Surge arrester
POLIM-H ..-.. D

Product description:
- Metal-oxide (MO) surge arrester without spark gap, designed and type tested according to EN 50526-1 and IEC 62848-1, with own ABB metal-oxide resistors since more than 30 years
- Direct molded silicone housing in patented loop design for best environmental robustness
- 100 % in house production – fully in charge of complete process
- High quality, safe and reliable, maintenance free
- For DC systems
- High energy absorption capacity
- For indoor and outdoor installations

Especially recommended for overvoltage protection of:
- Fixed installations in DC traction systems (A1)
- Equipment on rolling stock and locomotives (A1)
- High speed trains
- Devices in DC installations

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

Technical data

Classification according to EN 50526-1 and IEC 62848-1	
Nominal discharge current I_n (8/20 µs)	10 kA_{peak}
Class	DC-B
High current impulse I_{hc} (4/10 µs)	100 kA_{peak}
Switching current impulse I_{sw} (30/60 µs)	1000 A_{peak}
Charge transfer capability Q_t	2.5 As
Energy withstand capability W	9.5 kJ/kV_{Uc}
Short circuit rating I_s	40 kA_{DC} for 0.2 s

The thermal stability of the MO surge arrester is proved in the operating duty test according to class DC-B with two impulses of the charge transfer capability Q_t (total 5 As).

Classification according to IEC 60099-4	
Arrester class	SH, Station High
Line discharge class (LD)	4
Nominal discharge current I_n (8/20 µs)	20 kA_{peak}
Repetitive charge transfer rating Q_{rs}	2.8 As (C)
Long duration current impulse	1350 A for 2000 µs
Short-circuit rating I_s (50 Hz)	65 kA_{rms} for 0.2 s

Mechanical loads	
Torque	100 Nm
Tensile strength axial	4000 N
Short term load SSL perpendicular to axis	4000 Nm
Long term load SLL perpendicular to axis	2000 Nm

Service conditions	
Ambient air temperature T_{amb}	−60 to +40°C (for temperatures up to 80 °C consider instructions of application guidelines)
Altitude	up to 1800 m (for higher altitudes contact ABB)

Electrical data and Housing

Electrical data

Continuous operating voltage	**Residual voltage U_{res} at specified impulse current**									
	Steep current impulse wave 1/…µs		Lightning current impulse wave 8/20 µs					Switching current impulse wave 30/60 µs		
U_c (=U_r) *	**5 kA**	**10 kA**	**1 kA**	**2 kA**	**5 kA**	**I_n=10 kA**	**20 kA**	**250 A**	**500 A**	**1000 A**
kV_{DC}	**kV_{peak}**	**kV_{peak}**	**kV_{peak}**	**kV_{peak}**	**kV_{peak}**	**kV_{peak}**	**kV_{peak}**	**kV_{peak}**	**kV_{peak}**	**kV_{peak}**
1.0	2.43	2.60	2.08	2.18	2.29	**2.38**	2.60	1.96	2.01	2.07
1.5	3.65	3.90	3.11	3.26	3.43	**3.57**	3.90	2.93	3.02	3.10
2.0	4.86	5.19	4.15	4.35	4.57	**4.76**	5.19	3.91	4.02	4.14
2.5	6.07	6.49	5.18	5.44	5.71	**5.95**	6.49	4.88	5.03	5.17
3.0	7.29	7.79	6.22	6.52	6.85	**7.14**	7.79	5.86	6.03	6.20
4.2	10.20	10.90	8.70	9.13	9.58	**10.00**	10.90	8.20	8.44	8.68
4.7	11.42	12.20	9.74	10.22	10.73	**11.19**	12.20	9.18	9.45	9.72
5.0	12.39	13.24	10.57	11.09	11.64	**12.14**	13.24	9.96	10.25	10.54

