



Failsafe

Automatic voltage regulator

With precision

VRp model

3000-120V

3 kVA
3 kW
120 volts

5000-120V

5 kVA
5 kW
120 volts

Power with a
Precision Attitude™

Precision PWM Automatic Voltage Regulator with Automatic Bypass

Precision fast-PWM ac mains voltage correction

TSi Power's VRp automatic precision regulator line conditioner provides output voltage within plus/minus 3% of nominal, for input voltage that varies between 95 to 145vac.

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

Typical applications

Designed for applications that require absolutely stable, high-reliability power, without switching components in the power path.

Applications include, but are not limited to: analytical equipment, radio and TV broadcast equipment, mobile broadcast vans, industrial controllers (PLC), milking machines, lithographic equipment, recording studio equipment and electrolysis equipment.

Key benefits

The low weight, high efficiency VRp is easy to install in any environment. The automatic bypass assures that connected equipment will not shut down, even if VRp fails. 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.

How the VRp Series works

The high frequency 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 the nominal output voltage +/- 3%.

The automatic bypass will be activated when there is a fault condition. Green LED indicates Normal (regulating mode operation), Yellow LED indicates Bypass (non-regulated output), and the Red LED indicates a Fault condition.



(VRp-7500 shown)

Key features

- Outstanding voltage regulation. under normal input range of: 95 to 145V (47 to 63Hz), output regulation will be: 120V +/- 3%.
- No switching of the power path
- Fast regulation
- Failsafe automatic bypass
- Low impedance
- Low weight
- Quiet operation
- Two year warranty



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Precision automatic voltage regulator

Specification	VRp-3000-120V	VRp-5000-120V
Electrical		
Capacity in VA (watts)	3 kVA (3000W)	5 kVA (5000W)
Regulator engine	High frequency 20kHz IGBT driven voltage regulation converter	
Input		
Nominal voltage	120 volts ac single phase	
Operating voltage	95 to 145 volts ac	
Nominal frequency	47 to 63 Hz	
Overcurrent protection	Single pole circuit breaker	
Circuit breaker rating	1 x 40 amps	1 x 70 amps
Input wire size	10mm ² (AWG 8)	15mm ² (AWG 6)
Output		
Nominal voltage	120 volts ac, single phase	
Power efficiency	96% (typical)	
Voltage regulation	Combined 3% maximum under 0 to 100% load and input of 95 to 45V.	
Automatic bypass	Automatic bypass will be activated when there is a fault condition.	
Status indicators	System status LED's provided as follows: Green LED indicates Normal (regulating mode operation); Yellow LED indicates Bypass (non-regulated output); Red LED indicates Fault.	
Surge test conditions	Per ANSI/IEEE C62.41-1991 6kV normal-mode injection	
Surge let-through voltages	Category A3, Ring wave, 200A: L-N: 30V Cat. B3, Combination wave, 3000A: L-N: 200V Note: Unit should be installed as close as possible (within 30') of the neutral-to-ground bond at the service entrance, in order to minimize potential difference between neutral and ground. A separate isolation transformer is recommended for installations where distance exceeds above, or for grounding systems without a neutral-to-ground bond.	
Ac output connection	Hardwired output terminals (hot, neutral and ground) are standard. Optional input cord and output receptacles are available.	
Physical		
Dimensions	270mm(10.6")wide x 159mm(6.25")high x 368mm(14.5")deep	
Weight	18.2kg(40 lbs)	22.7kg(50 lbs)
Wall/Floor mounting kit	MK-5019C (optional)	
Safety		
Agency approvals	Designed to meet UL 1950 and cUL 1950 standards.	
Environmental		
Ambient temperature	0° to +40°C(32° to +104°F). 10 to 90% RH non-condensing.	
Warranty		
Warranty	Two year limited depot warranty, parts and labor.	

TSi Power's ongoing product improvement process makes specifications subject to change. Other companies product names herein are for identification purposes only, and may be trademarks of their respective companies.



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VRp system architecture

