

One-piece EZ II splice



General

Eaton provides a permanent, fully-shielded, fully submersible cable joint with a current rating equal to that of the mating cable with its Cooper Power™ series 15, 25 & 35 kV Class one-piece EZ™ II splice. The splice meets or exceeds all requirements of IEEE Std 404™-1993 standard and is Rural Utilities Service (RUS) approved.

The peroxide cured EPDM rubber provides for a highly reliable cable joint that can be used for the repair or extension of underground cables installed in direct burial, conduit or vault applications.

Wide range taking cable entrances are sized to accept all common cable insulation diameters. The wider cable ranges increase installation flexibility.

Design features

- Easiest To Install
 - Tapered cable entrances
 - Smooth bore
 - Relieved conductive insert
 - Reformulated rubber
- Wide Cable Ranges
 - Stocking flexibility
 - Transition splices
- Sure Grip
 - Contoured splice body
- Quality
 - Manufacturing facility registered to ISO 9001
- Assured Long Term Reliability
 - Eaton's exclusive MultiStress Test
 - IEEE Std 404™-1993 standard Certified

An optional cold shrink re-jacketing kit is available if required. The re-jacketing kit is used to cover and seal the splice and cable jacket when splicing jacketed concentric neutral cable. Two types of cold shrink kits are available: a one-piece design and a stacked two-piece design which reduces the amount of work space needed in a trench or manhole. Both designs are made from EPDM rubber to form a durable, water tight seal covering the entire splice and the exposed ends of the cable's outer jacket.

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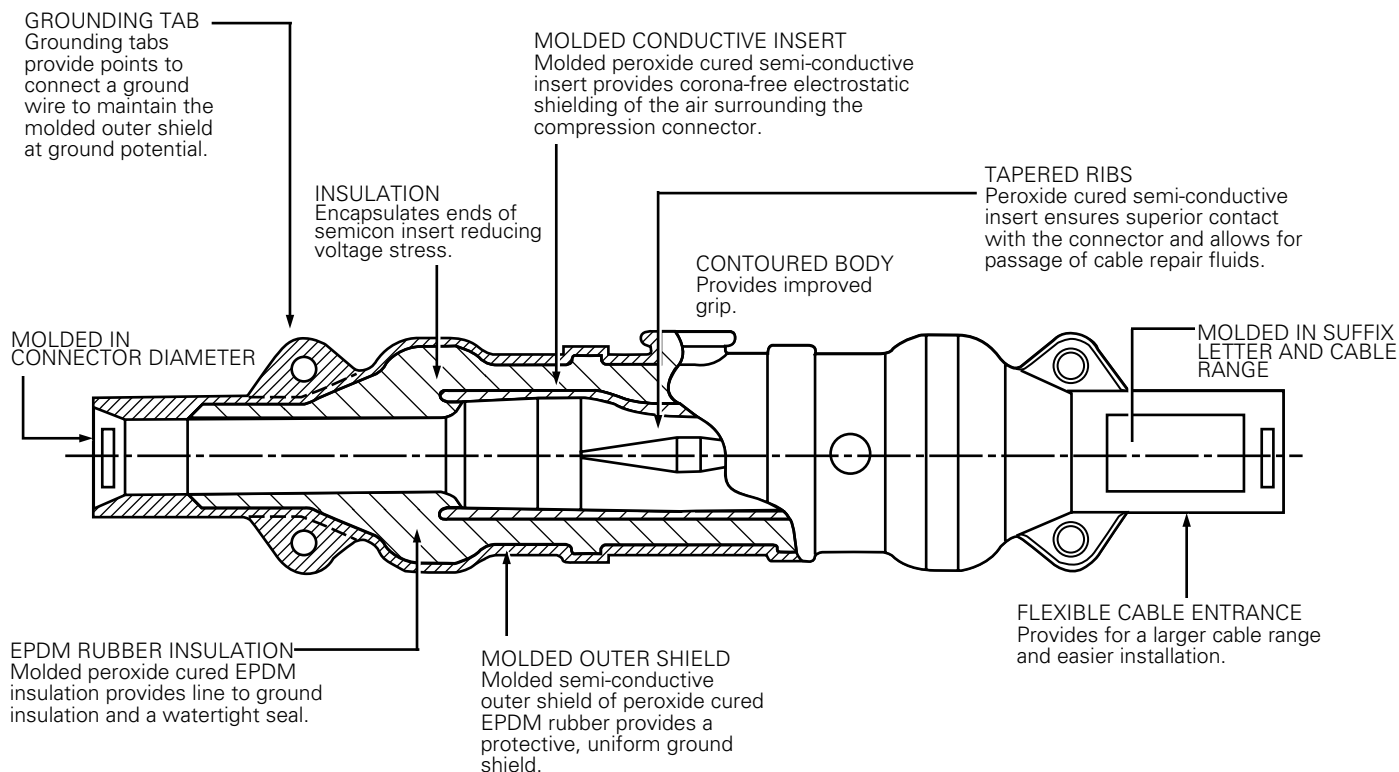


Figure 1. Cutaway illustration shows the molded design integrity of the 15, 25 & 35 kV EZ II splice.

