



EGCP-1

Engine Generator Control Package

- Engine Control
- Gen-Set Synchronizing
- Automatic Sequencing
- Real KW Load Control
- Reactive KVAR Control
- Gen-Set Protection
- Engine Protection
- Modbus Communications

APPLICATIONS

The EGCP-1 is a microprocessor based complete generator control and engine management package. It is designed for use with an automatic voltage regulator and a Woodward speed control to automate and protect diesel or gas engine based generator sets. Designed for small to medium size generator sets, the EGCP-1 can be configured to operate stand-alone or utility paralleled sets. A network of EGCP-1 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 accurate control.
- Configurable loading/unloading 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.

Reactive (KVAR) Control

- VAR sharing on isolated busses using percentage based reactive load sharing.
- 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 plant bus or process demand.
- Configurable plant bus demand start\stop levels and timers.
- On-line engine priority sequence configurability from any EGCP-1 or a PC to equalize run-time.

Generator Protective Features

- Over/Under Voltage
- Over/Under Frequency
- Reverse Power (Inverse time delay)
- Loss of Excitation

- Over current (Inverse time delay)
- Loss of Utility Power detection
- Speed/Frequency Mismatch
- Load Surge

Engine Protective Features

- High/Low Coolant Temperature
- High/Low Oil Pressure
- Overspeed
- Start Failure

Communications

- Modbus or DDE communications via RS-422 based serial port.
- RS485 EGCP to EGCP Load-sharing communications network.
- EGCP-1 Configuration file Upload\Download capability through a PC interface program.

HARDWARE - SPECIFICATIONS

Size: 290mm(11.4") High x 228mm(10.9") Wide x 48mm(1.9") Deep.

Operator Control Panel: 8 (16 Character) lines, 9 Navigation Buttons.

Power Supply Voltages: 12Vdc (9-15Vdc) or 24Vdc (18-32Vdc)

Control Part Numbers: 8406-020 (12Vdc), 8406-021 (24Vdc)

Connectors: 4 quick-disconnect Burndy type connectors

Temperature Range: -40 to +70 °C

Relative Humidity: 95% non-condensing, at 30 to 60 °C.

EMI/ESD: Conforms to EN 55011:1991 (CISPR11:1990) Group 1, Class B and to prEN 50082-2-2:1994

Associated Standards: ENV 50140, ENV 50141, ENV 50142, EN 61000-4-2, IEC 801-4, IEC 801-5, IEC 1000-4-1 and BS EN 61010-1:1993

