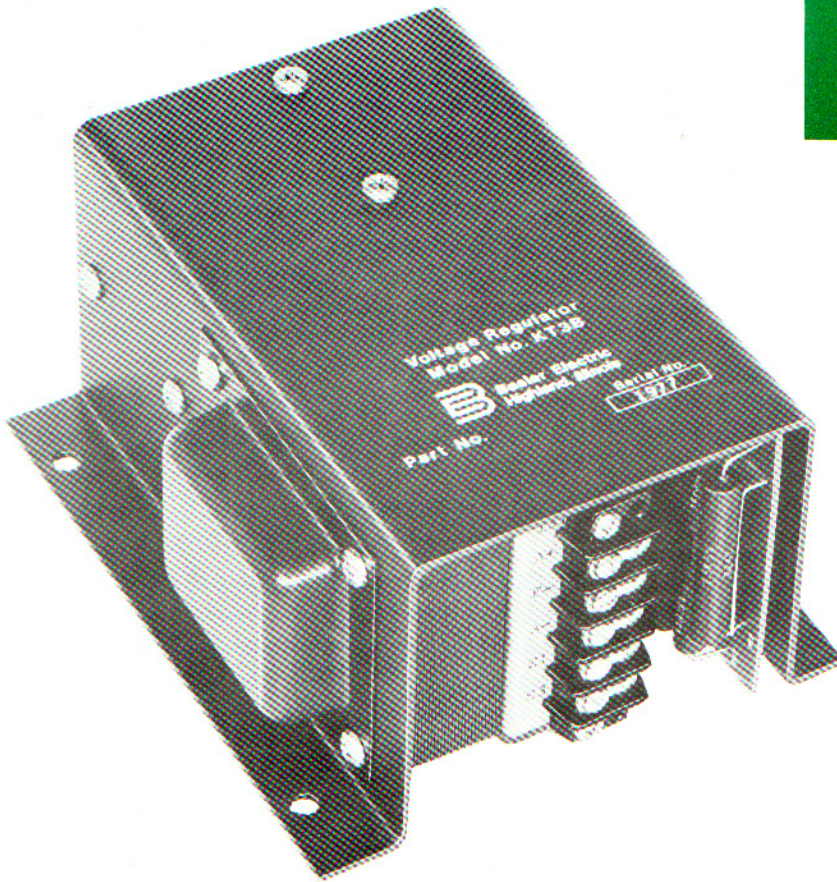


**Class 300 Equipment  
KT-3B  
VOLTAGE REGULATOR**



**DEVICE NO. 90**

**FEATURES:**

- Reliable solid-state static, silicon semiconductor unit.
- Rated at 125 volts, 2 amps continuous, with forcing reserve.
- Regulation accuracy within less than  $\pm 1\%$ .
- Mechanically rugged.
- No vibration or shock isolation required.
- Unit can be mounted on engine-generator.
- Same mounting dimensions and overall size as common electromechanical voltage regulators.
- Extremely economical and reliable.
- No external stabilizing networks required.
- No external power isolation transformers required.
- Available from stock.

**DESCRIPTION:**

The Basler KT, Keyed-Transistor Voltage Regulator line is the solid-state successor to the electromechanical regulator, which it will out-perform and out-last. Developed by Basler especially for low power, low cost applications, these units retain the high performance that customers have learned to expect from Basler's full line of power control equipment.

The KT Regulator acts as a stepless, infinitely-variable field rheostat. The KT's use DC armature voltage of the exciter as the source of regulator power, rather than rectifying AC generator terminal voltage. Excitation is maintained during heavy overloads and short circuits on the generator. Basler's product leadership in the regulator field has been extended to the smaller generator market requirements with the KT and the complementary KRF regulator line.

**B** Basler Electric  
Highland, Illinois

SED-1  
5-73

Supersedes REG-4 8/67

## SPECIFICATIONS:

Regulator	Continuous Armature Volts	Maximum Armature Volts	Rated Field Amps	Forcing Field Amps (1 minute)	Minimum <sup>o</sup> Cold Field Resistance Ohms
<b>KT-3B</b>	125	200	2	6.0	34

KT-3B can also be used on 63 VDC exciter application.

