



# AVR3PS1000-11

# THREE PHASE STATIC AUTOMATIC VOLTAGE REGULATOR

#### **FEATURES**

Designed for regions with voltage supply instability. Designed for remote operation where a high degree of reliability is essential.

Fully electronic with no moving parts for:

- High reliability
- Speed of operation
- Immunity to dust and other environmental conditions

### **SUITABLE FOR**

- Satellite operators
- Infrastructure telecom companies
- Embassies worldwide for reliable electrification of their posts
- Medical systems for digital imaging, scanning and x-ray equipment
- Mobile phone operators
- Offices and factories
- Grid utility companies for voltage regulation to their sub-stations
- Wind Farms
- United Nations divisions including WHO, UNICEF and WFP

#### AVR cabinet next to an AUX cabinet

\*Actual unit may differ from shown depending on model and options fitted



#### **SPEACIAL FEATURES**

- Wide input voltage range ±20%.
- High output protection accuracy ±3%
- High overload capability with up to 150% for 4 minutes
- Very low losses and minimal heat dissipation due to an efficiency of over 98% at full load
- Enclosure made of galvanised steel construction with high anticorrosion paint finish
- Warranty of 2 years. Sollatek provides full backup support on all its products, with local support in over twenty countries worldwide

#### **EQUIPPED WITH**

- Input circuit breaker
- Class II Surge protection
- Digital display: input and output voltage, output current
- Internal automatic bypass
- Anti-condensation heaters
- Volt free contact alarms:
  - High Temp Alarm
  - Internal Bypass Status
  - I/P Circuit Breaker Status
- Over-Temp Alarm
- General Fault

#### **OPTIONAL EXTRAS**

- Modem for remote monitoring
- High-level lightning protection (Class I)

