



PWM SERIES

2.1 kVA to 14 kVA

Single Phase Static Digital AC Voltage Stabilisers



TYPICAL APPLICATIONS



STATIC IGBT PWM DIGITAL DESIGN



Automatic Voltage Regulation



Spike & Surge Protection



Fast Response Time



Solid State Design



Virtually Maintenance Free



Stable & Clean Power
Worldwide



PWM SERIES

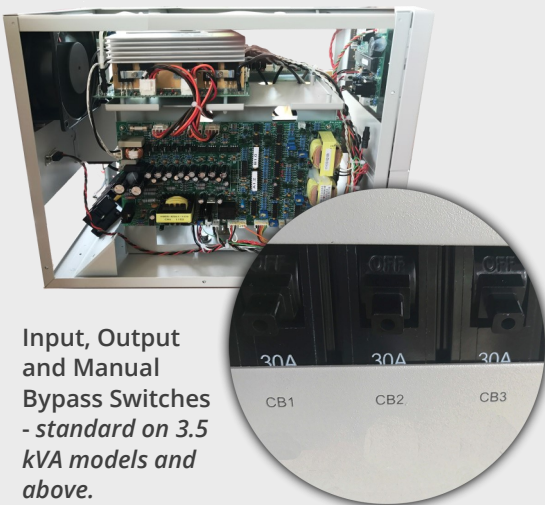
COST-EFFICIENT **VOLTAGE** STABILISATION

PWM SERIES microprocessor controlled Single Phase Static Digital Voltage Stabilisers automatically correct brownouts (by boosting low voltage) and over-voltages (by reducing high voltage). They are designed to ensure the delivery of a stable and quality output voltage.

Being designed for many years of reliable service, **VSi's PWM** models also provide protection from incoming line voltage sags, spikes and surges / swells.

With no moving parts (other than cooling fans), they are virtually maintenance free and offer an exceptional fast speed of correction, making them ideal for the most sensitive of electrical and electronic loads.

Internal View

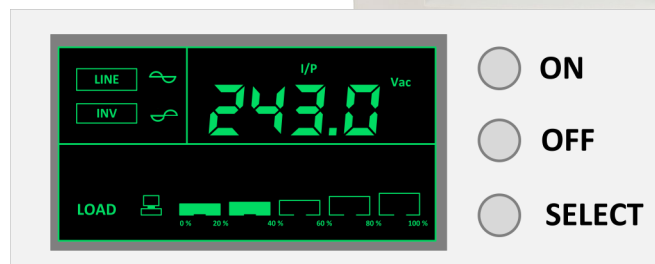


Input, Output and Manual Bypass Switches - standard on 3.5 kVA models and above.

PRINCIPLE OF OPERATION

PWM SERIES AC Voltage Stabilisers are designed around a traditional well proven 'Buck / Boost' design topology, utilising the latest in IGBT Power Devices and digital PWM (Pulse Width Modulated) controls.

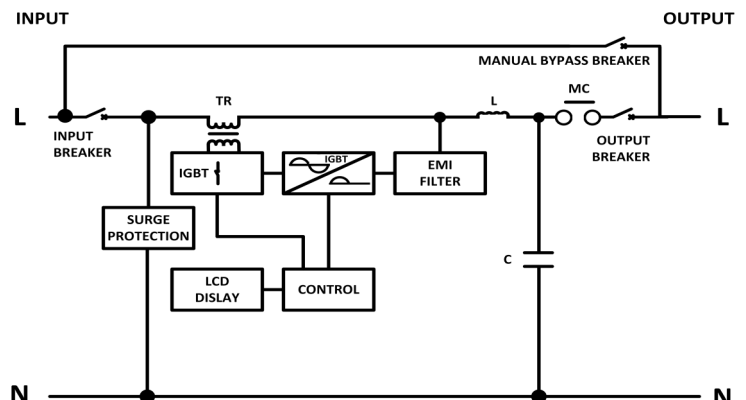
Digital Front Panel Display



AN **ENHANCED** LEVEL OF POWER PROTECTION

Capable of supporting all electrical and electronic load types, including modern office and general household appliances, **PWM Series** Voltage Stabilisers are designed to deliver a regulated and highly accurate output voltage for power environments where the incoming utility mains supply can drop as low as 173V or rise as high as 287V.

Representing the latest in digital static design, **PWM Series** Stabilisers are highly reliable and include as standard many protection features such as Input, Output, and Manual Bypass Breakers, as well as an automatic bypass facility, which similar systems available in the market only deem fit to offer as expensive add-ons.



