

产品规格书

SPECIFICATION

产品名称/Product: 方型有填料刀形触头熔断器

规格型号/Model: NH系列熔断体和熔断器底座

文件编号/File No.: FRSI-GGS-239/022-001

版本编号/Version: V.1.0.3

拟制/日期 Establish/Date	审核/日期 Check/Date	批准/日期:(盖章) Approve/Date
王才华/2020.07.01	梁金星/2020.07.01	李挺/2020.07.02



制/修订记录
Records of Revision

版本 Version	制/修订内容 Establish/Revised Content	制/修订人/日期	审核人/日期	批准人/日期	备注
V.1.0.1	创建	王才华/2020.07.01	梁金星/2020.07.01	李挺/2020.07.02	
V.1.0.2	增加AC690V电压等级	王才华/2021.12.31	梁金星/2021.12.31	李挺/2021.12.31	
V.1.0.3	增加NH4 DC440V 1600A底座	王才华/2022.03.01	梁金星/2022.03.02	李挺/2022.03.05	

1. 基本参数 Technical Specification

额定电压 Rated Voltage: AC690V、AC500V、AC400V、DC250V、DC440V

额定电流 Rated Current: 2A~1600A

频率（交流） Frequency For AC only: 45Hz~62Hz

时间常数（直流） T.C. For DC only: 15~20ms

使用类别 Utilization Category: gG

最大分断能力 Max Breaking Capacity: AC690V=80kA/50kA、AC500V=120kA、AC400V=50kA、

DC250V=100kA、DC440V=100kA/63kA

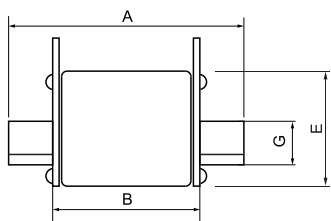
参考标准 Standards: GB/T13539.2 IEC60269-2

认证标志 Approval Mark: CCC、CE、RoHS、TUV

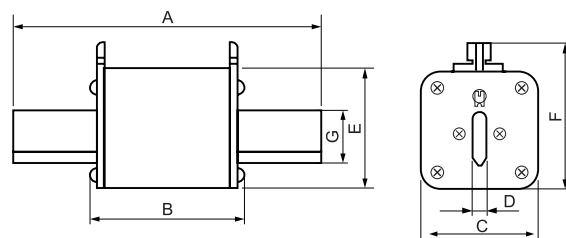
2. 外形尺寸 Dimension

(mm)

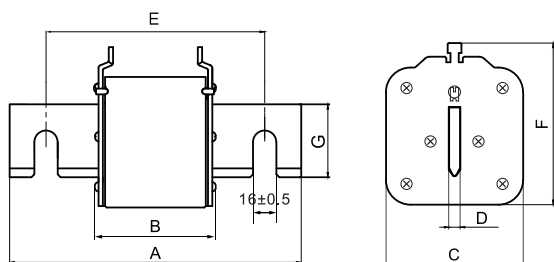
型号 Model	额定电压(V) Rated voltage	额定电流(A) Rated current	尺寸Dimension(mm)						
			A	B(Max)	C	D	E	F	G(Min)
NH00	AC500V/DC250V/DC440V/AC690V	2~160	78.5 ± 1.5	54	30(Max)	6 ± 0.2	48(Max)	59.5 ± 2	15
NH1	AC500V/DC440V/AC690V	80~250	135 ± 2.5	75	50(Max)	6 ± 0.2	50(Max)	61 ± 2	20
NH2	AC500V/DC440V/AC690V	125~400	150 ± 2.5	75	60(Max)	6 ± 0.2	60(Max)	72.5 ± 2	25
NH3	AC500V/DC440V/AC690V	200~630	150 ± 2.5	75	68 ± 2	6 ± 0.2	68 ± 2	84.5 ± 2	32
NH3D	AC400V	800	150 ± 2.5	75	68 ± 2	6 ± 0.2	68 ± 2	84.5 ± 2	32
NH4	AC500V/DC250V/DC440V/AC690V	630~1250	200 ± 3	90	100 ± 2	8 ± 0.2	150 ± 2	118 ± 3	50
	DC440V	1600							



