

UHS: UltraSIL polymer-housed VariSTAR IEC distribution class DH surge arrester



General

Eaton's Cooper Power™ series UltraSIL polymer-housed VariSTAR UHS distribution class DH surge arresters for systems up to 36 kV meet or exceed the requirements of IEC 60099-4.

Table 1. UHS arrester ratings and characteristics

Arrester characteristic	Ratings
Voltage ratings: U_r (kV)	3–36
Continuous operating voltages: U_c (kV)	2.55–29
Arrester IEC 60099-4 classification	DH
Nominal discharge current: I_n (kA)	10
Repetitive charge transfer rating: Q_{rs} (C)	0.5
Thermal charge transfer rating: Q_m (C)	1.1
High current impulses (peak current 4/10 μ s kA)	100
Rated short-circuit current: I_s (kA)	20
System frequency (Hz)	50/60
Ambient temperature ($^{\circ}$ C)	–40 to +40

Features and construction

The patented construction method of Eaton's UHS arresters begins with MOVs that must pass a series of physical and electrical tests, designed to ensure that only disks meeting strict quality standards are used.

The MOV disks are combined with aluminum end electrodes and are encapsulated by a high-strength insulating composite wrap on our automated assembly line. The composite wrap is cured onto the MOVs to form a solid disk module, which is interference-fit and bonded to the industry-leading track-resistant UltraSIL silicone rubber housing.

The MOV disk module's unique manufacturing process allows it to act as a secondary barrier against moisture ingress. The UltraSIL polymeric housing acts as the primary moisture seal and has undergone a wide range of design tests to achieve the optimum shed configuration.



Powering Business Worldwide

Features and detailed description

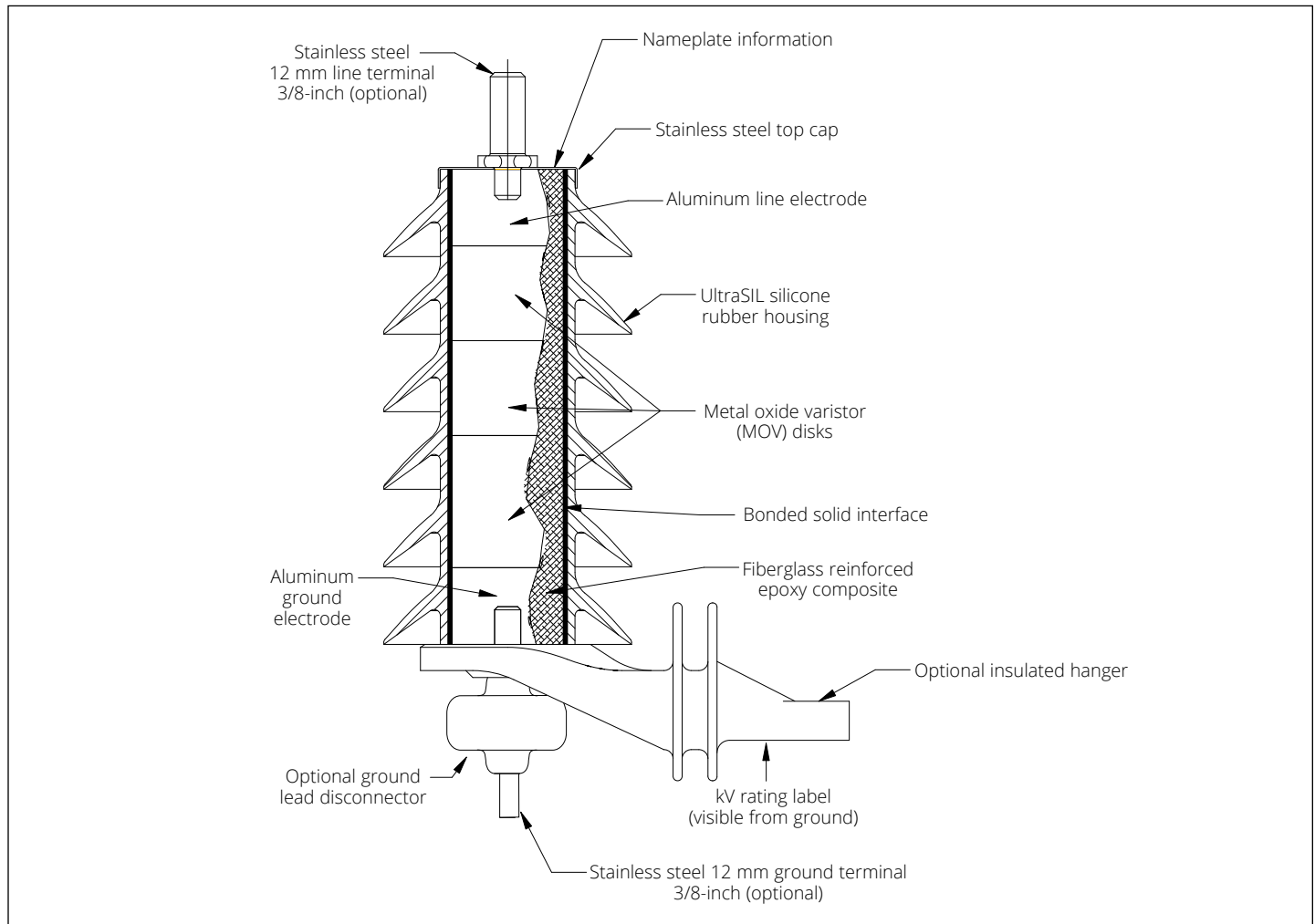


Figure 1. Cutaway illustration of a UHS UltraSIL polymer-housed VariSTAR surge arrester

The UltraSIL housing material, internal components, and hardware work as a system to withstand years of exposure to environmental extremes.

The UltraSIL silicone rubber housing also provides:

- Inherent water-repellent material
- Resistance to UV degradation and surface tracking
- Chemical inertness
- Temperature stability
- Resistance to biological growth
- Low external power losses under contaminated conditions
- Nonflammable housing material that will not support combustion

A ground lead disconnect is available for use on systems having 10 A or more of available fault current. If an end-of-life event were to occur, the disconnect will separate, preventing a permanent line-to-ground short across the arrester. A disconnect that has operated also provides a visual indication of an arrester that had an end-of-life event and requires replacement. **Figure 2** shows the disconnect operating characteristics.

Line and ground terminal wildlife guards are available to provide additional protection from wildlife-related outages caused by birds or other animals inadvertently bridging the voltage potential across the arrester. See **Figure 11–Figure 13** on **page 12** for additional details.

Operation

The UHS arrester is a gapless MOV surge arrester. During steady-state conditions, line-to-ground voltage is continuously across the arrester terminals. When overvoltages occur, the surge arrester immediately limits the overvoltage to the required protective level by conducting only the necessary level of surge current to earth. Upon passage of the overvoltage condition, the surge arrester returns to its initial condition once again, conducting only minimal leakage current.

