SOLLATEK DATA SHEET NO: 10910983

VOLTAGE PROTECTION

REGULATORS

AVR

Voltright™

SOLLATEK AUTOMATIC VOLTAGE REGULATOR (AVR)

THREE PHASE STATIC AVR

Image shows an AVR Cabinet next to an Aux Cabinet. Actual unit may differ from shown.

Model:

AVR3AS500-DGM
Three Phase: 345kVA

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

The AVR is specified and used by a number of large organisations including:

- 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
- Grid utility companies for voltage regulation to their sub-stations
- Wind Farms
- Various United Nations divisions including WHO, UNICEF and WFP

Equipped With:

- Class II Surge protection as standard (option D)
- Modem for remote monitoring (option G)
- Digital display: input and output voltage, output current (option M)
- Internal automatic bypass as standard

Special Features Include:

- Wide input voltage range ±20%. Wider ranges available
- 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 anti-corrosion paint finish
- Warranty of 2 years. Sollatek provides full back up support on all its products, with local support in over twenty countries worldwide

Optional Extras (ordered separately)

- Automatic Voltage Switcher with HVD and LVD (option A)
- Input circuit breaker (option B)
- Output circuit breaker (option C)
- Volt free contact alarms: (option V)
  - General Fault
  - High Temp Alarm
  - Over Temp Alarm
  - Internal Bypass Status
  - External Bypass Status
  - I/P Circuit Breaker Status
  - O/P Circuit Breaker Status
  - LVD Alarm
  - HVD Alarm
- Manual bypass transferring the load to the utility grid (option Y)
- Anti-condensation heaters

Sollatek (UK) Ltd. Sollatek House, Waterside Drive, Langley, Slough, SL3 6EZ, UK
Tel: +44 (1753) 214 500 Technical support: sollateksupport@sollatek.com Sales: sales@sollatek.com www.sollatek.com

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Specification:

Input	
Input Voltage	230/400 V ±20%
Maximum Input Current	600 A
Frequency Range	45 Hz to 65 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 Voltage	230/400 V ±3%
Maximum Output Current	3 x 500 A
Maximum Output Power	345 kVA
Correction Time	5 cycles/tap. 600 ms for 0-20% (0 to 100% load)
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
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	6.9 kW at 345 kVA at regulation extremes (±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
Surge Protection (option D)	Heavy duty input and output surge arrestors to protect against extreme surges and lightning on the supply. Dual mode. 9600 Joules total.
GSM Modem (option G)	To allow remote monitoring (activation required)
Displays (option M)	Digital display, per phase for input voltage, output voltage, output current and frequency
Internal Bypass	If the AVR enters into bypass mode for whatever reason, the input voltage will be supplied to the load without stabilisation. Before returning to normal operation (stabilising the voltage), the AVR will monitor the voltage for 3 minutes to ensure the cause has subsided.
Ambient Temperature	-10^{O}C to +55^{O}C
Relative Humidity	>95%, non-condensing
Environmental Protection	IP21
Acoustic Noise	<45 dB (A)
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)	1550 x 734 x 1750 mm
Weight	1035 kg
Optional Extras	
Automatic Voltage Switcher (option A)	Automatic Voltage Switcher (AVS) provides over and under-voltage protection and a reconnect delay (configurable). Protects the load from an extreme supply voltage where the AVR might not be able to stabilise the output voltage to its operating range.
Input circuit breaker (option B)	Input circuit breaker to protect the AVR against overload and short circuit. Due to the extra draw in input current on maximum boost, a 630 Amp breaker will be fitted for a 500 Amp AVR.
Output circuit breaker (option C)	Output circuit breaker to protect against overload and short circuit. A 500 Amp breaker would be fitted
Volt free contact alarms: (option V)	A general alarm interface using volt free contacts are available for connection to customer site monitoring equipment (SCADA).
Manual bypass (option Y)	By-pass to run load direct from the utility power
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.

