

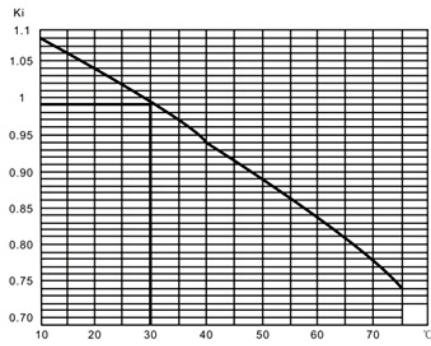
Features and application

1. Working circumstance

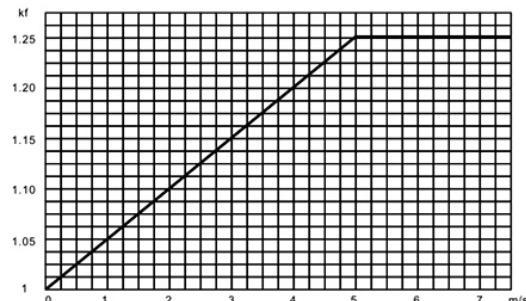
- Altitude no more than 2000m.(conditions to be discussed, if altitude more than 2000m)
- Ambient temperature within -5°C ~+40°C
- Relative humidity no more than 50% at +40°C; no more than 90% at +25°C.
- No explosive thing, metal corrosion and insulation damaging gas, and conductive dust in atmosphere.

2. Cooling

- Cooling methods of high speed fuse: self cooling, water cooling
- Rated current shall be according to circumstance temperature modified coefficient K_i of table 1, while self cooling high speed fuse working in a circumstance with ambient temperature above 30°C. Rated current shall be according to circumstance wind speed modified coefficient K_f of table 2, when it is installed in a ventilative circumstance.
- One end of water cooling high speed fuse shall be installed on the water cooled bus bar. If the rated current down, while using self cooling converter, please contact us.



Environment temperature modified coefficient curve



Wind speed modified coefficient curve

3.Selection of rated current

- In working condition, self cooling high speed fuse shall connect to conductor with current density higher than 1.6A/mm², and its length shorter than GB13539.1-19 standard temperature rising regulation. The cooling performance is not good, and the rated current of fuse shall be lowered, multiply the coefficient K_t , $K_t = 0.85-0.9$. Therefore, the selection of rated current I_{RN} could be done by calculating the working current of fuse circuit.
- $I_R = I_{RN} * K_t * K_i (K_i) * 1/K$
- K generally between 1.1-1.3

4.Selection of rated voltage

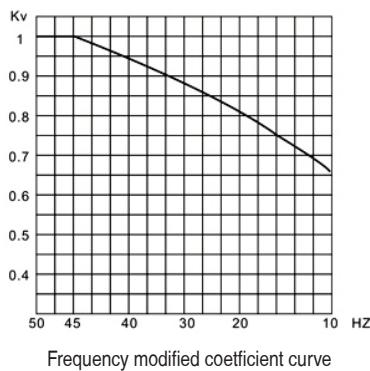
- The rated voltage of high speed fuse shall be a little high than the AC voltage of its two ends after fuse blew. If load of converter is motor' BACK-EMF load, the bad situation such as DC side short circuit caused by the SCR running out of control shall be considered. In such case, the rated voltage of fuse shall be higher than the AC voltage of fuse plus partial DC voltage.

5.Working frequency

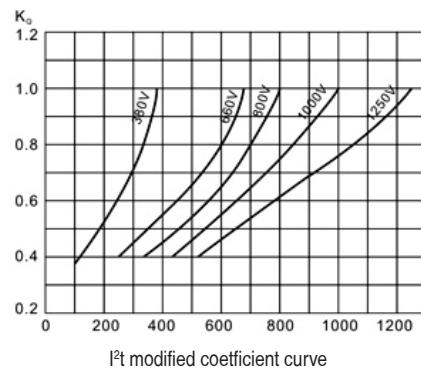
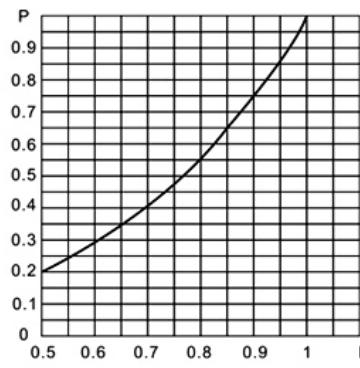
- The rated frequency of high speed fuse is 50 Hz. The rated voltage may fall along with frequency while the fuse working in 45 Hz circuit, according to K_v on table 3. The rated current will also fall. The high speed fuse's rated voltage, rated current, and blow time may relate to L/R of broken circuit in working DC circuit. Please contact us, if necessary.

