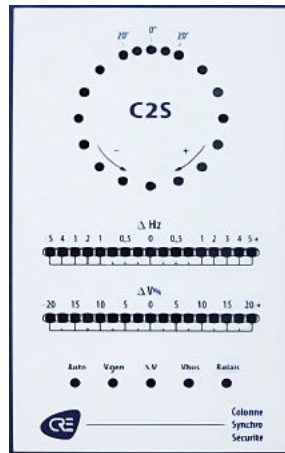


This second generation of microprocessor module combines all the visualization and control functions needed to couple a generator to a bus bar manually: display of the phase, frequency and voltage differences, a safety relay which monitors these three parameters and indicates the status of the installation.

This new version does not need an external DC power supply, as it takes it from the busbar. The reduced size allows the use of DIN92 format tools and its heavy duty metal case can operate in extreme environment.

### ADVANTAGES

- Led synchroscope
- Protections
- Manual/Auto modes



C2S MODULE FRONT VIEW



C2S MODULE REAR VIEW



### Part numbers:

- A25Z0 C2S Module AC Input voltage 100VAC
- A25Z2 C2S Module AC Input voltage 400VAC

## FEATURES & SPECIFICATIONS

### SYNCHRONIZATION COLUMN

- **Led synchroscope:** 18 LEDs spread over 360° display the phase difference. The synchroscope lines up when the frequency difference is less than 0.5 Hz.
- **Differential frequency meter:** The frequency difference is displayed by a 17 LED bar graph corresponding to  $\pm 5$  Hz with an expanded scale over 1 Hz.
- **Differential voltmeter:** The voltage difference is displayed by a 17 LED bar graph corresponding to  $\pm 20\%$ .

### SAFETY RELAY

- The coupling authorization relay monitors the difference in frequency, voltage and phase. It authorizes coupling only when all the parameters meet the requirements of the installation.
- **Frequency difference:** Coupling authorization is given for a frequency difference of less than 0.1 Hz.
  - **Phase difference:** The phase difference which authorizes coupling is adjustable between  $\pm 5^\circ$  and  $\pm 20^\circ$ .
  - **Voltage difference:** The voltage difference which authorizes coupling is adjustable between  $\pm 2.5\%$  and  $\pm 20\%$ . Automatic detection of all J1939 devices on the same CANbus network.

### LED INFORMATION

- **Presence of generator voltage (Vgen):** Shows that the voltage of the generator or the power source to be coupled is between 85% and 115% of its nominal value.
- **Presence of bus voltage (Vbus):** Shows that the voltage of the bus to which the generator must be coupled is between 85% and 115% of its nominal value.
- **Voltage difference fault (ΔV):** Shows that the voltage difference between the generator and the bus is greater than the safety relay setting
- **Coupling in automatic mode (Auto):** Shows that the installation is in automatic coupling mode.

The synchronization column is active but the other signalling LEDs and the safety relay are inactive.

- **Safety relay:** Shows that the safety relay which authorizes coupling is closed.

### CURRENT, VOLTAGE AND FREQUENCY

- **Output relay:** Isolated contact.
- 8 A with the 250 VAC nominal voltage, maximum voltage 440 VAC.
- 2000 VA switched power on resistive load.

### ENVIRONMENT

- Operating temperature:  $-20$  to  $+85^\circ\text{C}$ .
- Can be mounted in all positions.
- Humidity: will function normally in humid conditions (Tropic-proof circuits).
- Dimensions and weight:
  - Weight: 0.9 Kg
  - Size: 160x96x68mm
- Fixing: 4 x 3mm screws with 82x 150mm spacing.

### DIRECTIVES

CE Mark: the C2S complies with European Mark requirements.

### MEASUREMENTS

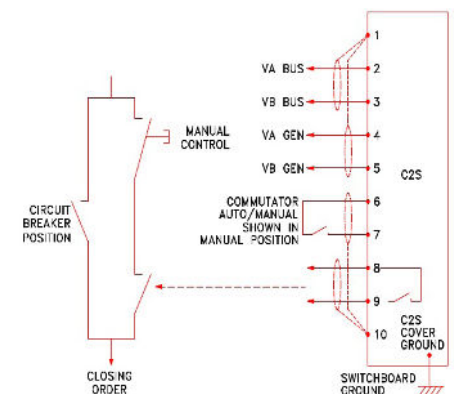
#### Measuring generator voltage [50 & 60 Hz (maximum consumption <4 VA)]

- Reference A25Z0: 100 VAC
- Reference A25Z2: 400 VAC

#### Measuring bus voltage input $\pm 15\%$ [50 & 60 Hz (maximum consumption <0.1 VA)]

- Reference A25Z0: 100 VAC
- Reference A25Z2: 400 VAC

### WIRING DIAGRAM



The voltage **VGEN** of the generator to be coupled is connected by 2 wires on terminals 4 and 5. The voltage **VBUS** of the reference bus is connected by 2 wires on terminals 2 and 3. If the supplying voltages are greater than the C2S nominal inputs, use reducing transformers.



**WARNING:** Check carefully that the phases connected on the generator voltage are the same as those connected on the reference bus voltage and in the same order. Remember that 2 opposite phases generate a 180° coupling and that different phases on the generator voltage and the bus voltage generate a  $\pm 120^\circ$  coupling.

### APPLICATIONS

C2S is a metallic housing Synchroscope made for manual synchronization system where it is used as a monitoring tool and Synch Check protection Relay, it can also be used as an additional display on panel or as a protection relay for synchronization check, especially in harsh environment thanks to its metallic casing.



### RELATED PRODUCTS

The **GENSYS COMPACT PRIME CORE** is made for gensets used in power plant applications requiring synchronizing, active and reactive load sharing and electrical/mechanical protections. **GENSYS COMPACT PRIME CORE** offers flexibility and time saving thanks to its simple wiring, all features included (no option), and easy engineering & programming.

The **GENSYS COMPACT MAINS CORE** is used on standalone genset in mains paralleling application. **GENSYS COMPACT MAINS CORE** range offers flexibility and time saving thanks to its simple wiring, all features included (no option), and easy engineering & programming.



GENSYS COMPACT MAINS CORE  
BASE MOUNTED VERSION



GENSYS COMPACT PRIME CORE  
BASE MOUNTED VERSION