

VR485 SERIES VOLTAGE REGULATOR

The VR485 series of voltage regulators controls the output voltage of 400Hz brushless generators. This is accomplished by the regulator supplying the necessary excitation to the generator field. Two styles are available. The VR485-100-L enables line drop compensation for voltage drops induced by large line impedance to isolated loads. The VR485-100-P allows paralleling of its generator to another power source. Both features require a 1 Amp CT input. Power transformer BE 25089-001 is included with these regulators. The transformer will convert 208Vac to the necessary voltages required by the regulator for proper operation.

FEATURES

- Regulation accuracy better than $\pm 1.0\%$.
- Frequency compensated.
- Continuous 5 Adc field current limiting.
- Automatic generator line voltage buildup.
- Paralleling or line drop compensation as standard.
- Fast response time (less than 1.5 cycles).
- Applicable on 400 Hz systems.

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SPECIFICATIONS

ELECTRICAL

Power Output

2.5 A_{dc} at 63 V_{dc} (157.5 W) maximum continuous
3.6 A_{dc} at 90 V_{dc} (324 W) forcing one minute

Exciter Field DC Resistance

25 ohms minimum

Power Input

Transformer BE25089-001 supplied with regulator for 208 Vac nominal generator line voltage. 320 Vac, 400 Hz center-tapped, 20 Vac, 400 Hz supplied to regulator from secondary of transformer

AC Input Sensing

208 V_{rms} ± 10%, single phase, 400 Hz

Input Sensing Burden

2 VA

Voltage Adjust Range

187 - 229 Vac. Voltage control by adjust on unit. For external adjust, use 20Kohm, 2 Watt potentiometer, Basler P/N 11521 or equivalent

Paralleling CT Input

Nominal 5% droop with 1A CT input (VR485-100-P only)

Line Drop Compensation

Adjustable from 0 to 15% of the generator voltage with a 1 A CT input (VR485-100-L only)

CT Burden Paralleling/Line Drop

2VA

Regulation Accuracy

Better than ± 1.0% no load to full load

Temperature Stability

1.0% maximum for a 33.3°C (60°F) change in ambient temperature

Frequency Compensation

Approximately 0.66 V/Hz below 380 Hz

Transient Response Time

Less than 1.5 cycles

Excitation Current Limit

5 A_{dc}

Line Voltage Buildup

Provides a minimum of 6 V_{dc} to the exciter field for voltage buildup, with as little as 10 Vac residual on the power transformer primary

Power Dissipation

40 Watts maximum

PHYSICAL

Operating temperature

-32°C to +60°C (-26°F+140°F)

Storage temperature

-40°C to +85°C (-40°F+185°F)

Weight

4.0 pounds (1.8 kilograms)