6.working voltage blow I^2t_R

- Blow value I^2t of electric feature table refer to the breaking experiment statistics under current 100KA, 1.1 times rated voltage and $\cos \Phi = 0.1-0.2$ circuit. Fore-arc I^2t is minimum value, and blow I^2t is maximum value (I^2t_{MAX}). Blow value I^2t falls along with the falling of operating voltage, the blow value I^2t could be calculated by multiply modified coefficient K_o by rated blow value I^2t_{MAX} , $I^2t_R = K_o * I^2t_{MAX}$. The blow value I^2t_R under operating voltage must be lower than the allowed I^2t_{FSMT} of semiconductor, while fuse is connected in parallel to semiconductor as short circuit protection, $I^2t_R < I^2t_{FSMT}$.



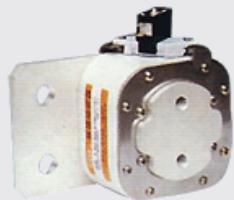
Frequency modified coefficient curve

 I^2t modified coefficient curve

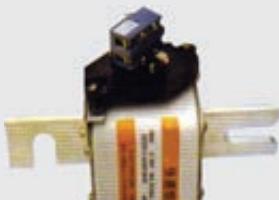
Power consumption-current curve



P frame (parallel)



P frame (single)



Z frame



L frame

7.Efficiency

- power consumption in Electric feature table refer to the power consumption under rated current. power consumption does not rise according to the current, because the fuse has a high resistance temperature value, and it can be found on table 5.

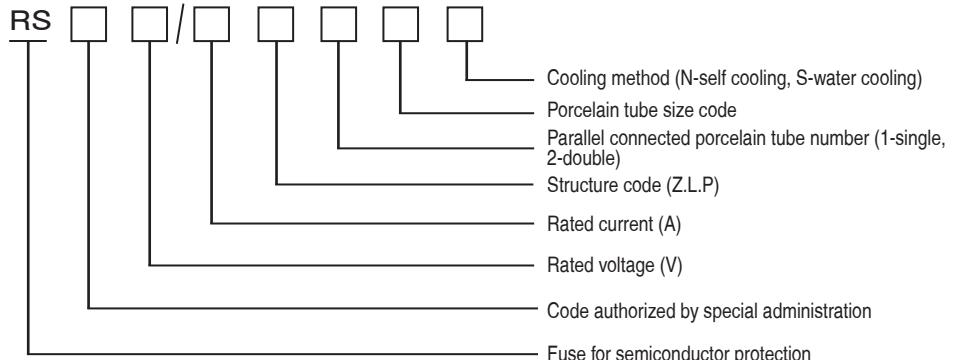
8.Fuse overvoltage

- the over voltage of high speed fuse is two times of broken circuit's while blowing, and will not surpass 2.5 times.

9.Breaking capacity

- The breaking capacity of high speed fuse should be higher than current produced when converter is short circuited. Please contact us, if the short circuit current of converter surpasses 100 KA.

Model introduction



- Note: 1. porcelain tube code consist of two digits, means the external diameter of porcelain tube, for example, 00-29*45.....

Meaning of model

- RS4-500V/800A-L104N means RS4 type, 500V, 800A, self cooling, with a 72*72 porcelain tube L form high speed fuse.
- RS8-800V/6400A-P207S means RS8 type, 800V, 6400A, water cooling, with 2 parallel 118*118 porcelain tube P form high speed fuse.

Specification, structure, and outline size

- RS4, RS8 series high speed fuses with rated voltage of 380V, 500V, 660V, 800V, 1000V, 1250V, 1500V, 2000V, and rated current 25A, 6600A. Models and specifications on table 1. Detail specification, structure form, and outline size of products on table 2.
- Structure of fuse includes P form, L form, and Z form. Most of fuses have blow indicator on their side, and a sensitive switch with one NO contact and one NC contact. (Breaking voltage no more than 220VDC or 250VAC) The indicator and sensitive switch will show the signal of blowing after the fuse blew and caused the blowing of signal fuse.