Production tests

Tests in Table 1 are performed on 100% of product in accordance with IEEE Std 404™ standard.

Table 1. Production Tests

Production Test	Voltage		
	15 kV	25 kV	35 kV
Partial Discharge (corona) voltage level (3 pC)	13 kV	22 kV	31 kV
AC Withstand	35 kV	52 kV	69 kV

The following tests are conducted in accordance with Eaton requirements:

- Physical Inspection
- Periodic X-ray Analysis

Table 2. Voltage Ratings and Characteristics

Description	Voltage		
Standard Voltage Class (kV)	15	25	35
Maximum Rating Phase-to-Ground (kV rms)	8.7	14.4	20.2
AC 60 Hz 1 Minute Withstand (kV rms)	35	52	69
DC 15 Minute Withstand (kV)	70	100	125
BIL and Full Wave Crest (kV peak)	110	150	200
Minimum Corona Voltage Level (kV)	13	22	31

Voltage ratings and characteristics are in accordance with IEEE Std 404™-1993 standard.

Table 3. Current Ratings and Characteristics

Description	Amperes
Continuous	Equal to the current rating of the cable
Short Time	Equal to the current rating of the cable

Installation

Refer to *Service Information MN650007EN for 15 kV and 25 kV Class EZ II Splice Installation Instructions (A, B, and C Cable Range Only)* and *Service Information MN650006EN 25/35 kV Class EZ II Splice Installation Instructions (D, E, and F Cable Range Only)* for instructions.

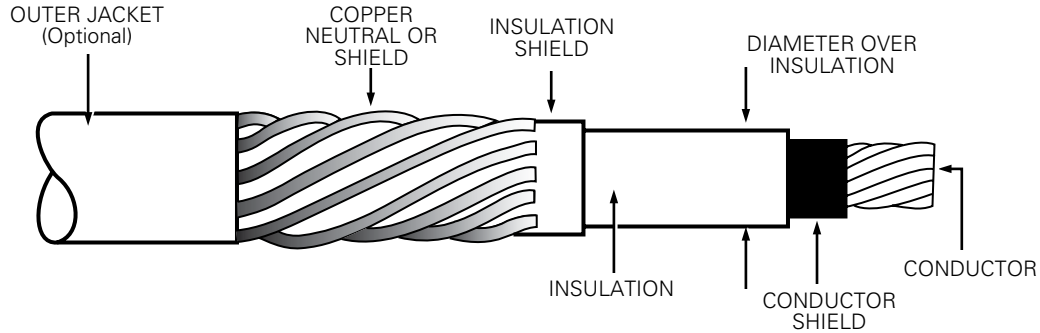


Figure 2. Illustration showing typical construction of high voltage underground cable.

Ordering information

The standard splice kit is packaged in a sealed heavy-duty polyethylene bag. Individually boxed kits are also available by special part number. An optional cold shrink re-jacketing kit is available to replace the cable jacket removed during the splice installation.

Standard splices

Each kit contains:

- Molded Splice Body
- Compression Connector, suitable for both copper and aluminum conductors
- Silicone Lubricant
- Installation Instruction Sheet
- Re-jacketing Kit - Optional

Catalog numbering system

To order an EZ II splice kit, follow the easy steps below.

Build the 10 digit catalog number for a splice by following the steps given below. The first 2 digits are always "SP". Only digits 3 through 8 need to be selected. Digits 9 and 10 are optional.



Step 1 - Select Digits 3 and 4 - Voltage Class Code

Use Table 4 to determine the voltage class of the splice and the associated Voltage Class Code.

Step 2 - Select Digit 5 - Cable Range Code

Determine the cable's diameter over the insulation as shown in Figure 2 (including tolerances). Then identify a cable range from Table 5 that includes both the minimum and the maximum insulation diameters and includes the appropriate conductor size. Select the Cable Range Code.

Table 4. Voltage Class

System Voltage		Voltage Class
(L-L)	(L-G)	Code
15 kV	8.7 kV	15
25 kV	14.4 kV	25
35 kV	20.2 kV	35

Table 5. Cable Range

Cable Range		Voltage Class Code	Conductor Range	Cable Range Code
Inches	Millimeters			
0.64-0.91	16.3-23.1	15	#3 str - 3/0 cmcpt	A
0.75-1.01	19.1-25.7	15 & 25	#3 str - 3/0 cmcpt	B
0.89-1.14	22.6-29.0		#3 str - 250 str	C
0.84-1.11	21.3-28.2	25 & 35	#3 str - 250 str	D
1.00-1.31	25.4-33.3		#3 str - 250 str	E
1.14-1.45	29.0-36.8	35	#3 str - 250 str	F

Step 3 - Select Digits 6, 7, and 8 for the Connector Code

Identify the conductor size and type from Table 6 and select the Connector Code from the far right column.

