



AVR3ANxxx RANGE

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

AVR cabinet next to an AUX cabinet

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

SPECIAL FEATURES

- Input voltage range $\pm 12.5\%$
- High output protection accuracy $\pm 3\%$
- High overload capability with up to 150% for 4 minutes
- Very wide 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 20 countries

EQUIPPED WITH

- Class II surge protection
- Digital display: input and output voltage, output current
- Internal automatic bypass
- Modem for remote monitoring

OPTIONAL EXTRAS

- Automatic Voltage Switcher (AVS) with HVD and LVD
- Input circuit breaker
- Output circuit breaker
- Manual bypass transferring the load to the utility grid
- Volt free contact alarms:
 - High temp alarm
 - Internal bypass status
 - I/P circuit breaker status
 - LVD alarm
 - Over-temp alarm
 - External bypass status
 - O/P circuit breaker status
 - HVD alarm
 - General fault
- High-level lightning protection (Class I)
- Anti-condensation heaters

TECHNICAL SPECIFICATION

INPUT	
Input Voltage	230/400 V $\pm 12.5\%$
Maximum Input Current	See model table below
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 $\pm 3\%$
Maximum Input Current	See model table below
Maximum Output Power	See model table below
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	See model table below
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	Heavy duty input and output surge arrestors to protect against extreme surges and lightning on the supply. Dual mode. 2880 Joules total. Class II, 8/20us, 80kA
Digital Meters	Accurate measurement of the AC RMS currents in three-phase systems Accuracy: 0.5% + 1 digit
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.
GSM Modem	To allow remote monitoring (activation required)
Ambient Temperature Range	-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: 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 (WxDxH)	See model table below
Weight	See model specification table
OPTIONS	
Automatic Voltage Switcher	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	Input circuit breaker to protect the AVR against overload and short circuits
Output Circuit Breaker	Output circuit breaker to protect against overload and short circuit
Manual By-Pass	By-pass to run load direct from utility power
DSP	Extra level of spike protection (Class I)
Volt free Contact Alarms	A general alarm interface using volt free contacts are available for connection to customer site monitoring equipment (SCADA)