Specification table of high speed fuse

Model	Rated voltage	Rated current
RS4-□/□-L100N	380,800	25,32,40,50,63,80,100,125
RS4-□/□-Z101N	380,600,1000	100,125,160,210,250
RS4-□/□-P101N	500,800,1000,1500	32,40,50,63,80,100,105,160,200,250,280,315,355
RS4-□/□-Z102N	380,660,1000	200,250,280,315,355,400
RS4-□/□-Z103N	380,660,1000	355,400,450,500,560,630
RS4-□/□-Z104N	500,800,1000	450,500,560,630,700,750,800,900,1000
RS8-□/□-P105N	500,800,1000,1250	500,560,630,700,800,900,1000,1250,1400,1500
RS8-□/□-P105N	1500,2000	315,355,400,450,500,560,630,700,800,900
RS8-□/□-P205N	500,800,1000	1500,1600,1800,2000,2200,2500
	500,2000	900,1000,1250,1400,1500
RS8-□/□-P106N	500,800,1000	1400,1600,1800,2000
RS8-□/□-P105S	500,800,1000	1400,1600,1800,2000
RS8-□/□-P106S	500,800,1000	2000,2200,2500,2800
RS8-□/□-P206S	500,800,1000	3600,3800,4200,4600,5000,5600
RS8-□/□-P107S	380,500,800,1000,1250	2200,2500,2800,3000,3200,3600
RS8-□/□-207S	380,500,800,1000,1250	5000,5600,6000,6400,6600

Model	Breaking capacity (effective value)(KA)	Cooling mode
RS4-□/□-L100N	≥100	self cooling
RS4-□/□-Z101N		
RS4-□/□-P101N		
RS4-□/□-Z102N		
RS4-□/□-Z103N		
RS4-□/□-Z104N		
RS8-□/□-P105N		
RS8-□/□-P205N		
RS8-□/□-P106N		
RS8-□/□-P105S	>100	water cooling
RS8-□/□-P106S		
RS8-□/□-P206S		
RS8-□/□-P107S		
RS8-□/□-207S		

- RS4-□/□-L100N Subseries
- RS4-□/□-Z101N Subseries
- RS4-□/□-P101N Subseries
- RS4-□/□-Z102N Subseries
- RS4-□/□-Z103N Subseries
- Rated voltage 380V-800V
- Rated voltage 380V-1000V
- Rated voltage 380V-1500V
- Rated voltage 380V-1000V
- Rated voltage 380V-1000V
- Rated current 25A-125A
- Rated current 100A-250A
- Rated current 32A-355A
- Rated current 200A-400A
- Rated current 355A-630A

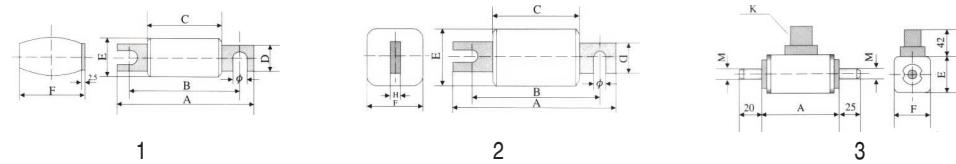
Outline size

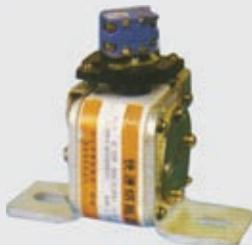


Serial number	Model	Rated voltage	Rated current	Structure form
1	RS4-380/□-L100N	380	25,32,40,50,63,80,100,125	L
2	RS4-800/□-L100N	800		
3	RS4-380/□-Z101N	380	100,125,160,200,250	Z
4	RS4-660/□-Z101N	660		
5	RS4-1000/□-Z101N	1000		
6	RS4-500/□-P101N	500	32,40,50,63,80,100,125,	P
7	RS4-800/□-P101N	800	160,200,250,280,315,355	
8	RS4-1000/□-P101N	1000		
9	RS4-1500/□-P101N	1500	32,40,50,63,80,100,125,	P
10	RS4-380/□-Z102N	380	160,200,250,280,315,355,400	Z
11	RS4-660/□-Z102N	660		
12	RS4-1000/□-Z102N	1000		
13	RS4-380/□-Z103N	380	355,400,450,500,560,630	Z
14	RS4-660/□-Z103N	660		
15	RS4-1000/□-Z103N	1000		

