



GENSYS COMPACT PRIME DEMONSTRATION SUITCASE

APPLICATION NOTE – DEMONSTRATION MODE



Part Number: A56 Z0 9 0022B EN

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1. INTRODUCTION

In demonstration mode, the GENSYS Compact PRIME considers 3 generators in parallel:

- Generator GE1 with nominal power 2000kW, not adjustable always on busbar.
- Generator GE2 with nominal power 2000kW, not adjustable always on busbar.
- Generator GE3 is controlled by GENSYS Compact PRIME on demonstration suitcase.

The demonstration suitcase allows to simulate:

- The Start sequence (Simulation of Pickup Speed and F/V alternator).
- The Synchronization (Simulation of generator voltage and on busbar).
- The Load/unload mode regarding the load: Threshold 20-80% of Load, the load can be modified with potentiometer.
- The Load sharing (Simulation of generator power kW/kVAR and busbar).

To navigate through menus and visualize voltages, currents, frequency, kW, kVAR, load sharing, synchronization



WARNING

RISK OF EQUIPMENT DAMAGE

Never connect a GENSYS compact PRIME in demonstration mode to a real application.

In order to avoid a bad manipulation, it's not possible to enter in demonstration mode while frames are received on inter-GENSYS CAN bus. A "hard shut down" default will occur if one frame is received on inter-GENSYS CAN bus during demonstration mode

Note: The demonstration mode allows to only simulate a multi generators application. It cannot simulate synchronization or paralleling with mains.



2. CONFIGURATION

a. Selection of demonstration mode

First of all, please to update your GENSYS compact PRIME unit with the last firmware available on CRE Technology web site. www.cretechnology.com

To preset the unit, in demonstration mode with the right labels and parameters, this following file must be loaded into the GENSYS Compact PRIME in level 2: **Config-Demo-GENSYSCompact.txt**

The level 2 password is: 1234

The demonstration mode is activated with the parameter E2011:

- E2011=0, then the GENSYS Compact Prime is in normal mode.
- E2011=1, then the GENSYS Compact Prime is in demonstration mode.
- After demonstration mode activation (E2011=1), a 10 seconds timer is needed for acknowledgement.
- In demonstration mode, a permanent alarm (orange Led) is there to inform the operator. This alarm cannot be resetted.

Note: When the demonstration mode is activated, some parameters are modified: speed measurement, pole numbers, number of GENSYS Compact on the bus, the GENSYS Compact number and start/stop mode. If the demonstration mode is disabled, think to put default values and to check the settings before to use the unit on real application.

b. Default values and power plant overview

The generators GE1 and GE2 (Fixed 2000kW / 1500 kVAR (Values cannot be changed)) are always on the busbar in load sharing mode. The fixed voltages are 405V_{AC} (+1% of the nominal AC Voltage) (Values cannot be changed), the fixed frequency are 49,5 Hz (-1% of the nominal AC Voltage) (Values cannot be changed). The Cosφ is fixed at 0.8I.

The generator GE3 corresponds to the generator managed by the demonstration suitcase.

- Load/Unload mode (automatic start/stop) regarding the load by “number of generator”,
- The GENSYS Compact number and number of GENSYS compact on the bus fixed at 3,
- Speed measurement fixed at “alternator” and pole number fixed at 2

Generator Number	Nominal kW	Nominal kVAR	Voltage	Frequency	Comments
1& 2	2000kW Fixed	1500kVAR Fixed	405V _{AC} Fixed	49,5Hz Fixed	Generators always on Busbars
3	2000kW configurable	1500kVAR configurable	400V _{AC} configurable	50Hz configurable	Full control of generator



3. DEMONSTRATION SUITCASE CONNECTIONS

Connection and configuration of **digital inputs**: Entrée #1 (J10) : Retour disjoncteur (pas utile car le retour disjoncteur est simulé en interne)

- Input #1 (J10) : Breaker feedback (not used because simulated)
- Input #2 (J11) : Remote Start in Auto mode
- Input #3 (J12) : Emergency Stop
- Input #4 (J13) : Oil pressure fault

Note: The input is activated if you upward the switch, except for emergency stop Switch (normally closed).

