

PRODUCT CATALOG



SCAN QR-CODE

ALEA

Distribution
Subtransmission
Transmission

CONTENTS



20 YEARS INNOVATING IN THE
PROTECTION OF ELECTRIC ENERGY
DISTRIBUTION AND TRANSMISSION
SYSTEMS.

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INNOVATING IN THE PROTECTION OF DISTRIBUTION AND TRANSMISSION SYSTEMS

Mappec is the first manufacturer in Mexico to offer externally gapped line arrester (alea), a new generation of lightning arresters to increase the reliability of Electric Power Distribution, Transmission and Subtransmission Lines in light of atmospheric discharges and pollution. "ALEA" products minimize the risks and problems related to these phenomena.

The "ALEA" protection devices are versatile equipment for installation in different types of structures and arrangements. In addition, due to its original design and composition, it eliminates many of the problems registered in conventional lightning arresters.

We maintain our competitive advantage by offering solutions to our clients according to their technical - economic needs, required delivery times, electrical - mechanical testing service, as well as support in the installation of our products and technical workshops for their staff.

We have a policy of innovation in products and manufacturing processes through Research and Development Projects carried out with research centers such as the Instituto de Investigaciones Eléctricas (IIE).

Proudly Mexicans, recognized beyond our borders.

**EXTERNALLY GAPPED LINE
ARRESTER**

→ PATENTS



We have more than 11 patents on our products, including polymeric concrete that allows to isolate the varistors of our ALEA and avoid the entry of moisture.

→ QUALITY-INNOVATION



Our commitment is to exceed the expectations of our customers around the world. Therefore, we offer innovative lightning arrester designs, manufactured and evaluated under the strictest quality standards.

In addition, our manufacturing processes do not consume water and do not emit toxic waste.

→ MAPPEC- LABORATORY



Our commitment is to exceed the expectations of our customers around the world. Therefore, we offer innovative and competitive

designs of finished products, based on the following standards:

- NMX-EC-17025-IMNC-2018
- ISO/IEC 17025:2017



CERTIFICATIONS AND ACCREDITATIONS

At Mappec we have the "Reliable Supplier Qualification" certificate issued by the Equipment and Materials Testing Laboratory (LAPEM) for all our products; in addition to the Quality Assurance System; among other certifications and accreditations:

ISO (9001:2015)

ISO (45001:2018)

(ISO/IEC 17025:2017)

NMX-EC-17025-IMNC-2018

Accreditation "Safe Company" by the STPS Occupational Health and Safety System (18001:2007)

Compliance with RETIE-2013 of the Ministry of Mines and Energy from Colombia.

Our products satisfactorily comply with the test of operation cycle, partial discharges and short-circuit described in the international standards:

IEC 60099-4

IEC 60099-8



MAPPEC-ALEA® VS CONVENTIONAL LIGHTNING ARRESTER

PROBLEM

CONVENTIONAL LIGHTNING ARRESTER

MAPPEC ALEA®

▶ Varistor degradation

YES: there is permanent leakage current circulation.

NO



▶ Device disconnected fault

YES: probability of permanent failure due to malfunction and false operation.

NO



▶ Contamination failure

SÍ: probabilidad de falla por contaminación (requiere selección por distancia de fuga)

NO



▶ Technical losses

YES: probability of failure due to contamination (requires selection by

NO



▶ Additional point of system failure

YES: it is added when connected to the system, being critical in transmission

NO



▶ Steep Front Surge Response (Induced)

Unanswered

OPERATES IN THE NORMAL WAY



WHY CHOOSE | *mappec* ?



QUALITY GUARANTEE

Immediate replacement for factory default.



INSTALLATION SUPPORT.



FREE TECHNICAL WORKSHOPS.



EXCELLENT CUSTOMER SERVICE.



ADAPTABLE PRODUCT



LOWER INSTALLATION COST
Less requirements

PRODUCTS

The logo for 'alea' is written in a bold, italicized, sans-serif font. A thin blue arc is positioned above the letters 'e' and 'a'.

DISTRIBUTION

The logo for 'abt' is written in a bold, italicized, sans-serif font. A thin blue arc is positioned above the letters 'b' and 't'.

LOW VOLTAGE
ARRESTER

The logo for 'alea' is written in a bold, italicized, sans-serif font. A thin blue arc is positioned above the letters 'e' and 'a'.

SUBTRANSMISSION

The logo for 'alea' is written in a bold, italicized, sans-serif font. A thin blue arc is positioned above the letters 'e' and 'a'.

