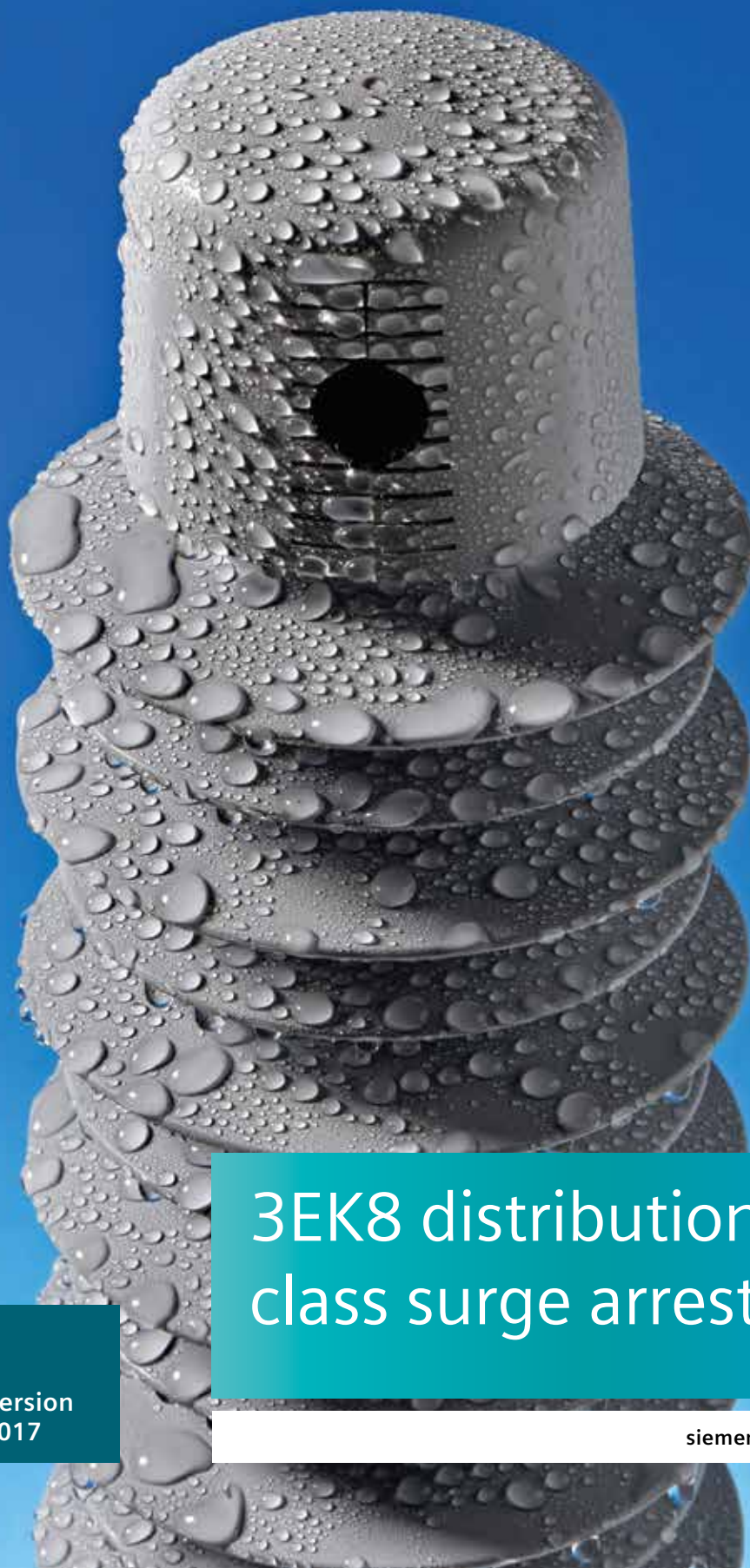


SIEMENS

Ingenuity for life



3EK8 distribution class surge arresters

Catalogue
HP-AR
28.2

Version
2017

[siemens.com/arresters](https://www.siemens.com/arresters)

Siemens surge arresters for any requirement

Experience is most essential when it comes to reliability in distribution and station class applications. Siemens has been designing and manufacturing distribution and station class surge arresters for standard and special applications since 1925. Continuous research and development, the wealth of Siemens know-how, and comprehensive world-wide experience give Siemens surge arresters a leading edge in overvoltage protection. Their uncompromising quality ensures a long service life and reliability in any application.

Siemens surge arresters are an indispensable aid to insulation coordination in electrical power supply systems. Valuable equipment such as transformers, circuit breakers, generators, motors, capacitors, traction vehicles and bushings, as well as complete switchgear, is optimally protected against lightning and switching overvoltages.

