High Voltage Surge Arresters
Buyer´s Guide — Section HS PEXLIM T-T

Power and productivity
for a better world™

Zinc-Oxide Surge Arrester HS PEXLIM T-T

Protection of switchgear, transformers and other equipment in high voltage systems against atmospheric and switching overvoltages.

- **in areas with very high lightning intensity**
- **where grounding or shielding conditions are poor or incomplete**
- **for important installations**
- **where energy requirements are very high (e.g. very long lines, capacitor protection).**
- **Specially suited to extreme seismic zones.**

Superior where low weight, non-fragility and additional personnel safety is required.

Other data can be ordered on request. Please contact your local sales representative.

Brief performance data

System voltages (U_m)	245 - 800 kV
Rated voltages (U_r)	180 - 624 kV
Nominal discharge current (IEC)	10/15/20 kA_{peak}
Classifying current (ANSI/IEEE)	10/15 kA_{peak}
Discharge current withstand strength:	
High current 4/10 µs	100 kA_{peak}
Low current 2000 µs	2200 A_{peak}
Energy capability:	
Line discharge class (IEC)	Class 5
[2 impulses, (IEC Cl. 8.5.5)	15.4 kJ/kV (U_r)]
Fulfils/exceeds requirements of ANSI transmission-line discharge test for 362 kV systems.	
Short-circuit/Pressure relief capability	65 kA_{sym}
External insulation	Fulfils/exceeds standards
Mechanical strength:	
Specified long-term load (SLL)	19000 Nm
Specified short-term load (SSL)	28000 Nm
Service conditions:	
Ambient temperature	-50 °C to +45 °C
Design altitude	max. 1000 m
Frequency	15 - 62 Hz

HS PEXLIM T-T
Guaranteed protective data

Max. system voltage	Rated voltage	Max. continuous operating voltage [1]		TOV capability [2]		Max. residual voltage with current wave						
		as per IEC	as per ANSI/IEEE			30/60 µs			8/20 µs			
U_m	U_r	U_c	MCOV	1 s	10 s	1 kA	2 kA	3 kA	5 kA	10 kA	20 kA	40 kA
kV_{rms}	kV_{rms}	kV_{rms}	kV_{rms}	kV_{rms}	kV_{rms}	kV_{peak}	kV_{peak}	kV_{peak}	kV_{peak}	kV_{peak}	kV_{peak}	kV_{peak}
245	180	144	144	209	198	354	364	371	389	405	438	476
	192	154	154	218	207	369	380	387	406	423	457	497
	216	156	174	246	233	415	427	435	457	476	514	559
	228	156	180	259	246	438	451	459	482	502	542	590
300	228	182	182	259	246	438	451	459	482	502	542	590
	240	191	191	273	258	461	475	484	507	528	571	621
362	258	206	209	310	293	523	538	548	575	599	647	704
	264	211	212	310	293	523	538	548	575	599	647	704
	276	221	221	314	297	531	546	556	583	608	656	714
380	288	230	230	328	310	554	569	580	609	634	685	745
400	300	240	240	342	323	577	593	604	634	660	713	776
420	330	264	267	378	358	638	656	669	702	731	789	859
	360	267	291	410	388	692	712	725	761	792	856	931
	390	267	315	444	420	750	771	786	824	858	927	1013
550	396	317	318	474	448	793	816	831	872	908	981	1072
	420	336	336	478	453	807	830	846	888	924	998	1091
	444	349	353	506	479	853	878	894	938	977	1060	1153
800	On request											

More detailed information on the TOV capability and the protective characteristics are given in Publ. 1HSM 9543 13-01en.

1) The continuous operating voltages U_c (as per IEC) and MCOV (as per ANSI) differ only due to deviations in type test procedures.
U_c has to be considered only when the actual system voltage is higher than the tabulated.
Any arrester with U_c higher than or equal to the actual system voltage divided by √3 can be selected.

2) With prior duty equal to the maximum single-impulse energy stress (10.0 kJ/kV (U_r)).

Arresters with lower or higher rated voltages may be available on request for special applications.

