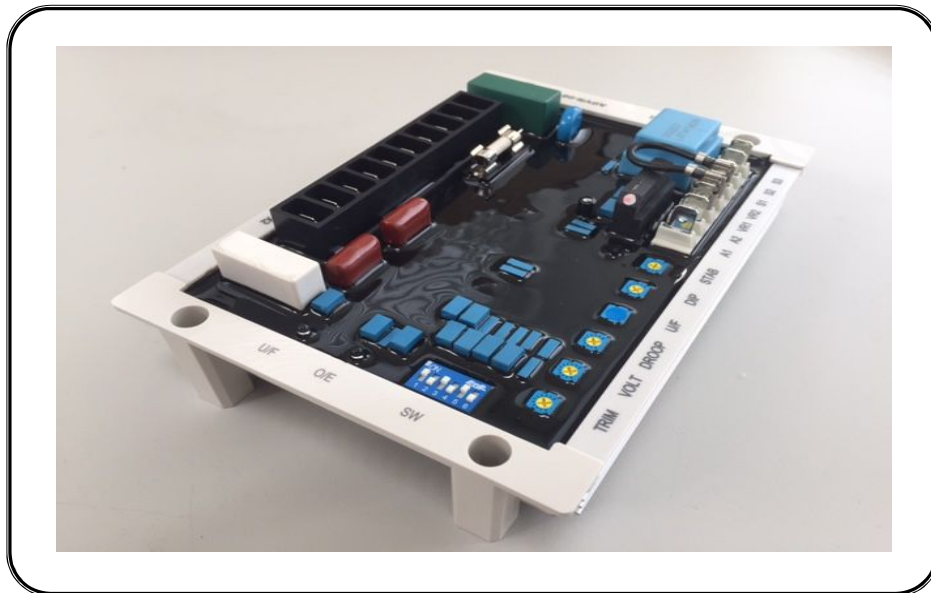


# ADVR-08

## ***Universal Hybrid Analog-Digital Voltage Regulator Operation Manual***



Universal Hybrid Analog/Digital 2 lines sensing 8 Amp AVR with multiple power input capability such as Full Harmonic (Compound Windings), Harmonic + Auxiliary Winding, PMG and SHUNT.

Compatible with Leroy Somer R449.



## SECTION 1 : SPECIFICATION

### Sensing Input (E1, E2)

Voltage	110 – 480 Vac 1 phase 90 – 130 Vac @ 110 Vac 180 – 260 Vac @ 220 Vac 340 – 520 Vac @ 380 Vac
Frequency	50/60 Hz selectable

### Power Input (X1, X2)

Voltage	40 – 300 Vac, 1 phase
Frequency	50 – 500 Hz

### Auxiliary Input (Aux1, Aux2)

Voltage	40 – 300 Vac, 1 phase
Frequency	50 – 500 Hz

### Output (F+, F-)

Voltage	Max. 63 Vdc @ power input 110 Vac Max. 125 Vdc @ power input 220 Vac
Current	Continuous 8A Intermittent 12A for 10 sec.
Resistance	$\geq$ 8 ohms @ power input 110 Vac $\geq$ 16 ohms @ power input 220 Vac
Fuse Spec.	5 x 20mm S505-10A (slow blow type)

### Burden in SHUNT & PMG Wiring

880 VA @ power input 110 Vac
1760 VA @ power input 220 Vac

### Voltage Regulation

< +/- 0.5% ( with 4% engine governing )

### Typical System Response

AVR response 20 ms

### Build Up Voltage

Residual voltage at AVR power input terminal  
> 6 Vac @ 25 Hz

### Voltage Thermal Drift

0.03% per °C change in AVR ambient

### External Volts Adjustment (VR1, VR2)

+/- 4% 500 ohms 1 watt potentiometer  
+/- 8% 1K ohms 1 watt potentiometer

### Soft Start Ramp Time

4 sec.

### Over Excitation Protection

Inverse-time 170 +/- 5 Vdc @ power input 220 Vac

### Unit Power Dissipation

Max.6 watts

### EMI Suppression

Internal EMI filtering

### Quadrature Droop Input (S1, S2, S3)

CT 5A (S1-S2) or 1A (S2-S3) > 5VA  
Max. +/- 5% @ P.F +/- 0.7

### Analogue Input (A1, A2)

Maximum input +/- 5 Vdc  
Sensitivity +/- 25% Generator Volts (adjustable)  
Input resistance > 2K ohms

### Under Frequency Protection (Factory Knee Point Setting)

50 Hz system presets knee point at 47 Hz  
60 Hz system presets knee point at 57 Hz  
Knee point Frequency Drift : 0.1 Hz @ -40 – +70 °C

### Environment

Operation Temperature	-40 – +70 °C
Storage Temperature	-40 – +85 °C
Relative Humidity	Max. 95%
Vibration	3 Gs @ 100 – 2K Hz

### Dimensions

171.0 (L) x 120.0 (W) x 50.0 (H) mm

### Weight

820 g +/- 2%

### ATTENTION

Carefully set the AVR sensing voltage from 110 to 480 Vac using DIP Switch SW 4 & 5.

