

3-Ph Static Smart AVR Model # MVR400K



- Large-Screen LCD Display
- Display Real-time Work Status
- Display Real-time Voltage
- Display Real-time Current
- Real-time Monitoring

Intelligent logic assembles function programming, it is suitable for all kinds of load and premises. The product lines have complete series and are all CE certified. Also, it's with compact size, high efficiency, and easier to operation. Electrical and servo module mass producing, with several patents and anti-mistake circuit design, the producing procedure meet international standard, with high reliability quality and long MTBF. The products are highly accepted and welcome by CNC industry, Medical, Banking, Industrial , Power plants and Utility, computer and instrument industries.

Features

- Intelligently logic regulation
- Self-detecting function
- Powerful overload 150% ability
- With bypass device and protect function
- Big Range high/low voltage protect device
- Phase failure, instant black-out, short circuit protection
- Start over voltage protection
- Independent regulation and protection design
- Full series with the same control system
- Front panel with LED indicator displayed AVR regulating status
- With O/P voltmeter to monitor O/P voltage
- With larger LCD, easier for setting
- Electronics double circuitry switch design
- Separated voltage regulation design, 3 phase unbalance 100%
- Double overload and short circuit protection
- With surge suppressor/LC filter/EMI filter (option) to provide pure power.

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Key Design Features

- CPU intelligent control
- SMT Main Control PCB
- Independent Phase Control
- No Contact, No Abrasion
- Maintenance Free
- Long Service Life



- **Intelligently Logic Regulation**

The Powerful PS series can completely adjust the regulating speed and regulation range in accordance with power's variation and the load character on the spot by a precise and unique motor to gain the most satisfactory power regulation required

- **Separate Regulators Design**

Whenever AC power encounters three phase unbalanced, non-linear power or heavy load, the Separate Regulators will still maintain its accurate output

- **Innovative Panel Design**

Almost every average user who considers AVR only as one of the power product seldom pays confirm its nominal reading. To renovate the traditional meter reading, this Super-Smart AVR provides user a very clear reading only by checking the indicators' colors to realize it is normal or abnormal. The green indicator stands for normal, red indicator shows abnormal

- **All Module Design**

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All the technical design inside the Super-Smart AVR is of Module Designed and separately assembled, components used on PCB are very stringently quality controlled and tested by computerized ICT satisfactory quality reliability

- **Self-Detect Function Design**

The Self-Detect result is displayed by light indicators providing an immediate, exact malfunction information to users making maintenance more easy and efficient

- **Powerful Overload Capability**

The Super-Smart AVR is specially designed to withstand 150% of its nominal load and cause nothing to output voltage, no voltage decrease

- **Start Over Voltage Protection**

Whether it is switch on or recovers from power outage, the Start Over Voltage Protection will always to start from low voltage to protect the load side equipment

- **Humanized Anti-Mistake Circuit Design**

To prevent from inappropriate operation or touch by which causing AC output switch ON or AC output switch OFF, Super-Smart AVR has a very delicate Electronic Double-Circuit Control design, one must simultaneously push two ONs or two OFFs to start or shut down the Super-Smart AVR

- **Big Range High / Low Voltage Protection**

Whatever the load side it may be like, for instance, heavy load equipment or precise equipment, even there is a very massive power variation, the Super-Smart AVR has a very special feature design of Various/Multi/Big range Select to pre-set the most appropriate and precise adjustment in accordance with the load requirement

- **Phase Failure Protection**

If there is any failure within three phase power, the Super-Smart AVR will immediately complete the detect and have it displayed and trip off to protect the load side equipment

- **Instant Trip Device**

This Instant Trip Design will always trip before AC recovers from an instant black-out, it features a re-set function making sure a stable power is in operation again while AC power gets back to normal. The purpose of this is to protect the load equipment from damaging by a frequently happened abnormal high voltage

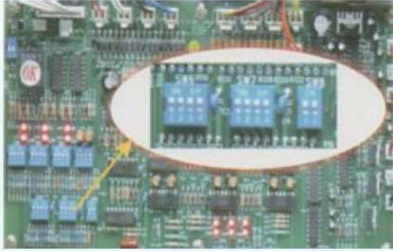
- **Bypass Device**

The AVR can still provide High/Low Voltage Protection, Phase Failure Protection...and all the other featured Protection when it is in status of Bypass under maintenance or repairing.

