AVC63-4D *AVC63-4*

AVC63-4 and AVC63-4D Automatic Voltage Regulators

Using enhanced technology, the AVC63-4 and AVC63-4D voltage regulators are designed for use on 50/60Hz brushless generators. These encapsulated regulators are economical, small in size, ruggedly constructed, and incorporates solid state technology with frequency compensation, automatic voltage build-up, over excitation shutdown and EMI filtering as standard.

FEATURES:

- Integrated circuitry for compact size, simplicity, high reliability.
- Extremely rugged.
- Exciter field current 4A continuous, 7A forcing.
- Regulation accuracy better than ± 1.0% no load to full load.
- Fast response.
- Frequency compensation.
- Overexcitation shutdown.
- EMI suppression.
- Available from stock.
- CSA approved.
- UL recognized.

ADDITIONAL INFORMATION

INSTRUCTION MANUAL

Request Publication 9166800890

Basler Electric
P. O. BOX 269 HIGHLAND, ILLINOIS, U.S.A. 62249 PHONE 618-654-2341 FAX 618-654-2351

DESCRIPTION:

The AVC63-4 and AVC63-4D voltage regulators maintains generator line voltage no load to full load on brushless generators from 5kW to over 100kW in size. These voltage regulators sense generator average voltage to sustain a precise regulation band within ±1% throughout the operating temperature range. This is accomplished by converting a 240Vac single phase power input to a controlled DC output signal. The solid-state voltage build-up circuit allows automatic generator line voltage build-up with as little as 6 Vac residual voltage applied to the regulators input power circuit.

Customer accessible adjustments for stability, underfrequency and the voltage regulation set point are provided to allow the controller to be tuned to the desired performance. The location of these adjustments are different depending on which model is selected. Both, the AVC63-4 and the AVC63-4D are intended to be mounted inside the generators terminal box. For applications that require the voltage regulator adjustments to be made from outside of the terminal box, the AVC63-4D should be considered. On this particular model, the adjustment potentiometers are accessible from the bottom side (label side) of the controller. Holes drilled through the terminal box per Fig. 6 will allow the user to adjust the potentiometers as needed. For applications that it is necessary to limit access to the adjustment potentiometers, the AVC63-4 would be a suitable selection. This is because the AVC63-4 voltage regulator provides adjustments from the component side of the controller, Fig. 4. When mounted in a generators terminal box, the controllers potentiometers are accessible.

The over-excitation feature assists in protecting the voltage regulator during a prolonged over-excitation condition. During this mode, a shutdown signal is sent to the power stage, turning off the regulator. This feature will reset automatically when the generator voltage drops below 6 Vac for a minimum of 2 seconds.

Figure 1 demonstrates the underfrequency characteristics of the voltage regulator during prime mover low speed conditions. Customer curve selection matches the voltage regulator to 50 or 60 Hz systems.

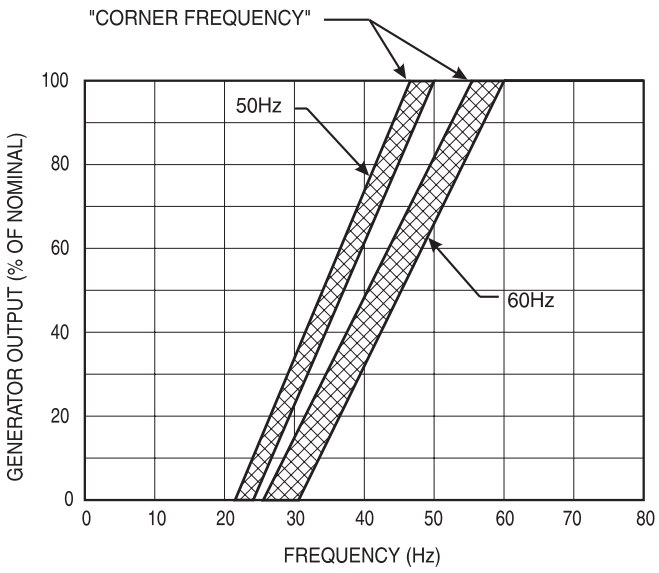

Figure 1 - Frequency Compensation Characteristic

SPECIFICATIONS:

DC OUTPUT				EXCITER FIELD RESISTANCE		SENSING/POWER INPUT	
MAX. CONT.		MAX FORCING 1 MIN (240 Vac INPUT)		MIN. OHMS @ 25°C	MAX. OHMS	SINGLE PHASE VOLTAGE RANGE	BURDEN
AMP	VOLT	AMP	VOLT				
4	63	7	100	15	100	171-264Vac	500VA

SPECIFICATIONS (continued):

DC OUTPUT POWER: 4 Adc at 63 Vdc maximum continuous, 7 Adc at 100 Vdc one minute forcing. (Forcing with 240 Vac nominal input).