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

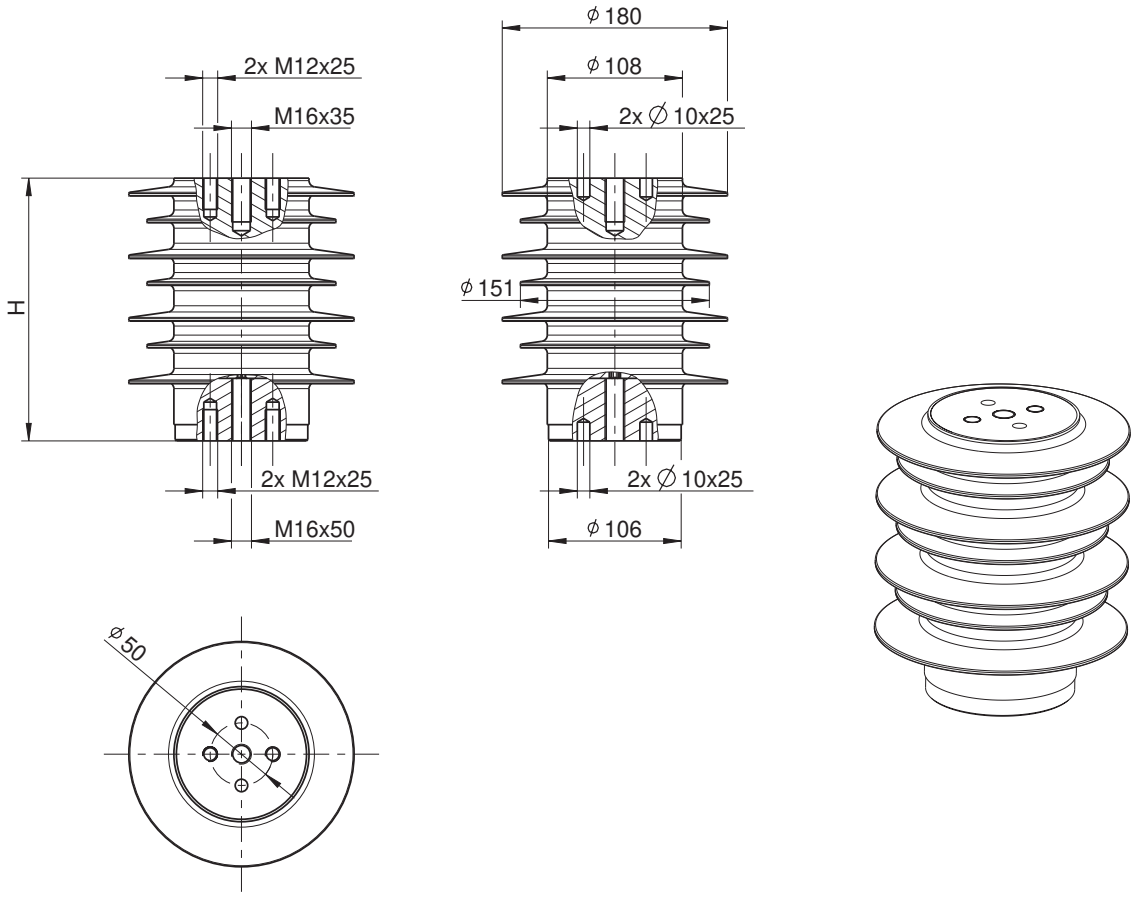
Housing

Continuous operating voltage U_c	**Housing size ***	**Creepage distance**	**Flashover distance**	**Height**	**Weight**	**Insulation withstand voltage of empty housing**			
						1.2/50 µs		**1 min wet**	
						required values acc. to EN/IEC	guaranteed	required values acc. to EN/IEC	guaranteed
kV_{DC}		**mm**	**mm**	**mm**	**kg**	**kV_{peak}**	**kV_{peak}**	**kV_{DC}**	**kV_{DC}**
1.0	10	409	188	160	4.1	3.50	118	2.38	45
1.5	10	409	188	160	4.2	5.25	118	3.57	45
2.0	10	409	188	160	4.3	7.00	118	4.76	45
2.5	10	409	188	160	4.4	8.75	118	5.95	45
3.0	20	559	238	210	5.8	10.50	150	7.14	57
4.2	20	559	238	210	5.9	14.70	150	10.00	57
4.7	20	559	238	210	6	16.45	150	11.19	57
5.0	20	559	238	210	6.1	17.85	150	12.14	57

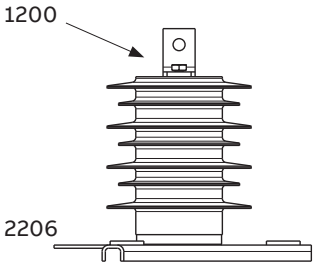
* Other combinations may be available upon request

Dimensions

Dimensions according to outline drawing 2GHV045094
Outline drawings with accessories on request



Structure of type designation with optional accessories (Example)



