

# EA08A

## **Generator Automatic Voltage Regulator Operation Manual**



**Self Excited Automatic Voltage Regulator**  
For use in Brushless Full Harmonic or Harmonic and Auxiliary Winding

Use with KUTAI IVT-1260 / IVT-2460 add-on module can boost generator motor starting capacity.



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# SECTION 1 : SPECIFICATION

## Sensing Input

Terminal E1 – 110V = 95 – 135V  
 E1 – 220V = 180 – 250V  
 E1 – 380V = 360 – 515V  
 Frequency 50/60 Hz, DIP switch setting

## Power Input (X1, X2 / Z1, Z2)

Voltage 40 – 250 Vac  
 Frequency 40 – 500 Hz  
 (PMG, Harmonic, Full Harmonic and Auxiliary Winding)

## Excitation Output

Voltage Max. 150 Vdc @ power input 220 Vac  
 Current Continuous 8A  
 Intermittent 12A for 10 secs.  
 Resistance Min. 10 ohms, Max. 100 ohms  
 Fuse Spec. Slow blow 5 x 20mm UDA-8A / 250V

## External Voltage Adjustment

Max. +/- 10% @ 1K ohm 1 watt potentiometer

## Voltage Regulation

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

## Build Up Voltage

5 Vac residual volts at power input terminal

## Quadrature Droop Input

CT 5A or 1A greater than 5VA  
 Max. +/- 4% @ P.F +/- 0.8

## Analogue Voltage Input

10% generator voltage per 1 Vdc

## Under-Frequency Knee Point Thermal Drift

Adjustable range 42 – 62 Hz

## Voltage Thermal Drift

Less than 3% at temperature range -40 to +70 °C

## Environment

Operating Temperature -40 to +60 °C  
 Storage Temperature -40 to +85 °C  
 Relative Humidity Max. 95%  
 Vibration 1.5 Gs @ 5 – 30 Hz  
 5.0 Gs @ 30 – 500 Hz

## Dimensions

150.0 (L) x 135.0 (W) x 56.0 (H) mm

## Weight

720 g +/- 2%

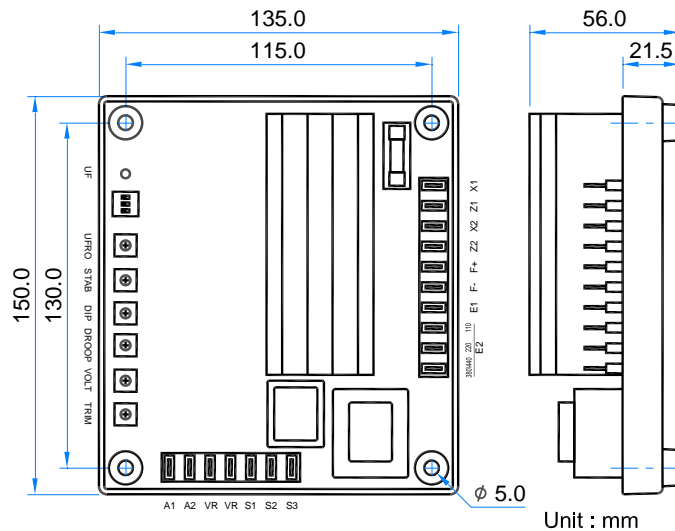


Figure 1 Outline Drawing

### 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 1.
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. 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 2 : WIRING

- 2.1 E1, 110, 220, 380V Sensing Input terminal.
- 2.2 F+, F- : Excitation Output.
- 2.3 X1 – X2, Z1 – Z2 Power Input terminal. When using single phase power input, please connect to X1 – X2. For 3 phase power input, please connect to X1, X2, Z2 terminals. The power input can be Self-Excited Shunt, PMG, Harmonic, Full Harmonic and Auxiliary Winding.
- 2.4 S1 – S2 : Current compensation input. Current Transformer secondary current = 5A.
- 2.5 S2 – S3 : Current compensation input. Current Transformer secondary current = 1A.
- 2.6 VR – VR External Voltage Adjustment 1K ohm.
- 2.7 A1 – A2 Analog Voltage Input Can accept remote DC voltage to adjust generator output voltage.

## SECTION 3 : ADJUSTMENTS

- 3.1 TRIM : Analog Voltage Input Adjustment.
- 3.2 VOLT : Voltage Adjustment.

