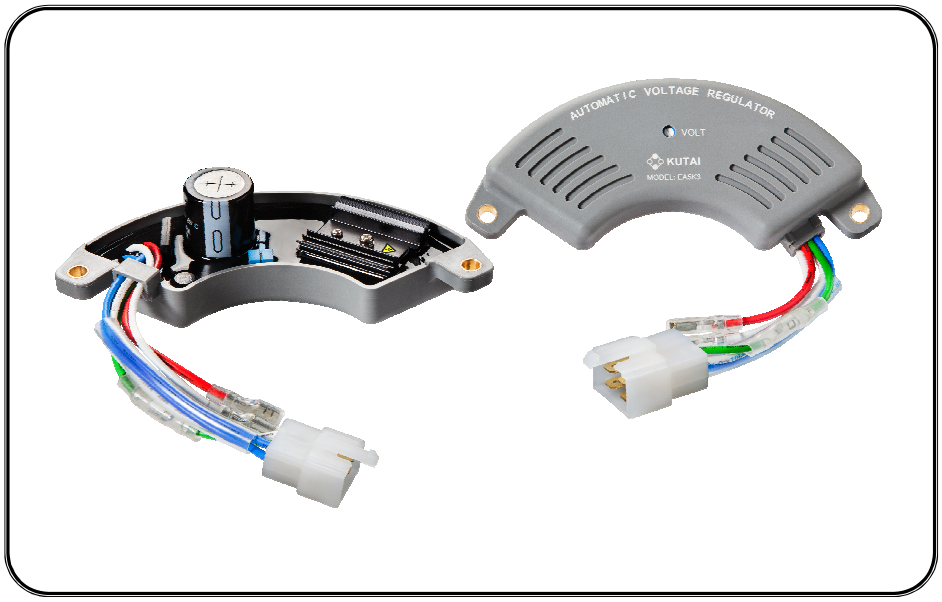
EA5K3

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.

KUTAI

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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

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 / 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.

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.

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.

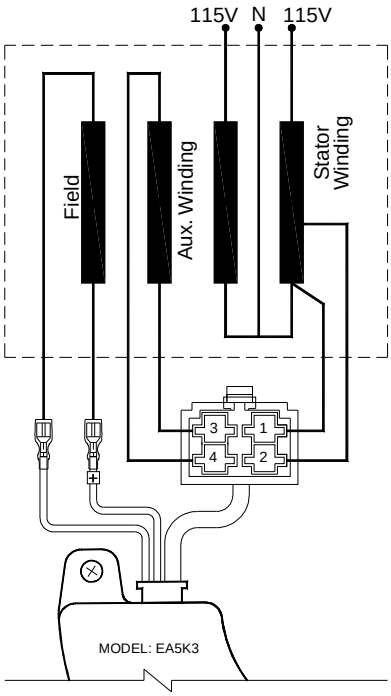

Figure 1 Connection

SECTION 4 : OUTLINE / DIMENSION

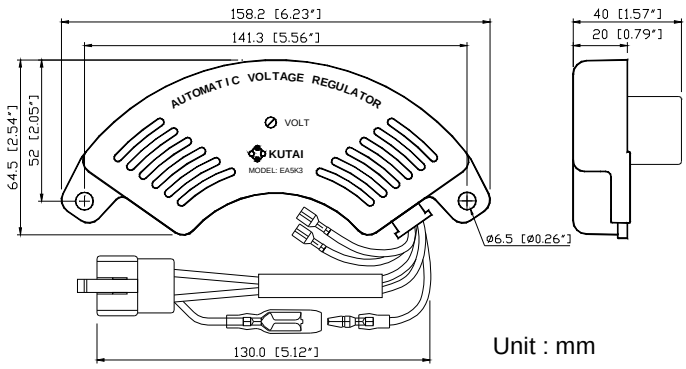

Figure 2 Outline Drawing

WARNING

AVR heat sink is electrophorus, do not touch the shell when installation.

ATTENTION

1. **AVR can be mounted directly on the engine, genset, switchgear, control panel, or any position that will not affects 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.