

## APECS® 500

### Single Speed Electronic Engine Controller

#### Description

The APECS 500 controller combines the convenience of manual adjustments with the flexibility of a computer-based calibration tool. Electrical connections consist of six wires to battery, actuator and magnetic engine speed pickup. For most applications, APECS 500 can be connected and adjusted with simple hand tools.



APECS 500 controls and limits engine speed by adjusting the fuel control lever with a proportional actuator. The controller will maintain fixed engine RPM regardless of load provided that the engine's available power is not exceeded (i.e., isochronous operation).

The controller has a multi-turn potentiometer for speed adjustment and a single-turn potentiometer for gain adjustment. It has six Euro-style screw terminals for:

- Battery Positive and Negative (9-30 Vdc). Reverse voltage protected.
- Actuator Positive and Negative (6A continuous). Short circuit protected.
- Magnetic Pickup (MPU) Positive and Negative (2 Vac minimum at 1000 Hz)

As shipped from the factory, APECS 500 can be manually adjusted for stable operation on most applications that supply a magnetic pickup frequency of 2500 to 5000 Hz. Through use of the optional APECS calibration tool (ACT), several user-adjustable features may be accessed, including:

- Frequency range (200-15,000 Hz)
- Synchronized speed sampling
- Proportional, Integral and Derivative gains
- Overspeed shutdown and delay
- Underspeed shutdown and delay
- Crank-to-run transition speed
- Warm-up speed and time
- Start-up gains
- Offset to actuator command
- Battery voltage compensation

#### Applications

The APECS 500 single speed controller is designed to meet the needs of the small genset market where simplicity, ease of operation, and low cost are key features.

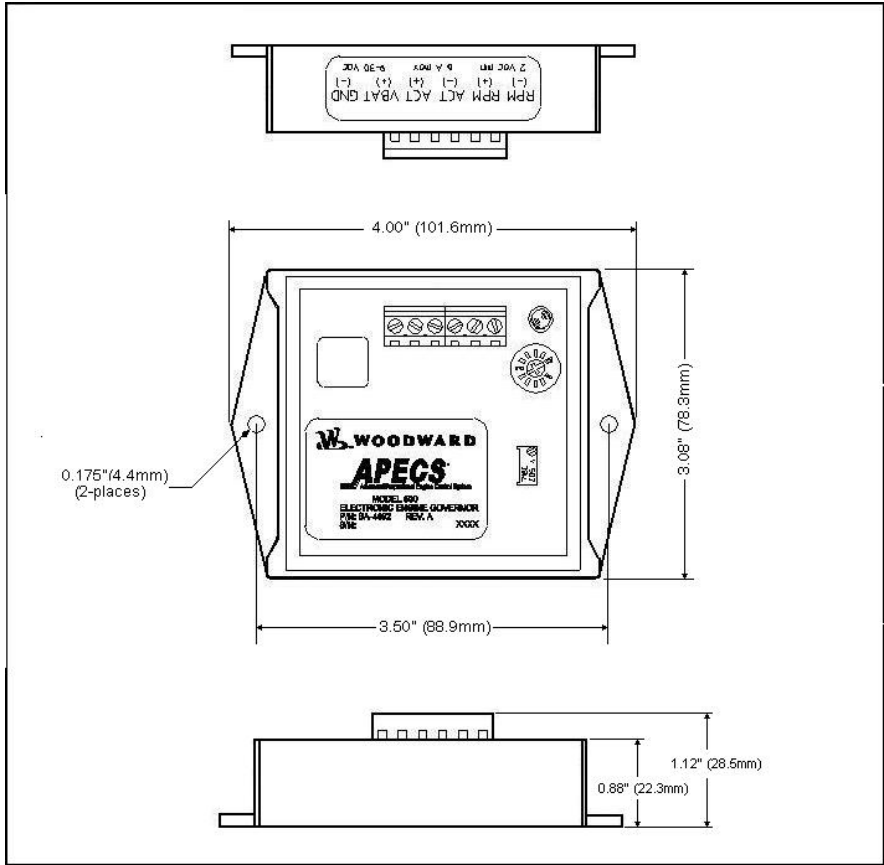
- Manual or PC-based calibration
- Environmentally sealed plastic enclosure
- Six Euro-style terminals for battery voltage, actuator and magnetic pickup
- 20-turn speed setpoint potentiometer
- Single-turn gain potentiometer
- Status lamp
- Programming interface for optional user flexibility
- Microprocessor control

# Specifications

Ambient Operating Temperature:	-40 to 85° C (-40 to 185° F)
Battery Voltage:	9-30 Vdc, reverse voltage protected
Electro-magnetic Compatibility:	30 V/m 2-1000 MHz
Magnetic Pickup:	2 Vac minimum @ 1000 Hz
Actuator Output*:	6 A max (PWM)

(\* ) Compatible with all APECS proportional actuators (linear and rotary).  
Includes short circuit and open circuit detection/protection.

# Dimensions



**APECS 500 Controller: SA-4492**

**Calibration Tool (ACT): SA-5206 (optional)**

**Service Manual: 36513**



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