Data sheet

Surge arrester
POLIM-C..N

Overvoltage protection of

- Transformers
- Motors
- Overhead lines
- Cable sheath

Applications

- Alternating current (AC)
- Outdoor and indoor

Technical data

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

Nominal discharge current I_n 8/20 µs	10 kA peak
Line discharge class (LD)	2
High current impulse I_{hc} 4/10 µs	100 kA peak
Long duration current impulse	550 A / 2000 µs
Short circuit rating I_s 50 Hz	20 kA rms for 0.2 s

The thermal stability of the MO surge arrester is proved in the operating duty test according to LD 2, which gives an energy input of 5,5 kJ/kV (U_c).

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

t = 1 s	$U_{TOV} = 1{,}31 \times U_c$
t = 3 s	$U_{TOV} = 1{,}28 \times U_c$
t = 10 s	$U_{TOV} = 1{,}25 \times U_c$

Mechanical loads

Torque moment	50 Nm
Tensile strength axial	1000 N
Short term load SSL horizontal to axis	350 Nm
Long term load SLL horizontal to axis	245 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	16,7/50/60 Hz
Weather ageing test	tested according to test series A (1000 h salt fog)

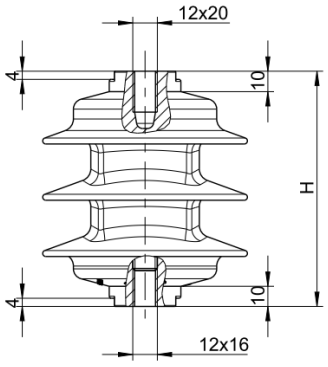
Electrical data

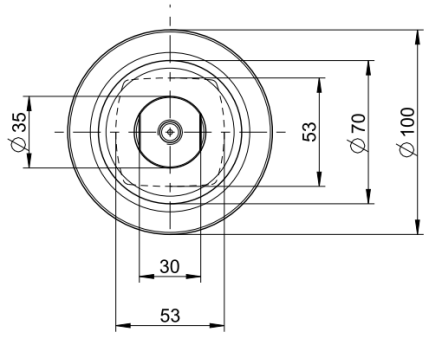
U_c Continuous operating voltage	U_r Rated voltage	Residual voltage U_{res} in kV peak at specified impulse current									
		wave 1/…µs		wave 8/20 µs					wave 30/60 µs		
kV rms	kV rms	5 kA	10 kA	1 kA	2,5 kA	5 kA	**10 kA**	20 kA	125 A	250 A	500 A
0.9	1.13	3.7	4.4	2.7	2.8	3.0	**3.1**	3.6	2.4	2.4	2.5
1.0	1.25	4.2	4.9	3.0	3.2	3.4	**3.5**	4.0	2.7	2.7	2.8
1.3	1.63	5.2	6.0	3.9	4.1	4.3	**4.5**	5.2	3.4	3.5	3.6
1.6	2.00	6.2	7.0	4.7	5.0	5.2	**5.5**	6.3	4.1	4.3	4.4
1.8	2.25	6.9	7.8	5.3	5.6	5.9	**6.2**	7.1	4.7	4.8	5.0
2.0	2.50	7.7	8.6	5.9	6.3	6.6	**6.9**	7.9	5.2	5.4	5.6
2.2	2.75	8.4	9.3	6.5	6.9	7.2	**7.6**	8.7	5.7	5.9	6.1
2.5	3.13	9.4	10.4	7.4	7.8	8.2	**8.6**	9.9	6.5	6.7	6.9
3.0	3.75	11.2	12.3	8.8	9.3	9.8	**10.3**	11.8	7.7	8.0	8.3
3.6	4.50	13.3	14.6	10.6	11.2	11.8	**12.4**	14.2	9.3	9.6	10.0
4.0	5.00	14.8	16.1	11.8	12.5	13.1	**13.8**	15.8	10.3	10.7	11.1
4.8	6.00	17.5	19.0	14.1	14.9	15.6	**16.5**	18.9	12.3	12.8	13.2
5.0	6.25	18.3	19.8	14.7	15.5	16.3	**17.2**	19.7	12.9	13.3	13.8
5.5	6.88	20.0	21.7	16.1	17.1	17.9	**18.9**	21.6	14.1	14.6	15.2
6.0	7.50	21.8	23.5	17.6	18.6	19.5	**20.6**	23.5	15.4	15.9	16.5
6.3	7.88	22.9	24.7	18.5	19.6	20.5	**21.7**	24.8	16.2	16.8	17.4
6.6	8.25	23.9	25.8	19.3	20.5	21.5	**22.7**	25.9	17.0	17.5	18.2
7.0	8.75	25.4	27.3	20.5	21.7	22.8	**24.1**	27.5	18.0	18.6	19.3
7.2	9.00	26.0	28.0	21.0	22.3	23.4	**24.7**	28.2	18.5	19.1	19.8
7.5	9.38	27.1	29.2	22.0	23.3	24.4	**25.8**	29.5	19.3	19.9	20.7

