

**SIEMENS**

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## 3EK8 medium-voltage surge arresters

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

# Siemens surge arresters for any requirement

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

Siemens surge arresters are an indispensable aid for 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.



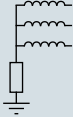
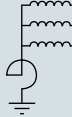
Siemens surge arresters have been designed to meet the requirements of a wide range of common installation conditions, from arctic cold to the heat of the desert and the dampness of tropical climates. They are available for

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

## Medium-voltage surge arresters

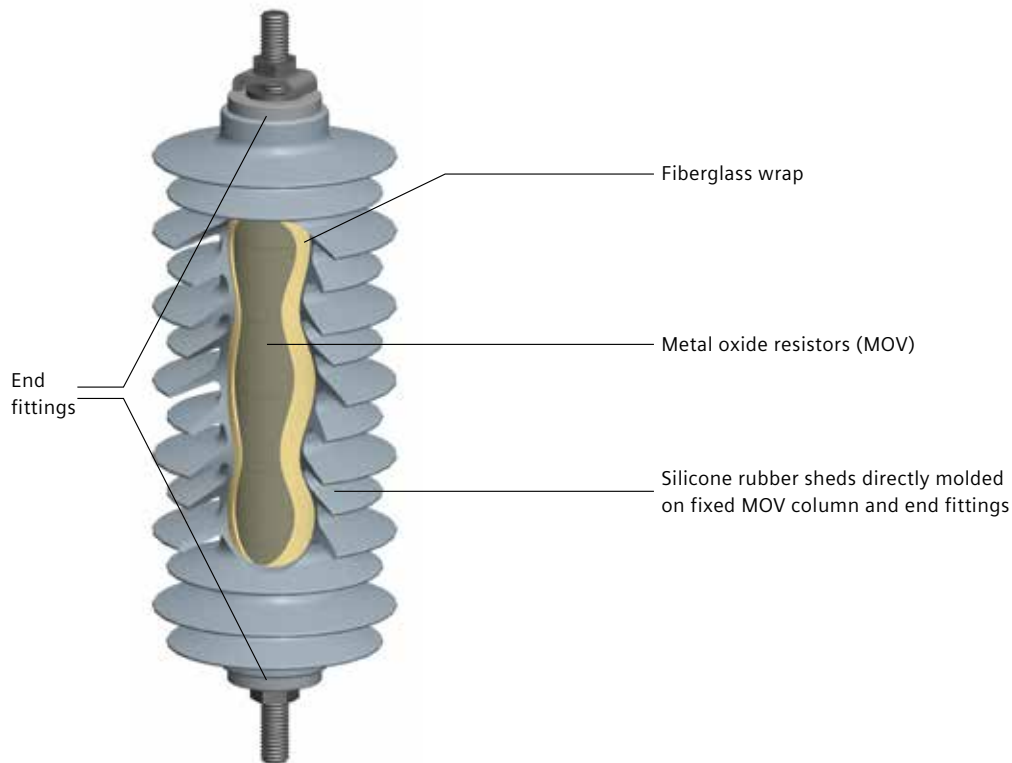
Siemens provides a wide range of surge arrester product families for the protection of medium-voltage systems and components up to 72.5 kV. The selection of the surge arrester depends on the application to be protected: Siemens' 3EK8 medium-voltage surge arresters are ideally suited for all purposes, especially for the reliable protection of transformers, circuit breakers, medium-voltage switchgear/panels, and distribution lines. The 3EK8 is the ideal solution for voltages up to 36 kV.

## Typical rated voltages $U_r$ for highest voltages of the system $U_s$ according to IEC 60099-4.

Highest voltage of system $U_s$ kV	Solidly earthed neutral system $U_r$ kV	Isolated neutral system; delta winding $U_r$ kV	Impedance-earthed neutral system $U_r$ kV	Resonant-earthed neutral system $U_r$ kV
				
3.6	3	6	3	6
7.2	6	9	9	9
12	9	15	12	15
17.5	15	24	15	24
24	18	30	21	30
36	27	45	33	45

# 3EK8 medium-voltage surge arresters with HTV silicone rubber housing

Siemens 3EK8 medium-voltage surge arresters offer superior protection against overvoltages



The metal oxide resistors (MOVs) 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.

Additional accessories are available on request.