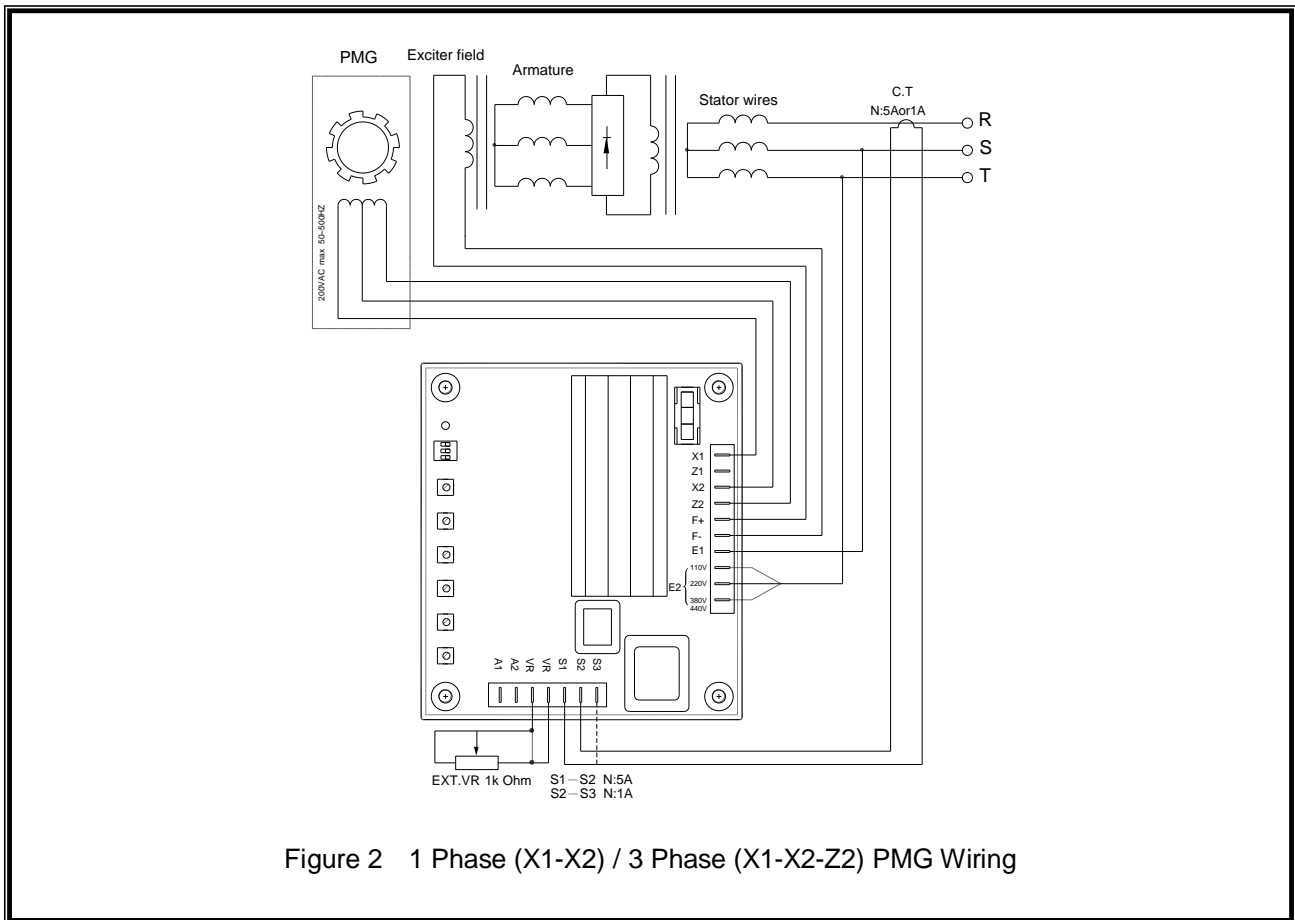
- 3.3 DROOP : Droop Adjustment.
- 3.4 DIP : To set the frequency related voltage dip.
- 3.5 STAB : Stability Adjustment.
- 3.6 UFRO : UFRO Knee Point set.
- 3.7 DIP Switch : Function Selection Switch.