Serial number	Model	Outline size									Photo number
		A	B	C	D	E	F	G	H		
1	RS4-380/□-L100N	100	80	50	20	29	47.5		9		1
2	RS4-800/□-L100N										
3	RS4-380/□-Z101N	140	110	68	26	51	51	6		10.5	2
4	RS4-660/□-Z101N										
5	RS4-1000/□-Z101N										
6	RS4-500/□-P101N	51				51	51		8		3
7	RS4-800/□-P101N	75				51	51		8		
8	RS4-1000/□-P101N	80				51	51		8		
9	RS4-1500/□-P101N	127				51	51		8		3
10	RS4-380/□-Z102N	140	110	68	32	58	58	6		10.5	2
11	RS4-660/□-Z102N										
12	RS4-1000/□-Z102N										
13	RS4-380/□-Z103N	140	110	68	32	58	58	6		10.5	1
14	RS4-660/□-Z103N										
15	RS4-1000/□-Z103N										

Outline photo





- RS4-□/□-L104N Subseries
- RS4-□/□-P104N Subseries
- RS4-□/□-Z104N Subseries
- Rated voltage 500V-1000V
- Rated current 450A-900A
- Rated voltage 500V-1000V
- Rated current 450A-1000A
- Rated voltage 500V-1000V
- Rated current 450A-900A

Outline size

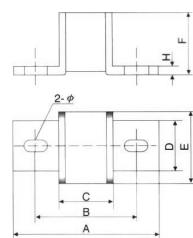
Serial number	Model	Rated voltage	Rated current	Structure form
1	RS4-500/□-L104N	500	450,500,560,630,700,800,900	L
2	RS4-500/□-P104N	500	450,500,560,630,700,800,900,1000	P
3	RS4-500/□-Z104N	500	700,750,800,900	Z
4	RS4-800/□-L104N	800	450,500,560,630,700,800	L
5	RS4-800/□-P104N			P
6	RS4-800/□-Z104N	800	700,750,800	Z
7	RS4-1000/□-L104N	1000	450,500,560,630,700	L
8	RS4-1000/□-Z104N			Z
9	RS4-1000/□-P104N	1000	450,500,560,630,700	P



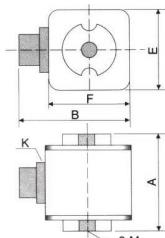
Serial number	Model	Outline size									Photo number
		A	B	C	D	E	F	H	M		
1	RS4-500/□-L104N	145	103	53	50	72	72	5		13x13	1
2	RS4-500/□-P104N	55	112			72	72				2
3	RS4-500/□-Z104N	145	96	47	47	72	72	8		13x23	3
4	RS4-800/□-L104N	165	123	73	73	72	72	5		13x23	1
5	RS4-800/□-P104N	75	112			72	72				2
6	RS4-800/□-Z104N	165	116	67	39	72	72	8		13x23	3
7	RS4-1000/□-L104N	182	140	90	50	72	72	5		13x23	1
8	RS4-1000/□-Z104N	182	133	84	39	72	72	8		13x23	3
9	RS4-1000/□-P104N	92	112			72	72				2



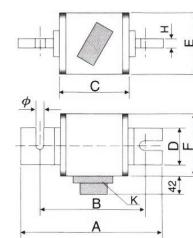
Outline photo



1



2



3

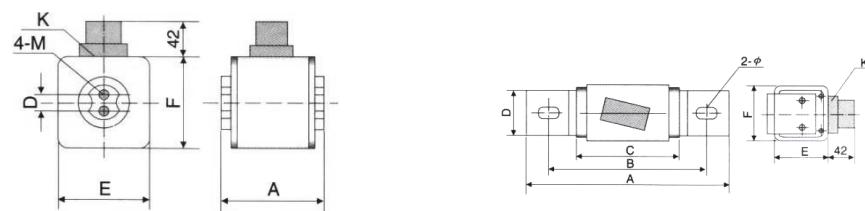
- RS8-□/□-L105N Subseries
- RS8-□/□-P105N Subseries
- RS8-□/□-Z105N Subseries
- Rated voltage 1500V
- Rated voltage 500V-2000V
- Rated voltage 1250V
- Rated current 315A-900A
- Rated current 450A-1500A
- Rated current 500A-1000A

Outline size

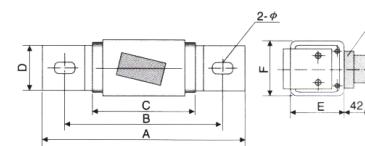
Serial number	Model	Rated voltage	Rated current	Structure form
1	RS8-500/□-P105N	500	900, 1000, 1100, 1250, 1400, 1500	P
2	RS8-800/□-P105N	800		
3	RS8-1000/□-P105N	1000	800, 900, 1000, 1250, 1400	P
4	RS8-1500/□-P105N	1500		
5	RS8-2000/□-P105N	2000	450, 560, 630, 700, 800, 900	P
6	RS8-1500/□-L105N	1500		
7	RS8-1250/□-Z105N	1250	315, 355, 400, 450, 500, 560, 630, 700, 80, 900	L
			500, 560, 630, 700, 800, 900, 1000	Z

