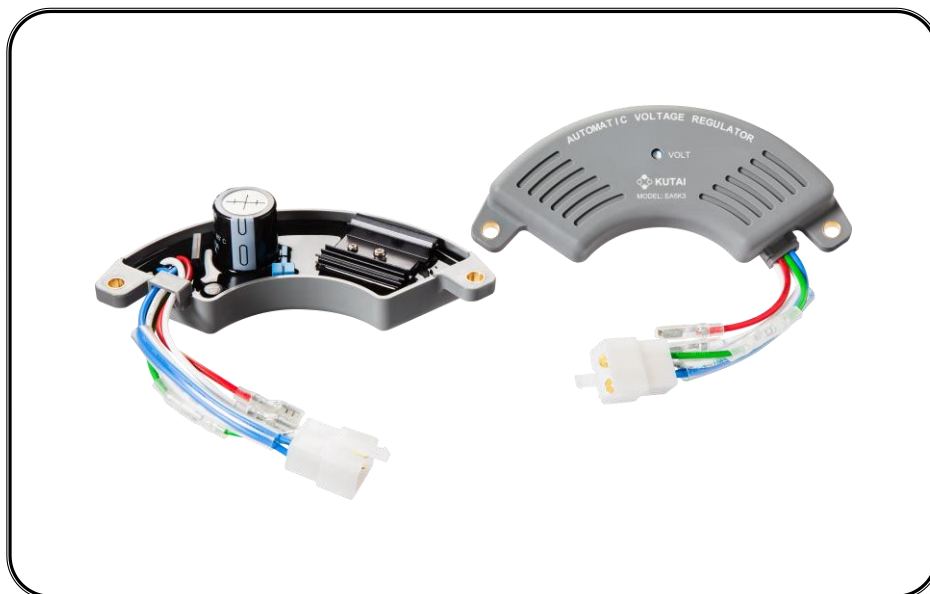


EA5K3

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

* All manufacturer names and numbers are used for reference purpose only
and do not imply that any part is the product of these manufacturer.



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ISO 9001
ETC

SECTION 1 : SPECIFICATION

Sensing Input

| | |
|-----------|-------------|
| Voltage | 16 – 25 Vac |
| Frequency | 50/60 Hz |

Power Input

| | |
|-----------|--------------|
| Voltage | 60 – 100 Vac |
| Frequency | 50/60 Hz |

Excitation Output

| | |
|------------|---|
| Voltage | Max. 100 Vdc @ power input 85 Vac |
| Current | Continuous 3A Intermittent 5A for 60 secs. |
| Resistance | Min. 25 ohms |

Voltage Regulation

Less than +/- 1% (with 4% engine governing)

Build Up Voltage

2 Vac residual volts at power input terminal

Voltage Adjust Range

115/230 Vac +/- 15%

Voltage Thermal Drift

Less than 5% at temperature range -40 to +70 °C

Environment

| | |
|-----------------------|--|
| Operating Temperature | -40 to +60 °C |
| Storage Temperature | -40 to +85 °C |
| Relative Humidity | Max. 90% |
| Vibration | 1.5 Gs @ 5 – 30 Hz 5.0 Gs @ 30 – 500 Hz |

Dimensions

64.5 (L) x 158.2 (W) x 40.0 (H) mm

Weight

190 g +/- 2%

SECTION 2 : SUMMARY

The EA5K3 automatic voltage regulator is a direct replacement for small brush type generators from 3 to 7.5 KW. 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.

SECTION 3 : WIRING & ADJUSTMENT

- Figure 1, show the plug connections numbered 1, 2, 3 and 4.
- Line 1 (white) and Line 2 (green) are the sensing input lines, they are used to match the generator output voltage (115 / 230 Vac) Some generators have an independent sensing connections, If this is your case, open wire 2 (green) and reconnect to its matching connector plug.
- Line 3 (blue) and Line 4 (blue) are the AVR Power Input terminals.
- The independent red (+ Positive) and white wire (– Negative) ending in spade terminals attach to the generators slip rings (F+ and F-).
- 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.

WARNING

Overly field flashing may damage the AVR or generator excitation winding.

Please make sure you have read and understand the contents of the instruction manual prior to installation. Incorrect wiring connection may result in irreversible damage to the product and other equipments.

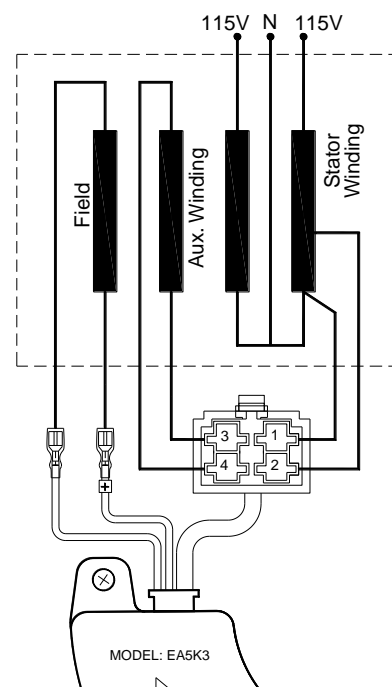


Figure 1 Connection

SECTION 4 : OUTLINE / DIMENSION

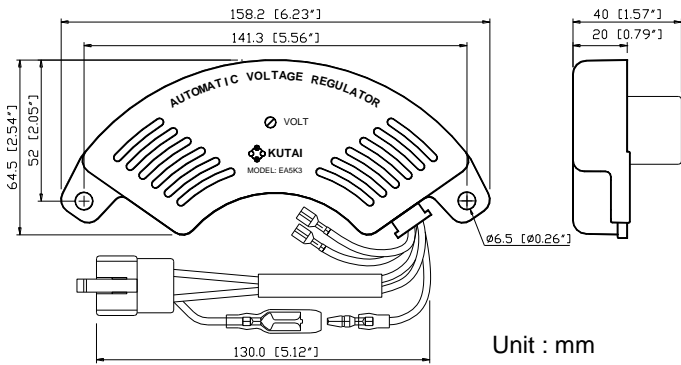


Figure 2 Outline Drawing

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.
4. Improper setting of under-frequency protection could cause the output voltage of the unit to drop or become unstable under with changes in load. Avoid making any changes to the U/F setting unless necessary.

SECTION 5 : COMPATIBLE REPLACEMENT

| BRAND | PART NUMBER |
|----------------|---|
| ELEMAX | SH4000, SH5000, SH6000, SH7000 |
| HONDA | EP3800, EP5000, EC6500 |
| KAWSAKI | GE4300A, GE5000AS, PP4000, PP6000 |
| KUBOTA Low Boy | GL6500S |
| SUZUKI | LTZ400 |
| SAWAFUJI | SH4600EX, SH5300EX, SH6500EXS, SH7600EX |
| YAMAHA | EDL6500S |

SECTION 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. |

※ Appearance and specifications of products are subject to change for improvement without prior notice.