Permanent distribution cable joints

PCJ power cable joints

PCJ power cable joints use permanently crimped connectors. PCJ housings are fully insulated, shielded and sealed for direct-burial, vault, submersible and other severe service applications. Units have been designed and tested per IEEE Standard 404 to ensure system-matched performance and ratings equal to the cable to which the splice will be installed.

PCJ power cable joints are available in two styles:
Style 1 uses a single-piece housing that is sized to accommodate a specific range of cable. Style 1 units are ideally suited for straight splicing of the same or similar cable.

Style 2 designs incorporate a universal housing with separate cable adapters to allow transition splices of different types and sizes of cable.

Electrical ratings summary

The follow ratings summary is based on IEEE 404 and applies to all Elastimold PCJ power cable joints.

Voltage
A. 15 kV class (8.7 kV phase-to-ground)
B. 25 kV class (14.4 kV phase-to-ground)
C. 35 kV class (20.2 kV phase-to-ground)
- Impulse withstand: A = 110 kV, B = 150 kV, C = 200 kV BIL, 1.2 x 50 microsecond wave
- Corona extinction voltage: A = 13 kV, B = 22 kV, C = 30 kV minimum, 3 pC sensitivity
- DC withstand: During installation, A = 56 kV, B = 80 kV, C = 100 kV
- DC withstand: After installation and in service for the first 5 years, A = 18 kV, B = 25 kV, C = 31 kV for XLPE insulated cables and A = 45 kV, B = 64 kV, C = 80 kV for EPR insulated cables (reference AEIC CS6 and CS8, Section L.2)

Current
Continuous rating equal to the rating of the cable
Short-time rating equal to the rating of the cable up to 35 kA

Shield design
- Meets IEEE 592 for exposed semiconducting shields on premolded high voltage cable joints and separable insulated connectors

Production tests include 100% tests of the premolded joints to ensure:
- Corona extinction voltage: A = 13 kV, B = 22 kV, C = 30 kV minimum, 3 pC sensitivity
- AC withstand: A = 35 kV, B = 52 kV, C = 69 kV, 60 Hz, 1 minute

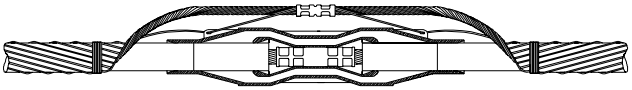
Design tests on production joints demonstrate compliance with IEEE 404 including:
- Corona extinction voltage: A = 13.0 kV, B = 22.0 kV, C = 30.0 kV minimum, 3 pC sensitivity
- AC withstand: A = 35 kV, B = 52 kV, C = 69 kV, 60 Hz, 1 minute
- DC withstand: A = 75 kV, B = 105 kV, C = 140 kV negative polarity, 15 minutes
- Impulse withstand (BIL): A = 110 kV, B = 150 kV, C = 200 kV, 10 positive and 10 negative, 1.2 x 50 microsecond wave, at conductor temperatures of 20 °C and 130 °C, nominal
- Short-time current: Magnitude equal to cable up to 35 kA
- Cyclic aging: 30 days at A = 26 kV, B = 43 kV, C = 61 kV AC continuous, load current for 8 hours per day, providing 130 °C conductor temperature; joints then subjected to A = 31 kV, B = 50 kV, C = 71 kV for 5 hours followed by A = 39 kV, B = 65 kV, C = 91 kV for 5 min
- Load cycle: Connectors meet requirements of ANSI C119.4, Class A and Class 3 ratings

Permanent distribution cable joints

PCJ power cable joints

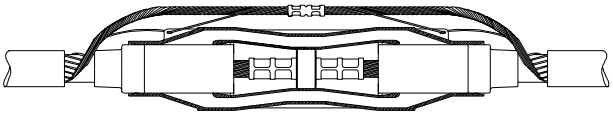
PCJ style 1

With single-piece housing



PCJ style 2

With universal housing and separate cable adapters that can be varied with the cable application

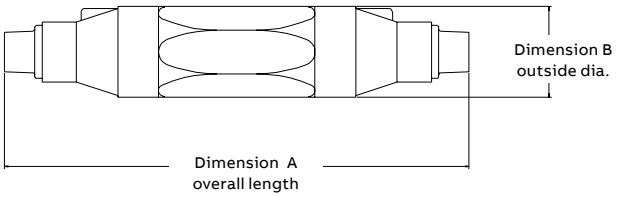


Ordering information

	P	C	J		W	1	X
Voltage indicator 15 kV **15** 25 kV **25** 35 kV **35**	**Power**	**Cable**	**Joint**	**Style** Style 1 **1** Style 2 **2**	**Insulation diameter W sizing information and selection** Use table W8 for 15 PCJ Use table W9 for 25 PCJ Use table W10 for 35 PCJ	**Conductor** Aluminum **1** Copper **2**	**Conductor size code X sizing information and selection N3** Use table X7 for 15 PCJ Use table X7 for 25 PCJ Use table X7 for 35 PCJ

Permanent distribution cable joints

PCJ power cable joints



Dimensional data

Style 1 Cat. no.	A inches	B inches
15PCJ1FX	10 1/4	1 3/4
15PCJ1GX	10 1/4	1 3/4
25PCJ1GX	14 3/8	2 7/16
15/25/35PCJ1HX	14 3/8	2 7/16
15/25/35PCJ1JX	14 3/8	2 7/16
15/25/35PCJ1KX	14 3/8	2 25/32
15/25/35PCJ1LX	14 3/8	2 25/32
15/25PCJ1LMX	14 3/8	2 25/32
15/25/35PCJ1MX	14 3/8	2 25/32
15/25/35PCJ1NX	15 3/4	3 3/16
15/25/35PCJ1PX	15 3/4	3 3/16
15/25/35PCJ1QX	15 3/4	3 3/16

Dimensional data

Style 2 Cat. no.	A inches	B inches
15PCJ2FX	16 3/8	2 25/32
15/25PCJ2GX	16 3/8	2 25/32
15/25/35PCJ2HX	16 3/8	2 25/32
15/25/35PCJ2JX	16 3/8	2 25/32
15/25/35PCJ2KX	21	3 3/4
15/25/35PCJ2LX	21	3 3/4
15/25/35PCJ2MX	21	3 3/4
15/25/35PCJ2NX	21	3 3/4
15/25/35PCJ2PX	21	3 3/4
15/25/35PCJ2QX	21	3 3/4

PCJ power cable joint

Description	Voltage class (kV)	Cat. no.	Notes
Power cable joint Style 1	15	15PCJ1W1X	N1
	15	15PCJ1W2X	N2
	25	25PCJ1W1X	N1
	25	25PCJ1W2X	N2
	35	35PCJ1W1X	N1
	35	35PCJ1W2X	N2
Power cable joint Style 2	15	15PCJ2W1X	N1
	15	15PCJ2W2X	N2
	25	25PCJ2W1X	N1
	25	25PCJ2W2X	N2
	35	35PCJ2W1X	N1
	35	35PCJ2W2X	N2

N1. Kit includes aluminum compression connector suitable for splicing aluminum conductor to aluminum conductor or aluminum conductor to copper conductor. An all-copper connector is required for copper-to-copper connections.
N2. Kit includes copper compression connector suitable for splicing copper conductors to copper conductor only. DO NOT use copper connectors on aluminum conductors.
N3. When constructing a catalog number for a transition (two different-size cables) joint, list the larger connector first and the smaller connector second.

Refer to the W and X tables on pages A54–A55 for sizing to cable insulation diameter and conductor size. For cable shield adapters and jacket seals, see pages A44–A45.