POLIM-H 4.7-20 D / 1200 / 2206

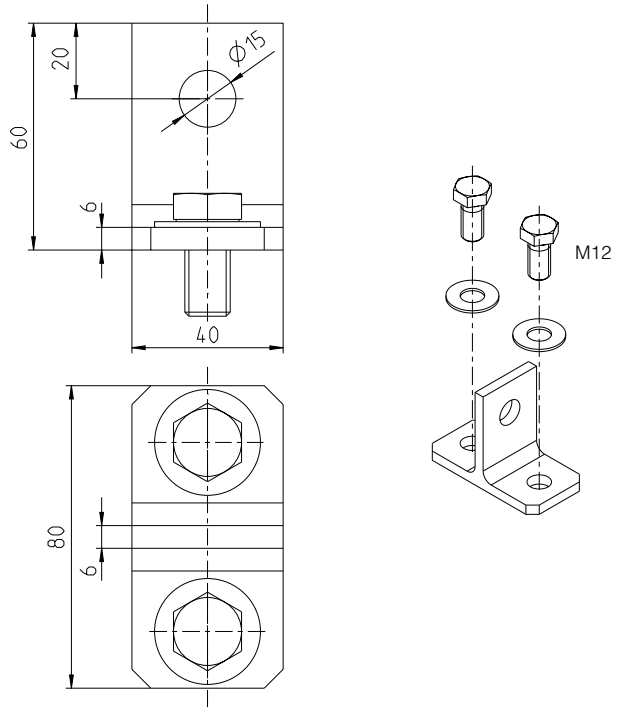
Type of surge arrester
U_c = Continuous operating voltage
Housing
Direct current

Type of top accessory (optional)
Type of bottom accessory (optional)

Dimensions (mm)

Common Top Accessories (optional)

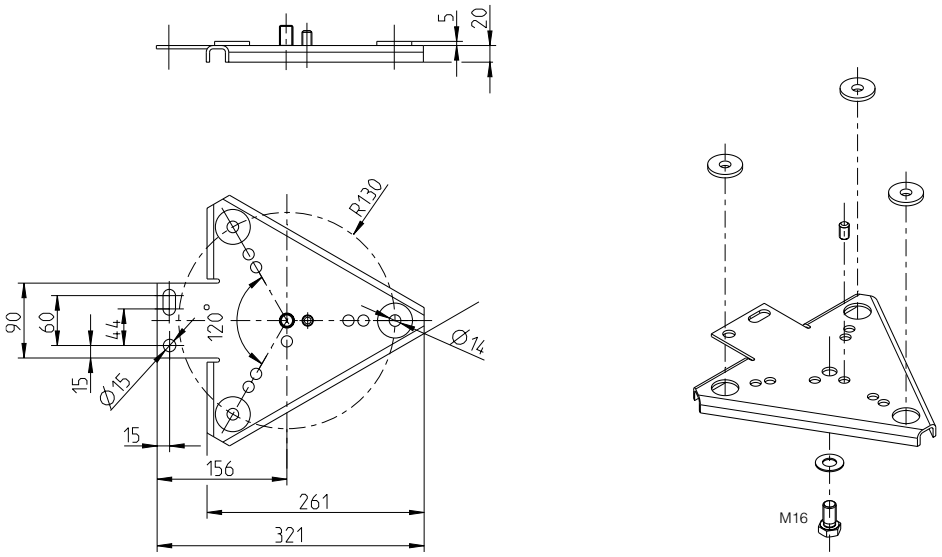
Type 1200 Flat terminal (aluminium alloy)
Type 1201 Flat terminal (stainless steel)



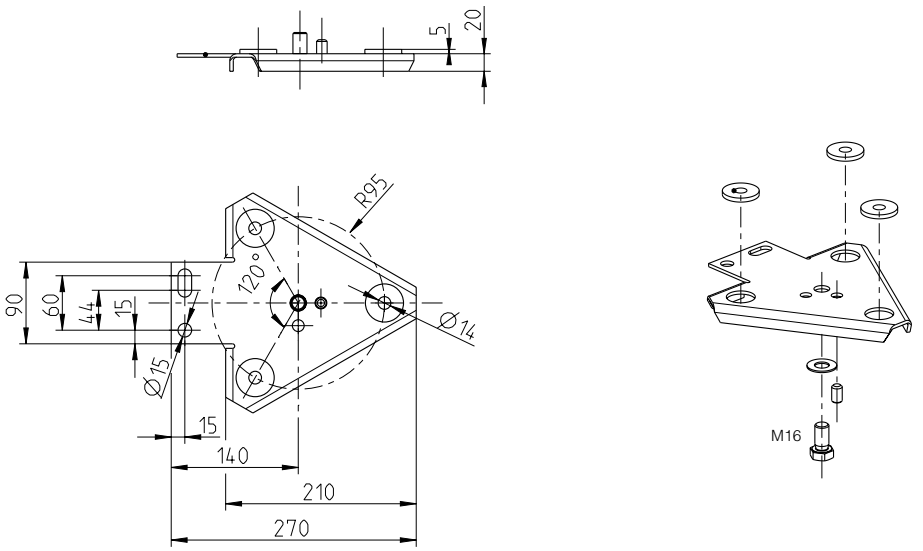
Dimensions (mm)