TRANSMISSION



www.mappec.com





alea

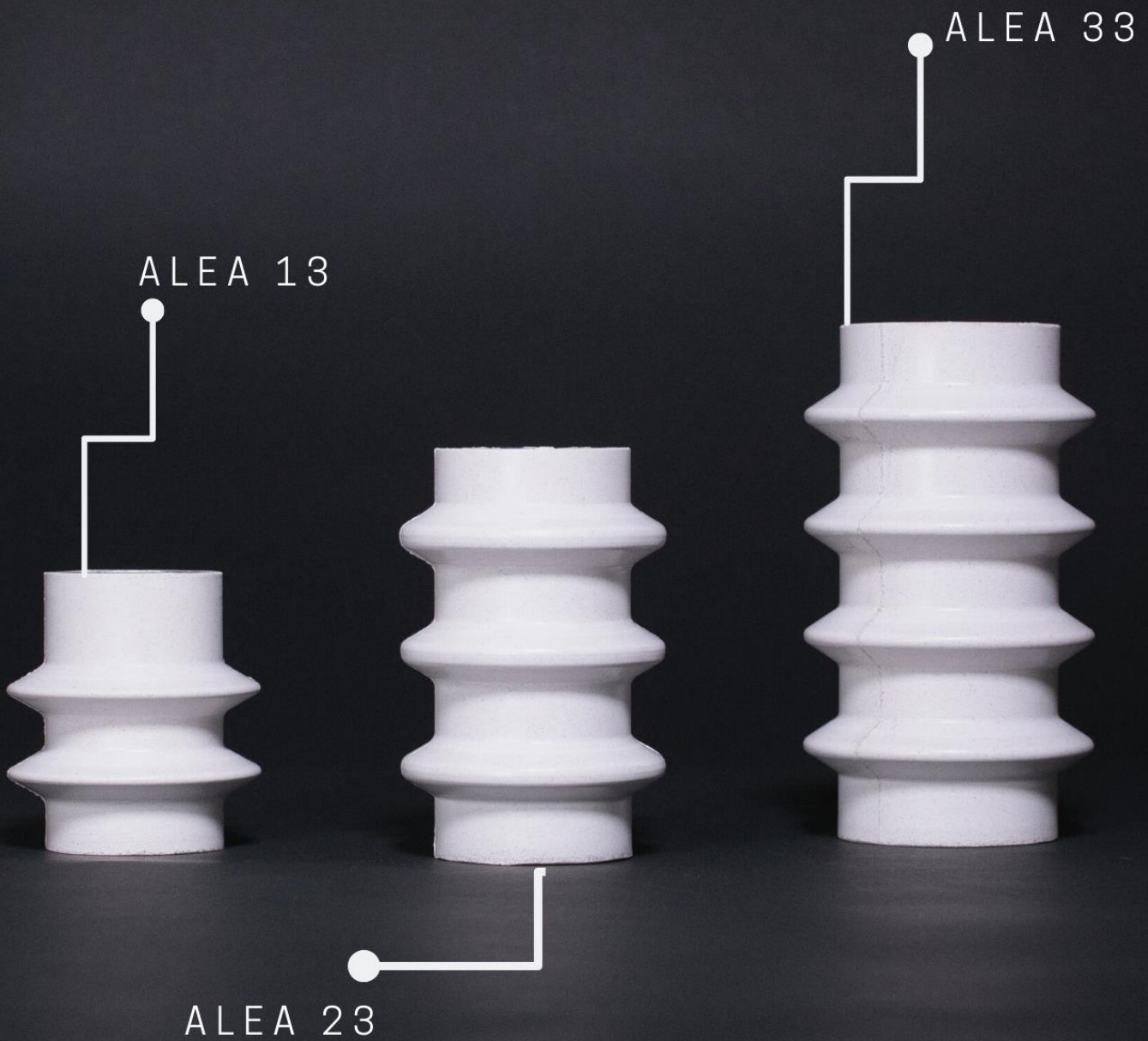
DISTRIBUTION



mappes



DISTRIBUTION





alea 13

CLASS 1

DISTRIBUTION

The externally gapped line arrester EGLA, ALEA by MAPPEC, protects lines used for distribution 13.8 kV for nominal current 10 kA in Mexico.

The ALEA consists of a core of zinc oxide varistors covered in a polymeric concrete housing, offering better mechanical resistance and permeability against water and dust.

Reduces the probability of flashovers caused by lightning direct or induced on the lines, it also prevents of backflash from the structure to the phases.

The ALEA is not permanently connected to the line.

The versatility of the ALEA allows its installation with any type of structure since it is installed in parallel to the insulation, adapting to the needs of our customers.



alea 13 C1
DISTRIBUTION

CHARACTERISTICS	UNIT	VALUE		
Rated Height	mm	90		
Rated Diameter	mm	90		
Minimum Creepage Distance	mm	115		
Rated Voltage	kV	13.8		
Rated current	kA	10		
Impulse Residual Voltage to: (0.5) Inom, Inom, (2) Inom	kV	17	19	21
Switching impulse residual voltage: 125 A and 500 A	kV	12.7	14	
Class According to IEC	N/A	1		
Short-Circuit Discharge Capacity	kA sym	20		
Critical Flashover Voltage	kV	90 (máx)		
Flashover 60 Hz Dry	kV	35 (mín)		
Flashover 60 Hz Wet	kV	25 (mín)		
Reference Voltage at 1 mA	kV	≥6		
Lightning Discharge Capability	C	≥0.4		
Partial Discharges	pC	≤10		
Cantilever Strength	kN	≥3.43		
Net Weight (With Accessories)	kg	1.5		
Support	N/A	Type "Z"		
HOUSING PROPERTIES				
Housing	N/A	Polymer Concrete		
Tracking (Inclined Plane)	kV	6		
Tracking (Ontario Wheel)	h @ kV	1993-3715 @ 19		
UV Resistance	h	6000		
Dielectric strength	kV/mm	≥23		
Hardness	Rockwell	73		

Fulfills IEC 60099-8 and applicable IEC 60099-4 tests



alea 13

LIVE LINE - CLASS 1

DISTRIBUTION

The externally gapped line arrester EGLA, ALEA in the version live line by MAPPEC, for installation with energized line.

Protects lines used for distribution 13.8 kV for nominal current 10 kA in Mexico.

The ALEA consists of a core of zinc oxide varistors covered in a polymeric concrete housing, offering better mechanical resistance and permeability against water and dust.

The ALEA LL is oriented to ease of installation, allowing it to be done from ground level using a pole. Thanks to the special connector, a quick and safe installation is achieved.

Reduces the probability of flashovers caused by lightning direct or induced on the lines, it also prevents of backflash from the structure to the phases.





alea 13

LIVE LINE - CLASS 1

CHARACTERISTICS	UNIT	VALUE		
Rated Height	mm	90		
Rated Diameter	mm	90		
Minimum Creepage Distance	mm	115		
Rated Voltage	kV	13.8		
Rated current	kA	10		
Impulse Residual Voltage to: (0.5) Inom, Inom, (2) Inom	kV	17	19	21
Switching impulse residual voltage: 125 A and 250 A	kV	12.7	14	
Class According to IEC	N/A	1		
Short-Circuit Discharge Capacity	kA sym	20		
Critical Flashover Voltage	kV	90 (máx)		
Flashover 60 Hz Dry	kV	35 (mín)		
Flashover 60 Hz Wet	kV	25 (mín)		
Reference Voltage at 1 mA	kV	≥6		
Lightning Discharge Capability	C	≥0.4		
Partial Discharges	pC	≤10		
Cantilever Strength	kN	≥3.43		
Net Weight (With Accessories)	kg	1.2		
Support	N/A	Live line type		
HOUSING PROPERTIES				
Housing	N/A	Polymer Concrete		
Tracking (Inclined Plane)	kV	6		
Tracking (Ontario Wheel)	h @ kV	1993-3715 @ 19		
UV Resistance	h	6000		
Dielectric strength	kV/mm	≥23		
Hardness	Rockwell	73		

Fulfills IEC 60099-8 and applicable IEC 60099-4 tests



aiea 23

CLASS 1

DISTRIBUTION

The externally gapped line arrester EGLA, ALEA by MAPPEC, protects lines used for distribution 23 kV for nominal current 10 kA in Mexico.

The ALEA consists of a core of zinc oxide varistors covered in a polymeric concrete housing, offering better mechanical resistance and permeability against water and dust.

Reduces the probability of flashovers caused by lightning direct or induced on the lines, it also prevents of backflash from the structure to the phases.

The ALEA is not permanently connected to the line.