Note: An additional auxiliary cabinet may be required to fit optional extras

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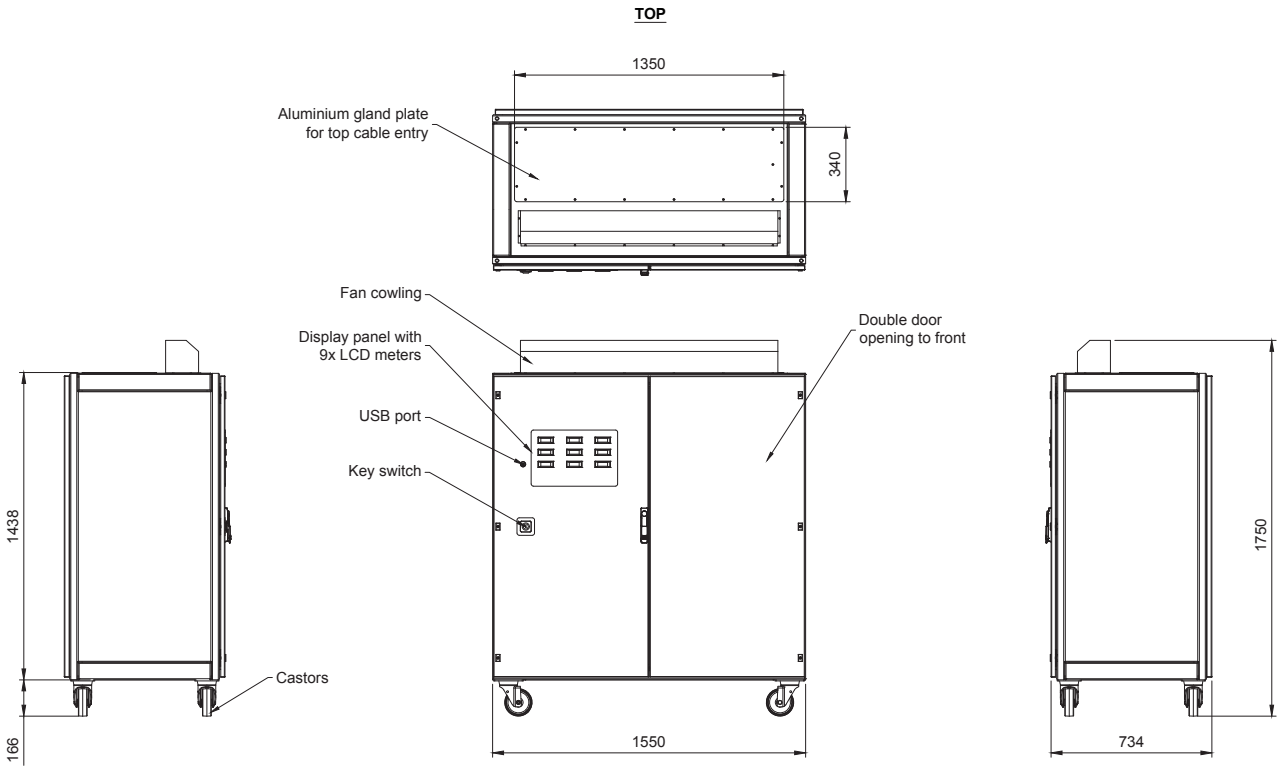
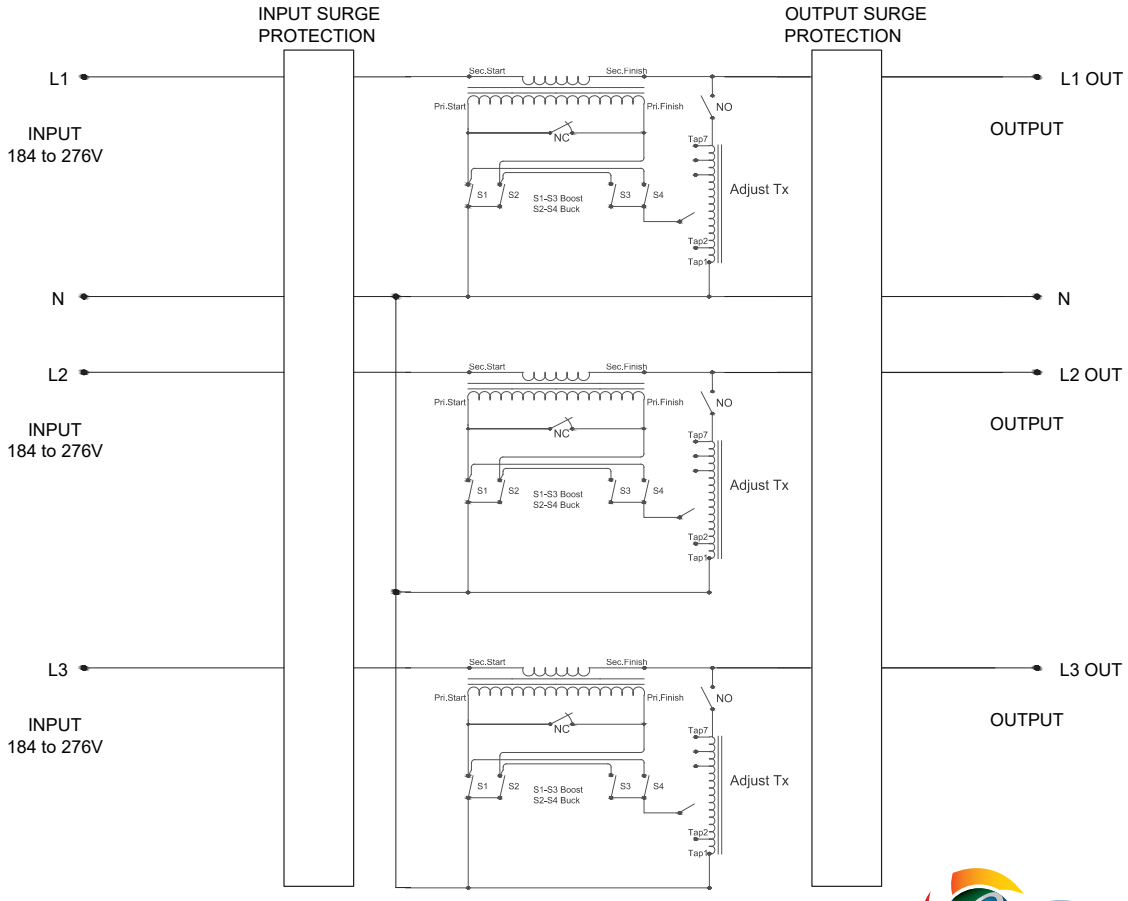
General Arrangement Diagram



Note: When AUX cabinet is required, both enclosure supplied with a plinth. If no AUX cabinet is needed, unit is supplied with plinth as standard but could be ordered with casters if not already in production or in stock.

AVR Circuit Diagram



*Three phase balanced independently

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MJA	17/10/2023