## SECTION 2 : OUTLINE / SIZE / INSTALLATION REFERENCE

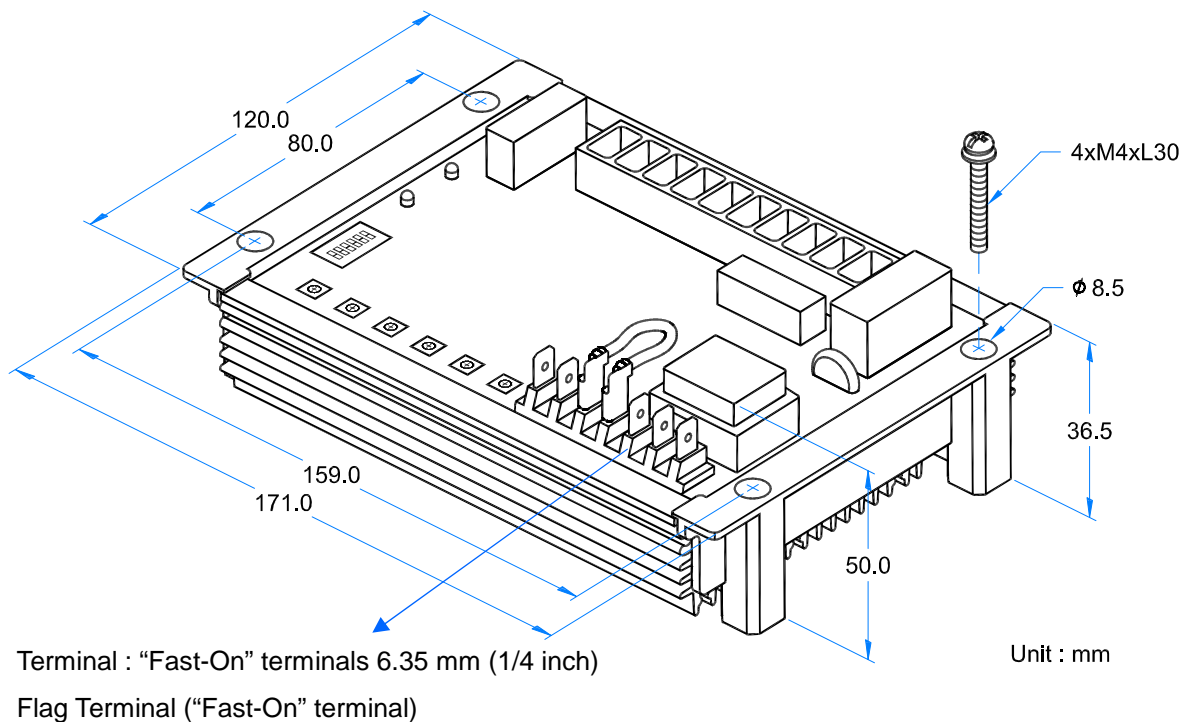
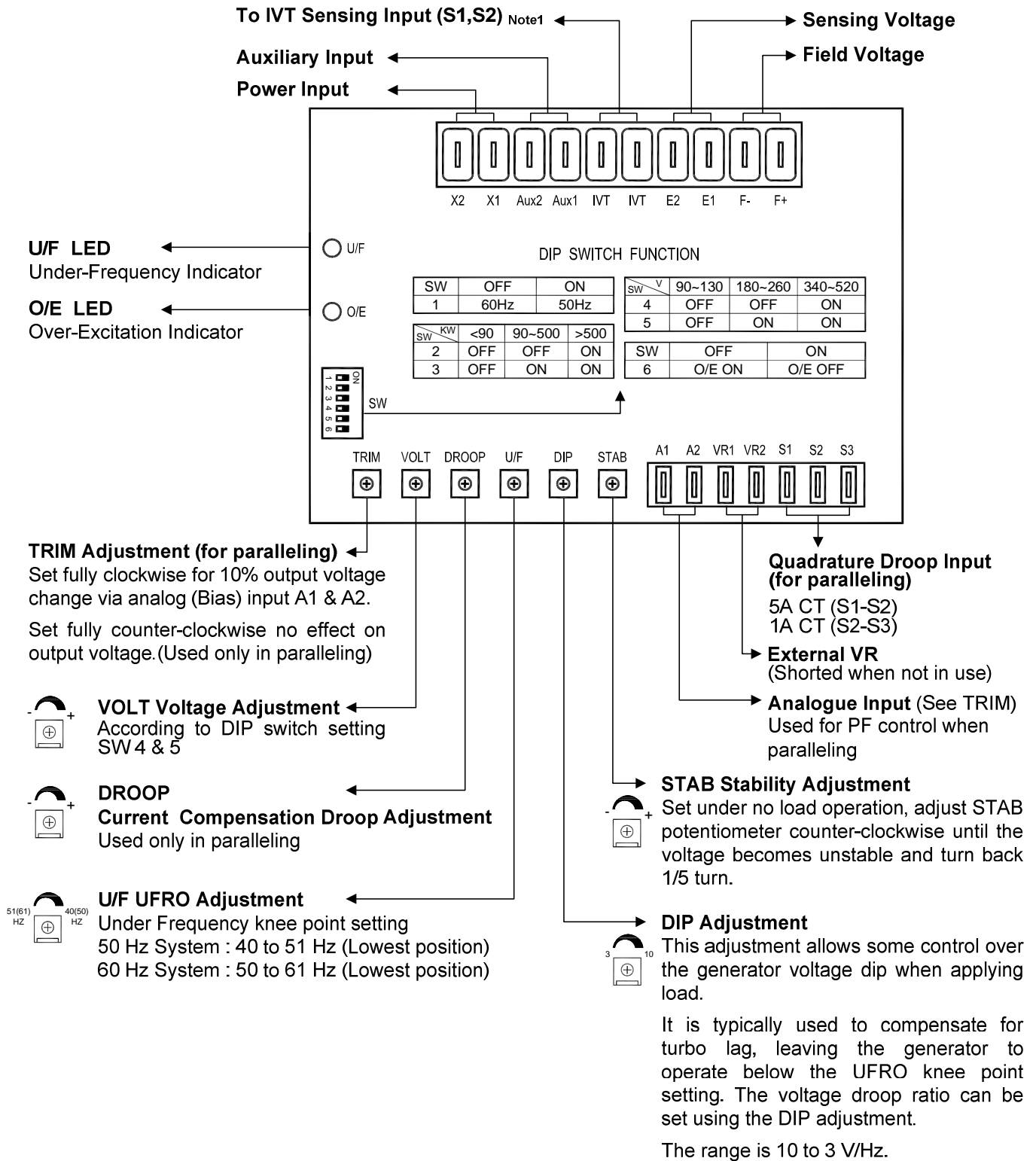


