PHILAE

FIRE ALARM SYSTEM

CONVENTIONAL

USER MANUAL

1 SUMMARY

PHILAE_USER_MANUAL_EN_REV0.docx				
Version	**Date**	**Description**	**Author**	**Approved by**
0	27/10/2020	First release	MH	JMA

2 INTRODUCTION

You have acquired a conventional fire detection **PHILAE** system and we thank you for the trust you place in MARINELEC TECHNOLOGIES. This product has been developed and approved for a marine and fluvial used. Below you can find all necessary information for its installation and commissioning.

2.1 Standards & Approvals

PHILAE system has been developed in conformity according to:

- Rule EN54-2 (12/97) + A1(01/06) "Fire detection and fire alarm systems – Control and indicating equipment"
- Directive 2014/90/EU of the European Parliament and of the Council of 23 July 2014 as transposed in the French Regulations and Commission Implementing Regulation (EU) 2019/1397 of 06 Aug. 2019 – Item A.1/ *3.51*

2.1.1 EN54-2 application

Mandatory functions of the EN54-2 standard applied

- FIRE ALARM
- FAULT ALARM
- ZONE DISABLEMENT
- ZONE ACTIVATION
- VISUAL AND AUDIBLE INDICATORS TEST

Additional functions not required by EN54-2 standard

- COMMUNICATION PORT MODBUS SLAVE
- COMMUNICATION PORT "V.D.R." [Marine application – Voyage Data Recorder]
- « GENERAL ALARM » AUDIBLE SIGNALISATION [Marine application – Vessel evacuation signal]
- « NOT ACKNOWLEDGED FIRE ALARM 2 MINUTES » OUTPUT [Marine application – Requirement for alarm forwarding of the navigation bridge]

Optional function with requirement of EN54-2 standard

- OUTPUT TO FIRE ALARM DEVICES (sirens output)

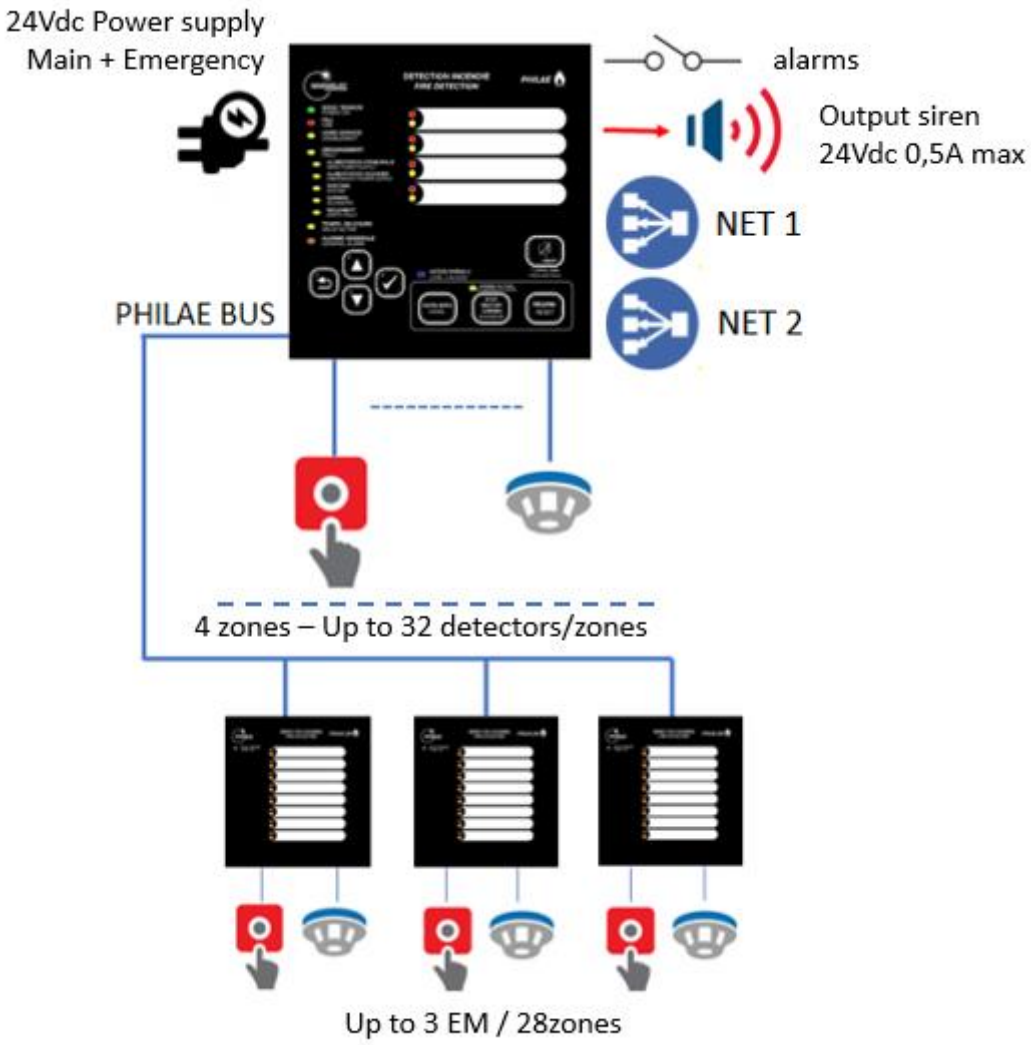
Optional function with requirement of EN54-2 rule not implemented

