

LOADBREAK PRODUCTS

200 AMP 35 kV

Experience & Reliability



Cable
Accessories





200 AMP 35 kV Loadbreak Products

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35 kV LOADBREAK PRODUCTS

RATINGS & SPECIFICATIONS

GENERAL INFORMATION

Hubbell 35 kV, 200 Amp Separable Connectors are fully shielded, insulated, and submersible products that provide a means to mate or disconnect cable to switchgear, transformers, or sectionalizing equipment on power distribution systems. They are designed for pad-mounted or subsurface applications, where the components may be exposed to direct sunlight or continuously submerged in water up to 6 feet (2m).

All 35 kV loadbreak elbows are designed and tested to meet or exceed all applicable requirements of IEEE, ANSI, and other industry standards including the following:

IEEE Std 386 for Separable Connectors (Figure 8)
IEEE Std. 592 for Exposed Semi-conducting Shields
IEEE Std. C62.11 for Metal Oxide Surge Arresters
ANSI C119.4 Std. for Conductor Connectors
AEIC & ICEA for Insulated Cables

These devices are suitable for energized loadmake / loadbreak operations when using an 8' shotgun-type hot stick on grounded WYE systems(1). They are also fully interchangeable with other manufacturer's products that conform to the electrical requirements of IEEE Std. 386.

Hubbell 35 kV products are designed for use in ambient temperatures between -40°C and +65°C and can be operated energized between -20°C and +65°C. Loadbreak devices should not be operated at elevations over 6,000 feet.

All rubber components are manufactured using peroxide-cured insulating and conductive compounds.

(1) Contact the factory for recommendations for use on ungrounded, resistance grounded, or delta systems.

RATINGS

Max. continuous voltage 21.1 kV phase-to-ground
36.6 kV phase-to-phase
Continuous current 200 amps rms

SHORT-TIME CURRENT RATINGS

0.17 seconds duration 10,000 amps rms symmetrical
3.00 seconds duration 3,500 amps rms symmetrical

INSULATION WITHSTAND VOLTAGES

Basic Impulse Level 150 kV crest
(1.2 x 50 µsec. wave)
60 Hertz (one minute) 50 kV rms
DC (15 minutes) 103 kV
Corona Extinction Voltage 26 kV rms
(3 pC)

SWITCHING

1-phase and 3-phase circuits 21.1 kV phase-to-ground, 36.6 kV maximum across the open contacts.	10 loadmake/loadbreak operations at 200 amps with 70-80% lagging power factor.
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FAULT CLOSURE

One fault-close operation at 21.1 kV phase-to-ground, or
36.6 kV phase-to-phase; 10,000 amps rms symmetrical, 10 cycles,
(0.17 seconds).

PRODUCTION TESTS

100% factory test for partial discharge and either AC HI-POT (50 kV
for 60 seconds) or impulse (BIL) (150 kV 1.2 x 50 µsec. wave).

Performance

35 kV LOADBREAK ELBOWS

HUBBELL 35 kV Loadbreak Elbows are designed and tested to meet all requirements of IEEE Std. 386. The operating interface will mate with any product that conforms to IEEE Std. 386, Figure 8.

Elbows can be supplied with a capacitive test point that allows for the installation of faulted circuit indicators and will indicate the presence of voltage when interrogated with a high-impedance meter.

Bi-metal compression lug meets all requirements of ANSI Std. C119.4 for Class A connectors.

Optional ground strap accessories can be supplied for use on tape shielded cables.



SELECTION & ORDERING INFORMATION

Determine the diameter over the cable's insulation by measuring it (Do not measure over the insulation shield) or from the cable manufacturer's catalog. Select an elbow size so that the insulation falls within the elbow's range.

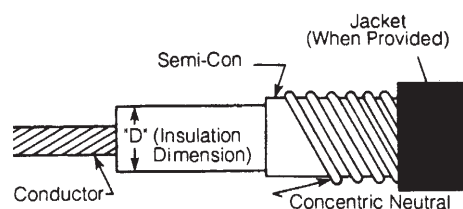
Select a connector code that identifies the conductor size and stranding.

The standard long, bi-metal connector can be replaced with a ProbeLok connector.

Decide if a capacitive test point is required.

The elbow can be supplied with a separate, cold-shrink seal kit for jacketed concentric neutral cable, or it can be furnished with a separate adapter kit for copper tape shield cables.

Cable Dimension Reference



Components:

To order a replacement probe complete with pin wrench, order 236LBP.

For a standard, long bi-metal lug, order: 200LUGBx.

For a ProbeLok lug, order: 200LUGPx.

To have a loadbreak insert packaged with the elbow, add "BI" to the end of the part number: 236LE55BI.

