

Surge arrester POLIM-S..N



Overvoltage protection of

- Transformers
- Motors
- Generators
- Cables
- Cable sheaths
- Traction systems (fixed installations and rolling stock)
- Capacitors and capacitor banks
- Medium voltage equipment

Application

- Alternating current (AC)
- Outdoor and indoor
- High-speed trains

Technical data

Surge arrester with metal oxide resistors without spark gaps (MO surge arrester), direct molded silicone housing, grey color, designed and tested according to IEC 60099-4

Nominal discharge current I_n 8/20 μ s	10 kA peak
Line discharge class (LD)	3
High current impulse I_{hc} 4/10 μ s	100 kA peak
Long duration current impulse	1000 A / 2000 μ s
Short circuit rating I_s 50 Hz	50 kA rms for 0.2 s
Classification according to IEEE (ANSI) C62.11	station class

The thermal stability of the MO surge arrester is proved in the operating duty test according to LD 3, which gives an energy input of 9,0 kJ/kV (U_c).

Power frequency voltage versus time characteristic (TOV) with prior energy input

$t = 1$ s	$U_{TOV} = 1.375 \times U_c$
$t = 3$ s	$U_{TOV} = 1.341 \times U_c$
$t = 10$ s	$U_{TOV} = 1.310 \times U_c$

Mechanical loads

Torque moment	100 Nm
Tensile strength axial	3000 N
Short term load SSL horizontal to axis	3840 Nm
Long term load SLL horizontal to axis	1920 Nm

Shock and vibration tested according IEC 61373.

General data

Ambient air temperature	-60 to +40 °C (for higher values contact manufacturer)
Altitude	up to 1800 m (for higher values contact manufacturer)
Frequency of system voltage	16.7/50/60 Hz
Weather ageing test	tested according to test series A (1000 h salt fog)



