Zinc Oxide Surge Arrester PEXLIM R-Y

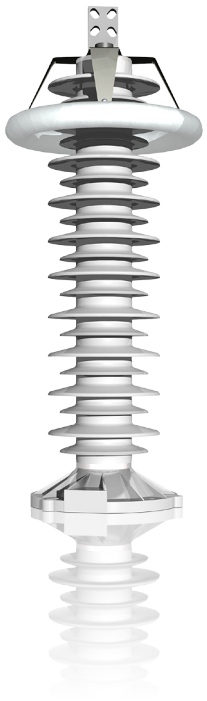
Protection of switchgear, transformers and other equipment in high voltage systems against atmospheric and switching overvoltages. For use when requirements of lightning intensity, energy capability and pollution are moderate.

Superior where low weight, reduced clearances, flexible mounting, non-fragility and additional personnel safety is required.
Major component in PEXLINK™ concept for transmission line protection.

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

Brief performance data

Arrester classification as per IEC 60099-4 Ed 3.0	Station; SL
Arrester classification as per IEEE Std C62.11-2012	Station
System voltages (U_s)	24 - 170 kV
Rated voltages (U_r)	18 - 144 kV
Nominal discharge current (IEC)	10 kA_{peak}
Lightning impulse classifying current (ANSI/IEEE)	10 kA_{peak}
Charge, energy and current withstand:	
Repetitive charge transfer rating, Q_{rs} (IEC)	1.2 C
Thermal energy rating, Wth (IEC)	5 kJ/kV (U_r)
Single impulse energy capability (2 ms to 4 ms impulse)	2.5 kJ/kV (U_r)
Discharge current withstand strength:	
High current 4/10 µs	100 kA_{peak}
Low current 2000 µs, (based on Q_{rs})	600 A_{peak}
Energy class as per IEEE standard (switching surge energy rating)	-
Single-impulse withstand rating as per IEEE standard	1.2 C
Repetitive charge transfer test value - sample tests on all manufactured block batches	1.5 C
Short-circuit/Pressure relief capability	50 $kA_{rms(sym)}$
Mechanical strength:	
Specified long-term load (SLL)	1000 Nm
Specified short-term load (SSL)	1600 Nm
Service conditions:	
Ambient temperature	-50 °C to +45 °C
Design altitude	max. 1000 m
Frequency	15 - 62 Hz
Line discharge class (as per IEC60099-4, Ed. 2.2	Class 2



Further data according to the IEEE standard can be supplied on request

PEXLIM R-Y
Guaranteed protective data 24 - 100 kV

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_s	U_r	U_c	MCOV	1 s	10 s	0.5 kA	1 kA	2 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}
24[3]	18	14,4	15.3	19.7	18.5	37.1	38.5	40.3	44.0	46.7	52.3	59.7
	21	16,8	17.0	23.0	21.6	43.2	44.9	47.0	51.3	54.4	61.0	69.7
	24	19,2	19.5	26.3	24.7	49.4	51.3	53.8	58.7	62.2	69.7	79.6
	27	21,6	22.0	29.6	27.8	55.6	57.7	60.5	66.0	70.0	78.4	89.6
36[3]	30	24,0	24.4	32.9	30.9	61.7	64.2	67.2	73.3	77.7	87.1	100
	33	26,4	26.7	36.2	34.0	67.9	70.6	73.9	80.6	85.5	95.8	110
	36	28,8	29.0	39.5	37.1	74.1	77.0	80.6	88.0	93.3	105	120
	39	31,2	31.5	42.8	40.2	80.3	83.4	87.3	95.3	102	114	130
	42	34	34.0	46.1	43.3	86.4	89.8	94.0	103	109	122	140
	48	38	39.0	52.7	49.5	98.8	103	108	118	125	140	160
52	42	34	34.0	46.1	43.3	86.4	89,8	94,0	103	109	122	140
	48	38	39.0	52.7	49.5	98.8	103	108	118	125	140	160
	51	41	41.3	56.0	52.6	105	109	115	125	133	148	170
	54	43	43.0	59.3	55.7	112	116	121	132	140	157	180
	60	48	48.0	65.9	61.9	124	129	135	147	156	175	199
	66	53	53.4	72.5	68.1	136	142	148	162	171	192	219
72	54	43	43.0	59.3	55.7	112	116	121	132	140	157	180
	60	48	48.0	65.9	61.9	124	129	135	147	156	175	199
	66	53	53.4	72.5	68.1	136	142	148	162	171	192	219
	72	58	58.0	79.1	74.3	149	154	162	176	187	209	239
	75	60	60.7	82.4	77.4	155	161	168	184	195	218	249
	84	67	68.0	92.3	86.7	173	180	188	206	218	244	279
	90	72	72.0	98.9	92.9	186	193	202	220	234	262	299
	96	77	77.0	105	99.1	198	206	215	235	249	279	319
100	75	60	60.7	82.4	77.4	155	161	168	184	195	218	249
	84	67	68.0	92.3	86.7	173	180	188	206	218	244	279
	90	72	72.0	98.9	92.9	186	193	202	220	234	262	299
	96	77	77.0	105	99.1	198	206	215	235	249	279	319

1) The continuous operating voltages U_C (as per IEC) and MCOV (as per IEEE) 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 thermal energy rating of 5 kJ/kV (U_r)

3) Arresters for system voltages 36 kV or below can be supplied, on request, when the order also includes arresters for higher system voltages.