SW \ KW	< 90 KW	90 – 500 KW	> 500 KW
1	OFF	OFF	ON
2	OFF	ON	ON

SW \ Freq.	50 Hz	60 Hz
3	OFF	ON

**WARNING**

**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.**



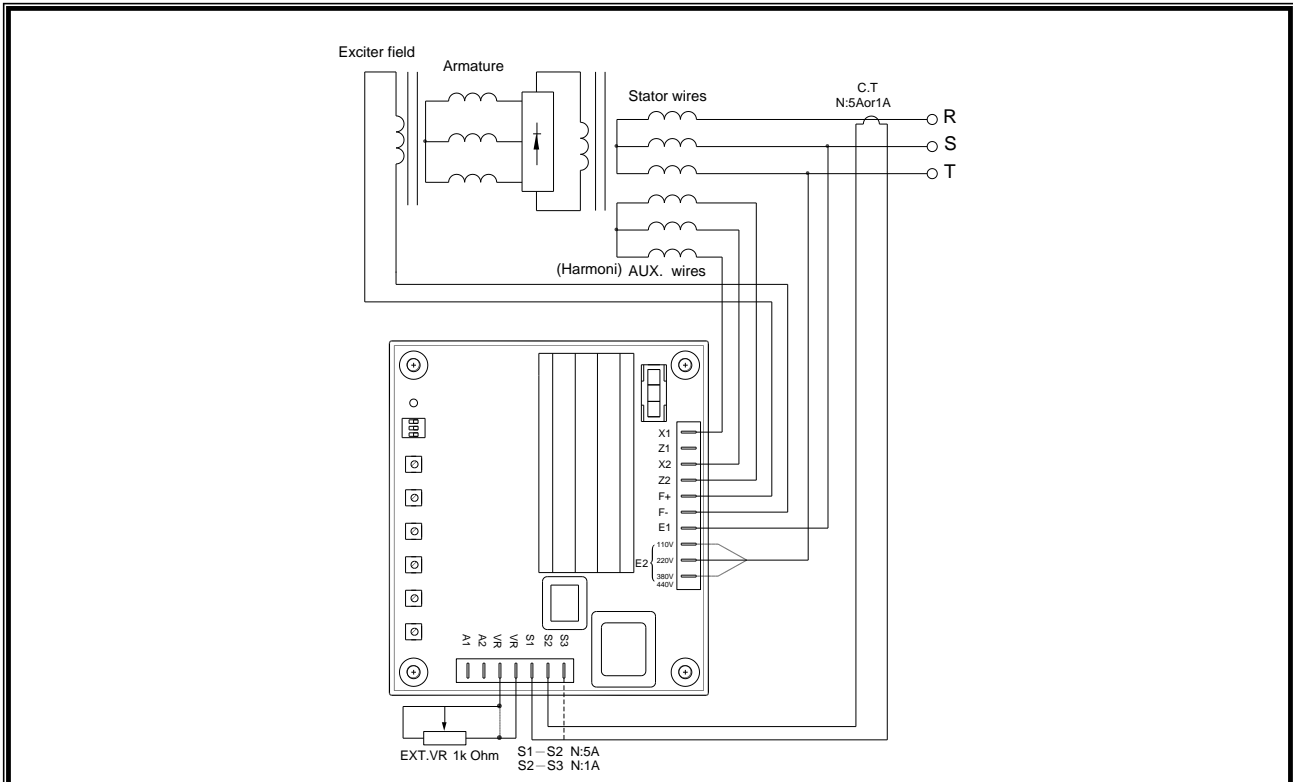


Figure 3 3 Phase (Self-Excited Shunt, Full Harmonic, Auxiliary Winding) Wiring

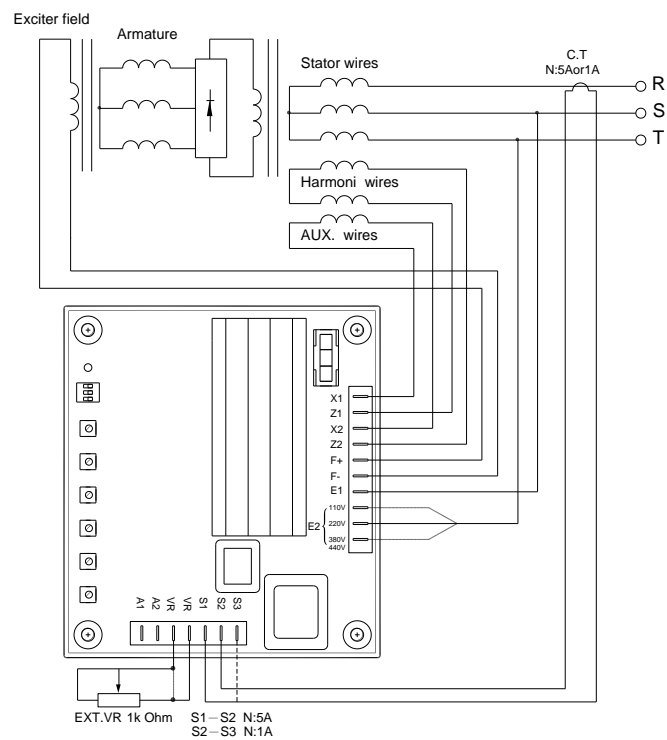