Siemens surge arresters have been designed to meet the requirements of a wide range of common installation conditions, from arctic cold to the heat of the desert and


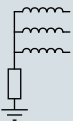

the dampness of tropical climates. They are available for any application from 3 kV up to 1,200 kV including special applications such as high-voltage direct current (HVDC) and flexible transmission system alternating current (FACTS) as well as all kinds of compensation systems for electric power networks.

Distribution class surge arresters

Siemens provides a wide range of surge arrester product families for the protection of medium-voltage systems and components up to 72.5 kV. The selection of the surge arrester depends on the application to be protected:

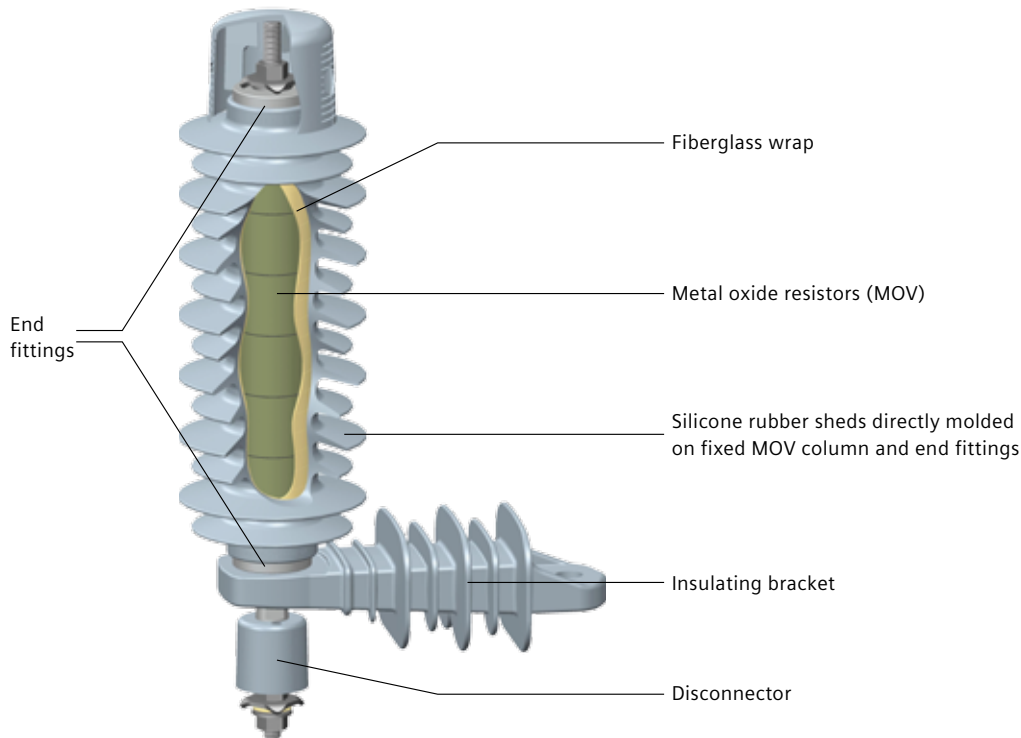
Siemens' 3EK8 distribution class surge arresters are ideally suited for all purposes, especially for the reliable protection of transformers, circuit breakers, medium-voltage switchgear / panels and distribution lines. The 3EK8 is the ideal solution for heavy duty applications for duty cycle voltages up to 36 kV and as riser pole for duty cycle voltages up to 27 kV.

Typical duty cycle voltages U_r for highest voltages of the system U_s according to IEEE C62.11.

System L-L voltage U_s kV	Four-wire multi-grounded neutral wye U_r kV	Three-wire low impedance neutral circuit U_r kV	Three-wire high impedance neutral circuit U_r kV
			
4.16	3	6	6
6.9			9
8.3	6	9	
12	9	12	
12.47	9 or 10	15	
13.8	10 or 12	15	18
22.86	15	21	
23			30
34.5	27	36	

3EK8 distribution class surge arresters with HTV silicone rubber housing

Siemens 3EK8 distribution class surge arresters offer superior protection against overvoltages in distribution class systems



The metal oxide resistors (MOV) provide a rigid, reinforced structure ensuring high mechanical strength. Reliability is guaranteed by the direct molding of the silicone rubber onto the MOV column. This ensures the total embedding of all components free of inclusions and gaps, thus providing an excellent sealing system against moisture ingress, which avoids partial discharges. In the extremely rare event of the MOVs being overloaded, arcing cannot result in a buildup of critical internal pressure, since the MOVs are not enclosed in a sealed rigid mechanical shell. The arc can escape directly through the fiberglass wrap and the soft silicone housing. The ejection of internal parts that could damage other equipment nearby is prevented almost completely.

