

EA5K3

Generator Automatic Voltage Regulator Operation Manual



Self Excited Slip Ring Type Automatic Voltage Regulator
with closed-loop feedback circuit
Designed For Small Diesel and Gasoline Generators



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1. SPECIFICATION

Sensing Input

Voltage 16 ~ 25 VAC, 50/60 Hz

Power Input

Voltage 60 ~ 100 VAC, 50/60 Hz

Output

Voltage Max. 100 VDC @ 85 VAC input

Current Continuous 3A
Intermittent 5A for 60 sec

Resistance Min. 25 ohm

Voltage Regulation

< ± 1% (with 4% engine governing)

Voltage Build-up

Residual voltage at AVR terminal > 2 VAC

Thermal Drift

0.05% per °C change in AVR ambient

Voltage Adjust Range

115 / 230 VAC ± 15%

Dimensions

64.5mm L * 158.2mm W * 40mm H

Weight

190 g ± 2%

2. SUMMARY

The EA5K3 Automatic voltage Regulator is a direct replacement for small brush type generators from 3 to 7.5KW. This AVR employs an enhanced closed-loop feedback circuit, which greatly improves voltage stability, also added is a new VOLT adjustment pot, not available in the original. This new AVR significantly improves generator performance.

3. WIRING & ADJUSTMENT

- 3.1 Figure 1, show the plug connections numbered 1, 2, 3 and 4.
- 3.2 Line 1 (white) and line 2 (green) are the sensing input lines, they are used to match the generator output voltage (115 / 230VAC) Some generators have an independent sensing connections, If this is your case, open wire 2 (green) and reconnect to its matching connector plug.
- 3.3 Line 3 (blue) and line 4 (Blue) are the AVR Power Input terminals
- 3.4 The independent red (+ Positive) and white wire (- Negative) ending in spade terminals attach to the generators Slip Rings (F+ and F-)
- 3.5 Moving the voltage adjustment potentiometer (VOLT) located on the back and center of the AVR changes the output voltage ±15%; moving it clockwise increases voltage and moving it counter-clockwise decreases voltage.

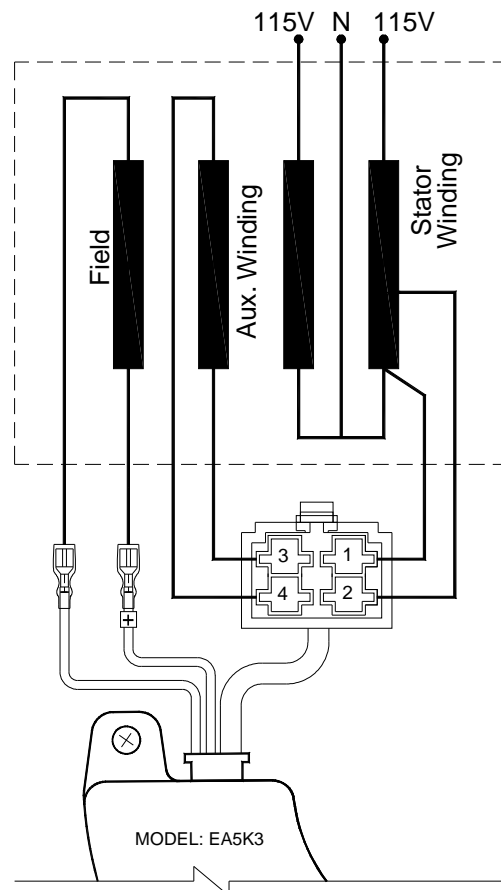


Figure 1 Connection

4. OUTLINE / DIMENSION

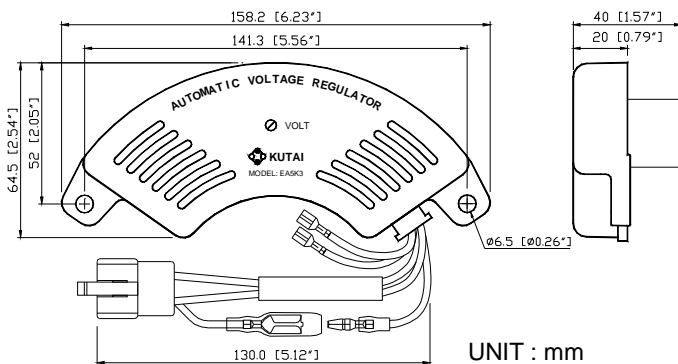


Figure 2 Outline Drawing

ATTENTION

1. AVR can be mounted directly on the engine, genset, switchgear, control panel, or any position that will not affect operation. For dimension reference, please see Figure 2.
2. All voltage readings are to be taken with an average-reading voltmeter Meggers and high-potential test equipment must not be used. Use of such equipment could damage the AVR.
3. Secure all wiring connection. Do not install AVR at a place with high vibrations to prevent loose connections. For safety avoid contact with the AVR case while in operation.

5. COMPATIBLE REPLACEMENT

| BRAND | PART NUMBER |
|----------------|---|
| ELEMAX | SH4000, SH5000, SH6000, SH7000 |
| HONDA | EP3800, EP5000, EC6500 |
| KAWSAKI | GE4300A, GE500AS, PP4000, PP6000 |
| KUBOTA Low Boy | GL6500S |
| SUZUKI | LTZ400 |
| SAWAFUJI | SH4600EX, SH5300EX, SH6500EXS, SH7600EX |
| YAMYHA | EDL6500S |

6. TROUBLE SHOOTING

| SYMPTOM | CAUSE | CORRECTION |
|---------------------------|---|--|
| Voltage does not build up | F+, F- Loosen connection | Check F+, F- connection |
| | F+, F- Polarity reversed | F+, F- reverse connection |
| | Residual voltage less than 1.5V | Execute field excitation |
| | CN1 Connection incorrect | Reference from Figure 2 to correct connection |
| Out voltage high | Voltage over AC130 / 260V and can not be adjusted | Defective AVR. Please contact with service provider. |

- ※ Use only original supplied spare protection fuse for fuse replacement.
- ※ Please accept our sincere apology if any modification in performance, specification or appearance is made without prior notice.