

GC2000 Generator Controller



- 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
- Alternator control and protections
- Tie breaker control
- Non essential load tripping
- Load sharing redundancy and heavy consumer management



Features

Control and management

- Manual and automatic engine control.
- J1939 compatibility (Cummins, Volvo, Scania, MTU, CAT...).
- Automatic start/stop control depending on load demand.
- Dead busbar management.
- Isochronous or droop kW load sharing control (up to 32 generators via CAN bus port).
- Constant voltage or droop kVAR load sharing control (via CAN bus serial port, up to 32 generators).
- Shore paralleling (1 generator).
- Power factor control when paralleling with shore.
- kW control (base load or peak shaving) when paralleling with shore.

Protections

- Generator electrical protections: <F, >F, <U, >U, >I, >In, >P, <P, <-P, >Q, <Q, <-Q
- Phase sequence protection, phase shift compensation.

Synchronization

- Manual and automatic frequency and phase synchronization (differential frequency meter + synchroscope available on screen).
- Manual and automatic voltage synchronization (differential voltmeter available on screen).

Information display

- Engine parameters display: oil pressure, water temp, speed, hours run meter....
- Generator electrical parameters display:
 - Phase-phase voltage (3 phase RMS)
 - Phase-neutral voltage (3 phase RMS)
 - Current (3 phase RMS)
 - Frequency
 - Active power (3 phase + total)
 - Reactive power (3 phase + total)
 - Power factor (3 phase + total)
 - Active power energy (kWh)
 - Reactive power energy (kVARh)
- Shore electrical parameters display:
 - Phase-phase voltage (3 phase RMS)
 - Frequency
 - Import active power energy (kWh)
 - Import reactive power energy (kVARh)

Alarms and events logging

- The last 50 alarms and last 50 faults are recorded in non volatile memory.
- User selectable data logging.

Other

- "Watchdog" digital output for microprocessor life signal.

Characteristics

Current, voltage and frequency

- 8 to 40V_{DC} power supply input: 750mA at 12V_{DC}, 400mA at 24V_{DC}.

- AC voltage inputs: 100 to 480V_{AC}, Neutral terminal does not need to be connected.
- AC current inputs: 0 to 5A, 1VA. Each phase is isolated from the others.
- AC current overload: 15A during 10s.
- Frequency measurement: 45 to 70 Hz – 15V_{AC} minimum between phase and neutral.
- Voltage control signal: AVR is controlled either by a +/-10V_{DC} output (adjustable span and offset) or by voltage+/voltage-contacts.

Inputs, outputs

- Digital inputs: NO or NC to ground.
- Emergency stop input: Norm. closed 24V.
- Relay outputs (crank and fuel): 5A/24V is provided through the emergency push button.
- Relay outputs (breakers): 5A, 230VAC max. NO + NC available.
- Transistor outputs: 350mA, overcurrent protected.
- Analog inputs (oil pressure and water temp): 0 to 400 Ω. Calibration is configurable.
- Analog inputs (spare 1 and spare 2): 0 to 10kΩ.
- Speed and frequency control, either by a +/-10VDC output with adjustable span and offset or by speed+/speed- contacts.
- Magnetic pick up input: 100 to 10.000Hz, 2V_{AC} minimum.



Specifications

GC2000 Generator Controller

Compatibility

- PWM output for CAT and Perkins engines 500Hz
- Fully compatible with all speed governors and AVR's
- Pulse output to control speed and AVR's
- Ethernet: PC communication/ Modbus TCP
- SD card reader

Ports

- Isolated communication ports are available:
 - RS485 for Modbus RTU (read and write)/ Integrated 120Ω termination resistors selected by micro-switch.
 - CAN bus for inter-GC2000 communication: Integrated 120Ω termination resistors selected by micro-switch
 - CAN bus dedicated to options J1939,2 CANopen I/O extensions: 120 Ω resistors selected by micro-switch

Environment

- Operating temperature: -20 to +70°C
- Storage temperature: -30 to +80°C
- Humidity: 5 to 95%. Tropic-proof circuits for normal operation in humid conditions.
- IP65: front panel / IP20: rear panel

Size and weight

- Size: 248x197x57mm (9.76x7.76x2.24in)
- Panel cut out: 177x228mm (6.97x8.98in)
- Weight: 1.9kg (4.2lb)

