The trend towards higher system voltage, increased load density, and larger substations has caused higher fault current potentials on the distribution system and the need to interrupt those higher currents when a fault exists. Current-limiting fusing provides both a high interrupting current rating and limits the peak value of current and the amount of energy to within acceptable levels for protection of the transformer.

**Improved Design**

**Housing** - The dry-well housing consists of filament-wound glass tubing with a resin-rich outer surface. This outer surface serves as the barrier against oil permeation through the tubing wall. *(See Figures 2-4 on page 2.)*

**Dry-well fuseholder location** - In padmounted transformer applications, the dry-well fuseholder is mounted on the transformer front plate, below the oil level. Because the current-limiting fuses that these fuse-holders are designed to accept will not function properly if exposed to transformer oil, the interior of the fuseholder must remain oil tight.

**Non-loadbreak fuseholders**

Non-loadbreak fuseholders for padmounted transformer applications are available at 8.3, 15.2, and 21.1 kV (125 kV BIL), both standard and submersible construction. The 21.1 kV (150 kV BIL) rating is available in standard construction only. The applicable device ratings are listed in *Table 1.*

For those applications where an interlocked loadbreak switch is not used in conjunction with the non-loadbreak fuseholder, an important feature of the non-loadbreak fuseholder is an integral warning nameplate to warn against operation while energized, and safety support that must be moved to gain access to the fuse *(see Figure 6 on page 4).* This optional warning nameplate assembly is available from ERMCO Components, Inc.
### Table 1  Non-Loadbreak - Standard and Submersible

<table>
<thead>
<tr>
<th>Line to Ground</th>
<th>8.3 kV</th>
<th>15.2 kV</th>
<th>21.1 kV</th>
<th>21.1 kV**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impulse Withstand</td>
<td>95 kV</td>
<td>125 kV BIL</td>
<td>125 kV BIL</td>
<td>150 kV BIL</td>
</tr>
<tr>
<td>Corona Extinction</td>
<td>11 kV</td>
<td>19 kV</td>
<td>26 kV</td>
<td>26 kV</td>
</tr>
<tr>
<td>Momentary Current (without fuse)</td>
<td>10,000 Amps*</td>
<td>10,000 Amps*</td>
<td>10,000 Amps*</td>
<td>10,000 Amps*</td>
</tr>
<tr>
<td>Continuous Current (without fuse)</td>
<td>160 Amps*</td>
<td>160 Amps*</td>
<td>160 Amps*</td>
<td>160 Amps*</td>
</tr>
<tr>
<td>Max Fault Current</td>
<td></td>
<td>EQUAL TO FUSE RATING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interrupting Ability</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* rms Symmetrical  ** Not available in submersible design

---

**Figure 1 (8.3, 15.2, or 21.1 kV)**

Typical non-loadbreak fuseholder warning nameplate assembly.

*See page 4 for details*

---

**Figure 2 (8.3, 15.2, or 21.1 kV)**

Typical non-loadbreak standard construction fuseholder and current-limiting fuse assembly.

- Fuse not included

*See pages 6-7 for details*

---

**Figure 3 (21.1 kV)**

Non-loadbreak 150 BIL standard construction fuseholder and current-limiting fuse assembly.

- Fuse not included

*See pages 8-9 for details*

---

**Figure 4 (8.3, 15.2, or 21.1 kV)**

Typical non-loadbreak submersible construction fuseholder and current-limiting fuse assembly.

- Fuse not included

*See pages 10-13 for details*
### Non-Loadbreak

**Aluminum Flange Canister Assembly**
- **Catalog Number**: 7559ZC8399
- **kV**: 21.1
- **BIL**: 125 kV
- **Fuseholder Cap**: Plated Steel
- **Description**: Typical non-loadbreak standard construction fuseholder and current limiting fuse assembly

**Catalog Number**: 7559ZG8399
- **kV**: 21.1
- **BIL**: 125 kV
- **Fuseholder Cap**: Stainless Steel

**Catalog Number**: 7559ZC8499
- **kV**: 15.2
- **BIL**: 125 kV
- **Fuseholder Cap**: Plated Steel

**Catalog Number**: 7559ZG8499
- **kV**: 15.2
- **BIL**: 125 kV
- **Fuseholder Cap**: Stainless Steel

**Catalog Number**: 7559ZC8599
- **kV**: 8.3
- **BIL**: 95 kV
- **Fuseholder Cap**: Plated Steel

**Catalog Number**: 7559ZG8599
- **kV**: 8.3
- **BIL**: 95 kV
- **Fuseholder Cap**: Stainless Steel

*Note*: Aluminum flange canister units listed above replaced the plastic flange canister units effective approximately April 1, 1988. Aluminum flange units are direct replacements for plastic flange units.