- OUTPUTS TO FIRE ALARM ROUTING EQUIPMENT
- OUTPUTS TO AUTOMATIC FIRE PROTECTION EQUIPMENT
- DELAY OF THE ACTIONING OF OUTPUTS
- COINCIDENCE DETECTION
- RECORDING OF THE NUMBERS OF ENTRIES INTO FIRE ALARM CONDITION
- FAULT SIGNALS FROM POINTS
- OUTPUTS TO FAULT WARNING ROUNTING EQUIPMENT
- DISABLEMENT OF EACH ADDRESS POINT
- TEST CONDITION
- STANDARDIZED INPUT/OUTPUT INTERFACE
- TOTAL LOSS OF POWER SUPPLY

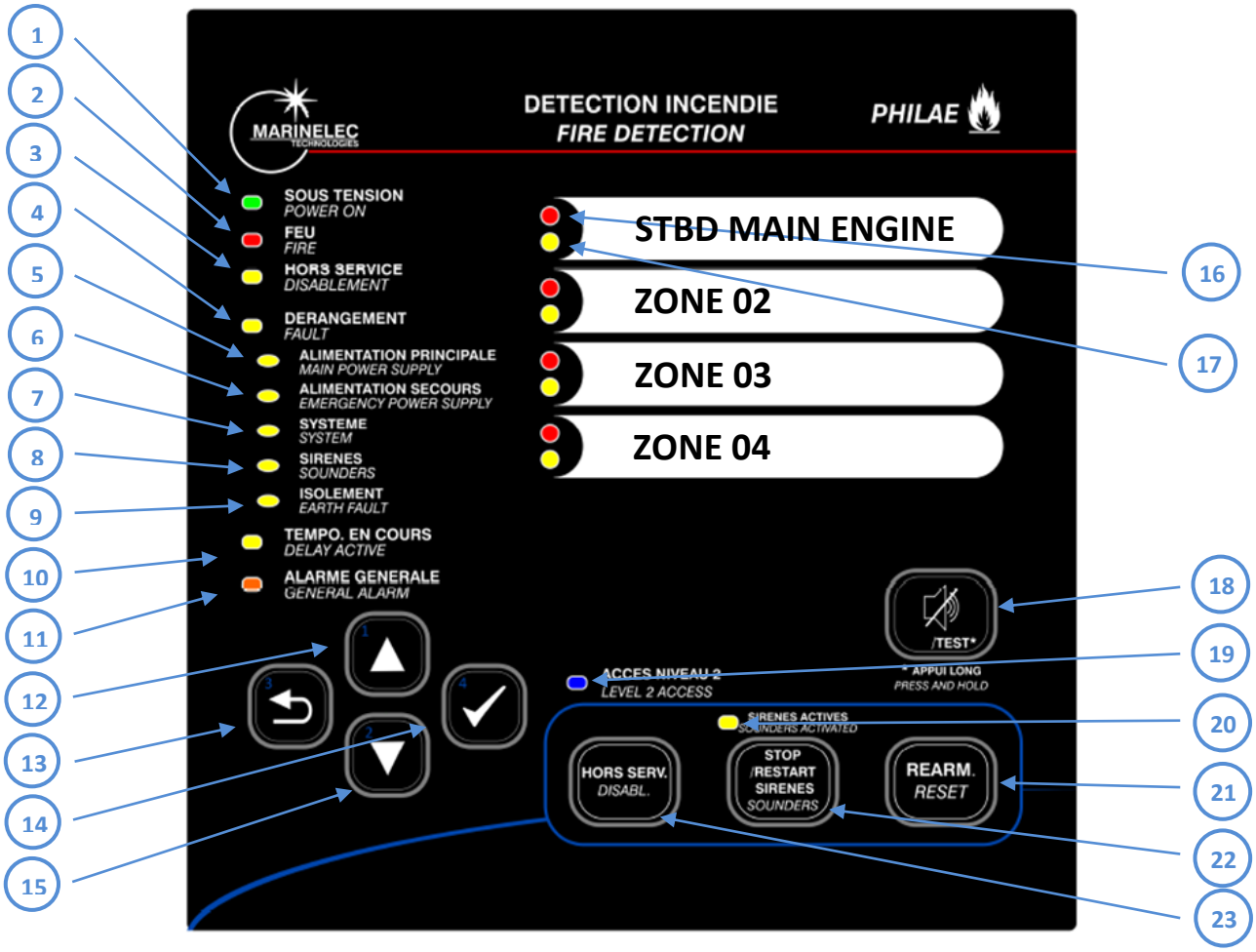
3 PRESENTATION

3.1 Overview

PHILAE is a modular conventional fire alarm system with a capacity of **4 zones to 28 zones**. It is composed of one main panel with 4 zones, and up to **3 optional expansion modules** PHILAE_EM (8 zones each). It's possible to connect up to 32 devices on each zone (manual call points and optical/heat/flame detector). Do not connect more than 512 detectors on your installation.
PHILAE product has been designed for simple and intuitive use.

