

## AVC63-4A VOLTAGE REGULATOR

Using enhanced technology, the AVC63-4A full wave voltage regulator is designed for use on 50/60 Hz brushless generators. This encapsulated regulator is small in size, ruggedly constructed, and incorporates solid state technology with frequency compensation, automatic voltage build-up, overexcitation 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  $\pm 1.0\%$  no load to full load.
- Fast response.
- Frequency compensation.
- Overexcitation shutdown.
- EMI suppression.
- Available from stock.
- Gost R certified #POCC US.ME05.B03392.

### ADDITIONAL INFORMATION

#### INSTRUCTION MANUAL

Request Publication 9285800991

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**B** Basler Electric

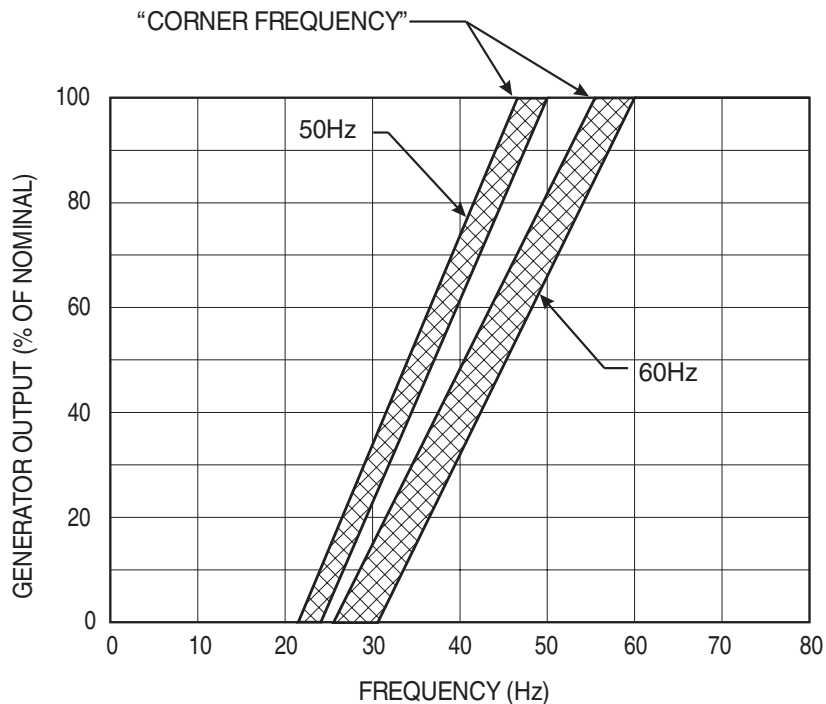
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## DESCRIPTION

The AVC63-4A model voltage regulator maintains generator line voltage on brushless generators from 5 kW to over 100 kW in size. The voltage regulator senses generator average voltage to maintain a precise regulation band within  $\pm 1$  percent. This is accomplished by converting a 120 VAC single phase power input to a controlled DC signal to the generator's exciter field. The solid-state voltage build-up circuit will enable automatic generator line voltage build-up with a voltage input to the regulator of at least 6 VAC. Customer accessible stability, underfrequency and range adjusts enable fine tuning of the voltage regulator to the generator in use.

The over-excitation feature assists in protecting the voltage regulator during an over-excitation fault condition. During this mode, a shutdown signal is sent to the power stage, turning the regulator off. This feature will reset when the voltage input is removed (less than 6 VAC for a minimum of 2 seconds) to the regulator. 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		POWER INPUT		SENSING INPUT
MAX. CONT.		MAX FORCING 1 MIN (120 Vac INPUT)		MIN. OHMS @ 25°C	MAX OHMS	SINGLE PHASE VOLTAGE RANGE	BURDEN	VOLTAGE ADJUST RANGE
AMP	VOLT	AMP	VOLT					
4	63	7	100	15	100	95-139Vac $\pm 10\%$	450VA	95-139Vac 190-277Vac

## SPECIFICATIONS (continued)

**DC OUTPUT POWER:** 4 Adc at 63 Vdc maximum continuous, 7 Adc at 100 Vdc one minute forcing. (Forcing with 120 Vac nominal input).

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

**AC POWER INPUT:** Operating range: 95-139 Vac single phase, 50/60 Hz  $\pm 10\%$ . Burden 450VA.

**SENSING INPUT:** 95-139 Vac single phase, 50/60 Hz  $\pm 10\%$ , or 190-277 Vac single phase, 50/60Hz  $\pm 10\%$ .

**VOLTAGE ADJUST RANGE:** 190-277 Vac.

**REGULATION ACCURACY:** Better than  $\pm 1.0\%$  no load to full load.

**RESPONSE TIME:** Less than 1.5 cycles for  $\pm 5\%$  change in sensing voltage.

**EMI SUPPRESSION:** Internal electromagnetic interference filtering.

**OVEREXCITATION SHUTDOWN:** Field voltage shuts down after time delay if exciter field voltage exceeds 95 Vdc  $\pm 5\%$ . The time delay is inversely proportional to the

magnitude of the detected overvoltage condition up to the 140 Vdc point, thus allowing nominal forcing for approximately 1 minute. Beyond 140 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:** 15 Watts maximum.