INTERCONNECTION

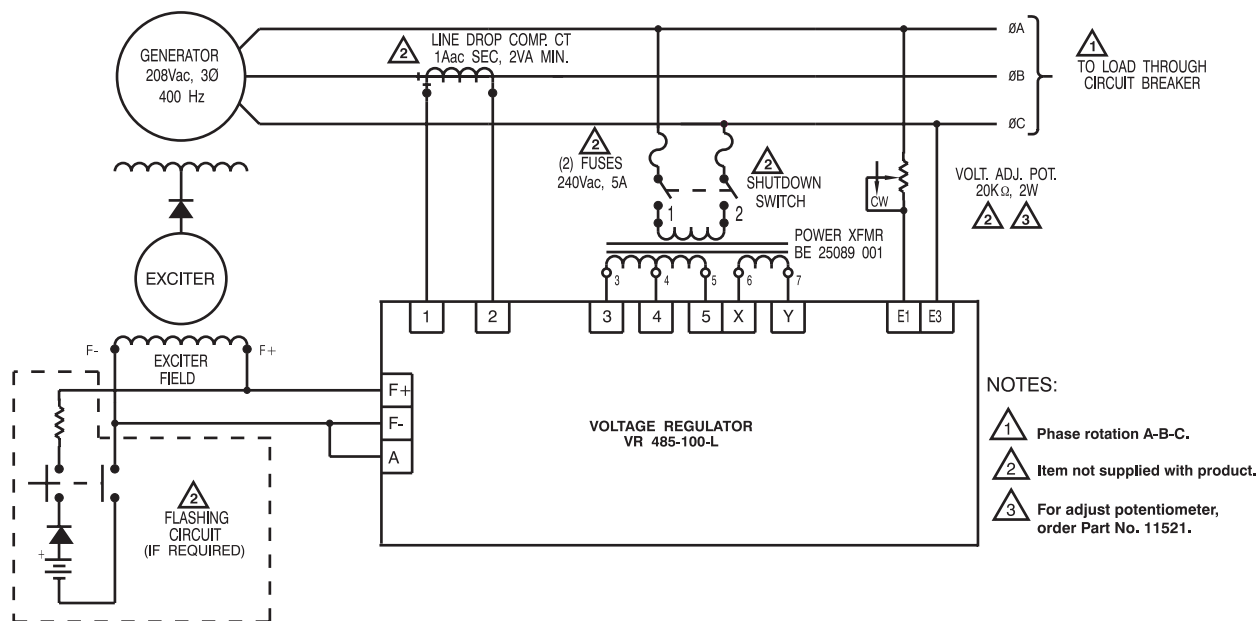


Figure 1A - Typical Interconnect of VR485-100-L, P/N 92482111, for isolated load (line drop) applications.

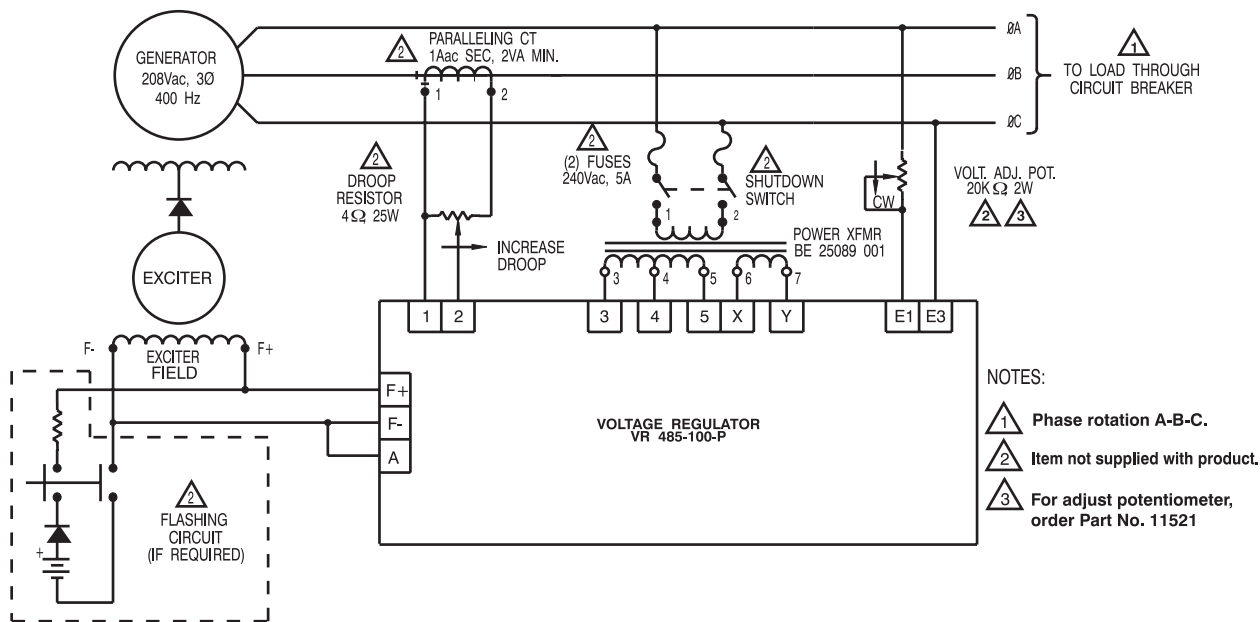


Figure 1B - Typical Interconnect of VR485-100-P, P/N 92482110, for generator paralleling.

NOTES:

Current transformer and external adjust rheostat supplied by customer.
 Transformer BE25089-001 is included for use with both voltage regulators and is supplied with them.

