

# SS448B

## Generator Automatic Voltage Regulator Operation Manual

PMG or A.R.E.P or Auxiliary Winding Type Compatible with Leroy Somer R448\*

Use with EPMG-1270 / EPMG-2470 add-on module can boost  
generator motor starting capacity

\* Use for reference purpose only and not a genuine Leroy Somer product

## SECTION 1: SPECIFICATION

**Sensing Input (E1 · E2) Average Reading**  
 Voltage 95 – 520 Vac 1 phase 2 wire  
 DIP Switch Settings  
 Adjustment 95 – 140 Vac @ 110 Vac  
 170 – 260 Vac @ 220 Vac  
 340 – 520 Vac @ 380 Vac  
 Frequency 50/60 Hz Jumper selected

**Power Input (X1 · X2)**  
 Voltage 40 – 150 Vac 1 phase 2 wire  
 Frequency 40 – 500 Hz

**Auxiliary Input (Z1 · Z2)**  
 Voltage 40 – 150 Vac 1 phase 2 wire  
 Frequency 40 – 500 Hz

**Excitation Output (E+ · E-)**  
 120V 1 phase Continuous 110 Vdc 7A  
 Max. 160 Vdc 10A 10Sec  
 Resistance Min. 15Ω, Max. 100Ω @120V  
 Fuse Spec. Slow blow 5 x 20mm 10A

**External Voltage Adjustment (1KΩ)**  
 Max. +/- 10% @ 1 KΩ 1 watt potentiometer

**Quadrature Droop Input (S1 · S2)**  
 CT N:1A  
 Sensitivity +/- 7% @ PF +/- 0.7 (STAT. Adjustable)

**Build Up Voltage**  
 5 Vac 25Hz residual volts at power input terminal

**Soft Start Ramp Time**  
 3 seconds +/- 10%

**Voltage Regulation**  
 Less than +/- 0.5% ( with 4% engine governing )

**Typical System Response**  
 0.3 – 1 seconds @ +/- 20% Voltage Vibration

**Static Power Dissipation**  
 Max. 4 watts

**Under Frequency Protection**  
 50 Hz system knee point at 45Hz  
 60 Hz systems knee point at 55Hz

**Over Excitation Current limitation**  
 3.5A to 10A (EXC.MAX. Adjustable)

**Voltage Thermal Drift**  
 Less than 3% from -40 to +70 °C

**Environment**  
 Operation Temperature -40 to +70 °C  
 Storage Temperature -40 to +85 °C  
 Relative Humidity Max. 95%  
 Vibration 5.5 Gs @ 60 Hz