Serial number	Model	Outline size									Photo number
		A	B	C	D	E	F	H	M		
1	RS8-500/□-P105N	52			40	74	74		8		1
2	RS8-800/□-P105N	68			40	74	74		8		1
3	RS8-1000/□-P105N	81			40	74	74		8		1
4	RS8-1500/□-P105N	126			40	74	74		8		1
5	RS8-2000/□-P105N										
6	RS8-1500/□-L105N	226	176	126	60	74	74			16.5x20	2
7	RS8-1250/□-Z105N	182	140	90	39	74	74	7		11	3

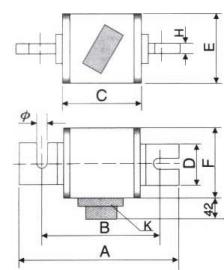
Outline photo



1



2



3

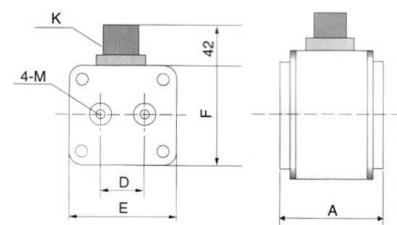
- RS8-□/□-P105S Subseries
- RS8-□/□-P205N Subseries
- Rated voltage 500V-1000V
- Rated voltage 500V-2000V
- Rated current 1400A-2000A
- Rated current 900A-2500A

Outline size

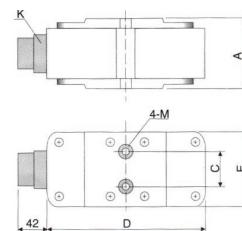
Serial number	Model	Rated voltage	Rated current	Structure form
1	RS8-500/□-P105S	500	1400, 1600, 1800, 2000	P
2	RS8-800/□-P105S	800		
3	RS8-1000/□-P105S	1000		
4	RS8-500/□-P205N	500	1500, 1600, 1800, 2000, 2200, 2500	P
5	RS8-800/□-P205N	800		
6	RS8-1000/□-P205N	1000		
7	RS8-1500/□-P205N	1500	900, 1000, 1250, 1400, 1500	P
8	RS8-2000/□-P205N	2000		

Serial number	Model	Outline size									Photo number
		A	B	C	D	E	F	H	M	Φ	
1	RS8-500/□-P105S	58			40	74	74		10		1
2	RS8-800/□-P105S	74			40	74	74		10		
3	RS8-1000/□-P105S	87			40	74	74		10		
4	RS8-500/□-P205N	55		40	166	74			10		2
5	RS8-800/□-P205N	70		40	166	74			10		
6	RS8-1000/□-P205N	83		40	166	74			10		
7	RS8-1500/□-P205N	130		40	166	74			10		
8	RS8-2000/□-P205N										

Outline photo



1



2



- RS8-□/□-P106N Subseries
- RS8-□/□-P106S Subseries
- RS8-□/□-P206S Subseries
- Rated voltage 500V-1000V
- Rated current 1400A-2000A
- Rated voltage 500V-1000V
- Rated current 2000A-2800A
- Rated voltage 500V-1000V
- Rated current 3800A-5600A

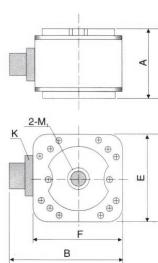
Outline size

Serial number	Model	Rated voltage	Rated current	Structure form
1	RS8-500/□-P106N	500	1400,1600,1800,2000	P
2	RS8-800/□-P106N	800	1400,1600,1800	
3	RS8-1000/□-P106N	1000		
4	RS8-500/□-P106S	500	2000,2200,2500,2800	P
5	RS8-800/□-P106S	800		
6	RS8-1000/□-P106S	1000	2000,2200,2500	
7	RS8-500/□-P206S	500	3800,4200,4600,5000,5600	P
8	RS8-800/□-P206S	800		
9	RS8-1000/□-P206S	1000	3600,3800,4200,4600,5000	