Design testing

The components and the assembled arresters meet the relevant IEC 60099-4 requirements. Additional reference documents are listed on **page 3**.

Quality assurance tests

An extensive and automated production test program ensures a quality product. Each MOV and fully assembled arrester undergo a series of electrical tests. Additional quality validation is achieved by subjecting varistor samples from each production batch to destructive testing.

Listed are the varistor tests performed in accordance with IEC 60099-4:

- Physical inspection
- Discharge voltage
- Reference voltage
- Power loss
- Batch high current impulse
- Batch thermal stability
- Batch aging

Each fully assembled UltraSIL arrester must pass the following routine tests per IEC 60099-4:

- Physical inspection
- Reference voltage
- Power loss
- Partial discharge

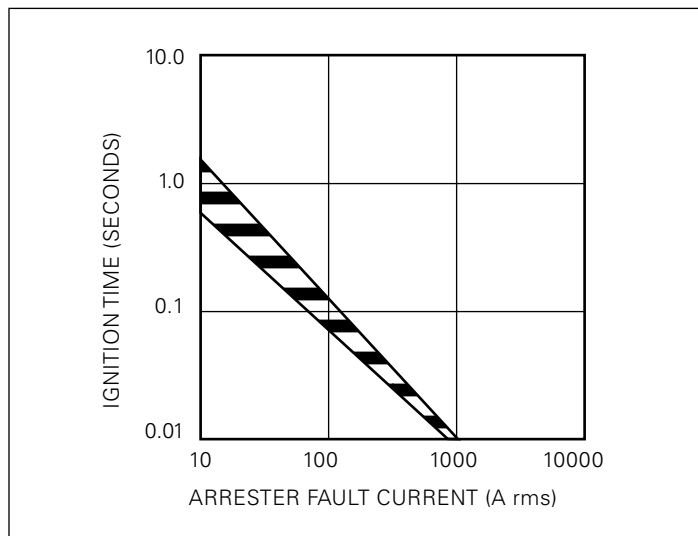


Figure 2. Disconnecter operating characteristics

General application recommendations

Table 2 provides a general guide for determining the proper arrester rating (U_r) for a given system voltage and grounding configuration.

Eaton's application engineers are available to help make specific system application recommendations.

The following information is normally required:

1. Maximum system operating voltage
2. System grounding conditions
3. Available fault current
4. Maximum line-to-ground voltage and overvoltage duration during fault conditions

Additional details on arrester selection and application recommendations can be found in IEC 60099-5.

Table 2. Commonly applied voltage ratings

System voltage phase-to-phase (kV, rms)		Arrester rating— U_r (kV, rms)		
Nominal	Maximum	Four-wire star multi- grounded neutral	Three-wire star solidly grounded neutral at source	Delta, ungrounded, and resonant impedance grounded star
3.3	3.7	3	6	6
6.6	7.3	6	9	9
10.0	11.5	9	12	12–15
11.0	12.0	9–10	12	12–15
16.4	18.0	15	—	18–21
22.0	24.0	18–21	24	24–27
33.0	36.3	27–30	36	36–36

Performance and protective characteristics

The temporary overvoltage (TOV) capability of the UHS arrester with and without prior duty is shown in **Figure 3**. The curves indicate the arrester's ability to withstand abnormal system power frequency (sinusoidal) overvoltages for various durations.

Table 3 displays the arrester rating (U_r), continuous operating voltage (U_c), and protective characteristics. **Table 4** lists the creepage distance and insulation withstand voltages for the standard housing designs, as specified by digits 6 and 7 in the catalog configurator.

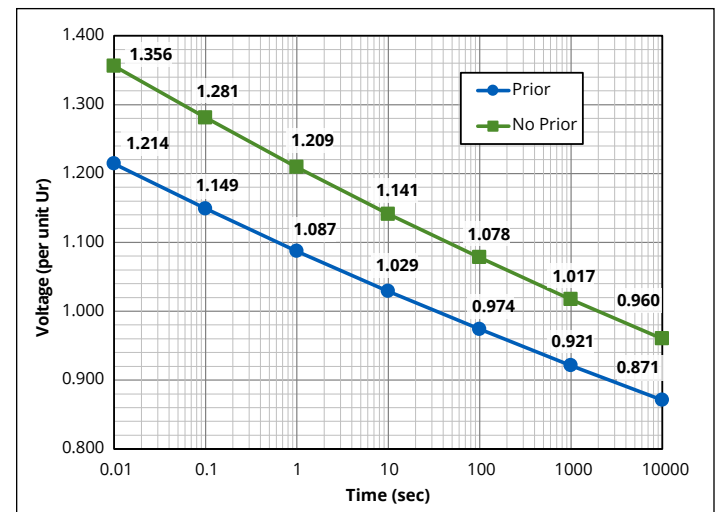


Figure 3. UHS temporary overvoltage capability

Additional information

- PA235006EN—Wildlife protection system product aid
- MN235005EN—UltraSIL polymer-housed distribution-class IEC MOV surge arrester installation instructions
- CT235006EN—UHS IEC class Distribution DH surge arrester certified test report
- CT235019EN—UHS IEC class Distribution DH surge arrester certified test report addendum

Table 3. UHS protective characteristics, $I_n = 10$ kA, Class DH IEC 60099-4

Arrester rating U_r (kV, rms)	Arrester COV U_r (kV, rms)	Steep current residual voltage (kV, peak)	Maximum residual voltage (kV crest) 8/20 μ s current wave						30/60 switching surge		TOV with prior duty	
			1.5 kA	3 kA	5 kA	10 kA	20 kA	40 kA	125 A	500 A	1 sec	10 sec
3	2.55	10.8	8.2	8.7	9.1	9.9	10.9	12.3	7.1	7.6	3.26	3.09
6	5.1	21.5	16.3	17.4	18.2	19.8	21.9	24.7	14.1	15.1	6.52	6.17
9	7.65	32.4	24.6	26.1	27.3	29.8	33.0	37.1	21.3	22.7	9.78	9.26
10	8.4	34.4	26.0	27.7	29.0	31.6	34.9	39.4	22.6	24.1	10.9	10.3
12	10.2	43.2	32.7	34.8	36.4	39.7	43.9	49.5	28.3	30.3	13.0	12.3
15	12.7	52.2	39.6	42.1	44.0	48.0	53.1	59.8	34.3	36.6	16.3	15.4
18	15.3	64.8	49.1	52.3	54.7	59.6	65.9	74.2	42.6	45.5	19.6	18.5
21	17	68.8	52.1	55.4	58.0	63.2	69.9	78.7	45.1	48.2	22.8	21.6
24	19.5	79.5	60.2	64.1	67.0	73.1	80.8	91.1	52.2	55.8	26.1	24.7
27	22	92.4	70.0	74.5	77.9	84.9	93.9	106	60.6	64.8	29.3	27.8
30	24.4	100.5	76.1	81.0	84.7	92.4	102	115	66.0	70.5	32.6	30.9
33	27	114.2	86.5	92.1	96.3	105	116	131	75.0	80.1	35.9	34.0
36	29	120.8	91.5	97.3	102	111	123	138	79.3	84.7	39.1	37.0

