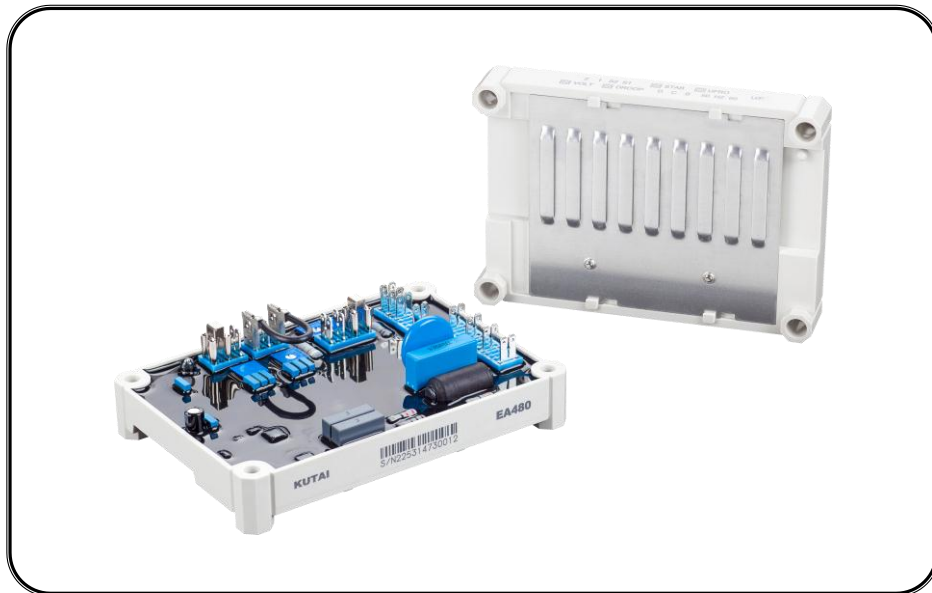


# EA480

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



Analog, single-phase sensing,  
Excitation output 5 Amp with half-wave rectifier  
For use with self-excited, brushless generators  
Compatible with Newage Stamford AS480\*  
Supports connection with Stamford Excitation Boost System (EBS)

\*Note : The manufacturer name and number are used for reference purpose only and do not imply that any part is the product of these manufacturer.



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## SECTION 1 : SPECIFICATION

### Voltage Sensing / Power Input (7,8) Average Reading

Voltage 60 – 300 Vac, 1 phase 2 wire  
Frequency 50/60 Hz (Jumper Selected)

### Excitation Output (F1, F2)

110V 1 phase Continuous 31 Vdc 5A  
Max. 45 Vdc 7.5A for 10 secs.  
220V 1 phase Continuous 63 Vdc 5A  
Max. 90 Vdc 7.5A for 10 secs.

Note : If AVR is mounted externally to alternator  
continuous current is reduced by 20%

Resistance Min. 6 ohms, Max. 100 ohm @ 110V  
Min. 13 ohms, Max. 100 ohm @ 220V

### External Voltage Adjustment (1, 2)

Max. +/- 10% @ 1K ohm 1 watt potentiometer  
Use 7.5K ohms resistor to enable 110Vac sensing

### Voltage Regulation

Less than +/- 0.5% (with 4% engine speed governing)

### Build up Voltage

4 Vac 25 Hz residual volts at power input terminal

### Soft Start Ramp Time

3 seconds +/- 10%

### Typical System Response

Less than 20 milliseconds

### EMI

Built-in Harmonic suppression

### Static Power Dissipation

Max. 4 watts

### Quadrature Droop Input (S1, S2)

Input resistance 10 ohms  
Sensitivity 0.07A for 5% voltage drop (PF= 0)  
Max. Input 0.33A

