps must be used when
1-1/2" clearance cannot be
maintained within an enclosure

Enclosure Rated Sign Face Components



Enclosure Rated Material:
Atofina Chemicals (Tuffak XL)
GE Plastics (Lexan)
Sheffield Plastics (Hyzod)
Spartech Plastics (Sungard)

Icon Shown: Recognized component face sign material (enclosure rated) is
marked for the use and must be installed per the manufacturers installation
instructions. Special care must be used when gluing retainer products to the
face material

Switches and Switch Boots



Westrim shown
Boots must be used when
installed in a wet location
(Transco not shown)

Electrode Receptacles: Porcelain Damp/Dry



Westrim's 2-up porce-
lain receptacles
(Transco's D-2 not
shown)

LISTED AND RECOGNIZED COMPONENTS

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Non-Metallic (Enclosure Rated) Letters



Gemini shown. Non-Metallic channel letters can be used in wet or damp/dry locations. These letters can also be used in combination with other metallic channel letters. Recommended bonding requirements are shown in the section below.

Grounding and Bonding: Metallic



Master's bonding plate



Grounding lug



Grounding ring

All dead metal parts need to be grounded and a continuous ground plane must be maintained to insure the operation of the secondary circuit-ground fault transformers.

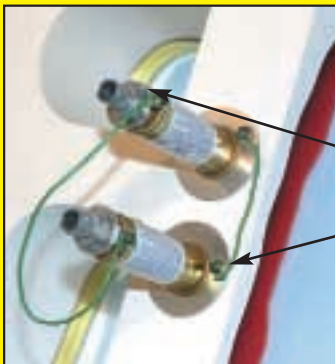
Grounding / Bonding: Nonmetallic Conduit



Bonding plastic conduit / NEC

Nonmetallic conduit when used in a high voltage circuit must be space 1-1/2" away from the grounding/bonding conductor to avoid the capacitance coupling and destruction of the nonmetallic conduit

Grounding and Bonding: Nonmetallic



NOTE: Though 2 bonding options are shown here, only one is required for continuous bonding.

1. Standard Bonding with Rings, or
2. Custom Washer Rings for Bonding

Nonmetallic letters require continuous bonding between the connectors



NOTE: Rubber washer between back of letter & bonding plate

Sign Will Not Light

...is usually a symptom of a bad ground

This is generally a big problem for many UL2161 secondary-circuit ground fault protection transformers. Two things make a good ground: a grounding wire that is approved and is the proper size that can be traced all the way back to the breaker panel. Metallic conduit properly connected all the way back to the breaker panel.

NOTE: Gutters, metal building frame, flashing, sign base, painted surfaces, down spouts, etc. are not a good ground.

You need to connect to a proper 3-wire (hot, neutral, ground) branch circuit.

The ground must be firmly bonded to the transformer enclosure or box, raceway or sign body and to the transformers ground terminal (green nut) or wire is firmly bonded to this enclosure box or raceway and signbody.

Please consult individual manufacturers web sites for the most up-to-date, current servicing requirements.

TRANSFORMERS AND POWER SUPPLIES

Most commonly used in the
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We neither recommend nor endorse any of the products shown. For a complete up-to-date list, you can access the ul.com site, select Standards Certifications from the home page, from that directory select UL Category Code/ Guide Information, enter PWIK or PWIK2 in category code box then select search. Select the companies guide information and it will tell you their products.

Actown-Electrocoil, Inc.

www.actown.com



Allanson International, Inc.

www.allanson.com



France/Scott Fetzer Co.

www.franceformer.com



Lighting Components, Inc.



Universal

www.universalballast.com



Linsa

www.efficient-tec.com



Transco, Inc.

www.transco-neon.com



Transfotec Intn'l, LTD

www.transfotec.com



Ventex Technology, Inc.

www.ventextech.com



SECONDARY GROUND FAULT TRANSFORMERS AND POWER SUPPLIES:

Listed transformers and power supplies today are equipped with secondary-circuit ground fault protection. Recognized transformers and power supplies are not required to have secondary-circuit ground fault protection; but can only be used as part of a listed sign.

As a result of the NEC code change in 1996, Underwriters Laboratories created and implemented UL 2161 the Standard to test Neon transformers and power supplies.

Effective with the adoption of the 1996 code installations of field installed skeleton neon required transformers with secondary-circuit ground fault protection. September 1999 UL required all Listed neon signs to have secondary-fault ground protection.

The Code and Standard was a direct result of the increase in the number of neon sign fires. Unfortunately, the installation practices were the problem, but

since correcting the installation practices were deemed not practicable or possible it was decided to place protection in the transformers and power supplies. Since the field reports determined fire and not shock was the hazard, this allowed for a reasonable control by the trip mechanism. Dealing with high voltage and the capacitance coupling it was determined a half second short to ground of at least 15 ma would be required to trip the product. These requirements are high compared to the normal ground fault required in a bathroom or pool areas; but remember we are dealing with fire and not shock protection.

The preceding is a list of the products most commonly used in North America. Since each manufacturer has different installation and service instructions we refer you to their web sites for current information and recommend you print the information for your installation and service personnel on a timely basis.