

Surge arrester

POLIM-D..PI-2/-3



Overvoltage protection of

- Metal clad medium voltage switchgear

Application

- Alternating current (AC)
- Indoor

Technical data

Surge arrester with metal oxide resistors without spark gaps (MO surge arrester), touch proof metal clad design, designed and tested according to IEC 60099-4.

Nominal discharge current I_n 8/20 μ s	10 kA peak
Line discharge class (LD)	1
High current impulse I_{hc} 4/10 μ s	65 kA peak
Long duration current impulse	250 A / 2000 μ s
Short circuit rating I_s 50 Hz	16 kA rms for 0.2 s

The thermal stability of the MO surge arrester is proved in the operating duty test with a high current impulse $I_{hc} = 65$ kA, which gives an energy input of 2.6 kJ/kV (U_c).

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

$t = 1$ s	$U_{TOV} = 1.32 \times U_c$
$t = 3$ s	$U_{TOV} = 1.28 \times U_c$
$t = 10$ s	$U_{TOV} = 1.25 \times U_c$

General data

Ambient air temperature	-40 to + 40 °C (for higher values contact manufacturer)
Frequency of system voltage	16.7/50/60 Hz



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Electrical data

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U_c Continuous operating voltage	U_r Rated voltage	Residual voltage U_{res} in kV peak at specified impulse current									
		wave 1/... μ s		wave 8/20 μ s					wave 30/60 μ s		
kV rms	kV rms	5 kA peak	10 kA peak	1 kA peak	2,5 kA peak	5 kA peak	10 kA peak	20 kA peak	125 A peak	250 A peak	500 A peak
4	5.0	14.5	16.0	11.7	12.4	13.1	14.0	15.9	10.4	10.8	11.1
6	7.5	21.7	24.0	17.5	18.5	19.6	21.0	23.9	15.6	16.1	16.6
7.6	9.5	27.4	30.4	22.1	23.5	24.8	26.6	30.2	19.7	20.4	21.1
8	10.0	28.9	32.0	23.3	24.7	26.1	28.0	31.8	20.8	21.5	22.2
10	12.5	36.1	39.9	29.1	30.8	32.6	35.0	39.8	25.9	26.8	27.7
12	15.0	43.3	47.9	34.9	37.0	39.1	42.0	47.7	31.1	32.2	33.2
14	17.5	50.5	55.9	40.7	43.2	45.6	49.0	55.7	36.3	37.5	38.8
15	18.8	54.1	59.9	43.6	46.2	48.9	52.5	59.6	38.9	40.2	41.5
16	20.0	57.7	63.9	46.5	49.3	52.1	56.0	63.6	41.5	42.9	44.3
17	21.3	61.3	67.9	49.4	52.4	55.4	59.5	67.6	44.1	45.6	47.1
18	22.5	64.9	71.9	52.3	55.5	58.6	63.0	71.6	46.7	48.2	49.8
20	25.0	72.1	79.8	58.1	61.6	65.1	70.0	79.5	51.8	53.6	55.3
22	27.5	79.4	87.8	64.0	67.8	71.7	77.0	87.4	57.0	59.0	60.9
24	30.0	86.6	95.8	69.8	74.0	78.2	84.0	95.4	62.2	64.3	66.4
26	32.5	93.8	103.8	75.6	80.1	84.7	91.0	103.3	67.4	69.7	71.9
28	35.0	101.0	111.8	81.4	86.3	91.2	98.0	111.3	72.6	75.0	77.5
29	36.3	104.6	115.8	84.3	89.4	94.4	101.5	115.3	75.2	77.7	80.2
30	37.5	108.2	119.7	87.2	92.4	97.7	105.0	119.2	77.7	80.4	83.0
32	40.0	115.4	127.7	93.0	98.6	104.2	112.0	127.2	82.9	85.7	88.5
34	42.5	122.6	135.7	98.8	104.8	110.7	119.0	135.1	88.1	91.1	94.1
36	45.0	129.8	143.7	104.6	110.9	117.2	126.0	143.1	93.3	96.4	99.6
38	47.5	137.0	151.7	110.4	117.1	123.7	133.0	151.0	98.5	101.8	105.1
40	50.0	144.2	159.6	116.2	123.2	130.2	140.0	158.9	103.6	107.1	110.6
41	51.3	147.9	163.6	119.2	126.3	133.5	143.5	162.9	106.2	109.8	113.4
42	52.5	151.5	167.6	122.1	129.4	136.8	147.0	166.9	108.8	112.5	116.2

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U_c Continuous operating voltage	U_r Rated voltage	Residual voltage U_{res} in kV peak at specified impulse current									
		wave 1/... μ s		wave 8/20 μ s				wave 30/60 μ s			
kV rms	kV rms	5 kA peak	10 kA peak	1 kA peak	2,5 kA peak	5 kA peak	10 kA peak	20 kA peak	125 A peak	250 A peak	500 A peak
24	30.0	86.6	95.8	69.8	74.0	78.2	84.0	95.4	62.2	64.3	66.4
26	32.5	93.8	103.8	75.6	80.1	84.7	91.0	103.3	67.4	69.7	71.9
28	35.0	101.0	111.8	81.4	86.3	91.2	98.0	111.3	72.6	75.0	77.5
29	36.3	104.6	115.8	84.3	89.4	94.4	101.5	115.3	75.2	77.7	80.2
30	37.5	108.2	119.7	87.2	92.4	97.7	105.0	119.2	77.7	80.4	83.0
32	40.0	115.4	127.7	93.0	98.6	104.2	112.0	127.2	82.9	85.7	88.5
34	42.5	122.6	135.7	98.8	104.8	110.7	119.0	135.1	88.1	91.1	94.1
36	45.0	129.8	143.7	104.6	110.9	117.2	126.0	143.1	93.3	96.4	99.6
38	47.5	137.0	151.7	110.4	117.1	123.7	133.0	151.0	98.5	101.8	105.1
40	50.0	144.2	159.6	116.2	123.2	130.2	140.0	158.9	103.6	107.1	110.6
41	51.3	147.9	163.6	119.2	126.3	133.5	143.5	162.9	106.2	109.8	113.4
42	52.5	151.5	167.6	122.1	129.4	136.8	147.0	166.9	108.8	112.5	116.2