Insulation withstand characteristics

Table 4. Housing insulation withstand voltages

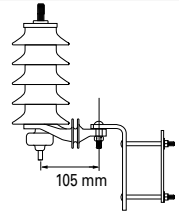
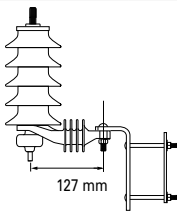
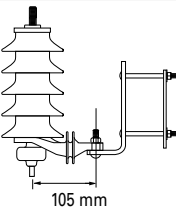
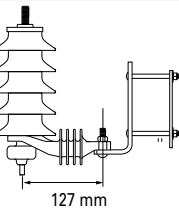

Arrester mounting configuration																				
			1.2/50 μ s impulse (kV crest)	1 min. dry (kV rms)	1 min. wet (kV rms)	1.2/50 μ s impulse (kV crest)	1 min. dry (kV rms)	1 min. wet (kV rms)	1.2/50 μ s impulse (kV crest)	1 min. dry (kV rms)	1 min. wet (kV rms)	1.2/50 μ s impulse (kV crest)	1 min. dry (kV rms)	1 min. wet (kV rms)	1.2/50 μ s impulse (kV crest)	1 min. dry (kV rms)	1 min. wet (kV rms)			
Arrester housing designation (digits 6 & 7)	Creepage distance (mm)	Strike (mm)	03	183	79	78	47	23	92	50	36	70	44	22	85	53	29	70	42	23
04	256	106	91	56	34	105	55	38	79	52	33	99	56	37	82	51	33			
05	330	133	104	64	43	117	63	51	89	55	42	109	60	49	90	62	45			
06	404	159	117	78	55	126	86	57	93	61	48	119	80	58	97	72	55			
07	477	186	129	87	66	137	96	68	98	62	51	122	81	60	107	81	66			
08	551	213	140	96	77	148	106	79	104	65	55	126	82	65	118	89	78			
09	625	239	—	—	—	159	116	90	—	—	—	130	83	70	129	98	89			
10	698	266	—	—	—	171	126	100	—	—	—	136	86	75	140	106	99			
11	772	293	—	—	—	183	135	111	—	—	—	142	90	80	152	114	109			
12	846	320	—	—	—	195	144	121	—	—	—	149	94	86	164	122	119			
13	919	346	—	—	—	207	153	131	—	—	—	158	99	92	177	130	128			
14	993	373	—	—	—	220	161	140	—	—	—	167	105	98	190	138	137			
15	1067	400	—	—	—	233	170	150	—	—	—	177	112	105	204	146	146			
16	1140	426	—	—	—	—	—	—	—	—	—	—	—	—	218	154	154			
17	1214	453	—	—	—	—	—	—	—	—	—	—	—	—	233	161	162			
18	1288	480	—	—	—	—	—	—	—	—	—	—	—	—	248	169	169			
19	1361	506	—	—	—	—	—	—	—	—	—	—	—	—	264	178	176			
20	1435	533	—	—	—	—	—	—	—	—	—	—	—	—	280	184	183			
21	1509	560	—	—	—	—	—	—	—	—	—	—	—	—	296	191	189			

Table 5. Insulation withstand characteristics of optional insulated mounting bracket

Insulated mounting bracket	Bracket mounting length center-to-center (mm)	Creepage distance (mm)	Strike (mm)	Power frequency voltage withstand (60 sec, wet, kV)	1.2/50 μ s impulse (kV crest)
Standard for $U_r = 3-10$ kV	105	150	71	36	70
Standard for $U_r = 12-36$ kV	127	226	99	48	80

Dimensions and clearances

Outline drawings for common options are shown. Dimensions (shown in mm) for these arrangements are listed in **Table 6**.

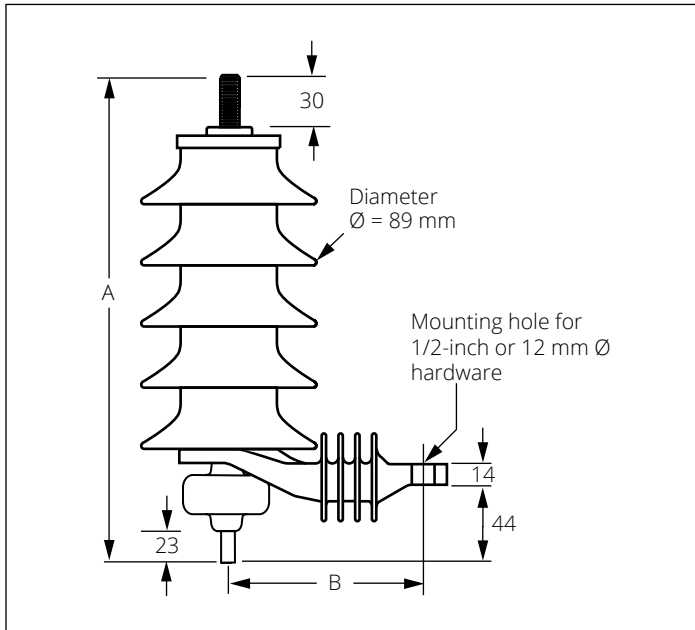


Figure 4. UHS arrester with optional insulated mounting bracket and disconnector

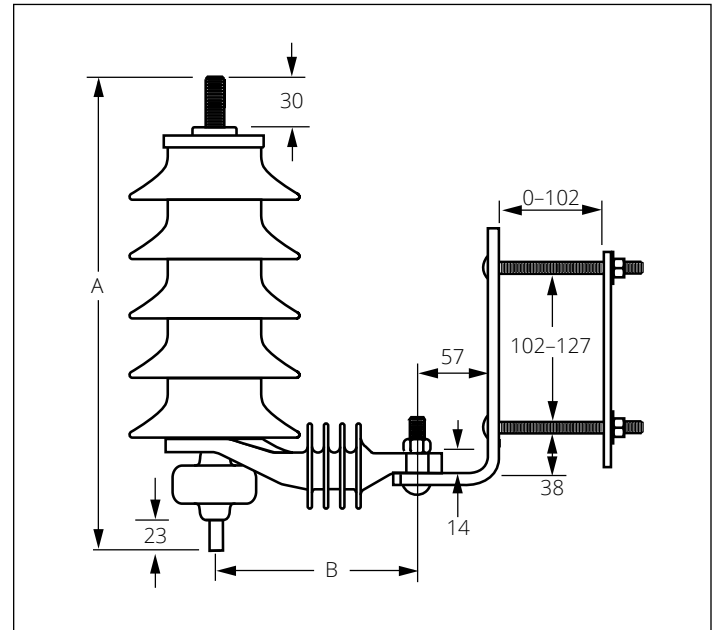


Figure 6. UHS arrester with insulated mounting bracket, NEMA cross-arm hanger, and disconnector

Note: See **Figure 8** for additional NEMA cross-arm hanger dimensions.

