



K-LINE INSULATORS LIMITED  
TORONTO, ONTARIO, CANADA

# Catalogue EI-ELI

## EXTENSION INSULATORS AND EXTENSION LINK INSULATORS *15 kV to 69 kV*

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ISO9001  
SAI GLOBAL  
FILE No. 000117

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# Extension and Extension Link Insulators

**EXTENSION INSULATORS** are one piece units manufactured by coupling silicone covered core rod to polymer deadend insulators. Extension Insulators are made using the same manufacturing methods and quality assurance program as deadend insulators. Each Extension Insulator is mechanically proof tested to a minimum of 45kN (10,000 lbs).

**EXTENSION LINK INSULATORS** consist of a silicone covered core rod with a variety of end fittings. Each Extension Link Insulator is mechanically proof tested to a minimum of 45kN (10,000 lbs). These can be coupled with an insulator for application requiring extensions or extra clearance.

## PERFORMANCE BENEFITS

The performance benefits of **K-LINE INSULATORS (KLI)** Extension & Extension Link Insulators are similar to all **KLI** standard insulator designs and are listed below.

- Improves Reliability (by minimizing interruptions and outages due to vandalism, pole fires, and flashovers in all types of environments)
- Eliminates or Reduces Maintenance (such as washing and trouble calls) and is compatible with existing plant
- Improves Power Quality (less RI and TVI)
- Energy Efficiency (lower losses due to lower leakage currents)
- Safety (light weight for handling and installation)
- Service Life (consistent performance over its service life)
- Life Cycle Cost (savings over porcelain insulators)

## APPLICATION

Extension Insulators provide additional insulation value and are used on overhead lines operating at or below 69 kV. These insulators are used to support line conductors in deadend modes such as line terminations, angles, and tangents. Extension Link Insulators are designed to be used in series with Deadend Insulators. Extension Insulators and Extension Link Insulators are used to obtain more working clearance and electrical clearance or to move the conductor attachment point away from the structure.

## CORE ROD

The core rod of the insulator is made of a high quality, epoxy resin, E-Glass fiberglass rod that has been specially formulated for electrical and mechanical applications.