# 3EK8 technical data

## Electrical characteristics

Rated voltage	Continuous operating voltage	Arrester type	Designation	Nominal discharge current	Charge transfer rating	Thermal charge transfer rating	Maximum values of the residual voltages at discharge currents of the following impulses						
							30/60 μs 125 A	30/60 μs 500 A	8/20 μs 1 kA	8/20 μs 3 kA	8/20 μs 5 kA	8/20 μs 10 kA	8/20 μs 20 kA
kV	kV			I <sub>n</sub> kA	Q <sub>n</sub> C	Q <sub>th</sub> C	kV	kV	kV	kV	kV	kV	kV
3.0	2.4	3EK8 030 - 1 P □ □	DH	10	0.4	1.1	5.9	6.2	6.5	7.1	7.4	8.0	8.9
6.0	4.8	3EK8 060 - 1 P □ □	DH	10	0.4	1.1	11.8	12.4	13.0	14.2	14.8	15.9	17.8
9.0	7.2	3EK8 090 - 1 Q □ □	DH	10	0.4	1.1	17.6	18.6	19.6	21.2	22.2	23.9	26.7
12	9.6	3EK8 120 - 1 Q □ □	DH	10	0.4	1.1	23.5	24.8	26.1	28.3	29.6	31.8	35.6
12	10.2	3EK8 120 - 2 Q □ □	DH	10	0.4	1.1	23.5	24.8	26.1	28.3	29.6	31.8	35.6
12	10.2	3EK8 120 - 2 R □ □	DH	10	0.4	1.1	23.5	24.8	26.1	28.3	29.6	31.8	35.6
15	12.0	3EK8 150 - 1 R □ □	DH	10	0.4	1.1	29.4	31.0	32.6	35.4	37.0	39.8	44.5
15	12.0	3EK8 150 - 1 S □ □	DH	10	0.4	1.1	29.4	31.0	32.6	35.4	37.0	39.8	44.5
15	12.7	3EK8 150 - 2 R □ □	DH	10	0.4	1.1	29.4	31.0	32.6	35.4	37.0	39.8	44.5
15	12.7	3EK8 150 - 2 S □ □	DH	10	0.4	1.1	29.4	31.0	32.6	35.4	37.0	39.8	44.5
18	14.4	3EK8 180 - 1 T □ □	DH	10	0.4	1.1	35.3	37.2	39.1	42.5	44.4	47.7	53.4
18	15.3	3EK8 180 - 2 T □ □	DH	10	0.4	1.1	35.3	37.2	39.1	42.5	44.4	47.7	53.4
21	16.8	3EK8 210 - 1 T □ □	DH	10	0.4	1.1	41.2	43.4	45.6	49.5	51.8	55.7	62.3
21	17.0	3EK8 210 - 2 T □ □	DH	10	0.4	1.1	41.2	43.4	45.6	49.5	51.8	55.7	62.3
22	17.6	3EK8 220 - 1 V □ □	DH	10	0.4	1.1	43.1	45.5	47.8	51.9	54.2	58.3	65.3
24	19.2	3EK8 240 - 1 V □ □	DH	10	0.4	1.1	47.1	49.6	52.2	56.6	59.1	63.6	71.2
24	19.5	3EK8 240 - 2 V □ □	DH	10	0.4	1.1	47.1	49.6	52.2	56.6	59.1	63.6	71.2
27	21.6	3EK8 270 - 1 V □ □	DH	10	0.4	1.1	52.9	55.8	58.7	63.7	66.5	71.6	80.1
30	24.0	3EK8 300 - 1 V □ □	DH	10	0.4	1.1	58.8	62.0	65.2	70.8	73.9	79.5	89.0
30	24.4	3EK8 300 - 2 V □ □	DH	10	0.4	1.1	58.8	62.0	65.2	70.8	73.9	79.5	89.0
33	26.4	3EK8 330 - 1 W □ □	DH	10	0.4	1.1	64.7	68.2	71.7	77.8	81.3	87.5	97.9
36	28.8	3EK8 360 - 1 W □ □	DH	10	0.4	1.1	70.6	74.4	78.2	84.9	88.7	95.4	107
36	28.8	3EK8 360 - 1 X □ □	DH	10	0.4	1.1	70.6	74.4	78.2	84.9	88.7	95.4	107
36	29.0	3EK8 360 - 2 W □ □	DH	10	0.4	1.1	70.6	74.4	78.2	84.9	88.7	95.4	107