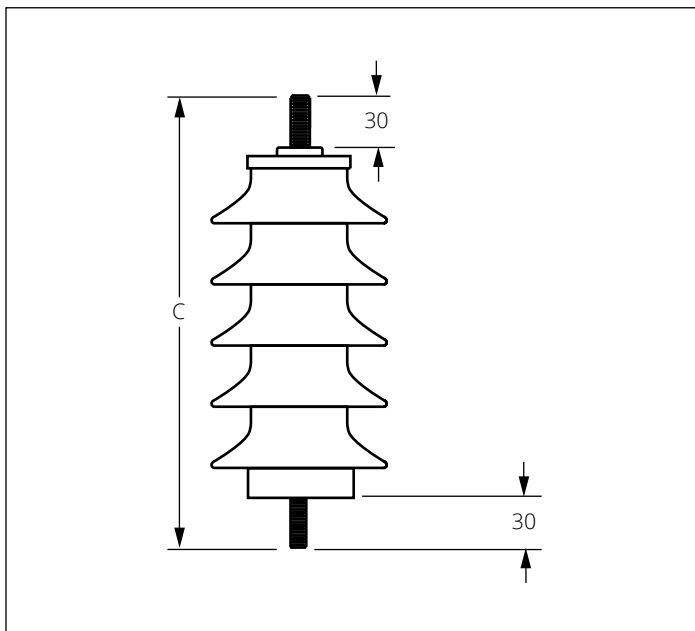


Figure 5. UHS arrester for base or cable riser mounting

Note: Arrester may be installed horizontally or vertically with either end at line potential.

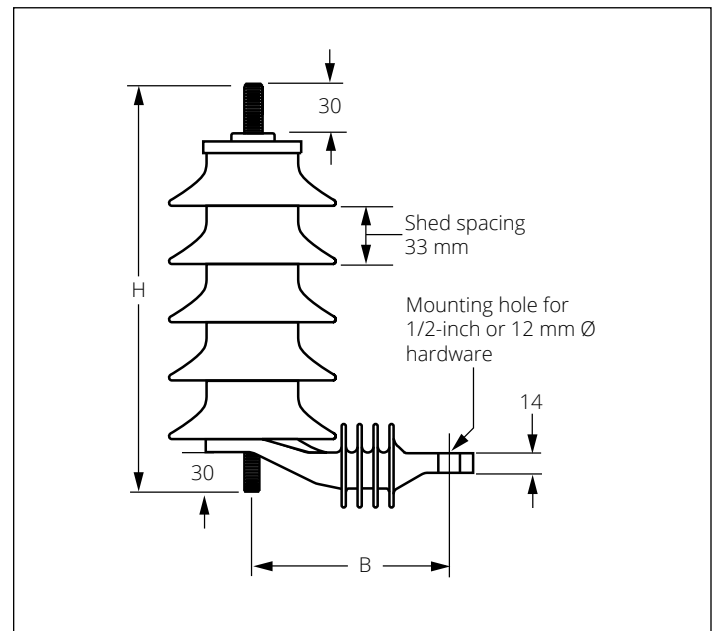


Figure 7. UHS arrester with optional insulated mounting bracket

Table 6. UHS dimensional data

Arrester rating U (kV, rms)	Housing designation (digits 6 and 7 Table 9)	Dimensions—Figure 4–Figure 7 (mm)			
		A	B	C	H
3–10	03	162	105	146	140
	04	190	105	174	168
	05	218	105	202	196
	06	246	105	230	224
	07	272	105	255	249
	08	300	105	283	277
12–36	06	246	127	230	224
	07	272	127	255	249
	08	300	127	283	277
	09	325	127	308	302
	10	353	127	336	330
	11	381	127	364	358
	12	406	127	390	384
	13	434	127	418	412
	14	462	127	446	440
	15	488	127	471	465
	16	—	—	499	—
	17	—	—	527	—
	18	—	—	555	—
	19	—	—	583	—
	20	—	—	611	—
	21	—	—	639	—

Table 7. UHS minimum recommended clearances

Arrester rating U (kV, rms)	I _n = 10 kA	
	Phase-to-earth	Phase-to-phase
3	76	108
6	102	140
9	133	178
10	133	178
12	152	197
15	171	222
18	235	286
21	235	286
24	273	337
27	273	337
30	273	337
33	324	413
36	324	413

Note: All clearances are measured between center lines of arresters or from center line to earth.

Table 8. Catalog numbers for standard UHS arrester configurations

Arrester rating U (kV, rms)	With isolator and insulated hanger (Figure 4)	With isolator, insulated hanger, and NEMA cross-arm bracket (Figure 6)	With insulated hanger without isolator (Figure 7)
3	UHS0303AFDV1AA1	UHS0303AFDV1BA1	UHS0303AFAV1AA1
6	UHS0604AFDV1AA1	UHS0604AFDV1BA1	UHS0604AFAV1AA1
9	UHS0905AFDV1AA1	UHS0905AFDV1BA1	UHS0905AFAV1AA1
10	UHS1005AFDV1AA1	UHS1005AFDV1BA1	UHS1005AFAV1AA1
12	UHS1206AFDV1AA1	UHS1206AFDV1BA1	UHS1206AFAV1AA1
15	UHS1507AFDV1AA1	UHS1507AFDV1BA1	UHS1507AFAV1AA1
18	UHS1808AFDV1AA1	UHS1808AFDV1BA1	UHS1808AFAV1AA1
21	UHS2109AFDV1AA1	UHS2109AFDV1BA1	UHS2109AFAV1AA1
24	UHS2410AFDV1AA1	UHS2410AFDV1BA1	UHS2410AFAV1AA1
27	UHS2711AFDV1AA1	UHS2711AFDV1BA1	UHS2711AFAV1AA1
30	UHS3012AFDV1AA1	UHS3012AFDV1BA1	UHS3012AFAV1AA1
33	UHS3313AFDV1AA1	UHS3313AFDV1BA1	UHS3313AFAV1AA1
36	UHS3614AFDV1AA1	UHS3614AFDV1BA1	UHS3614AFAV1AA1

Note: All catalog numbers listed above include a universal wildlife protector.

Table 9. UltraQUIK™ catalog numbering system for UltraSIL polymer-housed VariSTAR surge arresters

1 U	2 H	3 S	4	5	6	7	8	9	10	11	12	13	14	15
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Catalog number digits

6 & 7 = Housing options per arrester rating—select from table below.