**Dimensions**  
 203.0 (L) x 153.0 (W) x 60.5 (H) mm  
 7.99 (L) x 6.03 (W) x 2.38 (H) inch

**Weight**  
 850 g +/- 2%  
 1.874 lb +/- 2%

## SECTION 2: DIMENSION

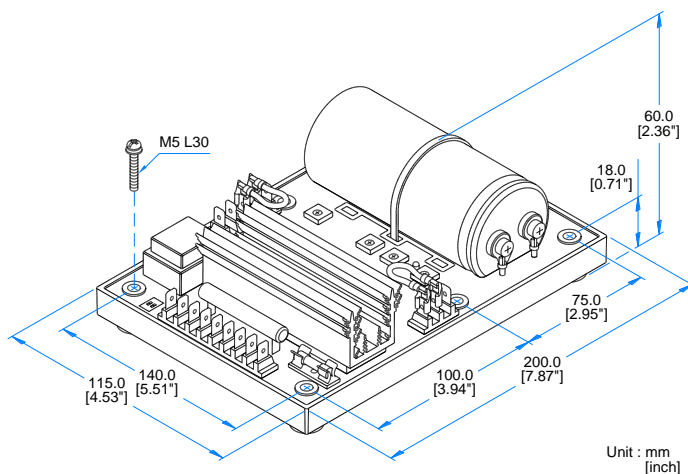
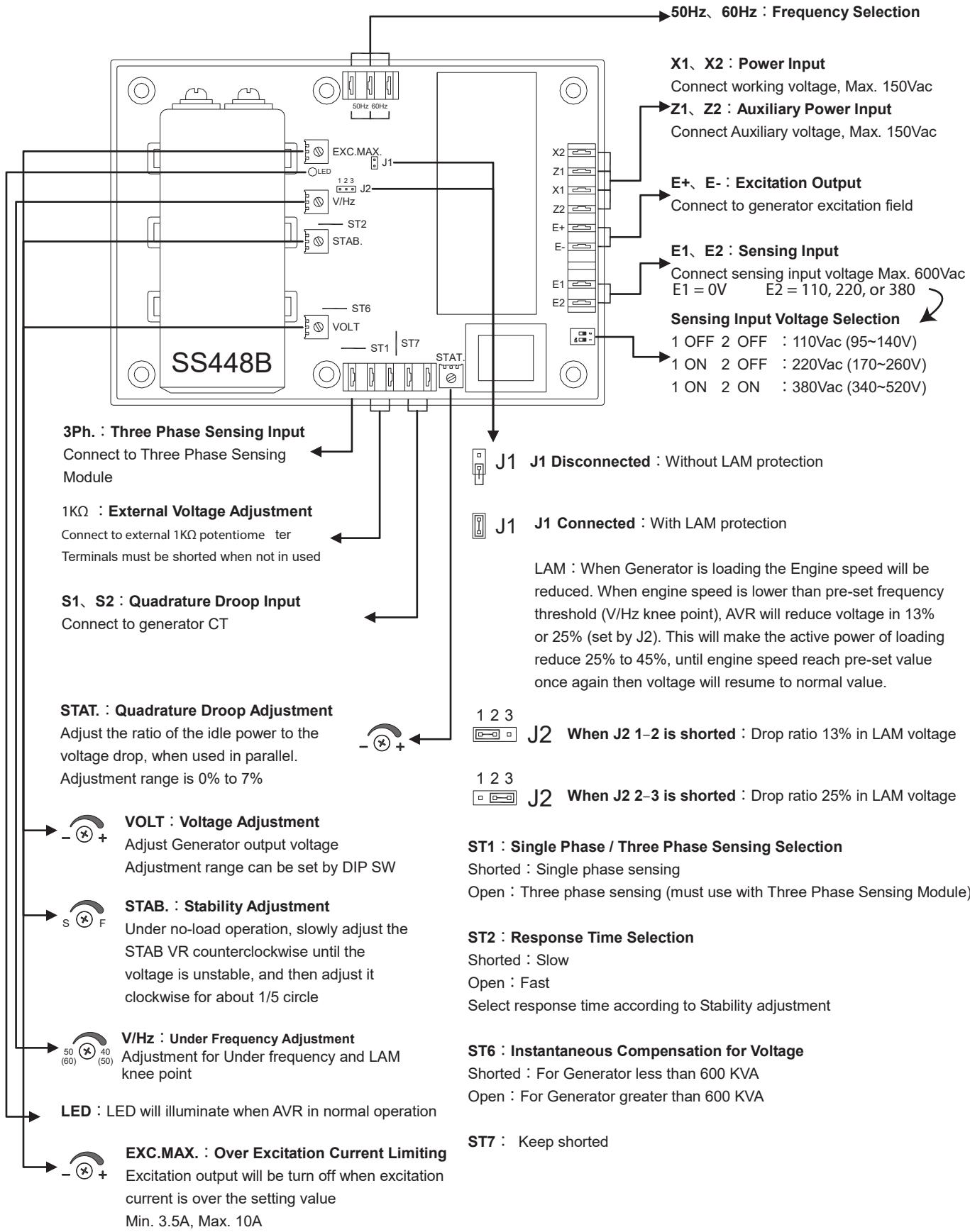


Figure 1. Outline Drawing

### NOTICE

1. AVR could be installed in any suitable locations of the generator sets, the appearance and fixing holes are as (Figure 1)
2. To ensure safety and avoid the permanent damage to the AVR caused by the high pressure, make sure remove the connection wiring on the AVR before using megohmmeter and the voltage meter.
3. Make sure tie up the connection wiring of the AVR when installing in a high-vibration environment. The cooling fin could release the high temperature under the normal operation, please do not touch.