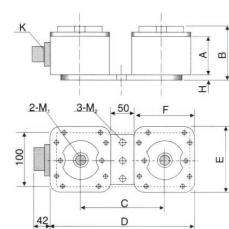
Serial number	Model	Outline size								Photo number
		A	B	C	D	E	F	H	M ₁	
1	RS8-500/□-P106N	60	102			105	105		16x14	1
2	RS8-800/□-P106N	80	122			105	105		16x14	
3	RS8-1000/□-P106N	90	132							
4	RS8-500/□-P106S	60	102			105	105		16x14	1
5	RS8-800/□-P106S	80	122			105	105		16x14	
6	RS8-1000/□-P106S	90	132							
7	RS8-500/□-P206S	40	60	140	245	105	105	8	16x14	2 (3)
8	RS8-800/□-P206S	60	80							
9	RS8-1000/□-P206S	70	90							

■ Note: the conducting plate of high speed fuse RS8- / -P206S also available in photo 3 outline, shall be indicated on contract.
(A size of photo 3: 660V, A=63; 800V or 1000V, A=85)

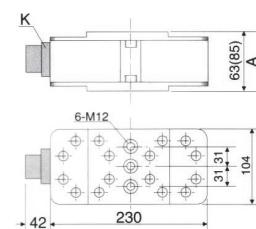
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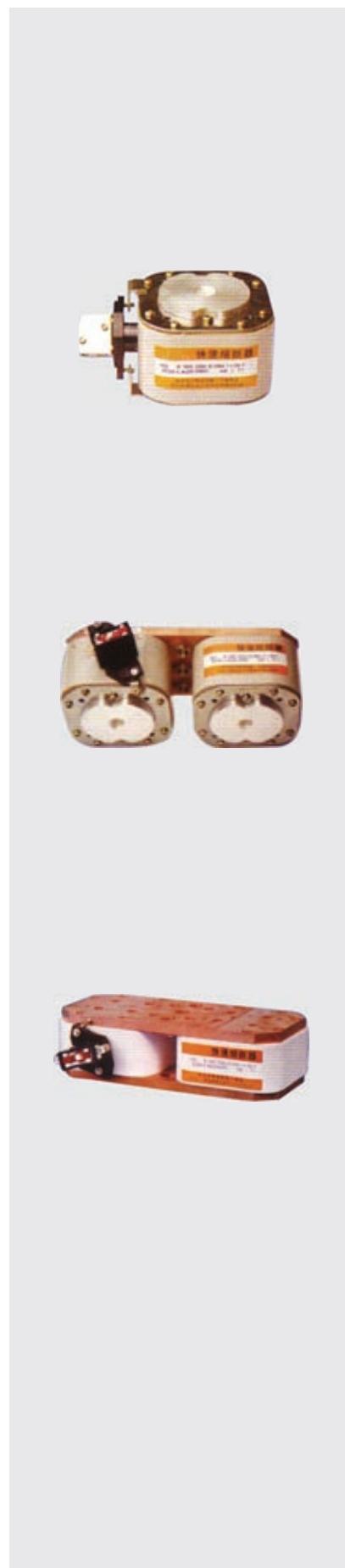
1



2



3



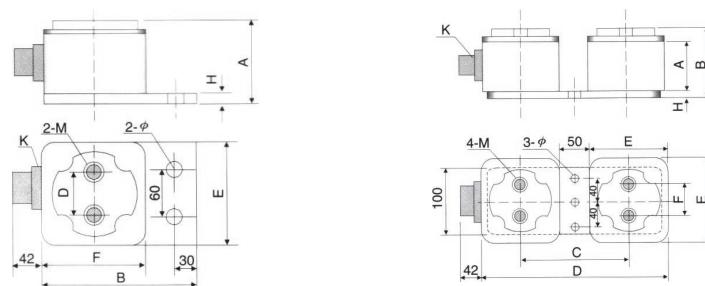
- RS8-□/□-P107S Subseries
- RS8-□/□-P207N Subseries
- Rated voltage 380V-1250V
- Rated voltage 380V-1250V
- Rated current 2200A-3600A
- Rated current 5000A-6600A

Outline size

Serial number	Model	Rated voltage	Rated current							Structure form
1	RS8-380/□-P107S	380	2500,2800,300,3200,3600							1
2	RS8-500/□-P107S	500								
3	RS8-800/□-P107S	800								
4	RS8-1000/□-P107S	1000								
5	RS8-1250/□-P107S	1250								
6	RS8-380/□-P207S	380	5000,5600,6000,6400,6600							2
7	RS8-500/□-P207S	500								
8	RS8-800/□-P207S	800								
9	RS8-1000/□-P207S	1000								
10	RS8-1250/□-P207S	1250								