High-temperature vulcanized (HTV) silicone rubber is highly hydrophobic and maintains its ability to repel water and deposits of pollution throughout its entire service life. This results in high tracking erosion resistance. The silicone rubber housing is self-extinguishing, flame-retardant and UV-resistant. These advantages provide maintenance-free and reliable service for 3EK8 surge arresters.

3EK8 surge arresters will always be delivered with an insulating bracket, a disconnector and a bird cap.

Additional accessories are available on request.

3EK8 technical data – heavy duty

Electrical characteristics

Duty cycle voltage	MCOV	Arrester order number	Energy class	Lightning impulse classifying current	Single impulse withstand rating	Switching surge energy rating	Protective Level Maximum discharge voltage						
							45/90µs 125 A kV cr	45/90µs 500 A kV cr	8/20µs 1.5 kA kV cr	8/20µs 3 kA kV cr	8/20µs 5 kA kV cr	8/20µs 10 kA kV cr	8/20µs 20 kA kV cr
kV	kV			I _n kA	C	kJ/kVmcov							
3.0	2.55	3EK8 030 - 3 B □ □	A	10	0.4	3.0	6.7	7.0	7.7	8.0	8.4	9.0	10.1
6.0	5.10	3EK8 060 - 3 C □ □	A	10	0.4	3.0	13.3	14.0	15.3	16.0	16.7	18.0	20.2
9.0	7.65	3EK8 090 - 3 C □ □	A	10	0.4	3.0	20.0	21.1	23.0	24.0	25.1	27.0	30.2
10	8.40	3EK8 100 - 3 C □ □	A	10	0.4	3.0	22.2	23.4	25.5	26.7	27.9	30.0	33.6
12	10.2	3EK8 120 - 3 E □ □	A	10	0.4	3.0	26.6	28.1	30.6	32.0	33.5	36.0	40.3
15	12.7	3EK8 150 - 3 E □ □	A	10	0.4	3.0	33.3	35.1	38.3	40.1	41.9	45.0	50.4
18	15.3	3EK8 180 - 3 E □ □	A	10	0.4	3.0	40.0	42.1	45.9	48.1	50.2	54.0	60.5
21	17.0	3EK8 210 - 3 G □ □	A	10	0.4	3.0	46.6	49.1	53.6	56.1	58.6	63.0	70.6
24	19.5	3EK8 240 - 3 G □ □	A	10	0.4	3.0	53.3	56.2	61.2	64.1	67.0	72.0	80.6
27	22.0	3EK8 270 - 3 G □ □	A	10	0.4	3.0	59.9	63.2	68.9	72.1	75.3	81.0	90.7
30	24.4	3EK8 300 - 3 J □ □	A	10	0.4	3.0	66.6	70.2	76.5	80.1	83.7	90.0	101
36	29.0	3EK8 360 - 3 J □ □	A	10	0.4	3.0	79.9	84.2	91.8	96.1	100.4	108.0	121

Mechanical characteristics

Duty cycle voltage	MCOV	Arrester order number	Height [H]	Leakage distance	Rated short-circuit current	Recommended minimum clearances		Static cantilever load	Dynamic cantilever load	Weight
						To ground (ph-gnd) inches	Between phases (ph-ph) inches			
kV	kV		inches	inches	I _s kA			lbf	lbf	lbs
3.0	2.55	3EK8 030 - 3 B □ □	3.2	7.1	20	3.0	4.3	156	219	2.3
6.0	5.10	3EK8 060 - 3 C □ □	5.2	13.0	20	3.4	5.4	96	135	3.0
9.0	7.65	3EK8 090 - 3 C □ □	5.2	13.0	20	4.0	6.0	96	135	3.1
10.0	8.40	3EK8 100 - 3 C □ □	5.2	13.0	20	4.2	6.2	96	135	3.2
12	10.20	3EK8 120 - 3 E □ □	7.5	20.5	20	5.5	7.5	67	94	4.2
15	12.7	3EK8 150 - 3 E □ □	7.5	20.5	20	6.5	8.5	67	94	4.4
18	15.3	3EK8 180 - 3 E □ □	7.5	20.5	20	7.5	9.5	67	94	4.5
21	17.0	3EK8 210 - 3 G □ □	10.2	28.7	20	8.0	10.0	49	69	5.5
24	19.5	3EK8 240 - 3 G □ □	10.2	28.7	20	10.0	12.0	49	69	5.6
27	22	3EK8 270 - 3 G □ □	10.2	28.7	20	10.8	13.0	49	69	5.7
30	24.4	3EK8 300 - 3 J □ □	12.7	36.6	20	10.8	13.3	40	56	6.6
36	29	3EK8 360 - 3 J □ □	12.7	36.6	20	12.8	16.3	40	56	6.9