<sup>o</sup> **NOTE:** Includes total resistance of exciter and external resistance series connected in field circuit during regulator operation.

**STABILITY:** The KT-3B is stable when applied to generators of relatively small size. The internal stabilizing circuits have been tailored to the short time constants found in generators of 75 KW and smaller. Machines larger than 75 KW may require SR type regulators.

**REGULATION ACCURACY:**  $\pm 1\%$  or better over the full range of generator load,  $\pm 10\%$  change in output frequency and a field temperature rise of 70°C.

**TYPE OF SENSING:** Single Phase.

**SENSING VOLTAGES:** Unit has integral sensing transformer with taps for: 120, 208, 240, 416, and 480 VAC, 50 or 60 cycle. 10 VA burden on the phase sensed. All units are factory connected for 120 VAC sensing, unless otherwise specified.

**VOLTAGE BUILD UP:** Automatic build up of system voltage will occur if exciter output voltage is more than 3 VDC due to residual magnetism.

## APPLICATION DATA:

**CRANKING EXCITER APPLICATIONS:** KT-3B regulator can be used for applications using the rotary exciter as a cranking motor during start cycles.

**SINGLE PHASE GENERATORS:** The KT-3B regulators are designed to operate properly with single phase generators larger than approximately 1 KVA. KT regulators can be successfully applied on reconnectable single to three phase generators and on both two and three wire single phase generators.

## SAMPLE SPECIFICATION:

The regulator shall be required for use in an excitation system for AC generators rated up to 75 KW with a rated armature and field winding of 125 volts. Regulator shall be a solid state static voltage regulator rated for 125 volts @ 2 amperes continuous operation with forcing reserve capability. The regulator regulation accuracy shall be  $\pm 1\%$  minimum for 100% alternator loading and  $\pm 10\%$  frequency changes.

The regulator shall be required to use the DC armature

**GENERATOR TERMINAL VOLTAGE ADJUSTMENT RANGE:**  $\pm 10\%$  of nominal.

**TERMINAL VOLTAGE ADJUST:** KT-3B regulators contain an internal generator terminal voltage adjustment potentiometer.

**SHORT CIRCUIT AND MOTOR STARTING PERFORMANCE:** Up to 6 amps maximum field excitation will be supplied (max. one minute) to the exciter field during short circuit, starting, or other overload conditions. There is no collapse of regulator output when generator terminal voltage is reduced to zero.

**REVERSED VOLTAGE PROTECTIVE FEATURE:** Regulator will not be damaged if connected to an exciter with reversed residual voltage.

**INTERCHANGEABILITY:** Unit is interchangeable with common electromechanical voltage regulators.

**MOUNTING:** Regulator is ruggedly constructed and is not sensitive to vibration or shock when mounted in an engine-generator or switchboard configuration.

**OPERATING TEMPERATURE RANGE:**  $-30^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$  ( $-22^{\circ}\text{F}$  to  $+140^{\circ}\text{F}$ ).

**STORAGE TEMPERATURE:**  $-55^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  ( $-67^{\circ}\text{F}$  to  $+185^{\circ}\text{F}$ ).

**COOLING:** Free convection.

**WEIGHT:** 4.5 pounds net, 7 pounds shipping weight.

**FINISH:** Dark gray, lusterless, textured baked enamel.

**PARALLEL PROVISIONS:** Standard 25 VA, 5 amp secondary CT's may be used in conjunction with a Basler APM-300 paralleling module, ((3) phase generators) APM301 single phase generators.

**MANUAL CONTROL:** Manual control is possible on this unit although it is not necessary. Contact Basler Electric for further information.

voltage of the exciter as the source of the regulator power and be capable of acting as a stepless, infinitely-variable field rheostat. Regulator shall have short circuit performance of up to 6 amperes maximum 1 minute (capability to the exciter field during short circuits and overloads).