# SECTION 3: DIP SWITCH SETTING



## SECTION 4: CONNECTION DIAGRAMS

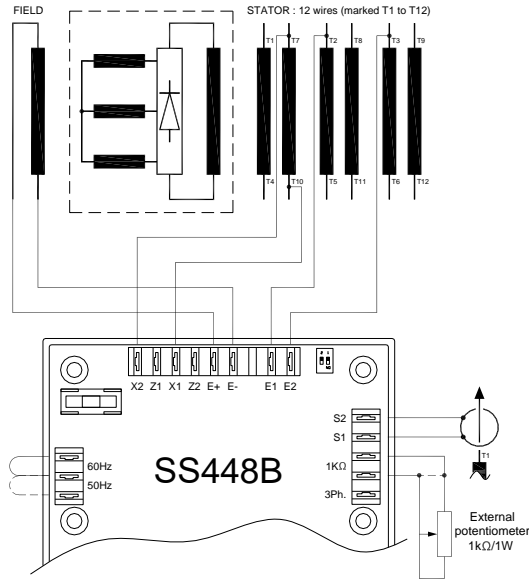


Figure 2. Self-Excited (SHUNT)

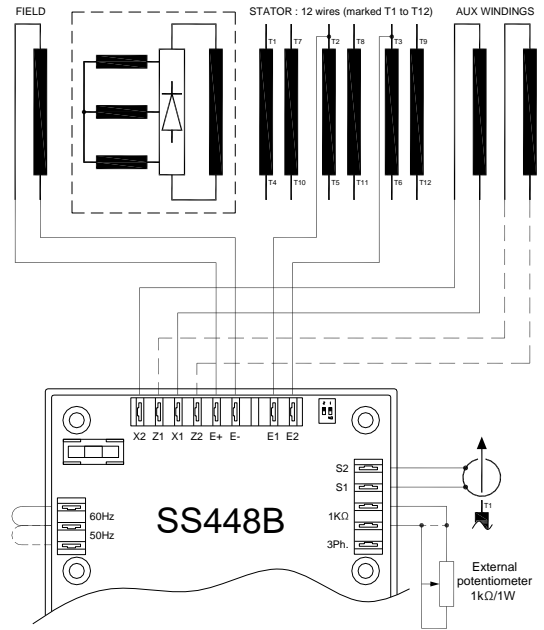


Figure 3. Auxiliary and Harmonic Power Winding

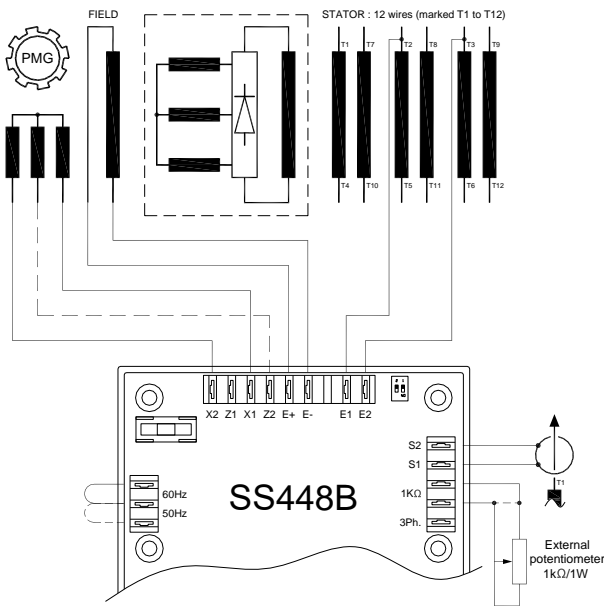


Figure 4. PMG Winding

### ATTENTION!!

1. 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.
2. Terminal Specification : 6.35mm (1/4 inch) Flagged Terminals
3. Use only replacement fuses specified in this user manual.
4. Appearance and specifications of products are subject to change for improvement without prior notice.