NH00



NH1~NH3~NH3D



NH4

3. 电气特性Electrical Characteristics

3.1 电气特性参数 Parameters of Electrical Characteristics

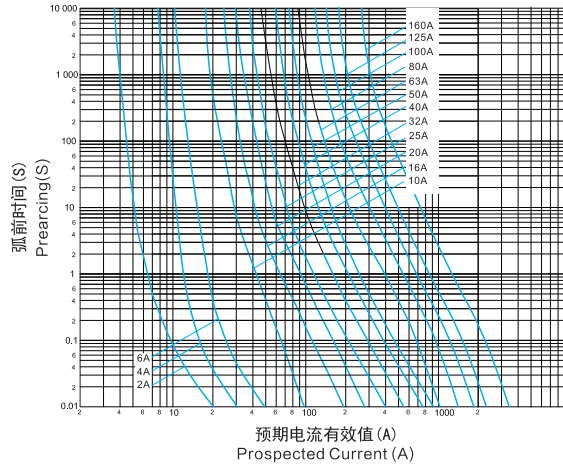
型号 Model	额定电压(V) Rated voltage	电流(A) Rated Current	弧前I ² t Pre-Arcing kA ² S	熔断I ² t Clearing kA ² S	额定功率(W) Watts Loss	曲线图 Curve
NH00	AC500V/120kA DC250V/100kA	2A	0.002	0.009	0.6	图Figure 1 图Figure 6
		4A	0.015	0.028	1.1	
		6A	0.045	0.16	1.3	
		10A	0.12	0.40	1.6	
		16A	0.307	1.06	1.4	
		20A	0.691	1.8	1.6	
		25A	1.08	3.7	2.4	
		32A	1.92	7.8	2.6	
		40A	4.2	14.1	3.2	
		50A	6.25	17	4.3	
		63A	8.2	27	4.7	
		80A	12	47	4.8	
		100A	25	80	6.5	
		125A	32	132	8.3	
160A	55	204	9.5			
NH1	AC500V/120kA	40A	4	12.1	3.2	图Figure 2 图Figure 6
		50A	6.1	16	4.4	
		63A	8	26.5	6.1	
		80A	11	45	7.3	
		100A	22	79	8.7	
		125A	30	130	10.6	
		160A	50	233	12.5	
		200A	110	332	14	
		224A	160	471	15.5	
250A	210	582	16			
NH2	AC500V/120kA	80A	11	43	6.9	图Figure 3 图Figure 6
		100A	22	80	8	
		125A	31	131	10.2	
		160A	50	225	12.3	
		200A	150	400	13.8	
		250A	215	550	16.2	
		300A	420	840	19.8	
		315A	431	1289	22	
		355A	658	1560	25	
400A	860	1710	27.6			

型号 Model	额定电压(V) Rated voltage	电流(A) Rated Current	弧前I ² t Pre-Arcing kA ² S	熔断I ² t Clearing kA ² S	额定功率(W) Watts Loss	曲线图 Curve		
NH3	AC500V/120kA	200A	140	392	14	图Figure 4		
		250A	200	530	16.5			
		300A	420	850	20			
		315A	467	1222	21			
				355A	591	1652	25.2	图Figure 6
				400A	804	1820	27	
				425A	883	2170	31	
				500A	1720	3345	32	
NH3D	AC400V/50kA	800A	950	4560	58.4(400V)			
NH4	AC500V/120kA DC250V/100kA	630A	1200	5400	47	图Figure 5		
		800A	2500	10400	59			
		1000A	7000	19000	74			
		1250A	10000	34800	99	图Figure 6		