Common Bottom Accessories (optional)

Type 2200 3-points base R = 130 (hot-dip galvanized steel)



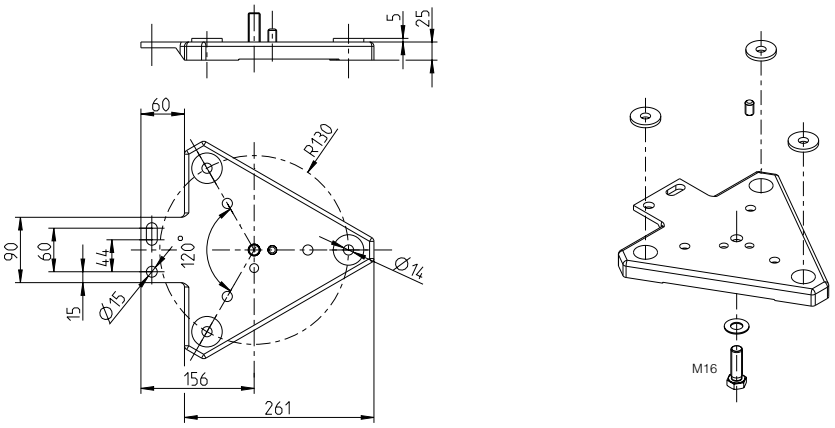
Type 2202 3-points base R = 95 (hot-dip galvanized steel)



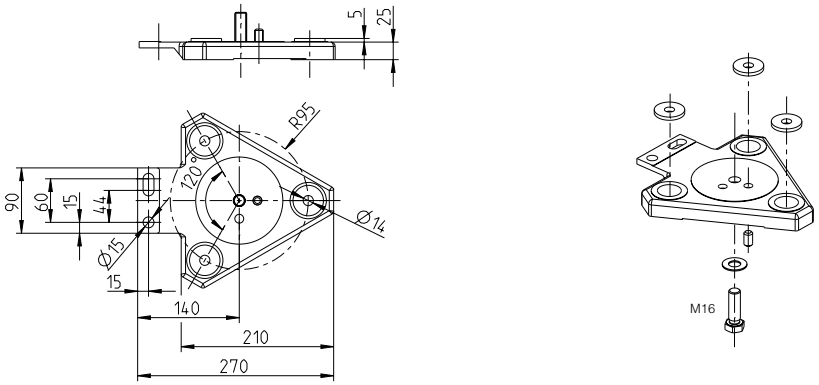
Dimensions (mm)

Common Bottom Accessories (optional)

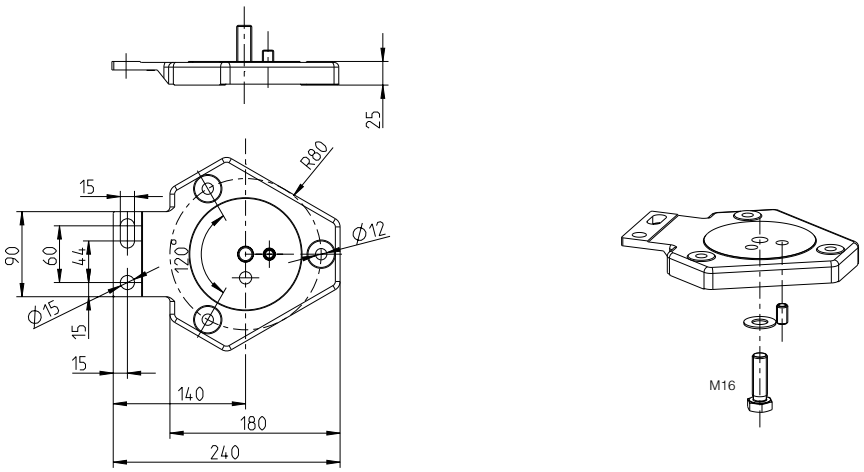
Type 2204 3-points reinforced base R = 130 – (aluminium alloy)



Type 2206 3-points reinforced base R = 95 – (aluminium alloy)



Type 2225 3-points reinforced base R = 80 – (aluminium alloy)



Dimensions (mm)

For more information please contact:

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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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Note
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Our products are certified according ISO 9001, 14001 and 18001

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