Figure 4 Auxiliary Winding & Harmonic Wiring

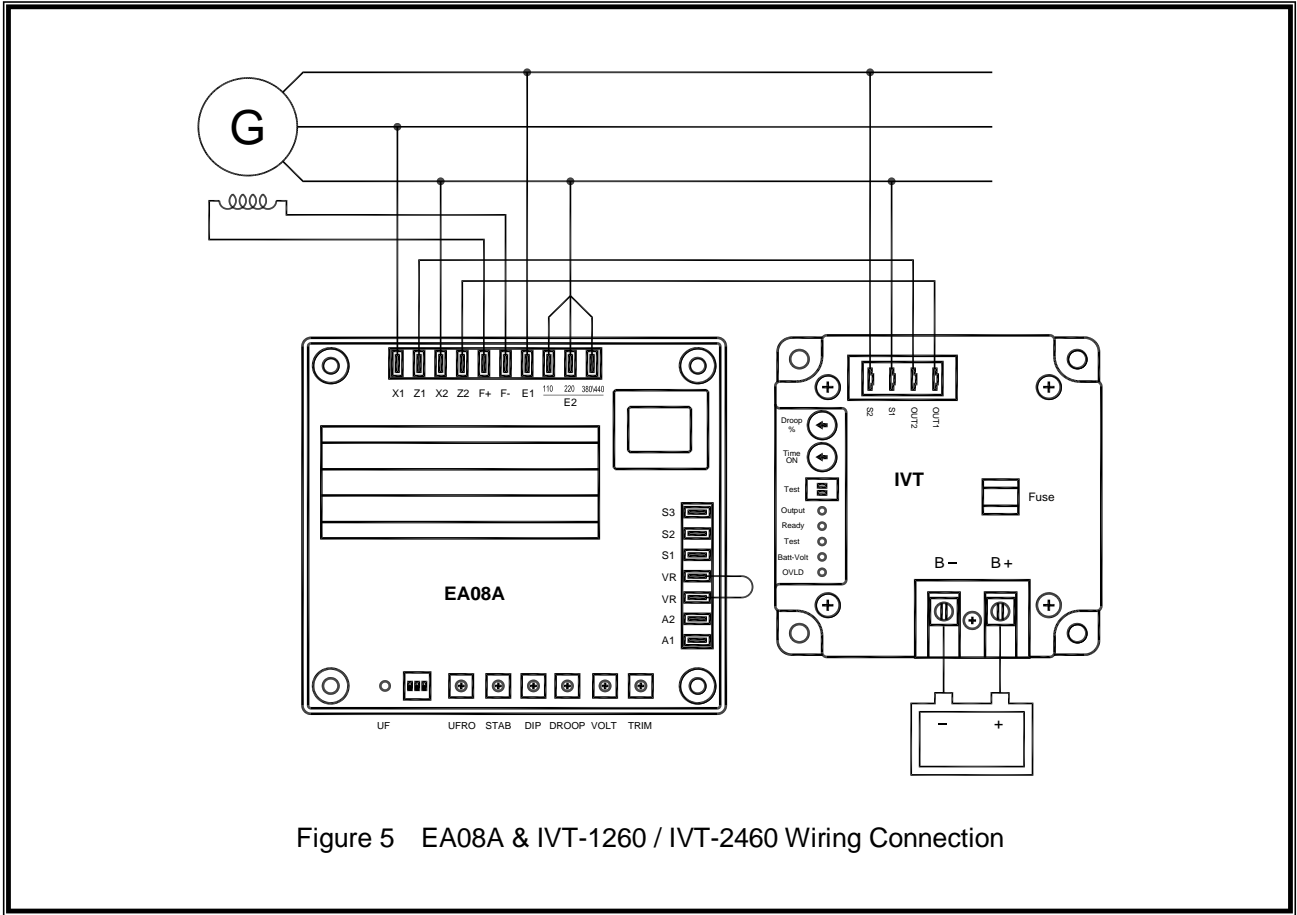


Figure 5 EA08A & IVT-1260 / IVT-2460 Wiring Connection

- ※ Use only the original protection fuse for replacement (10A).
- ※ Appearance and specifications of products are subject to change for improvement without prior notice.