

Surge arrester POLIM-D



Overvoltage protection of

- Transformers
- Medium voltage equipment

Application

- Alternating current (AC)
- Outdoor and indoor

Technical data

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

Nominal discharge current I_n 8/20 μ s	10 kA (pv)
Line discharge class (LD)	1
High current impulse I_{hc} 4/10 μ s	100 kA (pv)
Long duration current impulse	250 A / 2000 μ s
Short circuit rating I_s 50 Hz	20 kA (rms) während 0.2 s
Classification according to IEEE (ANSI) C62.11	distribution heavy duty

The thermal stability of the MO surge arrester is proved in the operating duty test with a high current impulse $I_{hc} = 100$ kA, which gives an energy input of 3.6 kJ/kV (U_c).

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

$t = 1$ s	$U_{TOV} = 1.325 \times U_c$
$t = 3$ s	$U_{TOV} = 1.300 \times U_c$
$t = 10$ s	$U_{TOV} = 1.275 \times U_c$

Mechanical loads

Torque moment	50 Nm
Tensile strength axial	625 N
Short term load SSL horizontal to axis	207 Nm
Long term load SLL horizontal to axis	207 Nm

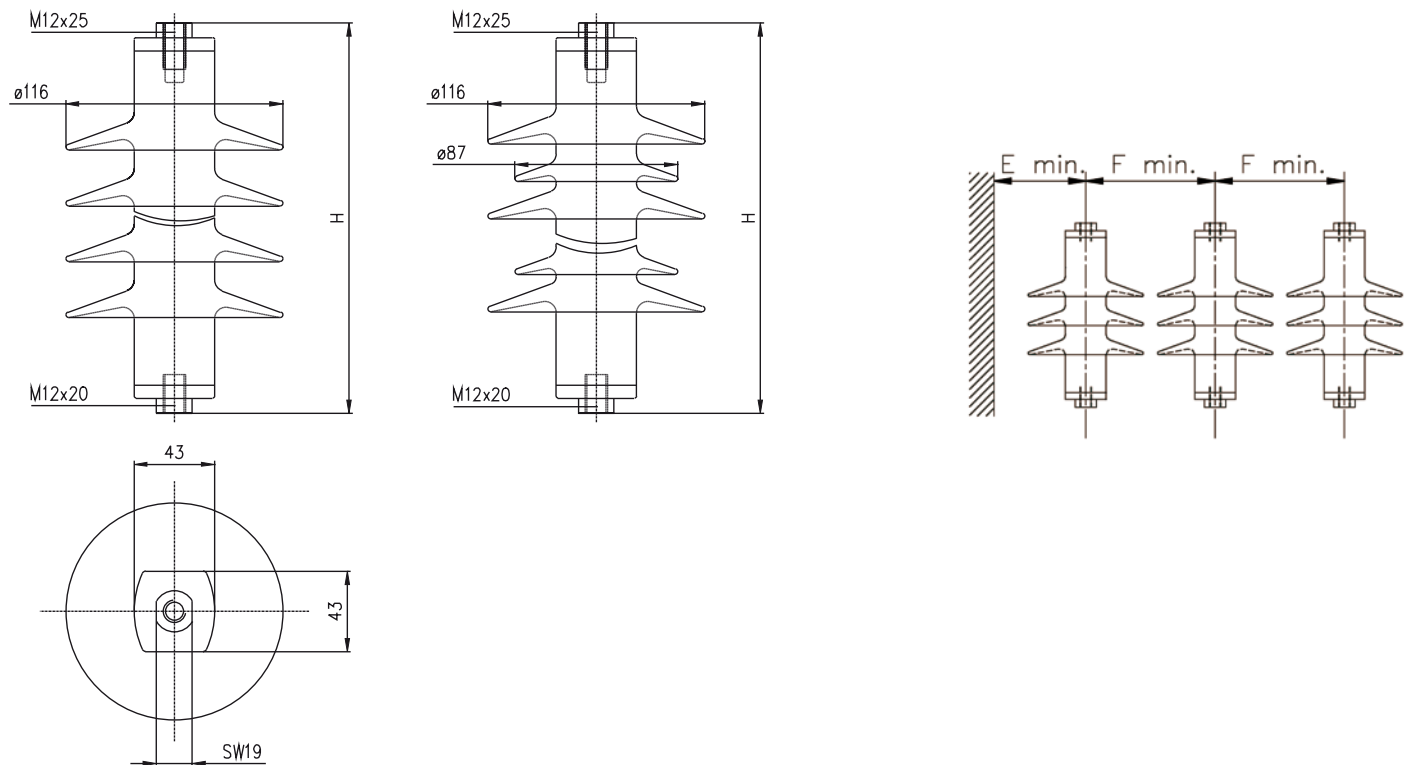
General data

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	50/60 Hz
Weather ageing test	tested according to test series A (1000 h salt fog)

Electrical data

U_c Continuous operating voltage	U_r Rated voltage	Residual voltage U_{res} in kV (pV) at specified impulse current									
		wave 1/... μ s		wave 8/20 μ s					wave 30/60 μ s		
kV rms	kV rms	5 kA pV	10 kA pV	1 kA pV	2.5 kA pV	5 kA pV	10 kA pV	20 kA pV	125 A pV	250 A pV	500 A pV
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
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
16	20.0	57.7	63.9	46.5	49.3	52.1	56.0	63.6	41.5	42.9	44.3
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
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

Dimensions (in mm)



Housing 01/03/05/07

Housing 02/04/06/08/09/10/11

Housing

U_c Continuous operating voltage	Housing sizes											Recommended clearances	
	01	02	03	04	05	06	07	08	09	10	11	E_{min}	F_{min}
