Scania Engines

Operator's manual

3250
Instrumentation
en-GB 2 490 157

Issue 3.0

Introduction

This Operator’s manual describes the operation of instrument panel 3250 for Scania generator sets.

The information in this Operator's manual was correct at the time of going to press. Scania reserves the right to make alterations without prior notice.

Note:

Always use Scania spare parts for repair work.

Functions

Instrument panel 3250 is a microcontroller-based instrument panel used to start and switch off the generator set manually or automatically via an external signal.

The instrument panel runs and monitors parameters to ensure trouble-free operation of the generator set. The instrument panel display displays the operational status and display messages.

Instrument panel 3250 has the following functions:

- Manual and automatic startup and shutdown of the generator set.
- Engine shutdown and alarms.
- Measuring engine data: engine temperature, oil pressure, fuel level, operating time and maintenance reminder.
- Measuring generator data: power, measuring effective voltage and current (RMS).
- Graphics of engine temperature, oil pressure and fuel level.
- CAN communication with the engine control unit for diagnostics.
- History log with the last 119 alarms.

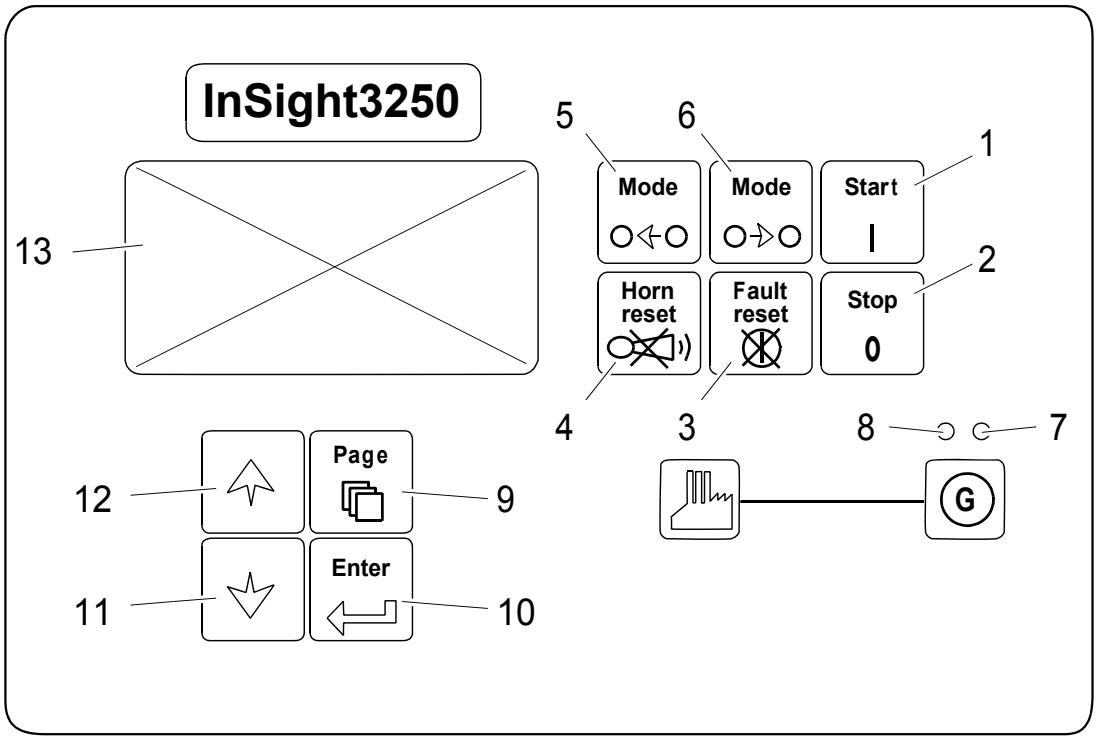
Alarms and stopping the engine

Instrument panel 3250 has alarm functions for:

