TND1(SVC) Single-phase Automatic Voltage Regulator TNS1(SVC) Three-phase Automatic Voltage Regulator

1. General

1.1 Application:
TND/TNS(SVC) series full-automatic AC voltage regulator collects sample and amplifies it and automaticly control circuit, and drives the servomotor to rotate the rocker arm and brush in required direction, and finally adjusts the output voltage to the rated value, finally reaches the aim of stabilizing the voltage. It can be widely used in areas, where the mains voltage often comes across sharp fluctuation or sharp seasonal variation, such as industrial production, scientific research medical treatment & hygiene, household electrical appliances, it can provide any loads with excellent power supply.

1.2 Features: Elegant appearance, compact structure, light weight, low power waste, complete protection functions, stable and reliable, low output waveform distortion and so on.

2. Type designation

TN□1 (SVC)-□/□

- Cooling type. AN means: convective cooling (AN will be omitted in model description); AF means: draw out the hot-air with fan or blow on the product direct.
- Rated capacity of regulator (kVA)
- Servo AC voltage stabilizer (Foreign model)
- Design serial number
- D: single-phase, S: three-phase
- Automatic voltage regulator (high precise automatic AC voltage regulator)

3. Operation conditions

3.1 Ambient temperature: -15℃～+45℃.
3.2 Relative humidity ≤90%(at +25℃).
3.3 Altitude: ≤1000m.
3.4 Working environment: Indoors, be free from chemical deposition, dirt, harmful corrosive medium, or flammable or explosive gas.

4. Technical data

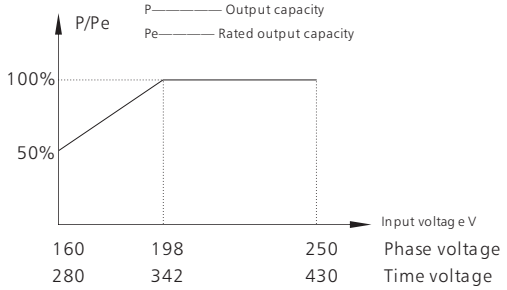
Model	TND	TNS
		
No. of phase	single	three
Input voltage (V)	160V~250V	280V~430V(3-phase, 4-lines)
Output voltage (V)	220V±4%	380V±4%(3-phase, 4-lines)
Frequency (Hz)	50-60	
Adjusting time(s)	⩽3s when the input voltage changes within the range of 20V	
harmonic distortion	No additional distortion	
Output over-voltage protection setting value	246±4V	Phase voltage 246±4V
Output under-voltage protection setting value	180±8V	Phase voltage 180±8V

5. Technical characteristics

5.1 Output capacity
The relation between output capacity and input voltage refer to as fig. 1
When input voltage less than 198V, the output capacity of product will decrease, the working capacity of stabilizer shall come down; when you choose output voltage of 110V, the out put capacity shall be not more than 50% rated capacity,to prevent overload.

5.2 Overload capacity
The stabilizer is not allowed for working overloading long time, when the input phase voltage fluctuate within 198V ~ 250V (line voltage from 342V ~ 430V), at emergent case, it is allowed towork as specified in sheet 1.

Fig. 1



6. Overall dimensions and weights

Phase number	Model & Spec.	Overall dimensions (mm)	Packing dimensions (mm)	Pcs	Weight (kg)	Gross weight (kg)
Single-phase	TND1(SVC)-0.5	195×205×150	235×215×175	1	4.5	4.8
	TND1(SVC)-1	215×235×165	260×250×200	1	6.1	6.8
	TND1(SVC)-1.5	215×235×165	260×250×200	1	6.8	7.5
	TND1(SVC)-2	225×285×220	330×260×260	1	9.5	10
	TND1(SVC)-3	245×305×240	360×300×270	1	12.5	13
	TND1(SVC)-5	225×350×285	385×265×310	1	16.5	17
	TND1(SVC)-10/AF(vertical)	285×320×520	390×410×610	1	38.5	47
	TND1(SVC)-10(horizontal)	245×430×370	310×475×410	1	33	35.5
	TND1(SVC)-15/AF	325×430×620	415×550×720	1	58.5	68.5
	TND1(SVC)-20/AF	325×430×620	415×550×720	1	71.5	81.5
	TND1(SVC)-30/AF	405×730×805	510×830×965	1	140	156
Three-phase	TNS1(SVC)-1.5	490×325×160	525×375×200	1	16	16.5
	TNS1(SVC)-3	490×325×160	525×375×200	1	19.5	20
	TNS1(SVC)-4.5	490×325×160	525×375×200	1	20.5	22
	TNS1(SVC)-6	275×345×615	360×475×715	1	33.5	37
	TNS1(SVC)-9	330×360×730	420×475×825	1	46	50
	TNS1(SVC)-15	360×385×855	440×510×945	1	60.5	66
	TNS1(SVC)-20	475×460×920	590×580×1020	1	135	155
	TNS1(SVC)-30/AF	475×460×920	590×580×1020	1	139.5	160
	TNS1(SVC)-45/AF	480×780×1050	600×850×1200	1	191	213
	TNS1(SVC)-60/AF	480×780×1050	600×850×1200	1	230	250

7. Selection notice

a. Input and output of three-phase products of this series are of three-phase four-wire connected, please wire them with neutral line before using.
Example of type selection: Three-phase motor 2.2kW 1pcs, 5.5kW 1pcs, when selecting the voltage regulator, its capacity should be ≥(2.2kW+5.5kW)×2.5=19.25kVA, so, the selected product should be three-phase SVC-20kVA at least.
b. When the three-phase voltage regalator is applied to single-phase or three-phase , max capacity of each phase should be one third of rated capacity.
c. When the input phase voltage is lower than 198V, the output capacity of voltage regulator will be reduced, then the loads should be reduced correspondingly, otherwise, it may be overloaded; when the output voltage is 110V, then the output capacity should not be beyond 50% of rated capacity, otherwise, it may be overloaded.
Please refer to fig.1 for detail characters.

Sheet 1 Safe consult coefficient of choosing regulator capacity

Load kind	Consumer samples	Safe coefficient	Chosen capacity rate
Complete resistive loads	Incandescent lamp, resistant coil, electric cooker	1.1~1.3	>1.1~1.3 times of total rated capacity
Inductive, capacitive loads	Fluorescent lamp, fan, pump, air-conditioner, refrigerator and etc.	2.5~3	>2.5~3 times of total rated capacity