

# Surge arrester

## POLIM-R..-1N



### Product description:

- Metal-oxide (MO) surge arrester without spark gap, with own ABB metal-oxide resistors since more than 30 years
- Direct molded silicone housing for best environmental robustness
- 100% in house production – fully in charge of complete process
- High quality, safe and reliable, maintenance free
- For alternating current (AC) systems
- For indoor and outdoor installations
- Outstanding low protection level
- Excellent long-term stability even in case of frequent current impulses

### Especially recommended:

- overvoltage protection of motors
- overvoltage protection of power electronics
- energy absorber of semiconductor switching devices

### Additional certification:

- Shock and vibration tested according to IEC 61373
- Fire and smoke behavior tested and classified according to EN 45545-2

## Technical data

### Characteristics

Impulse current tested according to IEC 61643-11	Class I & II
Nominal discharge current $I_n$ (8/20 $\mu$ s)	10 kA <sub>peak</sub>
Lightning discharge current $I_{imp}$ (10/350 $\mu$ s)	10 kA <sub>peak</sub>

### Characteristics tested according to EN 50526-1 / IEC 62848-1

High current impulse $I_{hc}$ (4/10 $\mu$ s)	100 kA <sub>peak</sub>
Charge transfer capability $Q_t$	2.5 As (C)
Energy withstand capability W	12 kJ/kV ( $U_c$ )
Rated short-circuit current (after overload) $I_s$	20 kA <sub>DC</sub> for 0.2 s

### Mechanical loads

Torque	20 Nm
Short term load SSL perpendicular to axis	60 Nm
Long term load SLL perpendicular to axis	30 Nm

### Service conditions

Ambient air temperature $T_{amb}$	-60 to +55 °C (for temperatures up to 80 °C consider instructions of application guidelines)
Altitude	up to 1800 m (for higher altitudes contact ABB)
Frequency of system voltage	15 to 62 Hz

# Electrical data and Housing

## Electrical data

Continuous operating voltage $U_c (=U_r)^*$	Residual voltage $U_{res}$ at specified impulse current									
	Steep current impulse wave 1/... $\mu$ s		Lightning current impulse wave 8/20 $\mu$ s					Switching current impulse wave 30/60 $\mu$ s		
	5 kA	10 kA	1 kA	2 kA	5 kA	$I_n=10$ kA	20 kA	250 A	500 A	1000 A
$kV_{rms}$	$kV_{peak}$	$kV_{peak}$	$kV_{peak}$	$kV_{peak}$	$kV_{peak}$	$kV_{peak}$	$kV_{peak}$	$kV_{peak}$	$kV_{peak}$	$kV_{peak}$
0.11	0.35	0.38	0.30	0.32	0.33	<b>0.34</b>	0.38	0.28	0.29	0.30
0.22	0.72	0.77	0.61	0.64	0.68	<b>0.70</b>	0.77	0.58	0.60	0.61
0.28	0.88	0.94	0.75	0.79	0.83	<b>0.86</b>	0.94	0.71	0.73	0.75
0.40	1.20	1.28	1.02	1.07	1.13	<b>1.17</b>	1.28	0.96	0.99	1.02
0.44	1.37	1.47	1.17	1.23	1.29	<b>1.34</b>	1.47	1.10	1.14	1.17
0.66	2.08	2.22	1.77	1.86	1.95	<b>2.03</b>	2.22	1.67	1.72	1.77
0.78	2.43	2.60	2.08	2.18	2.29	<b>2.38</b>	2.60	1.96	2.01	2.07

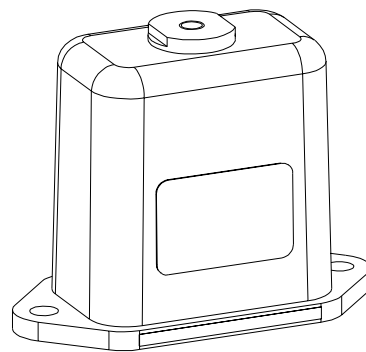
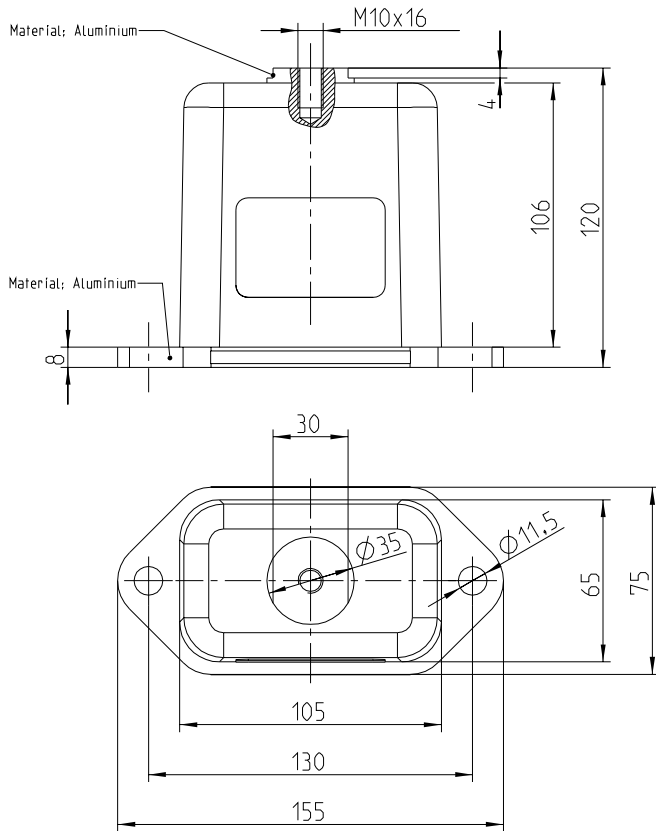
\* The rated voltage  $U_r$  of the arrester coincides with the continuous operating voltage  $U_c$ .

## Housing

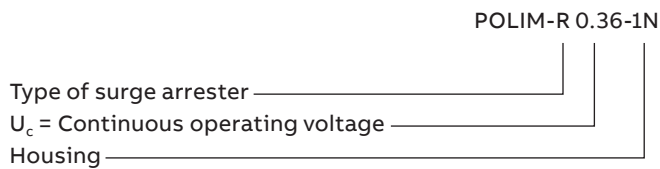
Continuous operating voltage $U_c$	Creepage distance mm	Flashover distance mm	Height mm	Weight kg	Insulation withstand voltage of empty housing			
					1.2/50 $\mu$ s		1 min wet	
					required values acc. to EN/IEC	guaranteed	required values acc. to EN/IEC	guaranteed
$kV_{rms}$					$kV_{peak}$	$kV_{peak}$	$kV_{AC}$	$kV_{AC}$
0.11	115	115	120	<1.5	0.50	20	0.34	10
0.22	115	115	120	<1.5	1.03	20	0.70	10
0.28	115	115	120	<1.5	1.27	20	0.86	10
0.40	115	115	120	<1.5	1.72	20	1.17	10
0.44	115	115	120	<1.5	1.97	20	1.34	10
0.66	115	115	120	<1.5	2.99	20	2.03	10
0.78	115	115	120	<1.5	3.50	20	2.38	10

# Dimensions

Dimensions according to outline drawing 1HC0015765  
 Outline drawings with accessories on request



## Structure of type designation



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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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