kV rms	Creepage distance											mm	mm
	153	248	306	375	460	506	610	715	844	1101	1311		
4	04-01	04-02										67	120
6	06-01	06-02										90	120
8			08-03	08-04								112	131
10			10-03	10-04	10-05	10-06						135	153
12			12-03	12-04	12-05	12-06						157	175
14					14-05	14-06	14-07	14-08				180	197
16					16-05	16-06	16-07	16-08				203	218
18					18-05	18-06	18-07	18-08	18-09			225	240
20							20-07	20-08	20-09			248	262
22							22-07	22-08	22-09	22-10		270	284
24							24-07	24-08	24-09	24-10		293	306
26									26-09	26-10	26-11	315	328
28									28-09	28-10	28-11	338	350
30									30-09	30-10	30-11	361	371
32										32-10	32-11	383	393
34										34-10	34-11	406	415
36										36-10	36-11	428	437

Housing sizes	Creepage distance mm	Flashover distance mm	Height H mm	Weight kg	Insulation withstand of housing	
					1.2/50 μ s kV (pv)	50 Hz, 60 s wet kV (rms)
01	153	121	144	0.8	78	20
02	248	136	144	0.9	88	23
03	306	170	191	1.2	110	28
04	375	182	191	1.4	118	35
05	460	217	239	1.6	140	38
06	506	229	239	1.8	148	40
07	610	264	286	2.2	170	50
08	715	283	286	2.5	180	53
09	844	328	334	3.1	213	63
10	1101	420	429	3.5	273	75
11	1311	514	518	4.1	296	87

Housing

Comparison table housing sizes

Old designation	New designation
POLIM-D 4 N	POLIM-D 04-01
6 N	POLIM-D 06-01
8 N	POLIM-D 08-03
10 N	POLIM-D 10-03
12 N	POLIM-D 12-03
14 N	POLIM-D 14-05
16 N	POLIM-D 16-05
18 N	POLIM-D 18-05
20 N	POLIM-D 20-07
22 N	POLIM-D 22-07
24 N	POLIM-D 24-07
POLIM-D 4 L	POLIM-D 04-02
6 L	POLIM-D 06-02
8 L	POLIM-D 08-04
10 L	POLIM-D 10-06
12 L	POLIM-D 12-06
14 L	POLIM-D 14-08
16 L	POLIM-D 16-08
18 L	POLIM-D 18-09
20 L	POLIM-D 20-09
22 L	POLIM-D 22-10
24 L	POLIM-D 24-10
30 L	POLIM-D 30-11
36 L	POLIM-D 36-11

Structure of type designation

POLIM-D 04-01

U_c = Continuous operating voltage

Housing sizes

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For detailed information for dimensioning of our products
see 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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