**Description**

The EGCP-3 MC is a powerful microprocessor-based system control and management package designed for the most demanding power generation applications.

The EGCP-3 MC combines power system, switchgear, bus and utility monitoring, protection, and control functions in a single, compact, and cost-effective package.

Perfect for medium and large-sized generating systems, the EGCP-3 MC is designed for use in ATS, peaking, or utility paralleled systems.

The MC is a supervisory control system that works with EGCP-3 LS units to provide total system control, including multiple utility tie applications.

**Applications**

**Real kW Load Control**
- True RMS power calculations
- Configurable load/unload ramp rates
- Load control of up to 15 EGCP-3 LS units using percentage based load sharing
- Utility Import/Export KW control
- Process control
- Externally adjustable load or process references (using Analog Inputs or Modbus)

**Reactive kVAR Control**
- Configurable load/unload ramp rates
- PF or VAR control using percentage based load sharing
- Utility Import/Export VAR or PF control
- Externally adjustable VAR or PF references (using Analog Inputs or Modbus)
- Manual voltage control capability

**Automatic Transfer Switch (ATS)**
- Open or Closed transition
- Configurable fast transfer time, LOM action delay, utility and bus stable delay
- Zero power transfer across breaker during closed transition
- Emergency Power Supply (EPS) supplying load alarm and discrete output
- LOM alarms and discrete output
- Load shed on overload

**Peaking Control**
- Automatic start/stop based on time of day or demand level
- Four time-of-day programs with two starts and durations per program
- Parallel to utility or perform open/closed transition for time-of-day starts
- Configurable time delayed start/stop and immediate start for demand levels
- Configurable time delay
- Automatic demand monitoring of multiple mains inputs

- Complete system control package
- Automatic load-demand sequencing of multiple units
- Synchronization of two breakers/contacts
- Comprehensive system protection—bus and utility
- Revenue-grade power and energy metering
- Digital display of bus, utility, and system data
- Real kW and reactive kVAR control
- Advanced network communications with Echelon® and Modbus® networks
- Built-in system diagnostics
Synchronizing
- Phase match or slip frequency synchronization with voltage matching
- Full three-phase sensing on both buses
- Adjustable phase window, voltage window, re-close attempts, re-close timing
- Dead bus closing logic internal to the control
- Synch check (25)
- Breakers or contactors

Communications
- Modbus® RTU via RS-232/-422/-485 serial ports
- ServLink, Watch Window via RS-232/-422/-485 serial ports
- Echelon® TP/XF-1250 network (LON)

Diagnostic Features
- Breaker/Contactor synchronization timeout and re-close alarms
- Breaker/Contactor feedback and shunt trip alarms
- Phase Rotation Mismatch
- Network communication error alarms
- Analog input out-of-range alarms
- Configuration check

*—Modbus® is a trademark of Schneider Automation Inc.
**—Echelon® is a trademark of Echelon Corporation

Bus Protective Features
- Over/Under Voltage (59, 27)
- Over/Under Frequency (81O, 81U)
- Directional (Forward/Reverse) Power (32) *
- Negative Sequence Phase Overcurrent (46)
- Negative Sequence Phase Overvoltage (47)
- Phase Overcurrent (51) *
- Voltage Restained Phase Overcurrent (51V) *
- Directional VAR
- Phase Current Imbalance (46) *

Utility Protective Features
- Over/Under Voltage (59, 27)
- Over/Under Frequency (81O, 81U)
- Directional (Import/Export) Power (32) *
- Negative Sequence Phase Overcurrent (46)
- Negative Sequence Phase Overvoltage (47)
- Phase Overcurrent (51) *
- Voltage Restained Phase Overcurrent (51V) *
- Directional VAR
- Phase Current Imbalance (46) *
- Loss of Mains/Loss of Mains with Alarm
- Load Surge (islanding protection)

*—Inverse Time Protections implemented are according to IEEE C37.112 “Very Inverse” curves
Hardware Specifications

Size: 282 mm (11.1”) high x 358 mm (14.1”) wide x 134 mm (5.275”) deep
Operator Interface Panel: 8 (20 character) lines plus membrane keypad
Power Supply Voltage: 24 Vdc system (18–32 Vdc nominal; 9–40 Vdc maximum)
Control Part Numbers: MC: 8406-114
Installation Manual: 26122
Operation Manual: 26195
Connectors: Terminal blocks are screwless CageClamp-style blocks. PT and CT inputs are fixed screw terminals.
Voltage Measuring Input Range: 70–300 Vac
Current Measuring Inputs: 5 Aac RMS nominal, 7 Aac RMS maximum
Rated short-time current (1 sec) 10 X (I) rated (8406-114 Rev D or later)
Temperature Range: –20 to +70 °C (–4 to +158 °F) operating
–30 to +80 °C (–22 to +176 °F) storage
Humidity: 95% at 60 °C non-condensing
Enclosure Rating: Type 4 (NEMA) requirements from the front panel and properly installed in an equivalent enclosure
Vibration: Suitable for engine skid or control cabinet
Random Test: 10–2000 Hz at 0.04 G²/Hz and 8.2 Grms PSD
Mechanical Shock: 30 G peak, 11 ms duration, non-operating
Regulatory Compliance: Class I, Division 2, Groups A, B, C, D for North America
Zone 2, Group IIC for Europe
Declared to the EMC; Low-Voltage, and ATEX Directives
Marine Type Approval: American Bureau of Shipping, Bureau Veritas, Det Norske Veritas, and Lloyds Register

EGCP-3 Outline Drawing and Panel Layout Template
(Do not use for construction)
**EGCP-3 MC Applications/Configurations**

**Multiple Unit–Utility Parallel**

- Unit 16
- EGCP-3 MC
- Load Breakers
- Bus A
- Unit 2
- EGCP-3 LS
- Unit 1
- EGCP-3 LS

**Multiple Unit–ATS**

- Unit 16
- EGCP-3 MC
- Load Breakers
- Bus A
- Unit 2
- EGCP-3 LS
- Unit 1
- EGCP-3 LS

**Multiple Unit–Multiple Unit Parallel**

- Unit 16
- EGCP-3 MC
- Synchronizer
- Bus A
- Unit 1
- EGCP-3 LS
- Unit 2
- EGCP-3 LS
- Unit 15
- EGCP-3 MC
- Load Breakers
- Bus B
- Unit 3
- EGCP-3 LS
- Unit 4
- EGCP-3 LS

**Other Configurations**

- Single Utility–Multiple Bus
- Multiple Utility–Single/Multiple Bus

For a complete set of EGCP-3 Installation/Operation manuals or Application Notes on the above configurations, download from the Woodward website at: [www.woodward.com/publications](http://www.woodward.com/publications)

For more information contact:

WOODWARD
PO Box 1519, Fort Collins CO, USA 80522-1519
1000 East Drake Road, Fort Collins CO 80525
Tel.: +1 (970) 482-5811  • Fax: +1 (970) 498-3058
www.woodward.com

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.

This document is distributed for informational purposes only. It is not to be construed as creating or becoming part of any Woodward Governor Company contractual or warranty obligation unless expressly stated in a written sales contract.

© Woodward 2002, All Rights Reserved