Housing

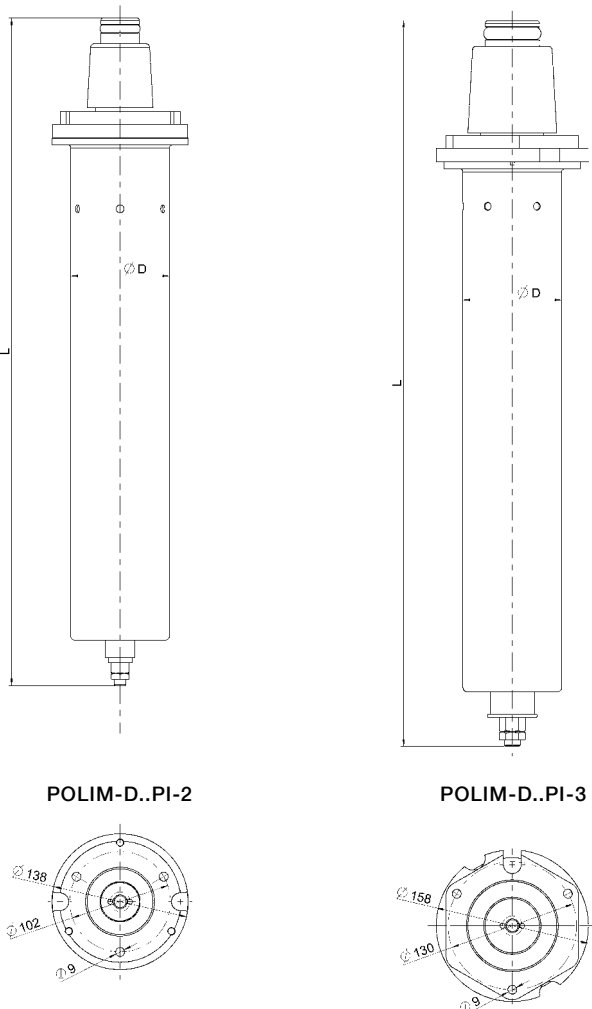
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U_c Continuous operating voltage kV rms	Length L mm	Weight kg	Diameter D mm	Insulation withstand voltage of empty housing		
				1.2/50 μ s kV peak	50 Hz, 60 s kV rms	DC voltage, 15 m kV DC
				4	440	≤ 3.6
6	440	≤ 3.6	100	200	95	103
7,6	440	≤ 3.6	100	200	95	103
8	440	≤ 3.6	100	200	95	103
10	440	≤ 3.6	100	200	95	103
12	440	≤ 3.6	100	200	95	103
14	535	≤ 5.0	100	200	95	103
15	535	≤ 5.0	100	200	95	103
16	535	≤ 5.0	100	200	95	103
17	535	≤ 5.0	100	200	95	103
18	535	≤ 5.0	100	200	95	103
20	535	≤ 5.0	100	200	95	103
22	535	≤ 5.0	100	200	95	103
24	535	≤ 5.0	100	200	95	103
26	634	≤ 6.5	100	200	95	103
28	634	≤ 6.5	100	200	95	103
29	634	≤ 6.5	100	200	95	103
30	634	≤ 6.5	100	200	95	103
32	634	≤ 6.5	100	200	95	103
34	634	≤ 6.5	100	200	95	103
36	634	≤ 6.5	100	200	95	103
38	678	≤ 7.2	100	200	95	103
40	678	≤ 7.2	100	200	95	103
41	678	≤ 7.2	100	200	95	103
42	678	≤ 7.2	100	200	95	103

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U_c Continuous operating voltage	Length L	Weight	Diameter D	Insulation withstand voltage of empty housing		
				1,2/50 μ s	50 Hz, 60 s	DC voltage, 15 m
				kV rms	mm	kg
24	595	≤ 5.5	100	250	95	103
26	694	≤ 7.3	100	250	95	103
28	694	≤ 7.3	100	250	95	103
29	694	≤ 7.3	100	250	95	103
30	694	≤ 7.3	100	250	95	103
32	694	≤ 7.3	100	250	95	103
34	694	≤ 7.3	100	250	95	103
36	694	≤ 7.3	100	250	95	103
38	738	≤ 8.0	100	250	95	103
40	738	≤ 8.0	100	250	95	103
41	738	≤ 8.0	100	250	95	103
42	738	≤ 8.0	100	250	95	103

Dimensions (mm)



Standard dimensions according outline drawing
1HC0019010 for POLIM-D..PI-2 and
1HC0021407 for POLIM-D..PI-3
(may be subject to changes)

Structure of type designation

POLIM-D 36 PI-2

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

For further information please contact:

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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

For pdf or print version please send E-mail to:
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