DIMENSIONS

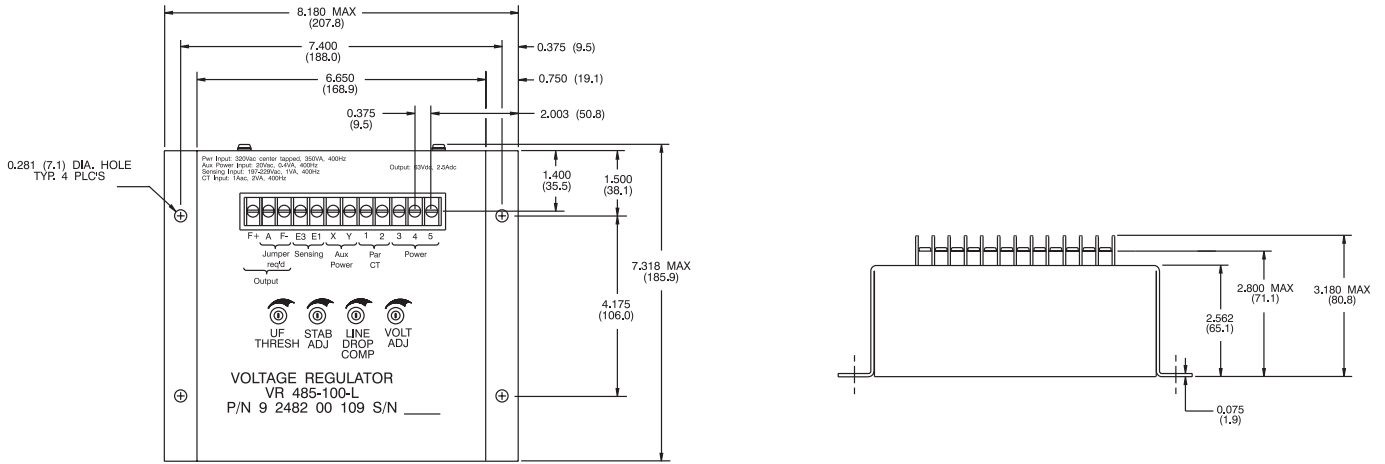


Figure 2 - Outline Drawing VR485-100-L, P/N 9248200111 (shown), or VR485-100-P, P/N 9248200110.

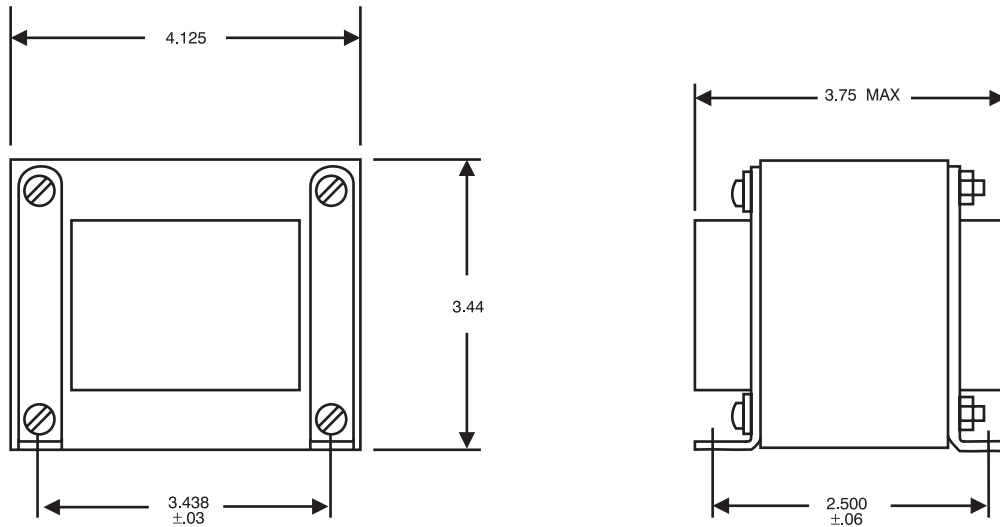


Figure 3 - Outline Drawing for Transformer BE25089-001.

NOTES:

- 1) For optimum cooling of the regulator, it is recommended that the regulator be mounted vertically. Refer to outline drawings.
- 2) All dimensions are in inches (millimeters).

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