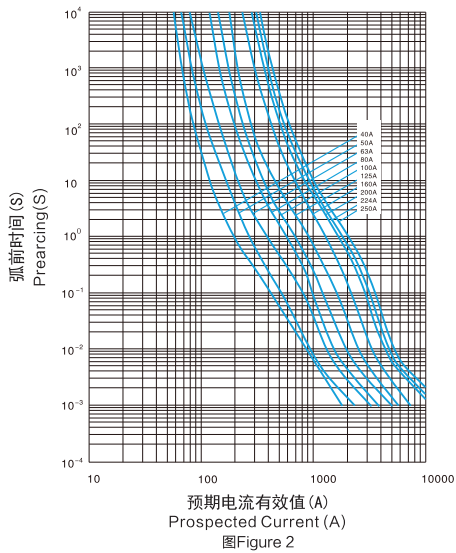
型号 Model	额定电压(V) Rated voltage	电流(A) Rated Current	弧前I ² t Pre-Arcing kA ² S	熔断I ² t Clearing kA ² S	额定功率(W) Watts Loss	曲线图 Curve
NH00	DC440V/100kA AC690V/80kA	2A	0.002	0.009	0.6	图Figure 1
		4A	0.015	0.028	1.1	
		6A	0.045	0.16	1.3	
		10A	0.12	0.40	1.6	
		16A	0.307	1.3	1.8	
		20A	0.691	2.1	2.3	
		25A	1.08	5	2.5	图Figure 6
		32A	1.92	9	3.2	
		40A	4.2	16	4	
		50A	6.25	25	4.9	
		63A	8.2	41	5.6	
		80A	12	70	6.2	
		100A	25	120	7	
		125A	32	190	9.2	
160A	55	280	11			
NH1	DC440V/100kA AC690V/80kA	40A	4	15	4.9	图Figure 2
		50A	6.1	21	5.6	
		63A	8	40	6.3	
		80A	11	80	7.5	
		100A	22	110	9	图Figure 6
		125A	30	180	11	
		160A	50	310	13	
		200A	110	410	15.5	
		224A	160	570	16	
250A	210	710	18			
NH2	DC440V/100kA AC690V/80kA	80A	11	60	7.5	图Figure 3
		100A	22	120	8.8	
		125A	31	180	11.5	
		160A	50	350	14	
		200A	150	620	17	图Figure 6
		250A	215	830	21	
		300A	420	1100	23	
		315A	431	1732	25	
		355A	658	1950	27	
		400A	860	2530	28.9	

型号 Model	额定电压(V) Rated voltage	电流(A) Rated Current	弧前I ² t Pre-Arcing kA ² S	熔断I ² t Clearing kA ² S	额定功率(W) Watts Loss	曲线图 Curve		
NH3	DC440V/100kA AC690V/50kA	200A	140	530	15	图Figure 4		
		250A	200	750	17			
		300A	420	1251	21			
		315A	467	1452	23			
				355A	591	1960	26	图Figure 6
				400A	804	2130	29	
				425A	883	3130	32	
				500A	1720	4435	34	
		630A	2460	7530	41			
NH4	DC440V/63kA AC690V/50kA	630A	1200	8400	58	图Figure 5		
		800A	2500	18400	71			
		1000A	7000	29000	90	图Figure 6		
		1250A	10000	44800	108			
	DC440V/63kA	1600A	65400	75200	142			

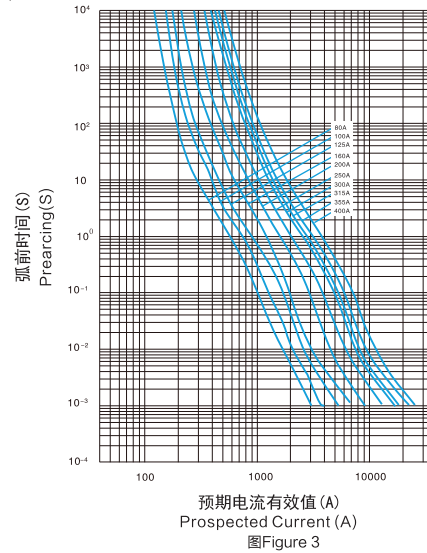
3.2 时间电流特性曲线 Time-current Characteristics Curves



