



- J1939 CAN communication
- (9 to 32) V (dc) operation
- IP67 enclosure
- Fixed or variable speed controller
- Switched or analog speed setpoint control
- Auto idle
- Fuel mapping
- Current based fuel rack feedback
- PTO mode
- Engine protection
- Flexible programming via RS-232
- Product manual: 36752

## **APECS™ 4500**

### **Performance and Flexibility Upgrade for Small Mechanically Governed Industrial Engines**

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# APECS\* 4500

## Performance and Flexibility Upgrade for Small Mechanically Governed Industrial Engines

### Benefits

The APECS\* 4500 electronic controller optimizes control and flexibility for your existing mechanically governed engine. By adjusting the fuel control lever with a Woodward proportional actuator, the 4500 system controls and limits engine speed and fuel delivery. By adjusting to load, temperature, and fuel quality, it optimizes your engine's operating efficiency.

- Automatic start-up
- Autocrank control for starter motor
- Temperature-dependent glowplug timing control
- Universal speed input can detect engine speed from either MPU, coil spark, magneto spark, or hall-effect sensors
- Start-up smoke limiting
- Speed control—Either isochronous or droop speed selection is possible
- Configurable ramp rates for acceleration and deceleration
- Programmable auto idle speed and inactivity delay parameters
- Boost pressure based fuel control
- Engine protection—underspeed and overspeed protection
- Ground speed limiting
- Internal diagnostics—with external notification via LED or discrete out
- Enclosure sealed to IP67
- Operating temperature range of  $-40\text{ }^{\circ}\text{C}$  to  $+85\text{ }^{\circ}\text{C}$
- Can drive any Woodward proportional linear actuator up to 4000 mA with PWM output
- Configurable discrete outputs for lamp drivers, relays, etc.

### Applications

The APECS 4500 controller is part of a family of “off-engine” ECU's for industrial engines in the output range of 3 kW to 200 kW (4 hp to 270 hp).

The controller can be used on all kinds of engine applications, including (but not limited to) power generation, direct drive, hydraulic drive, and pump drive systems.

### Installation

The APECS 4500 Control unit is preferably off-engine-mounted away from major heat sources. It can be mounted on-skid for skid-type application and in cab for vehicle-type applications.

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## Features

APECS 4500 CONTROLLER FAMILY FEATURES	ADDITIONAL HARDWARE REQUIRED?	FEATURE PRESENT IN:		
		SA-4489	8800-1006	8800-1012
Actuator Current Protection	No	●	●	●
Autocrank	Yes	●	●	●
Auxiliary Output	Yes	●	●	●
CAN Communications	No		●	●
Droop Governing	No	●	●	●
Engine Protection Input	Yes	●	●	●
Engine Start Calibration	No	●	●	●
Fuel Limiting: MAP-based	Yes			●
Fuel Limiting: Speed-based	No			●
Glowplug Control	Yes	●	●	●
Switched Glowplug Timing	Yes			●
Overspeed / Underspeed Protection	No	●	●	●
PID Gains Adjustment No	No	●	●	●
PTO Switch Input	Yes	●	●	●
Analog Speed Setpoint Input	Yes	●	●	●
Switched Analog Speed Ranges	Yes			●
Switched Speed Setpoint Inputs	Yes	●	●	●
Auto Idle / Configurable Brake Rate	Yes			●

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PO Box 1519, Fort Collins CO 80522-1519, USA  
1000 East Drake Road, Fort Collins CO 80525, USA  
Phone +1 (970) 482-5811 • Fax +1 (970) 498-3058

Email and Website—[www.woodward.com](http://www.woodward.com)

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