EXCITER FIELD DC RESISTANCE: 15 ohms minimum; 100 ohms maximum.

AC SENSING/POWER INPUT: Operating range: 190-240 Vac single phase ±10%, 50/60 Hz ±10%. Burden 500VA.

VOLTAGE ADJUST RANGE: 171-264 Vac.

REGULATION ACCURACY: Better than ±1.0% no load to full load.

RESPONSE TIME: Less than 1.5 cycles for ±5% change in sensing voltage.

EMI SUPPRESSION: Internal electromagnetic interference filtering.

OVEREXCITATION SHUTDOWN: Field voltage shuts down after time delay if exciter field voltage exceeds 100 Vdc ±5%. The time delay is inversely proportional to the magnitude of the detected overvoltage condition up to the 135 Vdc point, thus allowing nominal forcing for approximately 1 minute. Beyond 135 Vdc, the field voltage is removed within 2.0 seconds.

VOLTAGE BUILDUP: Internal provisions for automatic voltage buildup from generator residual voltages as low as 6 Vac.

TERMINATIONS: 1/4" "Fast-On" Terminals.

POWER DISSIPATION: 8 Watts maximum.

OPERATING TEMPERATURE: -40°C (-13°F) to +60°C (+140°F).

STORAGE TEMPERATURE: -65°C (-85°F) to +85°C (+185°F).

VIBRATION: Withstands 1.3 Gs at 5 to 26 Hz; 0.036" double amplitude at 27 to 52 Hz; and 5 Gs at 52 to 1000 Hz.

SHOCK: Withstands up to 20 Gs in each of three mutually perpendicular axes.

WEIGHT: 8 oz. (0.22 kg) Net.

ACCESSORY

Remote Adjustment Rheostat: 1000 ohm, 2W rheostat with locking slotted shaft, Basler Electric P/N 17727.

