

# VRP

Fail-safe

PWM automatic voltage regulator

With precision

## VRP Model

VRP-2000-0268

2000 W  
230 V  $\pm$  3%  
9 A  
Single phase

VRP-3000-0268

3000 W  
230 V  $\pm$  3%  
13 A  
Single phase

VRP-5000-0268

5000 W  
230 V  $\pm$  3%  
22 A  
Single phase

## Precision PWM voltage regulator with automatic bypass

### Precision fast - PWM AC mains voltage correction

The single-phase VRP is an automatic precision AC voltage regulator which allows trouble free operation of electronic equipment over a very wide mains AC voltage range of 184 - 276 V.

### Typical applications

Typical equipment applications include, but are not limited to: CNC equipment, medical imaging, analytical / laboratory instruments, telecommunications, wireless sites, broadcast transmitters, semiconductor production, industrial automation and digital printing / graphics.

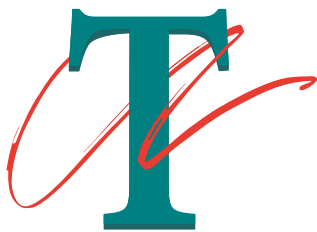
### How the VRP Series works

The high frequency insulated gate bipolar transistor (IGBT) driven converter takes the incoming AC power, measures it against the nominal voltage and adds or subtracts voltage, 20,000 times per second, to achieve the nominal output voltage  $\pm$ 3%.

The automatic bypass will be activated when there is a fault condition. Green LED ON indicates normal operation; yellow LED ON indicates start-up or bypass; red LED ON indicates a fault condition.



Rear ISO view with cover removed.



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### Features and Benefits

- VRP's low weight makes installation easy.
- Connected equipment will not shut down even if the VRP fails due to the automatic bypass feature.
- Since the VRP does not switch any components in the power path, it is compatible with all loads.
- The ultra-low impedance of the VRP assures stability even with the most demanding loads.
- The quiet operation of the VRP makes the installation as unobtrusive as possible.
- Outstanding voltage regulation makes the VRP the choice for critical equipment.
- Input and output by means of either hardwire or NEMA receptacles provides flexible choices.
- Two-year limited warranty on parts and labor.

SPECIFICATION	VRP-2000-0268	VRP-3000-0268	VRP-5000-0268
<b>ELECTRICAL</b>			
Capacity in VA (watts)	2 kVA (2000 W)	3 kVA (3000 W)	5 kVA (5000 W)
<b>INPUT</b>			
Voltage range	184 - 276 V		
Frequency	47 - 63 Hz		
Current	12 A	17 A	28 A
Overcurrent protection	Circuit breaker		
Circuit breaker rating	15 A	20 A	30 A
AC input connection	Hardwire input terminals		
<b>OUTPUT</b>			
Voltage range	230 V $\pm$ 3 %		
Current	9 A	13 A	22 A
AC output connections	Hardwire output terminals		
LED indicators: Green/Yellow/Red	Regulation / Bypass / Fault		
Power efficiency @ 230 V	98 %		
Power efficiency in max. Boost	96 %		
Surge voltage let-through	<300 V [ Line-Neutral (or dual phase) ] @ 1.2 x 50 $\mu$ s		
<b>MECHANICAL</b>			
Dimensions: mm (in)	156.2 mm (6.149") H x 278.5 mm (10.965") W x 378.4 mm (14.899") D		
Weights: kg (lbs)	13.6 kg (30 lbs)	16.78 kg (37 lbs)	20.41 kg (45 lbs)
Wall / Floor mounting kit	MK-5000C (optional)		
<b>ENVIRONMENTAL</b>			
Ambient temperature	0° to +40° C ( 32° to +104° F ), Humidity: 0 - 95 % Non-condensing		
Cooling method	Forced air		
<b>EMC &amp; Safety</b>			
EMC Directive:	2014/30/EU EN 61000-6-2:2016 EN 61000-6-4:2011 + A1:2011 EN 55024:2015 EN55032:2015 EN 55035:2016		
LV Directive:	2014/35/EU EN 60950-1:2006 + A11:2009 + A12:2011 + A1:2010 + A2:2013 <i>withdrawal date 12/20/2020 - to be replaced by EN 62368-1</i>		
<b>WARRANTY</b>			
Warranty	Two-year limited warranty covers 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