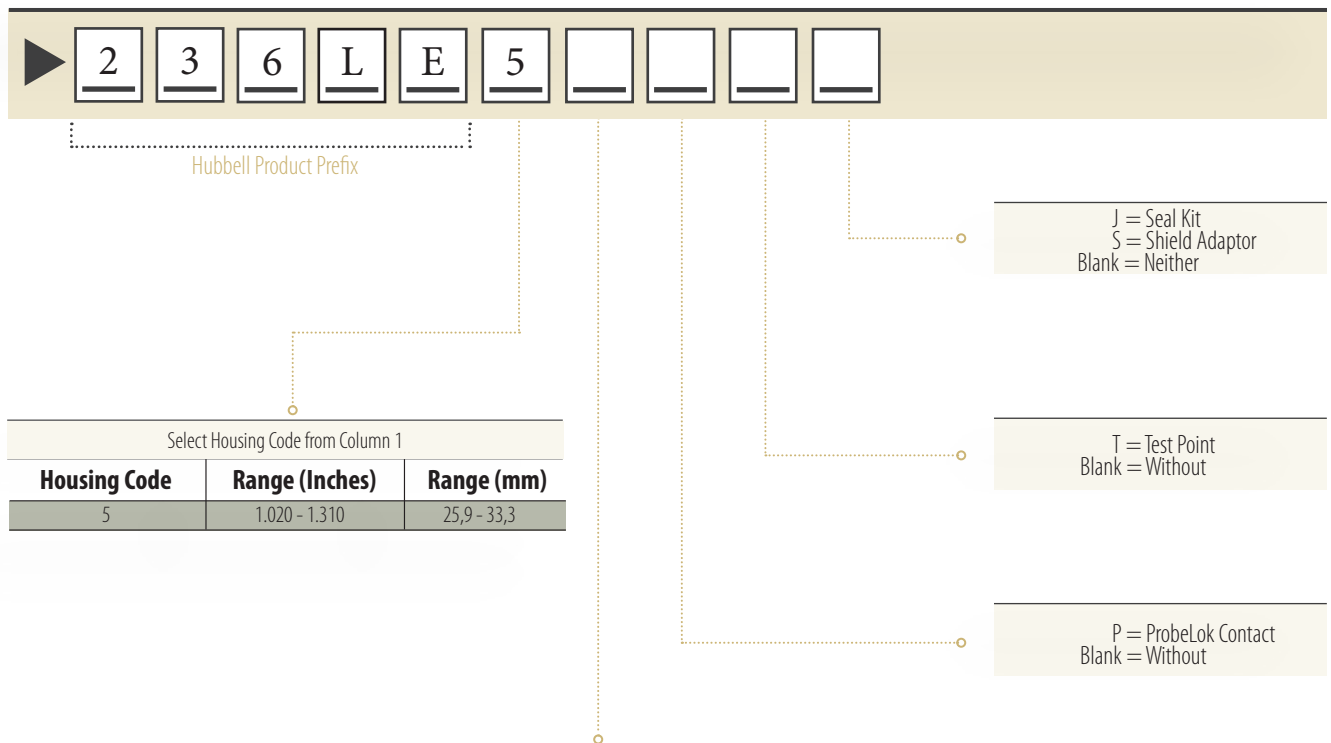
625SK52 Cold Shrink Cable Seal Kit for JCN cable with an overall diameter of 0.95" to 1.94"

625SK60 Tape Shield Adapter Kit for cable with an overall diameter of 0.83" to 1.64"



CATALOG NUMBER ORDERING INFORMATION

Example: Loadbreak elbow for 1/0 stranded, 345 mil cable with a test point is: 236LE5T



Connector Code	AWG or kcmil	Stranding	25kV - 260 mil (Inches)	35kV-345mil (Inches)
4	1/0	Compact & Solid	---	1.010 - 1.120
5	1/0 2/0	Stranded & Compressed Compact & Solid	--- ---	1.045 - 1.155 1.045 - 1.160
6	2/0 3/0	Stranded & Compressed Compact & Solid	--- ---	1.090 - 1.200 1.095 - 1.205
7	3/0 4/0	Stranded & Compressed Compact & Solid	--- ---	1.140 - 1.255 1.145 - 1.260
8	4/0 250	Stranded & Compressed Compact	1.025 - 1.135 1.040 - 1.135	1.195 - 1.310 1.210 - 1.315

*These ranges are taken from the AEIC/ICEA industry cable standards

35 kV UNDERGROUND ARRESTERS

HUBBELL 35 kV Elbow Arresters are designed and tested to meet all requirements of IEEE Std. 386. The operating interface will mate with any product that conforms to IEEE Std. 386, Figure 7.