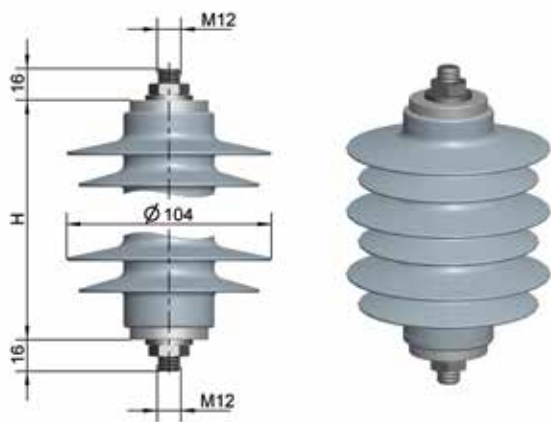
Options		Additional weight (kg)	
B 0	Line terminal equipped with 16 mm M12 bolt, nut, and washer Earth terminal equipped with 16 mm M12 bolt, nut, and washer	0.10	
B 2	Line terminal equipped with M12 bolt, nut, and washer Earth terminal equipped with M12 bolt, nut, and washer	0.13	
B 3	Line terminal equipped with M12 bolt, nut, and washer Earth terminal equipped with M12 bolt, nut, washer, NEMA insulating bracket, and disconnecter	0.52 0.63	for rated voltage up to 15 kV for rated voltage above 15 kV
B 4	Line terminal equipped with M12 bolt, nut, washer, and bird cap Earth terminal equipped with M12 bolt, nut, washer, NEMA insulating bracket, and disconnecter	0.56 0.67	for rated voltage up to 15 kV for rated voltage above 15 kV
B 5	Line terminal equipped with M12 bolt, nut, washer, and bird cap Earth terminal equipped with 50 mm M12 bolt, nut, and washer	0.23	
B 6	Line terminal equipped with 50 mm M12 bolt, nut, and washer Earth terminal equipped with 50 mm M12 bolt, nut, and washer	0.24	
B 7	Line terminal equipped with 50 mm M12 bolt, nut, and washer Earth terminal equipped with M12 bolt, nut, washer, NEMA insulating bracket, and disconnecter	0.57 0.67	for rated voltage up to 15 kV for rated voltage above 15 kV
B 8	Line terminal equipped with 70 mm M12 bolt, nut, and washer Earth terminal equipped with 70 mm M12 bolt, nut, and washer	0.27	
C 0	Line terminal equipped with M12 bolt, nut, and washer Earth terminal equipped with M12 bolt, nut, washer, NEMA insulating bracket, and fault indicator	0.87 0.97	for rated voltage up to 15 kV for rated voltage above 15 kV
C 1	Line terminal equipped with 50 mm M12 bolt, nut, washer, and bird cap Earth terminal equipped with 50 mm M12 bolt, nut, and washer	0.28	
C 4	Line terminal equipped with 40 mm M12 bolt, nut, and 3-corner washer Earth terminal equipped with 50 mm M12 bolt, nut, and washer	0.20	
C 5	Line terminal equipped with 40 mm M12 bolt, nut, 3-corner washer, and bird cap Earth terminal equipped with 50 mm M12 bolt, nut, and washer	0.24	
C 6	Line terminal equipped with 60 mm M12 bolt, nut, and washer Earth terminal equipped with 60 mm M12 bolt, nut, and washer	0.25	

## Mechanical characteristics

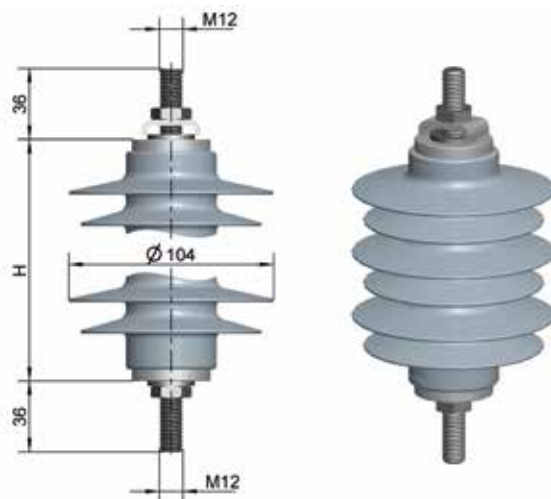
Height [H]	Creepage distance	Rated short- circuit current	Housing insulation		Specified short- term load SSL	Specified long- term load SLL	Maximum weight of arrester	Flashover distance
			Lightning impulse withstand voltage 1.2/50 $\mu$ s	Power frequency withstand voltage 1 min., wet				
mm	mm	$I_s$ kA	kV	kV	N	N	kg	mm
97	267	20	63	29	2060	1440	0.5	109
97	267	20	63	29	2060	1440	0.6	109
134	393	20	84	39	1490	1040	0.8	146
134	393	20	84	39	1490	1040	0.9	146
134	393	20	84	39	1490	1040	0.9	146
153	465	20	95	44	1300	910	1.0	165
153	465	20	95	44	1300	910	1.1	165
180	578	20	111	51	1110	770	1.2	192
153	465	20	95	44	1300	910	1.1	165
180	578	20	111	51	1110	770	1.2	192
240	765	20	146	68	830	580	1.6	252
240	765	20	146	68	830	580	1.6	252
240	765	20	146	68	830	580	1.7	252
240	765	20	146	68	830	580	1.7	252
295	997	20	178	82	670	460	2.0	307
295	997	20	178	82	670	460	2.1	307
295	997	20	178	82	670	460	2.1	307
295	997	20	178	82	670	460	2.1	307
295	997	20	178	82	670	460	2.2	307
295	997	20	178	82	670	460	2.2	307
332	1123	20	200	92	600	420	2.4	344
332	1123	20	200	92	600	420	2.5	344
390	1358	20	233	108	510	350	2.8	402
332	1123	20	200	92	600	420	2.5	344

