TM Ultra-low Voltage Automatic AC Voltage Regulator

1. General

TM series ultra low-voltage automatic AC voltage stabilizer is a kind of stabilizer which adopts the sampling control system composed of digital integrated circuit, controls electromagnetic relay and changes the tap of auto-transformer, so as to achieve stable output voltage. The outstanding advantage of the product is to have the voltage stabilizing function of inputting ultra low voltage and achieving a wide range of input voltage.

This product is widely used in office equipment of various industries and household refrigerators, freezers, electric fans, air conditioners, TVs, computers and other electrical appliances and applies to communication, medical care, lighting system and other electrical places, especially to some areas where electrical appliances do not work properly which is caused by too high or too low grid voltage. It can automatically adjusts the voltage to the proper range, to ensure the normal use of electrical appliances.

Product standard: Q/ZT 648.

2. Type designation

TM - □

Rated capacity, kVA

Self-coupled voltage-adjusting step voltage regulator

3. Operating conditions

3.1 Ambient temperature: -5℃～+40℃

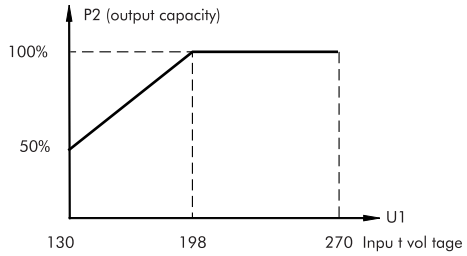
3.2 The installation site elevation does not exceed 3000m.

3.3 Work environment: the installation environment has no obvious contamination; the interior has no chemical depositions, dirts,hazardous aggressive media and flammable, explosive gases.

3.4 Ventilation should be maintained around the installation site; enough space should be left for heat dissipation around the installation (generally the reserved space should be greater than or equal to 0.5m). It is prohibited to use plastic cover, cloth and other flammable items for covering the regulated power supply or to place sundries on the power supply, in order to avoid overheating damage to regulated power supply .
3.5 During installation, it is prohibited to place it onto the plastic components of refrigerators, freezers and other appliances, in order to avoid overload heating of the voltage stabilizer to make plastic surfaces of appliances heat to cause deformation.

Fig. 1 Output capacity curve

When the voltage inputted by single-phase stabilized power supply drops below 198V, the output capacity of the product will be reduced and the product must be used after reducing capacity.



4. Technical data

Table 1 Technical data

Model specification	Rated capacity kVA	Rated output current A	Frequency Hz	Rated input voltage V	Input voltage range V	Rated output voltage and precision V	Output over-voltage protection value V	Installation method
TM-0.5	0.5	2.3	50	220	130~270& 95~270	220	246±4	Desk type
TM-1	1	4.5						
TM-1.5	1.5	6.8						
TM-2	2	9.1						
TM-3	3	13.6						Wall-mounted, desk type
TM-5	5	22.7						
TM-8	8	36.4						
TM-10	10	45.5						

Note: If need more wider input voltage range (50~270A), it can be customized.

5. Product features

5.1 The product adopts relay for fast switching and voltage regulating, with the characteristics of reliable operation, fast reaction speed, no waveform distortion and strong instantaneous overload capacity.

5.2 Strong anti-overload, overvoltage capability. When the load is overweight, it has the functions of automatic protection and cutting off the output power. When the grid voltage exceeds the input range of the voltage stabilizer and high voltage is inputted, it can also quickly cut off the output, to ensure the safety of electrical equipment of users.

5.3 The effective input voltage range is AC 130V-270V. When the grid voltage changes from 130V to 270V, its output voltage is always maintained within 220V±10%, therefore, it is particularly suitable for use in the occasion of grid voltage fluctuating within this range.

5.4 It uses LCD screen to display the input and output voltage values, with the characteristic of clear, intuitive, accurate readings.

5.5 It adopts excellent circuit design and is made from high-quality raw materials and parts. Thus this series of products have low failure rate, long service life,safe and reliable operation.

5.6 TM-3~10 are equipped with two kinds of working states of "mains "and "steady". When the voltage of AC is normal, "mains" switch can be turned on to make the voltage stabilizer operate in "mains" state; at this time, loss of the straight-through output terminal of AC power supply can be further reduced.

6. Outline overall and installing dimensions

Model and specification	Outline dimension(mm) Width max. × depth max. × height max.	Packing size (mm)	Piece / package
TM-0.5	165×275×96	210×355×150	1
TM-1	165×275×96	210×355×150	1
TM-1.5	165×275×96	210×355×150	1
TM-1	185×295×105	238×388×157	1
TM-2	260×380×155	305×422×190	1
TM-5	295×410×195	350×447×215	1
TM-8	295×410×195	350×447×215	1
TM-10	450×320×205	388×500×250	1

The above dimensions and weights are for reference only.

The product after improvement is subject to local change involved without prior notice.

7. Ordering information

For your safety, please read carefully the following selection requirements and precautions when ordering:

a. This product should not be used under overload conditions. In areas with generally low grid voltage, attention should be paid that the use of effective capacity shall be proportionately reduced, that is, the lower the input voltage, the smaller the electric appliance (load) shall be. When the input voltage drops below 198V, the output capacity of the regulated power supply will be reduced, thus it must be used after reducing the load, in order to avoid overload. Refer to "Fig.1 Output capacity curve" for its relationship.

b. Under normal circumstances, regulated power supply shall be reasonably selected according to the rated power, start surge current, inductive or capacitive loads of the electrical equipment in selection. Its output capacity should allow sufficient margin; especially in impact load selection, margin should be greater. For example, air conditioners, freezers, refrigerators and other household appliances require large start-up current at start moment. Generally, power of the voltage stabilizer should be more than 3 times the rated power of the used appliances; otherwise, it will not conducive to the normal work of household appliances.

c. There exists high voltage within the voltage stabilizer. Non professional personnel is not asked to open the casing so as to avoid the electric shock.

d. The voltage stabilizer must be earthed reliably. AC socket connected with the input plug of the voltage stabilizer must be equipped with reliable earth wire to ensure the safe use. The power plug should be pulled off or wiring removed for safekeeping if never used.

e. The voltage stabilizer should be placed indoor for ventilation and drying. The use environment should be free of corrosive gases, vapors, conductive dusts, explosive substances and violent vibration.

f. Do not use plastic cover, cloth and others for covering the voltage stabilizer or place sundries on the voltage stabilizer in order to avoid the overheating of the voltage stabilizer and being damaged. The voltage stabilizer should be placed in a well-ventilated location, for better heat dissipation.

g. It is prohibited to use the voltage stabilizer in parallel. Output terminals of two or several voltage stabilizers shall not be used in parallel or in series. h.When the product is operating, switching of the relay contacts in the machine may produce arc spark. It is prohibited to use this machine in the combustible and explosive places (e.g. oil depot, fireworks factory etc.).