The versatility of the ALEA allows its installation with any type of structure since it is installed in parallel to the insulation, adapting to the needs of our customers.

alea 23

CLASS 1

CHARACTERISTICS	UNIT	VALUE		
Rated Height	mm	133		
Rated Diameter	mm	90		
Minimum Creepage Distance	mm	175		
Rated Voltage	kV	23		
Rated current	kA	10		
Impulse Residual Voltage to: (0.5) Inom, Inom, (2) Inom	kV	34	38	42
Switching impulse residual voltage: 125 A and 500 A	kV	25.4	28	
Class According to IEC	N/A	1		
Short-Circuit Discharge Capacity	kA sym	20		
Critical Flashover Voltage	kV	125 (máx)		
Flashover 60 Hz Dry	kV	50 (mín)		
Flashover 60 Hz Wet	kV	40 (mín)		
Reference Voltage at 1 mA	kV	≥12		
Lightning Discharge Capability	C	≥0.4		
Partial Discharges	pC	≤10		
Cantilever Strength	kN	≥2.94		
Net Weight (With Accessories)	kg	2.2		
Support	N/A	Type "Z"		
HOUSING PROPERTIES				
Housing	N/A	Concreto Polimérico		
Tracking (Inclined Plane)	kV	6		
Tracking (Ontario Wheel)	h @ kV	1993-3715 @ 19		
UV Resistance	h	6000		
Dielectric strength	kV/mm	≥23		
Hardness	Rockwell	73		

Fulfills IEC 60099-8 and applicable IEC 60099-4 tests



alea 23

LIVE LINE - CLASS 1

DISTRIBUTION

The externally gapped line arrester EGLA, ALEA in the version live line by MAPPEC, for installation with energized line.

Protects lines used for distribution 23 kV for nominal current 10 kA in Mexico.

The ALEA consists of a core of zinc oxide varistors covered in a polymeric concrete housing, offering better mechanical resistance and permeability against water and dust.

The ALEA LL is oriented to ease of installation, allowing it to be done from ground level using a pole. Thanks to the special connector, a quick and safe installation is achieved.

Reduces the probability of flashovers caused by lightning direct or induced on the lines, it also prevents of backflash from the structure to the phases.

The ALEA is not permanently connected to the line.

The versatility of the ALEA allows its installation with any type of structure since it is installed in parallel to the insulation, adapting to the needs of our customers.



alea 23

LIVE LINE - CLASS 1

CHARACTERISTICS	UNIT	VALUE		
Rated Height	mm	133		
Rated Diameter	mm	90		
Minimum Creepage Distance	mm	175		
Rated Voltage	kV	23		
Rated current	kA	10		
Impulse Residual Voltage to: (0.5) Inom, Inom, (2) Inom	kV	34	38	42
Switching impulse residual voltage: 125 A and 250 A	kV	25.4		28
Class According to IEC	N/A	1		
Short-Circuit Discharge Capacity	kA sym	20		
Critical Flashover Voltage	kV	125 (máx)		
Flashover 60 Hz Dry	kV	50 (mín)		
Flashover 60 Hz Wet	kV	40 (mín)		
Reference Voltage at 1 mA	kV	≥12		
Lightning Discharge Capability	C	≥0.4		
Partial Discharges	pC	≤10		
Cantilever Strength	kN	≥2.94		
Net Weight (With Accessories)	kg	1.9		
Support	N/A	Live line type		
HOUSING PROPERTIES				
Housing	N/A	Polymer Concrete		
Tracking (Inclined Plane)	kV	6		
Tracking (Ontario Wheel)	h @ kV	1993-3715 @ 19		
UV Resistance	h	6000		
Dielectric strength	kV/mm	≥23		
Hardness	Rockwell	73		

Fulfills IEC 60099-8 and applicable IEC 60099-4 tests



alea 33

CLASS 1

DISTRIBUTION

The externally gapped line arrester EGLA, ALEA by MAPPEC, protects lines used for distribution 34.5 kV for nominal current 10 kA in Mexico.

The ALEA consists of a core of zinc oxide varistors covered in a polymeric concrete housing, offering better mechanical resistance and permeability against water and dust.

Reduces the probability of flashovers caused by lightning direct or induced on the lines, it also prevents of backflash from the structure to the phases.

The ALEA is not permanently connected to the line.

The versatility of the ALEA allows its installation with any type of structure since it is installed in parallel to the insulation, adapting to the needs of our customers.



alea 33

CLASS 1

CHARACTERISTICS	UNIT	VALUE		
Rated Height	mm	175		
Rated Diameter	mm	101		
Minimum Creepage Distance	mm	215		
Rated Voltage	kV	34.5		
Rated current	kA	10		
Impulse Residual Voltage to: (0.5) Inom, Inom, (2) Inom	kV	51	57	63
Switching impulse residual voltage: 125 A and 500 A	kV	38.1		42
Class According to IEC	N/A	1		
Short-Circuit Discharge Capacity	kA sym	20		
Critical Flashover Voltage	kV	150 (máx)		
Flashover 60 Hz Dry	kV	55 (mín)		
Flashover 60 Hz Wet	kV	45 (mín)		
Reference Voltage at 1 mA	kV	≥18		
Lightning Discharge Capability	C	≥0.4		
Partial Discharges	pC	≤10		
Cantilever Strength	kN	≥1.96		
Net Weight (With Accessories)	kg	3.3		
Support	N/A	Type "Z"		
HOUSING PROPERTIES				
Housing	N/A	Polymer Concrete		
Tracking (Inclined Plane)	kV	6		
Tracking (Ontario Wheel)	h @ kV	1993-3715 @ 19		
UV Resistance	h	6000		
Dielectric strength	kV/mm	≥23		
Hardness	Rockwell	73		

Fulfills IEC 60099-8 and applicable IEC 60099-4 tests.



alea 33

LIVE LINE - CLASS 1

DISTRIBUTION

The externally gapped line arrester EGLA, ALEA in the version live line by MAPPEC, for installation with energized line.

Protects lines used for distribution 34.5 kV for nominal current 10 kA in Mexico.

The ALEA consists of a core of zinc oxide varistors covered in a polymeric concrete housing, offering better mechanical resistance and permeability against water and dust.

The ALEA LL is oriented to ease of installation, allowing it to be done from ground level using a pole. Thanks to the special connector, a quick and safe installation is achieved.

Reduces the probability of flashovers caused by lightning direct or induced on the lines, it also prevents of backflash from the structure to the phases.

The ALEA is not permanently connected to the line.

The versatility of the ALEA allows its installation with any type of structure since it is installed in parallel to the insulation, adapting to the needs of our customers.

