



ELASTIMOLD[®]

Product Guide

Protection and Control

SURGE ARRESTERS



- Exceeds IEEE 386
- EPDM Molded Rubber Construction
- Submersible
- Compact to allow installation in existing cabinetry
- Ground Lead Tethered to the Jacket

Thomas & Betts



MOV SURGE ARRESTERS

Protection and Control Products

Nowadays electric power underground distribution systems demand high performance in the form of improved reliability and power quality, reduced operational and maintenance costs, and flexibility of operation. These can be accomplished by sectionalizing feeders, installing equipment with minimal maintenance/installation costs, installing protection equipment, installing automatic source transfer equipment, and/or providing ways to monitor the system and quickly locate a fault.

Thomas & Betts' Protection and Control products provide flexible solutions to all of the above challenges. With a wide arrangement of products such as arresters, canister and molded fuses, fault indicators, fused elbows, and switchgear we are able to provide the equipment that you need to fulfill the needs of underground distribution systems up to 35kV.

Thomas & Betts' Elastimold® Metal Oxide Varistor (MOV) Surge Arresters are fully shielded, fully submersible and are equipped with IEEE 386 interfaces for convenient energized connection with other 200 Amp loadbreak or dead-break components up to 35kV. Arresters are available in three styles: Elbow (ESA), Parking Stand (PSA) and Bushing (BSA). The PSA and BSA arresters permit direct connection, eliminating the need for additional accessories.

Elastimold MOV Surge Arresters provide high voltage lightning and switching surge protection of transformers, cable, equipment and other components typically located on underground power distribution systems. Proper placement, voltage selection and coordination with riser pole arresters minimizes damaging surge voltages by improving protective margins.

Typical applications include installing an arrester at the end of a radial system, or at both ends of an open point on a loop system. Additional arresters can be added at strategic locations upstream from the endpoint for optimum protection. Request Form 2068 (Surge Protection Options for Underground Distribution) and Form 2069 (Arrester Applications -- Underground Electrical Systems) for additional application and margin of protection information.

ESA Elbow Arresters are also available with a 200 Amp Deadbrak interface for mating with other Deadbreak Accessories.



FEATURE	BENEFIT / DESCRIPTION
■ IEEE 386 Interfaces	■ Convenient energized connection with other 200 Amp loadbreak or deadbreak components
■ EPDM Molded Rubber Construction	■ Fully shielded, fully submersible
■ Compact	■ Allow installation in existing cabinetry
■ Elbow (ESA), Parking Stand (PSA), and Bushing (BSA) styles available	■ Ease of application and installation
■ Direct connection on PSA and BSA	■ Eliminates the need for additional accessories
■ No. 4AWG Ground Lead Tethered to the Jacket	■ Withstands 10,000 amp for 10 cycles without fusing
	■ Controls end plug when ejected, preventing uncontrolled trajectory
	■ Maintains the housing shield ground connection after failure



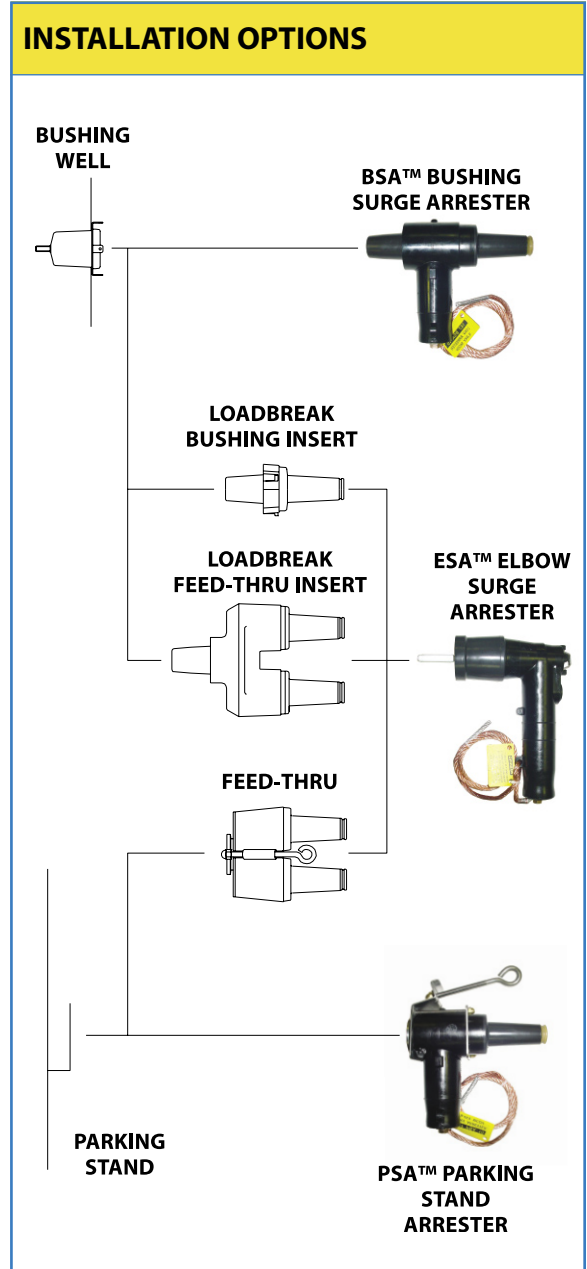
MOV SURGE ARRESTERS

RATINGS	
High Current Short Duration	All MOV Arresters withstand two discharges of 40kA crest.
Low Current Long Duration	All MOV Arresters withstand 20 surges of 75 amperes/2000 microsecond duration
Duty Cycle Test	All MOV Arresters withstand 22 operations of 5kA crest at 8 x 20 microsecond duration while energized at rated voltage for the initial 20 operations and at maximum continuous operating voltage (MCOV) for the final two operations.
Following each of the preceding tests, MOV Arresters demonstrate thermal recovery at MCOV.	