### Non-Loadbreak

**Plastic Flange Canister Assembly**
- **Catalog Number**: 7559ZC2599
- **kV**: 21.1
- **BIL**: 150 kV
- **Description**: Typical non-loadbreak standard construction fuseholder and current limiting fuse assembly

### Submersible-Non-Loadbreak

**4 Bolt Stainless Steel Flange Canister Assembly**
- **Catalog Number**: 7509ZE0199
- **kV**: 8.3
- **BIL**: 95 kV
- **End Cap Stud 0.250-20-2B**: No
- **Description**: Typical non-loadbreak submersible standard construction fuseholder and current limiting fuse assembly

**Catalog Number**: 7509ZE3199
- **kV**: 8.3
- **BIL**: 95 kV
- **End Cap Stud 0.250-20-2B**: Yes

**Catalog Number**: 7509ZE0299
- **kV**: 15.2
- **BIL**: 125 kV
- **End Cap Stud 0.250-20-2B**: No

**Catalog Number**: 7509ZE3299
- **kV**: 15.2
- **BIL**: 125 kV
- **End Cap Stud 0.250-20-2B**: Yes

**Catalog Number**: 7509ZE0399
- **kV**: 21.1
- **BIL**: 125 kV
- **End Cap Stud 0.250-20-2B**: No

**Catalog Number**: 7509ZE3399
- **kV**: 21.1
- **BIL**: 125 kV
- **End Cap Stud 0.250-20-2B**: Yes

### Submersible-Non-Loadbreak

**Stainless Steel Flange Canister Assembly (Welded to Tank)**
- **Catalog Number**: 7559ZE1199
- **kV**: 8.3
- **BIL**: 95 kV
- **End Cap Stud 0.250-20-2B**: No

**Catalog Number**: 7559ZE2199
- **kV**: 8.3
- **BIL**: 95 kV
- **End Cap Stud 0.250-20-2B**: Yes

**Catalog Number**: 7559ZE1299
- **kV**: 15.2
- **BIL**: 125 kV
- **End Cap Stud 0.250-20-2B**: No

**Catalog Number**: 7559ZE2299
- **kV**: 15.2
- **BIL**: 125 kV
- **End Cap Stud 0.250-20-2B**: Yes

**Catalog Number**: 7559ZE1399
- **kV**: 21.1
- **BIL**: 125 kV
- **End Cap Stud 0.250-20-2B**: No

**Catalog Number**: 7559ZE2399
- **kV**: 21.1
- **BIL**: 125 kV
- **End Cap Stud 0.250-20-2B**: Yes

For more information see pages 6 and 7.
**Replacement Part**

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Description</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>7285ZA1499</td>
<td>Grounding Spring</td>
<td>Stainless Steel</td>
</tr>
</tbody>
</table>

**Note:**
1. For those applications where an interlocked loadbreak switch is not used in conjunction with the non-loadbreak fuseholder, a warning nameplate should be used as a precaution against energized operation of the fuseholder. The optional warning nameplate (w/bracket) shown above is available from ERMCO Components, Inc. (see ordering information below).

**Accessories**

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>&quot;A&quot;</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>7559ZC2099</td>
<td>5.48&quot;</td>
<td>Warning Nameplate</td>
</tr>
<tr>
<td>7559ZC2199</td>
<td>6.79&quot;</td>
<td></td>
</tr>
</tbody>
</table>
Fuse Adapter Details and Ordering Information

**Figure 7**
Fuse Adapter

### Accessories

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>&quot;L&quot;</th>
<th>Application</th>
<th>Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>7559ZB6099</td>
<td>8.00&quot;</td>
<td>8.3 to 23 kV</td>
<td>None</td>
</tr>
<tr>
<td>7559ZB6199</td>
<td>3.68&quot;</td>
<td>15.2 to 23 kV</td>
<td></td>
</tr>
<tr>
<td>7559ZB6299</td>
<td>5.18&quot;</td>
<td>8.3 to 15.2 kV</td>
<td></td>
</tr>
</tbody>
</table>

Note:
1. Assemble fuse adapter (when required) to bottom of fuse as shown above.
2. A vent hole on centerline and perpendicular to the long axis may be added at vendor’s option.
3. Apply Loctite to set screws as necessary.
Engineer Data