PRODUCT FEATURES:

Fiberglass Wrap ensures that the MOV block stack remains in one piece and prevents the blocks from breaching the side wall should the arrester fail.

ID Band provides clear visual identification of arrester MCOV and duty cycle ratings.

Flexible Lead is #4 AWG copper rope lay conductor 595 strand (7 x 85). Ends are soldered to prevent fraying. Standard length is 36" long. Other lead lengths are available.

MOV Blocks are the same ones found in Ohio Brass overhead arresters.

Protective Characteristics

Catalog Number	MCOV kV	Rating kV	0.5 μ sec. 5 kA Max IR-kV	Maximum Discharge Voltage (kV Crest) 8x20 μ sec. Current Wave				
				1.5 kA	3.0 kA	5.0 kA	10 kA	20 kA
235ELA24	19.5	24	92.0	71.5	76.5	82.0	90.5	106.5
235ELA27	22.0	27	100.5	78.0	84.0	90.0	99.0	117.0
235ELA30	24.4	30	108.0	81.0	88.5	94.5	108.0	124.5

Normally Recommended MCOV for Various System Voltages

System L-L Voltage (kV)		Arrester MCOV (kV)	
Nominal	Maximum	Grounded Neutral	Impedance Grounded or Ungrounded
6.9	7.26	5.1	7.65
12.0	12.7	7.65	12.7
12.47	13.2	7.65	15.3
13.2	13.97	8.4	15.3
13.8	14.52	8.4	15.3
20.78	22	12.7	22
22.86	24.2	15.3	24.4
23	24.34	15.3	24.4
24.94	26.2	15.3	-
27	28	17	-
34.5	36.2	22	-

Hubbell URD Arrester Selection

Selection of the arrester size is based upon the maximum continuous operating voltage (MCOV) line-to-ground that is applied across the arrester in service. For arresters on effectively grounded systems, this is normally the maximum line-to-ground voltage – e.g., 22.0 kV on a 34.5 kV multi-grounded system.

For ungrounded or impedance-grounded systems, the MCOV should be at least 90 percent of maximum phase-to-phase voltage. Smaller arresters than shown may be used; contact your Hubbell Power Systems account representative for details.



CATALOG NUMBER ORDERING INFORMATION

Example: Elbow arrester for use on a 34.5 kV L-L system is: 235ELA27

2

3

5

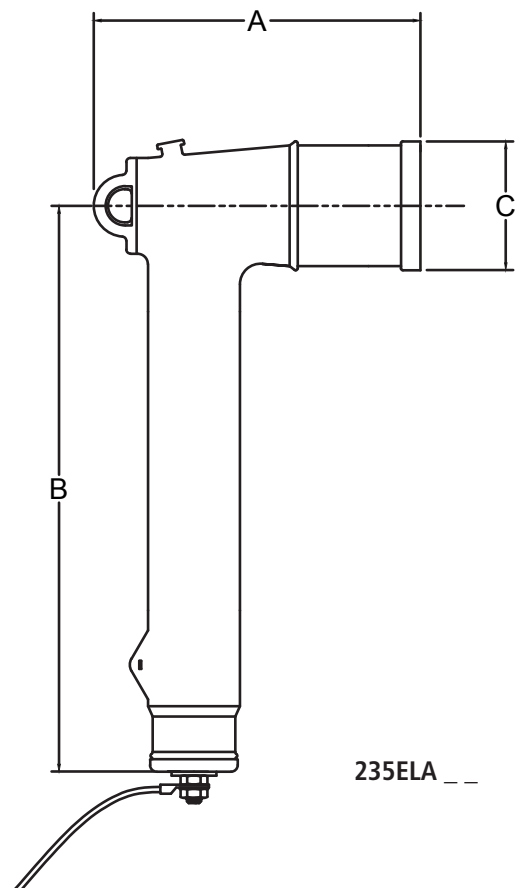
E

L

A

Hubbell Product Prefix

Rating	MCOV
24	19.5
27	22
30	24.4



235ELA _ _

ELA Reference Data:

Catalog Number	IEEE Std. 386 Interface	MCOV (kV)	Rated Voltage (kV)	Dimensions Inch (mm)			Shipping Weight Lbs (kg)	
				A	B	C		
235ELA24	35 kV Class Fig. 7	19.5	24	7.9 (201)	10.2 (168)	3.1 (79)	5.2	2.4
235ELA27		22	27		13.7 (348)		6.5	2.9
235ELA30		24.4	30					

Caution

This product is only compatible with a 35 kV small interface, Fig. 7 of IEEE Std 386. It is not compatible with a 35 kV large interface, Fig. 8 of IEEE Std 386.

NOTE: Because Hubbell has a policy of continuous product improvement, we reserve the right to change design and specifications without notice.

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