



## AP Series Intelligent Faradic Electrical Manostat

### Technical Specification

Voltage stabilizing Range: Rated input voltage  $\pm 15\%$  (On customer's demand)  
Output Voltage: 220V, 380V, 440V (On customer's demand)  
Voltage stabilizing Ratio:  $+1.5\% \sim -1.5\%$   
Output Precision:  $\pm 0.5\% \sim \pm 10\%$  Adjustable  
Service Efficiency:  $>98\%$   
Reaction Time:  $\leq 0.1s$  (5 Cycles)  
Working Frequency: 50/60Hz  $\pm 5\%$   
Wave Distortion: No distortion on sine wave  
Heat Emission: Dry fan cooling

### Overall Features

- ∅ Small: Compact structure, nice looks and environmental friend.
- ∅ New: New design, new circuit, new shape, new patent.
- ∅ Stable: Stable and accurate control.
- ∅ Safe: Double loop backup control system.
- ∅ Saving: Low waste, energy saving, space saving, cost saving.
- ∅ Complete: Complete detection and protection for overvoltage, undervoltage, loss phase, reversed phase.

### Suitable Application

SMT/PCB/AI;  
Digital Processing Center/CNC;  
Research Test Facilities;  
Electrical and Medical Equipments;  
Electronic Communication Equipments.

### Functions & Features

#### A. Exterior Functions

1. Accurate indication of output voltage meter, easy to read.
2. Thin film switch panel, touch key control, simple operation.
3. Self-detection LED displaying normal and abnormal status, easy to confirm.
4. Manual/auto button working together with electric lock system, optional control of output voltage, easy to shift.
5. Mass flow axial flow fan with proper ventilator for effective heat emission.
6. Impact structure, small volume, light easy to installation and transport.

#### B. Internal Functions

1. Excellent design, good material, no touch, stable linear, high overload capacity.
2. Digital control precision can reach  $\pm 1\%$ .
3. Auto detection and alarm for overvoltage, undervoltage, loss phase, reversed phase; and failure reason indicated on panel.
4. Standard by-pass switch, no need to cut down power and stop production for repair and maintenance of equipments.
5. Powerful electromagnetic switch can automatically cut off output to protect load ( $>150KVA$  On demand).
6. Voltage regulation and voltage transformation, to offer different requests of input and output voltage (On demand).

Model	Capacity		(380V/h)	Type Explain	Dimensions (mm)	Weight (kg)
	KVA	KW				
AP-3015Y	15	12	22A	Y Plus Voltage Transformation System X2=220V X3=380V X4=440VY Plus Voltage Transformation System	760*380*840	230
AP-3020Y	20	16	30A		760*380*840	247
AP-3030Y	30	24	45A		760*380*840	270
AP-3045Y	45	36	68A		760*380*840	300
AP-3015	15	12	22A		600*380*870	155
AP-3020	20	16	30A		600*380*870	165
AP-3030	30	24	45A		600*380*870	175
AP-3045	45	36	68A		600*380*870	210
AP-3060	60	48	91A		600*680*870	225
AP-3075	75	60	113A		800*550*1255	425
AP-30100	100	80	152A		800*550*1255	450
AP-30150	150	120	215A		800*550*1255	520
AP-30200	200	160	302A		680*1050*1510	848
AP-30250	250	200	375A		680*1050*1510	900
AP-30300	300	240	455A		680*1050*1510	1035
AP-30350	350	280	525A		680*1050*1510	1196
AP-30400	400	320	608A		680*1050*1510	1420
AP-30500	500	400	757A		900*1600*2010	1550
AP-30600	600	480	910A		900*1600*2010	1680
AP-30800	800	640	1216A		900*1600*2010	1880
AP-31000	1000	800	1520A	900*1600*2010	2050	

### Electromagnetic Property

The main parts are turning part R and stabilizing part S (refer to right pic). Inside R, coil connects in parallel with power supply line. Inside S, the second coil connects in series with load. When voltage E1 inputs between point 3~4, the induced voltage of the second coil varies within , the angle between the two coils. So  $E2=E1 \cos$  . If connecting point 2~3, the voltage of point 1~4 is  $E1+E2=E1(1+\cos)$  . If the two coils parallel in same direction, the voltage of point 1~4 reaches the highest, equals to  $E1+E2$ . If the two coils form a rectangle, the second coil has no induced voltage,  $E2=0$ ; the terminal voltage equals to supply voltage E1. If R turns an angle exceeding 90, the second coil also has induced voltage E2, but reversed to E1. The terminal voltage equals to the difference of E1 and E2. From above, we know the relative position of first and second time. When loading, the voltage also can be continuously controlled according to the first magnetic flux. The advantage is high capacity, instant overload capacity strong and low failure rate.

### Materials Characteristics

- ∅ Interior iron core adopting Japanese H14 high magnetic beam silicon steel sheet, low iron loss, small no load current, tiny wastage rate and energy saving.
- ∅ Interior coil adopting Taiwan H level heat resistance copper wire, low copper loss, low temperature rise, low wastage and energy saving.
- ∅ Interior insulation material adopting American heat resistance insulating material, with high insulation level and strong safety capacity.
- ∅ Interior main axial adopting non-magnetoconductive stainless steel material, to avoid main axial eddy loss, reduce magnetic hysteresis, and lengthen life.

### Control Characteristics

- ∅ Adopting digital circuit sampling comparison, stabilizing voltage by CPU programming digital control, high output precision, speed reaction frequency.
- ∅ Adopting large integrated circuit plate, double loop backup control system, auto shift to stabilize output voltage and protect load current.

### Stabilized Voltage Characteristics

- ∅ Made according to the theory of electromagnetic induction; no touch, no carbon brush abrasion, no sparkle; low failure rate, high safety, no maintenance and change; overcoming the defect of carbon brush voltage regulating type of autotransformer.
- ∅ Making use of magnetic field deflection to stabilizing voltage, no phase skipping, linear voltage regulation, no tap surging, no wave form mutation; overcoming the defect of digital silicon control machine.