

GC2000 Generator Controller

Power Management and Protection



A powerful generator controller and power management system for marine and offshore applications

SELCO's GC2000 provides efficient and reliable controls for gensets in a wide range of marine power applications, installed in commercial ships, tugboats, fishing vessels, crewboats, yachts and naval vessels etc.

The GC2000 features a complete engine-generator control and protection system, and includes an extensive range of functions for engine control & monitoring, synchronizing, load-sharing, load depending start and stop and complete generator protection.

The GC2000 is designed to fit a wide range of applications, from basic genset control and monitoring applications to advanced and more complex power management solutions including combinations of shaft generators, bus tie breakers and shore power connections.



» Highlights

Full Integrated Control & Protection solution

GC2000 incorporates an extensive range of control, protection and monitoring functions, making it a full-featured out-of-the-box ready unit, that fits most marine power applications, without adding additional modules. The GC2000 is suitable for stand-alone generator control to applications with parallel operation of up to 32 gensets.

Easy Expansion Options

In case of extension requirements, I/O extension modules can be added to the dedicated CANopen bus. This can extend the inputs/outputs with up to 128 digital inputs, 64 digital outputs, 44 analog inputs and 8 analog outputs.



» Features

- Complete Generator control, monitoring and protection
- Automatic synchronisation and load sharing
- Embedded engine start/stop and alarm monitoring
- Power management including load-dependent start/stop schemes and blackout prevention/recovery
- Alternator control and protections
- Tie breaker control
- Non essential load tripping
- Load sharing redundancy and heavy consumer management
- LCD screen to display engine and generator values and alarms
- RS-485/CAN ports with Modbus RTU/TCP communication
- CAN bus dedicated for J1939, CANopen and I/O extensions
- Easy configurable via front panel or via a PC and internal configuration software
- Event logging
- SD card support





Functions

The GC2000 includes three main functions:

- Generator Control and Protection
- Engine Control and Monitoring
- Power Management.

Generator Control and Protection

The GC2000 includes Synchronizing and both active and reactive load sharing functions. The unit controls speed governors and automatic voltage regulators (AVR) by speed/voltage up/down pulses, analogue voltage or pulse width modulated signals.

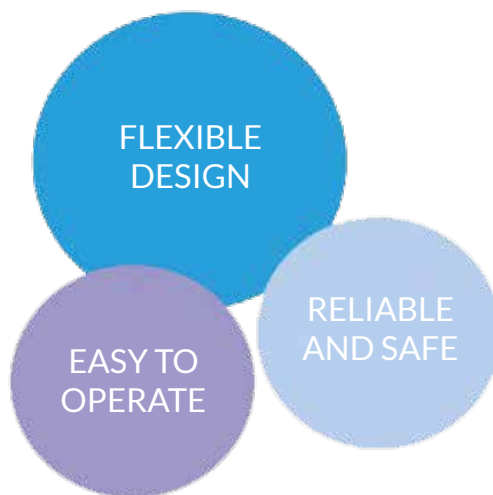
Thus GC2000 is compatible with most commonly used speed governors and AVRs.

Protection functions include:

- Overcurrent
- Over-/ Undervoltage
- Over-/ Underfrequency
- Reverse Power
- Excitation Loss
- Earth Fault Protection
- Non Essential Load Trip