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

PEXLIM R-Y
Guaranteed protective data 123 - 170 kV

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_s	U_r	U_c	MCOV	1 s	10 s	0.5 kA	1 kA	2 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}
123	90	72	72.0	98.9	92.9	186	193	202	220	234	262	299
	96	77	77.0	105	99.1	198	206	215	235	249	279	319
	102	78	82.6	112	105	210	218	229	250	265	296	339
	108	78	84.0	118	111	223	231	242	264	280	314	359
	120	78	98.0	131	123	247	257	269	294	311	349	398
	132	78	106	145	136	272	283	296	323	342	383	438
	138	78	111	151	142	284	295	309	338	358	401	458
	144	78	115	158	148	297	308	323	352	373	418	478
145	108	86	86.0	118	111	223	231	242	264	280	314	359
	120	92	98.0	131	123	247	257	269	294	311	349	398
	132	92	106	145	136	272	283	296	323	342	383	438
	138	92	111	151	142	284	295	309	338	358	401	458
	144	92	115	158	148	297	308	323	352	373	418	478
170	132	106	106	145	136	272	283	296	323	342	383	438
	138	108	111	151	142	284	295	309	338	358	401	458
	144	108	115	158	148	297	308	323	352	373	418	478

1) The continuous operating voltages U_C (as per IEC) and MCOV (as per IEEE) differ only due to deviations in type test procedures.
Uc 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 thermal energy rating of 5 kJ/kV (U_r)

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

PEXLIM R-Y
Technical data for housings

Max. system voltage	Rated voltage	Housing	Creepage distance	External insulation *)				Dimensions				
U_s	U_r			1.2/50 µs dry	50 Hz wet (60s)	60 Hz wet (10s)	250/2500 µs wet	Mass	A_{max}	B	C	Fig.
kV_{rms}	kV_{rms}		mm	kV_{peak}	kV_{rms}	kV_{rms}	kV_{peak}	kg	mm	mm	mm	
24	18-27	YV024	1863	310	150	150	250	16	641	-	-	1
36	30-48	YV036	1863	310	150	150	250	15	641	-	-	1
52	42-60	YV052	1863	310	150	150	250	15	641	-	-	1
	66	YV052	2270	370	180	180	300	17	727	-	-	1
72	54-60	YH072	1863	310	150	150	250	15	641	-	-	1
	54-72	YV072	2270	370	180	180	300	17	727	-	-	1
	75-96	YV072	3726	620	300	300	500	27	1216	-	-	2
100	75-96	YV100	3726	620	300	300	500	27	1216	-	-	2
123	90	YH123	3726	620	300	300	500	29	1219	400	160	3
	96-120	YH123	3726	620	300	300	500	27	1216	-	-	2
	90-96	YV123	4133	680	330	330	550	31	1305	400	160	3
	102-132	YV123	4133	680	330	330	550	29	1302	-	-	2
	138-144	YV123	4540	740	360	360	600	30	1388	-	-	2
145	108	YH145	3726	620	300	300	500	29	1219	400	160	3
	120	YH145	3726	620	300	300	500	26	1216	-	-	2
	108	YV145	4540	740	360	360	600	33	1391	400	160	3
	120-144	YV145	4540	740	360	360	600	30	1388	-	-	2
170	132-144	YH170	4540	740	360	360	600	32	1391	400	160	3
Neutral-ground arresters												
52	30-36	YN052	1863	310	150	150	250	14	641	-	-	1
72	42-54	YN072	1863	310	150	150	250	14	641	-	-	1
100	60	YN100	1863	310	150	150	250	14	641	-	-	1
123	72	YN123	2270	370	180	180	300	16	727	-	-	1
	84-120	YN123	3726	620	300	300	500	25	1216	-	-	2
145	75-120	YN145	3726	620	300	300	500	25	1216	-	-	2
170	75-120	YN170	3726	620	300	300	500	25	1216	-	-	2