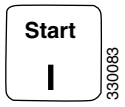
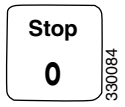
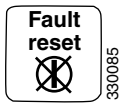
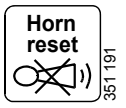
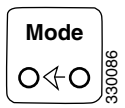
- Undervoltage and overvoltage.
- Underfrequency and overfrequency.
- Excess current.
- Failed engine start or engine shutdown.
- Undervoltage and overvoltage for battery.
- Imbalanced load between phases or phase fault.
- High engine temperature.
- Emergency stop.
- Low oil pressure.
- Maintenance reminder.
- Configurable binary input for alarm and engine shutdown.
- Oil pressure sensor error.
- Coolant temperature sensor error.
- Alarms and diagnostic messages from the engine control unit.

Instrument panel

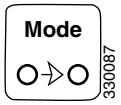
The illustration displays the instrument panel switches, indicator lamps and display.



Switches for generator set

Position	Switch	Function
1		Start the engine. The switch is only activated in manual operating mode (*MAN*).
2		Stop the engine. The switch is only activated in manual operating mode (*MAN*). When you press the switch, the generator set stop sequence is initiated. If you press the switch several times or press it in for over two seconds, the current phase of the stop sequence is cancelled (e.g. cooling), and the next phase is started.
3		Acknowledge alarm and switch off the alarm signal. Acknowledged alarms disappear immediately and active alarms are changed to acknowledged. An alarm message disappears when the cause has been resolved.
4		Deactivate alarm signal without acknowledging the alarm.
5		Change operating mode between *OFF*, *MAN*, *AUT*, *TEST*. The switch is activated when the main view with the selected operating mode is displayed. The switch is deactivated when the operating mode has been selected externally.

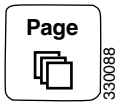
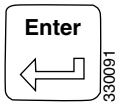
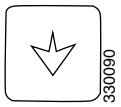
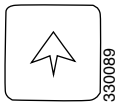
Switches for generator set

6		Change operating mode between *OFF*, *MAN*, *AUT*, *TEST*. The switch is activated when the main view with the selected operating mode is displayed. The switch is deactivated when the operating mode has been selected externally.

Indicator lamps

Position	Function
7	Red indicator lamp, flashes when an alarm is triggered. When you press switch 3 (*Fault reset*), the indicator lamp is constantly on when alarm is still active, or it turns off when no alarm is active.
8	Green indicator lamp, on when there is generator voltage and it is within the limits. The generator voltage and frequency limits depend on the parameters set in the *Gener Protect* group on the *Set-points* page.

Switches for display and control

Position	Switch	Function
9		Go to next page.
10		Finish editing a setting or go to the right in the history log.
11		Page down or decrease a setting value in edit mode.
12		Page up or increase a setting value in edit mode.
13		Graphic black/white display.