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Technological Features

Logic Assemble Function Programming



Adopt with multilayer and big range DIP SW logic assemble design, include high/low voltage, delay, and O/P accuracy setting. All setting can operate and select easier, user can pre-set the most appropriate adjustment in accordance with the load requirement

Monitor / Feedback / Buzzer/ Dry Contact



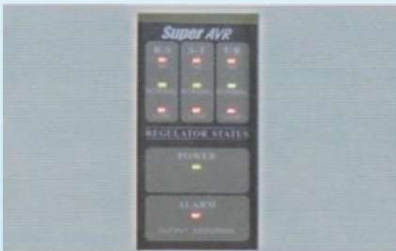
Output voltmeter monitor three phase voltage. With individual three phase feedback buzzer, mute switch and remote monitor dry contact

Electronic Bypass Design for Each Phase and Section



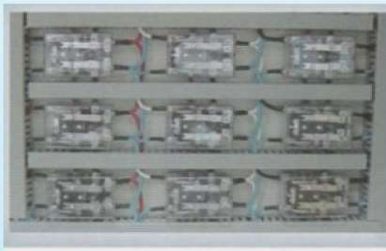
Each phase and each section available separate with their own bypass switch, even under bypass condition which still keep the over/under voltage and phase loss warning function

Innovative Panel Design



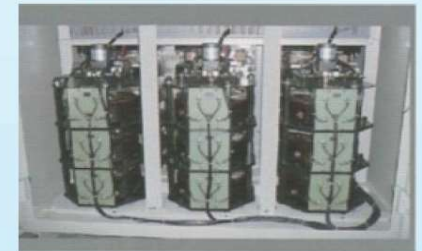
The display panel provides user a clear viewing which also may seen the indicator's color to realize normal or abnormal. The green LED stands for normal, the red LED with buzzer shown abnormal

SOVP Device



Whether it is on or recover from power outage, the Start Over Voltage Protection will always re-start from low voltage

3 Phase Detect & Regulated Separately

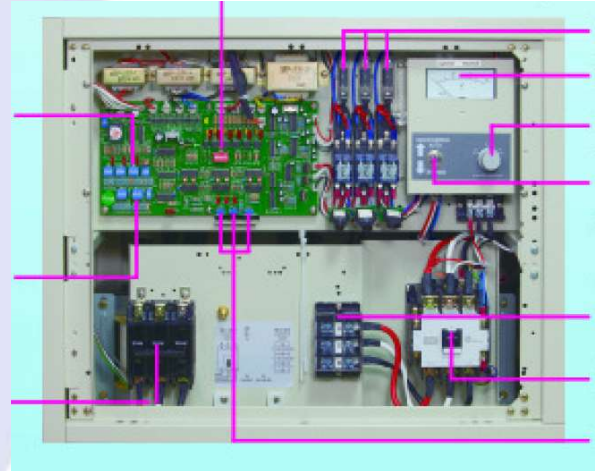


PSN's design is good to detect and adjust three phase individually, the high accurate regulation, output voltage won't oscillation

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Excellent and Precision Main control circuit

- High /Low voltage protection based on various preset select to suite load requirement
- Intelligent mode built in to match up various voltages on the spot
- Concealed power switch equipped with additional over load protection



- 3- PH Short circuit protection
- 3- PH meter
- 3-PH Voltage Selection knob
- Electronic bypass switch equipped with High/ Low Voltage protection and Phase failure protection even in the bypass
- Output Terminals
- Abnormal voltage trip device
- Most precise Output Voltage adjustment knob