#### **TECHNICAL SPECIFICATION**

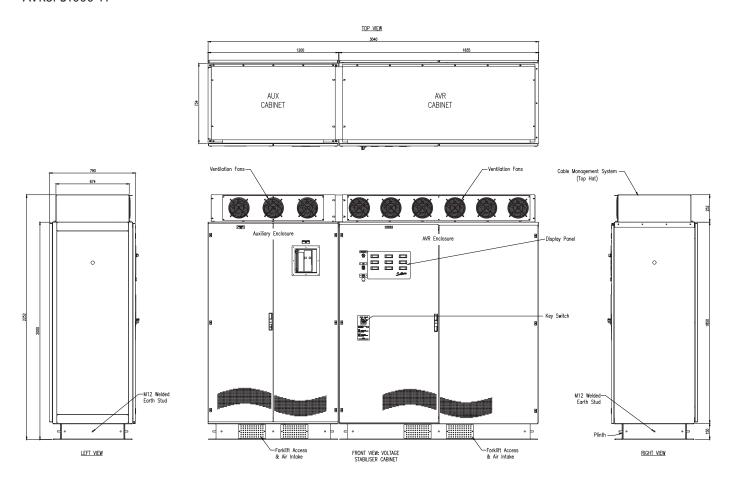
Input Voltage 230/400 V ±20%  Maximum Input Current 1200 A  Additional Voltage THD <0.2% at input (tested at 100% linear load) (No PWM methods used)  Maximum Input THD Can withstand >10% THD from the supply  OUTPUT  Output Accuracy 230/400 V ± 3%  Maximum Output Current 1000 A  Maximum Output Current 590 kVA  Speed of Correction 750 V/s  As the AVR powers up, the Load will receive raw mains (i.e. AVR in bypass mode) for a period of 3 seconds while the AVR initialises. If this is not desired, the AVS option (see below) can be used to delay the start-up until the AVR is initialised.  Additional Voltage THD <0.25% at output (tested at 100% linear load)(No PWM methods used)  Crest Factor >1:3 permissible on load current (tested at 100% load)  Synchronisation Output synchronised to input  Permissible Overload 1000% for 100 ms; 150% for 4 mins; 110% for 10 mins  Load Types Designed to run lighting, motors, battery chargers, communications equipment, office equipment, sMPS, air. conditioners, compressors, industrial machines, medical equipment and others. Suitable for all domestic, commercial and industrial sites.  GENERAL  Technology All solid state (static) switching  Efficiency >98% (at 100% linear load)  Heat Dissipation -13 kW at 690 kVA (at extremes i.e. +20% or -20%)  Control Protection Internal surge a rrestors and filters in control circuit protect against disturbances. Filtering algorithms and faulty tolerant software protect against disturbances. Filtering algorithms and faulty tolerant software protect against disturbances and false measurements.  Power Connections Supply phases, neutral and earth. Load phases, neutral and earth Input Circuit Breaker (Draw-out)  Internal Bypass If the AVR enters into bypass mode for whatever reason, the input voltage will be supplied to the load without stabilisation.	INPUT	
Frequency Range 45 Hz to 75 Hz  Additional Voltage THD <0.2% at input (tested at 100% linear load) (No PWM methods used)  Maximum Input THD Can withstand >10% THD from the supply  OUTPUT  Output Accuracy 230/400 V ± 3%  Maximum Output Current 1000 A  Maximum Output Power 690 kVA  Speed of Correction 750 V/s  As the AVR powers up, the Load will receive raw mains (i.e. AVR in bypass mode) for a period of 3 seconds while the AVR initialises. If this is not desired, the AVS option (see below) can be used to delay the start-up until the AVR is initialised.  Additional Voltage THD <0.25% at output (tested at 100% linear load) (No PWM methods used)  Synchronisation Voltage THD <0.25% at output (tested at 100% linear load) (No PWM methods used)  Synchronisation Output synchronised to input  Permissible Overload 1000% for 100 ms; 150% for 4 mins; 110% for 10 mins  Load Types Designed to run lighting, motors, battery chargers, communications equipment, office equipment, SMPS, air-conditioners, compressors, industrial machines, medical equipment and others. Suitable for all domestic, commercial and industrial sites.  GENERAL  Technology All solid state (static) switching  Efficiency >8% (at 100% linear load)  Heat Dissipation ~13 kW at 690 kVA (at extremes i.e. +20% or -20%)  Control Microcontroller based control system provides self-checks, system integrity monitoring and diagnostic indicators  Control Protection Internal surge arrestors and filters in control circuit protect against disturbances. Filtering algorithms and faulty tolerant software protect against disturbances measurements.  Power Connections Supply phases, neutral and earth. Load phases, neutral and earth Input circuit breaker to protect the AVR against overload and short circuits.  Heavy duty input and output surge arrestors to protect against extreme surges and lightning on the supply. Dual mode. 2880 Joules total. Class II, 8/20 us, 80 kA.  Digital Meters Accuracy 0.5% + 1 digit  Internal Bypass	Input Voltage	230/400 V ±20%
Additional Voltage THD  Output  Output Accuracy  Additional Voltage THD  Output Accuracy  Output Accuracy  230/400 V ± 3%  Maximum Output Current  1000 A  Maximum Output Power  Speed of Correction  As the AVR powers up, the Load will receive raw mains (i.e. AVR in bypass mode) for a period of 3 seconds while the AVR initialises. If this is not desired, the AVS option (see below) can be used to delay the start-up until the AVR is initialised.  Additional Voltage THD  Co.25% at output (tested at 100% linear load)(No PWM methods used)  Crest Factor  Singermissible on load current (tested at 100% load)  Synchronisation  Output synchronised to input  Permissible Overload  1000% for 100 ms; 150% for 4 mins; 110% for 10 mins  Designed to run lighting, motors, battery chargers, communications equipment, office equipment, SMPS, air-conditioners, compressors, industrial machines, medical equipment and others. Suitable for all domestic, commercial and industrial sites.  GENERAL  Technology  All solid state (static) switching  Efficiency  98% (at 100% linear load)  Heat Dissipation  7 13 kW at 690 kVA (at extremes i.e. +20% or -20%)  Control  Microcontroller based control system provides self-checks, system integrity monitoring and diagnostic indicators  Control Protection  Internal surge arrestors and filters in control circuit protect against disturbances. Filtering algorithms and faulty tolerant software protect against disturbances and false measurements.  Power Connections  Supply phases, neutral and earth. Load phases, neutral and earth Input circuit Breaker (Draw-out)  Heat Discipation  Accurate measurement of the AC RMS currents in three-phase systems  Accurate measurement of the AC RMS currents in three-phase systems  Accurates in the supply Dual mode. 2880 Joules total. Class II, 8/20 us, 80 kA.  Bigital Meters  Accurates into bypass mode for whatever reason, the input voltage will be supplied	Maximum Input Current	1200 A
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Output Accuracy  230/400 V ± 3%  Maximum Output Current  1000 A  Maximum Output Power  690 kVA  Speed of Correction  750 V/s  As the AVR powers up, the Load will receive raw mains (i.e. AVR in bypass mode) for a period of 3 seconds while the AVR initialises. If this is not desired, the AVS option (see below) can be used to delay the start-up until the AVR is initialised.  Additional Voltage THD  <0.25% at output (tested at 100% linear load)(No PWM methods used)  Crest Factor  >1:3 permissible on load current (tested at 100% load)  Synchronisation  Output synchronised to input  Permissible Overload  1000% for 100 ms; 150% for 4 mins; 110% for 10 mins  Load Types  Designed to run lighting, motors, battery chargers, communications equipment, office equipment, SMPS, air-conditioners, compressors, industrial machines, medical equipment and others. Suitable for all domestic, commercial and industrial sites.  GENERAL  Technology  All solid state (static) switching  Efficiency  >98% (at 100% linear load)  Heat Dissipation  ~ 13 kW at 690 kVA (at extremes i.e. +20% or -20%)  Control  Microcontroller based control system provides self-checks, system integrity monitoring and diagnostic indicators  Control Protection  Internal surge arrestors and filters in control circuit protect against disturbances. Filtering algorithms and faulty tolerant software protect against disturbances and false measurements.  Power Connections  Input Circuit Breaker (Draw-out)  Input circuit breaker to protect the AVR against overload and short circuits.  Surge Protection  Heavy duty input and output surge arrestors to protect against extreme surges and lighting on the supply. Dual mode. 2880 Joules total. Class II, 8/20 us, 80 kA.  Digital Meters  Accuracy: 0.5% + 1 digit  Internal Bypass  If the AVR enters into bypass mode for whatever reason, the input voltage will be supplied	Maximum Input THD	Can withstand >10% THD from the supply
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	Internal Bypass	



