

NPA

Single Phase: 10kVA~30kVA

Three Phase: 30kVA~500kVA

Industrial Class, Electromagnetic
Inductive, Contactless
Voltage Regulator

Main Features

- Output low-voltage / high-voltage protection
- Open-phase protection
- Overload protection
- High temperature protection
- Soft-output function
- Free from Voltage-Drop
- Pure Linear Voltage adjustment
- Contactless design
- Wide input voltage range
- Modular design
- Fully isolated, manual bypass function
- Superior monitoring system
- Misoperation prevention design
- Better efficiency, excellent characteristics
- Seriously selected industrial-strength



Characteristics

- Stepless Linear Voltage Regulation

The contactless inductive transformer makes the linear voltage regulation. No tap connected to the load, there is no coupling noise and voltage drop.

- No Arc Discharge

No contact point inside the transformer, there is no arc discharge.

- High Efficiency Transformer

The winding of transformer is made of high purity oxygen-free copper wire, the copper loss is low, and the temperature rise is slow. The core of transformer is made of the high magnetic density silicon-steel plate, the no-load current is low.

- Long Lifespan and Severe Environment Tolerance

There is no any contact surfaces or components can be worn inside the transformer, and others are the seriously selected industrial-strength components, it can work for more than 10 years. It also can tolerate the severe temperature, humidity, vibration and dust.

- Reliable Modular Design

Complete Modular design, for easy after sales services and debugging. All the components are standardized, all the PCBA are parallely connected to the main control board.

- Double Insurance Duplex Control

Both regulation circuit and monitoring circuit have interlock function. Only when the two circuits detect the voltage change at the same time, the transformer starts regulation.

- Strong Overload Ability

The transformer won't be damaged, when short circuit happened on the loads or it's overloaded in short time. 100% load for long time, 150% for 15 seconds, 200% for 5 seconds

- Output Precision Adjustable.

The output precision is +/-1%~ +/-15% adjustable, through the jumper on the regulation board.

- Manual Bypass

Through fully-isolated manual bypass switch, the stabilizer can be connected to mains.

- Automatic Bypass (customized)

When input voltage is within the range, while the output is out of range, the stabilizer will automatically switch to bypass mode.

- Soft Startup Function

With soft startup function, the rotor will stay in an appropriate position if mains power is failure, to prevent a high voltage is delivered out when mains power restores.

- Surge Protection Device (customized)

Additional surge protection device can be added, to depress the surge and spike from the mains power.

- RS232/RS485 Communication Port (customized)

The monitoring and remote control can be realized through RS232/485 communication port.

Schematic of Transformer

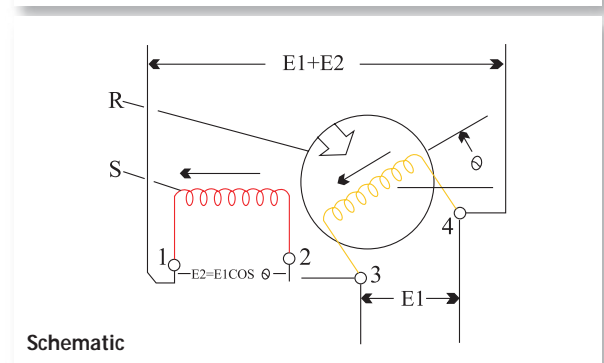
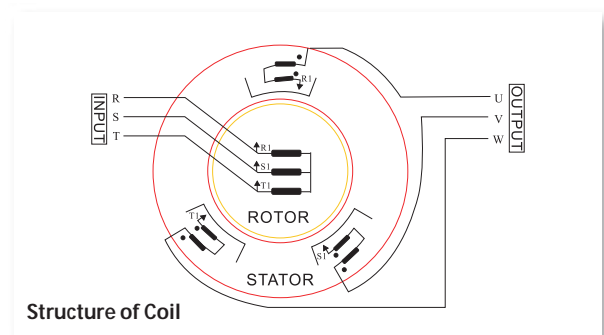
The major parts are "R" (Rotor) and "S" (Stator). Winding "R" is the primary winding, which is connected to the mains power. Winding "S" is the secondary winding, which is connected to the load. If a voltage "E1" is applied to the primary winding (between 3 and 4), there will be an induced voltage "E2" on the secondary winding (between 1 and 2). The value of "E2" will vary, along with variation of the crossing angle "θ" between the two windings.

$$E2 = E1 * \cos\theta$$

If connect 2 and 3, the output voltage "E1+E2" between 1 and 4 is equal to "E1(1+cosθ)"

$$E1 + E2 = E1(1 + \cos\theta)$$

When the two windings are in the same direction (θ=0), the output voltage reaches the maximum. When the primary winding is vertically positioned to the secondary winding (θ=90), the induced voltage "E2" is "0", then the output voltage is equal to the input voltage. If the two windings are not in the same direction (θ>90), the output voltage will be less than the input voltage.