<table>
<thead>
<tr>
<th>Fuseholder Cap</th>
<th>Catalog Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plated Steel</td>
<td>7559ZC8399 7559ZC8499 7559ZC8599</td>
</tr>
<tr>
<td>Stainless Steel</td>
<td>7559ZG8399 7559ZG8499 7559ZG8599</td>
</tr>
<tr>
<td>&quot;A&quot;</td>
<td>6.68&quot; 6.68&quot; 5.58&quot;</td>
</tr>
<tr>
<td>&quot;B&quot;</td>
<td>22.84&quot; 20.04&quot; 14.44&quot;</td>
</tr>
<tr>
<td>Max Voltage Rating</td>
<td>21.1 kV 15.2 kV 8.3 kV</td>
</tr>
<tr>
<td>BIL</td>
<td>125 kV 125 kV 95 kV</td>
</tr>
<tr>
<td>HIPOT</td>
<td>50 kV 40 kV 34 kV</td>
</tr>
<tr>
<td>Corona Extinction</td>
<td>26 kV 19 kV 11 kV</td>
</tr>
<tr>
<td>Continuous Current Rating (Unfused)</td>
<td>160 A 160 A 160 A</td>
</tr>
<tr>
<td>Momentary Current Rating (Unfused)</td>
<td>10,000 A RMS SYM (10 Cycles) 10,000 A RMS SYM (10 Cycles) 10,000 A RMS SYM (10 Cycles)</td>
</tr>
<tr>
<td>Acceptable Fuses (Cooper or HiTech)</td>
<td>23 kV - All Sizes Thru 25 A 15.5 kV - All Sizes Thru 40 A 2.8 &amp; 4.3 kV - All Sizes Thru 100 A 5.5 kV - All Sizes Thru 75 A 8.3 kV - All Sizes Thru 40 A</td>
</tr>
</tbody>
</table>

Note:
1. For those applications where an interlocked loadbreak switch is not used in conjunction with the non-loadbreak fuseholder. A warning nameplate should be used as a precaution against energized operation of the fuseholder. The optional warning nameplate (w/bracket), shown on page 4, Figure 6, is available from ERMCO Components Inc. (7559ZC2099)
1.50” Below Min. Oil Level

Coil Lead

Bushing Lead

Maintain adequate strike
(Barriers may be used if available spacing does not provide sufficient strike clearance)

Live Cap

Back of Tank

Maintain 4.50” radial clearance minimum from centerline of fuseholder to inside wall of tank or other ground plane.

Notes:
1. Pockets up to 1.50” in depth can be used without adversely affecting impulse withstand.

2. If application requires pocket depth in excess of 1.50” care should be taken to avoid adversely affecting impulse withstand.

FUSE REPLACEMENT INSTRUCTIONS

FUSE CHANGE-OUT - DISASSEMBLE BY LOOSENING 4 SET SCREWS. REPLACE BLOWN FUSE WITH NEW FUSE AND REASSEMBLE WITH PARTS ORIENTED AS PER ABOVE SKETCH. RETIGHTEN THE 4 SET SCREWS.

Figure 9
General Fuseholder Application

Figure 10
Detail of Terminal

Figure 11
Decal (Standard-Non-Loadbreak)
### Standard-Non-Loadbreak 150 BIL Details and Ordering Information

**Engineering Data**

**Plastic Flange Canister**

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>7559ZC2599</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Voltage Rating</td>
<td>21.1 kV (LN/GND)</td>
</tr>
<tr>
<td>Max Voltage Rating</td>
<td>36.6 kV (LN/LN)</td>
</tr>
<tr>
<td>BIL</td>
<td>150 kV</td>
</tr>
<tr>
<td>HIPOT</td>
<td>50 kV</td>
</tr>
<tr>
<td>Corona Extinction</td>
<td>26 kV</td>
</tr>
<tr>
<td>Continuous Current Rating (Unfused)</td>
<td>160 A</td>
</tr>
<tr>
<td>Momentary Current Rating (Unfused)</td>
<td>10,000 A RMS</td>
</tr>
<tr>
<td>SYM (10 Cycles)</td>
<td></td>
</tr>
</tbody>
</table>

**Acceptable Fuses (Cooper or HiTech)**

- 23 kV - All Sizes Thru 25 A
- Must Be Ordered Separately

**Catalog Number**

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Replacement Parts</th>
</tr>
</thead>
<tbody>
<tr>
<td>7539ZB3999</td>
<td>Contact Assembly</td>
</tr>
<tr>
<td>7559ZB5399</td>
<td>Plug &amp; Channel Assembly (w/Gasket)</td>
</tr>
<tr>
<td>7559ZB5499</td>
<td>Gasket</td>
</tr>
<tr>
<td>7559ZB5699</td>
<td>Piston Assembly (w/Spiral &amp; Retaining Springs)</td>
</tr>
<tr>
<td>7559ZB5799</td>
<td>Plug, Channel, Gasket, &amp; Flange</td>
</tr>
</tbody>
</table>