Anti-Condensation Heaters	Recommended when the AVR is to be installed in potential condensing environments where the AVR will be off for periods of time
Ambient Temperature	-10°C to +55°C
Relative Humidity	>95%, non-condensing
Environmental Protection	IP21
Acoustic Noise	<45 dB (A), <65 dB with fans on
Expected Service Life	>25 years
Standards	Manufactured to comply with: ISO9001:2015, CE, EN 55022:2010, EN 61000-4-2:2009, EN 61000-4-3:2006, EN 61000-4-4:2012, EN 61000-4-5:2014, EN 61000-4-6:2014, EN 61000-4-11:2004.
Dimensions (W x D X H)	AVR: 184 x 79 x 225 cm AUX: 120 x 79 x 225 cm
Weight	AVR: 2,300kg AUX: 500kg
OPTIONS	
GSM Modem	To allow remote monitoring (activation required)
Class I Surge Protection	Extra level of spike protection

# **GENERAL ARRANGEMENT DIAGRAM**

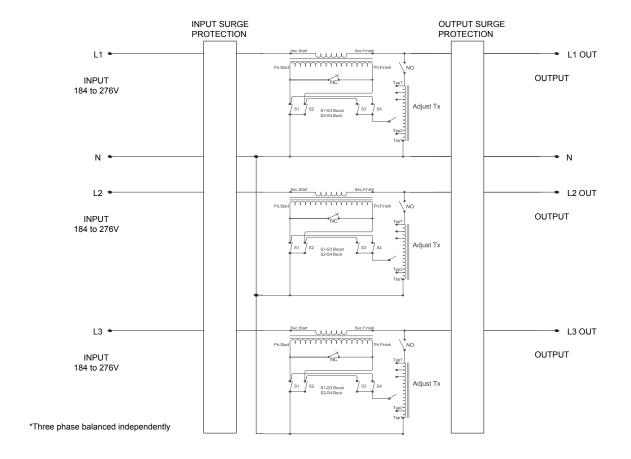
AVR3PS1000-11



AVR Circuit Diagram available on the following page.



#### **AVR CIRCUIT DIAGRAM**



# **SOLLATEK (UK) LIMITED**

Sollatek House, Waterside Drive, Langley, Slough SL3 6EZ, United Kingdom

Tel: +44 (1753) 214 500 Email: sales@sollatek.com Web: www.sollatek.com

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