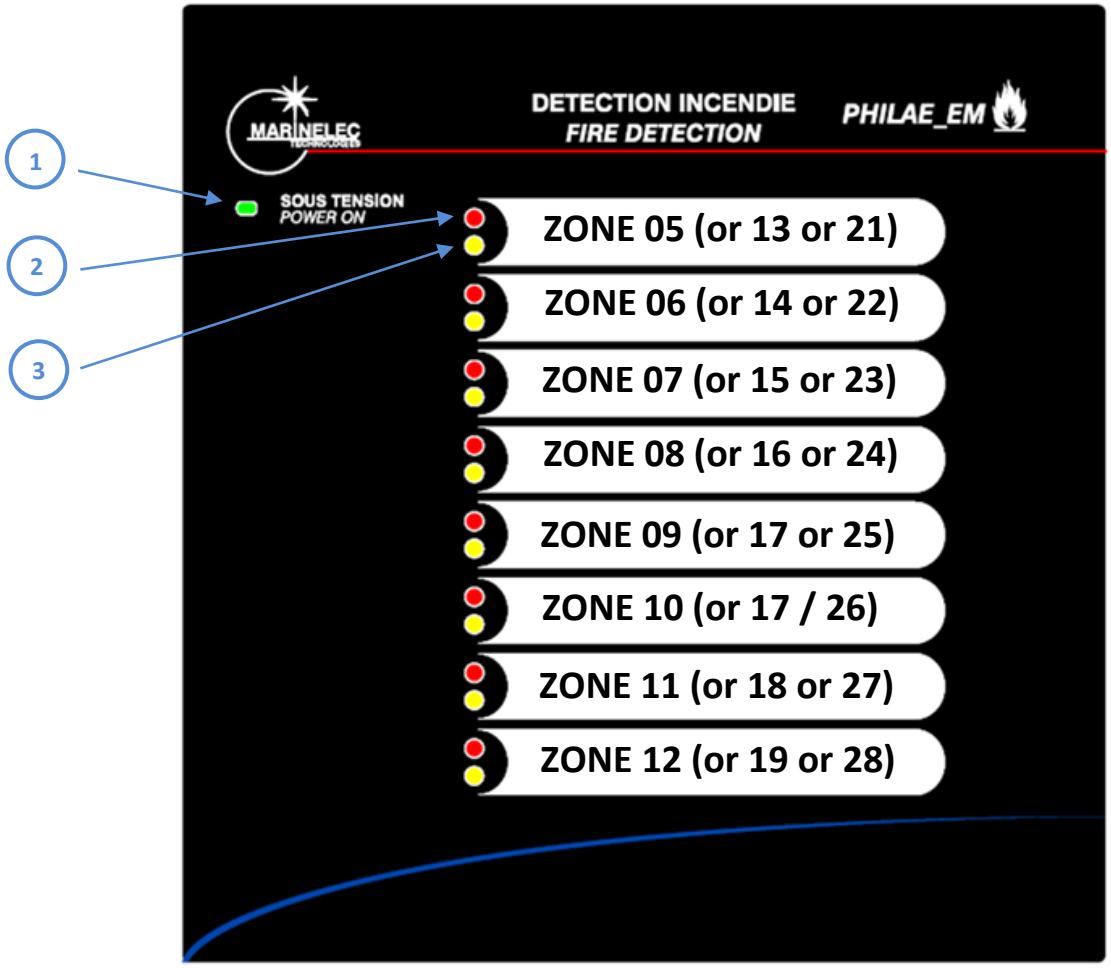


3.2 PHILAE front panel



Id.	Description
1	Powered Equipment
2	Fire alarm
3	Disablement
4	Fault
5	Main power supply fault
6	Emergency power supply fault
7	System fault
8	Sirens output (fault or disablement)
9	Insulation fault
10	Delay “fire not acknowledged 2 minutes”
11	General alarm
12	Up arrow button / number 1
13	Back button / number 3 (Disablement menu)