Options

- A 4 Line terminal equipped with bolt, nut, 4-corner washer and bird cap
Earth terminal equipped with bolt, nut, 4-corner washer, NEMA insulating bracket and disconnecter
- F 1 Line terminal equipped with bolt, nut, 4-corner washer and bird cap
Earth terminal equipped with bolt, nut, 4-corner washer, insulating bracket with silicone rubber sheds and disconnecter

3EK8 technical data – riser pole

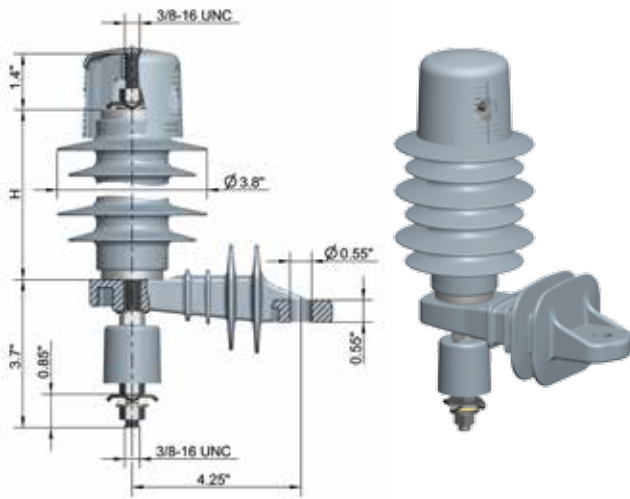
Electrical characteristics													
Duty cycle voltage	MCOV	Arrester order number	Energy class	Lightning impulse classifying current	Single impulse withstand rating	Switching surge energy rating	Protective Level Maximum discharge voltage						
							45/90µs 125 A kV cr	45/90µs 500 A kV cr	8/20µs 1.5 kA kV cr	8/20µs 3 kA kV cr	8/20µs 5 kA kV cr	8/20µs 10 kA kV cr	8/20µs 20 kA kV cr
kV	kV			I _n kA	C	kJ/kVmcov							
3.0	2.55	3EK8 030 - 4 C □ □	A	10	0.4	3.0	6.7	7.1	7.7	8.1	8.5	9.1	10.2
6.0	5.10	3EK8 060 - 4 C □ □	A	10	0.4	3.0	13.5	14.2	15.5	16.2	16.9	18.2	20.4
9.0	7.65	3EK8 090 - 4 E □ □	A	10	0.4	3.0	18.0	19.0	20.7	21.6	22.6	24.3	27.2
10	8.40	3EK8 100 - 4 E □ □	A	10	0.4	3.0	19.8	20.9	22.8	23.9	24.9	26.8	30.0
12	10.2	3EK8 120 - 4 E □ □	A	10	0.4	3.0	23.6	24.9	27.1	28.4	29.7	31.9	35.7
15	12.7	3EK8 150 - 4 G □ □	A	10	0.4	3.0	30.0	31.6	34.4	36.0	37.7	40.5	45.4
18	15.3	3EK8 180 - 4 G □ □	A	10	0.4	3.0	36.0	37.9	41.3	43.3	45.2	48.6	54.4
21	17.0	3EK8 210 - 4 J □ □	A	10	0.4	3.0	41.0	43.2	47.1	49.3	51.5	55.4	62.0
24	19.5	3EK8 240 - 4 J □ □	A	10	0.4	3.0	47.2	49.8	54.2	56.8	59.3	63.8	71.5
27	22.0	3EK8 270 - 4 J □ □	A	10	0.4	3.0	53.1	56.0	61.0	63.9	66.8	71.8	80.4