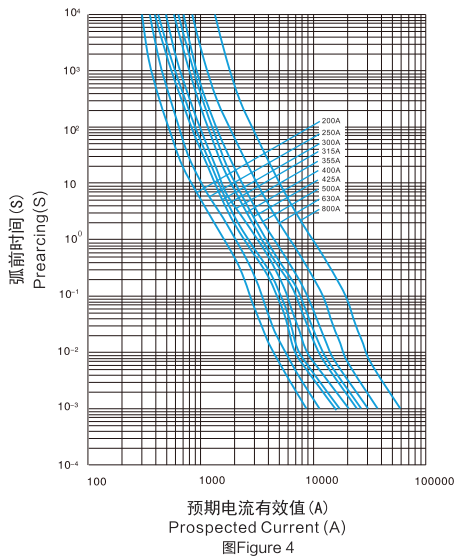
预期电流有效值 (A)
Prospected Current (A)
图Figure 1



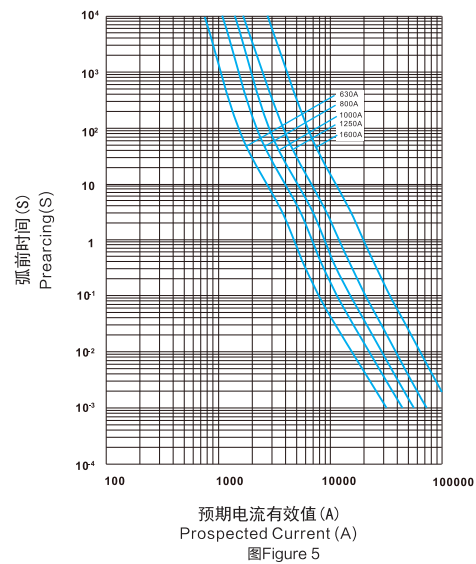
预期电流有效值 (A)
Prospected Current (A)
图Figure 2



预期电流有效值 (A)
Prospected Current (A)
图Figure 3

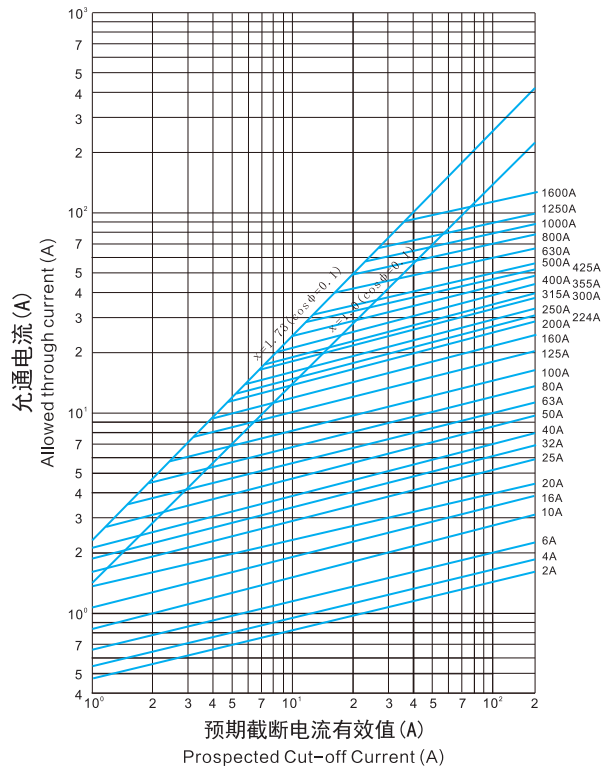


预期电流有效值 (A)
Prospected Current (A)
图Figure 4



预期电流有效值 (A)
Prospected Current (A)
图Figure 5

3.3 截断电流曲线 Cut-off Current Curves



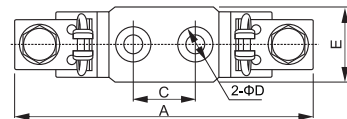
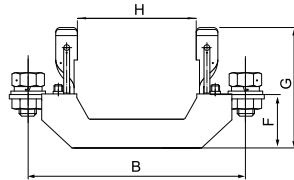
图Figure 6

