

## Electronic Servo AVR (Single Phase) Model # MVR50KS



Single Phase Electronic Servo AVR is suitable for all kinds of single phase load and premises. The product lines have complete series and are all CE certified. The products are light, thin and small in size and are environment friendly conceptual models. The products have patented bypass device and continuous step less voltage regulation design. The products are highly accepted and welcome by CNC industry, computer and instrument industries.

### Features

- Input range is  $\pm 15\%$
- ( $\pm 20\% \sim \pm 40\%$  can be customized)
- Output accuracy is within  $\pm 1\%$
- Self-detecting function
- Continuous step less regulator design
- No distortion
- Overload, short circuit protect device
- Start over voltage protection
- Powerful overload 150% ability
- Front panel with LED indicator displayed
- With O/P voltmeter to monitor O/P voltage
- High Efficiency  $\geq 98\%$
- Innovative panel design
- Compact size & easy to operate
- With bypass device

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### Applications



### Key Design Features

#### 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

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

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### Start Over Voltage Protection

Whether it is switch on or recovers from power outage, the Start over Voltage Protection will always 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

**Instrument Lamp Indicating**



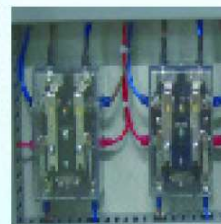
**Precision Main Control PCB**



**With Surge Protection**



**With SOVP device**



**Bypass Protection Device**



Latest conditions are indicated by voltmeter, Hi/Low and Normal

Power are by and  
 With Multi functions, including self-detection, Hi/Low voltage protection and voltage regulation

Having surge element to protect equipment  
 Lightning protection to protect equipment

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

All models are equipped with Bypass protecting device so as to keep the equipment installed with AVR free from any damages

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### Technical Specifications

<b>Technology</b>	Servo Electronic - Variable Transformer, controlled, series regulation transformer (buck-boast transformer with secondary wired in series with the load).
<b>Input Voltage Swing</b>	±15% (or -17% +18% or -19% +21%) Single Phase, 2 Wire.
<b>Output Voltage</b>	Pre-settable for any voltage between 220V, 230V, 240V, (Customer to specify), Single Phase, 2 Wire. 254V & 277V models available to special order.
<b>Output Voltage Accuracy</b>	± 1%, ± 3% or ± 5 % - auto selection based on input voltage swing.
<b>Frequency</b>	47 - 65Hz
<b>Response Time</b>	<1.5ms
<b>Correction Time</b>	A 10% supply variation will be corrected to within 2.5% in 0.6 seconds.
<b>Efficiency</b>	98%
<b>Power Factor</b>	Any lagging to 0.95 leading
<b>Surge Ratings</b>	10 x max. current rating for 2 seconds
	3 x max. current rating for 1 minute
	2 x max. current rating for 2 minutes
<b>Surge Suppression</b>	TVSS - Protects loads against high-energy Spikes and Transient Voltages.
<b>Total Harmonic Distortion</b>	Less than 1%
<b>Soft-Switch On</b>	Ensures the output voltage is set at minimum upon Switch-On before commencing stabilization - protects load equipment from damaging start up voltage surges. Stabilization - protects load equipment from damaging start up voltage surges.
<b>Environment</b>	Temperature range -15 to 45 °C. De-rate by 2% for each additional °C Up to max 60 °C .
	Suitable for indoor tropical use 95% RH (non-condensing). Maximum altitude 1000m.
	De-rate by 2.5% for each additional 500m.
<b>Construction</b>	Enclosures to IP20 (NEMA 1 Style) - BS EN 60529.
<b>Paint Color</b>	RAL 7032 (Grey - Epoxy Powder Coating)
<b>EMC Conformance</b>	Complies with BS EN 55022 and the relevant parts of the BS EN 61000 series of standards.
<b>CE Conformity</b>	CE Marked - being fully compliant with
	European Union Directives 2004/108/EC (The EMC Directive) and 2006/95/EC (The Low Voltage Directive).

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<b>Standard Warranty</b>	2 Years from date of supply & Extended up to 5years
<b>Standard Features</b>	<b>50 KVA</b>
	Input Circuit Breaker
	Input / Output Terminals
	Output Voltmeter and Ammeter
	Bypass Control Switch
	Free Standing Enclosure on Castors
<b>Optional Accessories:</b>	Over / Low Voltage Protection
	Voltmeter & Ammeter
	Manual Maintenance Bypass Switch
	Lightning Surge Arrestor
	Digital Power Metering

### 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.

### Input Voltage Windows

Nominal Single Phase Voltage	Output Voltage accuracy	INPUT VOLTAGE SWINGS		
		S20	S25	S30
		Up to 50KVA	Up to 40KVA	Up to 30KVA
220V	± 1%	176v to 264v (± 20%)	165v to 275v (± 25%)	154v to 286v (± 30%)
	± 3%	172v to 271v (-22% / +23%)	161v to 282v (-27% / +28%)	150v to 293v (-32% / +33%)
	± 5%	167v to 277v (-24% / +26%)	156v to 288v (-29% / +31%)	145v to 299v (-34% / +36%)
230V	± 1%	184v to 276v (± 20%)	173v to 287v (± 25%)	161v to 299v (± 30%)
	± 3%	179v to 283v (-22% / +23%)	168v to 294v (-27% / +28%)	156v to 306v (-32% / +33%)

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	± 5%	175v to 290v (-24% / +26%)	163v to 302v (-29% / +31%)	152v to 313v (-34% / +36%)
240V	± 1%	192v to 288v (± 20%)	180v to 300v (± 25%)	168v to 312v (± 30%)
	± 3%	187v to 295v (-22% / +23%)	175v to 307v (-27% / +28%)	163v to 319v (-32% / +33%)
	± 5%	182v to 302v (-24% / +26%)	170v to 314v (-29% / +31%)	158v to 326v (-34% / +36%)

### Note

In situations where there is a reasonably good mains supply, a Stabilizer offering an input variation swing of  $\pm 15\%$  (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  $\pm 20\%$  or greater may be needed to be accommodated by the Stabilizer. Magnizon also has any customized solution catering to the special needs.

### Physical Details

Model No	Rating KVA	Maximum Rating Amp			Dimension in MM WxHxD	Weight (Kg)
		220V	230V	240V		
MVR50KS	50 KVA	227	217	208	500 x 910 x 600	140