



ZU HV DC

ZU HV DC is a surge arrester with typical usage in direct current systems and particularly where electric traction (railway, underground) is used.

It provides the following features and benefits:

- Surge arrester type L with: limiting operation, varistor for protection against overvoltages in direct current applications, and atmospheric lightning strikes;
- This SPD is installed in a vertical position, when hooked on overhead lines and when mounted on electric motors;
- Its high mechanical resistance to bumps and vibrations complies with the regulations of IEC/EN 60068 part 2-29;
- Its silicone rubber housing with high creepage distance allows internal or external mounting;
- Its high discharge capacity I_n is 10 kA (8/20);
- Its continuous voltage rating is from 1 to 4kV d.c.;
- Size and volume of the surge arresters based on the practical minimum for each nominal voltage;
- The insulator of the surge arrester is characterized by the absence of junction lines;
- The construction and manufacturing process prevent partial discharges;
- Sealed with aluminium fittings and terminated with stainless steel clamps, screws and washers.

Model ZU HV DC -/10

Nominal voltage	U_r	da 1,2 kV a 4,8 kV
Nominal discharge current	I_n	10 kA
High current impulse	I_{hc}	100 kA 4/10 μ s
Long duration impulse current		1000 A / 2 ms
Class in accordance with EN 50526-1; 2012		DC-B
Thermal energy rating kJ/kV (IEC 60099-4 Ed. 3.0; 2014)		10 (10 kJ/kV a U_r)
Line discharge class (based on IEC 60099-4 Ed. 2.2; 2009)		4
Rated short circuit current		40 kA / 0,2 s
Resistance to mechanical impact, according IEC/EN 60068 part 2-29		15 g
Resistance to vibration IEC/EN 60068 part 2-6		3 g (10 - 500 Hz)
Ambient temperature range		- 40 ... + 55 °C
Altitude above sea level		up to 1000 m above sea level*
Insulator		silicon rubber HTV
Insulator colour		grey RAL 7040

* for altitude above 1000 m a.s.l. apply declassification in accordance with CEI-IEC



Rated voltage	Continuous operating voltage	Max. residual voltage / Protection level							Height	Total creepage distance	Weight	Surge arrester insulation		Model	CODE
		10 kA 1/2 μ s	5 kA 8/20	10 kA 8/20	20 kA 8/20	250 A 30/70	500 A 30/70	1000 A 30/70				Withstand voltage wet Unst kV	Lightning wet impulse withstand Unsch kV		
Ur kV	Uc kV	10 kA 1/2 μ s kV	5 kA 8/20 μ s U _{pl} kV	10 kA 8/20 μ s U _{pl} kV	20 kA 8/20 μ s U _{pl} kV	250 A 30/70 μ s U _{ps} kV	500 A 30/70 μ s U _{ps} kV	1000 A 30/70 μ s U _{ps} kV	h mm	mm	kg	Withstand voltage wet Unst kV	Lightning wet impulse withstand Unsch kV	ZU HV DC	
1,0	1,0	2,7	2,5	2,6	2,8	2,0	2,1	2,1	115	320	3,1	≥ 35	≥ 123	1/10	111 001
1,5	1,5	3,7	3,5	3,7	3,9	2,8	2,9	3,0	115	320	3,2	≥ 35	≥ 123	1,5/10	111 005
2,0	2,0	5,1	4,8	5,0	5,4	3,9	4,0	4,1	115	320	3,3	≥ 35	≥ 123	2/10	111 002
3,0	3,0	7,5	6,9	7,3	7,9	5,7	5,8	6,0	115	320	3,4	≥ 35	≥ 123	3/10	111 003
4,0	4,0	10,2	9,5	10,0	10,8	7,8	8,0	8,2	115	320	3,1	≥ 35	≥ 123	4/10	111 004
4,5	4,5	11,5	10,7	11,3	12,2	8,8	9,0	9,2	115	320	3,4	≥ 35	≥ 123	4,5/10	111 006

TECHNICAL DATA

Power frequency voltage versus time characteristic (TOV) (pre heating to 60 °C)

U / Uc