Serial number	Model	Outline size									Photo number
		A	B	C	D	E	F	H	M	Φ	
1	RS8-380/□-P107S	60	178		50	118	118	10	12X14	17	1
2	RS8-500/□-P107S										
3	RS8-800/□-P107S		80	178		50	118	118	10	12X14	17
4	RS8-1000/□-P107S		100	178		50	118	118	10	12X14	17
5	RS8-1250/□-P107S										
6	RS8-380/□-P207S	40	62	168	286	118	50	10	12X14	17	2
7	RS8-500/□-P207S										
8	RS8-800/□-P207S		60	82	168	286	118	50	10	12X14	17
9	RS8-1000/□-P207S		80	102	186	286	118	50	10	12X14	17
10	RS8-1250/□-P207S										

Outline photo



1

2

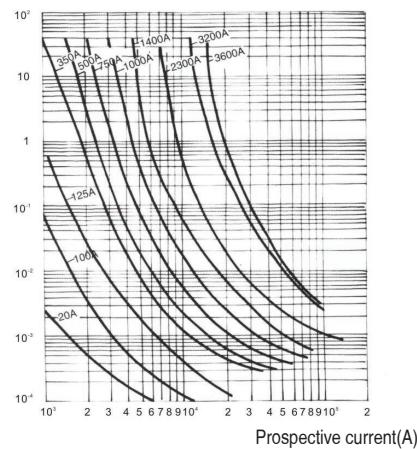
Electric feature and curve

■ Table 3 shows parts of RS4, RS8 series high speed fuses' I_{2t}, power consumption etc. and table 6-9 show the curve.

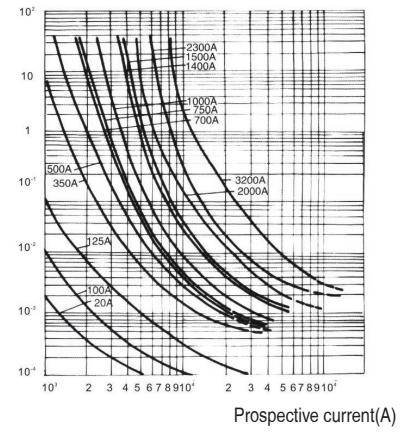
Model	Rated voltage	Rated current	Fore-arc	Breaking	Power con-sumption	Breaking capacity	Cooling mode
RS4-380/□-L100N	380	25	0.031	0.45	8	≥100	self cool-ing
		32	0.055	0.78	9	≥100	
		40	0.12	1.3	11	≥100	
		50	0.2	1.95	13	≥100	
		63	0.34	2.4	16	≥100	
		80	0.5	3.6	18	≥100	
		100	0.8	5.4	23	≥100	
RS4-660/□-Z101N	660	100	1.07	5.7	35	≥100	self cool-ing
		125	1.9	9.9	37	≥100	
		160	3.4	18	40	≥100	
		200	4.9	26.1	46	≥100	
		250	7.2	38	52	≥100	
RS4-660/□-Z102N	660	250	6.8	36	54	≥100	self cool-ing
		280	9.6	51	55	≥100	
		315	12	64.8	61	≥100	
		355	15.8	84	68	≥100	
		400	23	120	70	≥100	
RS4-660/□-Z103N	660	400	21	114	71	≥100	self cool-ing
		450	30	160	74	≥100	
		500	43	230	82	≥100	
		560	57	303	91	≥100	
		630	71	375	106	≥100	
RS4-500/□-Z104N	500	630	90	473	98	≥100	self cool-ing
		700	114	599	104	≥100	
		800	156	819	113	≥100	
RS8-500/□-P105N	500	800	137	712	67	≥100	self cool-ing
		1000	223	1160	74	≥100	
		1250	320	1664	106	≥100	
		1400	440	2300	116	≥100	
		1500	500	2600	125	≥100	
RS8-500/□-P205N	500	1600	548	2849	134	≥100	self cool-ing
		1800	627	3260	138	≥100	
		2000	892	4638	148	≥100	
		2200	950	5000	199	≥100	
		2500	1344	6720	212	≥100	
RS8-500/□-P106N	500	1400	529	2750	134	≥100	self cool-ing
		1600	654	3400	155	≥100	
		1800	828	4305	181	≥100	
		2000	1029	5350	196	≥100	