NH系列有填料方管刀型触头熔断器底座

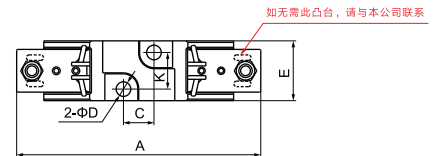
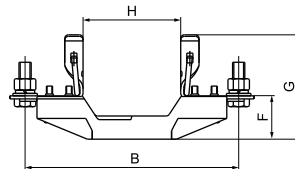
Fuse Base For Square Body With Knife Contacts And Sand Filling Fuses



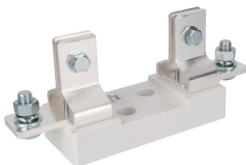
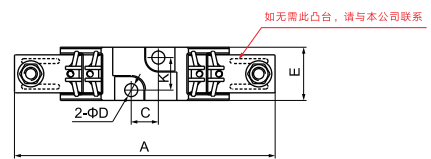
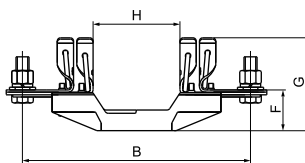
型号 Type	额定电压(V) Rated Voltage	电流等级(A) Rated Current	尺寸Dimension(mm)							
			A	B	C	ΦD	E	F	G	H
NH00(NT00)	690VAC/500VAC/250VDC/440VDC	160	120±2.5	100±1.5	25±0.7	7.5±0.5	30±1	25.5±1.5	57±2	56.5±1.5



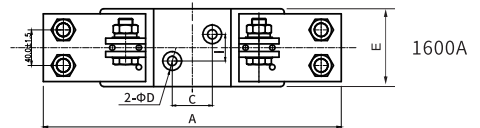
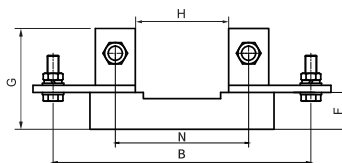
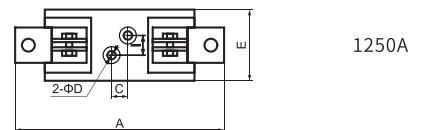
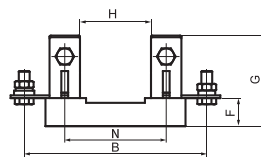
型号 Type	额定电压(V) Rated Voltage	电流等级(A) Rated Current	尺寸Dimension(mm)								
			A	B	C	ΦD	E	F	G	H	K
NH1(NT1)	690VAC/500VAC/440VDC	250	200±3.6	175±2.5	25±0.7	12±0.5	50±2	35±2	84±2	80±3	30±0.7
NH2(NT2)	690VAC/500VAC/440VDC	400	224±3.6	200±2.5	25±0.7	12±0.5	50±2	35.5±2	88.5±2	80±3	30±0.7



型号 Type	额定电压(V) Rated Voltage	电流等级(A) Rated Current	尺寸Dimension(mm)								
			A	B	C	ΦD	E	F	G	H	K
NH3(NT3)	690VAC/500VAC/440VDC	630	240±3.6	210±3	25±0.7	12±0.5	50±2	38.2±2	92±2	80±3	30±0.7



型号 Type	额定电压(V) Rated Voltage	电流等级(A) Rated Current	尺寸Dimension(mm)									
			A	B	C	ΦD	E	F	G	H	I	N
NH4(NT4)	500VAC/250VDC/690VAC	1250	310±3.6	270±3	45±1	10.5±0.5	88±2	40.5±2	134±3	105±3	30±1	150±1.5
	DC440V	1600	335±3.6	290±3	45±1	10.5±0.5	88±2	40.5±2	113±3	105±3	30±1	150±1.5