Figure 1 Outline Drawing

### ATTENTION

Meggers and high-potential test equipment must not be used as it could damage the AVR.

# SECTION 3 : DIP SWITCH PROGRAMMING & ADJUSTMENTS



## NOTE

For more detail about " IVT Generator Auxiliary Excitation Booster " please visit KUTAI website.

# SECTION 4 : WIRING CONNECTIONS

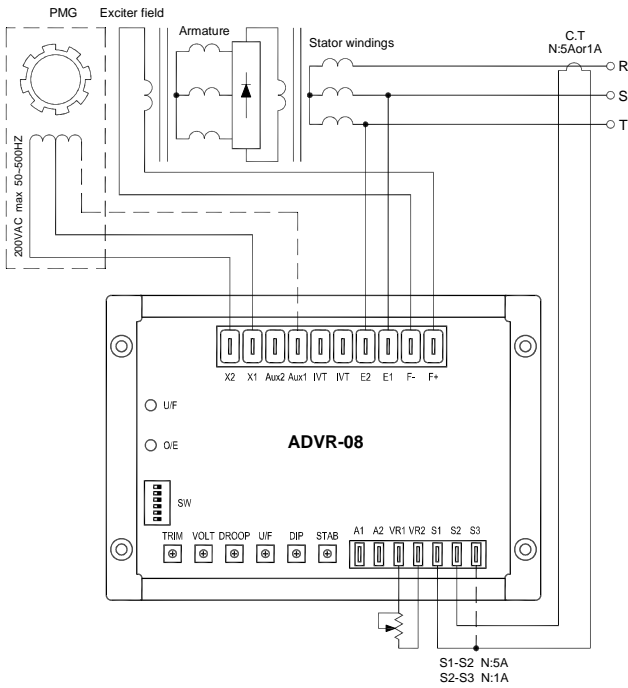


Figure 2 Single & Three Phase PMG

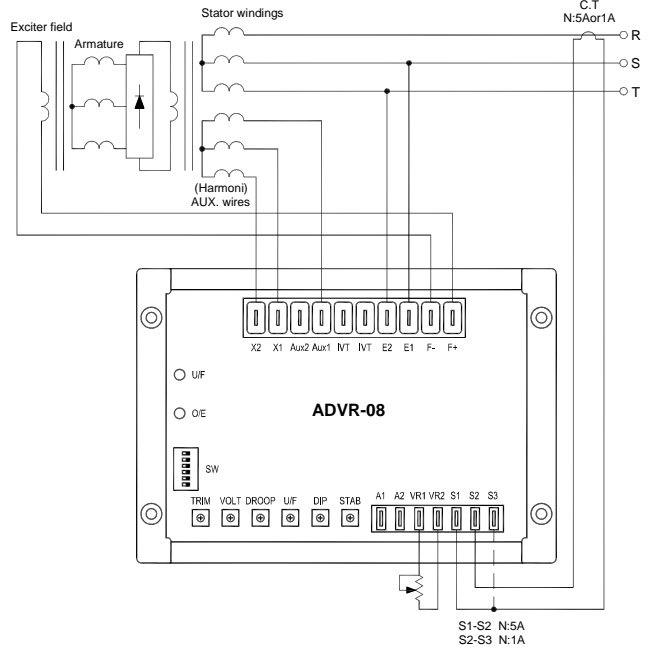


Figure 3 Three Phase Auxiliary Winding (Full Harmonic)

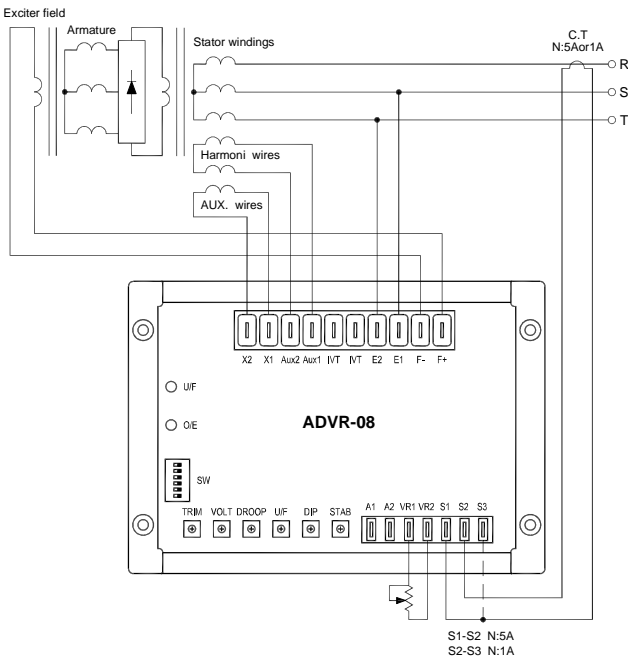


Figure 4 Auxiliary & Harmonic

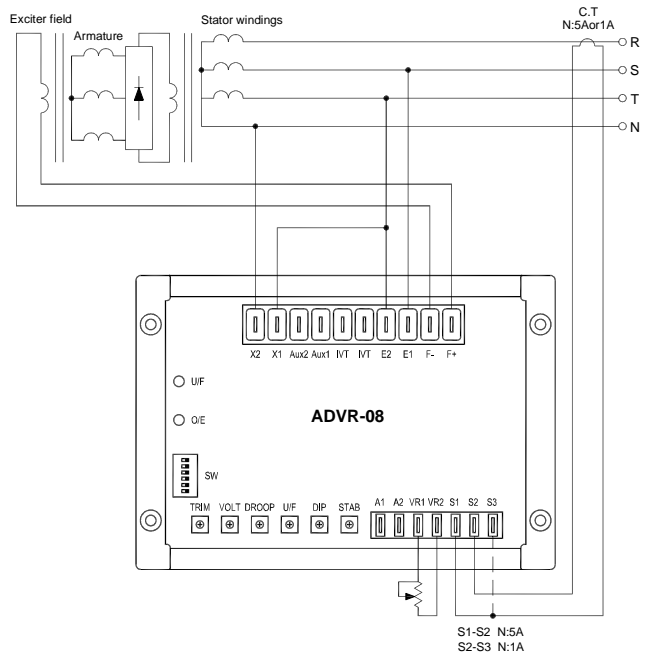


Figure 5 Self-Excited (SHUNT)