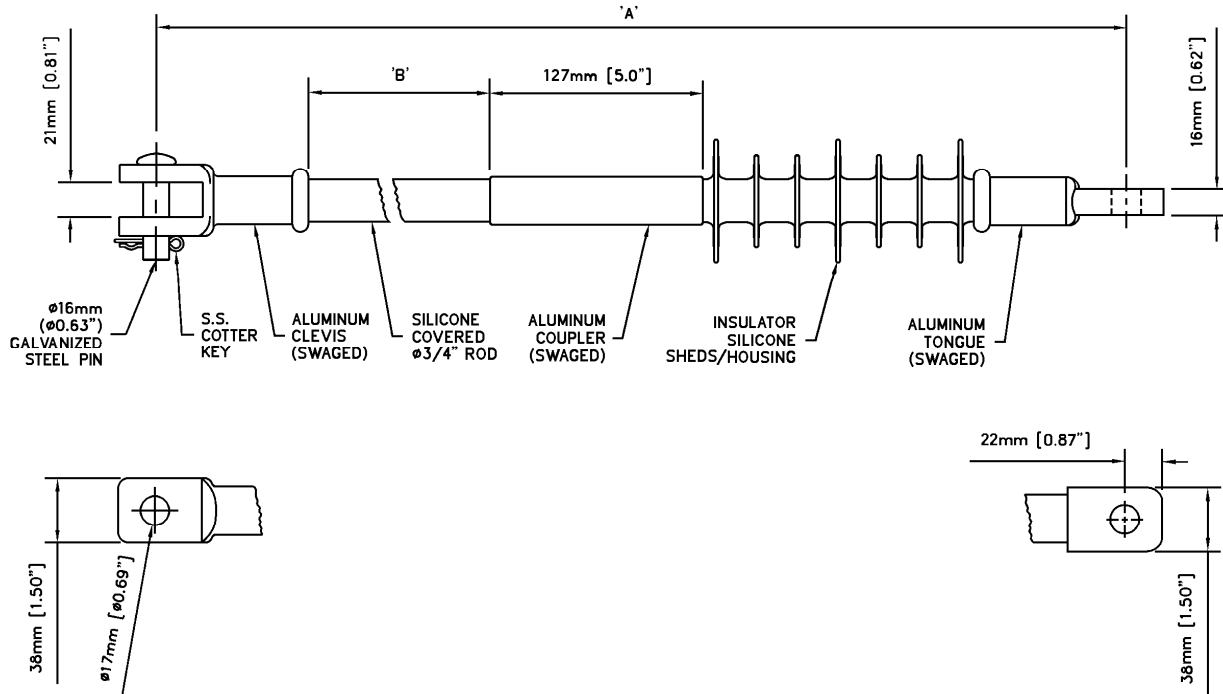
## HOUSING

The housing (includes sheath and sheds) of the insulator is one piece, high temperature vulcanized, injection molded silicone rubber that is chemically bonded to the core rod. This ensures that the interface between the rubber and rod is impenetrable against moisture ingress. **KLI** uses its own proprietary silicone rubber formula in the manufacture of its insulators. The formulation has silicone rubber as the base polymer material with additives to enhance its performance in wet and contaminated environments.

## FITTINGS

Extension and Extension Link Insulators come standard with aluminum clevis and tongue end fittings, galvanized iron fittings are also available. Other fitting combinations are available upon request.