***** = Standard housing **O** = Housing options

1 = UltraSIL polymer-housed VariSTAR surge arrester: **U**

2 = Arrester class: **H** = $I_n = 10$ kA, Class DH

3 = Arrester type: **S** = VariSTAR

4 & 5 = Arrester rating U_r (U_c):

03 = 3 kV (2.55 kV)

15 = 15 kV (12.7 kV)

27 = 27 kV (22.0 kV)

06 = 6 kV (5.1 kV)

18 = 18 kV (15.3 kV)

30 = 30 kV (24.4 kV)

09 = 9 kV (7.65 kV)

21 = 21 kV (17.0 kV)

33 = 33 kV (27.0 kV)

10 = 10 kV (8.4 kV)

24 = 24 kV (19.5 kV)

36 = 36 kV (29.0 kV)

12 = 12 kV (10.2 kV)

Digits 6 and 7	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21
Creepage distance (mm)	183	256	330	404	477	551	625	698	772	846	919	993	1067	1140	1214	1288	1361	1435	1509
Arrester rating (kV rms)																			
3	*	O																	
6		*	O	O															
9			*	O	O	O													
10			*	O	O	O													
12				*	O	O	O	O											
15					*	O	O	O	O	O									
18						*	O	O	O	O	O	O							
21							*	O	O	O	O	O							
24								*	O	O	O	O	O	O					
27									*	O	O	O	O	O	O	O			
30										*	O	O	O	O	O	O	O	O	
33											*	O	O	O	O	O	O	O	O
36												*	O	O	O	O	O	O	O

Table 9. UltraQUIK catalog numbering system for UltraSIL polymer-housed VariSTAR surge arresters (continued)

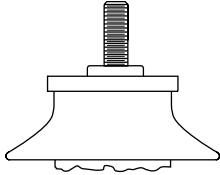
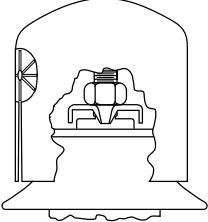
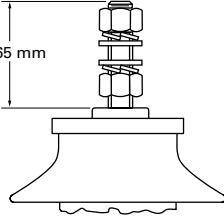
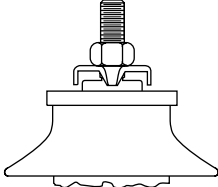
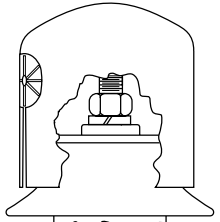
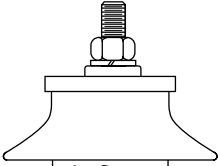
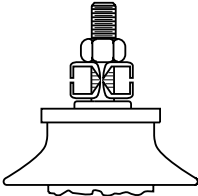
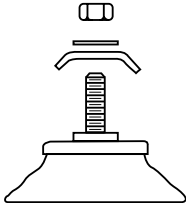
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
U	H	S												

8 = Line stud and lead options:

- 12 mm line terminal options—all threaded studs are 12 mm x 30 mm long (except options L and M), stainless steel
 - A** = without line lead
 - C** = with 300 mm long, 5 mm diameter insulated lead wire having one ring terminal
 - D** = with 300 mm long, 5 mm diameter insulated lead wire having two ring terminals
 - L** = with 45 mm long stud, without insulated lead wire (will not allow use of universal wildlife protector)
 - F** = with 450 mm long, 5 mm diameter insulated lead wire having one ring terminal
 - G** = with 450 mm long, 5 mm diameter insulated lead wire having two ring terminals
 - M** = with 65 mm long stud, without insulated lead wire (will not allow use of universal wildlife protector)
 - J** = with 750 mm long, 5 mm diameter insulated lead wire having one ring terminal
 - K** = with 750 mm long, 5 mm diameter insulated lead wire having two ring terminals
- 3/8 inch line terminal options—all threaded studs are 3/8 inch x 1-3/16 inch long, stainless steel
 - 0** = without line lead
 - 2** = with 12 inches #6 AWG insulated lead wire having one ring terminal
 - 3** = with 12 inches #6 AWG insulated lead wire having two ring terminals
 - 5** = with 18 inches #6 AWG insulated lead wire having one ring terminal
 - 6** = with 18 inches #6 AWG insulated lead wire having two ring terminals
 - 8** = with 30 inches #6 AWG insulated lead wire having one ring terminal
 - 9** = with 30 inches #6 AWG insulated lead wire having two ring terminals

9 = Line terminal accessories

All line terminal accessory hardware is stainless steel (12 mm or 3/8 inches Ø, as required for digit 8).

 <p>C = No hardware</p>	 <p>F = Nut, wire clamp, and universal wildlife protector</p>	 <p>L = 2 each: nuts, flat washers, and lock washers (requires “L” or “M” in digit 8)</p>	 <p>R = Nut and wire clamp</p>
 <p>S = Nut, lock washer, and universal wildlife protector (also for leads with ring terminals, see digit 8)</p>	 <p>T = Nut, lock washer (also for leads with ring terminals, see digit 8)</p>	 <p>U = Nut and 2 wire clamps</p>	 <p>V = Wire clamp, nut, and flat washer</p>

- Notes:**
- Wire clamps F, R, and U will accommodate #10 solid to 2/0 AWG or to 4 mm solid diameter wire. Wire clamp V will accommodate 6 mm solid or up to 14 mm diameter stranded conductor.
 - The universal wildlife protector may only be used with 30 mm or 1-3/16 inch length stud.

Table 9. UltraQUIK catalog numbering system for UltraSIL polymer-housed VariSTAR surge arresters (continued)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
U	H	S												

10 = Ground terminal options

- 12 mm ground terminal options

With ground lead disconnecter and stainless steel stud length of:

D = 12 mm Ø x 25 mm
(requires "1" in digit 12)

Without ground lead disconnecter, stainless steel stud length of:

A = 12 mm Ø x 30 mm
B = 12 mm Ø x 45 mm
C = 12 mm Ø x 65 mm

- 3/8 inch ground terminal options

With ground lead disconnecter and stainless steel stud length of:

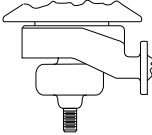
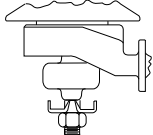
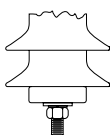
1 = 3/8 inch Ø x 1 inch
(requires "1" in digit 12)

Without ground lead disconnecter, stainless steel stud length of:


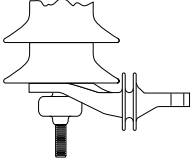
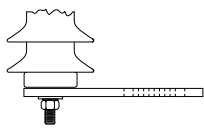
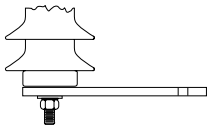
0 = 3/8 inch Ø x 1-3/16 inch

11 = Ground terminal hardware

All ground terminal accessory hardware is stainless steel (12 mm or 3/8 inch Ø, as required for digit 10)

 <p>B = No hardware (shown with optional disconnecter and insulated mounting bracket)</p>	 <p>V = Wire clamp and nut (shown with optional disconnecter and insulated mounting bracket)</p>	 <p>W = Washer, lock washer, and nut</p>
--	---	--