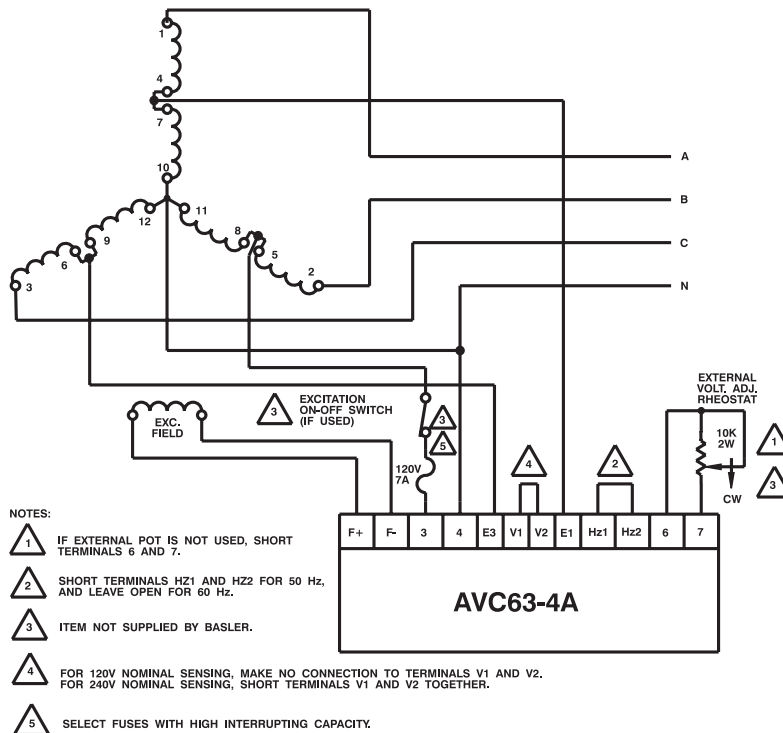
**OPERATING TEMPERATURE:**  $-40^{\circ}\text{C}$  ( $-40^{\circ}\text{F}$ ) to  $+60^{\circ}\text{C}$  ( $+140^{\circ}\text{F}$ ).

**STORAGE TEMPERATURE:**  $-40^{\circ}\text{C}$  ( $-40^{\circ}\text{F}$ ) to  $+85^{\circ}\text{C}$  ( $+185^{\circ}\text{F}$ ).

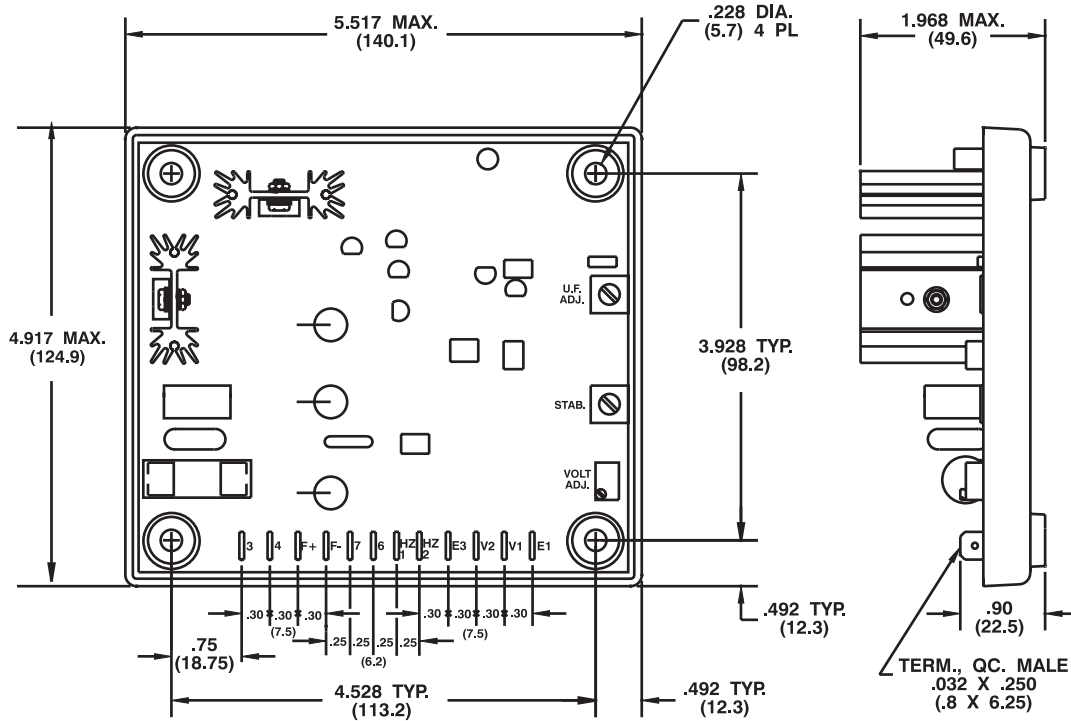
**VIBRATION:** Withstands 1.2 Gs at 5 to 26 Hz; 0.036" double amplitude at 27 to 52 Hz; and 5 Gs at 53 to 1000 Hz.

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

**WEIGHT:** 10 oz. (0.28 kg) Net.



**Figure 2 - Typical Interconnection Diagram**  
277/480V Nominal, 3-Phase, 4-Wire, Wye Connection



NOTE: All dimensions are in inches (millimeters).

Figure 3 - Outline Drawing

NOTES:

1. Dimensions in parentheses are in millimeters.
2. All drawings and data subject to change without notice.



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