

产 品 规 格 书

SPECIFICATION

产品名称/Product: 直流快速熔断器

规格型号/Model: FRM61S~62-P80K UN110K MB120K

文件编号/File No.: FRSI-GGS-239-012

版本编号/Version: V.1.0.7

拟制/日期 Establish/Date	审核/日期 Check/Date	批准/日期: (盖章) Approve/Date
李 挺/2021.07.01	梁金星/2021.07.01	李 挺/2021.07.10



1. 基本参数 Technical Specification

额定电压 Rated Voltage: DC1000V

额定电流 Rated Current: (50A~700A UL) 、 (800A 试验报告)

频率 (交流) /Frequency For AC only: N/A

时间常数 (直流) T.C. For DC only: Size 61S-61 : 10-15ms、Size 62: 1-3ms

使用类别 Utilization Category: aR

最大分断能力 Max Breaking Capacity: For 61 (61S) size I1=50KA、I1=150KA(T.C.≤5ms); For 62 size I1=100kA

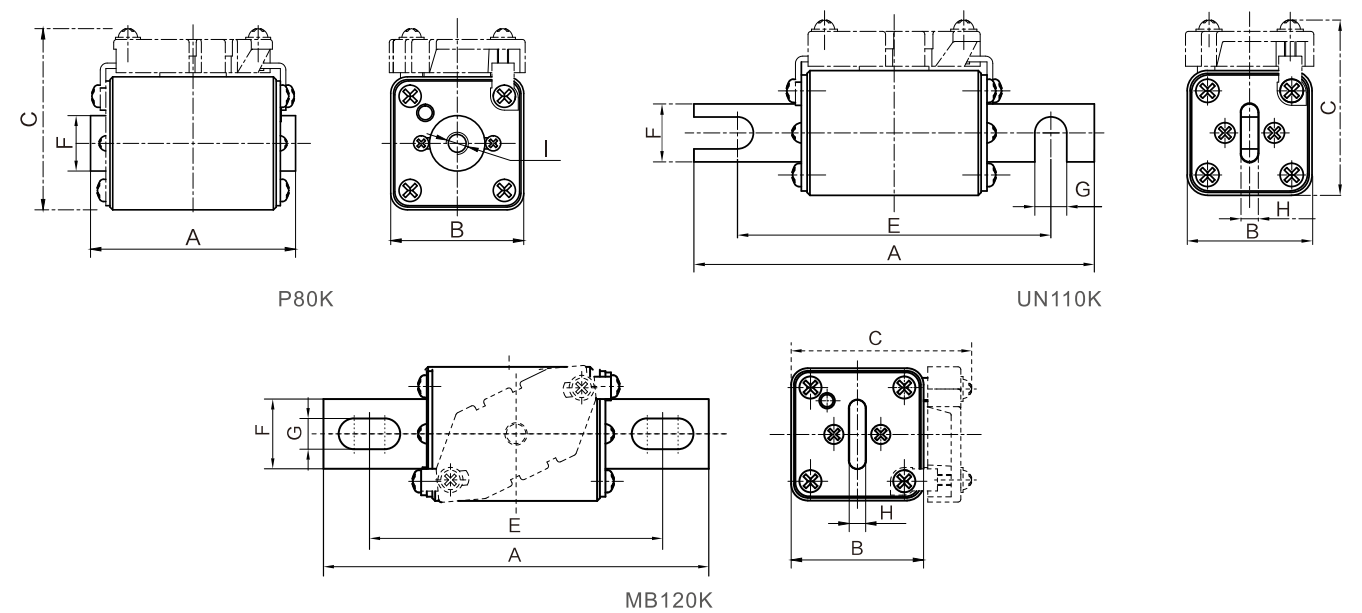
参考标准 Standards: 61S: GB/T13539.4和IEC60269-4 61&62: UL248-13