12 = Bracket configurations

 <p>0 = Base mounted arrester</p>	 <p>1 = Insulated mounting bracket (required with optional disconnecter). Only available with housing code (digits 6 and 7) 15 or less.</p>	 <p>2 = Conductive mounting bracket for 3/8 inch hardware (requires "0" in digit 10 and "W" in digit 11) See Figure 9 for dimensional information.</p>	 <p>3 = Conductive mounting bracket for 12 mm hardware (requires "A", "B", or "C" in digit 10 and "W" in digit 11) See Figure 10 for dimensional information.</p>
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13 = Mounting options

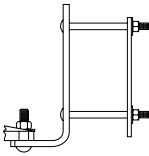
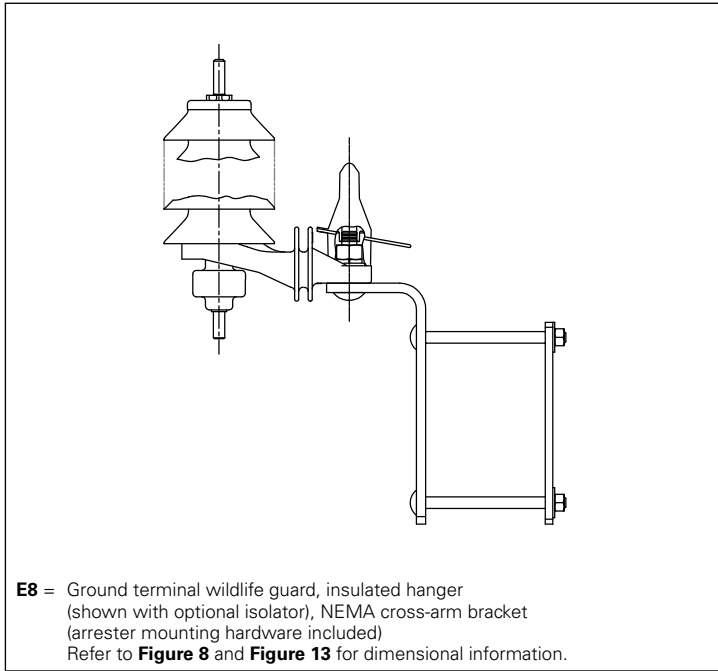
<p>A = Without a mounting bracket</p>	 <p>B = NEMA cross-arm hanger (mounting hardware included) (requires "1", "2", or "3" in digit 12) See Figure 8 for dimensional information.</p>
--	--

Table 9. UltraQUIK catalog numbering system for UltraSIL polymer-housed VariSTAR surge arresters (continued)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
U	H	S												

12 & 13 = Double-digit mounting options with ground terminal wildlife guard



14 = Nameplate information, see Figure 14

Nameplate information is per IEC 60099-4. Auxiliary nameplates are available in the following languages:

- A** = English
- B** = Español – Mexico
- C** = Español – Americas
- D** = Português – Americas
- E** = Español – Europa
- F** = Português – Europa
- G** = Polski
- H** = Français
- I** = Norsk
- J** = Suomeksi
- K** = Greek
- L** = Italiano
- M** = Russian

15 = Packaging

- 1** = Individual carton. Each arrester with accessories is shipped in an individual cardboard carton. Individual cartons are packed within a heavy-duty quadwall carton having a skid bottom and suitable for double stacking within an ocean shipping container.
- 2** = Individual carton. Each arrester is shipped in an individual cardboard carton. Individual cartons are stacked on a pallet and shrink wrapped, suitable for shipment within NAFTA. Quantities per pallet may be adjusted to meet shipping requirements.

Accessories for the UltraSIL polymer-housed VariSTAR surge arrester

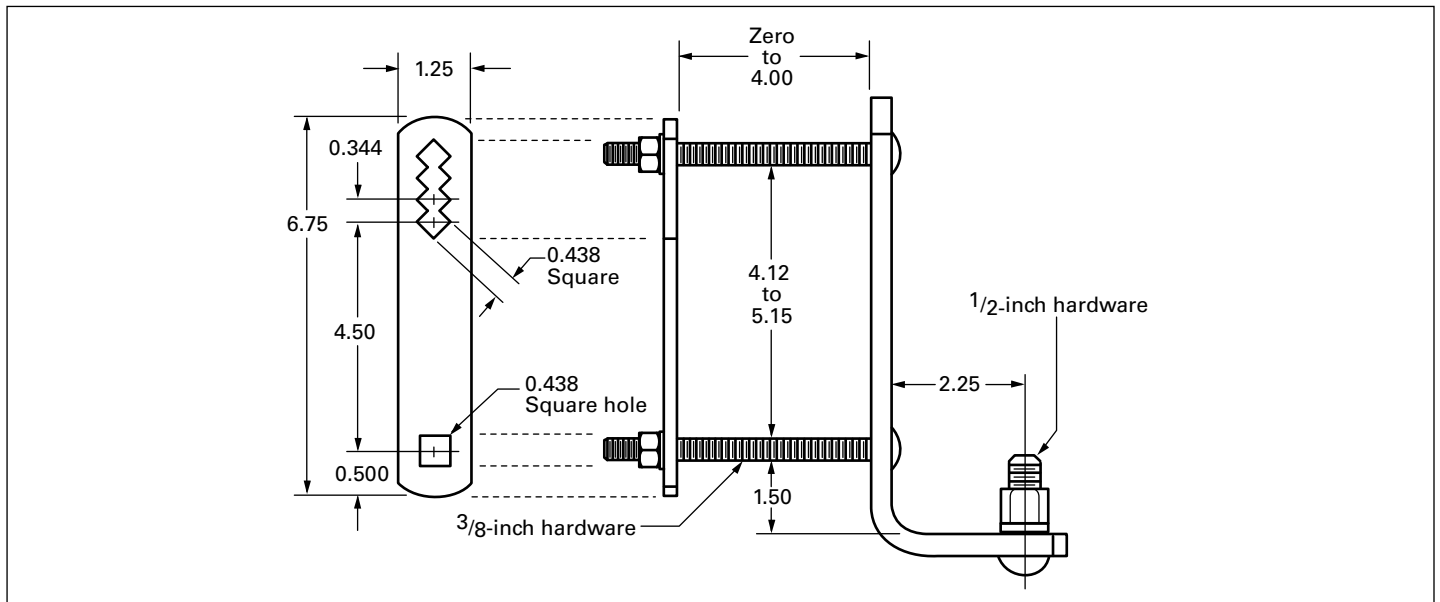


Figure 8. NEMA cross-arm hanger can be specified with a "B" in digit 13

Note: Dimensions in inches per NEMA requirements.