HS PEXLIM T-T
Technical data for housings

Max. system voltage	Rated voltage	Housing	Creepage distance	External insulation *)				Dimensions					
U_m	U_r			1.2/50 µs dry	50 Hz wet (60s)	60 Hz wet (10s)	250/2500 µs wet	Mass	A_{max}	B	C	D	Fig.
kV_{rms}	kV_{rms}		mm	kV_{peak}	kV_{rms}	kV_{rms}	kV_{peak}	kg	mm	mm	mm	mm	
245	180-216	TH245	7150	1081	524	510	750	170	2310	600	-	300	1
	228	TV245	9900	1500	700	700	1050	245	3495	600	-	300	2
300	228-240	TV300	9900	1500	700	700	1050	260	3495	1600	800	1000	3
362	258-276	TH362	9900	1500	700	700	1050	265	3495	1600	800	1000	3
380	288	TH380	9900	1500	700	700	1050	270	3495	1600	800	1000	3
400	300	TM400	9900	1500	700	700	1050	270	3495	1600	800	1000	3
420	330	TH420	12100	1831	874	860	1275	300	4035	1600	800	1000	3
	360	TH420	12100	1831	874	860	1275	300	4035	1200	800	600	3
	390	TV420	14300	2162	1048	1020	1500	330	4575	1200	800	600	3
550	396	TH550	14300	2162	1048	1020	1500	350	4890	2000	1000	1200	4
	420	TH550	14300	2162	1048	1020	1500	350	4890	2000	1000	1200	4
	444	TH550	14850	2250	1050	1050	1575	405	5540	2000	1000	1200	5

*) Sum of withstand voltages for empty units of arrester.

HS PEXLIM T-T

Technical data for housings

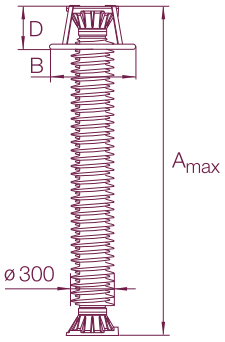


Figure 1

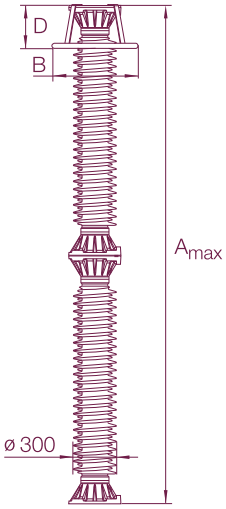


Figure 2

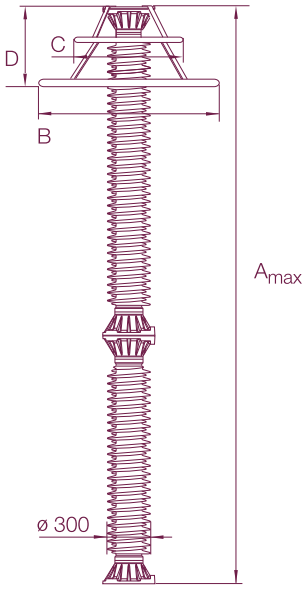


Figure 3

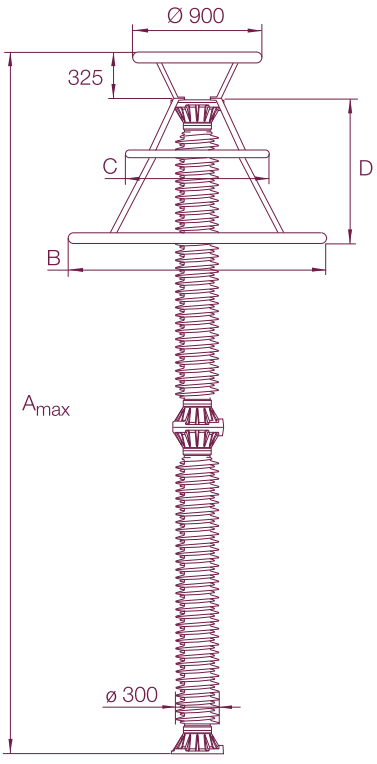


Figure 4

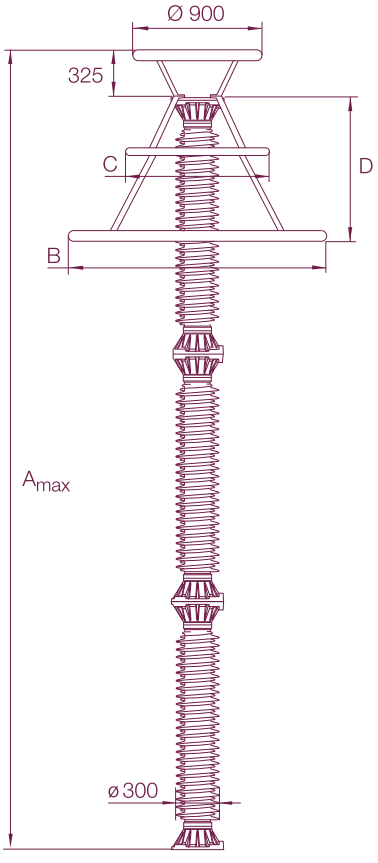
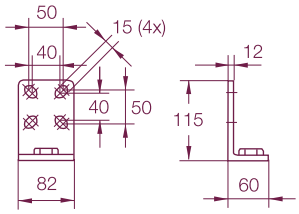