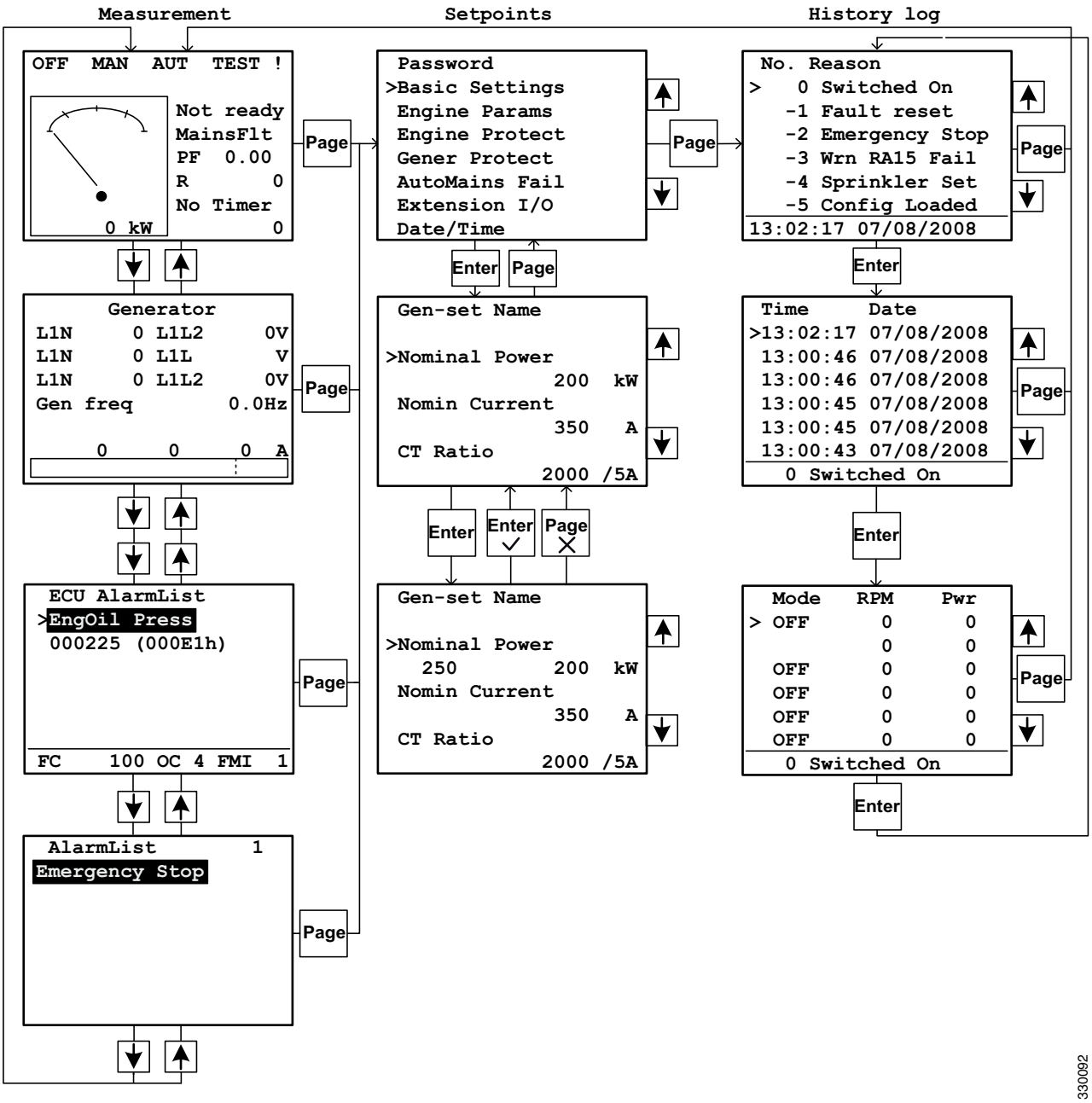
Display pages and structure

The information displayed is structured in three pages with subordinate views. You can change pages with the *Page* switch.

1. The *Measurement* page consists of views that display measurement values such as voltages, current, oil pressure and calculated values such as generator power and statistical data. The alarm list from the previous view is also shown there.
2. The *Setpoints* page consists of views with settings divided into groups, and a separate group for entering the password.
3. The *History log* page shows the history log, where the last event is displayed first.

Note:

The *Setpoints* and *History log* pages are only accessible when *Engineer* is selected as the user (not *User*). See the section Selecting language and user.



Values which are read from the engine control unit

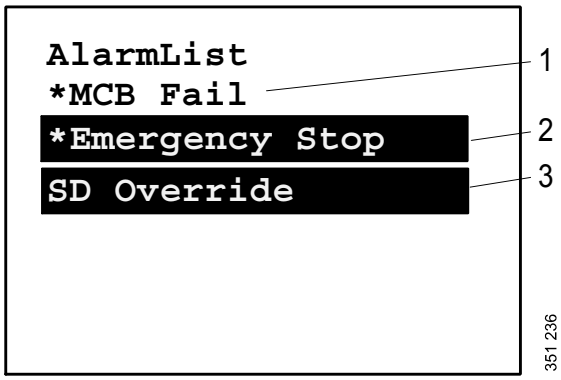
The instrument panel can read and generate alarms for the following values from the engine control unit:

- Engine speed.
- Oil pressure.
- Engine coolant temperature.
- Total operating time until next maintenance.
- Fuel level (only if the generator set has the fuel level monitor option).
- Boost pressure.
- Intake temperature.
- Engine oil temperature.

Note:

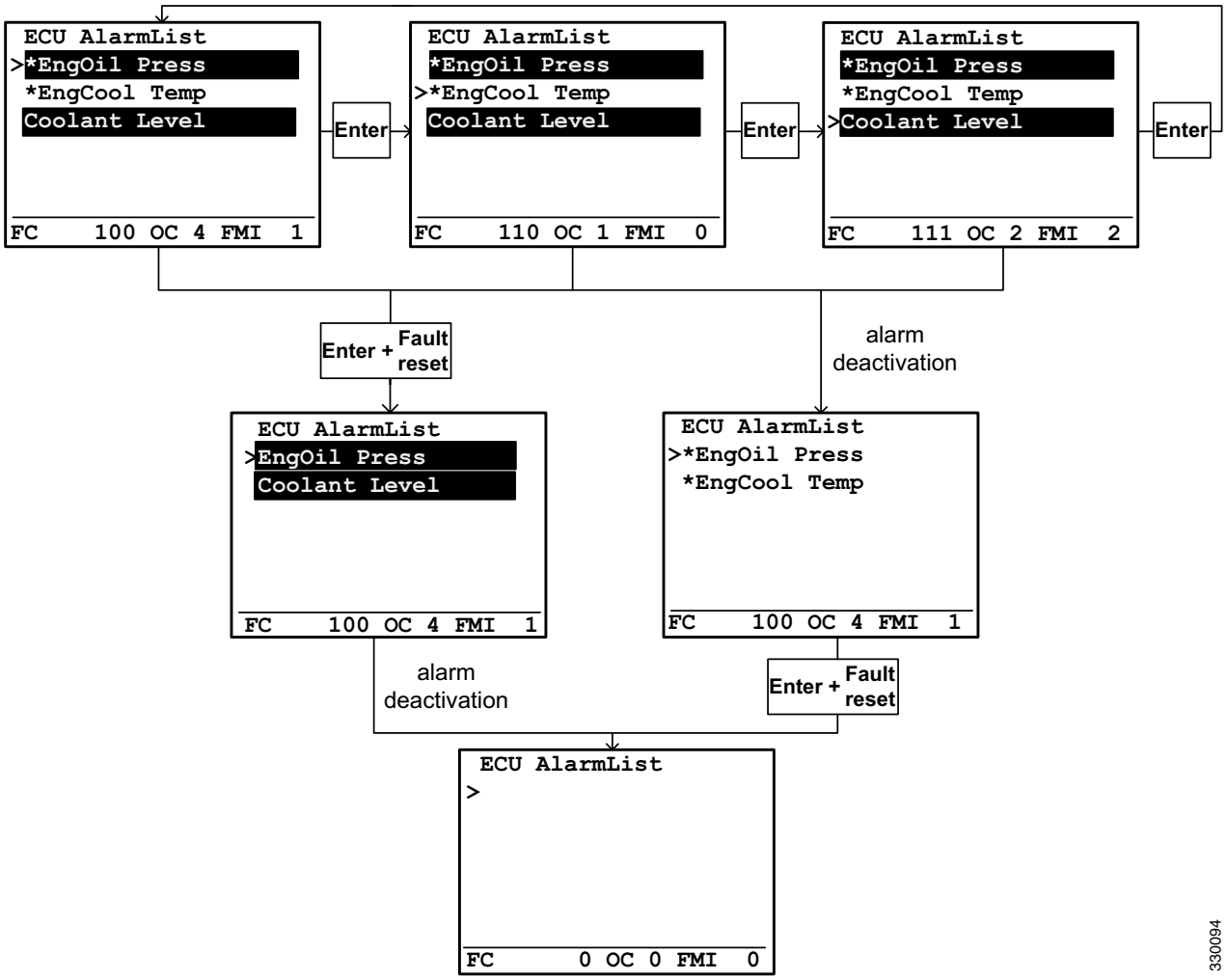
Only alarms are written in the history log. Other values that have been read from the engine control unit are not registered.

Alarms from the engine control unit

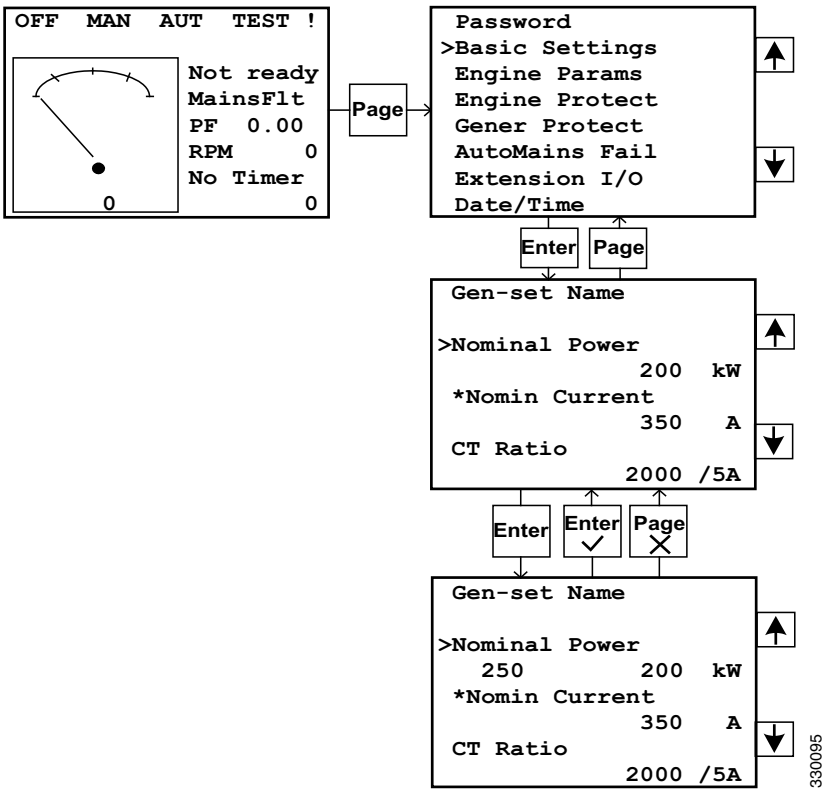


1. *Inactive non-acknowledged alarm*
2. *Active non-acknowledged alarm*
3. *Active acknowledged alarm*

How to scroll through the alarms from the engine control unit:



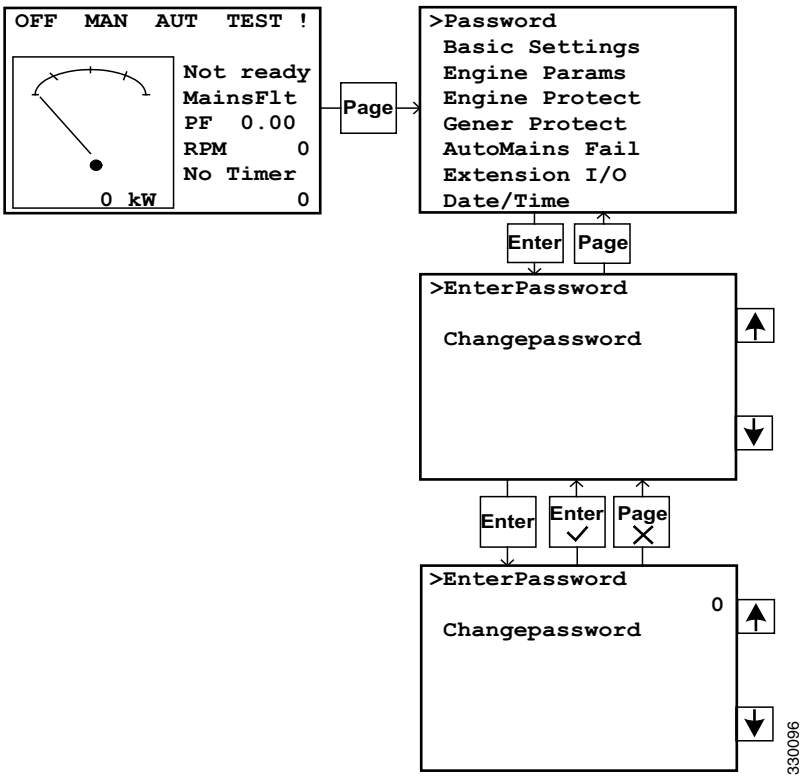
Changing settings



Note:

Settings with an asterisk are password-protected. If you want to change them, you must first enter the password according to the instructions in the next section.

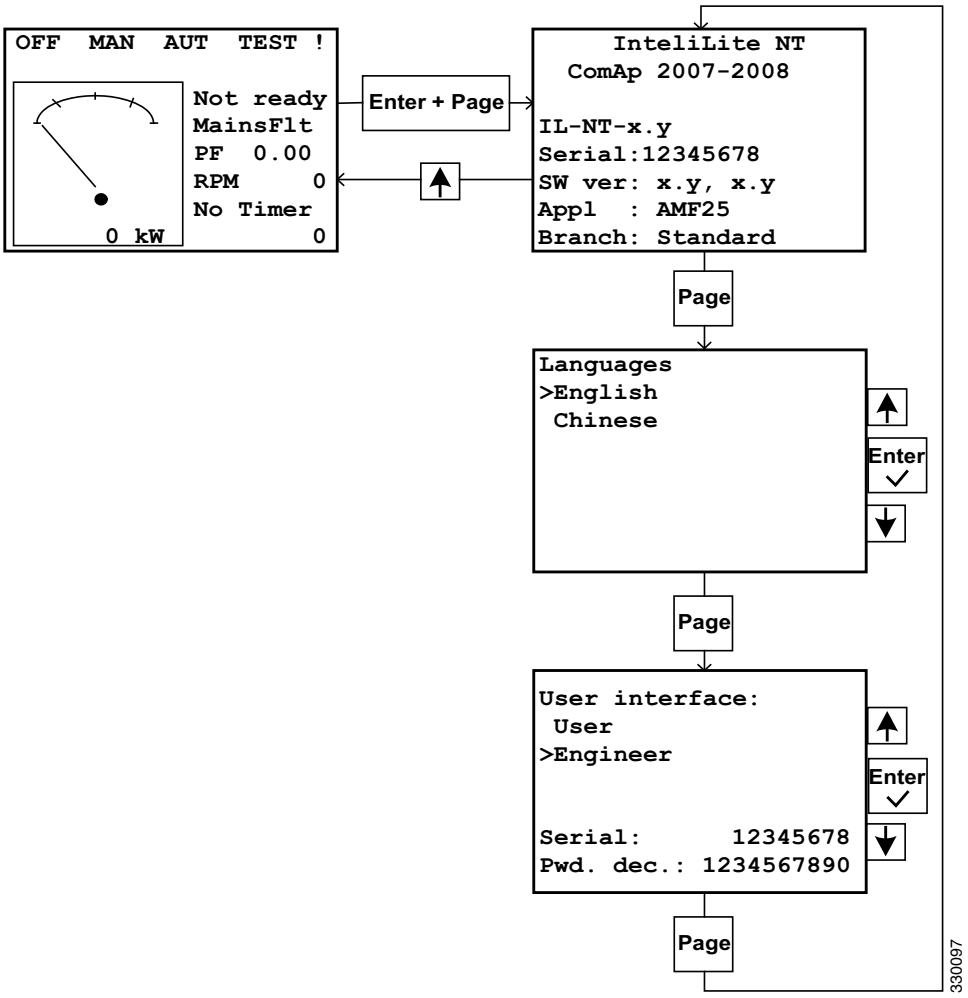
Entering the password



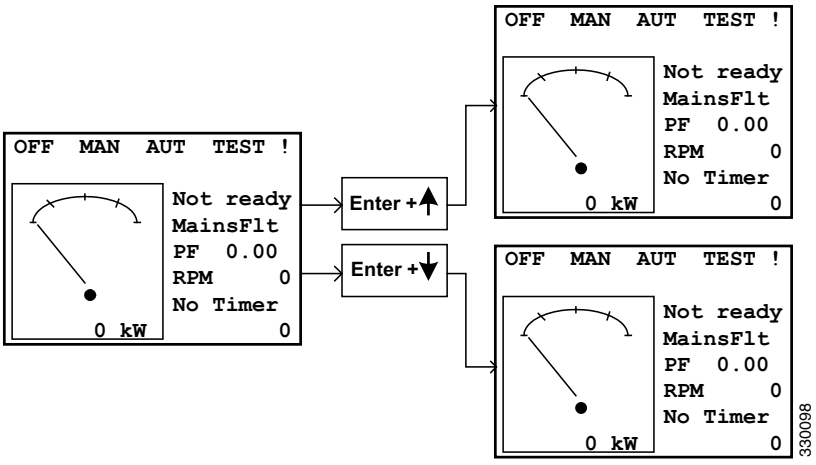
Note:

If you do not have the password: Access the information view with the serial number (*Serial*) and the password decode number (*Pwd. dec.*) according to the instructions in the next section. Then send the numbers to your Scania distributor.

Selecting language and user



Adjusting the display contrast



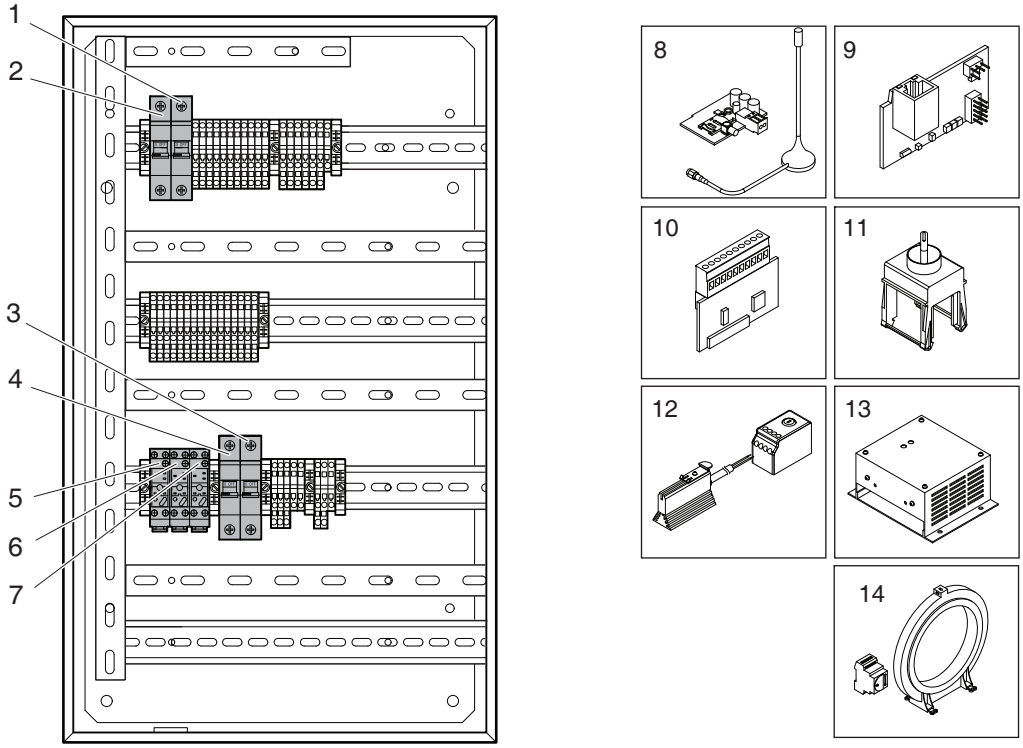
List of alarms from the coordinator

If the external expansion card has been installed (see position 10 in Components in the central electric unit), the alarm can be used to control an external output, e.g. switching on a light or emitting an acoustic signal.

Alarm	Safety precaution	Description
AI1 Wrn	Alarm	Extra protection against low oil pressure. Activated at 2.4 bar.
AI1 Sd	Engine shutdown	Extra protection against low oil pressure. Activated at 2.0 bar.
AI2 Wrn	Alarm	Extra protection against high coolant temperature.
AI2 Sd	Engine shutdown	Extra protection against high coolant temperature.
AI3 Wrn	Alarm	Low fuel level warning, if the fuel level monitor option has been selected.
AI3 Sd	Engine shutdown	Low fuel level warning, if the fuel level monitor option has been selected.
Binary input	Configurable	Configurable alarm or engine shutdown for the inputs for IL-NT, which are built-in in the instrument panel. Binary input 1 is used for emergency stop and binary input 2 for remote start.
IL-NT-BIO8	Configurable	Configurable alarm or engine shutdown for the inputs for IL-NT-BIO8, if the expansion card has been selected as an option.
Wrn Batt Volt	Alarm	The battery voltage is beneath the set limit values for *Batt Undervolt/Batt OverVolt*.
ChargeAlt Fail	Alarm	Fault when the alternator tried to charge the battery.
Sd BatteryFlat	Engine shutdown	If the instrument panel is switched off during the starting sequence of the engine due to a voltage drop, the instrument panel will not try to start the engine again. Instead, engine shutdown is activated.
Sd Start Fail	Engine shutdown	Starting fault. All start attempts have been carried out but failed.
Wrn Stop Fail	Alarm	Shutdown fault. A shutdown fault occurs if the stop button is pressed and the instrument panel is still reading the values for voltage, rpm or oil pressure.
Sd Gen Lx >V (where x = 1, 2, 3)	Engine shutdown	The alternator voltage is outside the *Gen >V Sd* limit values.

Components in the central electric unit

The illustration below shows the location of the components inside the central electric unit. The illustration shows all options. The central electric unit ordered can therefore have other equipment.



Pos.	Designation	Description
1	MCB1	Miniature circuit breaker for engine control unit, 20 A
2	MCB2	Miniature circuit breaker for instrument panel, 10 A
3	MCB5	Miniature circuit breaker for engine heater, 6 A
4	MCB6	Miniature circuit breaker for battery charger, 6 A
5	FCR	Relay for fuel valve
6	ECR	Not used
7	HCR	Relay for engine heater, instrument panel heater element and generator heater
8	Expansion card	For remote connection via GSM/GPRS
9	Expansion card	For remote connection via network
10	Expansion card	8 additional inputs and outputs
11	Switch	For changing between 50/60 Hz
12	OH2/FLZ510	Heater element for instrument panel/thermostat
13	Battery charger	For 220/240 V electrical power network
14	Hobut	Residual current device