# 3EK8 options

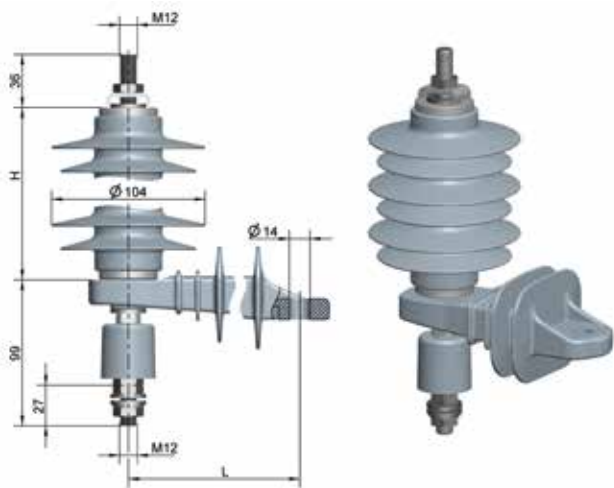
Option B0



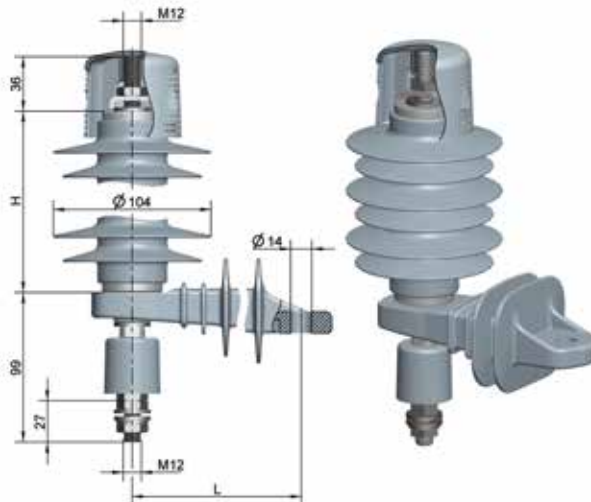
Option B2



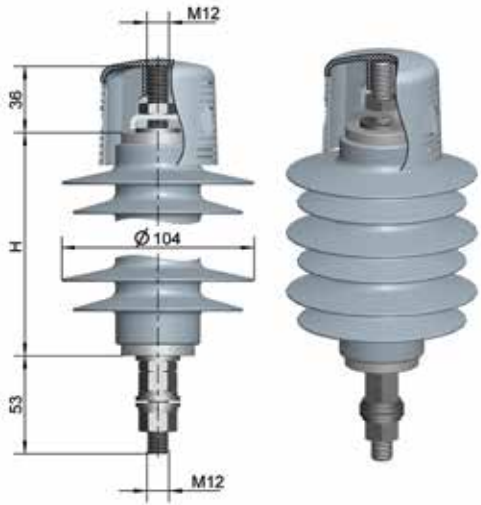
Option B3



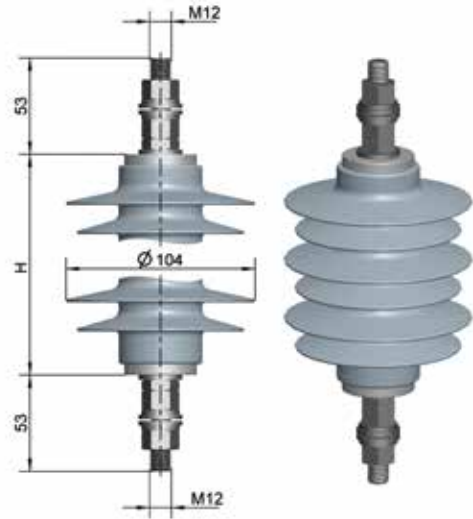
Option B4



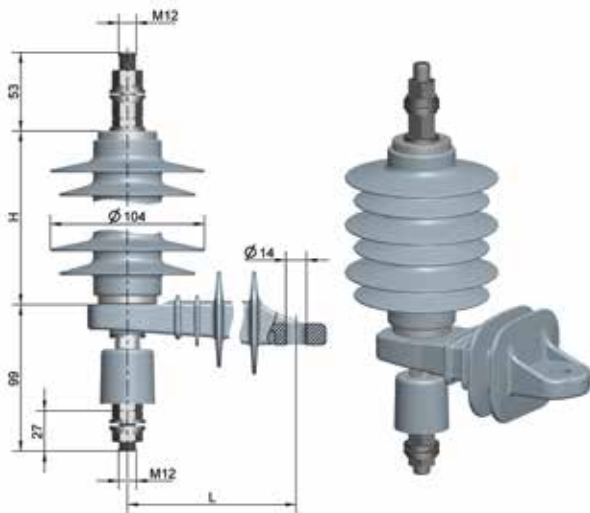