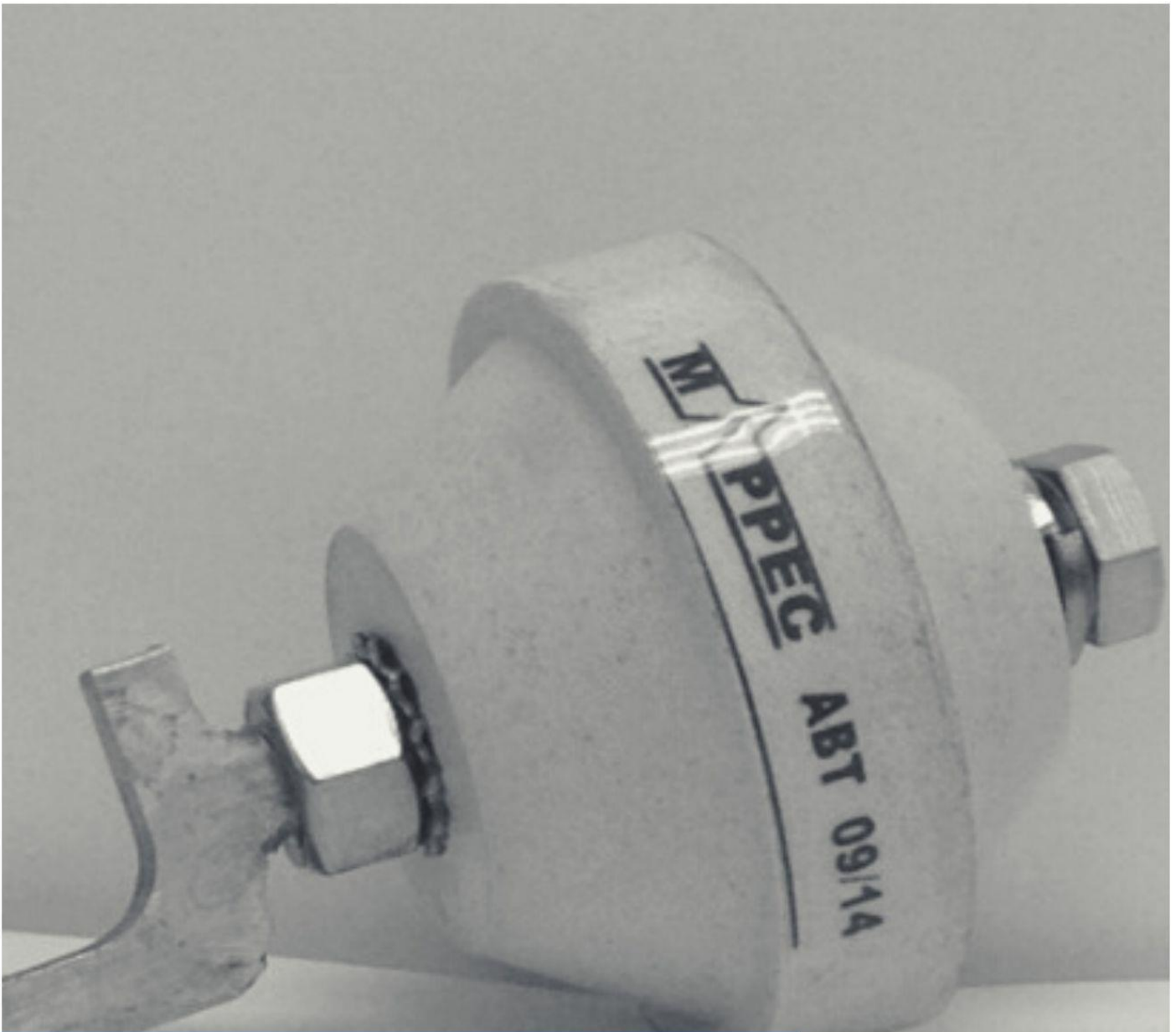


alea 33

LIVE LINE - CLASS 1

CHARACTERISTICS	UNIT	VALUE		
Rated Height	mm	175		
Rated Diameter	mm	101		
Minimum Creepage Distance	mm	215		
Rated Voltage	kV	34.5		
Rated current	kA	10		
Impulse Residual Voltage to: (0.5) Inom, Inom, (2) Inom	kV	51	57	63
Switching impulse residual voltage: 125 A and 250 A	kV	38.1	42	
Class According to IEC	N/A	1		
Short-Circuit Discharge Capacity	kA sym	20		
Critical Flashover Voltage	kV	150 (máx)		
Flashover 60 Hz Dry	kV	55 (mín)		
Flashover 60 Hz Wet	kV	45 (mín)		
Reference Voltage at 1 mA	kV	≥18		
Lightning Discharge Capability	C	≥0.4		
Partial Discharges	pC	≤10		
Cantilever Strength	kN	≥1.96		
Net Weight (With Accessories)	kg	3		
Support	N/A	Live line type		
HOUSING PROPERTIES				
Housing	N/A	Polymer Concrete		
Tracking (Inclined Plane)	kV	6		
Tracking (Ontario Wheel)	h @ kV	1993-3715 @ 19		
UV Resistance	h	6000		
Dielectric strength	kV/mm	≥23		
Hardness	Rockwell	73		

Fulfills IEC 60099-8 and applicable IEC 60099-4 tests



abt
LOW VOLTAGE
ARRESTER



LOW VOLTAGE ARRESTER

DISTRIBUTION

MAPPEC has developed a Low Voltage Arrester (ABT), for the protection of equipment and transformers.

In the case of transformers, it is connected directly to the secondary nozzle, using the support fork and its connection to ground is by means of stainless-steel screws.

The ABT consists of a core of zinc oxide varistors covered in a polymeric concrete housing, offering better mechanical resistance and permeability against water and dust.

The ABT have completed the protection of the transformer against overvoltage's induced by the low voltage side.

It is a versatile and easy to install product that offers an excellent 100% Mexican technical and economical option.



LOW VOLTAGE ARRESTER

CHARACTERISTICS	UNIT	VALUE
Rated Height	mm	45
Rated Diameter	mm	61
Minimum Creepage Distance	mm	55
Rated Voltage	V	120/240
Rated current	kA	10
Maximum Voltage	V	175/350
Reference Voltage	V	≥205
Maximum Wavefront Voltage (Disruptive Discharge)	kV	2.3
Maximum Breakdown Voltage at 60 Hz	kV	1.2
Maximum discharge voltage at 10 kA	kV	2.25
HOUSING PROPERTIES		
Housing	N/A	Polymer Concrete
Tracking (Inclined Plane)	kV	6
Tracking (Ontario Wheel)	h @ kV	1993-3715 @ 19
UV Resistance	h	6000
Dielectric strength	kV/mm	≥23
Hardness	Rockwell	73



alea

SUBTRANSMISSION



mappac



alea 69

HS CLASS 1, 2 Y 3

SUBTRANSMISSION

The externally gapped line arrester EGLA, ALEA by MAPPEC, protects lines used for sub-transmission 69 kV for rated current 10 kA in Mexico.

The ALEA consists of a core of zinc oxide varistors enclosed in a housing of silicone rubber, offering better cantilever strength and permeability against water and dust.

Reduces the probability of flashovers caused by lightning direct or induced on the lines, it also prevents of backflash from the structure to the phases.

The ALEA is not permanently connected to the line.

The versatility of the ALEA allows its installation in any type of structure (special towers), adapting to the needs of our customers.





