



TND1 Single-phase Automatic AC Voltage Regulator

TNS1 Three-phase Automatic AC Voltage Regulator

1.General

1.1 Application:

TND1/TNS1 series full-automatic AC voltage regulator collects sample and amplifies it and automatically 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-□/□

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)

Design serial number

D: single-phase, S: three-phase

Automatic voltage regulator
(high precise automatic AC voltage regulator)

3. Operating conditions



3.1 Ambient temperature: $-5^{\circ}\text{C} \sim +40^{\circ}\text{C}$.

3.2 Relative humidity $\leq 90\%$ (at $+20^{\circ}\text{C}$).

3.3 Altitude: $\leq 2000\text{m}$.

3.4 Working environment: Indoors, be free from chemical deposition, dirt, harmful corrosive medium, or flammable or explosive gas.

4. Technical data

Model	TND1	TNS1
		
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)	≤6s when the input voltage changes within the range of	
harmonic distortion	20V No additional distortion	
Output over-voltage protection setting	246±4V	Phase voltage 246±4V
value	180±8V	Phase voltage 180±8V
Output under-voltage protection setting		
value		

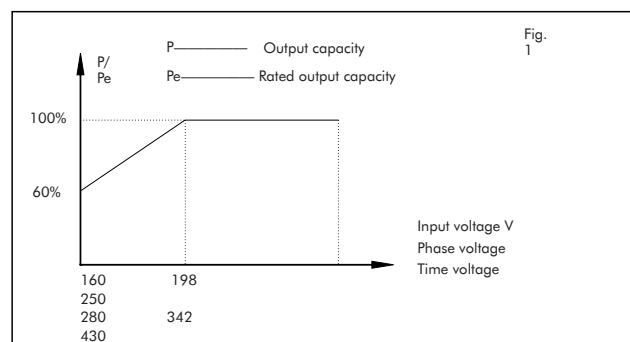
5. Features

5.1 Output capacity

The relation between output capacity and input voltage refer to as fig. 1 When input voltage is 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 output capacity shall be no more than 60% rated capacity, to prevent overload.

5.2 Overload capacity

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



6. Overall dimensions and weights

Phase number	Model & Spec.	Overall dimensions(mm)	Packing dimensions(mm)	Pcs
Single-phase	TND1-0.5	195×200×140	436×234×182	2
	TND1-1	215×240×160	506×270×200	2
	TND1-1.5	215×240×160	506×270×200	2
	TND1-2	225×290×215	336×268×258	1
	TND1-3	245×305×230	366×295×266	1
	TND1-5	225×350×280	389×270×318	1
	TND1-10/AF(vertical)	285×320×520	367×337×584	1
	TND1-10(horizontal)	245×430×375	310×475×410	1
	TND1-15/AF	325×430×620	487×382×746	1
	TND1-20/AF	325×430×620	487×382×746	1
	TND1-30/AF	402×735×803	510×840×970	1
Three-phase	TNS1-1.5	490×325×160	534×358×208	1
	TNS1-3	490×325×160	534×358×208	1
	TNS1-4.5	490×325×160	534×358×208	1
	TNS1-6	275×355×620	360×475×715	1
	TNS1-9	330×360×730	420×475×825	1
	TNS1-15	330×420×840	420×530×930	1
	TNS1-20	510×465×930	595×595×1020	1
	TNS1-30/AF	510×465×930	595×595×1020	1
	TNS1-45AF	480×790×1055	600×885×1230	1
	TNS1-60/AF	480×790×1055	600×885×1230	1

7. Ordering information

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 $\geq (2.2\text{kW} + 5.5\text{kW}) \times 2.5 = 19.25\text{kVA}$, so, the selected product should be three-phase SVC-20kVA at least.

b. When the three-phase voltage regulator 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