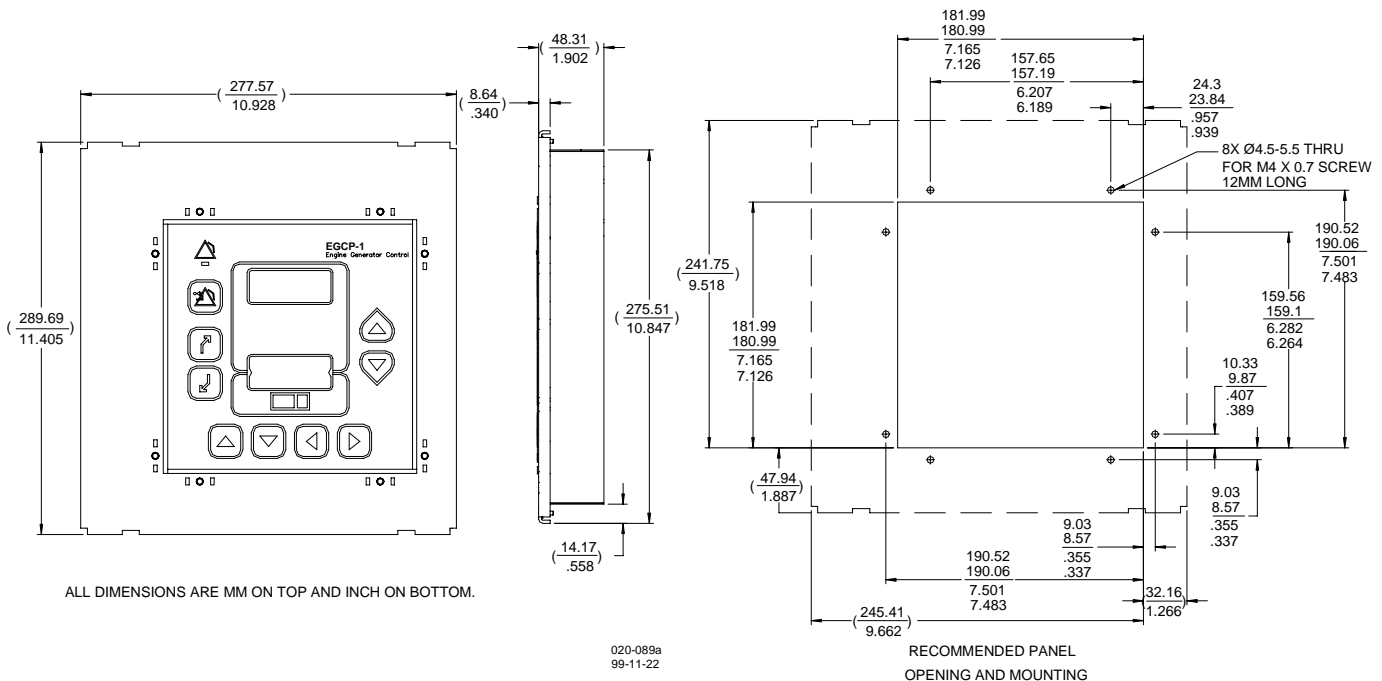
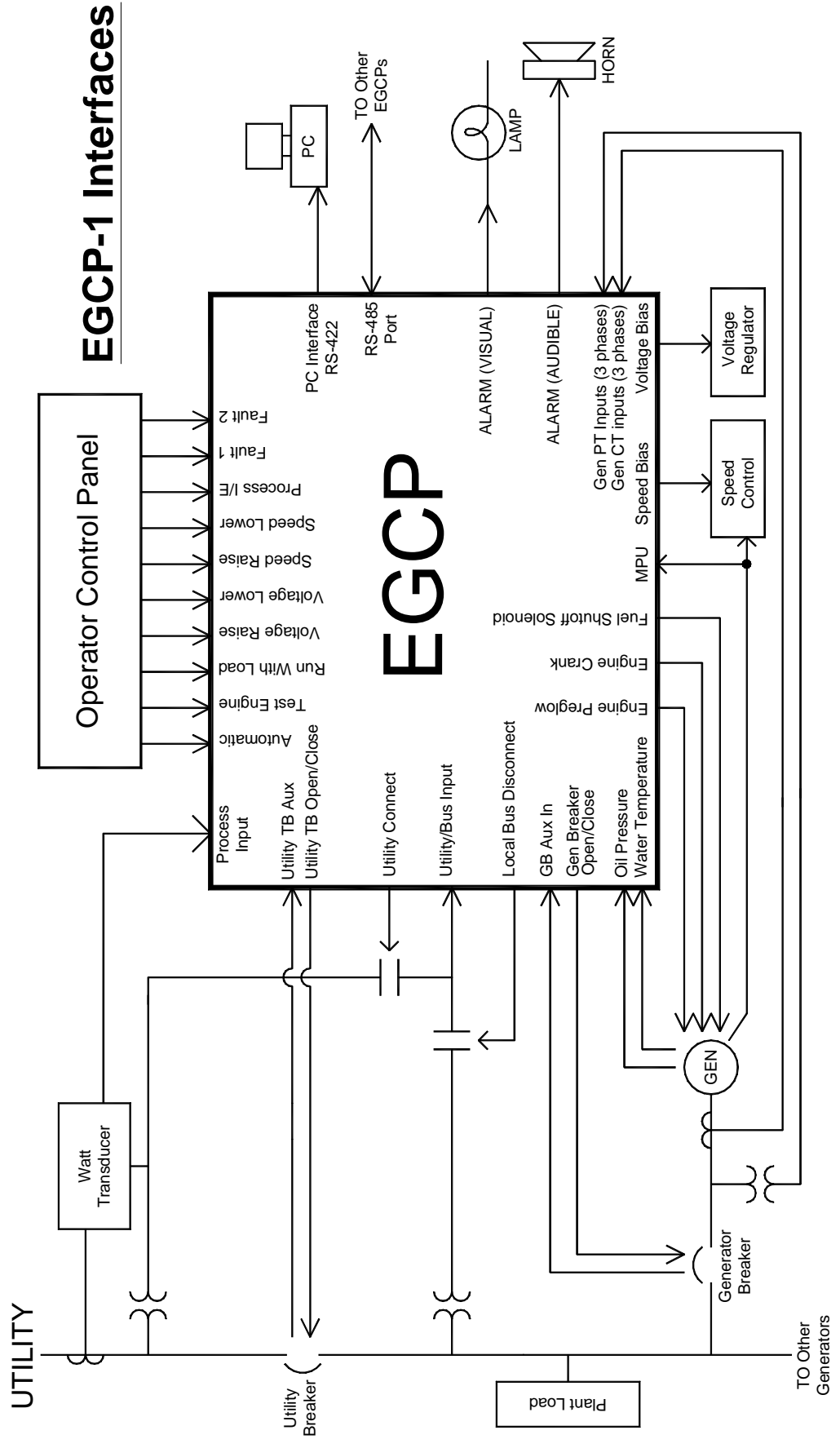


