

Model: VR1808FW Voltage Regulator Operation Manual

DESCRIPTION:

The VR1808FW is an automatic voltage regulator designed to replace more expensive 125 volt regulators up to 7 or more amps.*

Its circuitry is encapsulated to protect from vibration and moisture.

DANGER: High voltage can cause injury or death! This regulator should be installed by a trained technician.

SPECIFICATIONS

Input	160~277VAC 50/60Hz.
Continuous output	125 VDC 7A - *up to 12A if adequately cooled
Maximum output	170VAC @ 10 ADC for 10 seconds
Sensing input	190VAC - 277VAC 50/60Hz
Regulation	±1%
Voltage Build Up	When residual voltage is greater than 5V @ 25Hz, the voltage will build up automatically.
Exciter field Resistance	Minimum 9Ω
External Voltage Adjustment	When fitted 1000Ω, voltage adjust range ±10% Variable Resistor rated minimum rate is 0.5W.
Under Frequency Protection	60Hz. If the generator is lower than 55Hz, the regulator will shut down immediately. (Refer to Fig2) 50Hz. If the generator is lower than 45Hz, the regulator will shut down immediately. (Refer to Fig2)
Usage Temperature	-10C ~ 60C
Storage Temperature	- 60C ~ 85C
Size	Approx. 5 7/8" L x 3 7/8" W x 2 7/8" H
Weight	Approx. 1 lb. (475±10g)
Voltage soft start	Build in voltage soft start function

NOTES:

3-1 Note before installation (Refer to Fig1)

3-2 Note when generator running

3-2-1 The temperature of AVR may be over 60C when generator set is running.

3-2-2 Please don't touch the heat-sink when generator set is running.

3-3 Procedure of generator running

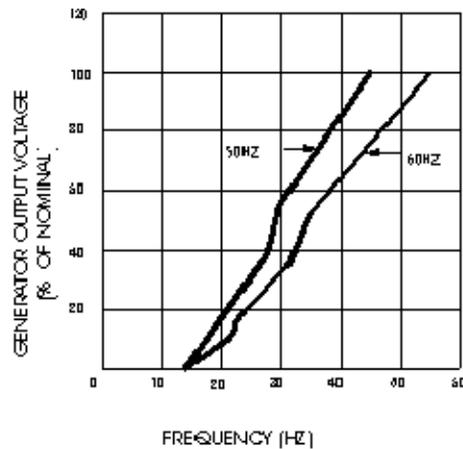
3-3-1 Setting

- (1) Check the wiring and connections.
- (2) Check that the protection fuse is rated 15A 250V.
- (3) Turn the volt trimmer fully counter-clockwise.
- (4) Turn the external trimmer to midway position if fitted.
- (5) Turn the stability trimmer fully counter-clockwise.
- (6) Connect a 110VDC voltmeter to field F+ & F- terminals.
- (7) Connect a 300Vac voltmeter to generator output voltage terminals.

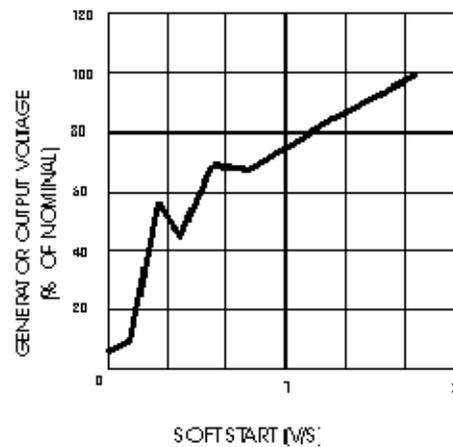
3-3-2 Start the generator

- (1) Start generator with no load. Adjust the speed at correct position.
- (2) Carefully turn volt trimmer clockwise until rated voltage is reached.
- (3) Turn stability trimmer clockwise until the output voltage is not stable, carefully turn stability trimmer anticlockwise until rated stable voltage is reached. That is the best match point between AVR and generator.

1.



(Under Frequency curve Figure 2.)



(Soft-start Curve Figure 3.)

ADJUSTMENTS:

- 4-1 Under frequency adjustment
 - 4-1-1 Factory preset jumper for 60Hz. Remove jumper when running @ 50Hz.
 - 4-1-2 Under frequency setting procedure, if necessary.
 - (1) Start the generator and set the output voltage.
 - (2) Adjust the generator speed controller until under frequency point is reached.
 - (3) Carefully turn U/F trimmer until the U/F LED is illuminated. (50Hz is set at 45Hz, 60Hz is set at 55Hz by default).

- 4-2 Voltage adjustment
 - 4-2-1 Carefully turn volt trimmer until rated voltage is reached.
 - 4-2-2 Install an external rheostat rated 1500~1000Ω 1/2W between "EXT.VR" terminal, if necessary.

- 4-3 Stability adjustment
 - 4-3-1 Carefully turn stability trimmer until output voltage is stable.

EXCITATION:

If the generator is running at rated rpm and the voltage still does not build up, please check if the wiring is correct. Try to exchange F+ with F-. If the voltage is still does not build up, you may need to flash the field from another source.

The method is as follows:

Start the engine and run the generator at rated speed. Using a 12VDC power source, apply 12 VDC + input to F+, DC - to F-. When the AC voltage reaches 1/3 ~1/2 of the rated output, remove the DC input. The voltage should continue to build automatically.

P.S. Do NOT leave the DC input connected to F+ and F- for a long time, it will cause AVR and / or exciter damage!

2. CONNECTION:

- 6-1 Link the generator field to F+ and F-
- 6-2 Link sensing input to "AC".
- 6-3 Link external trimmer to "EXT.VR" if desired.
- 6-4 Select 50Hz or 60 Hz system.

NOTE: Advanced Service And Parts, LLC will not be responsible for incidental or consequential damages. Customer is responsible for the correct application, installation, and adjustment. We do not manufacture regulators; they are made by various manufacturers for us.