Option B5



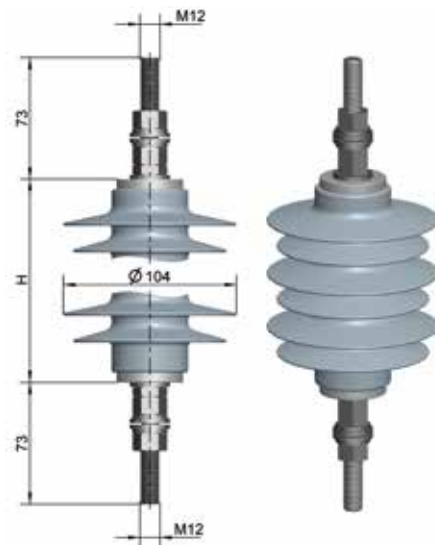
Option B6



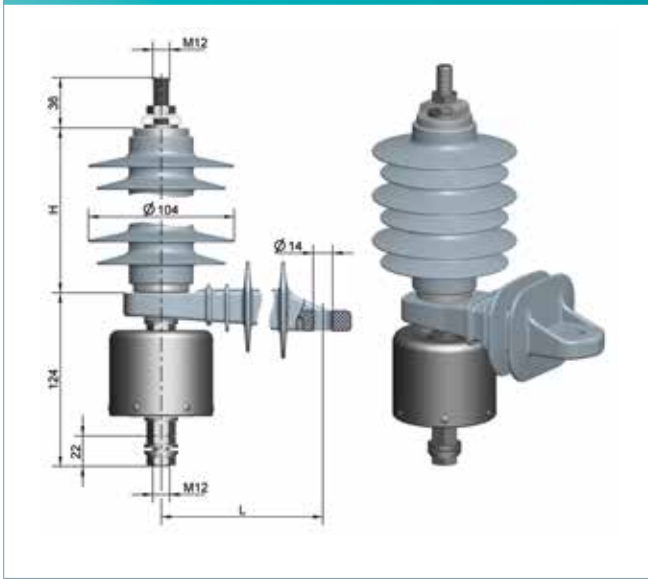
Option B7



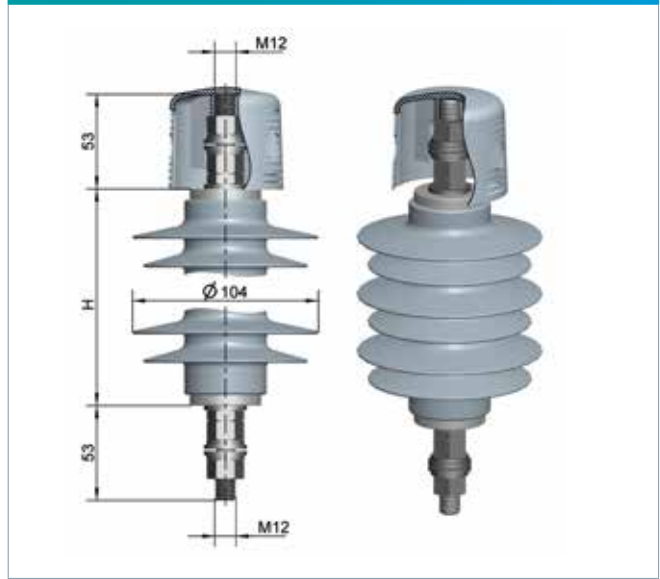
Option B8



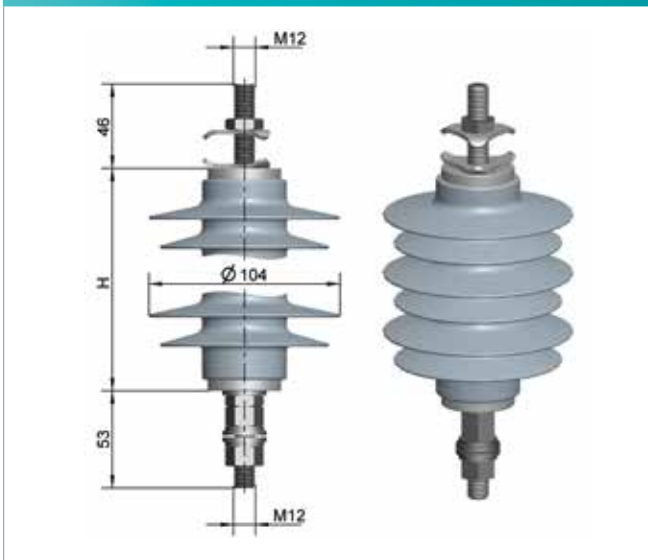
Option C0