Technical Specifications

NPA Series

Model		
Input	Nominal Voltage	1 Phase: 220V/230V/240V 3 Phase: 380V/400V/415V/440V
	Input Voltage Range	+/-25% or +/-30% or customized
	Nominal Frequency	50Hz or 60Hz
	Frequency Range	+/-5Hz
	Power Factor	0.98
Output	Output Wave Form	Sine wave
	Nominal Voltage	1 Phase: 220V/230V/240V 3 Phase: 380V/400V/415V/440V
	Output Precision	+/- 1% (+/-1%~ +/-15% adjustable)
	Output Frequency	synchronized with input frequency
	Harmonic Distortion	< 2%
	Respond Time	< 0,042 second
	Efficiency	98% at full load
Indicator	Output Voltage	analog (voltmeter)
	Output On	LED is lit
	Output Off	LED is lit
	Output High Voltage	LED is lit
	Output Low Voltage	LED is lit
Protection	Output High Voltage	output + LED is lit + buzzer beeping
	Output Low Voltage	output + LED is lit + buzzer beeping
	Open Phase	buzzer beeping
	Overload	30s for 150%; 10s for 200%; out of range the output is cutoff
	Surge	Optional, replaceable module
	Short Circuit	by contactor
	Delay Output	6 seconds
	Manual Bypass	yes
	Automatic Bypass	Optional
Safety	Insulation Voltage	2000V 60S (coil to other body)
	Insulation Resistance	> 5M Ω (coil to ground)
	Creeping Distance	> 8mm
	Grounding Resistance	< 0.1 M Ω
	No-load Loss	< 1%
	Cooling Mode	forced cooling fan is activated when temperature is 100°C
	Shock Resistant	0.3G
	Temperature Rating of Coil	Class F, 155°C
Environment	Audible Noise	< 65dB (at 1 meter from cabinet with full load)
	Operation Humidity	0%~95%, non-condensing
	Operation Temperature	-10°C~40°C
	Operation Altitude	<1000m
	Storage Temperature	-20°C~40°C

Dimension and Weight

Input Range: - 25% + 20%

Model	Capacity (kVA)	Phase - Voltage (Ø - V)	Machine Size (W * D * H) CM	Net Weight (KG)	Current (A)
NPA-11010-25	10	1Ø 220V	30 * 51 * 48	50	1 * 46
NPA-11020-25	20	1Ø 220V	30 * 51 * 48	65	1 * 91
NPA-11030-25	30	1Ø 220V	36 * 54 * 57	105	1 * 137
NPA-33040-25	40	3Ø 380V	52 * 82 * 82	165	3 * 61
NPA-33060-25	60	3Ø 380V	52 * 82 * 82	200	3 * 92
NPA-33080-25	80	3Ø 380V	52 * 102 * 82	220	3 * 122
NPA-33100-25	100	3Ø 380V	52 * 102 * 82	240	3 * 152
NPA-33120-25	120	3Ø 380V	52 * 102 * 82	265	3 * 182
NPA-33160-25	160	3Ø 380V	60 * 120 * 117	530	3 * 244
NPA-33200-25	200	3Ø 380V	60 * 120 * 117	670	3 * 304
NPA-33250-25	250	3Ø 380V	90 * 120 * 150	930	3 * 380
NPA-33300-25	300	3Ø 380V	90 * 120 * 150	1085	3 * 457
NPA-33400-25	400	3Ø 380V	148 * 148 * 190	1840	3 * 608
NPA-33500-25	500	3Ø 380V	148 * 148 * 190	2300	3 * 760

Input Range: - 30% + 25%

Model	Capacity (kVA)	Phase - Voltage (Ø - V)	Machine Size (W * D * H) CM	Net Weight (KG)	Current (A)
NPA-11010-25	10	1Ø 220V	30 * 51 * 48	58	1 * 46
NPA-11020-25	20	1Ø 220V	36 * 54 * 57	85	1 * 91
NPA-11030-25	30	1Ø 220V	41 * 60 * 66.5	120	1 * 137
NPA-33040-25	40	3Ø 380V	52 * 82 * 82	180	3 * 61
NPA-33060-25	60	3Ø 380V	52 * 82 * 82	215	3 * 92
NPA-33080-25	80	3Ø 380V	52 * 102 * 82	240	3 * 122
NPA-33100-25	100	3Ø 380V	52 * 102 * 82	265	3 * 152
NPA-33120-25	120	3Ø 380V	60 * 120 * 117	550	3 * 182
NPA-33160-25	160	3Ø 380V	60 * 120 * 117	620	3 * 244
NPA-33200-25	200	3Ø 380V	80 * 120 * 162	980	3 * 304
NPA-33250-25	250	3Ø 380V	90 * 120 * 150	1240	3 * 380
NPA-33300-25	300	3Ø 380V	90 * 120 * 150	1840	3 * 457
NPA-33400-25	400	3Ø 380V	162 * 162 * 190	2940	3 * 608
NPA-33500-25	500	3Ø 380V	162 * 162 * 190	3400	3 * 760

Contact Details

NORTH & SOUTH AMERICA
PCE UPS SYSTEMS Inc.
4805 Colombo Cres.
Mississauga, ON L5M 7R3
Canada

MIDDLE EAST & AFRICA
PCE POWER FZE
LOB 15 #202, Jebel Ali Free Zone
P.O.Box 263295, Dubai
United Arab Emirates