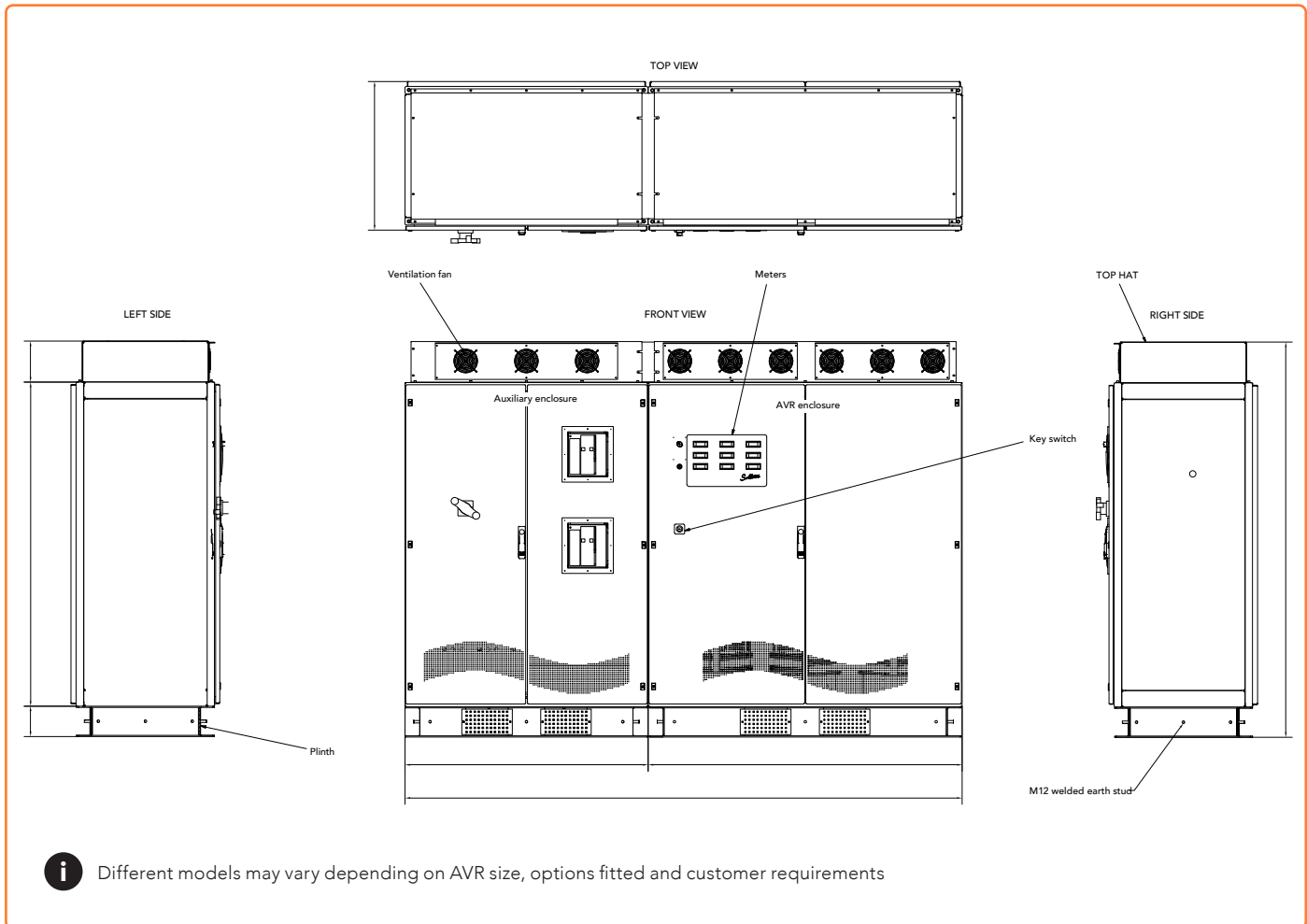


MODEL SPECIFICATION

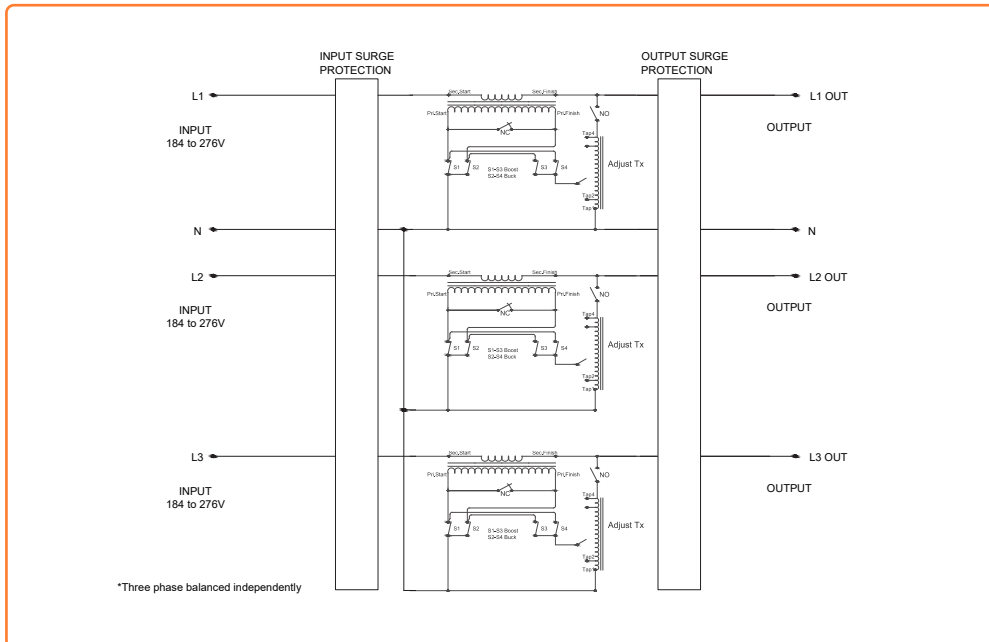
Model	kVA	No of Cabinets		AVR (each, if>1)		Max input A	Output A	Max kVA at 230 V	Max kVA at 24 hr/ 45°C/ Max Boost	Heat Dissipation in kW	Impedance in mΩ	Short Circuit Capability kA	Output Regulation
		AVR	AUX*	kg	cm (WxDxH)								
AVR3AN-230kVA 3x277/250A	230	1	1	520	100x56x157	277	250	230	172	2.3	4.8	5.6	3%
AVR3AN-275kVA 3x331/300A	275	1	1	580	100x56x157	332	300	275	206	2.75	4	6.7	3%
AVR3AN-370kVA 3x446/400A	370	1	1	770	143x74x180	443	400	370	277	3.7	3	9	3%
AVR3AN-460kVA 3x554/500A	460	1	1	850	143x74x180	554	500	460	345	4.6	2.4	12	3%
AVR3AN-550kVA 3x662/600A	550	1	1	920	143x74x180	665	600	550	412	5.5	1.8	15	3%
AVR3AN-700kVA 3x843/800A	700	1	1	1250	155x74x195	886	800	700	525	7	1.4	19	3%
AVR3AN-900kVA 3x1084/1000A	900	1	1	1393	155x74x195	1108	1000	900	675	9	1	24	3%
AVR3AN-1100kVA 3x1325/1200A	1100	1	1	1877	183x79x225	1330	1200	1100	825	11	0.8	27	3%
AVR3AN-1650kVA 3x2400/1800A	1650	3	1	1120	110x74x200	1995	1800	1650	1237	16.5	0.7	40	3%
AVR3AN-2000kVA 3x2897/2173A	2000	3	1	1200	110x74x200	2409	2174	2000	1500	20	0.6	48	3%



AVR GA DIAGRAM



AVR CIRCUIT DIAGRAM



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