



Gold Box™

The Encorp Gold Box™ was among the first distributed intelligence control devices commercialized for on-site power supply optimization. Today's advanced rendition is the product of tens-of-millions-of-dollars of private and venture capital investment. Since its introduction into the global marketplace seeking solutions for the management of distributed energy resources (DER) in microgrids, demand response, combined heat and power and related virtual power plant (VPP) applications over 20 years ago, several thousand Gold Boxes have been installed in mission critical and premium power installations worldwide.

The Gold Box controller is a multi-faceted device that provides for the aggregation and control of all forms of DER, including advanced batteries. In many of these complex projects, the Gold Box also serves as the primary protection and control device at utility points of common coupling, offering a low-cost but feature rich solution serving both project hosts and utilities. The Gold Box is a great example of how advanced hardware systems can help solve DER control challenges on today's 21st century power grid.

Highlights

- Embedded PLC software module, IEC 1131-3 Programming
- Language (Ladder Logic)
- Communication through LONWORKS® and Modbus®
- (RS-232/485)
- UL recognized component
- Embedded software modules include synchronizer, true RMS real power sensor, VAR sharing, kW load sharing control with soft loading and unloading, base load control, VAR/PF control, protective relays and PLC — all in one box!
- Includes complete power metering and monitoring functions
- Utility-grade device
- Remote operation using a variety of communications methods
- Remote real and reactive power reference settings
- Programmable, separately isolated switch inputs and relay outputs
- Setup and configuration with standard PC (no hand-held programmer required)
- IEEE 1547 compliant

Complete Power Metering & Monitoring Functions

- True RMS real power sensor
- Remote power quality monitoring
- Remote energy/electrical metering
- Remote data logging

Customizable Design for Multiple Applications

- Peak shaving/sharing
- Microgrid control
- Soft loading closed-transition transfer
- Import/export
- Energy management
- Cogeneration
- Demand Response
- Real-time pricing
- Interruptible rates

Single/Multiple Genset Applications

The Gold Box with the PTC-enabled (Power Transfer Control) configuration provides safe, reliable transfer of power between a single generator and the utility grid. Standard options include a wide variety of traditional control modules and open-communication protocols integrated into a single unit.

The Gold Box with the kWS-enabled (kilowatt sharing) configuration provides safe, reliable paralleling of multiple generators. Combined with our UPC, the kWS-enabled Gold Box is ideal for synchronizing and paralleling multiple generators to the utility grid.

These integrated solutions provide easier and faster installation, increased reliability and the latest cutting-edge technology. Combined with our 2-year standard warranty and 24-hour technical support, the Gold Box is the complete solution for all distributed energy needs.

Intuitive Graphical User Interface

- Includes NST (Network Service Tool) setup and configuration tool for LONWORKS®-based hardware
- Store parameters for easy transfer between units
- 32-bit application, Windows® 95 and NT® 4.0 compatible
- Runs on standard desktop or laptop PC, eliminating the need for a hand-held programmer
- Basic monitoring functions built in
- Simple “drag-and-drop” interface
- Reads and displays LONMARK® object names
- Utilizes simple user-created forms
- Industry standard ODBC compliant database
- High-speed OLE automation server
- Reads and displays values and documentation for monitored data points

Protective Relaying Functions

- Sync check (25)
- Auto-synchronizer (25A) with voltage matching, two modes available:
 1. Frequency and phase matching
 2. Slip frequency
- Over/under voltage for generator and utility tie (27/59)
- Over/under frequency for generator and utility tie (81 O/U)
- Directional power (32)
- Directional reactive power (32VAR)
- Reverse-phase/phase-balance current (46)
- Phase sequence voltage (47)
- Voltage-restrained overcurrent (51VR)

Specifications

Environmental:

Humidity: 95% at 38° C

Temperature: -25° C to 70° C

Power Requirements:

18 to 75 Vdc (<10W)

85 to 265 Vac (<25W)

Single Phase Potential Input:

60 to 150 Vac; 50/60 Hz; delta, open delta or wye configurations

3-Phase Potential Inputs:

60 to 150 Vac; 50/60 Hz; delta, open delta or wye configurations

Single Phase Current Input:

0 to 5 amps; 50/60 Hz

3-Phase Current Inputs:

0 to 5 amps; 50/60 Hz

Digital Inputs:

20 to 40 Vac/Vdc; 85 to 150 Vac/Vdc

Digital Outputs:

1 to 120 Vac/Vdc; 0.15 amps max

Frequency and Voltage Bias Outputs:

+/- 3 Vdc and 4-20 mA

Designed to meet or exceed ANSI/IEEE C37.90-1989, IEEE Standards for Relays and Relay Systems associated with Electrical Power Apparatus (5000 Volt Surge Withstand)

Designed to comply with:

IEC 1000-4-2 Electrostatic Discharge

IEC 1000-4-3 Radiated Immunity

IEC 1000-4-4 Fast Transient

IEC 1000-4-5 Surge Withstand

IEC 1000-4-6 Conducted Immunity

ANSI/IEEE C37.90.1 Surge Withstand/Fast Transient

ANSI/IEEE C37.90.1 Radiated Immunity

Designed for LONMARK® Compatibility

Recognized to U.S. and Canadian requirements under the Component Recognition Program of Underwriters Laboratories