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Electrical data

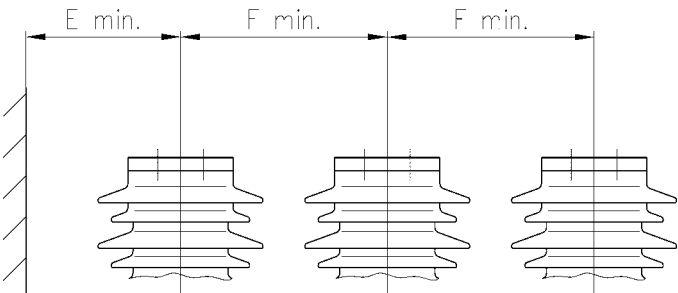
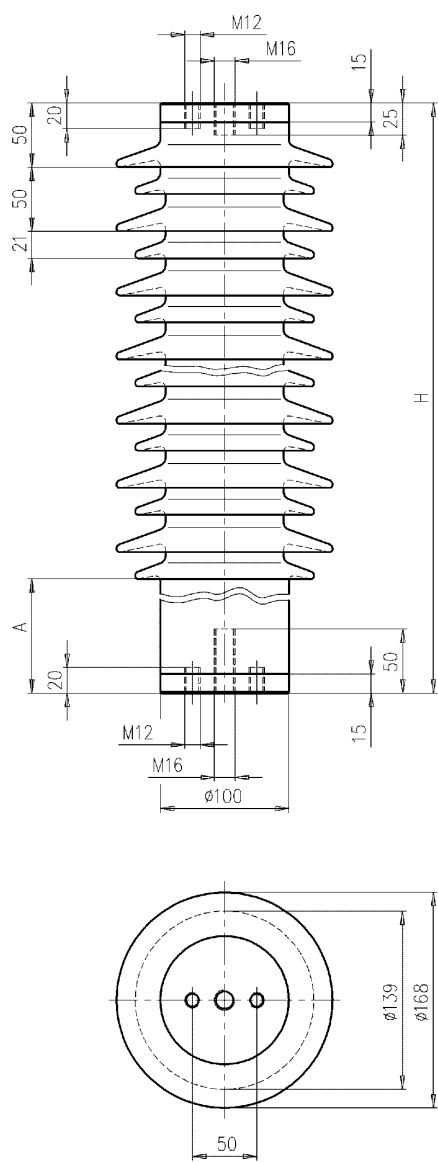
U_c Continuous operating voltage	U_r Rated voltage	Residual voltage U_{res} in kV peak at specified impulse current									
		wave 1/...μs		wave 8/20 μs					wave 30/60 μs		
kV	kV	5 kA	10 kA	1 kA	2,5 kA	5 kA	10 kA	20 kA	250 A	500 A	1000 A
rms	rms	peak	peak	peak	peak	peak	peak	peak	peak	peak	peak
4	5.0	12.6	13.2	10.5	11.0	11.5	12.0	13.3	9.6	9.8	10.1
5	6.3	15.8	16.5	13.1	13.8	14.4	15.0	16.6	11.9	12.3	12.6
6	7.5	18.9	19.8	15.7	16.5	17.2	18.0	19.9	14.3	14.7	15.2
7	8.8	22.1	23.1	18.3	19.2	20.1	21.0	23.2	16.7	17.2	17.7
8	10.0	25.2	26.4	20.9	22.0	22.9	24.0	26.5	19.1	19.6	20.2
9	11.3	28.4	29.7	23.5	24.7	25.8	27.0	29.8	21.5	22.1	22.7
10	12.5	31.5	33.0	26.1	27.5	28.7	30.0	33.1	23.8	24.5	25.2
11	13.8	34.7	36.3	28.8	30.2	31.5	33.0	36.4	26.2	27.0	27.7
12	15.0	37.8	39.6	31.4	33.0	34.4	36.0	39.8	28.6	29.4	30.3
13	16.3	41.0	42.9	34.0	35.7	37.3	39.0	43.1	31.0	31.9	32.8
14	17.5	44.1	46.2	36.6	38.4	40.1	42.0	46.4	33.4	34.3	35.3
15	18.8	47.3	49.5	39.2	41.2	43.0	45.0	49.7	35.7	36.8	37.8
16	20.0	50.4	52.8	41.8	43.9	45.8	48.0	53.0	38.1	39.2	40.3
17	21.3	53.6	56.1	44.4	46.7	48.7	51.0	56.3	40.5	41.7	42.8
18	22.5	56.7	59.4	47.0	49.4	51.6	54.0	59.6	42.9	44.1	45.4
19	23.8	59.9	62.7	49.6	52.1	54.4	57.0	62.9	45.3	46.6	47.9
20	25.0	63.0	66.0	52.2	54.9	57.3	60.0	66.2	47.6	49.0	50.4
21	26.3	66.2	69.3	54.9	57.6	60.2	63.0	69.5	50.0	51.5	52.9
22	27.5	69.3	72.6	57.5	60.4	63.0	66.0	72.8	52.4	53.9	55.4
23	28.8	72.5	75.9	60.1	63.1	65.9	69.0	76.2	54.8	56.4	57.9
24	30.0	75.6	79.2	62.7	65.9	68.7	72.0	79.5	57.1	58.8	60.5
25	31.3	78.8	82.5	65.3	68.6	71.6	75.0	82.8	59.5	61.2	63.0
26	32.5	81.9	85.8	67.9	71.3	74.5	78.0	86.1	61.9	63.7	65.5
27	33.8	85.1	89.1	70.5	74.1	77.3	81.0	89.4	64.3	66.1	68.0
28	35.0	88.2	92.4	73.1	76.8	80.2	84.0	92.7	66.7	68.6	70.5
29	36.3	91.4	95.7	75.7	79.6	83.0	87.0	96.0	69.0	71.0	73.0
30	37.5	94.5	99.0	78.3	82.3	85.9	90.0	99.3	71.4	73.5	75.6
31	38.8	97.7	102.3	81.0	85.1	88.8	93.0	102.6	73.8	75.9	78.1
32	40.0	100.8	105.6	83.6	87.8	91.6	96.0	105.9	76.2	78.4	80.6
33	41.3	104.0	108.9	86.2	90.5	94.5	99.0	109.2	78.6	80.8	83.1
34	42.5	107.1	112.2	88.8	93.3	97.4	102.0	112.6	80.9	83.3	85.6
35	43.8	110.3	115.5	91.4	96.0	100.2	105.0	115.9	83.3	85.7	88.1
36	45.0	113.4	118.8	94.0	98.8	103.1	108.0	119.2	85.7	88.2	90.7
37	46.3	116.6	122.1	96.6	101.5	105.9	111.0	122.5	88.1	90.6	93.2
38	47.5	119.7	125.4	99.2	104.2	108.8	114.0	125.8	90.5	93.1	95.7
39	48.8	122.9	128.7	101.8	107.0	111.7	117.0	129.1	92.8	95.5	98.2
40	50.0	126.0	132.0	104.4	109.7	114.5	120.0	132.4	95.2	98.0	100.7
41	51.3	129.2	135.3	107.1	112.5	117.4	123.0	135.7	97.6	100.4	103.2
42	52.5	132.3	138.6	109.7	115.2	120.3	126.0	139.0	100.0	102.9	105.8
43	53.8	135.5	141.9	112.3	118.0	123.1	129.0	142.3	102.3	105.3	108.3
44	55.0	138.6	145.2	114.9	120.7	126.0	132.0	145.6	104.7	107.8	110.8