4. 铭牌信息 Label Mark

4.1 熔断体 Fuse-link

4.1.1 熔断体上的标识应易于看清：The markings on the fuse-link shall be easily recognized

4.1.2 每个熔断体应标有以下标识：The symbols below shall be presented on each fuse-link

4.1.2.1 商标Trade Mark: FRSI

4.1.2.2 使用类别Utilization category: gG

4.1.2.3 额定电流Rated current: 2A~1600A

4.1.2.4 额定电压Rated voltage: NH00~NH4(2A~1250A): AC690V/DC440V

{ NH00(2A~160A)和NH4(630A~1250A):AC500V / DC250V
 NH1~NH3(40A~630A): AC500V
 NH3D(800A): AC400V
 NH4(1600A): DC440V

4.1.2.5 最大分断能力Max breaking capacity: AC690V $I_{b1}=80kA$ (NH00~NH2) / $I_{b1}=50kA$ { NH3,NH4 (1600A除外) }

DC440V $I_{b1}=100kA$ (NH00~NH3) / $I_{b1}=63kA$ (NH4)

AC500V $I_{b1}=120kA$

DC250V $I_{b1}=100kA$

AC400V $I_{b1}=50kA$

4.1.2.6 符合标准Standards Conformed: GB/T13539.2 IEC60269-2

4.1.2.7 认证标志 (如有) Approval mark (if necessary): CCC、CE、RoHS、TUV(仅NH4)

4.1.2.8 型号标识Model mark: NH00、NH1、NH2、NH3、NH3D、NH4

4.2 熔断器底座 Fuse Base

4.2.1 熔断器底座上的标识应易于看清：The markings on the fuse base shall be easily recognized

4.2.2 每个熔断器底座应标有以下标识：The symbols below shall be presented on each fuse base

4.2.2.1 商标Trade Mark: FRSI

4.2.2.2 额定电流Rated current: NH00 (NT00): 160A、NH1 (NT1): 250A、NH2 (NT2): 400A、
 NH3 (NT3): 630A、NH4 (NT4): 1250A/1600A

4.2.2.3 额定电压Rated voltage: NH00 (NT00): 690Vac/500Vac/250Vdc/440Vdc

NH1 (NT1) ~NH3 (NT3): 690Vac/500Vac/440Vdc

NH4 (NT4) (1250A): 690Vac/500Vac/250Vdc NH4 (NT4) (1600A): 440Vdc

4.2.2.4 符合标准Standards Conformed: GB/T13539.2 IEC60269-2

4.2.2.5 认证标志 (如有) Approval mark (if necessary): CCC、CE、RoHS、TUV (仅NH4)

4.2.2.6 型号标识Model mark: NH00 (NT00)、NH1 (NT1)、NH2 (NT2)、NH3 (NT3)、NH4 (NT4)

5. 包装信息 Package Specification

型号 Model	内盒包装信息 Inner packing information				外箱包装信息 Outer packing information			
	数量 Qty	毛重 (KG) G.W. (KG)	长×宽×高 (mm) Length×Width×Height	材质 Material	数量 Qty	毛重 (KG) G.W. (KG)	长×宽×高 Length×Width×Height	材质 Material
NH00熔断体	3	0.517	98×85×65	瓦楞纸板	108	19.70	350×320×220	瓦楞纸板
NH00底座	3	0.50	98×123×66	瓦楞纸板	144	22.60	420×385×290	瓦楞纸板
NH1熔断体	3	1.26	155×140×65	瓦楞纸板	54	23.10	440×325×220	瓦楞纸板
NH1底座	1	0.50	205×54×87	瓦楞纸板	30	14.60	425×290×280	瓦楞纸板
NH2熔断体	3	1.86	188×156×78	瓦楞纸板	36	24.60	390×340×260	瓦楞纸板
NH2底座	1	0.55	231×54×94	瓦楞纸板	20	11.10	475×290×200	瓦楞纸板
NH3熔断体	1	0.94	155×70×91	瓦楞纸板	24	21.00	325×315×295	瓦楞纸板
NH3底座	1	0.80	245×54×94	瓦楞纸板	20	15.50	505×290×205	瓦楞纸板
NH4熔断体	1	2.57	210×100×130	瓦楞纸板	8	20.20	435×230×295	瓦楞纸板
NH4底座	1	2.55	315×95×146	瓦楞纸板	8	19.50	405×320×310	瓦楞纸板

6. 运输和存储 Transportation and Storage

6.1 运输过程中应避免机械损伤和雨雪侵袭

It shall be prevented from mechanical damage and invasion of rain or snow during transportation

6.2 存储条件 Storage conditions

6.2.1 温度 Temperature: 产品 Products -40°C-90°C; 包装 Packing -40°C-70°C

6.2.2 空气 Air: 干净 Clean

6.2.3 湿度 Humidity:

对于产品, 相对湿度在最高温度为40°C时不超过90%; 对于包装, 相对湿度不超过90%, 无凝露。

For products the relative humidity does not exceed 90% at the maximum temperature of 40°C;

For packing stuff the relative humidity does not exceed 90%, and no condensation is allowed.