Applications



PCB Drilling Machine



Integrated Processing Machine



SMT



EDM



Milling Machine



AI Component Inserting Machine

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Technical Specifications

Three Phase Static Smart AC Automatic Voltage Regulator	
Model/Series	MVR Series
Power Rating (KVA)	400KVA
Control Method	SC/Non-Contact (Microprocessor CPU)
Input	
Rated Voltage	3 x 380VAC (3Phase + N)(208V,220V, 230V, 400V, 415V option)
Voltage Range	±15% or ±20% (±15%~±60% customized)
Frequency	50/60 Hz
Output	
Rated Voltage	3 x 380VAC (3Phase + N)(208V,220V, 230V, 400V, 415V option)
Stabilizing Accuracy	±1%~ ±5% Adjustable
Power Factor	PF≥0.8
Efficiency	≥98%
Response time	≤0.04S
Delay time(When it is on)	≤5s (Optional)
Waveform Distortion	≤1%
System Protection	
Over Voltage	The output voltage is higher than 10%, turn to the bypass automatically in 3~5s
Under Voltage	The output voltage is lower than 10%, turn to the bypass automatically in 3~5s
Overload	If over current input switch will be tripped in 3~5s
Phase Loss	When there is phase loss, alarm and cut off the input power.
Short Circuit	When there exists short circuit, the input switch will be tripped in 3~5s
Surge Rating	10 x max. current rating for 2 seconds, 3 x max. current rating for 1 minute, 2 x max. current rating for 2 minutes
Surge Suppression	TVSS - Protects loads against high-energy Spikes and Transient Voltages
Bypass	When the AVR fails or is repaired, the power transfer to bypass automatically
Total Harmonic Distortion	Less than 1%
Soft-Switch On	Ensures the output voltage is set at minimum upon Switch-On before commencing stabilization - protects load equipment from damaging start up voltage surges
Control	Maintains each phase voltage stable irrespective of load unbalance, even up to 100% load unbalance
LCD Screen	
Input Voltage	Real-time display of the input voltage
Output Voltage	Real-time display of output voltage
Output Current	Real-time display of working current
Working Status	AVR, Bypass, Fuse Blown, Over-voltage, Under-voltage, Over-load etc.
Others	
Cooling System	Cooling System Air
Insulation Resistance	Insulation Resistance ≥2MΩ
Voltage-endurance	Voltage-endurance The whole machine has no breakdown and no arcing phenomena for 2000VAC/min.
Noise	Noise < 65dB/m

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Construction	Enclosures to IP20 (NEMA 1 Style) - BS EN 60529
Paint Color	RAL 7032 (Grey - Epoxy Powder Coating)
EMC Conformance	Complies with BS EN 55022 and the relevant parts of the BS EN 61000 series of standards
CE Conformity	CE Marked - being fully compliant with European Union Directives 2004/108/EC (The EMC Directive) and 2006/95/EC (The Low Voltage Directive)
Standard Warranty	Two Years from date of supply /Extended warranties up to 5 years
Optional Accessories	Output Circuit Breaker
	Manual Maintenance Bypass Switch
	Ammeter (with Phase Selector Switch)
	Lightning Surge Arrestors
	No Volt Remote Monitoring Contacts
	Drip Proof Cowl for IP21 Ingress Protection
	Digital Power Metering (with RS-485 interface)
Environment	
Storage Temperature	0°C-60°C (No condensation)
Working Temperature	0°C-50°C (No condensation)
Working Humidity	Working Humidity 20%-90%
Altitude	0-3000mtrs
Dimension	
Size WxDxH(mm)	1050×700×1500
Gross Weight (KG)	870Kgs

Note: - Magnizon also has any customized solution catering to the special needs with tailor made specifications. Most of the high capacity models with extended warranties will be supplied with minimum spare parts to cater to the immediate service resolutions.

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Input Voltage Windows

Nominal Single Phase Voltage	Output Voltage accuracy	INPUT VOLTAGE SWINGS			
		S15	S20	S25	S30
380V	± 0.5%	323v to 437v (± 15%)	304v to 456v (± 20%)	285v to 475v (± 25%)	266v to 494v (± 30%)
	± 3%	315v to 448v (-17% / +18%)	296v to 467v (-22% / +23%)	277v to 486v (-27% / +28%)	258v to 505v (-32% / +33%)
	± 5%	308v to 460v (-19% / +21%)	289v to 479v (-24% / +26%)	270v to 498v (-29% / +31%)	251v to 517v (-34% / +36%)
400V	± 0.5%	340v to 460v (± 15%)	320v to 480v (± 20%)	300v to 500v (± 25%)	280v to 520v (± 30%)
	± 3%	332v to 472v (-17% / +18%)	312v to 492v (-22% / +23%)	292v to 512v (-27% / +28%)	272v to 532v (-32% / +33%)
	± 5%	324v to 484v (-19% / +21%)	304v to 504v (-24% / +26%)	284v to 524v (-29% / +31%)	264v to 544v (-34% / +36%)
415V	± 0.5%	353v to 477v (± 15%)	332v to 498v (± 20%)	311v to 519v (± 25%)	291v to 540v (± 30%)
	± 3%	344v to 490v (-17% / +18%)	324v to 510v (-22% / +23%)	303v to 531v (-27% / +28%)	282v to 552v (-32% / +33%)
	± 5%	336v to 502v (-19% / +21%)	315v to 523v (-24% / +26%)	295v to 544v (-29% / +31%)	274v to 564v (-34% / +36%)

Note: -In situations where there is a reasonably good mains supply, AVR offering an input variation swing of ±15% (S15 Models) will usually be more than acceptable, but in more remote locations, or countries where the national supply infrastructure is less developed, variations of ±20% or greater may be needed to be accommodated by the AVR. Magnizon also has any customized solution catering to the special needs.