Environmentally, the regulator shall be capable of operating within an ambient temperature range of  $-30^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$  and mount directly on an engine-generator.

The regulator shall be a Basler KT-3B static regulator.

## ORDERING INSTRUCTIONS:

When ordering, specify the regulator sensing voltage and model number. If application assistance is required, copies of applicable specifications and exciter/generator

rating data should be furnished to your nearest Basler Sales Office of the Factory (POWER PRODUCTS SALES DEPARTMENT) direct.

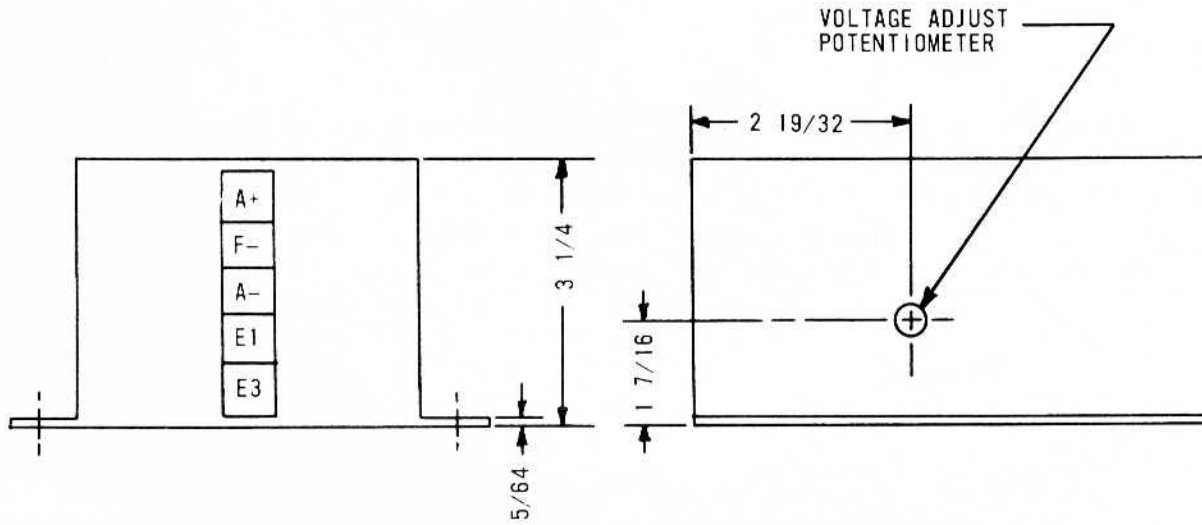


FIGURE 1—OUTLINE DRAWING

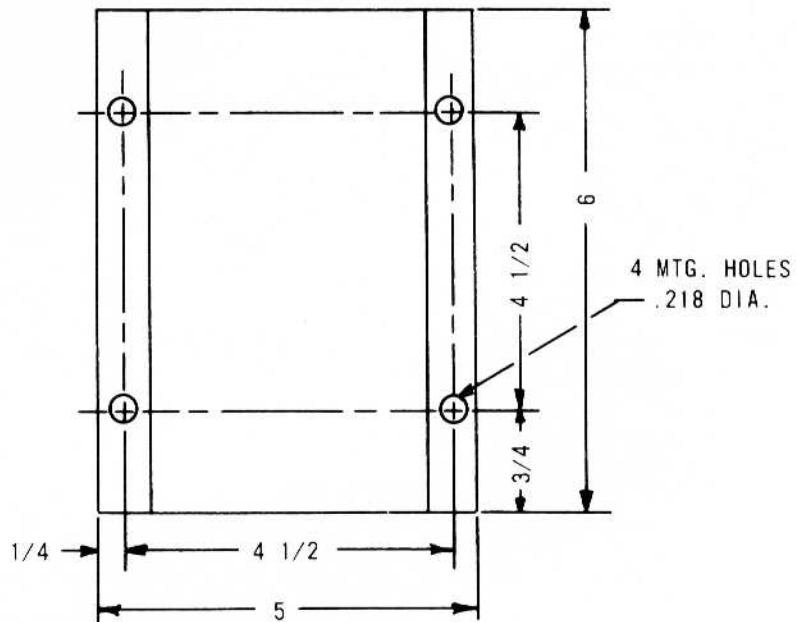
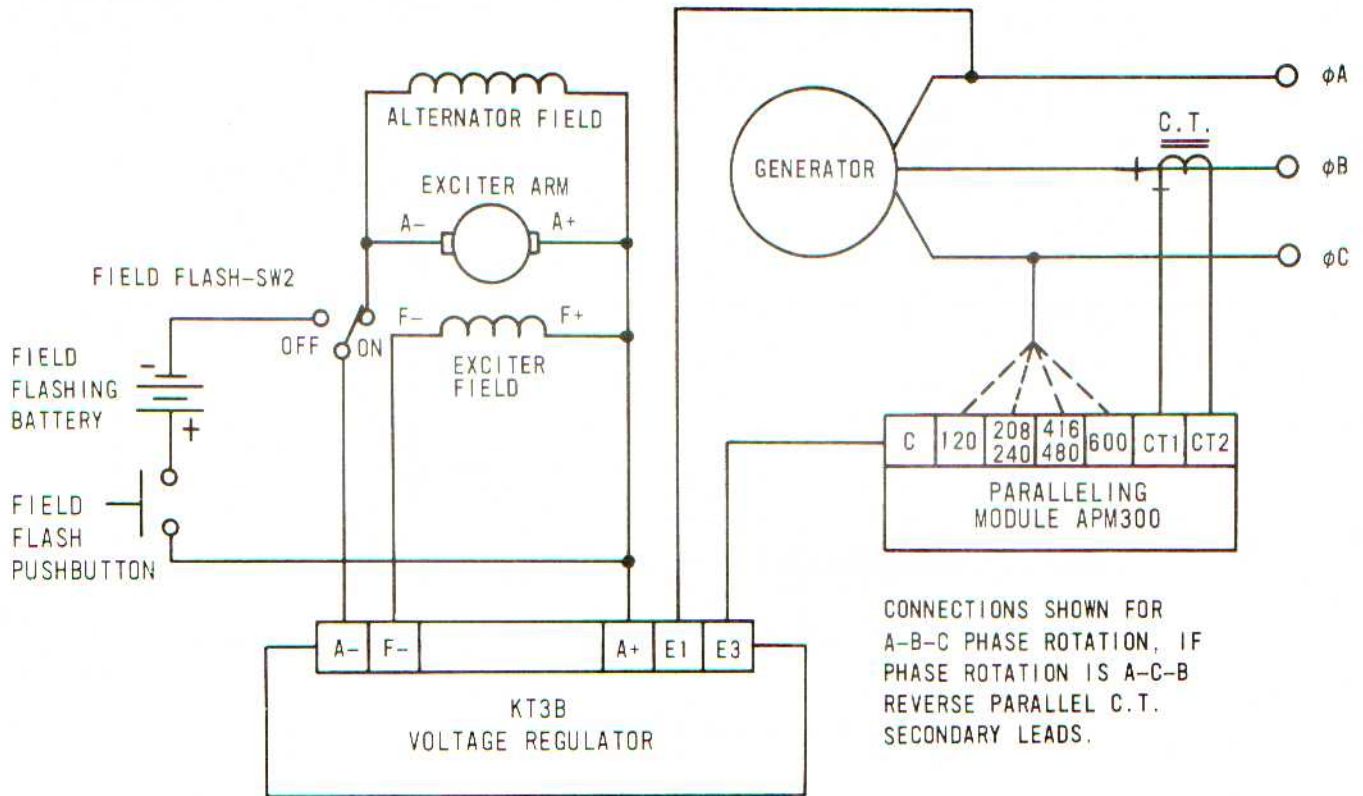


FIGURE 2—DRILLING DIAGRAM

**NOTE:** This drawing is NOT intended for installation purposes. Refer to OPERATION MANUAL received with equipment for proper installation drawings.



**FIGURE 3—INTERCONNECTION DIAGRAM**

**Basler Electric**

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