**Figure 12**

*Fuseholder Mounting Dimensions*

- Front View
  - Tank Wall:
    - 2.50” Paint Band
    - 2.40” Paint Band
    - 2.50” Paint Band
  - See Figure 13 for Detail of Terminal
  - (4) 0.500” Bolt Holes in Flange

- Side View (Section)
  - Front View:
    - 0.62”
    - 5.16”
    - 2.00”
    - 20.42”

**Figure 13**

*Detail of Terminal*

- 1.00”
- 0.50”
- 0.281” Hole
- 0.030” Thick

**Note:**

1. For those applications where an interlock loadbreak switch is not used in conjunction with the non-loadbreak fuseholder. A warning nameplate should be used as a precaution against energized operation of the fuseholder. The optional warning nameplate (w/bracket), shown on page 4, Figure 6, is available from ERMCO Components Inc. (7559ZC2199).

2. Silicon grease should be applied to the drawout rod assembly gasket before installing in the drywell tube.
1. If application requires pocket depth in excess of 1.50” care should be taken to avoid adversely affecting impulse withstand.

2. With fuseholder fully assembled check for approx. 0.10” clearance between locknut and channel to adjust, tighten, or loosen two locknuts of flange studs.

**FUSE REPLACEMENT INSTRUCTIONS**

**FUSE CHANGE-OUT** - DISASSEMBLE BY REMOVING RETAINING SPRING AND LOOSENING 4 SET SCREWS. REPLACE BLOWN FUSE AND REASSEMBLE WITH PARTS ORIENTED AS PER ABOVE SKETCH. RETIGHTEN THE 4 SET SCREWS, REGREASE GASKETS BEFORE RE-INSTALLING.

---

**Figure 14**
General Fuseholder Application

**Figure 15**
Decal (Dielectric Plug)
### Engineering Data

<table>
<thead>
<tr>
<th>All Flanges Stainless Steel</th>
<th>Catalog Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>W/O Stud</td>
<td>7509ZE0199</td>
</tr>
<tr>
<td>With Stud (0.250-20-2B)</td>
<td>7509ZE3199</td>
</tr>
<tr>
<td>&quot;A&quot;</td>
<td>8.91&quot;</td>
</tr>
<tr>
<td>&quot;B&quot;</td>
<td>18.27&quot;</td>
</tr>
<tr>
<td>Max Voltage Rating</td>
<td>8.3 kV</td>
</tr>
<tr>
<td>BIL</td>
<td>95 kV</td>
</tr>
<tr>
<td>HIPOT</td>
<td>34 kV</td>
</tr>
<tr>
<td>Corona Extinction</td>
<td>11 kV</td>
</tr>
<tr>
<td>Continuous Current Rating</td>
<td>160 A</td>
</tr>
<tr>
<td>(Unfused)</td>
<td>10,000 A RMS SYM (10 Cycles)</td>
</tr>
<tr>
<td>Momentary Current Rating</td>
<td>10,000 A RMS SYM (10 Cycles)</td>
</tr>
<tr>
<td>(Unfused)</td>
<td>10,000 A RMS SYM (10 Cycles)</td>
</tr>
</tbody>
</table>

Acceptable Fuses (Cooper or HiTech) (Must Be Ordered Separately): 2.8 & 4.3 kV - All Sizes Thru 100 A, 5.5 kV - All Sizes Thru 75 A, 8.3 kV - All Sizes Thru 40 A.

15.5 kV - All Sizes Thru 40 A, 23 kV - All Sizes Thru 25 A.

Note:
1. For those applications where an interlock loadbreak switch is not used in conjunction with the non-loadbreak fuseholder, a warning nameplate, shown on page 4, Figure 6, should be used as a precaution against energized operation of the fuseholder.

