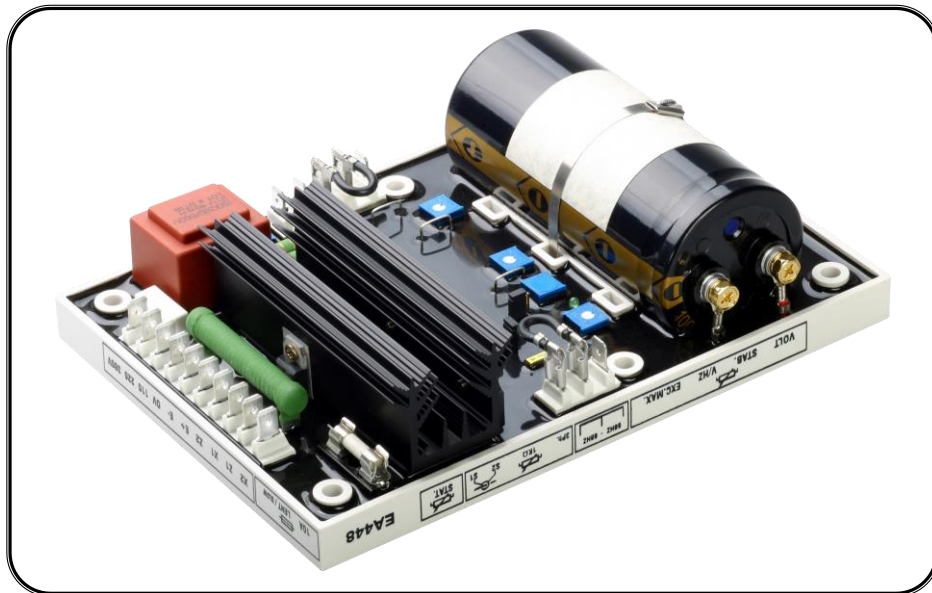


EA448

Generator Automatic Voltage Regulator Operation Manual



Permanent Magnet Generator or A.R.E.P or Auxiliary Winding Type
Compatible with Leroy Somer R448*

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

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



KUTAI ELECTRONICS INDUSTRY CO., LTD.

TEL : +886-7-8121771

FAX : +886-7-8121775

Website : www.kutai.com.tw

Headquarters : No.3, Ln. 201, Qianfu St., Qianzhen Dist., Kaohsiung City 80664, Taiwan

ISO 9001
ETC

SECTION 1 : SPECIFICATION

Sensing Input

| | |
|-----------|--|
| Terminal | 0 – 110 Vac = 95 – 140 Vac 0 – 220 Vac = 170 – 260 Vac 0 – 380 Vac = 340 – 520 Vac |
| Frequency | 50/60 Hz, selectable |

Power Input

| | |
|---------|-----------------------|
| Voltage | 40 – 150 Vac, 3 phase |
|---------|-----------------------|

Excitation Output

| | |
|---------|------------------------------------|
| Voltage | Max. 160 Vdc @ power input 120 Vac |
| Current | Max.10 A |

External Voltage Adjustment

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

Voltage Regulation

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

Build Up Voltage

5 Vac residual volts at power input terminal

Response Time

0.3 – 1sec @ +/- 20% Voltage Vibration

Quadrature Droop Input

Max 7% @ P.F. = 0.7

Auxiliary Winding

6 – 150 Vac (No load rms)

LAM Voltage Drop Rate

4.5 – 6.5 V/Hz @ 220 Vac, selectable

Environment

| | |
|-----------------------|--|
| Operation Temperature | -40 to +70 °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

203.0 (L) x 153.0 (W) x 60.5 (H) mm

Weight

950 g +/- 2%

SECTION 2 : OPERATION PROCEDURE

2.1 Jumper Adjustment

- (1) ST1 : Connected wire ST1 for Single phase measurement. Cut wire ST1 for three phase measurement.
- (2) ST2 : Response Time : Fast (disconnected) / Slow (Connected) Select.
PS : It should do stable adjustment with P3.
- (3) ST3 : For 50/60 Hz selection use Jumper ST3.
- (4) ST4 : Remove wire ST4 to Connect external potentiometer (1 K ohm). Connect wire ST4 when it is not necessary to connect external potentiometer.
- (5) ST6 : Instantaneous Compensation for Voltage.
PS : Remove wire ST6 when the regulator is used in higher 600 KVA.
- (6) ST7 : Jumpers connected.
- (7) J1 : Connected with LAM protection. Discounted without LAM protection. No LAM protection, for knee frequency adjustment use P4.
- (8) J2 : LAM voltage drop rate, 1-2 about 4.5 V/Hz, 2-3 about 6.5 V/Hz @ 220 Vac.