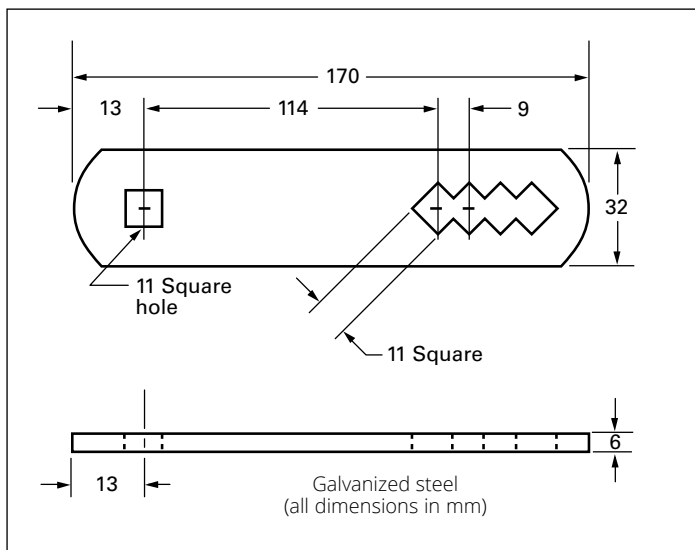


Figure 9. Conductive base mounting for use with 3/8 inch hardware (dimensions in mm)

Note: Can be specified with a "2" in digit 12 (requires "0", "A", "B", or "C" in digit 10, "W" in digit 11).

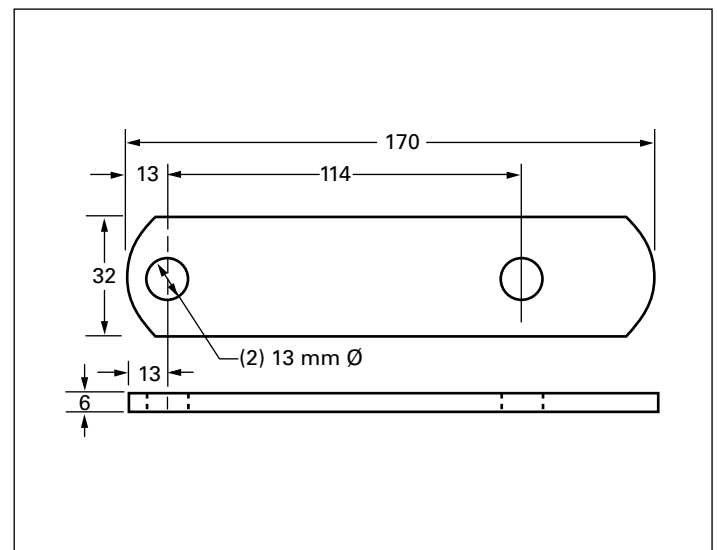


Figure 10. Conductive base mounting for use with 12 mm hardware (dimensions in mm)

Note: Can be specified with a "3" in digit 12 (requires "0", "A", "B", or "C" in digit 10, "W" in digit 11).

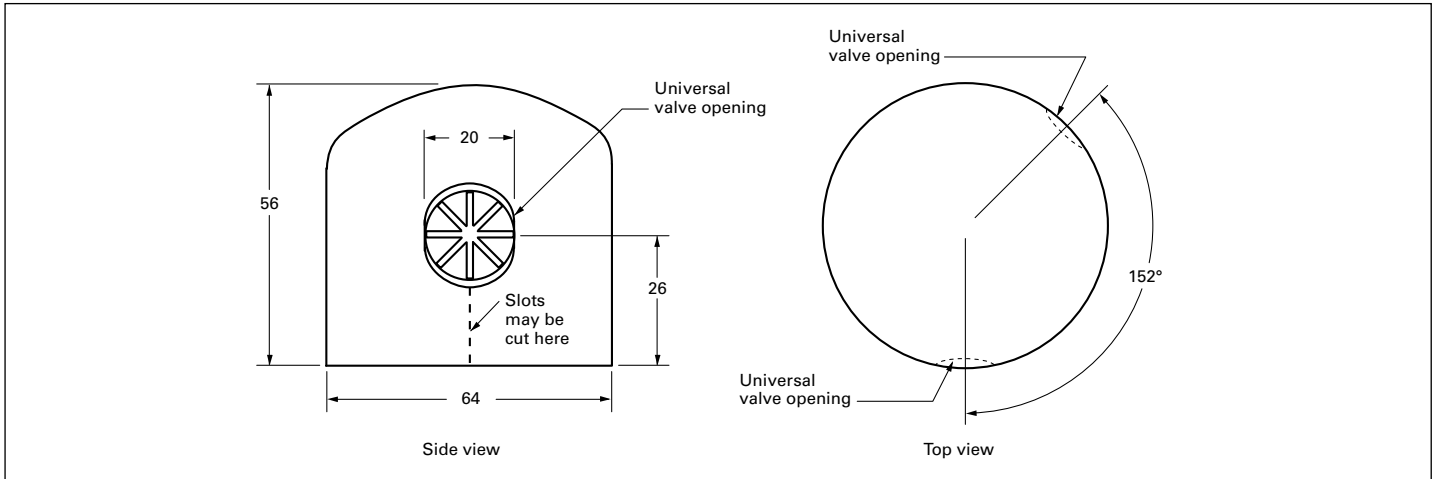


Figure 11. Universal wildlife protector for line terminal (dimensions in mm)

The optional universal wildlife protector has two self-adjusting “valve” style openings that vary from 0 to 19 mm (0.75 inches) in diameter, thus allowing for a large variety of conductor/insulation sizes while providing optimum wildlife protection. When installed, the universal wildlife protector adds 5 mm to arrester height above the line terminal stud. Can be ordered separately using catalog number **AV346X1C**.

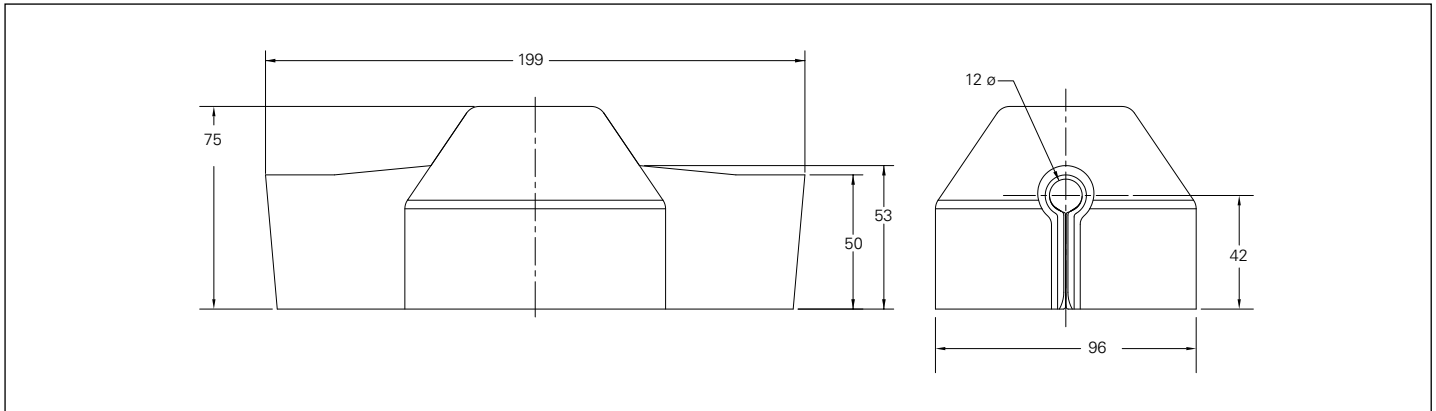


Figure 12. Line terminal wildlife guard (dimensions in mm)

The optional line terminal wildlife guard has two “wing” style openings that increase distance to live components and allow for conductors 0 to 12 mm in diameter. Can be ordered separately using catalog number **AV698X1C**.