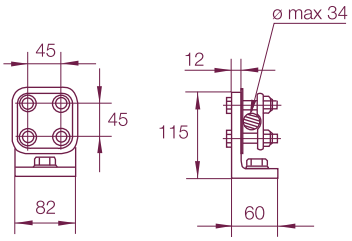
Figure 5

HS PEXLIM T-T
Accessories

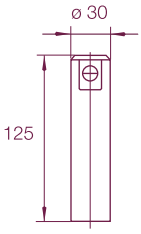
Line terminals



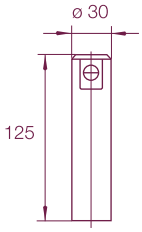
1HSA410 000-A
Aluminium



1HSA410 000-B
Aluminium flag with other items in stainless steel

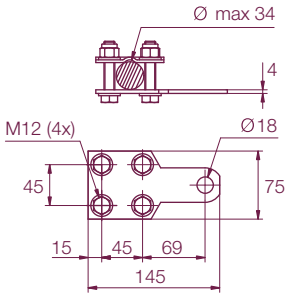


1HSA410 000-C
Aluminium

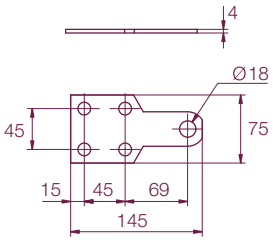


1HSA410 000-D
Stainless steel

Earth terminals

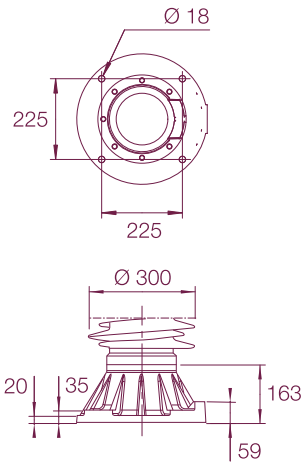


1HSA420 000-U
Stainless steel

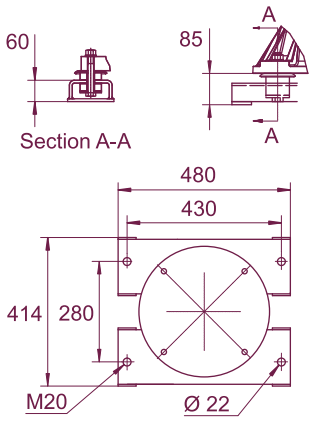


1HSA420 000-V
Stainless steel

Drilling plans



Without insulating base
Aluminium



Insulating base
1HSA430 000-P
Galvanized steel

M20 bolts for connection to structure are not supplied by ABB.

HS PEXLIM T-T
Shipping data

Rated voltage	Housing	Number of arresters per crate					
		One		Three		Six	
U_r		Volume	Gross	Volume	Gross	Volume	Gross
kV_{rms}		m^3	kg	m^3	kg	m^3	kg
180	TH245	5.4	315	5.4	676	6.0	1262
192	TH245	5.4	316	5.4	680	6.0	1270
216	TH245	5.4	321	5.4	692	6.0	1295
228	TV245	2.6	340	4.3	893	-	-
228	TV300	2.8	405	5.3	1006	-	-
240	TV300	2.8	407	5.3	1011	-	-
258	TH362	2.8	411	5.3	1026	-	-
264	TH362	2.8	411	5.3	1026	-	-
276	TH362	2.8	412	5.3	1028	-	-
288	TH380	2.8	414	5.3	1033	-	-
300	TM400	2.8	416	5.3	1038	-	-
330	TH420	5.8	507	6.6	1163	-	-
360	TH420	5.2	452	5.5	1086	-	-
390	TV420	5.2	483	5.5	1179	-	-
396	TH550	6.7	611	6.7	1355	-	-
420	TH550	6.7	612	6.7	1357	-	-

Rated voltage	Housing	Number of arresters per crate			
		One		Two	
U_r		Volume	Gross	Volume	Gross
kV_{rms}		m^3	kg	m^3	kg
444	TH550	3.7	602	5.5	1054

Each crate contains a certain number of arrester units and accessories for assembly and erection. A packing list is attached externally on each crate.

Each separate crate is numbered and the numbers of all crates and their contents are listed in the shipping specification. ABB reserves the right to pack arresters in the most effective/economic combination. Alternate or non-standard crates may involve additional charges.

The table above is to be seen as an approximation and specific data for deliveries may differ from the values given.

For more information please contact:

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NOTE! ABB AB is working continuously to improve the products. We therefore reserve the right to change designs, dimensions and data without prior notice.

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