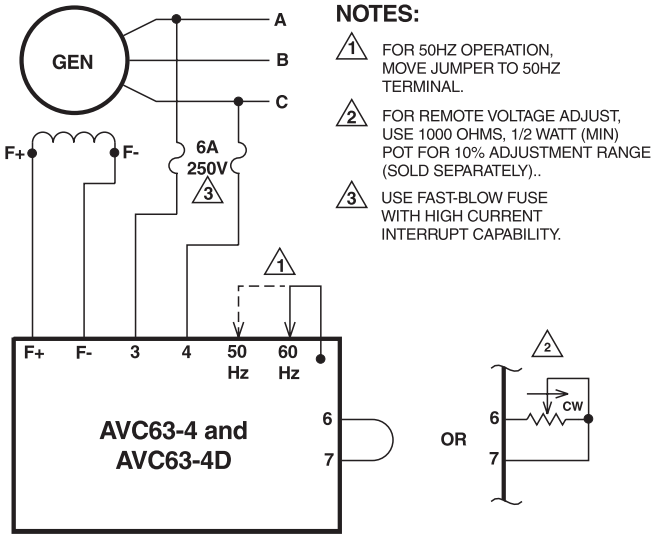

Figure 2 - Typical Interconnection Diagram, 208/240Vac Nominal

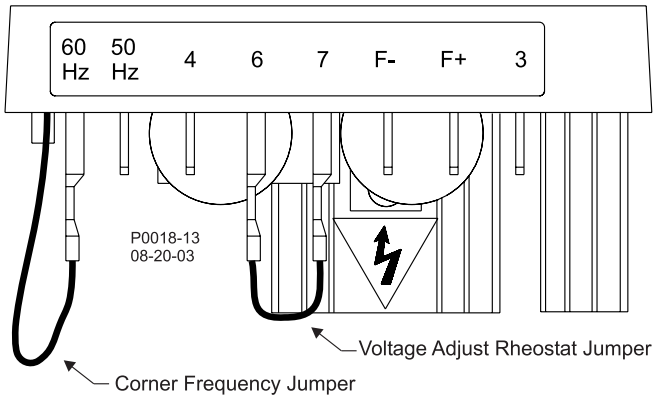

Figure 3 - Jumper Locations

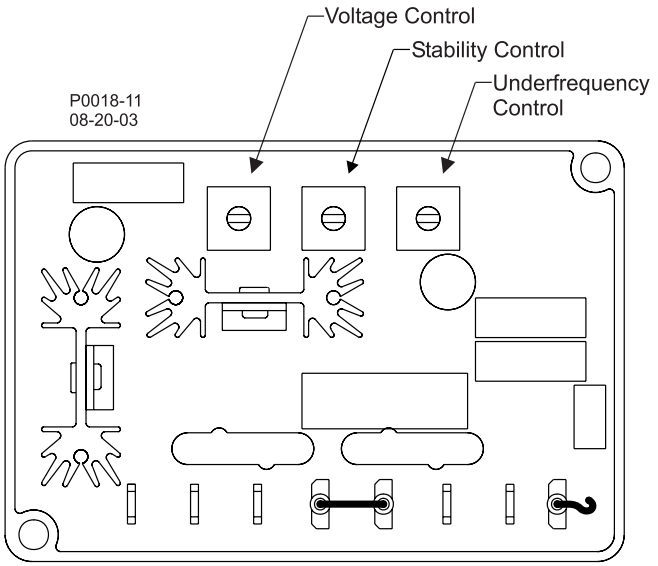

Figure 4 - AVC63-4 Potentiometer Control Locations

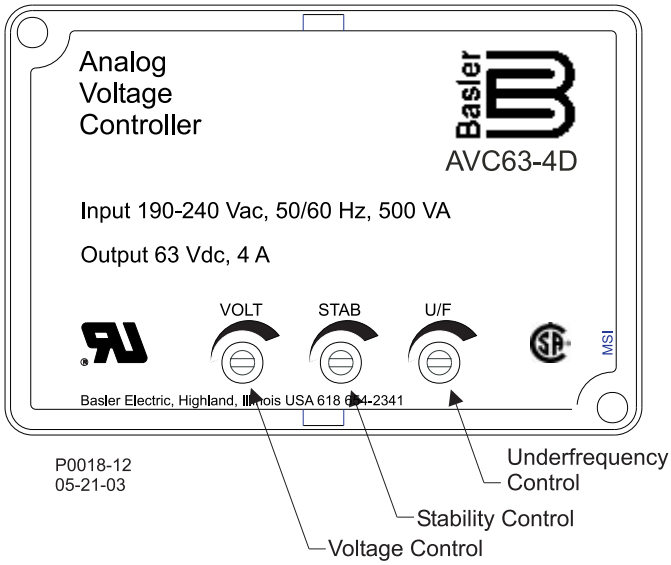

Figure 5 - AVC63-4D Potentiometer Control Locations

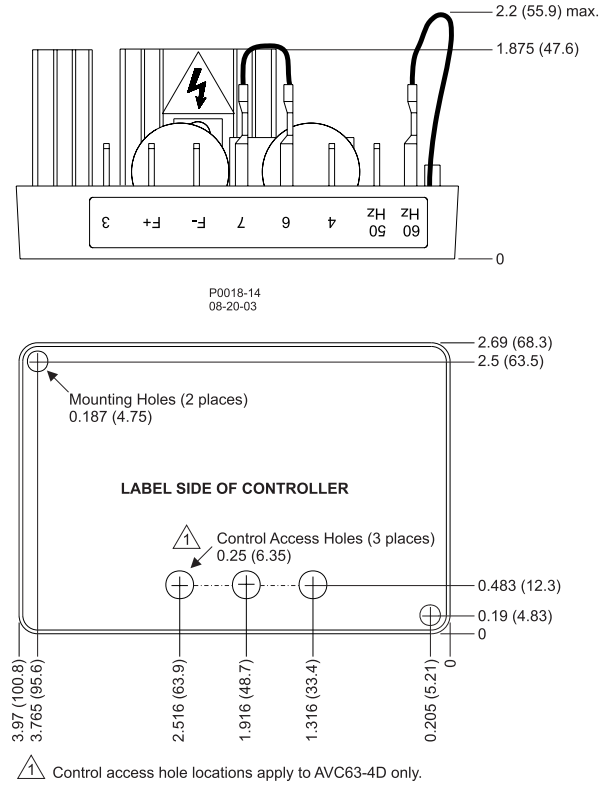

Figure 6 - Outline and Drilling Drawing

NOTE: All drawings and data subject to change without notice.

Highland, IL: ISO 9001
Wasselonne, France: ISO 9001
Taylor, TX: ISO 9001

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