### Catalog Number

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Replacement Parts</th>
</tr>
</thead>
<tbody>
<tr>
<td>7559ZB3999</td>
<td>Contact Assembly</td>
</tr>
<tr>
<td>7559ZB4099</td>
<td>Gasket</td>
</tr>
<tr>
<td>7559ZE4099</td>
<td>Drawout Rod Assembly</td>
</tr>
<tr>
<td>7559ZE4199</td>
<td>Drawout Rod and Contact Assembly</td>
</tr>
<tr>
<td>7285ZA1499*</td>
<td>Grounding Spring</td>
</tr>
</tbody>
</table>

*See page 4 for more information
**Maintain 4.50” radial clearance minimum from centerline of fuseholder to inside wall of tank or other ground plane.**

**Figure 17**
General Fuseholder Application
*(See Figure 21 for Vertical Mounting)*

**Figure 18**
Detail of Terminal

**FUSE REPLACEMENT INSTRUCTIONS**

FUSE CHANGE-OUT - DISASSEMBLE BY LOOSENING 4 SET SCREWS. REPLACE BLOWN FUSE WITH NEW FUSE AND REASSEMBLE WITH PARTS ORIENTED AS PER ABOVE SKETCH. RETIGHTEN THE 4 SET SCREWS.

**Figure 19**
Decal *(Submersible-Non-Loadbreak)*
Submersible-Non-Loadbreak Details and Ordering Information

**Catalog Number**

<table>
<thead>
<tr>
<th>W/O Stud</th>
<th>7559ZE1199</th>
<th>7559ZE1299</th>
<th>7559ZE1399</th>
</tr>
</thead>
<tbody>
<tr>
<td>With Stud (0.250-20-2B)</td>
<td>7559ZE2199</td>
<td>7559ZE2299</td>
<td>7559ZE2399</td>
</tr>
<tr>
<td>&quot;A&quot;</td>
<td>8.91&quot;</td>
<td>8.91&quot;</td>
<td>8.91&quot;</td>
</tr>
<tr>
<td>&quot;B&quot;</td>
<td>18.27&quot;</td>
<td>22.57&quot;</td>
<td>25.53&quot;</td>
</tr>
</tbody>
</table>

**Max Voltage Rating**

<table>
<thead>
<tr>
<th>8.3 kV</th>
<th>15.2 kV</th>
<th>21.1 kV</th>
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</thead>
<tbody>
<tr>
<td>95 kV</td>
<td>125 kV</td>
<td>125 kV</td>
</tr>
<tr>
<td>34 kV</td>
<td>40 kV</td>
<td>50 kV</td>
</tr>
<tr>
<td>11 kV</td>
<td>19 kV</td>
<td>26 kV</td>
</tr>
</tbody>
</table>

**Continuous Current Rating (Unfused)**

<table>
<thead>
<tr>
<th>160 A</th>
<th>160 A</th>
<th>160 A</th>
</tr>
</thead>
</table>

**Momentary Current Rating (Unfused)**

<table>
<thead>
<tr>
<th>10,000 A RMS SYM (10 Cycles)</th>
<th>10,000 A RMS SYM (10 Cycles)</th>
<th>10,000 A RMS SYM (10 Cycles)</th>
</tr>
</thead>
</table>

**Acceptable Fuses (Cooper or HiTech)**

<table>
<thead>
<tr>
<th>2.8 &amp; 4.3 kV - All Sizes Thru 100 A</th>
<th>5.5 kV - All Sizes Thru 75 A</th>
<th>8.3 kV - All Sizes Thru 40 A</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.5 kV - All Sizes Thru 40 A</td>
<td>23 kV - All Sizes Thru 25 A</td>
<td></td>
</tr>
</tbody>
</table>

**Note:**

1. For those applications where an interlock loadbreak switch is not used in conjunction with the non-loadbreak fuseholder. A warning nameplate, shown on page 4, Figure 6, should be used as a precaution against energized operation of the fuseholder.

2. Use adequate heat sinks when welding to prevent localized hot spots and resulting stress in the drywell.

**Catalog Number**

<table>
<thead>
<tr>
<th>Replacement Parts</th>
</tr>
</thead>
<tbody>
<tr>
<td>7559ZB3999</td>
</tr>
<tr>
<td>7559ZE4099</td>
</tr>
<tr>
<td>7559ZE4199</td>
</tr>
</tbody>
</table>

**Figure 20**

Fuseholder Mounting Dimensions

**Figure 22**

See Detail of Terminal for 22
Maintain 4.50” radial clearance minimum from centerline of fuseholder to inside wall of tank or other ground plane.

Coil Lead

Bushing Lead

Live Cap

Maintain adequate strike
(Barriers may be used if available spacing does not provide sufficient strike clearance)

1.50” Minimum above conductive paint band.

1.00” Ø0.281” Hole 0.030” Thick

FUSE REPLACEMENT INSTRUCTIONS

FUSE CHANGE-OUT - DISASSEMBLE BY LOOSENING 4 SET SCREWS. REPLACE BLOWN FUSE WITH NEW FUSE AND REASSEMBLE WITH PARTS ORIENTED AS PER ABOVE SKETCH. RETIGHTEN THE 4 SET SCREWS