认证标志 Approval Mark: Size 61S: TUV和CQC、61&62: UL

2. 外形尺寸 Dimension

型号 Model	尺码 Size	安装方式 Installation	额定电压 Rated Voltage (V)	额定电流 Rated Current (A)	尺寸Dimension (mm)							
					A	B	C	E	F	G	H	I
FRM	61S	P80K	DC1000	50~400	81±2	43±2	61±3	—	17±1	—	—	M8x10
	61	P80K	DC1000	100~500	81±2	51±2	67±3	—	20±1	—	—	M8x10
	61S	UN110K	DC1000	50~400	134±3	43±2	61±3	108±2.5	20±1	8.5	6±0.2	—
	61	UN110K	DC1000	100~500	138±3	51±2	67±3	108±2.5	25±1	11	6±0.2	—
	61S	MB120K	DC1000	50~400	146±3	43±2	61±3	115±2.5	20±1	8.5	6±0.2	—
	61	MB120K	DC1000	100~500	146±3	51±2	67±3	115±2.5	25±1	11	6±0.2	—
FRM	62	P80K	DC1000	250~700 800A	81±2	60±2	76±3	—	24±1	—	—	M10x12
		UN110K			138±3	60±2	76±3	108±2.5	25±1	11	6±0.2	—
		MB120K			146±3	60±2	76±3	115±2.5	25±1	11	6±0.2	—

* 尾缀 “W” 代表不带微动开关基座 例：FRM61-UN110K-W
尾缀 “T” 代表视觉弹片指示 例：FRM61-UN110K-T

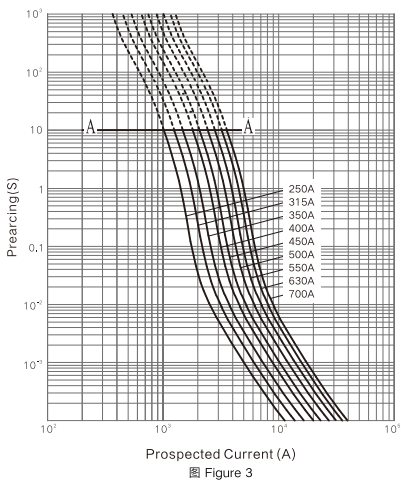
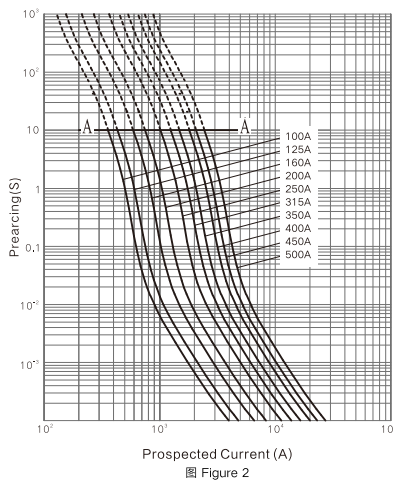
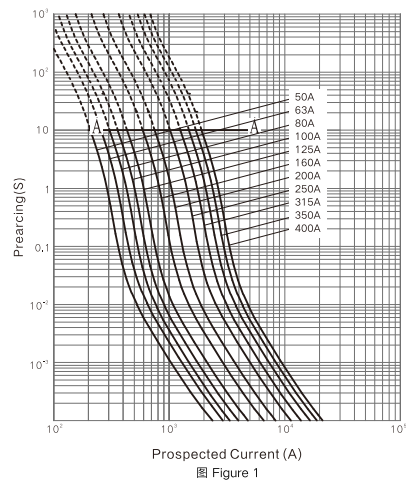


3. 电气特性Electrical Characteristics

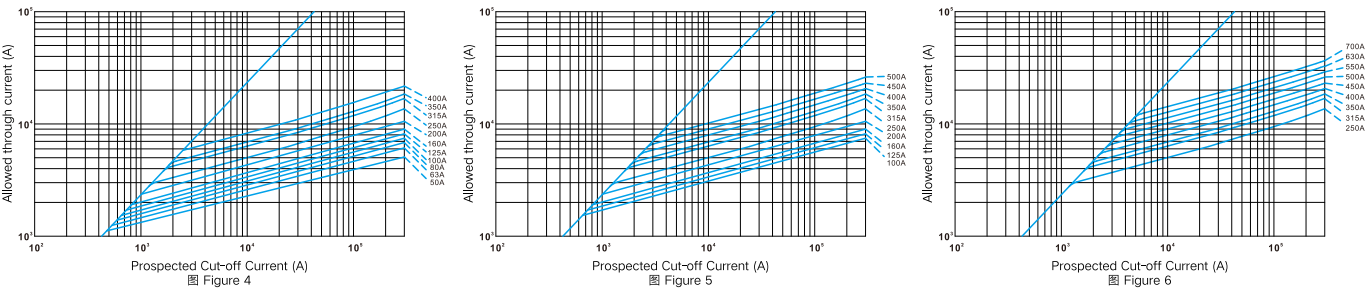
3.1 电气特性参数 Parameters of Electrical Characteristics