2.2 Adjustment

- (1) P1 : Adjustment of quadrature droop. (Max 7%).
- (2) P2 : Output Voltage adjustment by using P2.
- (3) P3 : Stability.

- (4) P4 : Under-speed (U/F) and LAM protection: for knee frequency adjustable us P4.
- (5) P5 : Excitation over current adjustment use P5 : 3.5A – 10A.

2.3 Wiring

- (1) X1-X2 : Excitation power auxiliary winding input, single phase 2 wires.
- (2) Z1-Z2 : Harmonic Power input (Multi-Harmonic).
- (3) E+ : Positive Output Terminal for Excitation power.
- (4) E- : Negative Output Terminal for Excitation power.
- (5) 0 – 110 : Measure Power Input 110 Vac.
- (6) 0 – 220 : Measure Power Input 220 Vac.
- (7) 0 – 380 : Measure Power Input 380 Vac.

Note :

- (1) When excitation power is three phase input, connect X2, X1, Z2. See Figure 3.
- (2) Fuse capacity : 10A / 250V.
- (3) Under normal operation, the LED will remain illuminated. When abnormal auxiliary power input occurs, the LED will switch off and automatically decrease rated output voltage (The decrease in voltage is different from generator to generator) and voltage adjustment becomes ineffective.

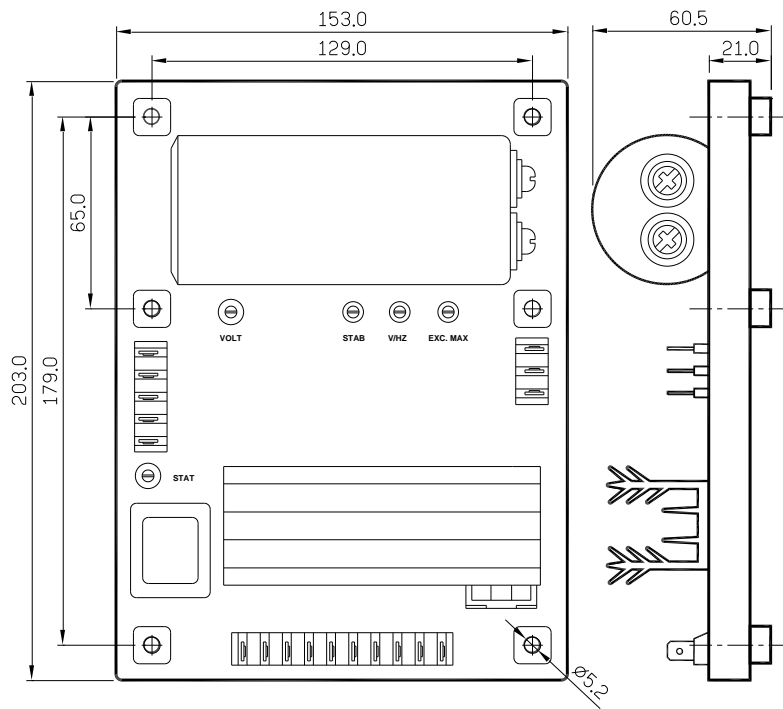


Figure 1 Outline Drawing

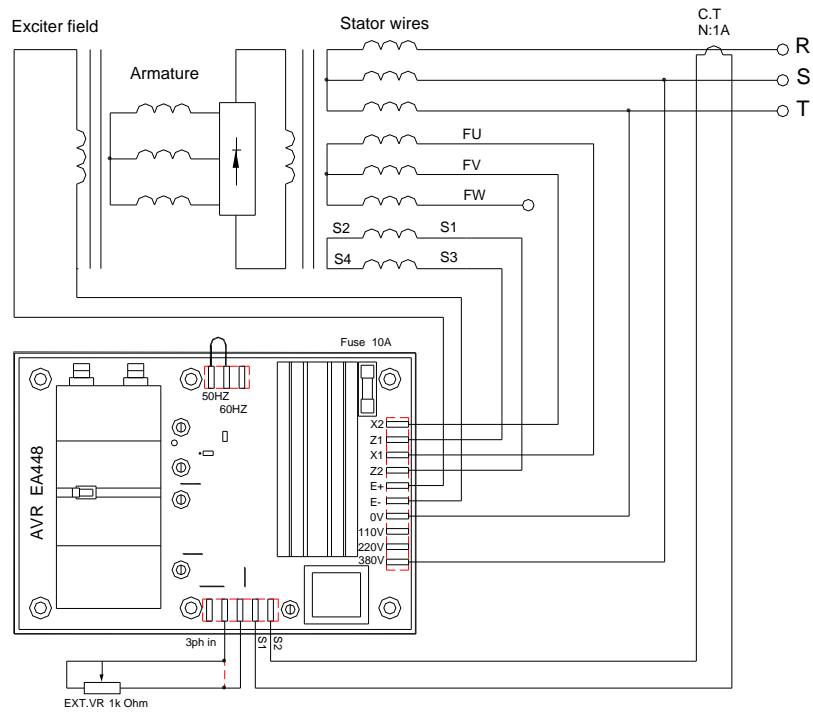


Figure 2 Power and Wiring for Harmonic Power

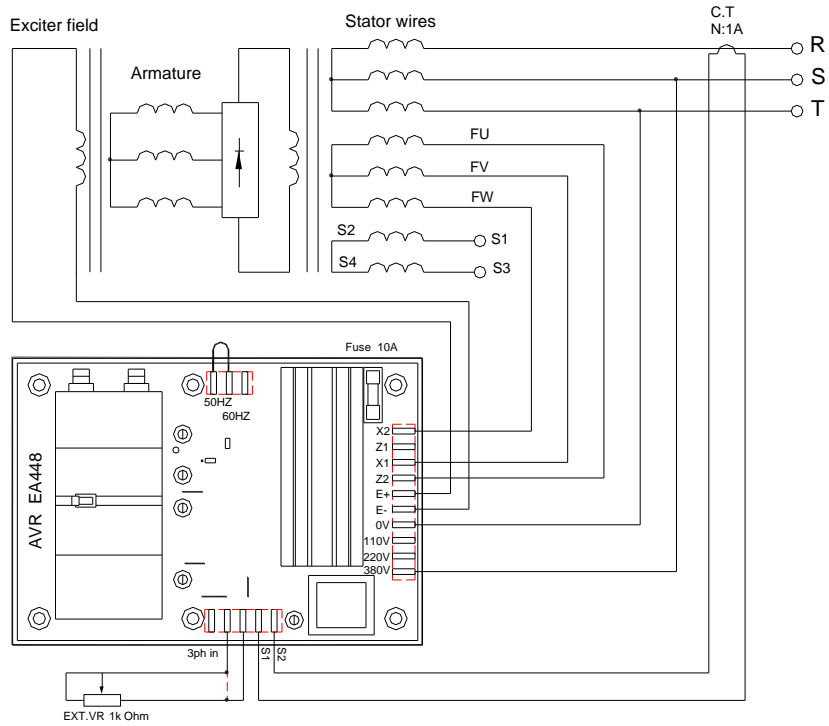


Figure 3 Three phase wiring

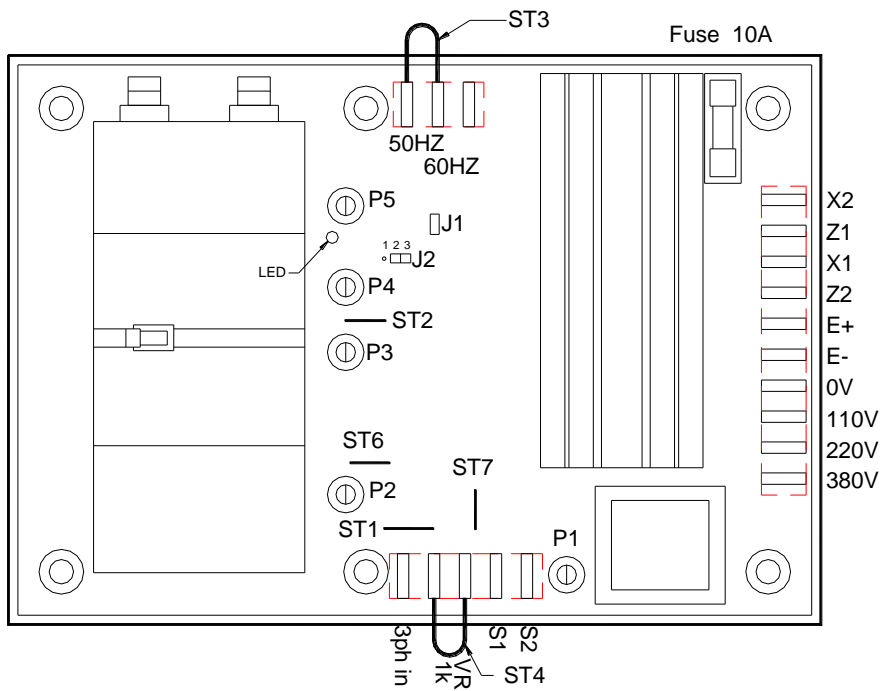


Figure 4 Adjustment and Jumper Diagram

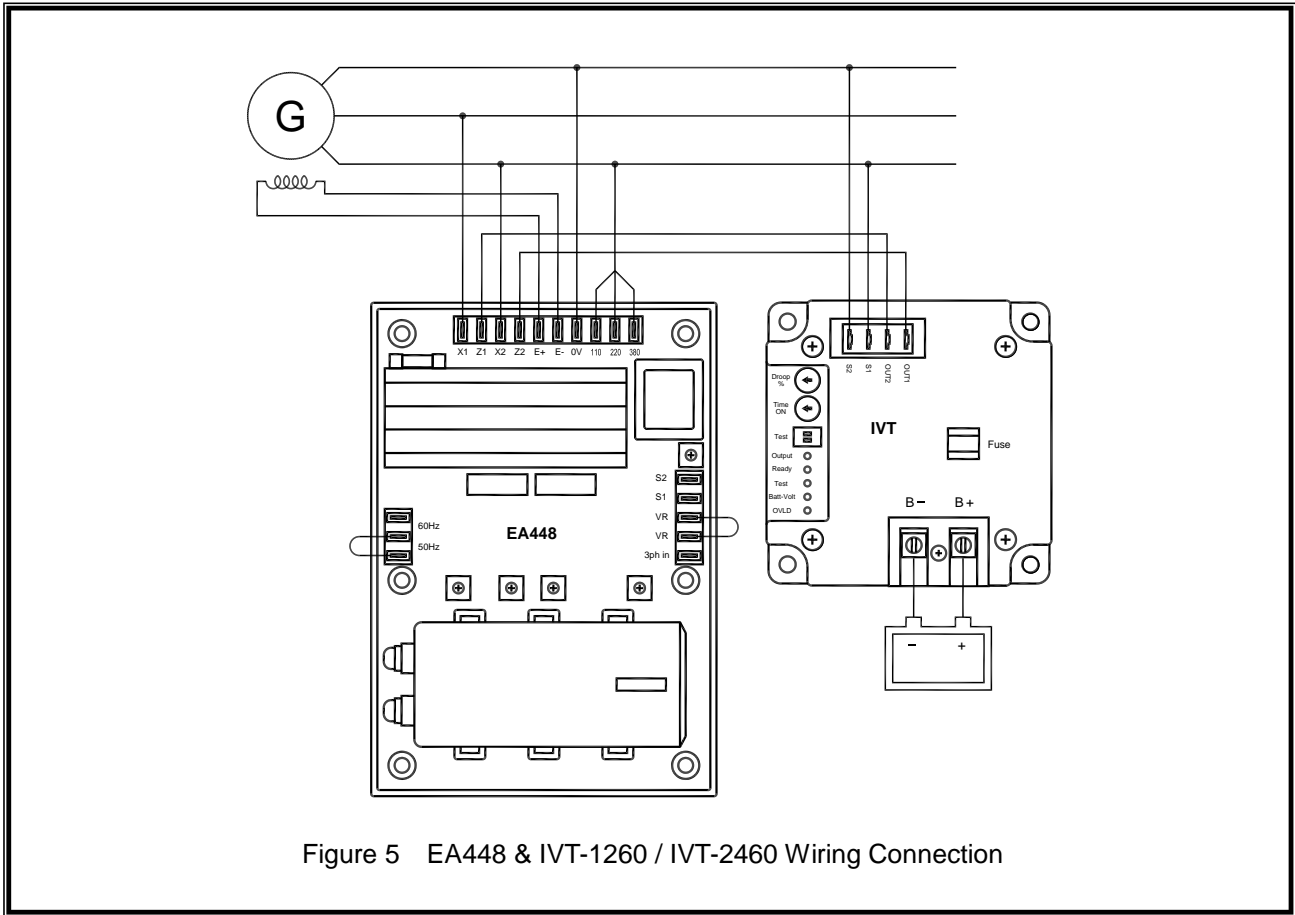


Figure 5 EA448 & IVT-1260 / IVT-2460 Wiring Connection

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