APECS® 2000
The powerful microprocessor-based controller of the APECS (Advanced Proportional Engine Control System) monitors the actual speed of the engine through a speed sensor, compares the actual speed with the desired speed, then sends a pulse width modulated signal to the precision proportional actuator to maintain the desired speed.

Features:
- Proportional, Integral and Derivative control (PID)
- Isochronous governing ± 0.25% (20 turn setpoint)
- Remote speed setpoint (± 10% speed change or 0–100% of internal setpoint)
- Surface mount technology
- Signal source: magnetic pickup
- Electrostatic discharge protection
- Reverse polarity protection
- Protection against miswiring
- Diagnostics for broken wire, overspeed, and internal component check
- Engine compartment mountable and can be used with all sizes of APECS actuators
- Rugged case potted for environmental protection

Order Information:

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<th>ORDER NO.</th>
<th>Model</th>
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<td>SA-4389</td>
<td>2000</td>
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E.E.C. Directive Compliance: All parts supplied by Woodward are classified as components, and therefore are not “CE” marked. Please contact factory direct for details on specific product compliance with 89/336/EEC and 89/392/EEC directives.

phone: 847-967-7730
APECS® 2000

**Dimensions:**

**FRONT VIEW**

- 5.12" [130 mm] (MIN)
- 9.50" [241 mm] (MAX)

**SIDE VIEW**

- 6.20" [157.5 mm] (MIN)
- 13.0" [330 mm] (MAX)

**Electrical Specifications:**

- Operating Voltage: 9–30 VDC (wide range)
- Overspeed Protection: Automatic shutdown at 125% of setpoint speed
- Speed Input Signal: 250 Hz to 10,000 Hz (5 ranges)
- Signal Input Minimum: 2 VRMS at cranking
- Output: PWM up to 8 A

**Mechanical Specifications:**

- Operating Temperature: -40°F to 185°F (-40˚C to 85˚C)
- Vibration: 6 G’s from 20 to 500 Hz
- Shock: 4 foot drop test
- Protection: Potted electronics for environmental protection
- Terminals: Nickel plated, humidity and salt spray resistant
- Weight: 1.4 lbs (0.6 kg)

Specifications are for reference only.

**WARNING:** An overspeed shutdown device, independent of the APECS system, should be provided to prevent loss of engine control that may cause personal injury or equipment damage.

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