### Under Frequency Protection (knee point factory preset)

45 Hz for 50 Hz systems  
55 Hz for 60 Hz systems

### Over Excitation Protection

Excitation Voltage 70 Vdc +/- 10 %  
Time Delay 10 – 15 seconds

### 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 5.5 Gs @ 60 Hz

### Dimensions

130.0 (L) x 90.0 (W) x 39.0 (H) mm  
5.12 (L) x 3.54 (W) x 1.54 (H) inch

### Weight

260 g +/- 2%  
0.573 lb +/- 2%

## SECTION 2 : APPEARANCE / DIMENSIONS / INSTALLATION DRAWING

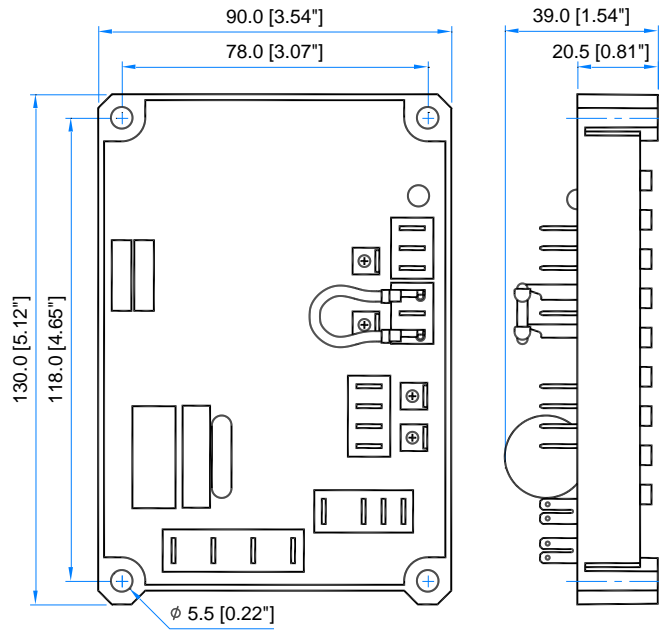


Figure 1 Outline Drawing Unit : mm [inch]