PROTECTIVE CHARACTERISTICS							
	MCOV (kVrms) Note 1	Duty Cycle Rating (kVrms)	Maximum Discharge Voltage (kV crest) 8x20 microsecond current wave				
			1.5kA	3kA	5kA	10kA	20kA
15kV CLASS	2.55	3	10.5	11.0	11.5	13.0	14.5
	5.1	6	20.5	21.5	23.0	25.5	30.0
	8.4	10	30.5	32.5	34.5	38.5	43.5
	10.2	12	40.0	42.5	45.0	50.0	56.5
	12.7	15	48.0	51.0	54.0	60.0	68.0
	15.3	18	56.5	60.0	64.0	71.0	80.5
25kV CLASS	8.4	10	30.5	32.5	34.5	38.5	43.5
	10.2	12	40.0	42.5	45.0	50.0	56.5
	12.7	15	48.0	51.0	54.0	60.0	68.0
	15.3	18	56.5	60.0	64.0	71.0	80.5
	17.0	21	65.5	69.5	74.0	82.5	93.0
35kV CLASS	19.5	24	78.5	83.5	89.0	99.0	112.0
	22.0	27	87.5	93.0	99.0	110.0	124.5
	24.4	30	95.5	101.5	108.0	120.0	136.0

NOTES:

1. MCOV = Maximum Continuous Operating Voltage





MOV SURGE ARRESTERS

ORDERING INFORMATION

To specify and order an MOV Surge Arrester:




1. Determine the appropriate Maximum Continuous Operating Voltage (MCOV) for your system voltage by using the ELASTIMOLD ARRESTER APPLICATION TABLE.
2. Specify the appropriate ELASTIMOLD part number from the SELECTION CHART.

ARRESTER APPLICATION TABLE				
	System Line-to-Line Voltage kV rms		MCOV (Max. Continuous Operating Voltage) kV rms	
	Nominal	Max.	Solidly Grounded Neutral Circuits	3-Wire Ungrounded Circuits
15kV CLASS	2.40	2.54	2.55	2.55
	4.16	4.40	2.55	5.10
	4.80	5.08	5.10	5.10
	6.90	7.26	5.10	8.40
	8.32	8.80	5.10	8.40
	12.47	13.20	8.40	15.30
	13.20	13.97	8.40	15.30
	13.80	14.50	8.40*	15.30
	13.80	14.50	10.20	15.30
25kV CLASS	6.90	7.26	5.10	8.40
	8.32	8.80	5.10	8.40
	12.47	13.20	8.40	15.30
	13.20	13.97	8.40	15.30
	13.80	14.50	8.40*	15.30
	13.80	14.50	10.20	15.30
	20.78	22.00	12.70	-
	20.78	22.00	15.30*	-
	23.00	24.34	15.30	-
	24.94	26.40	15.30	-
35kV CLASS	23.00	24.34	-	22.00
	34.50	36.51	22.00*	-
	34.50	36.51	24.40	-

* Preferred arrester MCOV for this system voltage.

SELECTION CHART NOTES

- N1. Elastimold PSA and BSA Arresters are equipped with a fully rated 200A switching and fault close loadbreak bushing.
- N2. Elastimold Arresters use high-strength silver epoxy bonded MOV blocks and shunted spring connections for the best circuit connection.
- N3. A 36 inch #4 AWG ground lead provided with each unit.
- N4. BSA installed by turning internal hex bolt (accessed through the 200 Amp Bushing Interface) with 5/16" hex wrench supplied with each unit.
- N5. For 15kV and 25kV Class DEADBREAK system Elbow Arresters, use part number 156ESA with the appropriate Duty Cycle rating.

SELECTION CHART				
Picture	Description	Voltage Class	Elastimold Part Number	MCOV kVrms
	BSA Bushing Surge Arrester (includes assembly tool)	15kV	167BSA-3	2.55
		15kV	167BSA-6	5.10
		15kV	167BSA-10	8.40
		15kV	167BSA-12	10.20
		15kV	167BSA-15	12.70
		15kV	167BSA-18	15.30
		25kV	273BSA-10	8.40
		25kV	273BSA-12	10.20
		25kV	273BSA-15	12.70
		25kV	273BSA-18	15.30
		25kV	273BSA-21	17.00
		See Notes N1, 2, 3, 4	35kV	375BSA-24
	35kV	375BSA-27	22.00	
	35kV	375BSA-30	24.40	
	ESA Elbow Surge Arrester	15kV	167ESA-3	2.55
		15kV	167ESA-6	5.10
		15kV	167ESA-10	8.40
		15kV	167ESA-12	10.20
		15kV	167ESA-15	12.70
		15kV	167ESA-18	15.30
		25kV	273ESA-10	8.40
		25kV	273ESA-12	10.20
		25kV	273ESA-15	12.70
		25kV	273ESA-18	15.30
		25kV	273ESA-21	17.00
		See Notes N2, 3, 5	35kV	375ESA-24
	35kV	375ESA-27	22.00	
	35kV	375ESA-30	24.40	
	PSA Parking Stand Arrester	15kV	167PSA-3	2.55
		15kV	167PSA-6	5.10
		15kV	167PSA-10	8.40
		15kV	167PSA-12	10.20
		15kV	167PSA-15	12.70
		15kV	167PSA-18	15.30
		25kV	273PSA-10	8.40
		25kV	273PSA-12	10.20
		25kV	273PSA-15	12.70
		25kV	273PSA-18	15.30
		25kV	273PSA-21	17.00
		See Notes N1, 2, 3	35kV	375PSA-24
	35kV	375PSA-27	22.00	
	35kV	375PSA-30	24.40	

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