Certifications

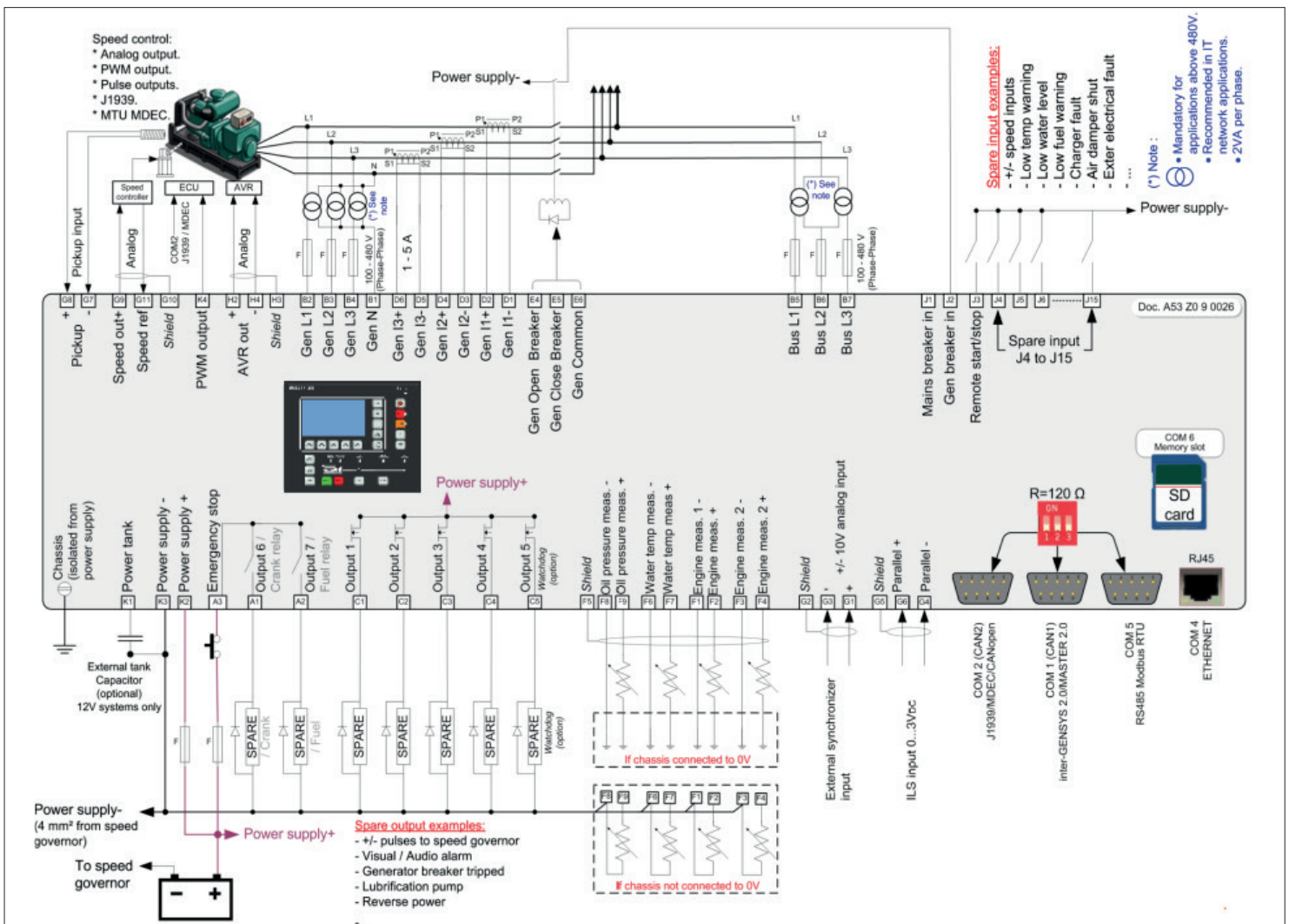
- European Union Directives: EN 50081-2, EN 50082-2, 73/23EEC
- DNV Marine Certification

Other

- LCD characteristics: 114x64mm, 60 cd/m² backlight, 3 character sizes.
- Terminals: 2 piece connectors, 2,5mm².
- Languages: English, Spanish, French, Italian

Part number
GC2000.0010

Software
SELCO Config / Easy PLC



SELCO

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