

AVR models(  $\pm 26\%$ )

**VRp-10000-9339-260M**

10KVA

 400V  $\pm 1\%$ 

Three phase

**VRp-16000-9339-260M**

16KVA

 400V  $\pm 1\%$ 

Three phase

**VRp-21000-9339-260M**

21KVA

 400V  $\pm 1\%$ 

Three phase

**VRp-25000-9339-260M**

25KVA

 400V  $\pm 1\%$ 

Three phase

**VRp-32000-9339-260M**

32KVA

 400V  $\pm 1\%$ 

Three phase

**VRp-50000-9339-260M**

50KVA

 400V  $\pm 1\%$ 

Three phase

**VRp-75000-9339-260M**

75KVA

 400V  $\pm 1\%$ 

Three phase

## Static voltage regulator with automatic bypass

### Precision fast-PWM ac mains voltage correction

TSi Elecpower's VRp is manufactured in a joint venture under license & technology transfer from TSi Power Corporation, USA. This automatic precision voltage regulator allows trouble-free operation of electronic equipment over a very wide mains ac voltage fluctuation range of 148 - 300 V found in many developing countries.

There is no switching of taps or otherwise a break in the power path thanks to continuous pulse-width-modulation (PWM) switching of a buck-boost transformer.

### Typical applications

Designed for applications needing absolutely safe and precisely regulated ac power, such as

- Residential & Commercial applications
- Process Industries
- Industrial process controller (PLC)
- Computer Controlled (CNC) Machines
- Medical (MRI, CT) and diagnostics
- Analytical measurement equipment
- Mobile communications (BTS sites)
- Radio / TV broadcasting/Transmission sites

### Key VRp Series benefits

VRp is compatible with all loads as it does not switch any components in the power path. VRp's ultra-low impedance assures stability even with the most demanding loads. The automatic bypass assures that connected equipment will not shut down, even if VRp fails.

### How the VRp Series works

The high frequency insulated gate bi-polar transistor (IGBT) driven converter takes the incoming ac power, measures against the nominal voltage and adds or subtracts voltage, 20,000 times per second, to achieve precisely regulated 230 vac output.

The automatic bypass will be activated when there is a fault condition. Green LEDs are used to indicate Normal (regulating mode) operation.



### Key features of the VRp Series precision voltage regulator

- Outstanding voltage regulation: under standard design voltage range, output regulation will be within  $\pm 1\%$ , but still higher voltage fluctuation can be covered to achieve liberal regulation within usable output voltage range of 200-250 vac, P-N.
- No switching of active power path
- Fail-safe: automatic bypass
- Instantaneous Correction: boon for CNC Machines & hi-tech electronic gadgets
- Low impedance
- Low weight
- Quiet operation
- Soft switch-on
- Energy efficient


**TSi Elecpower (P) Ltd**

CIB-212, GIDC Industrial Estate,  
Waghodia, Vadodara 391760  
Gujarat, India

Ph. : +91 2668 262122  
info@tsielecpower.com  
www.tsielecpower.com

Specifications sheet :VRp series AVR's designed for $\pm 26\%$ fluctuation							
CATEGORY	STANDARD THREE PHASE MODELS						
	VRp-10000-9339 260M	VRp-16000-9339 260M	VRp-21000-9339 260M	VRp-25000-9339 260M	VRp-32000-9339 260M	VRp-50000-9339 260M	VRp-75000-9339 260M
<b>ELECTRICAL</b>							
Capacity in KVA (KW)	10 KVA	16 KVA	21 KVA	25 KVA	32 KVA	50 KVA	75 KVA
Regulator engine	High frequency 20 Khz IGBT driven voltage regulation convertor						
<b>INPUT</b>							
*Nominal voltage	400 volts ac, three phase						
*Normal operating voltage (typical output regulation within +/- 1% of nominal)	295 - 505 volts ac( $\pm 26\%$ ) for full regulation						
Relaxed operating voltage (relaxed output regulation within functional range of 200-250V P-N)	255-520 volts ac (-36%+30%) within maximum rated input current capacity						
Maximum rated input current	20A	31A	40A	49A	62A	98A	146A
Nominal frequency	47 - 63 Hz						
Input circuit breaker rating	20 A X 3 phase (ganged MCB)	32 A X 3 phase (ganged MCB)	40 A X 3 phase (ganged MCB)	50 A X 3 phase (ganged MCB)	63 A X 3 phase MCCB	100 A X 3 phase MCCB	160 A X 3 phase MCCB
Input wire size	4 mm <sup>2</sup> (AWG 12)	4 mm <sup>2</sup> (AWG 12)	6 mm <sup>2</sup> (AWG 10)	6 mm <sup>2</sup> (AWG 10)	10 mm <sup>2</sup> (AWG 8)	16 mm <sup>2</sup> (AWG 6)	25 mm <sup>2</sup> (AWG 4)
Ac connection	Terminal block ( L1in , L2in, L3in, neutral and ground wires) provided						
<b>OUTPUT</b>							
*Nominal voltage	400 volts ac, three phase						
Power efficiency	typically over 95 % (with 20 - 100% load conditions)						
Voltage regulation (typical, excluding meter error)	+/-1%						
Maximum rated output current	14A	23A	30A	36A	46A	72A	108A
System status indicator	Green LED (ON) indicates Normal ( regulating mode) operation						
Ac connection	Terminal block ( L1op, L2op, L3op, neutral and ground wires) provided						
<b>PHYSICAL</b>							
Dimensions (IN MM)	610 W x 570 H x 610 D					813 W x 813 H x 813 D	
Weight (approx.)	105 kgs	115 Kgs	140 Kgs	150 Kgs	160 Kgs	275 Kgs	300 Kgs
Display	Digital output voltage display thru selector switch						
Annunciation	LED display for Regulation mode, Bypass mode & Fault conditions						
Mounting	4 caster wheels, 2 with brakes						
<b>ENVIRONMENTAL</b>							
Ambient temperature	0° to + 45° Centigrade (32° to + 113° Farhenite). 10 to 90% RH non-condensing.						
Cooling method	Fan Cooled						
<b>PROTECTIVE FEATURES</b>							
Standards & Safety	Designed to meet UL 60950-1 standards. Protection class IP 20.						
OV/UV cut off with SPP	Automatic trip in event of High/Low/Missing Voltage, auto reset					Automatic trip in event of High/Low/Missing Voltage, manual reset	
Overload & Short Circuit Protection	Through suitably rated input circuit breaker						
Soft Switch-On	This feature ensure that the output voltage is never higher than the input voltage upon switch-on, before it commences full stabilization.						
Automatic bypass	Automatic bypass will be activated when there is a fault condition						
Surge Test Conditions	Per Class 2 Surge ( combination wave)						
Surge let-through voltages	1.2 X 50 $\mu$ s, 6kV, 8 X 20 $\mu$ s, 3 kA waveform. L-N < 300V						
All * marked voltage regulation ranges are based on 400V nominal output voltage. They would proportionately change in case nominal output voltage is required to be preset at any other value between 380-415V.							



**TSi Elecpower (P) Ltd**

CIB-212,GIDC Industrial Estate,  
Waghodia, Vadodara 391760  
Gujarat, India

Ph. : +91 2668 262122  
info@tsielecpower.com  
www.tsielecpower.com

**VRp**  
VRp system  
architecture