Figure 1. EGCP-1 Outline Drawing



EGCP-1 Interfaces

Figure 2. EGCP-1 Interactions

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EGCP-1 Applications

- Single Unit - No Utility Parallel
- Single Unit – Utility Parallel
- Multiple Unit - No Utility Parallel
- Multiple Unit – Utility Parallel

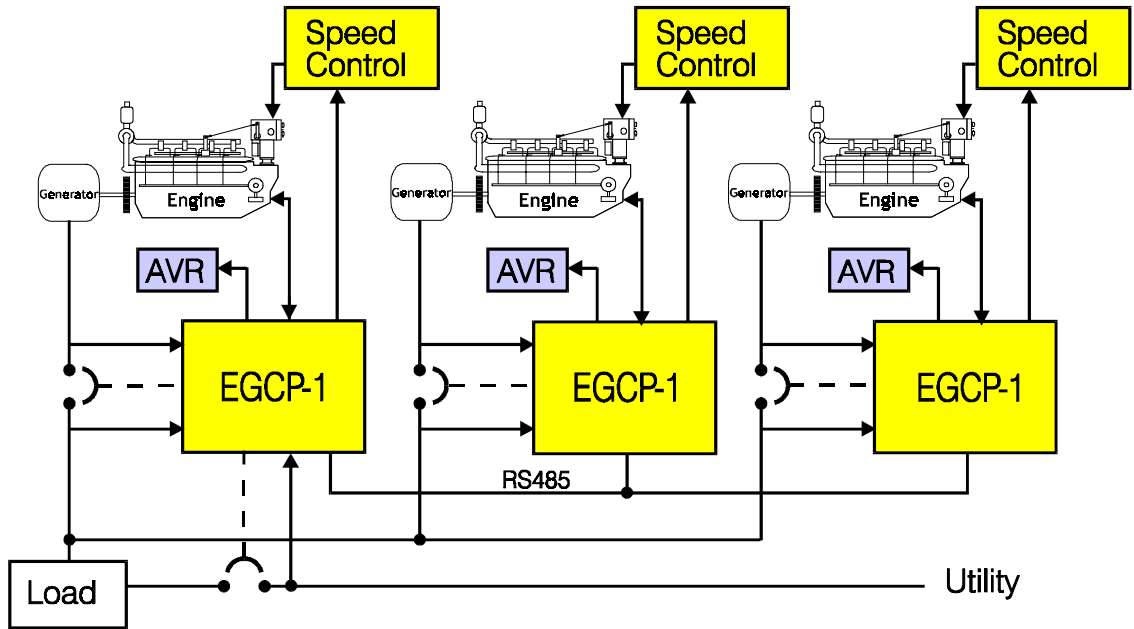


Figure 3. Typical Multiple Unit Parallel Application

For a complete set of EGCP-1 Installation/Operation or Application manuals connect to following Woodward Internet website and download the desired manual(s):

<http://www.woodward.com/industrial/gcpinfo.htm>

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