7. 使用条件 Conditions of Application

7.1 正常使用条件:

周围空气温度: 周围空气温度不超过40°C, 24h测得的平均值不超过35°C, 一年内测得的平均值低于该值; 周围空气温度最低值为-5°C。允许使用条件: -40°C-90°C。如有特殊使用场景, 请与我司联系。

Normal condition:

The ambient temperature does not exceed 40°C, its mean value measured over a period of 24h does not exceed 35°C, and its mean value measured over a period of one year is lower; the minimum value of the ambient air temperature is -5°C. Allowed to apply: -40°C to 90°C; Please contact us for technical advice if there is any special application.

7.2 海拔 Altitude

7.2.1 安装的海拔不超过2000m; 若使用地海拔超过2000米, 每超过100米要求0.5%的降容系数, 请参照表1《不同海拔的降容系数》。

The altitude of the site of installation of the fuses does not exceed 2000 m above sea-level. Above 2000 m a de-rating factor of 0.5% for every 100 m above 2000 m will be required. Please refer to table 1 “De-rating factor for different altitudes” .

7.2.2 海拔升高，空气绝缘强度下降，各熔断器之间或熔断器与其他带电结构或熔断器对地的绝缘间隙，请参考GB/T16935.1 (IEC60664-1) 进行相应修正；熔断器端子之间的绝缘距离一般远大于GB/T16935.1 (IEC60664-1) 表 A.1和表 A.2中要求的绝缘间隙，故除个别体积较小的熔断体外，一般不予校核绝缘间隙；

The dielectric strength decreases with the increase of altitude. Please refer to GB/T16935.1(IEC60664-1) to correct the dielectric gaps between each fuses or, between fuses with other electrical structures, or between fuses with the ground. The dielectric gap of terminals of each fuse is normally much larger than the requirements of tables A.1 and A.2 of GB/T16935.1 (IEC60664-1) , thus it's not required to correct the dielectric gap except for some little fuses.

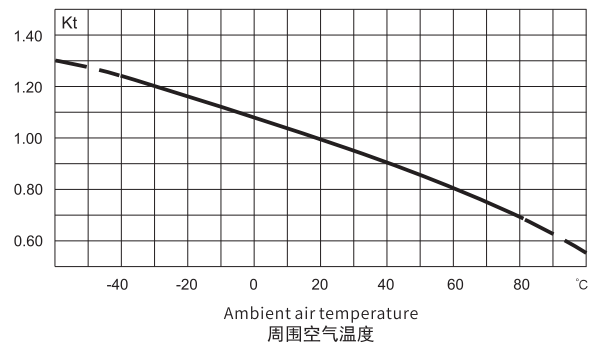
7.3 大气条件Atmospheric conditions :

空气是干净的，其相对湿度在最高温度为40°C时不超过50%；在较低的温度下可以有较高的相对湿度，例如，在20°C时，相对湿度可达90%；在这些条件下，由于温度变化，可能偶然发生中等凝露。

The air is clean and its relative humidity does not exceed 50% at the maximum temperature of 40°C ; Higher relative humidity is permitted at lower temperatures, for example, 90% at 20°C. Under these conditions, moderate condensation may occasionally occur due to variation in temperature.

表1 不同海拔的降容系数
Coefficient of different altitudes

海拔h(m)	降容系数 I / I _n
2 000	1.000
2 500	0.975
3 000	0.950
3 500	0.925
4 000	0.900
4 500	0.875
5 000	0.850



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The product information described in the data sheet is subject to the actual product.
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