Model	Rated voltage	Rated current	Fore-arc	Breaking	Power consumption	Breaking capacity	Cooling mode
RS8-1500/□-P105N	1500	315	41	176	71	≥100	self cool-ing
		355	53	228	78	≥100	
		400	91	391	88	≥100	
		450	133	572	92	≥100	
		500	166	714	105	≥100	
		560	185	795	111	≥100	
		630	228	980	118	≥100	
		700	332	1427	123	≥100	
RS8-2000/□-P105N	2000	450	147	632	74	≥100	self cool-ing
		560	206	885	94	≥100	
		630	260	1118	104	≥100	
		700	352	1513	132	≥100	
RS8-500/□-P106S	500	2000	1029	5453	171	>100	water cooling
		2200	1143	5715	178	>100	
		2500	1587	7935	244	>100	
		2800	1956	9780	252	>100	
RS8-800/□-P106S	800	2000	1090	5777	237	>100	
		2200	1328	7038	238	>100	
		2500	1852	9815	267	>100	
		2800	2291	11455	300	>100	
RS8-1000/□-P106S	1000	2000	1430	7579	246	>100	
		2200	1638	8681	284	>100	
		2500	2181	10900	324	>100	
RS8-500/□-P206S	500	3800	4000	21000	322	>100	water cooling
		4200	4789	25381	350	>100	
		4600	6002	31810	401	>100	
		5000	7998	42389	512	>100	
		5600	9800	49000	530	>100	
RS8-800/□-P206S	800	3800	4277	22668	449	>100	
		4200	5243	27787	460	>100	
		4600	6456	34216	483	>100	
		5000	7931	42034	526	>100	
		5600	11540	57700	598	>100	
RS8-1000/□-P206S	1000	3600	4835	25625	445	>100	
		3800	5404	28641	506	>100	
		4200	6647	35229	558	>100	
		4600	8000	40000	645	>100	
RS8-500/□-P107S	500	2500	2352	7056	182	>100	water cooling
		2800	2906	8718	225	>100	
		3000	3374	10122	241	>100	
		3200	3861	11583	258	>100	
		3600	4410	13230	288	>100	

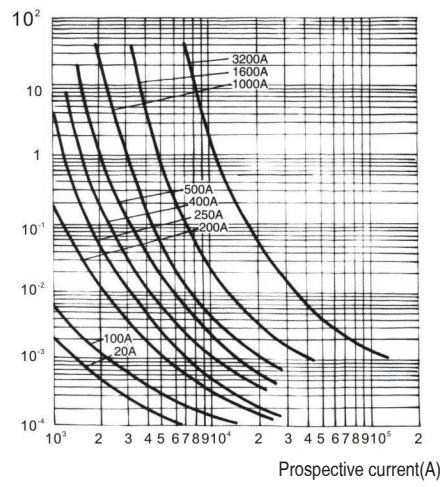
Model	Rated voltage	Rated current	Fore-arc	Breaking	Power consumption	Breaking capacity	Cooling mode
RS8-800/□-P107S	800	2500	2645	7935	266	>100	water cooling
		3800	3248	9744	293	>100	
		3000	3748	11244	315	>100	
		3200	4267	12801	337	>100	
		3600	5150	19100	379	>100	
RS8-1000/□-P107S	1000	2300	2672	11580	309	>100	water cooling
		2500	3031	13135	318	>100	
		2800	3829	16593	356	>100	
		3000	4398	19058	381	>100	
		3200	5011	21715	407	>100	
RS8-380/□-P207S	380	5000	8505	36571	351	>100	water cooling
		5600	10520	45279	395	>100	
		6000	12245	52653	423	>100	
		6400	14034	60346	454	>100	
		6600	16545	71143	458	>100	
RS8-500/□-P207S	500	5000	8779	37749	364	>100	
		5600	10849	46650	451	>100	
		6000	12595	54158	482	>100	
		6400	14413	61975	515	>100	
		6600	16969	72966	518	>100	
RS8-800/□-P207S	800	5000	9877	42471	532	>100	
		5600	12126	52114	586	>100	
		6000	13644	58669	630	>100	
		6400	15931	68503	674	>100	



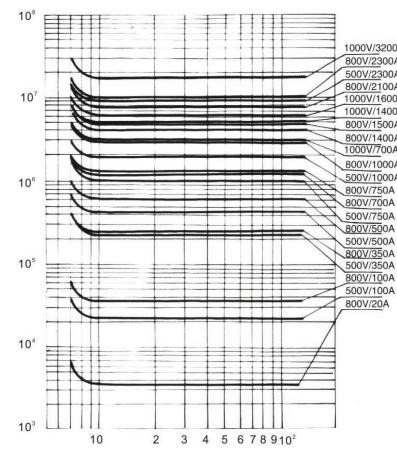
500 series pre-arc time&prospective current curve



800 series pre-arc time&prospective current curve



1000 series pre-arc time&prospective current curve

Prospective current multiplexIV
Fuse I^2t curve