型号 Model	尺寸 Size	安装方式 Installation	电流(A) Rated Current (A)	弧前I ² t Pre-arcingI ² t	熔断I ² t ClearingI ² t	功耗 (W) Power Dissipation	推荐螺栓 / 扭矩 Recommended bolts/torque	曲线图 Curves
FRM	61S	P80K UN110K MB120K	50	140	1050	17	M8: 11 ± 1 N·m	图 Figure 1 图 Figure 4
			63	220	1700	20		
			80	420	3300	24		
			100	760	5900	30		
			125	1500	11400	38		
			160	2600	20800	45		
			200	5200	40000	54		
			250	9200	65000	68		
			315	20000	105000	82		
			350	31500	135000	90		
FRM	61	P80K UN110K MB120K	400	44000	170000	100	M10: 21 ± 1 N·m	图 Figure 2 图 Figure 5
			100	760	5900	30		
			125	1500	11400	38		
			160	2600	20800	45		
			200	5200	40000	54		
			250	9200	65000	68		
			315	20000	105000	82		
			350	31500	135000	90		
			400	44000	170000	100		
			450	65000	250000	108		
FRM	62	P80K UN110K MB120K	500	85000	330000	115	M10: 21 ± 1 N·m	图 Figure 3 图 Figure 6
			250	9200	480000	68		
			315	20000	105000	82		
			350	31500	135000	90		
			400	44000	170000	100		
			450	65000	250000	108		
			500	85000	330000	115		
			550	130000	400000	127		
FRM	62	P80K UN110K MB120K	630	205000	600000	146	M10: 21 ± 1 N·m	图 Figure 3 图 Figure 6
			700	280000	800000	170		

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



3.3 截断电流曲线 Cut-off Current Curves



4. 铭牌信息 Label Mark

- 4.1 熔断体上的标识应易于看清The markings on the fuse-link shall be easily recognized
- 4.2 每个熔断体应标有以下标识：The symbols below shall be presented on each fuse-link
- 4.2.1 商标Trade Mark：FRZ
- 4.2.2 使用类别Utilization category：aR
- 4.2.3 额定电流Rated current：（50A~700A UL）、（800A 试验报告）
- 4.2.4 额定电压Rated voltage：DC1000V
- 4.2.5 最大分断能力Max breaking capacity：For 61(61S) size I1=50KA、I1=150KA(T.C.≤5ms); For 62 size I1=100kA
- 4.2.6 符合标准Standards Conformed: 61S: GB/T13539.4和IEC60269-4 61&62: UL248-13
- 4.2.7 认证标志（如有）Approval mark（if necessary）：61S:TUV和CQC、61&62:
- 4.2.8 型号标识Model mark：FRM61S-P80K、FRM61S-UN110K、FRM61S-MB120K
FRM61-P80K、FRM61-UN110K、FRM61-MB120K
FRM62-P80K、FRM62-UN110K、FRM62-MB120K

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
FRM61S-P80K	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
FRM61S-UN110K	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
FRM61S-MB120K	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
FRM61-P80K	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
FRM61-UN110K	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
FRM61-MB120K	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD

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
FRM62-P80K	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
FRM62-UN110K	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
FRM62-MB120K	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD

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℃- 90℃; 包装 Packing -40℃-70℃

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℃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℃;

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

Normal condition:

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

7.2 海拔 Altitude

us it' s not required to correct the dielectric gap except for some little fuses.

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）, th

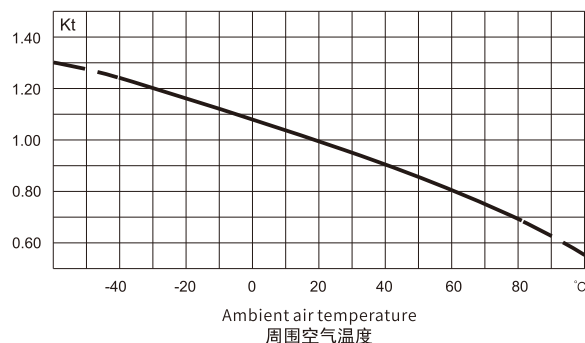
7.3 大气条件Atmospheric conditions：

空气是干净的，其相对湿度在最高温度为40℃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℃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℃；Higher relative humidity is permitted at lower temperatures, for example, 90% at 20℃. 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



样本所述的产品资料以实物为准，若有变更本公司恕不另行通知，欢迎致电咨询。

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

If there is any change, the company will not notify you separately. Please call for consultation.

FRZ[®] 弗而兹电气

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