 HS CLASS 1				
CHARACTERISTICS	UNIT	VALUE		
Rated Height	mm	372		
Rated Diameter	mm	147		
Minimum Creepage Distance	mm	1390		
Rated Voltage	kV	69		
Rated current	kA	10		
Impulse Residual Voltage to: (0.5) Inom, Inom, (2) Inom	kV	102	114	126
Switching impulse residual voltage: 125 A and 500 A	kV	76.2	84	
Class According to IEC	N/A	1		
Short-Circuit Discharge Capacity	kA sym	20		
Critical Flashover Voltage	kV	300 (máx)		
Flashover 60 Hz Dry	kV	160 (mín)		
Flashover 60 Hz Wet	kV	130 (mín)		
Reference Voltage at 1 mA	kV	≥36		
Lightning Discharge Capability	C	≥0.4		
Partial Discharges	pC	≤10		
Cantilever Strength	kN	≥2		
Net Weight (With Accessories)	kg	18		
Support	N/A	Suspension		
HOUSING PROPERTIES				
Housing	N/A	Silicone Rubber		
UV Resistance	h	>1000		
Tracking (Inclined Plane) for 6 h	kV	6		
Dielectric Strength	kV/mm	≥23		
Hardness	Shore A	60-70		

Fulfills IEC 60099-8 and applicable IEC 60099-4 tests



alea 69
HS CLASS 2

CHARACTERISTICS	UNIT	VALUE		
Rated Height	mm	450		
Rated Diameter	mm	160		
Minimum Creepage Distance	mm	1270		
Rated Voltage	kV	69		
Rated current	kA	10		
Impulse Residual Voltage to: (0.5) Inom, Inom, (2) Inom	kV	120	134.4	148
Switching impulse residual voltage: 125 A and 500 A	kV	85.4	93.8	
Class According to IEC	N/A	2		
Short-Circuit Discharge Capacity	kA sym	31.5		
Critical Flashover Voltage	kV	300 (máx)		
Flashover 60 Hz Dry	kV	160 (mín)		
Flashover 60 Hz Wet	kV	130 (mín)		
Reference Voltage at 1 mA	kV	≥42		
Lightning Discharge Capability	C	≥1.0		
Partial Discharges	pC	≤10		
Cantilever Strength	kN	≥3.2		
Net Weight (With Accessories)	kg	26.3		
Support	N/A	Suspension		
HOUSING PROPERTIES				
Housing	N/A	Silicone Rubber		
UV Resistance	h	>1000		
Tracking (Inclined Plane) for 6 h	kV	6		
Dielectric Strength	kV/mm	≥23		
Hardness	Shore A	60-70		

Fulfills IEC 60099-8 and applicable IEC 60099-4 tests



				
CHARACTERISTICS	UNIT	VALUE		
Rated Height	mm	519		
Rated Diameter	mm	215		
Minimum Creepage Distance	mm	1660		
Rated Voltage	kV	69		
Rated current	kA	10		
Impulse Residual Voltage to: (0.5) Inom, Inom, (2) Inom	kV	132	148.8	165
Switching impulse residual voltage: 250 A and 1,000 A	kV	77.6	83.2	
Class According to IEC	N/A	3		
Short-Circuit Discharge Capacity	kA sym	50		
Critical Flashover Voltage	kV	300 (máx)		
Flashover 60 Hz Dry	kV	160 (mín)		
Flashover 60 Hz Wet	kV	130 (mín)		
Reference Voltage at 2 mA	kV	≥48		
Lightning Discharge Capability	C	≥1.6		
Partial Discharges	pC	≤10		
Cantilever Strength	kN	≥5.8		
Net Weight (With Accessories)	kg	38.5		
Support	N/A	Suspension		
HOUSING PROPERTIES				
Housing	N/A	Silicone Rubber		
UV Resistance	h	>1000		
Tracking (Inclined Plane) for 6 h	kV	6		
Dielectric Strength	kV/mm	≥23		
Hardness	Shore A	60-70		

Fulfills IEC 60099-8 and applicable IEC 60099-4 tests



aiea 85

HS CLASS 1, 2 Y 3

SUBTRANSMISSION

The externally gapped line arrester EGLA, ALEA by MAPPEC, protects lines used for sub-transmission 85 kV for rated current 10 kA in Mexico.

The ALEA consists of a core of zinc oxide varistors enclosed in a housing of silicone rubber, offering better cantilever strength and permeability against water and dust.

Reduces the probability of flashovers caused by lightning direct or induced on the lines, it also prevents of backflash from the structure to the phases.

The ALEA is not permanently connected to the line.

The versatility of the ALEA allows its installation in any type of structure (special towers), adapting to the needs of our customers.





alea 85

HS CLASS 1

CHARACTERISTICS	UNIT	VALUE		
Rated Height	mm	555		
Rated Diameter	mm	147		
Minimum Creepage Distance	mm	2085		
Rated Voltage	kV	85		
Rated current	kA	10		
Impulse Residual Voltage to: (0.5) Inom, Inom, (2) Inom	kV	153	171	189
Switching impulse residual voltage: 125 A and 500 A	kV	114.3	126	
Class According to IEC	N/A	1		
Short-Circuit Discharge Capacity	kA sym	20		
Critical Flashover Voltage	kV	440 (máx)		
Flashover 60 Hz Dry	kV	210 (mín)		
Flashover 60 Hz Wet	kV	180 (mín)		
Reference Voltage at 1 mA	kV	≥54		
Lightning Discharge Capability	C	≥0.4		
Partial Discharges	pC	≤10		
Cantilever Strength	kN	≥1.1		
Net Weight (With Accessories)	kg	20.8		
Support	N/A	Suspension		
HOUSING PROPERTIES				
Housing	N/A	Silicone Rubber		
UV Resistance	h	>1000		
Tracking (Inclined Plane) for 6 h	kV	6		
Dielectric Strength	kV/mm	≥23		
Hardness	Shore A	60-70		