VSi Model:

GENERAL:

Max. Power Ratings:	kVA / kW Amps @ 230V
Design Topology:	

INPUT:

Voltage & Frequency:	
Max. Input Current:	Amps @ 173V
Input Power Connections:	

OUTPUT:

Voltage & Frequency:	
Wave Form:	
Efficiency:	
Harmonic Distortion:	
Power Factor:	
Output Power Connections	

METERING, STATUS INDICATORS, ALARMS & COMS:

LCD Digital Metering:	Voltage (Volts) Frequency (Hz) Loading (Amps) Temperature (°C)
Status Indicators:	Line Inv Bypass Fault
Audible Alarms:	
Communication:	

PROTECTION FEATURES:

Over Current:	
Spike & Surge Protection:	
Noise Protection:	
Overload Protection:	
Over & Under Voltage Protection:	
Short Circuit Protection:	
Manual Maintenance Bypass - inbuilt:	

ENVIRONMENTAL:

Operating Temperature Range:	
Storage Temperature Range:	
Maximum Altitude:	
Relative Humidity:	
Cooling:	
Acoustic Noise Level:	@ 1 Metre

PHYSICAL:

Construction:	
Colour:	
Dimensions: - W x H x D (mm)	
Packed - W x H x D (cm)	
Weight: (Packed)	

CERTIFICATION & CONFORMANCE:

EMC Conformance:	
CE Certification:	

WARRANTY:

Standard Warranty:	
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H SERIES - Single Phase 2 Wire 50/60 Hz

PWM-2.1H-S25	PWM-3.5H-S25	PWM-5.25H-S25	PWM-7H-S25	PWM-10.5H-S25	PWM-14H-S25
2.1 kVA/kW 9.1 Amps	3.5 kVA/kW 15.2 Amps	5.25 kVA/kW 22.8 Amps	7 kVA/kW 30.4 Amps	10.5 kVA/kW 45.6 Amps	14 kVA/kW 60.8 Amps
IGBT & MOSFET / Pulse Width Modulated (PWM) Inverter / Rectifier Solid State Design					

230V ±25% (173 to 287V), 2 Wire, 50/60 Hz (L+N+G/E) *					
13 Amps	21 Amps	32 Amps	42 Amps	63 Amps	84 Amps
IEC-320 (16 Amp)	Hardwire				

230V ±1%, 2 Wire, 50 Hz (L+N+G/E) *	
Pure Sine Wave	
≥ 95%	
<3% of THD for Linear Load	
The Power Factor has no effect on performance providing the device is being used within its rated capacity	
2 x IEC-320 (10 Amp)	Hardwire

* = 220V or 240V Models available to Special Order

Input & Output (V) Input & Output (Hz) Output Current (Amps) & Load Level (%) Internal Temperature (°C) Normal Operation Available Stable Output Voltage Overload or Fault - In Automatic Electronic Bypass Mode Overload or the existence of an abnormal condition Fault and Over Voltage RS-232 Serial Port
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Input & Output Breakers - as Standard	
MOV (Metal Oxide Varistor)	
EMI Filters	
More than 105% Output Automatically Disconnected - requiring Manual Restart (Output Under Limit 188V ±4V, Over Limit 270V ±4V)	
Protection against high and low voltage with automatic output disconnection requiring manual restart	
Automatic output disconnect requiring manual restart	
No	Yes - Ability to manually re-route the supply feed to bypass the stabilisation function

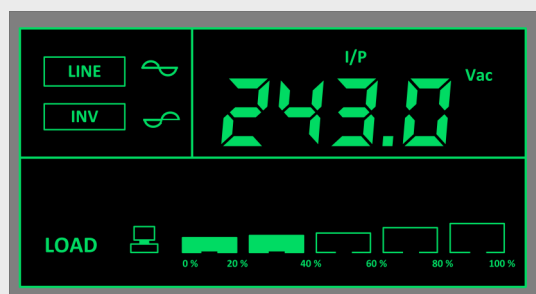
0 to 40°C. Derate by 2% for each additional °C Up to max 60 °C .	
-20 to 50°C	
2000 Metres. Derate by 1% for each additional 100m.	
Suitable for indoor use up to 90% Relative Humidity (non-condensing)	
Forced fan cooling	
<50 dBA	

Sheet metal enclosure to IP20 / NEMA 1 Style - BS EN 60529 - with Plastic Molded Front Cover					
RAL 7047 (Telegray 4)					
258 x 333 x 422	258 x 333 x 422	258 x 333 x 422	258 x 333 x 422	258 x 546 x 531	258 x 546 x 531
39 x 45 x 54	39 x 45 x 54	39 x 45 x 54	39 x 45 x 54	41 x 78 x 68	41 x 78 x 68
23 Kg (26 kg)	29 Kg (32 kg)	30 Kg (33 kg)	32 Kg (35 kg)	58 Kg (69 kg)	62 Kg (73 kg)

