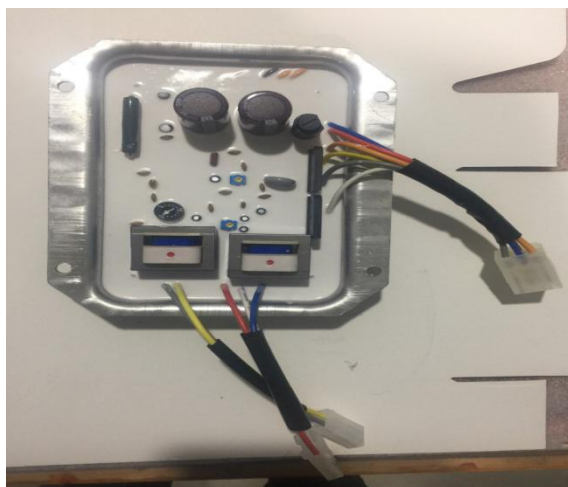


AN-5-203



1. Description:

AN-5-203 Automatic Voltage Regulator (AVR) is a partially sealed electronic device specially designed for supporting Denyo generators. The AVR automatically adjusts the output voltage of the generator by controlling the excitation current of the generator exciter.

2. Technical parameters:

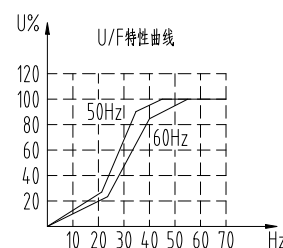
- ♦Auxiliary winding input: AC 55V-110V;
- ♦Maximum excitation voltage output: 120V/5ADC/10S;
- ♦Main winding voltage input: 400VAC, 50HZ/60HZ,
- ♦ Low frequency protection 50/60HZ adjustable;
- ♦The generator field resistance is $\geq 5\Omega$;
- ♦ Steady-state voltage regulation rate $\leq \pm 0.5\%$;
- ♦Voltage adjustment range $\geq 15\%$;
- ♦The minimum remanent excitation voltage is $\geq 5V/30Hz$;
- ♦When the external potentiometer is $1K\Omega/1W$, the voltage is finely adjusted by $\pm 12\%$; when the external potentiometer is not used, the connecting piece is shorted.

3. Precautions for use:

Installation, connection, and inspection operations must be performed by personnel with specialized knowledge to install the regulator in the generator or to prevent others from touching it. Do not touch the regulator during operation to avoid dangerous accidents.

4. Adjustment:

4.1 Low Frequency Protection Adjustment (U/F)



The "U/F" potentiometer is the frequency inflection point value for setting the low frequency protection. When used at 50 Hz, the low frequency protection is generally set to 46 Hz. When used at 60 Hz (56 Hz setting), the setting steps are as follows: the engine is started and the voltage is established. Adjust the engine to the desired low frequency value, and slowly adjust the "U/F" potentiometer counterclockwise to make the generator voltage start to drop. The protection action is as shown in the figure below. When the frequency is lower than the set inflection point value, the frequency is insufficient. Under this condition, the generator output voltage will drop due to the low frequency protection action to prevent the low frequency over excitation from damaging the magnetic field stator coil. At 60 Hz, re-adjust the "U/F" potentiometer to the desired low frequency protection value (56 Hz).

4.2 Voltage Adjustment (VOLT)

Before starting the machine, the voltage setting potentiometer can be turned counterclockwise (the factory has been set to 400V), and the external potentiometer port is shorted. When the generator set is running normally and reaches the rated speed, the potentiometer adjusts clockwise and the voltage rises, otherwise the voltage Drop until the output voltage meets the requirements.

If the user needs to adjust the external voltage, the external potentiometer port connection line on the AVR can be disconnected and connected to a potentiometer. Because the AVR external port is charged, if the external control voltage trimmer potentiometer is to be installed, the potentiometer must be To ensure good insulation, it is recommended to use a full plastic multi-turn potentiometer. If a metal case potentiometer is used, the outer casing must be grounded!

4.3 Stability Adjustment (STAB)

Adjusting the "STAB" potentiometer can stabilize the generator output voltage, but excessive adjustment will cause the generator to have a large voltage volatility under heavy load. It is recommended that the generator run at no load, check if the speed is correct, stabilize the "STAB" potentiometer counterclockwise, and then slowly rotate clockwise until the generator voltage starts to fluctuate. The correct setting is to turn slightly counterclockwise from this position (ie the voltage is stable at this point, but should be very close to the unstable zone).

5. excitation:

When the residual voltage of the generator is insufficient to make the AVR establish voltage, it must be externally excited. After the engine is started, use a 12V battery, the negative pole of the battery is connected to the F- of the AVR, and the anode of the battery is connected through a diode of (5A). The F+ of the AVR stops the excitation immediately when the generator voltage is established at 20%.

important: diodes must be used to ensure that the AVR is not damaged!

6. Installation dimension drawing and wiring instructions:

