



Controls Inc. has developed new microprocessor-based controllers, the C4 (left) and G4 (right) designed for engine monitoring and control for Tier 4, SAE J1939 diesel and natural gas engines. The modules are available as stand-alone controls or as part of a complete control panel system.

## STAYING IN CONTROL FOR TIER 4

Controls Inc. releases next-generation C4 and G4 engine control modules for Tier 4 diesel and gaseous-fueled engines

BY DJ SLATER

**C**ontrols Inc., the Medina, Ohio, manufacturer of engine and generator set control systems, has developed a new series of engine control modules for Tier 4 interim engines. The C4 module is suited to a wide array of diesel and natural gas applications, while the G4 is specifically for generator use.

These controls are an extension of the existing C series product line, according to Controls Inc. President Bob Cowen. "The C3 addressed many needs in the engine control market," Cowen said. "And the C4 and G4 build on this success with more features, flexibility and emissions support."

Employing advanced microprocessor designs and environmentally rugged packaging, the modules boast simple, self-contained integration into equipment ranging from basic power units up to sophisticated schemes that previously required additional modules, the company said. "Adding relays, PLCs and timers to panels adds expense and complexity that integrators can't afford," Cowen said. "Our modules eliminate these headaches and cut the variety of products needed to serve customers."

The C4 control is designed to offer an unprecedented level of integra-

tion in a single model. Able to control mechanical, Tier 3, Tier 4 diesels, as well as spark-ignited engines, the C4 is a complete package, the company said. Controls' exclusive programmable input and output technology enables users to configure the analog inputs, digital inputs and relay outputs to a wide array of functions without the need for external computers or extensive training, the company said.

In addition, the technology makes it easier to select operator throttle control via the up and down buttons on the module, discrete switches or analog senders (voltage or current-loop)



The XCAN-AC module collects input signals from a generator and converts and broadcasts the data onto an SAE J1939 CANbus. The XCAN-AC module can be used in conjunction with the G4 control.

and engine throttle via J1939 torque speed or relay outputs. Outputs have been expanded to eight relays, and inputs to eight digital and seven analog. Data logging keeps track of the last 16 events and time stamps each with the corresponding engine hour.

The G4 unit works in concert with the company's XCAN-AC module to form what Cowen called one of the safest, most economical gen-set controls on the market. The XCAN-AC is an instrument-grade measurement module that reads the generator voltages and current transformers directly. The True-RMS readings are then broadcast on the CANbus for display by one or more G4 units. Wiring is reduced by placing the XCAN-AC module right at the generator end. The 3KV galvanic isolation between the generator side and engine increases safety and makes the unit ideal for marine use, the company said. The G4 can also display kWh, power factor, kVA and kVAR.

Tier 4 interim monitoring for both the C4 and G4 controls is provided by a set of indicating lamps in addition to informational messaging on the display and menu adjustments. By employing industry-standard symbols and wording, common understanding of the Tier 4 functions is ensured across engine makes. "As the interface to the user, we take clear and concise enunciation very seriously," said Cowen. "Doing so

reduces service calls and increases customer satisfaction."

Also new is the addition of Modbus support. "Our customers' use of SCADA in the oil and gas industry led us to add this feature," said Cowen. "We went one step further and added the ability to perform speed control and engine start/stop through Modbus as well."

The sealed polycarbonate case is dust resistant and waterproof. Connections are made through two AMPSeal connectors. The company offers complete panels incorporating the C4 and G4 units with sealed keyswitches, lamps and gauges that maintain a waterproof barrier without sealed enclosures or doors. Terminations to industry-standard engine harnesses are offered for true plug-and-play utilization.

The C4 and G4 modules are available for auto-start applications, using automatic speed control to allow an engine to warm up, accelerate and cool down with no operator involvement. A separate auto-start configuration menu allows an operator to program the throttle settings, such as setting time delays for starting, warming up and cooling down the engine, the company said. **dp**

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