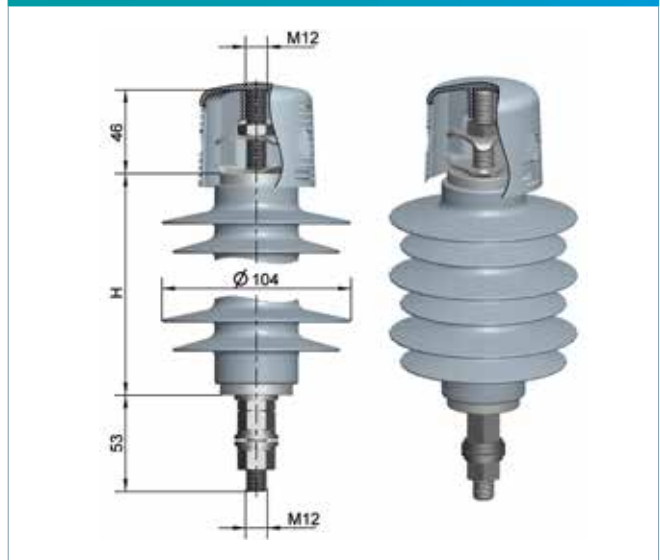
Option C1



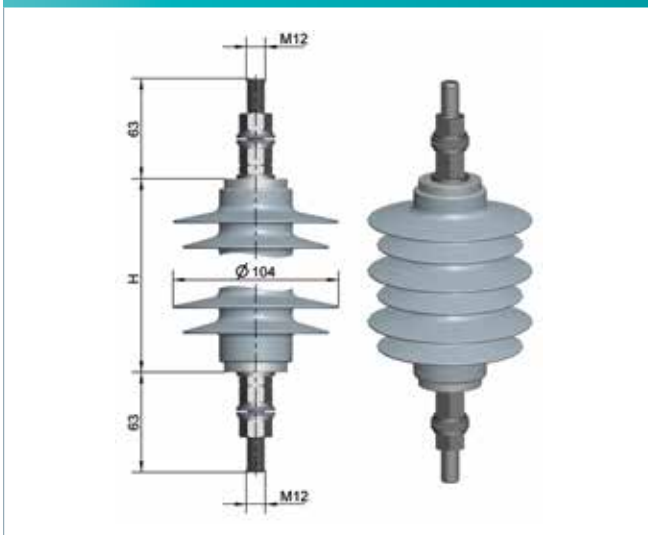
Option C4



Option C5

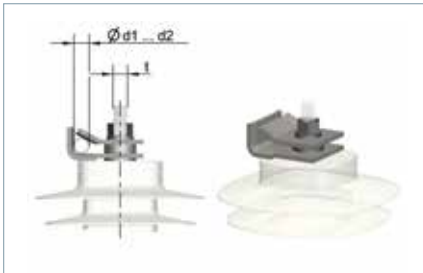


Option C6





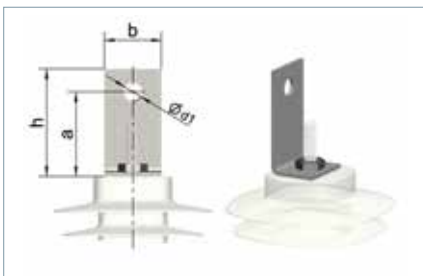
# 3EK8 accessories – line terminal options