- GENERATOR CONTROL & PROTECTION
- ENGINE CONTROL & MONITORING
- POWER MANAGEMENT



Engine Control and Monitoring

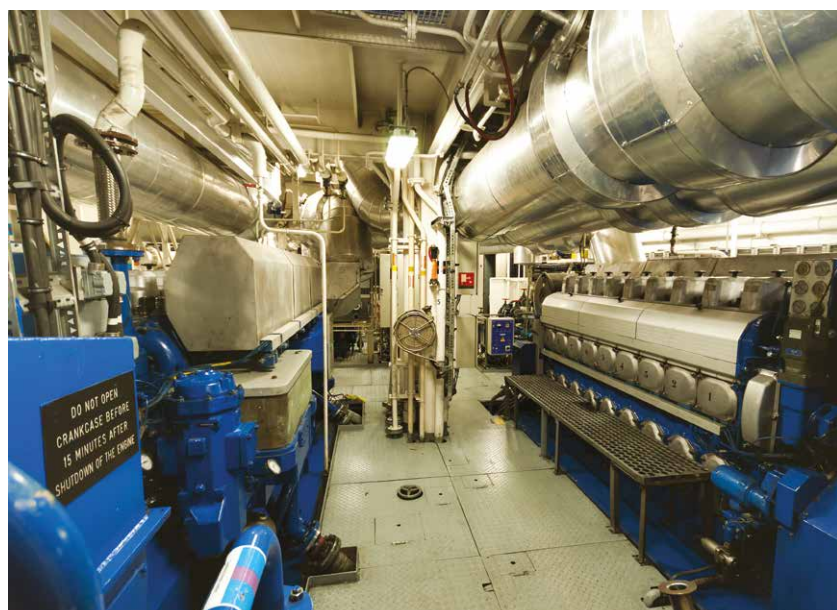
GC2000 includes an integrated Engine Controller taking care of start/ stop procedures and monitoring of the engine. The speed is measured through a magnetic pick-up input or generator frequency. This signal is used for detection of firing speed.

The J1939 bus can be used to interface with a large range of engine types.

For engine monitoring digital inputs or analogue resistive inputs can be used for connecting engine sensors such as lubrication oil pressure sensors and cooling water temperature sensors.

Power Management

- GC2000 includes a full power management system.
- Load Depending Start and Stop
- Large Consumer Handling
- Split bus function
- Short time synchronization to shore connection or shaft generator for load change over
- Automatic Black-Out Clearance

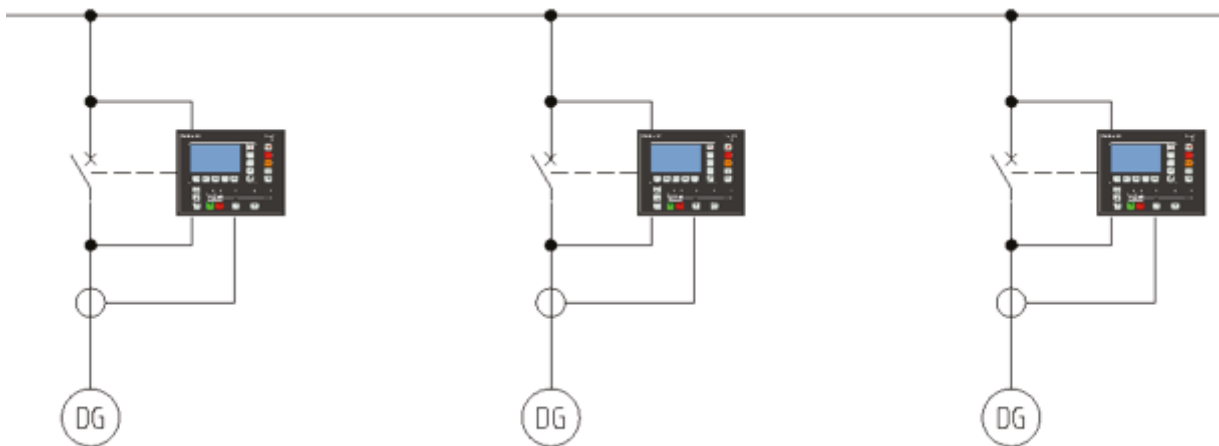


» Applications

GC2000 brings the flexibility and features needed to fit a wide range of power generation applications. From the simple one generator power back-up installation to more complex applications, GC2000 is always ensuring a cost effective power control and protection solution.

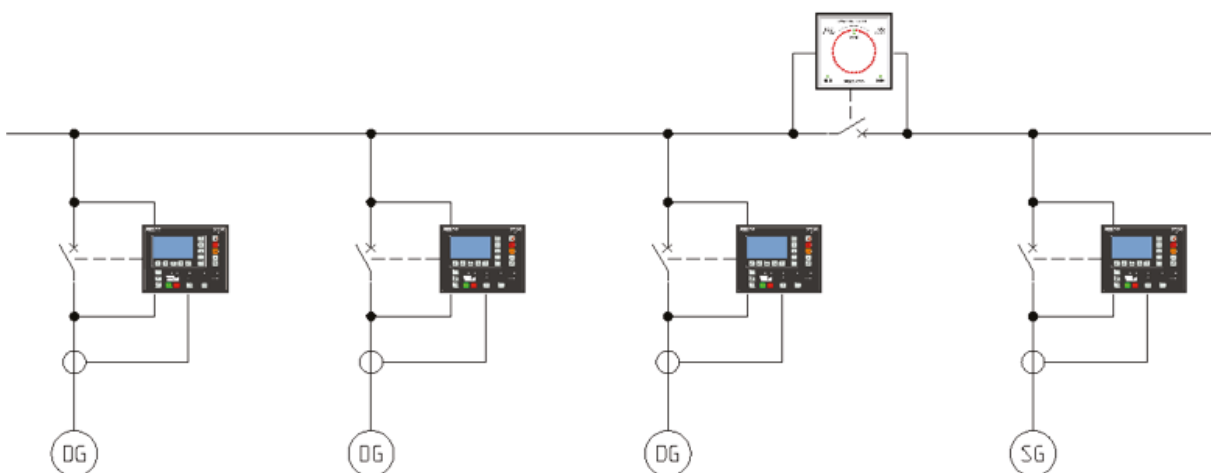
Marine Power Management Systems single bus-bar:

Common bus bar with load depending start and stop and blackout clearance:



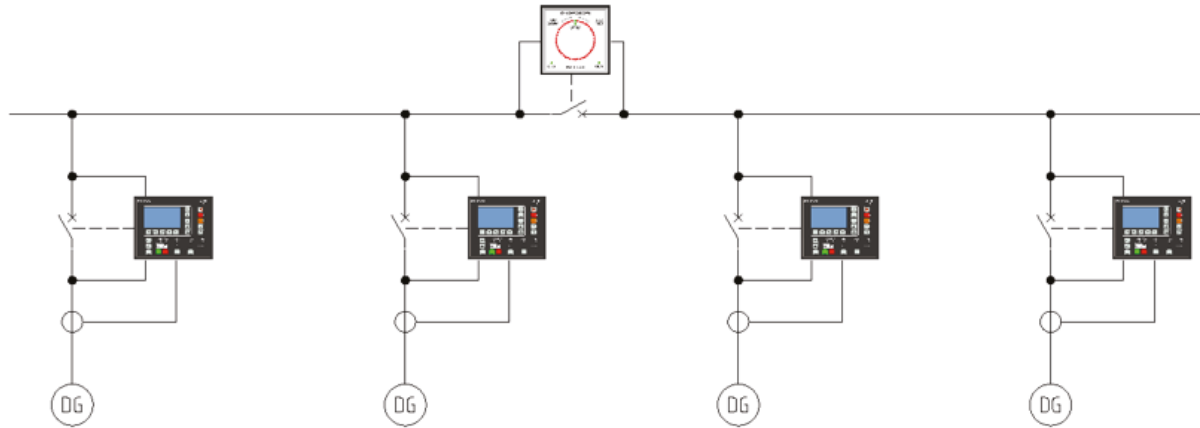
Marine Power Management Systems with shaft generator and tie breaker.

Short time synchronization with load change-over to and from shaft generator and/ or shore connection.



Marine Power Management System with split bus application

Both sections can run as two independent systems or as a common system.



Configuration

GC2000 embedded Web site makes it easy to configure.



Why choose GC2000

- Compact integrated unit
- Complete power management and protection
- Easy I/O expansion
- Programmable for advanced applications
- Flexible connectivity and communication options
- Fully compatible with all AVR's and speed governors
- Easy to operate and install
- Marine certified



Control. Monitor. Protect.



» About SELCO

For more than three decades, SELCO has been a market leader in providing electrical control, monitoring and protection equipment for power generation applications worldwide.

With headquarter and manufacturing mainly in Denmark, our product portfolio is known to be of high quality, extremely reliable and easy to use. Our partners and distributor network worldwide are vital, in supporting our sales to more than 60 countries.

Every day, SELCO products are on a mission, in operation, around the world, to help control, protect and enhance the safety of electrical equipment, engine and generator applications, within markets like marine, oil & gas, power generation, and general industry.

Our scope of supply and expertise is within the following areas;

- Generator Control and Power Management Systems
- Engine Control, Protection & Monitoring
- Protection and Control Relays
- Alarm Panels and Monitoring Systems