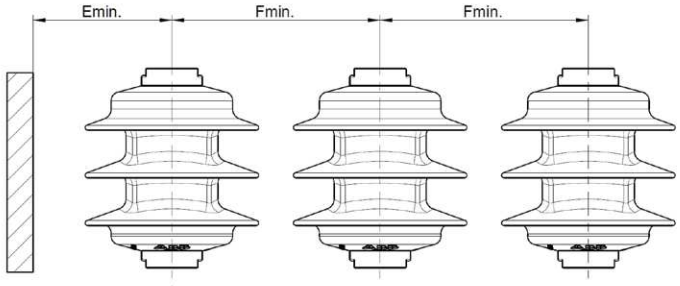
Housing

U_c Continuous operating voltage	Creepage distance	Flashover distance	Height H	Weight	Insulation withstand voltage of empty housing				Recommended minimum clearances	
					1,2/50 µs		50 Hz, 60s, wet			
					required values acc. to IEC	guaranteed	required values acc. to IEC	guaranteed	E_{min}	F_{min}
kV rms	mm	mm	mm	kg	kV peak	kV peak	kV rms	kV rms	mm	mm
0.9	138	107	87.5	0.8	4.7	20	1.9	4.3	55	105
1.0	138	107	87.5	0.8	6	20	2.1	4.3	55	105
1.3	138	107	87.5	0.8	7	20	2.7	4.3	55	105
1.6	138	107	87.5	0.8	9	20	3.3	4.3	55	105
1.8	138	107	87.5	0.8	10	20	3.8	4.3	55	105
2.0	138	107	87.5	0.8	11	20	4.2	4.3	55	105
2.2	199	134	115	1.1	12	30	4.6	10.7	55	105
2.5	199	134	115	1.1	13	30	5.2	10.7	55	105
3.0	199	134	115	1.1	16	30	6.3	10.7	55	105
3.6	199	134	115	1.1	19	30	7.5	10.7	57	105
4.0	199	134	115	1.1	21	30	8.4	10.7	61	105
4.8	199	134	115	1.1	25	30	9.9	10.7	70	105
5.0	199	134	115	1.1	26	30	10.4	10.7	72	105
5.5	255	162	142.5	1.6	29	40	11.4	16.1	78	105
6.0	255	162	142.5	1.6	31	40	12.4	16.1	83	105
6.3	255	162	142.5	1.6	33	40	13.1	16.1	86	105
6.6	255	162	142.5	1.6	34	40	13.7	16.1	90	106
7.0	255	162	142.5	1.6	36	40	14.5	16.1	94	110
7.2	255	162	142.5	1.6	37	40	14.9	16.1	96	112
7.5	255	162	142.5	1.6	39	40	15.6	16.1	99	115

Dimensions (mm)







Standard dimensions without accessories (may be subject to changes)
Dimensions according outline drawing 1HC0011755
Outline drawings with accessories on request

Structure of type designation

POLIM-C 1.8 N

Type of arrester
U_c = Continuous operating voltage
Housing

For further information please contact:

ABB Switzerland Ltd
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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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