Fulfills IEC 60099-8 and applicable IEC 60099-4 tests



alea 85
HS CLASS 2

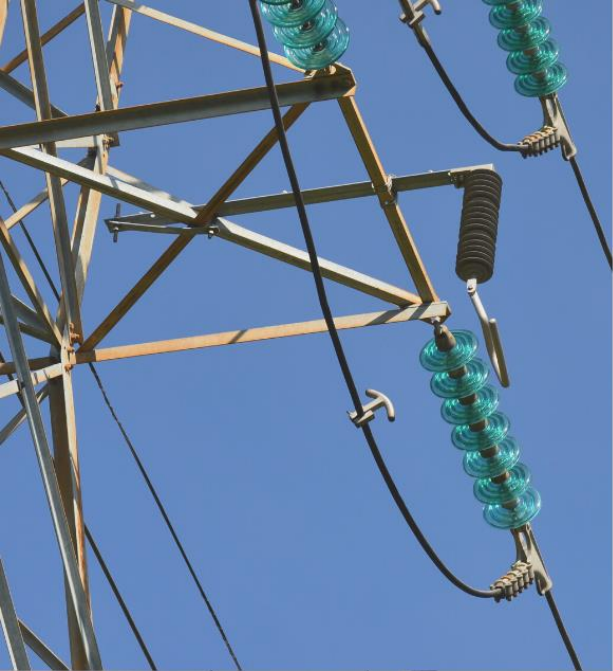
CHARACTERISTICS	UNIT	VALUE		
Rated Height	mm	670		
Rated Diameter	mm	160		
Minimum Creepage Distance	mm	1905		
Rated Voltage	kV	85		
Rated current	kA	10		
Impulse Residual Voltage to: (0.5) Inom, Inom, (2) Inom	kV	180	201.6	222
Switching impulse residual voltage: 125 A and 500 A	kV	128.1	140.7	
Class According to IEC	N/A	2		
Short-Circuit Discharge Capacity	kA sym	31.5		
Critical Flashover Voltage	kV	440 (máx)		
Flashover 60 Hz Dry	kV	210 (mín)		
Flashover 60 Hz Wet	kV	180 (mín)		
Reference Voltage at 1 mA	kV	≥63		
Lightning Discharge Capability	C	≥1.0		
Partial Discharges	pC	≤10		
Cantilever Strength	kN	≥2.1		
Net Weight (With Accessories)	kg	32.3		
Support	N/A	Suspension		
HOUSING PROPERTIES				
Housing	N/A	Silicone Rubber		
UV Resistance	h	>1000		
Tracking (Inclined Plane) for 6 h	kV	6		
Dielectric Strength	kV/mm	≥23		
Hardness	Shore A	60-70		

Fulfills IEC 60099-8 and applicable IEC 60099-4 tests



				
CHARACTERISTICS	UNIT	VALUE		
Rated Height	mm	772		
Rated Diameter	mm	215		
Minimum Creepage Distance	mm	2490		
Rated Voltage	kV	85		
Rated current	kA	10		
Impulse Residual Voltage to: (0.5) Inom, Inom, (2) Inom	kV	199	223.2	247
Switching impulse residual voltage: 250 A and 1,000 A	kV	116.4	124.8	
Class According to IEC	N/A	3		
Short-Circuit Discharge Capacity	kA sym	50		
Critical Flashover Voltage	kV	440 (máx)		
Flashover 60 Hz Dry	kV	210 (mín)		
Flashover 60 Hz Wet	kV	180 (mín)		
Reference Voltage at 2 mA	kV	≥72		
Lightning Discharge Capability	C	≥1.6		
Partial Discharges	pC	≤10		
Cantilever Strength	kN	≥4.1		
Net Weight (With Accessories)	kg	49.8		
Support	N/A	Suspension		
HOUSING PROPERTIES				
Housing	N/A	Silicone Rubber		
UV Resistance	h	>1000		
Tracking (Inclined Plane) for 6 h	kV	6		
Dielectric Strength	kV/mm	≥23		
Hardness	Shore A	60-70		

Fulfills IEC 60099-8 and applicable IEC 60099-4 tests



alea 115

HS CLASS 1, 2 Y 3

SUBTRANSMISSION

The externally gapped line arrester EGLA, AEA by MAPPEC, protects lines used for sub-transmission 115 kV for rated current 10 kA in Mexico.

The AEA consists of a core of zinc oxide varistors enclosed in a housing of silicone rubber, offering better cantilever strength and permeability against water and dust.

Reduces the probability of flashovers caused by lightning direct or induced on the lines, it also prevents of backflash from the structure to the phases.

The AEA is not permanently connected to the line.

The versatility of the AEA allows its installation in any type of structure (special towers), adapting to the needs of our customers.



alea 115
HS CLASS 1

CHARACTERISTICS	UNIT	VALUE		
Rated Height	mm	555		
Rated Diameter	mm	147		
Minimum Creepage Distance	mm	2085		
Rated Voltage	kV	115		
Rated current	kA	10		
Impulse Residual Voltage to: (0.5) Inom, Inom, (2) Inom	kV	153	171	189
Switching impulse residual voltage: 125 A and 500 A	kV	114.3	126	
Class According to IEC	N/A	1		
Short-Circuit Discharge Capacity	kA sym	20		
Critical Flashover Voltage	kV	515 (máx)		
Flashover 60 Hz Dry	kV	240 (mín)		
Flashover 60 Hz Wet	kV	205 (mín)		
Reference Voltage at 1 mA	kV	≥54		
Lightning Discharge Capability	C	≥0.4		
Partial Discharges	pC	≤10		
Cantilever Strength	kN	≥1.1		
Net Weight (With Accessories)	kg	20.8		
Support	N/A	Suspension		
HOUSING PROPERTIES				
Housing	N/A	Silicone Rubber		
UV Resistance	h	>1000		
Tracking (Inclined Plane) for 6 h	kV	6		
Dielectric Strength	kV/mm	≥23		
Hardness	Shore A	60-70		

Fulfills IEC 60099-8 and applicable IEC 60099-4 tests



alea 115

HS CLASS 2

CHARACTERISTICS	UNIT	VALUE		
Rated Height	mm	670		
Rated Diameter	mm	160		
Minimum Creepage Distance	mm	1905		
Rated Voltage	kV	115		
Rated current	kA	10		
Impulse Residual Voltage to: (0.5) Inom, Inom, (2) Inom	kV	180	201.6	222
Switching impulse residual voltage: 125 A and 500 A	kV	128.1	140.7	
Class According to IEC	N/A	2		
Short-Circuit Discharge Capacity	kA sym	31.5		
Critical Flashover Voltage	kV	515 (máx)		
Flashover 60 Hz Dry	kV	240 (mín)		
Flashover 60 Hz Wet	kV	205 (mín)		
Reference Voltage at 1 mA	kV	≥63		
Lightning Discharge Capability	C	≥1.0		
Partial Discharges	pC	≤10		
Cantilever Strength	kN	≥2.1		
Net Weight (With Accessories)	kg	32.3		
Support	N/A	Suspension		
HOUSING PROPERTIES				
Housing	N/A	Silicone Rubber		
UV Resistance	h	>1000		
Tracking (Inclined Plane) for 6 h	kV	6		
Dielectric Strength	kV/mm	≥23		
Hardness	Shore A	60-70		

