FEATURES

- For use with Self-Excited (SE) and Permanent Magnet Excited (PM) generators
- Regulation better than ±1.0%
- V/Hz and 2 V/Hz frequency compensation
- Over excitation shutdown
- Solid state voltage buildup
- Three phase or single phase sensing — standard
- Compact package size
- Moisture proof assembly
- Mechanically rugged
- Fast response time
- Adjustable knee frequency (45 Hz to 65 Hz)
- Stability adjustment
- Complete line of accessories available

SPECIFICATIONS

- Regulation
  Less than ±1% no load to full load
- Regulator drift
  Less than ±½% steady state
- Temperature drift
  Less than ±1% for any 40°C change over the operating temperature range
- Regulator response
  Less than 4 milliseconds
- Regulator sensing
  Three phase or single phase available on SE and PM generators
- Regulator stability
  Regulator responds to the fundamental component of the sensed voltage and remains stable for total harmonic distortion of the generator output voltage waveform up to 20%.
- Regulator filtering
  Telephone Influence Factor (TIF) less than 50. Optional filtering packages available to comply with MIL STD 461B Part 9 and VDE 85 level N.
- Harmonic tolerance
  The AVR will maintain precise control of the generator output with up to 20% harmonic distortion in the generator output voltage.
- Voltage adjust range
  -25% to 10% of nominal
- Regulator build-up voltage
  Regulator will build up with the generator output voltage as low as 6 VAC when used with SE generators. No minimum requirement when used with PM generators.
- Regulator start-up voltage
  Voltage overshoot at full throttle engine starting will not exceed 5% of rated value.
- Frequency compensation
  Voltage is linearly proportional to frequency for 8 Volts/Hz or 16 Volts/Hz below knee frequency. Knee frequency is adjustable from 45 Hz to 65 Hz. This provides matched engine/generator performance for improved block load performance.
- Reactive droop adjustment
  Adjustable from 0% to 10% at rated input current (1A or 5A)
**AUTOMATIC VOLTAGE REGULATOR VR6-B**

**SPECIFICATIONS (continued)**

- Over excitation protection
  Shuts off generator output when excitation exceeds the nominal values:

<table>
<thead>
<tr>
<th>Shutoff Valve</th>
<th>Shutoff Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 VDC</td>
<td>90 seconds</td>
</tr>
<tr>
<td>125 VDC</td>
<td>10 seconds</td>
</tr>
</tbody>
</table>

- Ambient operating temperature: −40° C to +70°C
- Storage temperature range: −40° C to +85°C
- Power dissipation: 50 watt (max)
- Shock: Withstands up to 20 g’s
- Vibration: Withstands 0.5 g’s at frequencies between 18 and 2000 Hz in three mutually perpendicular planes.
- Weight: 1.8 kg

**STANDARD ACCESSORIES AVAILABLE**

- Series boost
  Able to sustain the generator output at 300% rated current for a minimum of ten seconds. Not required for PM.
- The voltage regulator can be used with an external device (KVAR/PF controller) to control either the generator output KVAR or PF.
- Remote voltage adjust
  Controls voltage level with a 10 kΩ, 1 watt remotely mounted rheostat.
- Manual voltage control
  Permits manual regulation of the generator output in the event of a regulator failure.
- Paralleling
  A reactive droop network consisting of a current transformer, and wiring harness allows generator to be paralleled with other generators either in reactive droop or cross current compensation (zero droop) modes.
- Stability adjustment
  Adjustment allows the quickest response time to block loading while maintaining steady state stability.
- UL508A: Recognized
- CSA Certified
- CE Conformity: See “Physical Specifications”

**SUMMARY OF OPERATING PARAMETERS**

- Voltage rating: 240 VAC (480V and 120V sensing transformer kits available)
- Generator excitation: SE or PM
- Power input
  SE: 180-264 VAC, single or three phase, 50/60 Hz
  PM: 63-105 VAC, three phase, PMG 3125 VA maximum
- Output rating: 12 ADC @ 65 VDC maximum continuous 25 VDC @ 125 VDC forcing for 10 seconds
- Reactive droop input: 1A or 5A. At maximum rated current droop is adjustable up to 10%. Maximum droop is proportional to current. Proper droop current transformer sizing is essential to correct operation of this feature.
- Exciter field resistance: 3 to 10Ω

**PHYSICAL SPECIFICATIONS**

**CE CONFORMITY**

Conforms to:
- Radiated emissions ......................... EN50081-2
- Radiated Immunity:
  Electric field ......................... EN61000-4-3 (10 v/m)
  Conducted ......................... EN61000-4-6 (10 VRMS)
- Conducted emissions ........... EN50081-2 (EN55011, Class A)
- ESD immunity ................. EN50082-2 (4 KV contact, 8 KV air)
- EFT immunity ................. EN50082-2 (2 KV coupling clamp)
- Magnetic immunity .......... EN50082-2 (30ARMS, 50 Hz)
- Safety ................................. EH61010-1
For a complete listing of connection diagrams, see VR6-B Service Manual.