1.正常使用条件

本标准适用于拟在下列条件下使用的电容器。

1.1 海拔

不超过 1000m。

注：如果海拔超过了 1000m，则应考虑海拔对对流冷却和外绝缘的影响。

1.2 自然空气冷却下的运行温度

对电容器作如下表征：

电容器可以赋能的最低温度，在-40℃、-25℃和-10℃三个优先值中选取。

电容器可以运行的外壳最高温度，在 55℃、70℃和 85℃中选取。

1.3 强迫冷却下的运行温度

如果拟以流动媒质对电容器作强迫冷却，亦应遵守 1.2 所规定的运行温度条件。

应使用表 1 所示的优先的冷却流体的最高温度。用水冷却时，最低进口温度可以是 5℃。

表 1 无时间限制时冷却媒质的最高温度℃

进口温度	出口温度
35	40
45	50
55	60

规定冷却媒质的上限温度有两种方法，或者用进口温度，或者用出口温度。

除非另有协议，方法由电容器制造厂选取。

对于规定进口温度的方法，还必须规定冷却媒质的流速。

Normal service conditions

This standard gives requirements for capacitors intended for use in the following conditions.

Altitude

Altitude shall not exceed 1000m unless the effects on cooling and external insulation are taken into account.

Note: if an altitude of more than 1 000m, you should consider the effect of altitude on convective cooling and insulation.

The operating temperature of the natural air cooling

The following characterization of capacitor:

Capacitor can be the lowest temperature of empowerment, at the temperature of -40 ℃, -25 ℃ and -10 ℃ three priority value selections.

The highest temperature - shell can run capacitor, selected at 55 ℃, 70 ℃ and 85 ℃.

The operating temperature of forced cooling

If intends to flow media on a capacitor as the forced cooling, should also comply with 1.2 operating temperature conditions specified in.

The highest temperature cooling fluid priority should be used as shown in Table 1. When cooling water is used, the minimum inlet temperature is 5 ℃.

Table 1 The highest temperature of cooling medium without time limit℃

Inlet temperature	Outlet temperature
35	40
45	50
55	60

Limit temperature of cooling medium has two kinds of methods, or the use of inlet temperature, or with the outlet temperature.

Unless otherwise agreed, method for manufacturing a capacitor factory selection.

The method provides the inlet temperature of cooling medium, must also be specified velocity.

1.4 本标准适用于在电力电子设备中使用的电容器，因此电容器被看作是该设备的部件。

This standard is applicable to capacitors for use in electronic equipment, so the capacitor is regarded as components of the apparatus.

例如：用于符合 GB/T 3859.1、GB/T 3859.2、GB/T 7677、GB/T 7678 或 IEC 411 的半导体变流器。

For example: for compliance with GB/T 3859.1, GB/T 3859.2, GB/T 7677,GB/T 7678 or IEC 411 semiconductor converter.

这些设备一般安装在室内，但是强迫空气冷却则可能使它们受到户外空气条件（即：低温度、高湿度和污秽）的影响。

These devices are installed in the interior, but forced air cooling is likely to make them by outdoor air conditions (i.e.: low temperature, high humidity and pollution) effect.

2.非正常使用条件

Normal operating conditions

除非制造厂和购买方另有协议，本标准不适用于那些使用条件一般说来不符合本标准要求的电容器。

Unless the manufacturer and purchaser agree otherwise, this standard does not apply to those using conditions in general do not meet the requirements of this standard capacitor.

非正常使用条件要求增加测试，以保证即使在这些非正常使用条件下也能遵循本标准的条件。

Non normal use conditions require additional testing, so that they could follow this standard even in these non normal use conditions.

如果存在这类非正常的使用条件则必须将其通知电容器制造厂。

If the existence of this kind of non normal conditions of use must notify the capacitor factory.

这类非正常的使用条件为：

This kind of non normal use conditions for:

1）非正常的机械冲击和振动；

1）Non mechanical shock and vibration normal;

2）冷却水有腐蚀性或含有阻塞粒子（海水或很硬的水）；

2）The cooling water is corrosive or containing blocking particle (sea water or hard water);

3）冷却空气有腐蚀性和含有磨损性粒子；

3）The cooling air is corrosive and abrasive particles containing;

4）冷却空气中有导电性尘埃；

4）A conductive dust in the air cooling;

5）油或水蒸气或腐蚀性物质；

5）Oil or water vapor or corrosive substances;

6）爆炸性气体或尘埃；

6）Explosive gas or dust;

7)核辐射；

7)Nuclear radiation;

8)不寻常的贮存和运输温度；

8) Unusual transport and storage temperature;

9)不寻常的湿度（热带或亚热带地区）；

9) Unusual humidity (tropical or subtropical area);

10)过分迅速的温度变化（超过 5℃/h）或湿度变化（超过 5%/h）；

10)Temperature changes too quickly (over 5 ℃ /h) or humidity changes (more than 5%/h);

11)使用地方的海拔高于 1 000m；

11)Using the above 1 000m;

12)叠加电磁场；

12)Superposition of electromagnetic field;

13)过高的过电压，超过了 GB/T 17702.1-1999 中第 3 章所给出的限值。

13)Over voltage is too high, more than GB/T 17702.1-1999 in the third chapter the given limit value.