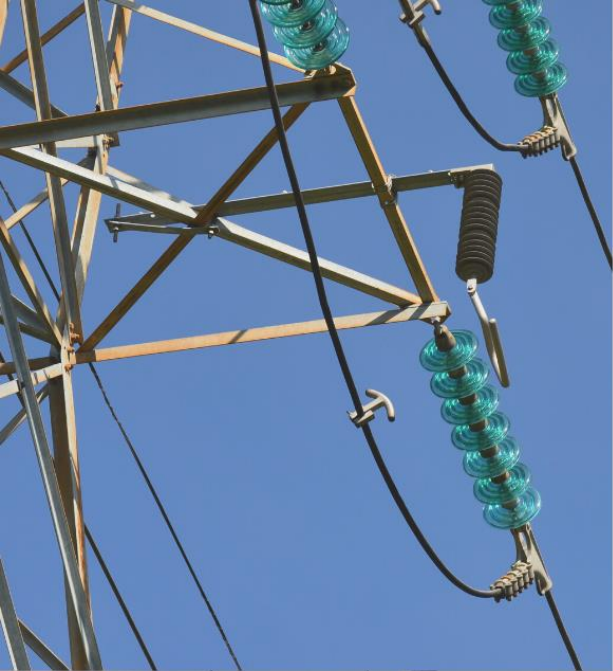
Fulfills IEC 60099-8 and applicable IEC 60099-4 tests



alea 115
HS CLASS 3

CHARACTERISTICS	UNIT	VALUE		
Rated Height	mm	772		
Rated Diameter	mm	215		
Minimum Creepage Distance	mm	2490		
Rated Voltage	kV	115		
Rated current	kA	10		
Impulse Residual Voltage to: (0.5) Inom, Inom, (2) Inom	kV	199	223.2	247
Switching impulse residual voltage: 250 A and 1,000 A	kV	116.4	124.8	
Class According to IEC	N/A	3		
Short-Circuit Discharge Capacity	kA sym	50		
Critical Flashover Voltage	kV	515 (máx)		
Flashover 60 Hz Dry	kV	240 (mín)		
Flashover 60 Hz Wet	kV	205 (mín)		
Reference Voltage at 2 mA	kV	≥72		
Lightning Discharge Capability	C	≥1.6		
Partial Discharges	pC	≤10		
Cantilever Strength	kN	≥4.1		
Net Weight (With Accessories)	kg	49.8		
Support	N/A	Suspension		
HOUSING PROPERTIES				
Housing	N/A	Silicone Rubber		
UV Resistance	h	>1000		
Tracking (Inclined Plane) for 6 h	kV	6		
Dielectric Strength	kV/mm	≥23		
Hardness	Shore A	60-70		

Fulfills IEC 60099-8 and applicable IEC 60099-4 tests



alea 138

HS CLASS 1, 2 Y 3

SUBTRANSMISSION

The externally gapped line arrester EGLA, ALEA by MAPPEC, protects lines used for sub-transmission 138 kV for rated current 10 kA in Mexico.

The ALEA consists of a core of zinc oxide varistors enclosed in a housing of silicone rubber, offering better cantilever strength and permeability against water and dust.

Reduces the probability of flashovers caused by lightning direct or induced on the lines, it also prevents of backflash from the structure to the phases.

The ALEA is not permanently connected to the line.

The versatility of the ALEA allows its installation in any type of structure (special towers), adapting to the needs of our customers.





alea 138

HS CLASS 1

CHARACTERISTICS	UNIT	VALUE		
Rated Height	mm	738		
Rated Diameter	mm	147		
Minimum Creepage Distance	mm	2780		
Rated Voltage	kV	138		
Rated current	kA	10		
Impulse Residual Voltage to: (0.5) Inom, Inom, (2) Inom	kV	204	228	252
Switching impulse residual voltage: 125 A and 500 A	kV	152.4	168	
Class According to IEC	N/A	1		
Short-Circuit Discharge Capacity	kA sym	20		
Critical Flashover Voltage	kV	618 (máx)		
Flashover 60 Hz Dry	kV	290 (mín)		
Flashover 60 Hz Wet	kV	250 (mín)		
Reference Voltage at 1 mA	kV	≥72		
Lightning Discharge Capability	C	≥0.4		
Partial Discharges	pC	≤10		
Cantilever Strength	kN	≥1		
Net Weight (With Accessories)	kg	23.8		
Support	N/A	Suspension		
HOUSING PROPERTIES				
Housing	N/A	Silicone Rubber		
UV Resistance	h	>1000		
Tracking (Inclined Plane) for 6 h	kV	6		
Dielectric Strength	kV/mm	≥23		
Hardness	Shore A	60-70		

Fulfills IEC 60099-8 and applicable IEC 60099-4 tests



alea 138
HS CLASS 2

CHARACTERISTICS	UNIT	VALUE		
Rated Height	mm	890		
Rated Diameter	mm	160		
Minimum Creepage Distance	mm	2540		
Rated Voltage	kV	138		
Rated current	kA	10		
Impulse Residual Voltage to: (0.5) Inom, Inom, (2) Inom	kV	240.8	268.8	296.8
Switching impulse residual voltage: 125 A and 500 A	kV	170.8	187.6	
Class According to IEC	N/A	2		
Short-Circuit Discharge Capacity	kA sym	31.5		
Critical Flashover Voltage	kV	618 (máx)		
Flashover 60 Hz Dry	kV	290 (mín)		
Flashover 60 Hz Wet	kV	250 (mín)		
Reference Voltage at 1 mA	kV	≥84		
Lightning Discharge Capability	C	≥1.0		
Partial Discharges	pC	≤10		
Cantilever Strength	kN	≥1.6		
Net Weight (With Accessories)	kg	38.3		
Support	N/A	Suspension		
HOUSING PROPERTIES				
Housing	N/A	Silicone Rubber		
UV Resistance	h	>1000		
Tracking (Inclined Plane) for 6 h	kV	6		
Dielectric Strength	kV/mm	≥23		
Hardness	Shore A	60-70		

Fulfills IEC 60099-8 and applicable IEC 60099-4 tests



				
CHARACTERISTICS	UNIT	VALUE		
Rated Height	mm	1025		
Rated Diameter	mm	215		
Minimum Creepage Distance	mm	2953		
Rated Voltage	kV	138		
Rated current	kA	10		
Impulse Residual Voltage to: (0.5) Inom, Inom, (2) Inom	kV	265.6	297.6	329.6
Switching impulse residual voltage: 250 A and 1,000 A	kV	155.2	166.4	
Class According to IEC	N/A	3		
Short-Circuit Discharge Capacity	kA sym	50		
Critical Flashover Voltage	kV	618 (máx)		
Flashover 60 Hz Dry	kV	290 (mín)		
Flashover 60 Hz Wet	kV	250 (mín)		
Reference Voltage at 2 mA	kV	≥96		
Lightning Discharge Capability	C	≥1.6		
Partial Discharges	pC	≤10		
Cantilever Strength	kN	≥2.9		
Net Weight (With Accessories)	kg	61		
Support	N/A	Suspension		
HOUSING PROPERTIES				
Housing	N/A	Silicone Rubber		
UV Resistance	h	>1000		
Tracking (Inclined Plane) for 6 h	kV	6		
Dielectric Strength	kV/mm	≥23		
Hardness	Shore A	60-70		

Fulfills IEC 60099-8 and applicable IEC 60099-4 tests



alea

TRANSMISSION



mappet



alea 230

HS CLASS 2

TRANSMISSION

The externally gapped line arrester EGLA, ALEA by MAPPEC, protects lines used for transmission 230 kV for rated current 10 kA in Mexico.