## SECTION 3 : LED INDICATORS AND POTENTIOMETER ADJUSTMENTS

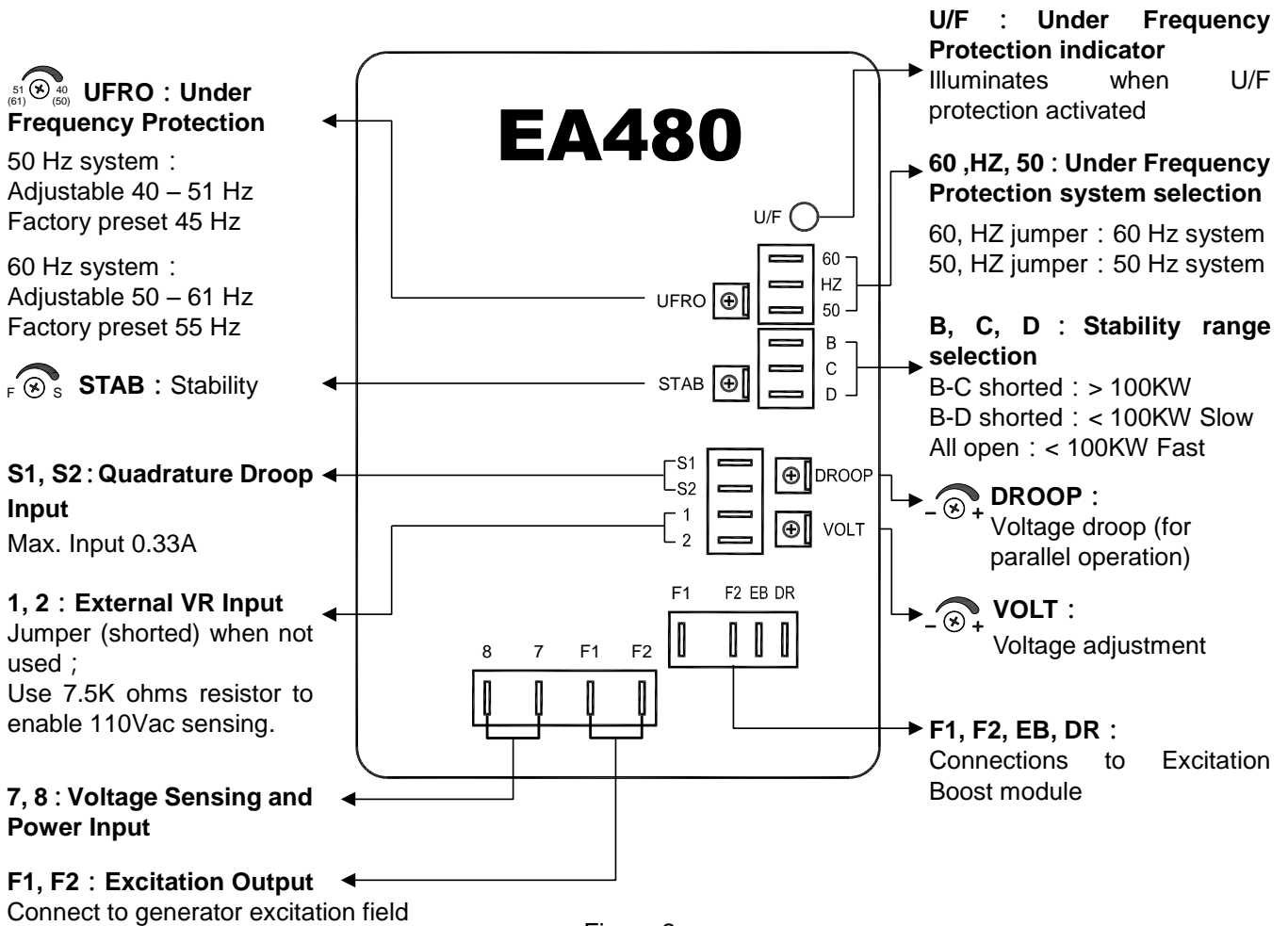


Figure 2

**SECTION 4 : CONNECTION DIAGRAMS**

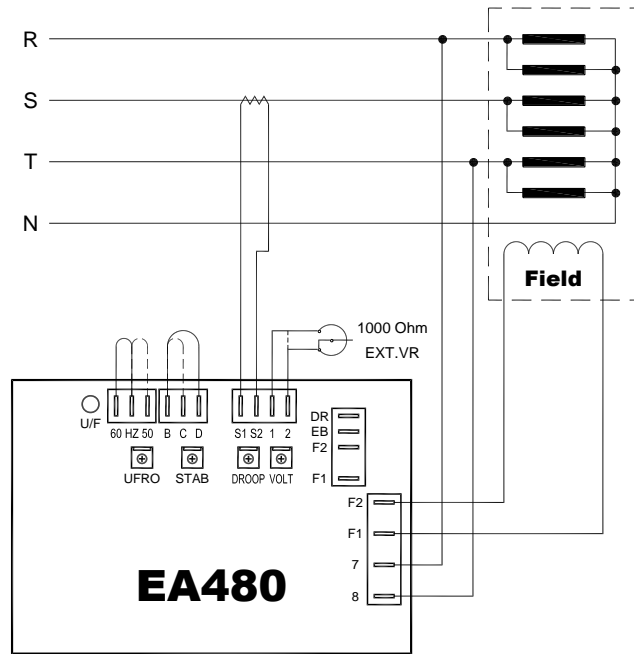


Figure 3 220 Vac

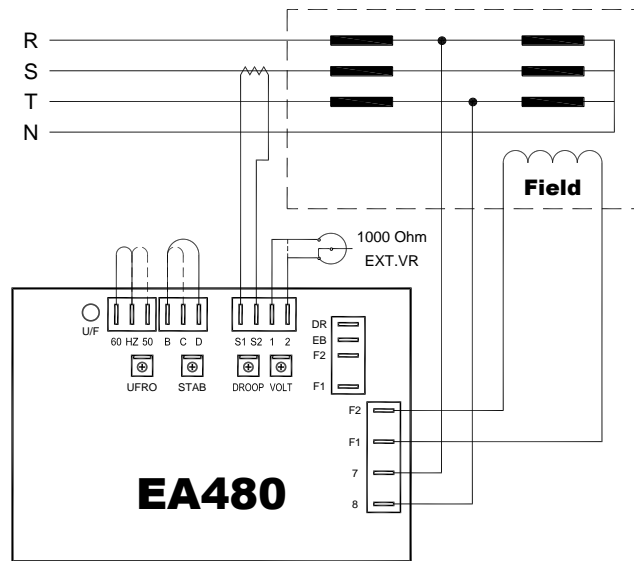


Figure 4 380/440 Vac

**ATTENTION**

1. Before using a Megger or Withstand Voltage Tester remove the wires connecting the AVR to prevent high voltage damage to the AVR.
2. Improper setting of under-frequency protection could cause the generator output voltage to drop or become unstable with changes in load. Avoid making any changes to the U/F setting unless necessary.

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