BS EN 55022 and relevant parts of BS EN 61000
Fully Compliant - 2014/30/EU (The EMC Directive) and 2014/35/EU (The Low Voltage Directive)

24 Months / 2 Years from date of Supply

FRONT DIGITAL DISPLAY PANEL



LED DIGITAL METERING

Input Voltage (I/P Vac)	Voltage level of the incoming utility mains supply
Output Voltage (O/P Vac)	Output voltage delivered by the system
Input Frequency (I/P Hz)	Frequency of the incoming utility mains supply
Output Frequency (O/P Hz)	Output Frequency delivered by the system
Load Current (O/P)	Power (Amps) drawn by the connected load
Temperature (°C)	Internal Temperature of the system
Load Level (%)	Bar Graph showing percentage load Level

LED STATUS INDICATION

LINE	All Okay - in line mode
BYPASS	In Bypass Mode
INV	Stable Output Voltage
FAULT	Output Overload or an Abnormal Condition exists

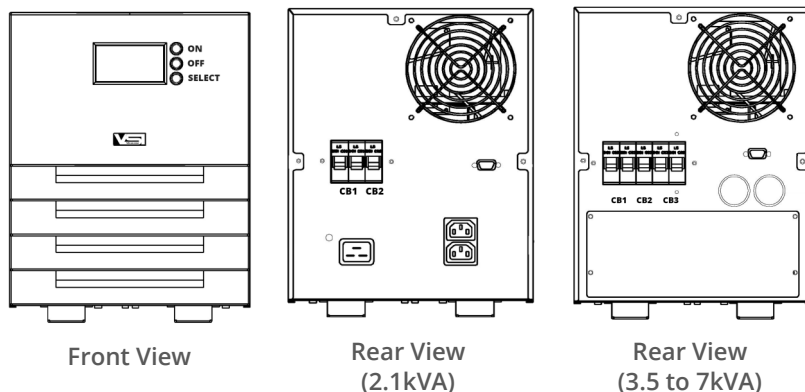
AUDIBLE ALARMS

Fault
Over Voltage

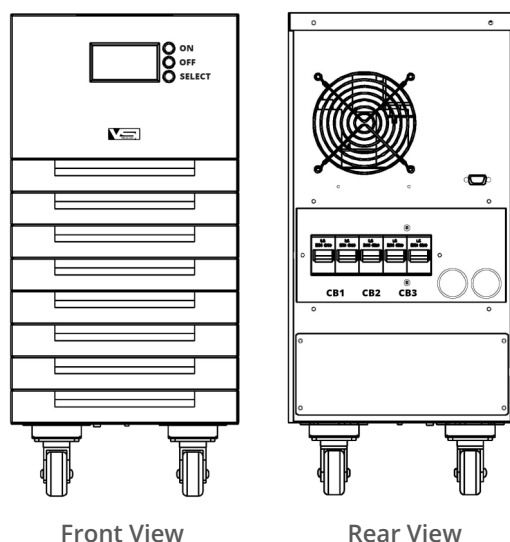
COMMUNICATIONS

RS-232 Serial Port - Standard on ALL Models

FRONT & REAR VIEWS - 2.1 to 7kVA Models

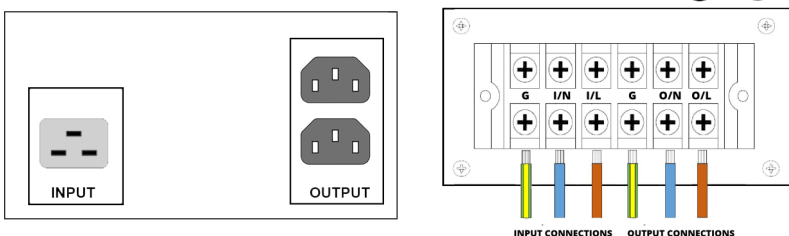


FRONT & REAR VIEWS - 10.5 to 14kVA Models



INPUT & OUTPUT CONNECTIONS

Plug N Play (2.1kVA Model)



Hardware (3.5 kVA Model & above)

Please Note: PWM Voltage Stabilisers are **NOT FOR USE** with life sustaining equipment, or any device where the power requirements exceed the "Maximum Power Ratings" listed in the General Technical Specification table.

These Stabilisers are not designed to support / protect voltage "back feed" applications, where energy is required to be also fed back into the utility supply.

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Worldwide