Housing

U _c Continuous operating voltage	Creepage distance	Flashover distance	Recommended minimum clearances		Height H	Weight	Insulation withstand voltage of empty housing			
			E _{min}	F _{min}			1.2/50 μs		50 Hz, 60 s wet	
							required values acc. to IEC	guaranteed	required values acc. to IEC	guaranteed
kV rms	mm	mm	mm	mm	mm	kg	kV peak	kV peak	kV rms	kV rms
4	364	197	90	170	210	4.5	16	119	8	34
5	364	197	98	170	210	4.6	20	119	10	34
6	499	229	107	170	240	5.2	24	138	12	39
7	499	229	116	170	240	5.2	28	138	14	39
8	499	229	126	177	240	5.3	32	138	16	39
9	654	279	135	187	290	6.3	36	168	18	48
10	654	279	145	196	290	6.4	39	168	19	48
11	654	279	154	206	290	6.5	43	168	21	48
12	654	279	164	216	290	6.5	47	168	23	48
13	829	347	173	225	360	7.8	51	209	25	59
14	829	347	182	235	360	7.9	55	209	27	59
15	829	347	192	244	360	7.9	59	209	29	59
16	829	347	201	254	360	8.0	63	209	31	59
17	829	347	210	263	360	8.1	67	209	33	59
18	829	347	220	273	360	8.2	71	209	35	59
19	829	347	229	283	360	8.3	75	209	36	59
20	829	347	239	292	360	8.4	78	209	38	59
21	983	397	248	302	410	9.3	82	239	40	68
22	983	397	257	311	410	9.4	86	239	42	68
23	983	397	267	321	410	9.5	90	239	44	68
24	983	397	276	331	410	9.5	94	239	46	68
25	983	397	286	340	410	9.6	98	239	48	68
26	1139	447	295	350	460	10.6	102	269	50	76
27	1139	447	304	359	460	10.7	106	269	51	76
28	1139	447	314	369	460	10.7	110	269	53	76
29	1139	447	323	378	460	10.8	114	269	55	76
30	1429	529	333	388	540	12.3	117	318	57	90
31	1429	529	342	398	540	12.4	121	318	59	90
32	1429	529	351	407	540	12.5	125	318	61	90
33	1429	529	361	417	540	12.5	129	318	63	90
34	1429	529	370	426	540	12.6	133	318	65	90
35	1429	529	380	436	540	12.7	137	318	67	90
36	1429	529	389	446	540	12.8	141	318	68	90
37	1603	597	398	455	610	14.0	145	359	70	102
38	1603	597	408	465	610	14.1	149	359	72	102
39	1603	597	417	474	610	14.2	153	359	74	102
40	1603	597	427	484	610	14.3	156	359	76	102
41	1739	629	436	493	640	14.8	160	378	78	107
42	1739	629	445	503	640	14.9	164	378	80	107
43	1739	629	455	513	640	15.0	168	378	82	107
44	1739	629	464	522	640	15.1	172	378	84	107

Housing

Dimensions (mm)



Standard dimensions without accessories (may be subject to changes)
Dimensions according outline drawing HAAR481762
Outline drawings with accessories on request

Structure of type designation

POLIM-S 36 N

Type of arrester _____
 U_c = Continuous operating voltage _____
Housing _____

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For detailed information regarding the dimensioning
of our products see the following ABB documents:

- Application guidelines
Overvoltage protection
Metal oxide surge arresters in medium voltage systems
- Application guidelines
Overvoltage protection
Metal oxide surge arresters in railway facilities

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