Table 6. Conductor Size and Type

Stranded or Compressed		Compact or Solid		Connector Code
AWG	mm ²	AWG	mm ²	
#3	-	#2	25	001
#2	25	#1	35	002
#1	35	1/0	50	003
1/0	50	2/0	70	004
2/0	70	3/0	-	005
3/0	-	4/0	95	006
4/0	95	250	120	007
250*	120	-	-	008

* Compressed stranding only

- An all aluminum crimp connector is provided as standard. This connector can be used on aluminum or copper conductor cable.
- If an all copper connector is desired, change digit #6 from "0" to "C".
- Transition connectors are available for splicing two different size conductors within the same splice body cable range. See Table 8 or 9 for ordering details.

Step 4 - Select Digit 9 - Re-jacketing Kit

Two types of re-jacketing kits are available. If a **single-piece** cold shrink re-jacketing kit is required include the code "S" in digit 9. If a **two-piece** cold shrink kit is required include the code "D" in digit 9. If a re-jacketing kit is not required leave digit blank.

Step 5 - Select Digit 10 - Packaging

Complete the catalog number. For a splice kit packaged in a corrugated cardboard box, insert an "X" as the last character in the catalog number. For standard packaging leave digit blank.

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Example:

Select a splice kit for use on a 8.7 kV line-to-ground system with two 1/0 compact cables, each with a nominal insulation diameter of 0.835". (Also include a single-piece cable re-jacketing kit.)

Step 1 - Select Digits 3 and 4

From Table 4, the voltage class is 15 kV. The Voltage Class Code is "15".

Step 2 - Select Digit 5

Nominal diameter over the insulation is 0.835" +/- 0.030".

Minimum diameter
0.835"—0.030" = 0.805"

Maximum diameter
0.835"+0.030" = 0.865"

From Table 5, identify the cable range 0.75"—1.01". Cable range "B" is the best fit for this cable.

Step 3 - Select Digits 6, 7 and 8

The conductor size is 1/0 and the type is compact. From Table 6, under the column "Compact or Solid" identify 1/0 and select the code "003".

Step 4 - Select Digit 9

Include the code "S" in digit 9 to order the single piece re-jacketing kit.

Step 5 - Select Digit 10

Standard packaging-leave digit blank.

Complete Catalog Number

Order catalog number

SP15B003S

Transition Splices

If a transition splice is required, select the transition connector code from Table 7 or 8 and insert it into digits 6, 7, and 8 of the catalog number.

Replacement connectors

To order standard aluminum or copper replacement connectors, refer to Table 9 for A, B & C cable ranges and Table 10 for D, E & F cable ranges.

Table 7. A, B & C Cable Range Splices Only

Conductor Size (AWG)

Small End		Large End		Transition Connector Code
Stranded or Compressed	Compact or Solid	Stranded or Compressed	Compact or Solid	
#4	#3	#2	#1 or #2	T01
#2	#2	#1	#1	T02
#2	#1 or #2	1/0	1/0 or 2/0	T03
#1	1/0	1/0	2/0	T04
1/0	2/0	2/0	3/0	T05

Note: For transition splices not listed in Table 8, contact the factory.

Table 8. D, E & F Cable Range Splices Only

Conductor Size (AWG)

Small End		Large End		Transition Connector Code
Stranded or Compressed	Compact or Solid	Stranded or Compressed	Compact or Solid	
#1	1/0	1/0	2/0	T11
#2	#2	#1	#1	T12
#2	#1	1/0	2/0	T13

Note: For transition splices not listed in Table 9, contact the factory.

Standard aluminum and copper connectors

Table 9. A, B & C Cable Range Splices Only

Stranded or Compressed	Compact or Solid	Connector O.D.	Catalog Number	
			Aluminum	Copper
AWG	mm ²	Inches	Aluminum	Copper
#3	—	0.64	0838587C01	0838591C01
#2	25	0.64	0838587C02	0838591C02
#1	35	0.64	0838587C03	0838591C03
1/0	50	0.64	0838587C04	0838591C04
2/0	70	0.64	0838587C05	0838591C05
3/0	—	0.78	0838587C06	0838591C06
4/0	95	0.78	0838587C07	0838591C07
250*	120	0.78	0838587C12	0838591C10

* Compressed stranding only

Note: The appropriate connector O.D. is molded into the cable entrance of the splice body. It is important to match the connector O.D. to that molded into the splice body. Splices with cable range code "A," "B" and "C" must use a 2" long connector only.

Table 10. D, E & F Cable Range Splices Only

Stranded or Compressed	Compact or Solid	Connector O.D.	Catalog Number	
			Aluminum	Copper
AWG	mm ²	Inches	Aluminum	Copper
#2	25	0.91	2638590C03	2638603C05
#1	35	0.91	2638590C06	2638603C08
1/0	50	0.91	2638590C08	2638603C03
2/0	70	0.91	2638590C09	2638603C04
3/0	—	0.91	2638590C10	2638603C01
4/0	95	0.91	2638590C11	2638603C02
250*	120	0.91	2638590C13	2638603C11

* Compressed stranding only

Note: The appropriate connector O.D. is molded into the cable entrance of the splice body. It is important to match the connector O.D. to that molded into the splice body. Splices with cable range code "D," "E" and "F" must use a 3" long connector only.

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For Eaton's Cooper Power series EZ II splice product information call 1-877-277-4636 or visit: www.eaton.com/cooperpowerseries.