

AVR-4

ALTERNATOR VOLTAGE REGULATOR



DESCRIPTION

DATAKOM AVR-4 voltage regulator is an electronic device which lets the alternator to produce a fixed output voltage.

The device has open chassis, resin molded design and is intended to be mounted in the alternator's terminal box. The unit does not include moving parts; therefore it is able to operate in highly vibrating environments.

The device measures phase to neutral of the alternator and adjusts the DC voltage applied to the excitation winding in order to reach the desired voltage.

The unit offers low-frequency protection feature. A frequency measuring circuit continually monitors the generator output and provides low-frequency protection of the excitation system, by reducing the output voltage proportionally with frequency below 45Hz.

The excitation power is derived directly from the generator terminals. The required minimum residual voltage for build up is 2 V-AC.

The output stage of the device is a Half Wave thyristor output associated with a free wheeling diode.

Basically the unit is compatible with all brushless type alternators. A stability adjustment potentiometer is also provided for this purpose.

FEATURES

Half-Wave thyristor output

0-115 volts output voltage

Start-up with 2 VAC

Compatible with various alternators

Designed for highly vibrating environment

Built in voltage adjustment

Stability adjustment

Soft starting of voltage

Compatible for 50 and 60 Hz

Low frequency protection

Simple connection diagram



INSTALLATION



To avoid risk of electric shock, do not touch terminals and heatsink.



Do not increase the voltage above rated generator voltage.

VOLTAGE ADJUSTMENT

The generator output voltage is set at the factory, but can be manually adjusted using the **VOLT** potentiometer. If voltage adjustment is required, proceed as follows:

- Turn the **VOLT** control fully anti-clockwise.
- Turn **STABILITY** control to midway position.
- Connect a suitable voltmeter (0-300VAC) across line to neutral of the generator.
- Start the genset, and run on no-load.
- Carefully turn **VOLT** control clockwise until desired voltage is reached.
- If instability is present at rated voltage, refer to **STABILITY** adjustment, then re-adjust voltage if necessary.

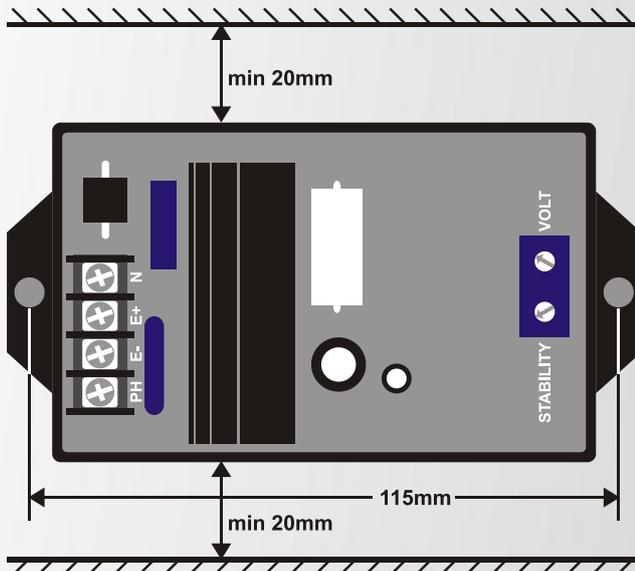
STABILITY ADJUSTMENT

The stability pot adjusts the reaction speed of the device. This helps the unit to comply with various alternators.

The correct setting can be found by running the generator at no load and slowly turning the stability control anti-clockwise until the generator voltage starts to become unstable. The optimum or critically damped position is slightly clockwise from this point.

MOUNTING THE UNIT

The unit is able to work in any position, but it is best to mount it on a vertical surface with enough space above and below for the adequate cooling. This will allow lower heatsink temperatures and wider operating temperature range.



TECHNICAL SPECIFICATIONS

INPUT

Voltage 195-265 V-AC (L-N)
Frequency 50/60 Hz nominal

OUTPUT

Voltage max 115 V-DC at 230 V-AC input
Current max 4 A-DC (continuous)

REGULATION

±%1 (with %4 engine governing)

SOFT START

2 sec

UNDER FREQUENCY PROTECTION

45 Hz

BUILD UP VOLTAGE

2 V-AC at AVR terminals

DIMENSIONS

125x68x35mm (L x W x H),
Weight: 200gr
Fixing centers: 115mm, 2xM6

ENVIRONMENTAL

Operating temperature -20 to +70 °C
Maximum humidity 95% non-condensing.
Storage temperature -30 to +80 °C

WIRING