# EXTENSION INSULATOR



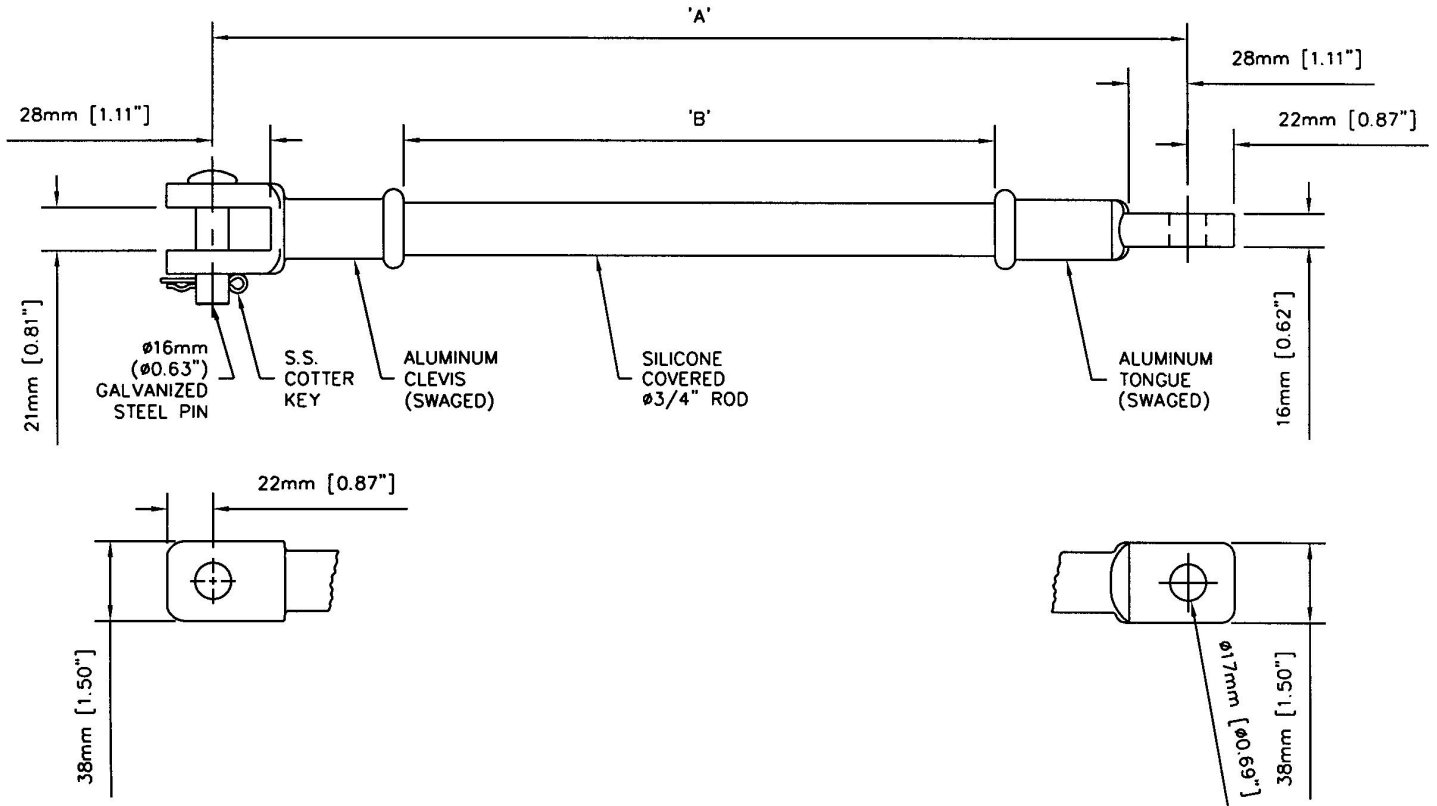
## TECHNICAL DATA

CATALOG NUMBER	VOLTAGE RATING (kV) (See Notes 1 & 2)	DIMENSIONS mm (in)		SPECIFIED MECHANICAL LOAD (SML) kN (lbs)	WEIGHT kg (lbs.)
		'A'	'B'		
KL15ASX11S4	15	761 (29.9")	290 (11.43")	90 (20,230)	1.1 (2.4)
KL15ASX24S4		1091 (42.9")	621 (24.43")	90 (20,230)	1.4 (3.1)
KL15ASX36S4		1369 (54.9")	925 (36.43")	90 (20,230)	1.7 (3.7)
KL15ASX60S4		2005 (78.9")	1535 (60.42")	90 (20,230)	2.2 (4.9)
KL28ASX11S4	28	871 (34.3")	290 (11.43")	90 (20,230)	1.2 (2.6)
KL28ASX24S4		1201 (47.3")	621 (24.43")	90 (20,230)	1.5 (3.3)
KL28ASX36S4		1506 (59.3")	925 (36.43")	90 (20,230)	1.8 (3.9)
KL28ASX60S4		2115 (83.3")	1535 (60.42")	90 (20,230)	2.3 (5.1)
KL35SX11S4	35	924 (36.4")	290 (11.43")	90 (20,230)	1.5 (3.3)
KL35SX24S4		1255 (49.4")	621 (24.43")	90 (20,230)	1.8 (4.0)
KL35SX36S4		1559 (61.4")	925 (36.43")	90 (20,230)	2.1 (4.7)
KL35SX60S4		2169 (85.4")	1535 (60.42")	90 (20,230)	2.7 (5.9)
KL46SX11S4	46	991 (39.0")	290 (11.43")	90 (20,230)	1.7 (3.8)
KL46SX24S4		1321 (52.0")	621 (24.43")	90 (20,230)	2.0 (4.5)
KL46SX36S4		1626 (64.0")	925 (36.43")	90 (20,230)	2.3 (5.1)
KL46SX60S4		2235 (88.0")	1535 (60.42")	90 (20,230)	2.9 (6.4)
KL69H16X11S4	69	1150 (45.3")	290 (11.43")	90 (20,230)	3.0 (6.6)
KL69H16X24S4		1480 (58.3")	621 (24.43")	90 (20,230)	3.3 (7.3)

**Notes:**

- 1) For complete specifications of the, 15-46 kV, insulators, refer to Distribution Insulators – Deadend/Suspension, Catalogue D-DS.
- 2) For complete specifications of the, 69 kV, insulators, refer to Transmission Insulators – Deadend/Suspension, Catalogue T-DS.
- 3) The silicone covered core rod in series with the insulator will provide additional insulation value.
- 4) Standard lengths listed. Custom lengths are available on request.
- 5) End fittings available are: clevis, tongue, thimble eye, oval eye, "y" clevis, socket, ball, etc.

# EXTENSION LINK INSULATOR



## TECHNICAL DATA

CATALOG NUMBER	DIMENSIONS mm (in)		Specified Mechanical Load (SML) kN (lbs)	WEIGHT kg (lbs.)
	'A'	'B'		
KL11CTS4	464 (18.3")	281 (11.1")	90 (20,230)	0.8 (1.7)
KL24CTS4	797 (31.4")	614 (24.2")	90 (20,230)	1.1 (2.4)
KL36CTS4	1102 (43.4")	919 (36.2")	90 (20,230)	1.4 (3.0)
KL60CTS4	1707 (67.2")	1524 (60.0")	90 (20,230)	1.9 (4.3)

Notes:

- 1) Standard lengths listed. Custom lengths are available on request.
- 2) End fittings available are: Clevis, Tongue, Thimble Eye, Oval Eye, "Y" Clevis, Socket, Ball, etc.
- 3) Tested & meets CSA C411.7



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