## Line clamp

Order number: 3EX4 063-0C

d1	8 mm
d2	18 mm
t	M12



## L-bracket

Order number: 3EX4 071

a	59 mm
b	40 mm
h	75 mm
d1	13 mm

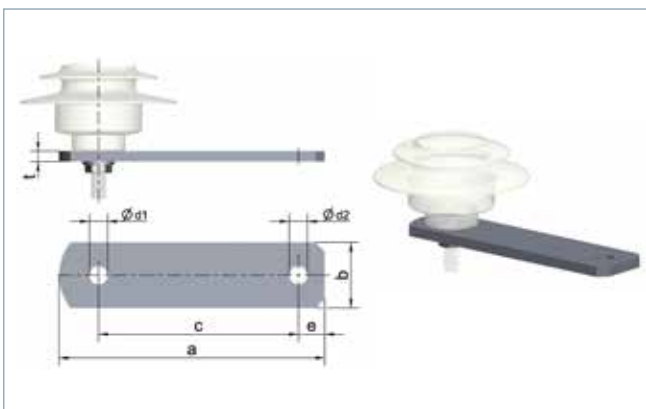


## Line clamp

Order number: 3EX4 101-1C

a	86 mm
d1	8 mm
d2	18 mm
t	M12

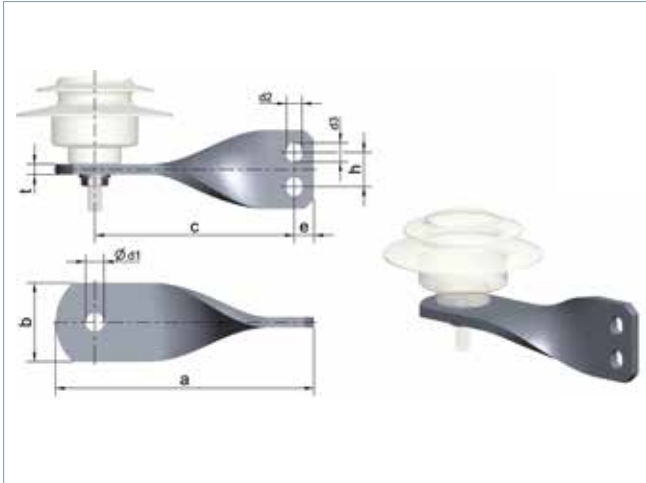
# Metal bracket options



## NEMA metal bracket

Order number: 3EX4 061-0C

a	202 mm
b	50 mm
c	152 mm
e	20 mm
d1	14 mm
d2	14 mm
t	8 mm

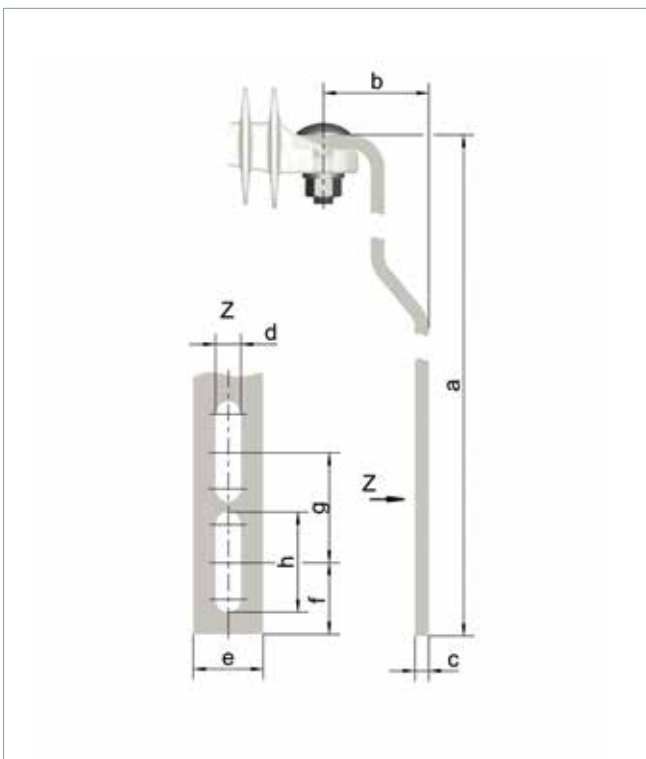


### DIN metal bracket

Order number: 3EX4 062

a	197 mm
b	60 mm
c	152 mm
e	15 mm
d1	14 mm
d2	12 mm
d3	14.5 mm
h	26 mm
t	8 mm

## Mounting options



### Transformer bracket, 221 mm

Order number: 3EX4 075-0A

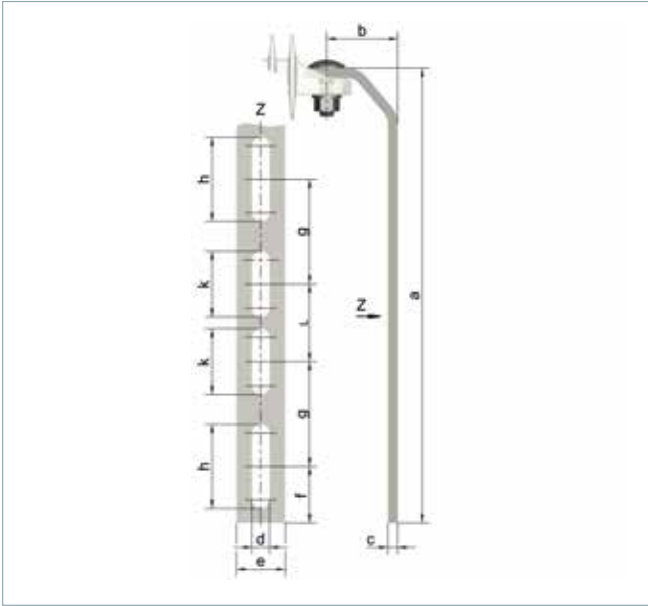
### Transformer bracket, 279 mm

Order number: 3EX4 075-0C

### Transformer bracket, 311 mm

Order number: 3EX4 075-0B