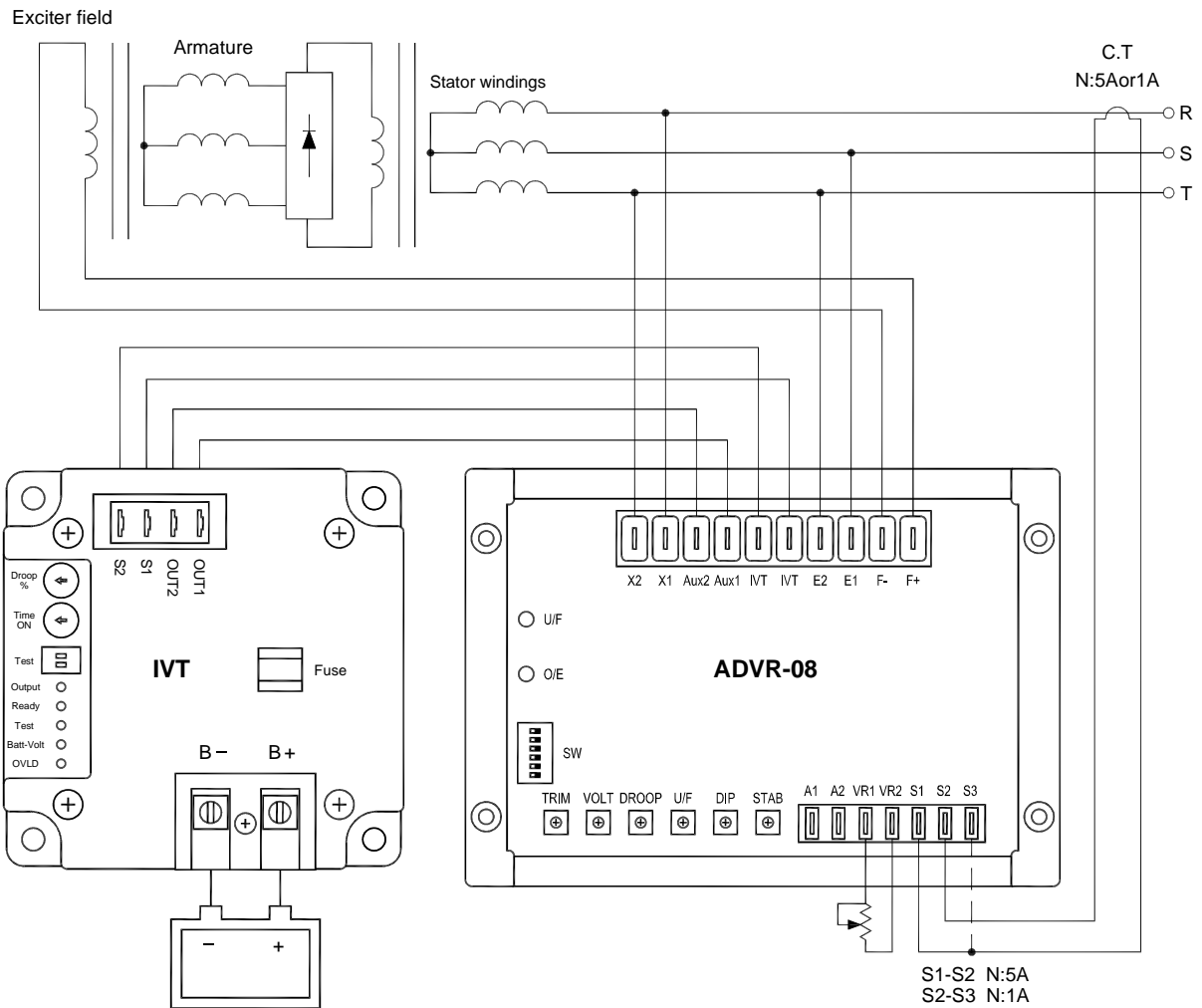


Figure 6 ADVR-08 with IVT-1260 / IVT-2460

#### ATTENTION

1. All AC voltage readings are average value only.
2. Use a remote 500 ohms 1 watt external VR for +/- 4% adjustment range. (keep shorted if not used)
3. Use a remote 1K ohms 1 watt external VR for +/- 8% adjustment range.
4. If your PMG is not working you can also power the AVR in shunt using terminals X1 & X2 connected to the output of the generator as long as it's less than 300 Vac.

- ※ Use only the replacement fuses specified in this user manual.
- ※ Appearance and specifications of products are subject to change for improvement without prior notice.