The ALEA consists of a core of zinc oxide varistors enclosed in a housing of silicone rubber, offering better cantilever strength and permeability against water and dust.

Reduces the probability of flashovers caused by lightning direct or induced on the lines, it also prevents of backflash from the structure to the phases.

The ALEA is not permanently connected to the line.

The versatility of the ALEA allows its installation in any type of structure (special towers), adapting to the needs of our customers.



alea 230

HS CLASS 2

CHARACTERISTICS	UNIT	VALUE		
Rated Height	mm	1425		
Rated Diameter	mm	160		
Minimum Creepage Distance	mm	3810		
Rated Voltage	kV	230		
Rated current	kA	10		
Impulse Residual Voltage to: (0.5) Inom, Inom, (2) Inom	kV	360	402	445
Switching impulse residual voltage: 125 A and 500 A	kV	256.2	281.4	
Class According to IEC	N/A	2		
Short-Circuit Discharge Capacity	kA sym	31.5		
Lightning Flashover Voltage	kV	≤1500 m s.n.m. 984 (máx)	>1500 m s.n.m. 1093 (máx)	
Switching impulse	kV	≤1500 m s.n.m. 450 (mín)	>1500 m s.n.m. 500 (mín)	
Reference Voltage at 1 mA	kV	≥126		
Lightning Discharge Capability	C	≥1.0		
Partial Discharges	pC	≤10		
Cantilever Strength	kN	≥1.1		
Net Weight (With Accessories)	kg	75.7		
Support	N/A	Suspension		
HOUSING PROPERTIES				
Housing	N/A	Silicone Rubber		
UV Resistance	h	>1000		
Tracking (Inclined Plane) for 6 h	kV	6		
Dielectric Strength	kV/mm	≥23		
Hardness	Shore A	60-70		

Fulfills IEC 60099-8 and applicable IEC 60099-4 tests



alea 230

HS CLASS 3

TRANSMISSION

The externally gapped line arrester EGLA, ALEA by MAPPEC, protects lines used for transmission 230 kV for rated current 10 kA in Mexico.

The ALEA consists of a core of zinc oxide varistors enclosed in a housing of silicone rubber, offering better cantilever strength and permeability against water and dust.

Reduces the probability of flashovers caused by lightning direct or induced on the lines, it also prevents of backflash from the structure to the phases.

The ALEA is not permanently connected to the line.

The versatility of the ALEA allows its installation in any type of structure (special towers), adapting to the needs of our customers.



alea 230

HS CLASS 3

CHARACTERISTICS	UNIT	VALUE		
Rated Height	mm	1640		
Rated Diameter	mm	215		
Minimum Creepage Distance	mm	4980		
Rated Voltage	kV	230		
Rated current	kA	10		
Impulse Residual Voltage to: (0.5) Inom, Inom, (2) Inom	kV	396	444	492
Switching impulse residual voltage: 250 A and 1,000 A	kV	232.8	249.6	
Class According to IEC	N/A	3		
Short-Circuit Discharge Capacity	kA sym	50		
Lightning Flashover Voltage	kV	≤1500 m s.n.m. 984 (máx)	>1500 m s.n.m. 1093 (máx)	
Switching impulse	kV	≤1500 m s.n.m. 450 (mín)	>1500 m s.n.m. 500 (mín)	
Reference Voltage at 2 mA	kV	≥144		
Lightning Discharge Capability	C	≥1.6		
Partial Discharges	pC	≤10		
Cantilever Strength	kN	≥2		
Net Weight (With Accessories)	kg	113.5		
Support	N/A	Suspension		
HOUSING PROPERTIES				
Housing	N/A	Silicone Rubber		
UV Resistance	h	>1000		
Tracking (Inclined Plane) for 6 h	kV	6		
Dielectric Strength	kV/mm	≥23		
Hardness	Shore A	60-70		

Fulfills IEC 60099-8 and applicable IEC 60099-4 tests



alea 400

HS CLASS 3

TRANSMISSION

The externally gapped line arrester EGLA, ALEA by MAPPEC, protects lines used for transmission 400 kV for rated current 10 kA in Mexico.

The ALEA consists of a core of zinc oxide varistors enclosed in a housing of silicone rubber, offering better cantilever strength and permeability against water and dust.

Reduces the probability of flashovers caused by lightning direct or induced on the lines, it also prevents of backflash from the structure to the phases.

The ALEA is not permanently connected to the line.

The versatility of the ALEA allows its installation in any type of structure (special towers), adapting to the needs of our customers.



alea 400

HS CLASS 3

CHARACTERISTICS	UNIT	VALUE		
Rated Height	mm	2730		
Rated Diameter	mm	215		
Minimum Creepage Distance	mm	8400		
Rated Voltage	kV	400		
Rated current	kA	10		
Impulse Residual Voltage to: (0.5) Inom, Inom, (2) Inom	kV	664	740	824
Switching impulse residual voltage: 250 A and 1,000 A	kV	388	416	
Class According to IEC	N/A	3		
Short-Circuit Discharge Capacity	kA sym	50		
Lightning Flashover Voltage	kV	≤1500 m s.n.m. 1218 (máx)	>1500 m s.n.m. 1353 (máx)	
Switching impulse	kV	≤1500 m s.n.m. 771 (mín)	>1500 m s.n.m. 857 (mín)	
Reference Voltage at 2 mA	kV	≥240		
Lightning Discharge Capability	C	≥1.6		
Partial Discharges	pC	≤10		
Cantilever Strength	kN	≥2		
Net Weight (With Accessories)	kg	174		
Support	N/A	Suspension		
HOUSING PROPERTIES				
Housing	N/A	Silicone Rubber		
UV Resistance	h	>1000		
Tracking (Inclined Plane) for 6 h	kV	6		
Dielectric Strength	kV/mm	≥23		
Hardness	Shore A	60-70		

Fulfills IEC 60099-8 and applicable IEC 60099-4 tests

LABORATORY

ROUTINE TESTS

We have our own laboratory successfully accredited to EMA (Mexican Accreditation Entity), where routine technical tests and acceptance of materials and finished products are carried out:

- Dielectric strength
- Isolation resistance
- Reference voltage
- Reference current
- Mechanical resistance
- Duty Cycle
- Partial Discharges
- Short-Circuit





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