	3EX4 075-0A	3EX4 075-0C	3EX4 075-0B
a	221 mm	279 mm	311 mm
b	60.5 mm	60.5 mm	60.5 mm
c	8 mm	8 mm	8 mm
d	14.3 mm	14.3 mm	14.3 mm
e	40 mm	40 mm	40 mm
f	41.4 mm	41.4 mm	41.4 mm
g	63.2 mm	63.2 mm	63.2 mm
h	57.2 mm	57.2 mm	57.2 mm



**Transformer bracket, 368 mm**  
Order number: 3EX4 075-0D

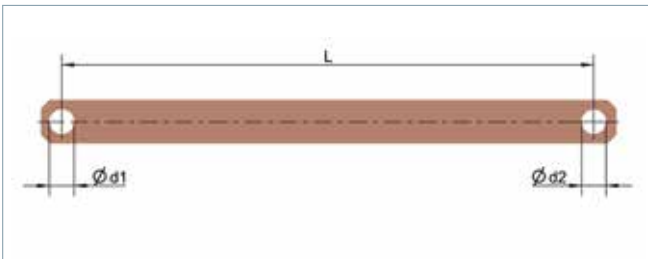
a	368.3 mm
b	58.2 mm
c	8 mm
d	14.3 mm
e	40 mm
f	46.3 mm
g	85.9 mm
h	69 mm
k	53.9 mm
l	63.5 mm



**Cross-arm bracket**  
Order number: 3EX4 073-0A

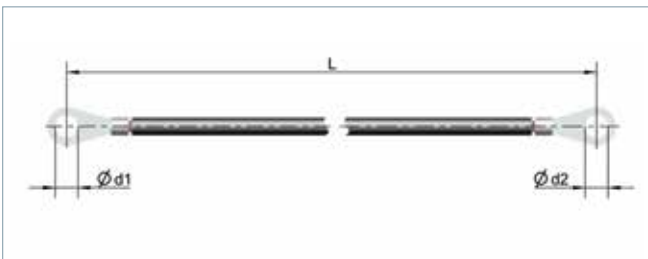
a	104.6 ... 150.9 mm
b	0 ... 120.6 mm
c	33 mm
d	52 mm
t	M10

## Lead options



**Ground strap, 305 mm**  
Order number: 3EX4 078-0C

L	305 mm
d1	14 mm
d2	14 mm



**Line and earth lead, insulated**  
Order number: 3EX4 074-0C

L	455 mm
d1	13 mm
d2	13 mm

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