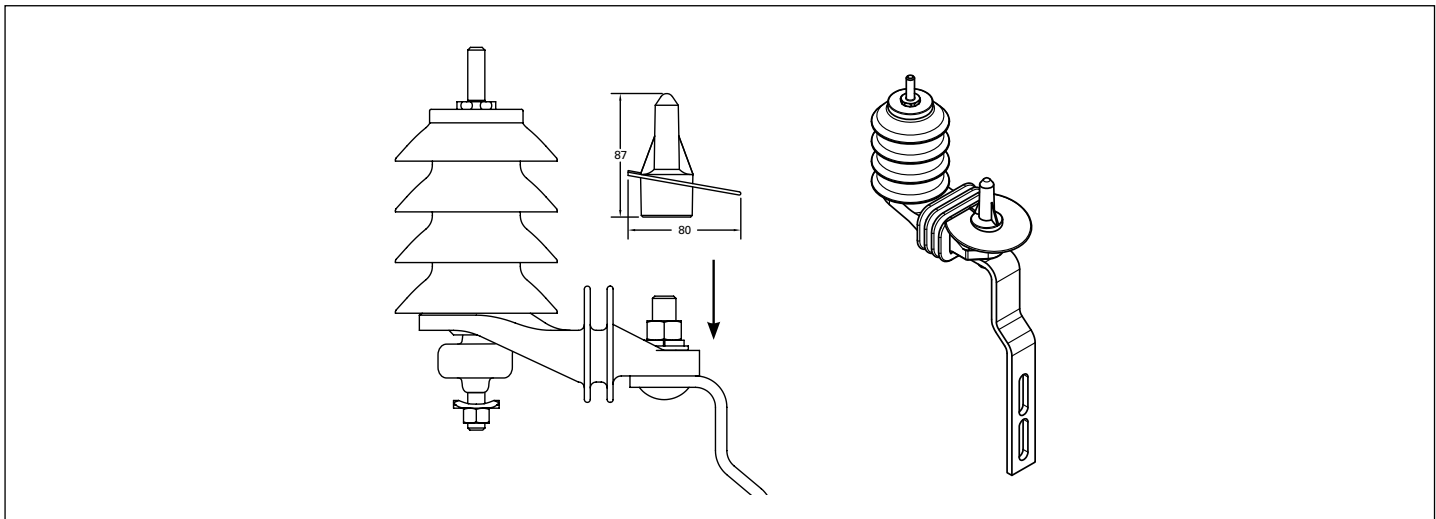


Figure 13. Ground terminal wildlife guard (dimensions in mm)

The optional ground terminal wildlife guard helps prevent animals from coming in contact with energized objects while on a grounded surface. Can be ordered separately using catalog number **AV731X1C**.



Figure 14. $I_n = 10$ kA, Class DH, UHS nameplate—stamped in stainless steel top cap

VARISTAR® SURGE ARRESTER
ULTRASIL™ TYPE UHS-ZnO
 $I_n = 10$ kA CLASS 1 IEC 60099-4 P.R. = 20 kA sym

(ENGLISH)

PARARRAYOS VARISTAR®
TIPO ULTRASIL™ UHS-ZnO
 $I_n = 10$ kA CLASE 1 CEI 60099-4 AdP = 20 kA sim

(ESPAÑOL - EUROPA)

APARTARRAYOS VARISTAR®
TIPO ULTRASIL™ UHS-ZnO
 $I_n = 10$ kA CLASE 1 IEC 60099-4 AdP = 20 kA sim

(ESPAÑOL - MEXICO)

DESC. DE SOBRET. VARISTAR®
TIPO ULTRASIL™ UHS-ZnO
 $I_n = 10$ kA CLASSE 1 IEC 60099-4 LdeS = 20 kA sim

(PORTUGUÊS - EUROPA)

PARARRAYOS VARISTAR®
TIPO ULTRASIL™ UHS-ZnO
 $I_n = 10$ kA CLASE 1 IEC 60099-4 AdP = 20 kA sim

(ESPAÑOL - AMERICAS)

OGRANICZNIK PRZEPIC VARISTAR®
ULTRASIL™ TYP UHS-ZnO
 $I_n = 10$ kA KLASA 1 IEC 60099-4 Pr = 20 kA sym

(POLSKI)

PÀRA-RAIOS VARISTAR®
TIPO ULTRASIL™ UHS-ZnO
 $I_n = 10$ kA CLASSE 1 IEC 60099-4 Sp = 20 kA sim

(PORTUGUÊS - AMERICAS)

PARAFOUDRE VARISTAR®
MODELE ULTRASIL™ UHS-ZnO
 $I_n = 10$ kA CLASSE 1 IEC 60099-4 LdP = 20 kA sym

(FRANÇAIS)

VARISTAR® OVERSPENNINGSAVLEDER
ULTRASIL™ TYPE UHS-ZnO
 $I_n = 10$ kA KLASSE 1 IEC 60099-4 KORTSLUTTKAP = 20 kA sym

(NORSK)

VARISTAR® YLIJÄNNITESUOJA
ULTRASIL™ TYYPI UHS-ZnO
 $I_n = 10$ kA LUOKKA 1 IEC 60099-4 RTV = 20 kA sym

(SUOMEKSI)

ALEXIKEPAYNO M.T. VARISTAR®
TYPOS ULTRASIL™ UHS - ZnO
 $I_n = 10$ kA IEC 60099-4 EKT PIES = 20 kA Sym

(GREEK)

SCARICATORE M.T. VARISTAR®
TIPO ULTRASIL™ UHS-ZnO
 $I_n = 10$ kA CLASSE 1 IEC 60099-4 P.R. = 20 kA sym

(ITALIANO)

VARISTAR® ОГРАНИЧИТЕЛЬ ПЕРЕНАПРЯЖЕНИЯ
ULTRASIL™ ТИП ДИСКОВ: ZnO Масса кг
КЛАСС=10кАМЭК ИЕЦ 60099-4 СБРОС ДАВЛ.=20кА, СИМ

(RUSSIAN)

Figure 15. $I_n = 10$ kA, Class DH, UHS auxiliary nameplates

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