Connection and configuration of **Analogue inputs**:

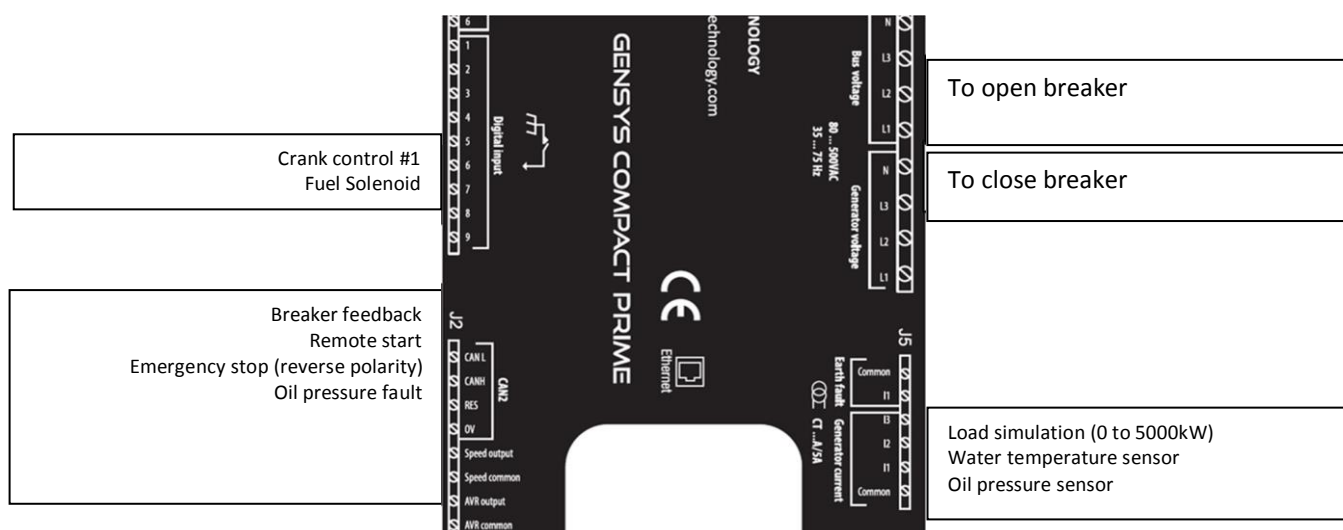
- Input #1: Oil pressure simulation (to generate a default for example)
- Input #2: Water temperature simulation (to generate a default for example)
- Input #3: KW load on busbar simulation (to start/stop the GE3 in Auto mode with thresholds 20%-80%)

Connection and configuration of **digital outputs**:

- Output #1 : Crank control
- Output #2 : Fuel solenoid

Connection and configuration of Breaker command **digital outputs**:

- Relay output #1 : To open breaker
- Relay output #2 : To close breaker





4. FEATURES

The most of GENSYS Compact PRIME features are available and can be programmed:

- Engine start sequence (Prelub, preheating, stabilisation,...),
- Manual Mode : Start/Stop sequences, Speed/Voltage control, Breaker opening/closing, load/unload amps regarding settings,
- AUTO/TEST Mode: Start-Stop sequences regarding the load demand (Load simulation with potentiometer “analogue input » 3) and regarding the settings,
- TCP Modbus,
- PC connection with CRE Config software (visualisation/configuration/system),
- Alarms/Faults/logger archiving,
- With synchronization PID settings (P of frequency and phase) can see synchronization time and stability,
- Timers,
- Inputs /outputs modification (functions, timers,...),
- CANopen with capability to add external digital inputs/outputs,
- Protections,
- Maintenance,
- Energy meters.

Note : With normal configuration (E2011 variable at 0), the suitcase can be used to test a real application, to apply AC voltage and current. And to simulate, with switches or potentiometers, parameters of digital or analogue inputs.



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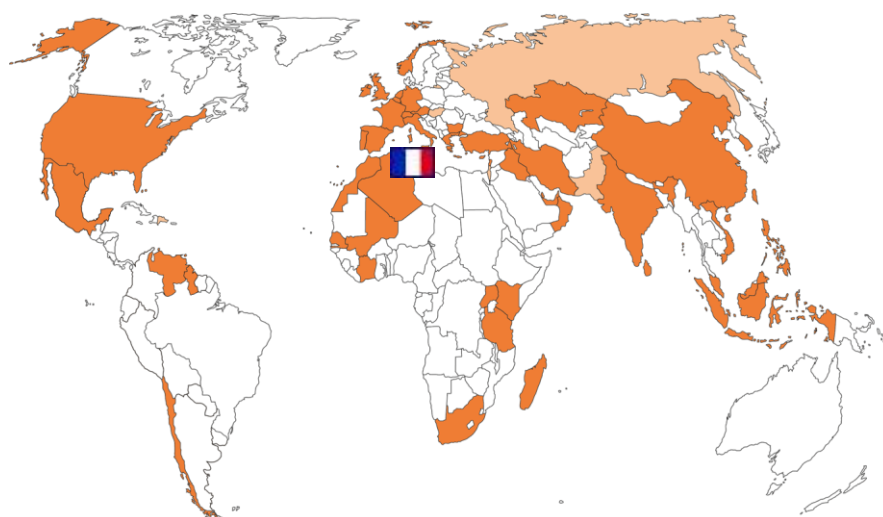
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