EGCP-2
Engine Generator Control Package

Applications

The EGCP-2 is a complete microprocessor-based engine-generator control and management package. It is designed for use with an automatic voltage regulator and a speed control to automate and protect diesel or gas engine based generator sets.

Designed for up to 30,000 kW generator sets, the EGCP-2 can be configured to operate stand-alone or utility paralleled.

A network of EGCP-2 controls is capable of controlling up to eight un-manned generator sets for base-load, peak shaving or backup power generation.

Description

The control's functions include:

- **Engine Control**
  - Engine Pre-glow Control
  - Fuel Solenoid Control
  - Engine Starter Control
  - kVA Controlled Cool-down Timer
  - Oil Pressure Monitoring
  - Water Temperature Monitoring
  - Battery Voltage Monitoring
  - Speed Monitoring with Overspeed Protection

- **Synchronizing**
  - Digital signal processing to eliminate harmonic issues
  - Adjustable phase window, voltage window, and dwell times
  - Safe dead bus closing logic internal to the control
  - Synchronization across generator and mains breakers
  - Multiple shot re-closing with adjustable time delays
  - Manual voltage and speed adjusts for manual synchronizing

- **Real kW Load Control**
  - True RMS power calculations
  - Load Bias Signal to engine speed control, configurable for ±3 Vdc, 0–5 Vdc, or 500 Hz PWM
  - Configurable load/unload ramp rates
  - Isochronous load-sharing of up to 8 units using percentage-based load sharing
  - Base load control for optimum fuel efficiency
  - Import/Export control using a watt transducer
  - Soft Utility Transfer Function
  - Externally adjustable Base Load or Process Reference levels with independent ramp rates
  - kW droop provided for manual load control

- **Gen-Set Synchronizing**
- **Automatic Sequencing of Multiple Units**
- **Automatic Start/Stop Control**
- **Digital Display of Engine and Generator Data**
- **Modbus® Communications**
Reactive kVAR Control
- PF sharing on isolated bus
- Voltage Trim feature for single generator operation
- Voltage Bias signal to AVR configurable for ±1, ±3, or ±9 Vdc
- Power Factor or VAR control when base loaded
- Externally adjustable VAR or PF setpoint levels

Automatic Generator Sequencing
- Automatically starts and stops gen-sets based on system load demand
- Configurable system load demand start/stop levels and timers
- On-line engine priority sequence configurability from any EGCP-2 or a PLC to equalize run-time

Engine Protective Features
- High/Low Coolant Temperature
- High/Low Oil Pressure
- Overspeed
- Battery Voltage
- Start Failure

Generator Protective Features
- Over/Under Voltage
- Over/Under Frequency
- Reverse Power (Inverse time delay)
- Reverse VARs
- Overcurrent (Inverse time delay)
- Loss of Utility Power detection
- Speed/Frequency Mismatch
- Load Surge

Communications
- Modbus® or DDE communications via RS-422 based serial port
- EGCP-2 Control View HMI for PC
- RS-485 EGCP-to-EGCP load-sharing communications network
- EGCP-2 Configuration file Upload/Download capability through a PC interface program

*—Modbus is a trademark of Schneider Automation Inc.

Hardware Specifications

- Size: 282 mm (11.1") high x 358 mm (14.1") wide x 69 mm (2.7") deep
- Operator Control Panel: 8 (20-character) lines plus membrane keypad
- Power Supply Voltage: 12 or 24 Vdc nominal (9–32 Vdc)
- Control Part Numbers: 8406-120 (150–300 Vac PT sensing range)
- Connectors: Terminal blocks are screwless CageClamp style blocks
- Operating Temperature Range: –20 to +70 °C (–4 to +158 °F), around outside of EGCP-2 chassis
- Relative Humidity: 95% non-condensing, at 30 to 60 °C
- Regulatory Compliance: The EGCP-2 is marked in accordance with EMC and Low Voltage Directives and is UL/cUL
  and CSA listed for ordinary locations.
- Vibration: Suitable for engine skid or control cabinet.

---

EGCP-2 Outline Drawing (Do not use for construction)
**EGCP-2 Applications**

- Single Unit—No Utility Parallel
- Single Unit—Utility Parallel
- Multiple Unit—No Utility Parallel
- Multiple Unit—Utility Parallel

**Typical Multiple Unit Parallel Application**

For a complete set of EGCP-2 Installation/Operation or Application manuals, connect to the Woodward Internet website and download the desired manual(s):

http://www.woodward.com/ic

- Installation & Operation manual 26174
- Application manual 26175
- Communication manual 26181

---

**Distributors & Service**

Woodward has an international network of distributors and service facilities. For your nearest representative, call the Fort Collins plant or see the Worldwide Directory on our website.

For more information contact: