CEM8

Control and Operation.

User Guide

CEM8
Control and Operation
Legal Notice and Limitation of Liability

This guide is for informational purposes only and is intended to facilitate the understanding of the basic functions of the CEM8 controller. It does not replace, under any circumstances, the complete technical manuals or the official safety instructions provided by HIMOINSA.

The use, configuration, and maintenance of the CEM8 must be carried out exclusively by qualified and authorized personnel. Any handling, adjustment, or modification not included in the official documentation may compromise operator safety, equipment integrity, and the validity of the warranty.

HIMOINSA assumes no liability for personal, material, or financial damages arising from:

Improper or negligent use of the controller.

Failure to follow safety measures established in the official manuals.

Unauthorized modification of electrical, logical, or communication parameters.

Use of non-certified accessories, cables, or components.

Improper interruption of critical processes such as regenerations or automatic tests.

The operator is responsible for ensuring that the environmental safety conditions are adequate before starting the generator and for complying at all times with applicable local regulations.

For advanced configurations, firmware updates, or technical interventions, you must contact only HIMOINSA Authorized Technical Service or the official distributor who supplied the equipment.

HIMOINSA
A YANMAR COMPANY

Publication date: 25/09/2025
Revision: Rev. 0 (First edition)

CEM8 – CONTROL AND OPERATION

Daily use and safety guidelines

To start using the CEM8, stand in front of the panel and check both the surroundings and the machine: make sure the area is ventilated, with no obstructions, no people or materials near the exhaust and alternator; verify that there are no visible leaks, that the fuel tank has enough fuel, and that the emergency stop is not engaged. Also, confirm that the battery is connected and that there are no critical loads pending if you have not yet checked voltage and frequency. These few seconds of preparation help prevent failed starts and protect the equipment.

Start-up and main menus

When the switch is turned to the ON position, the CEM8 starts its interface and immediately displays the essential values:
- Communication and firmware version.
- Controller supply voltage.
- Engine status.
- Fuel level.
- Grid voltage and frequency (not displayed in the CEM8).
- IoT device connection and version.

When these parameters are within range and no alarms are present, the generator is ready to operate. From the HOME screen it is possible to navigate through the main menus, which provide information on engine status and electrical parameters, the management of active alarms and their history, the digital signals available on inputs and outputs, as well as basic utilities such as language, date, time, and brightness. The TIMERSET section is also accessible, allowing the programming of automatic starts and stops. In certain configurations, the IoT and PLC sections may also be enabled, designed for advanced integration and monitoring.

Customizable Dashboard

Set up the dashboard with pinned cards. Fix on the home screen the information you always need to have in front of you: engine status, fuel level, service hours, recent alarms, or electrical output. This way, you won't need to navigate through menus to make quick decisions in the field.

Working modes and lock

Use MANUAL for local tests: a single press on START starts the engine; confirm that frequency and voltage stabilize before connecting the load. In AUTO, the CEM8 will operate based on external signals or schedules defined in TIMERSET; this is the usual mode when the generator must respond automatically to a mains failure or to run scheduled tests. Mode lock prevents unintentional changes; enable it in installations with multiple operators.

Alarms: how to act

The CEM8 classifies each notification as

- Warning (does not stop the engine)
- Shutdown (stops the engine).

If an alarm appears, read it in ALARMS:
Acknowledge the alarm, identify the cause, and only restart once it has been resolved. The history will help you understand what happened and when. Do not clear alarms blindly.

Schedules and tests

From TIMERSET you can schedule automatic starts and stops, for example a weekly availability test. The screen shows which schedules are active, and you can enable or disable them whenever you need. It's useful to keep the generator ready even when you're not on site.

Regenerations (if applicable)

If the unit includes after-treatment, the CEM8 will guide you when a particle filter regeneration is required. It will indicate the prerequisites (temperature, minimum load, safety), the type of regeneration (automatic, manual, or forced), and the progress in real time. Follow the on-screen instructions and do not interrupt the process. If the regeneration fails or is interrupted, the CEM8 does not generate a specific alarm; instead, it stops the regeneration bar and keeps the icons that indicate the need to continue regenerating under safe conditions.

Safe shutdowns

To stop, use STOP. A single press performs a shutdown with cooling: the engine keeps running for a short time to dissipate heat and protect components. If the situation requires an immediate stop, press twice in succession. When finished, confirm the status on screen and leave the unit in AUTO (if it must remain available).

Restricted screens and access levels

The CEM8 includes screens and configuration parameters intended for technical personnel: electrical protections, input/output logic, communications, calibrations, and other engineering settings. They are not required for daily use and must not be modified without authorization. If the installation includes login, the dedicated button allows you to open the access screen or log out by holding it down; with the LED steady, you will know that access has been granted. Keep your operation within the user menus and use the technical panels only for consultation when appropriate.

Indicators and I/O

The alarm indicator notifies you of active events; always check them in its menu. The numbered indicators can display both digital input/output signals (illuminated number = active signal) as well as turn on depending on generator status, engine status, or other programmed conditions. They are a useful tool for basic field diagnostics.

Panel care

Keep the CEM8 clean and dry. Do not use solvents or operate with dirty hands. Keep the unit away from impacts and magnetic fields. Keys should be pressed gently; do not apply unnecessary force.

Shift closure

Before leaving, check SERVICE HOURS and the engine's basic readings in STATUS. Take care of maintenance reminders and, if applicable, leave the generator in AUTO to ensure availability. With this routine—check, start, monitor, stop with cooling, and log incidents—you will work safely and keep the generator ready whenever needed.

CEM8 INTERFACE

USAGE KEYS

The CEM8 is designed for fast, structured navigation. The Dashboard is the starting point and concentrates the main information, avoiding the need to go through the entire menu hierarchy. The cursors allow you to move through lists and modify values; when held down, they speed up scrolling in long lists.

The top bar always shows the current position within the menus, and the back button allows you to exit without applying changes. For frequent tasks, shortcuts can be assigned to the multifunction button. Login determines the access level, distinguishing between user functions and advanced configurations reserved for technicians.

The display features a high-contrast adjustment, adjustable from 0 to 10, which ensures clearer readability in environments with strong light or reflections.

⚠ The CEM8 must be kept clean, dry, and protected from impacts, water, magnetic fields, and improper handling. Do not use solvents or operate with dirty hands, and keys should be pressed gently without applying excessive pressure.

When operating the controller, it is essential not to cover the screen or obstruct the buttons, always ensuring clear visibility. Avoid handling live electrical connections and limit interaction to the controls and interface menus.

CEM8 PHYSICAL INTERFACE

1. Access the sections of DASHBOARD, STATUS, ALARMS, INPUTS/OUTPUTS, UTILITIES, and TIMERSET, in addition to IoT and PLC in the versions that include them. This enables quick navigation regardless of which screen the user is on.
2. The assistant button allows you to view Himoinsa's contact phone number and the configuration of the numbered indicators.
3. The numbered indicators show the status of the configurable digital inputs and outputs. When a number lights up in green, it means the corresponding signal is active. When the number is off, the input or output remains inactive.
4. Mode change: select MAN or AUTO; within this menu, switching to MANUAL can be locked to prevent unintentional changes.
5. By pressing the STOP button with MANUAL mode active, the engine will stop. The first press initiates a shutdown with a cooling cycle. Pressing twice in succession triggers an immediate stop. If the LED is steady, the engine is stopped; **if it is flashing, it indicates that the shutdown process is in progress.**
6. By pressing the START button with MANUAL mode active, the engine will start with a single press. The assistant button allows you to view Himoinsa's contact information and the configuration of the numbered indicators.
7. Navigation buttons for moving up, down, right, and left through the interface screens.
8. Menu back navigation and data editing cancellation.
9. Menu access and confirmations.
10. Direct access to the user login screen or, if already logged in, log out (hold the key for 5 seconds). Steady LED: User access granted. LED off: No session active.
11. Assign multifunction shortcuts, such as setting the anti-theft position, opening/closing the contactor, reset or alarm silence, pump activation, or PLC control.
12. The alarm indicator lights up when there is an active warning on the CEM8. It can indicate anything from simple informational messages to critical failures. With the LED off, there are no issues; when on or flashing, it signals that an alarm has occurred, which must be checked in the corresponding menu to identify the cause.

HOME

SETTINGS

Enter this menu to customize the interface. **Here you can change the navigation language, adjust the date and time, mute the buzzer with silent mode, or turn off the backlight with dark mode.**

Adjust the contrast between 0 and 10 depending on the ambient light. With maintenance-level access, you can save a backup of the entire configuration and restore it when needed, or return the controller to its factory settings.

Key point: the restore option always preserves the factory defaults.

HOME

USERS

When the CEM8 prompts you to log in, enter your 4-digit PIN. The access level determines whether you can use only basic functions or also advanced settings. From the Users menu, you can change your PIN, create lower-level accounts, or delete users that are no longer in use.

PASSWORD
USER: 0000
PASSWORD: 0000

By default, the CEM8 includes a standard user whose default ID and password are 1111. This basic access allows you to manage daily-use functions. To access advanced configurations or higher levels, you must contact the vendor or authorized service.

HOME

CONFIGURATION

This section requires an authorized key and provides access to the electrical and logic parameter tables: protections, thresholds, delays, and inputs/outputs.

HOME

DASHBOARD

When the CEM8 is powered on, it goes directly to the Dashboard. Here you can customize which data to view on the widget panel. Use the cursors to navigate between screens and pin the widgets you use most: service hours, fuel level, frequency, voltages, etc.

DASHBOARD
Kw 60.3
Shutdown 0
Warnings 2
80% LOAD
100 50 0

If you need a value to always remain visible, use the pin icon to anchor it in the main position. This avoids having to navigate through menus when working in the field.

ENGINE

REVOLUTIONS	0	rpm
FUEL LEVEL	73	%
DEF LEVEL	0	%
BATTERY V.	12.0	V
ALTERNATOR V.	0.0	V

All tables with a dark pin can be anchored to the Dashboard. Go to the parameter you want to pin to your dashboard and press OK.

ENGINE
DO YOU WANT TO SET REVOLUTIONS FOR YOUR DASHBOARD?
YES

Confirm your request and the parameter will be pinned to your dashboard.

DASHBOARD
RPM
1500

Key point: On the Dashboard, up to 4 widgets can be configured per screen and a maximum of 8 different screens. The CEM8 comes with a default set of widgets already loaded on the first screen.

If you want to recover the widgets, it is best to save a configuration before making any changes and later press "restore configuration." Resetting the configuration could cause the entire controller to become misconfigured.

HOME

TIMERSET

The TIMERSET screen allows you to schedule automatic starts and stops of the generator without anyone needing to be present at the machine. It provides three options: Lock, Forced Start, and Test, which can be scheduled by date and time to run autonomously.

TIMERSET
CURRENT DATE | 17 | 09 | 2024 | EDIT
CURRENT TIME | 16 : 31 | EDIT
CHECK THAT THE CURRENT DATE IS CORRECT
PROGRAMMING ACTIONS

BLock: prevents any start and disables the contactor.

Forced Start: starts the unit and activates the contactor.

Test: starts the unit without activating the contactor.

TIMERSET
PROGRAMME ACTION
BLOCK: 4 : 1 CREATED
FORCED-START 0 : 1 CREATED
TEST 0 : 1 CREATED
17-09-2024 15:41

These functions are very useful for coordinating generator operation with periodic routines, availability tests, or safety conditions. However, the creation and management of these events is restricted to the Maintenance level.

Important note: the standard operator can view this screen, but to create or edit actions, Maintenance credentials are required. If you need to configure any of these events, always refer to the CEB Manual and follow the official instructions.

⚠

Attention regarding TIMERSET:

Scheduling automatic starts and stops means the generator may start without the operator being present. Before activating a schedule, make sure the area is properly marked, safe, and free of exposed personnel. Also consider the electrical installation: connecting or disconnecting loads without supervision may damage sensitive equipment. The use of TIMERSET requires planning, and it is the operator's responsibility to ensure safe operating conditions.

HOME

UTILITIES

The UTILITIES screen brings together support functions that are not part of basic daily operation but are very useful for consulting information, performing diagnostics, and managing auxiliary equipment. It is accessed from HOME, and once inside, several sections are displayed.

FUNCTIONS
History | Engine ECU
Fuel pump | DEF pump
Devices | Counters

ALARMS | EVENTS | DTCs

19/06/24	MAINS FAILURE	H
19/06/24	EMERGENCY STOP	+
19/06/24	EMERGENCY STOP	+
17/06/24	MINIMUM MAINS VOLTAGE	+
17/06/24	GENERATOR FAILURE	+

History: review of alarms, events, and DTC codes, ordered by date to analyze what happened.

Engine ECU (Maintenance level): access to ECU errors via J1939, for authorized personnel only.

FUEL PUMP
50%
FUEL LEVEL CORRECT
MIN. 30 MAX. 60
MIXED MODE
ACTIVATE PUMP

Fuel Pump: displays fuel level and transfer pump status; it can be activated in manual or mixed mode.

DEF PUMP
ADBLUE LEVEL CORRECT
50%
MIN. 20 MAX. 65
ACTIVATE PUMP

DEF Pump: shows the level and status of the urea (DEF) pump; if in manual mode, it allows manual activation.

Devices: lists equipment on the CAN Bus; with maintenance level, IDs can be edited, while in normal use it is read-only.

Counters: displays maintenance and rental counters; visible to the standard user and editable with higher access level.

...continues to the right

GEOFENCE
UPDATED
GEOFENCE: ON
POSITION STORED: 0.000000, 0.000000
STATUS: ACTIVE UPDATED
SET POSITION
8

Geofence Integrated anti-theft system in the CEM8

It allows you to define a security radius in meters, taking the machine's GPS position as a reference.

If the controller detects that the unit moves outside this radius, it can generate an alarm and, depending on the configuration, prevent the start.

Editing Geofence parameters (enable, disable, modify radius) is restricted to the Maintenance level.

The standard user can only check whether it is active or not.

HOME

PLC

The CEM8 includes a dedicated PLC screen for integrating custom logic. It provides up to four screens with configurable widgets that display values or states defined in the program, as well as four virtual buttons per screen configurable through Genset WorkBench. The multifunction button can also be assigned as a PLC input so that its function and the associated LED depend directly on the program.

The PLC adds adaptability, allowing the CEM8 interface to display data and controls specific to each installation, designed with external software. This functionality is intended for specialized technicians, as it involves programming and modifications that directly affect system behavior.

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Advertencia: la lógica definida en el PLC puede activar o desactivar funciones del generador de forma automática. Toda configuración debe realizarse con responsabilidad, garantizando la seguridad del personal y la protección de los equipos conectados.

HOME

COMMUNICATIONS

The COMMUNICATIONS screen shows the status of the CEM8 channels and allows verification of whether each protocol is active. Configuration is performed in the SETTINGS menu.

The controller includes two CAN buses (one internal and another at 250 Kbit/s for the engine), an RS-485 port with Modbus RTU, Ethernet connection with Modbus TCP, and compatibility with SNMP through MIB files downloadable from HIMOINSA.

This is an informational screen: the operator can confirm communication activity, while advanced configuration is reserved for authorized technical personnel.

HOME

IoT

The IoT screen allows you to check the status of the CEM8 connectivity device. From here, the operator can verify that the module is active, see its firmware version, and check whether functions such as low-power mode or the anti-theft system are enabled.

The information is organized by interfaces: on Ethernet, it shows IP address, mask, and gateway; on modem/SIM, it displays data such as IMEI, IMSI, connection type, operator, and signal strength; on WiFi, parameters such as RSSI, IP, and gateway can be checked. SNMP and Modbus TCP connections are also shown, as well as the GPS/GNSS position with available satellites and update status. Finally, the HG Server section indicates whether communication with the remote platform is active and how often data is transmitted.

⚠

This screen is for consultation only. The user can confirm that the IoT system is working and transmitting information, but any parameter changes must be made from the Settings menu with a higher access level.

HOME

REGENERATION

In engines with an after-treatment system, the CEM8 provides a REGENERATION screen that displays and manages the particle filter cleaning cycles.

These cycles are necessary to prevent the filter from becoming clogged with soot and to ensure proper engine performance.

The user may encounter three types of situations:

Automatic regeneration: the engine ECU starts it when it detects it is necessary and the proper conditions are met (temperature, minimum load, ventilation). The CEM8 only reports the ongoing process.

Inhibited regeneration: from this screen, regeneration can be blocked so that the ECU will not perform it even if required. This action is restricted to Maintenance level.

Forced regeneration: also from this screen, and with Maintenance level access, the engine can be forced to regenerate immediately, provided safety conditions are met (ventilated environment, no people nearby, minimum load connected, etc.).

When the filter reaches a high saturation level, the CEM8 warns the user with icons. Regeneration icons are displayed on all screens where they can be shown, indicating that a forced cycle is required. During the process, the controller displays a status icon and a progress bar.

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Warning: regenerations increase the temperature of the exhaust system. They must never be interrupted and should only be forced when requested by the CEM8. The operator is responsible for ensuring that the surroundings are clear and in safe conditions before authorizing a cycle.

Note on inhibition: the option to inhibit regeneration is intended only for maintenance personnel and must be used only in exceptional situations (ongoing work, transport, enclosed spaces, or fire risk). Inhibiting a cycle when the filter requires it may cause serious failures in the after-treatment system and the engine.

HOME

INPUTS / OUTPUTS

The Inputs/Outputs screen allows real-time monitoring of all digital and analog signals managed by the CEM8. It is a diagnostic tool that helps the operator verify whether the installation's sensors and actuators are responding correctly.

It is organized into four sections:

Digital Inputs (IN1–IN12): Include configurable signals such as low oil pressure, high engine temperature, low water level, or pump activation. The emergency stop (EMS) always appears as a fixed input.

Digital Outputs (O1–O8): Show which functions are active at any given time, with a capacity of up to 2 A per output and 8 A in total. For power digital outputs (P1, P2, and P3), the maximum current is 40 A (T ≤ 1 s), 20 A (1 s ≤ T ≤ 10 s), and 10 A (T > 10 s).

Analog Inputs (AN1–AN4): Can be configured as resistive, voltage, current, or digital, and can be expanded with up to 16 additional inputs through external modules.

External Inputs and Outputs: Display signals coming from expansion modules connected to the system.

Every number illuminated on the screen represents an active signal. This allows the operator to quickly check whether, for example, a sensor has closed the contact or a pump has received the start command. It is important to remember that the illuminated numbers do not only indicate inputs and outputs; they can also be programmed to reflect other generator or engine states. In addition, during an ongoing regeneration, a status bar is displayed on this screen so the operator does not lose track of the process even while checking the I/Os.

Practical Tip
During maintenance tasks, use the Inputs/Outputs screen as the first checkpoint: it allows quick identification of wiring faults, improperly connected sensors, or non-responsive actuators.

HOME

GENERATOR

The Generator screen displays the main electrical measurements of the unit in real time. Here you can check phase-to-phase and phase-to-neutral voltages, current per phase, active, reactive, and apparent power, as well as frequency and power factor.
If a load is connected, the values of power delivered to the installation are also shown.
The status of the generator contactor is displayed on the "Status" screen.

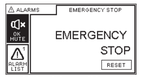
This information is key for the operator: it allows confirmation that voltage and frequency are within range before closing the contactor and putting the machine on load, as well as monitoring to ensure that overload conditions or phase imbalances do not occur.

Practical note: the standard user can view all these measurements from this screen, but the definition of protections, thresholds, and electrical delays belongs to the SETTINGS menu, reserved for Maintenance level.

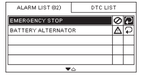
HOME

ALARMAS

The ALARMS screen displays active events in the installation in real time. Here, the operator can check the description of each alarm, its priority, and the associated code to support diagnostics.



In addition, it is possible to review both the list of active alarms and the history of those already resolved.
The acoustic signal can be silenced with the MUTE button.



Warning (Does not stop the engine)
Error or Shutdown (Stops the engine)
Reset Alarm

HOME

STATUS

The STATUS screen provides an overview of the system's most relevant parameters and is useful for understanding the generator's condition as well as the reasons why it may start in automatic mode.

This section shows the operating state of the unit—for example, stopped, in start–up phase, running steadily, or another intermediate condition. It also displays the status of inputs that directly influence this behavior, such as start inhibition, external start, or the position of the contactors.

The STATUS screen does not allow configurations or modifications to the controller. Its purpose is exclusively informational and read-only, just like the ENGINE and GENERATOR screens. In this way, the operator has a safe reference panel designed to support diagnostics and monitoring without the risk of altering critical installation parameters.

STOP

The STOP button on the front panel allows the engine to be stopped at any time. A single press initiates a shutdown with cooling: the engine continues running for a few seconds without load, dissipating system heat before shutting down. During this time, the button's LED flashes until the cycle is complete.

Pressing STOP twice in succession shuts down the engine without cooling, just like turning the key to position 0. In AUTO mode, the CEM8 always applies a shutdown with cooling when the run command ends, allowing heat to dissipate before stopping the engine. If the process is not completed within the expected time, the controller triggers a Shutdown Failure alarm and keeps the STOP LED flashing as a warning.

HOME

ENGINE

The Engine screen gathers all the essential variables to check the real-time condition of the engine. Here you can monitor coolant temperature, oil pressure and temperature—fundamental values to verify that the unit is operating within range. It also shows the fuel level and, in engines with after-treatment, the urea (DEF) level. When the transfer or DEF pumps are activated, the corresponding icons flash to confirm it.

If the engine is equipped with an after-treatment system, this screen also reflects the regeneration status of the particle filter. Electrically, it provides information on battery voltage, alternator voltage, and, if present, an auxiliary battery. Finally, it includes service hour counters and the number of starts, distinguishing between successful and failed attempts.

This screen is available to the standard user and serves as the main reference for monitoring engine health before, during, and after operation.

MODE

The MODE button, located on the front of the CEM8, allows you to select the controller's operating mode. Each press toggles between MANUAL and AUTO, and the status is immediately confirmed through the LEDs located next to the button itself. These indicators are very intuitive: when an LED remains steady, it means that mode is active; when off, it means it is inactive; and if flashing, it indicates that AUTO mode is locked for safety.

In MANUAL, generator control is exercised directly from the CEM8, with local start and stop depending on the operator's action. In AUTO, the controller waits to receive external commands or to execute the schedules defined in TIMERSET, allowing the engine to start and stop fully automatically without manual intervention. It should be emphasized that in this mode the CEM8 does not perform mains switching by itself, as that function belongs to external switching equipment installed in the system.

Mode lock adds an extra layer of safety to the system: it prevents switching from AUTO to MANUAL in situations where the generator must always remain available in automatic mode. This avoids unintentional changes that could compromise operation and ensures service continuity at all times.

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When the generator is in AUTO, it can start at any time even if no one is present. Before leaving the unit in this mode, make sure the area is clear, ventilated, and free of people or materials that could pose a risk.

ON-SCREEN INDICATORS

1 Top Bar

Displays the active menu and status icons. This is where regeneration warnings and other relevant events appear, serving as a constant reference of the generator's status. **(see icon table)**

2 Central Panel

It is the main working area. Here, configurable widgets are displayed along with information tables and interaction zones to check parameters, navigate through options, or execute actions.

3 Bottom bar:

It functions as a navigation guide with arrows and shortcuts. On some screens, it displays the date and time, and during regenerations, it is used to show the real-time progress bar.

When powering on the CEM8, it is advisable to first check the top bar, where in engines with regeneration cycles, warnings may appear that can affect normal generator operation. If no issues are present, load or engine values can then be checked. It is recommended to periodically review the counters in the central area (service hours, fuel) to anticipate scheduled maintenance. And alarms must never be cleared without resolving their cause: the active list and history help identify precisely what happened and when.

ICON TABLES – INDICATORS FOR REGENERATION CYCLES IN THE TOP BAR

ICONS FOR GENERATORS WITH YANMAR ENGINES

Description	Icon	Value
Diesel particulate filter lamp SPN: 3697		STEADY ICON: MEDIUM SOOT LEVEL – Regeneration required, moderate level
		FLASHING ICON: HIGH SOOT LEVEL – Regeneration required, high level
Amber warning lamp (REOP3)		Amber warning lamp active
Active regeneration status of the filter NORMAL – SPN 3700 FORCED – SPN 4175 INHIBITED – SPN 3703		Active regeneration
		Active regeneration inhibition
		Active forced regeneration
High exhaust system temperature SPN: 3698		FLASHING ICON: High temperature
NOx control diagnostic system (Stage V only)		Emission control system malfunction
Safety interlock mode		Safety conditions active for forced regeneration request

ICONS FOR GENERATORS WITH FPT - IVECO ENGINES

Description	Icon	Value
Operator-induced severity (EGR/DPF) lamps System tampering lamps SCR induction lamps DEF quality lamps DEF level lamps		STEADY ICON: Moderate warning for urea fluid status.
		FLASHING ICON: Severe warning for urea fluid status / Urea tank empty.
Soot level (Diesel particulate filter status) SPN 3701		MEDIUM SOOT LEVEL: Regeneration required, moderate level
		STEADY ICON: HIGH SOOT LEVEL – Regeneration required, high level
		ICONO PARPADEANDO NIVEL CRÍTICO DE HOLLÍN: Regeneración requerida, nivel crítico.
Thermal treatment SPN 3697 SPN 3700 (Forced) SPN 3712 (Inhibited)		DPF Forced Regeneration Active
		DPF Active Regeneration Inhibition
		DPF Active Automatic Regeneration
High Exhaust System Temperature (HEST) SPN: 3698		High Catalyst Temperature
HC Burnout		STEADY ICON: Engine speed reduced. First level of HC accumulation
		FLASHING ICON: Engine speed reduced. Second level or higher of HC accumulation

ICONS FOR GENERATORS WITH SCANIA ENGINES

Description	Icon	Value
Diesel Exhaust Fluid (DEF) Level SPN 5245		STEADY ICON: Moderate DEF refill warning
		FLASHING ICON: Severe DEF refill warning / Urea tank empty
Soot Level (Diesel particulate filter status) SPN 3701		MEDIUM SOOT LEVEL: Regeneration required
		STEADY ICON: HIGH SOOT LEVEL – Regeneration required, moderate level
		FLASHING ICON: CRITICAL SOOT LEVEL – Regeneration required, high level
Thermal Treatment SPN 3697 SPN 3700 (Forced)		Forced Regeneration Active
		Active Regeneration Inhibition
		Automatic Regeneration Active
High Exhaust System Temperature (HEST) SPN 3698		High Catalyst Temperature
Emission Induction Failure – OBD		Emissions fault: dosing error, urea quality issue, monitoring failure, or NOx sensor failure

BOTTOM BAR

Real-time progress bar in the bottom bar during regeneration cycles.

CONNECTIONS, CABLE TYPES, AND SAFETY

The base of the CEM8 incorporates the necessary connectors for integration: sockets for GPS and IoT antennas, an Ethernet port for network communications, a USB port for programming and service, and a multipin terminal block that contains the connections for RS485 and CAN, as well as power supply and ignition key. With these connections, the controller can be linked both to local systems and to remote monitoring platforms.

For the connections, it is recommended to use low-loss coaxial cable for antennas (max. 3 m), shielded twisted pair for Ethernet (up to 100 m), standard USB 2.0 (max. 5 m), and shielded cables for inputs and outputs, keeping runs short (max. 30 m) to ensure reliability.

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Connection safety: before handling the CEM8 base, it is essential to disconnect the power supply and ensure that no residual voltages are present. Cables must never be connected or disconnected while the system is running. Keep the area clean and dry to avoid short circuits, respect isolation distances, and always use certified connectors and cables. Incorrect assembly at this base can compromise both communication and the electrical protection of the system.

1 Coaxial connectors

One dedicated to the GPS/GNSS antenna, for location and geofence services.

Another for the LTE/IoT modem antenna, which enables remote communication of the device in the versions that include it..

2 Ethernet port:

Network connection for standard communication protocols such as Modbus TCP or SNMP, allowing integration into BMS or monitoring platforms, and direct connection with technical support.

3 USB Type-B port:

Used for programming, firmware updates, and communication with the Genset WorkBench software. It also facilitates log downloads when enabled.

4 Multipin terminal block:

RS485 (MODBUS RTU), CAN (CPUB communication), ignition key input, and display power supply.

CONNECTIVITY: GENSET WORKBENCH, LOGICLAB Y HGWEB

To obtain Genset WorkBench, firmware updates, or programming libraries, it is necessary to contact HIMOINSA technical support or the distributor who supplied the controller.

On the lower rear part of the CEM8 are the communication and expansion connectors. This access allows technical service to connect network cables, USB, or RS485 interfaces without the need to disassemble the panel.

LogicLab
Entorno de desarrollo para crear las lógicas de PLC que luego se transfieren a la CEM8 mediante GenSet Workbench.

GenSet Workbench
Software oficial de configuración y mantenimiento avanzado. Permite personalizar la interfaz, cargar rutinas PLC y actualizar firmware.

HGWEB
HIMOINSA platform for remote monitoring on PC or mobile: real-time values, alarms, and service history.

CEM8 Assembly

The CEM8 combines the control interface, intended for daily operation, with the CPU, which processes inputs and outputs, engine data, and external communications. The CPU is where the logic that coordinates the entire system is concentrated.

DIAGNOSIS AND TROUBLESHOOTING

Before starting the CEM8 and the Generator
Check fuel, battery connected, emergency stop deactivated, ventilated area, and no leaks.

How do I start the CEM8?
Turn the switch to the ON position. The screen will display basic values.

What is the difference between MANUAL and AUTO?
In MANUAL, start/stop is done from the panel. In AUTO, the CEM8 operates automatically according to schedules or external signals.

What should I do if an alarm appears?
Enter the ALARMS menu, read the message, and resolve the cause before restarting.

How are alarms classified?
Warnings: Do not stop the engine.
Critical: Stop the engine.

How do I shut down the generator correctly?
Press STOP once for a shutdown with cooling.
With a double press, the generator stops immediately (use only in exceptional cases).
In emergencies, always use the emergency stop button.

What happens if I press STOP twice?
The engine stops instantly, recommended only in special situations.

What is the dashboard?
A configurable screen where readings such as hours, fuel, alarms, or power can be pinned.

How do I customize the dashboard?
The pins to anchor cards are found in the ENGINE, GENERATOR, and STATUS menus.

What is TIMERSET?
The function that allows you to schedule automatic starts and stops.

Can I schedule a weekly automatic test?
Yes, by setting the day and time in TIMERSET. The generator will start and stop automatically.

How do I know when to perform a regeneration?
The CEM8 displays a warning and guides you through the process. It must not be interrupted to ensure the filter is properly cleaned.

Which readings should I monitor during operation?
Mainly frequency, voltage, current, kW, service hours, temperature, oil pressure, and fuel level, along with any other parameter that the CEM8 indicates depending on the installation.

What maintenance can I do as a user?
Check fuel, battery, and external cleanliness of the panel.

What maintenance should I not do?
Parameter adjustments or calibrations, which are reserved for technical service.

What should I do if the generator does not start?
Check fuel, battery, emergency stop, fuses, and alarms. If the issue persists, contact technical service.

What happens if I turn off the key without pressing STOP?
The engine shuts down abruptly, shortening its service life.

What do the numbers in INPUTS/OUTPUTS mean?
They indicate which digital signals are active at that moment.

What should I do before leaving the generator?
Shut it down with cooling, check its status, and leave it in AUTO if required.

Why is it critical not to interrupt a regeneration?
If it is not completed, the filter remains dirty, fuel consumption increases, and the controller may block the start.

How is fuel transferred from an external tank?
Automatic: the CEM8 activates and stops the pump through its configurable thresholds.
Manual: from UTILITIES or a programmed input.

How do I know when scheduled service is due?
The CEM8 displays maintenance reminders based on engine hours. Review the message and contact technical service if applicable.

What connectivity options does the CEM8 have?
It can communicate with platforms such as HGWeb and supports optional modules for remote integration, monitoring, and PLC program loading.

Should I update the CEM8 firmware?
Yes, it is recommended to keep it up to date for improvements and fixes. The update must be carried out exclusively by authorized technical service.

What is GenSet Workbench?
It is the native configuration and programming software for the CEM8. It allows customization of PLC screens and widgets, loading of logic, adjustment of advanced parameters, and firmware updates. Its use is reserved for authorized technical service, as it modifies critical generator functions.

Comunicaciones
The CAN bus is robust and can reach up to 1000 m in length, extendable to 2000 m with repeaters. It supports up to 110 devices and maintains communication even if a cable breaks or short-circuits.
If a communication fault appears on the screen, the manual indicates possible causes:
Bus terminators not active (there must be 60 Ω between CANH and CANL).
Incorrect wiring of CANH and CANL leads.
Power supply failure in the module (+B and –B < 8 V).
Module activation failure (MAN and –B < 8 V).

Tip: always check continuity and voltages with the controller powered off before diagnosing a bus fault.

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