Mechanical characteristics											
Duty cycle voltage	MCOV	Arrester order number	Height [H]	Leakage distance	Rated short-circuit current	Recommended minimum clearances		Static cantilever load	Dynamic cantilever load	Weight	
						To ground (ph-gnd) inches	Between phases (ph-ph) inches				
kV	kV		inches	inches	I _s kA			lbf	lbf	lbs	
3.0	2.55	3EK8 030 - 4 C □ □	5.2	13.0	20	3.0	4.3	96	135	2.9	
6.0	5.10	3EK8 060 - 4 C □ □	5.2	13.0	20	3.4	5.4	96	135	3.0	
9.0	7.65	3EK8 090 - 4 E □ □	7.5	20.5	20	4.0	6.0	67	94	4.0	
10.0	8.40	3EK8 100 - 4 E □ □	7.5	20.5	20	4.2	6.2	67	94	4.1	
12.0	10.20	3EK8 120 - 4 E □ □	7.5	20.5	20	5.5	7.5	67	94	4.2	
15.0	12.70	3EK8 150 - 4 G □ □	10.2	28.7	20	6.5	8.5	49	69	5.1	
18.0	15.30	3EK8 180 - 4 G □ □	10.2	28.7	20	7.5	9.5	49	69	5.3	
21.0	17.00	3EK8 210 - 4 J □ □	12.7	36.6	20	8.0	10.0	40	56	6.1	
24.0	19.50	3EK8 240 - 4 J □ □	12.7	36.6	20	10.0	12.0	40	56	6.2	
27.0	22.00	3EK8 270 - 4 J □ □	12.7	36.6	20	10.8	13.0	40	56	6.4	

Options	
A 4	Line terminal equipped with bolt, nut, 4-corner washer and bird cap Earth terminal equipped with bolt, nut, 4-corner washer, NEMA insulating bracket and disconnecter
F 1	Line terminal equipped with bolt, nut, 4-corner washer and bird cap Earth terminal equipped with bolt, nut, 4-corner washer, insulating bracket with silicone rubber sheds and disconnecter

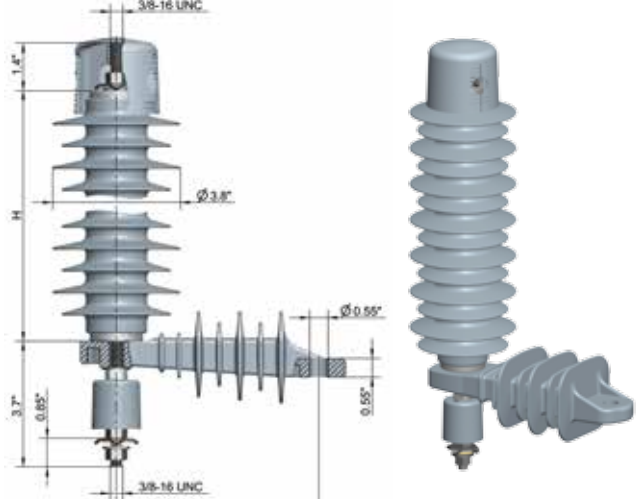
3EK8 drawings

Dimensions 3EK8 with 4" insulating bracket, disconnector and bird cap



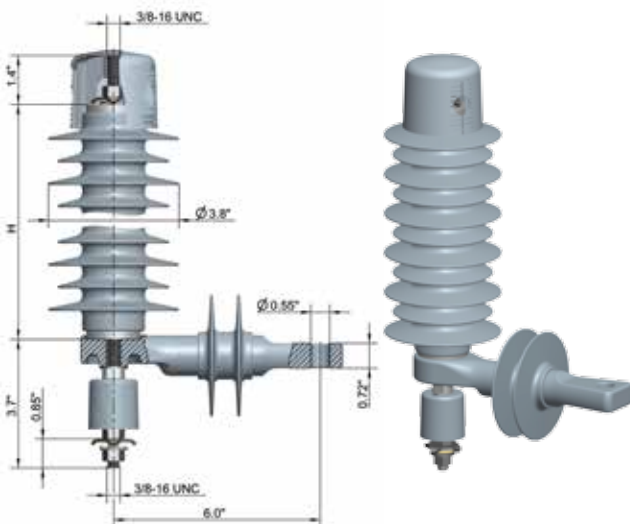
For duty cycle voltages up to 15 kV

Dimensions 3EK8 with 6" insulating bracket, disconnector and bird cap



For duty cycle voltages above 15 kV

Dimensions 3EK8 with silicone rubber insulating bracket, disconnector and bird cap



Packing dimensions

Packing dimensions 3EK8 with assembled insulating bracket, disconnecter and bird protection cap

Packing dimensions			
Housing	Length	Width	Height
	inches	inches	inches
Housing B	8.7	4.4	7.4
Housing C	10.9	4.4	7.4
Housing E	13.5	4.4	9.0
Housing G	15.8	4.4	9.0
Housing J	18.0	4.4	9.0

Related catalogues

Surge arresters	
<p>Medium-voltage surge arresters</p> <p>HP-AR 25</p> <p>Article No. EMHP-C10018-00-4AUS</p>	
<p>Silicone rubber insulation for surge arresters</p> <p>Article No. E50001-G630-A122-V3-4A00</p>	

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