APRCS® 500
Single Speed Electronic Engine Controller

Description

The APRCS 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, APRCS 500 can be connected and adjusted with simple hand tools.

APRCS 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.
- Magnetic Pickup (MPU) Positive and Negative (2 Vac minimum at 1000 Hz)

As shipped from the factory, APRCS 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 APRCS 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 APRCS 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.
### Specifications

<table>
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<tr>
<th>Specification</th>
<th>Details</th>
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<tbody>
<tr>
<td>Ambient Operating Temperature</td>
<td>-40 to 85°C (-40 to 185°F)</td>
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<tr>
<td>Battery Voltage</td>
<td>9-30 Vdc, reverse voltage protected</td>
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<tr>
<td>Electro-magnetic Compatibility</td>
<td>30 V/m 2-1000 MHz</td>
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<tr>
<td>Magnetic Pickup</td>
<td>2 Vac minimum @ 1000 Hz</td>
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<tr>
<td>Actuator Output*</td>
<td>6 A max (PWM)</td>
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(*) Compatible with all APECS proportional actuators (linear and rotary). Includes short circuit and open circuit detection/protection.

### Dimensions

![Dimensions Diagram](image)

APECS 500 Controller: SA-4492
Calibration Tool (ACT): SA-5206 (optional)
Service Manual: 36513