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

PEXLIM R-Y
Technical data for housings

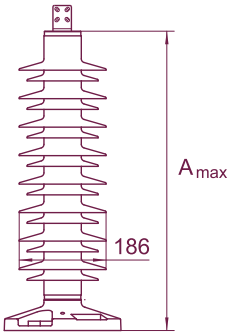


Figure 1

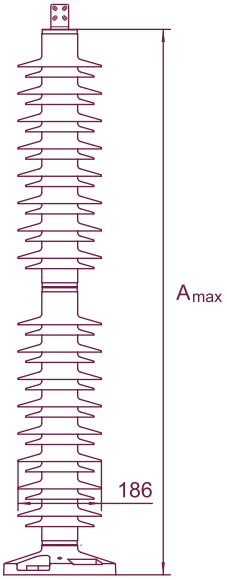


Figure 2

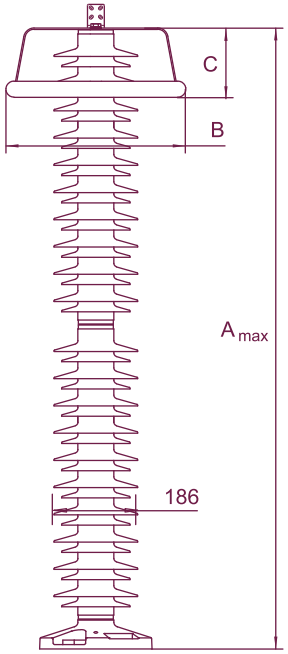
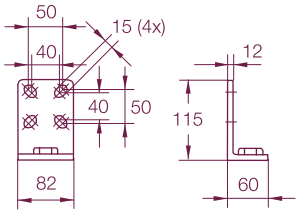


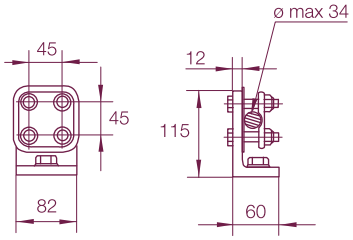
Figure 3

PEXLIM R-Y
Accessories

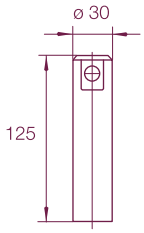
Line terminals



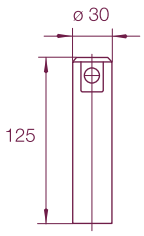
1HSA410 000-L
Aluminium



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

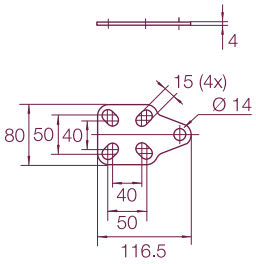


1HSA410 000-N
Aluminium

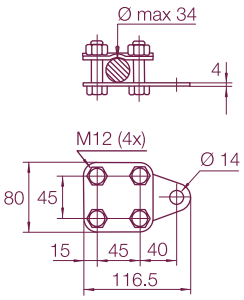


1HSA410 000-P
Stainless steel

Earth terminals

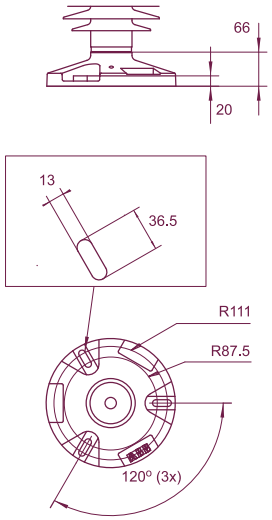


1HSA420 000-A
Stainless steel

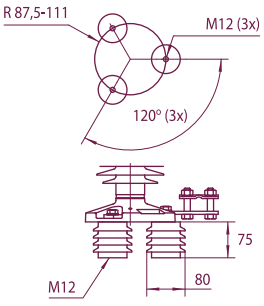


1HSA420 000-B
Stainless steel

Drilling plans



Without insulating base
Aluminium



Insulating base
1HSA430 000-H
Epoxy resin

M12 bolts for connection to structure are not supplied by ABB. Required threaded grip length is 15-20 mm.

PEXLIM R-Y
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
18-27	YV024	0.5	35	0.5	65	0.9	110
30-48	YV036	0.5	36	0.5	68	0.9	116
42-60	YV052	0.5	36	0.5	68	0.9	116
66	YV052	0.5	38	0.5	74	0.9	128
54-60	YH072	0.5	36	0.5	68	0.9	116
54-72	YV072	0.5	38	0.5	74	0.9	128
75-96	YV072	0.7	51	0.7	103	1.2	181
75-96	YV100	0.7	51	0.7	103	1.2	181
90	YH123	0.7	53	0.7	109	1.2	193
96-120	YH123	0.7	52	0.7	106	1.2	187
90-96	YV123	0.7	55	0.7	115	1.2	205
102-132	YV123	0.7	54	0.7	112	1.2	199
138-144	YV123	0.9	61	0.9	123	1.5	216
108-120	YH145	0.7	54	0.7	112	1.2	199
108	YV145	0.9	62	0.9	126	1.5	222
120-144	YV145	0.9	61	0.9	123	1.5	216
132-144	YH170	0.9	63	0.9	129	1.5	228
Neutral-ground arresters							
30-36	YN052	0.5	36	0.5	68	0.9	116
42-54	YN072	0.5	36	0.5	68	0.9	116
60	YN100	0.5	36	0.5	68	0.9	116
72	YN123	0.5	38	0.5	74	0.9	128
84-120	YN123	0.7	52	0.7	106	1.2	187
75-120	YN145	0.7	52	0.7	106	1.2	187
75-120	YN170	0.7	52	0.7	106	1.2	187

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.