14	Validation button / number 4 (Disablement menu)
15	Down arrow button / number 2
16	Fire alarm indicator for zone 01
17	Fault / Disablement indicator on zone 01
18	Acknowledgement button / Test
19	Level 2 access
20	Sirens output state
21	Reset button
22	Sirens output Stop/Start button
23	Disablement button (Zone / siren)

3.3 PHILAE_EM front panel

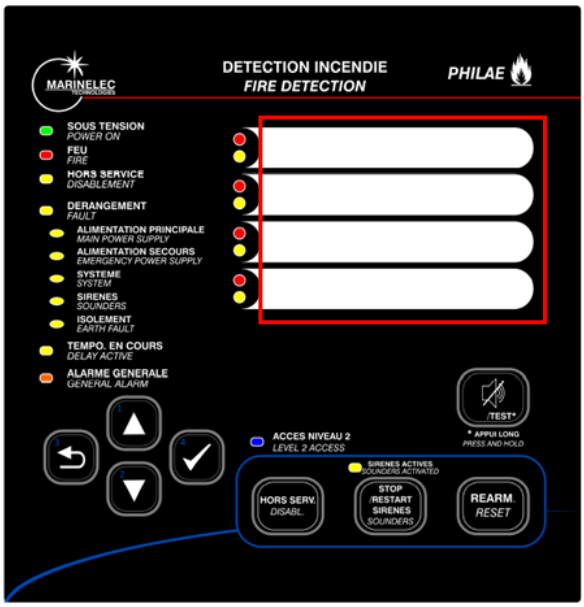


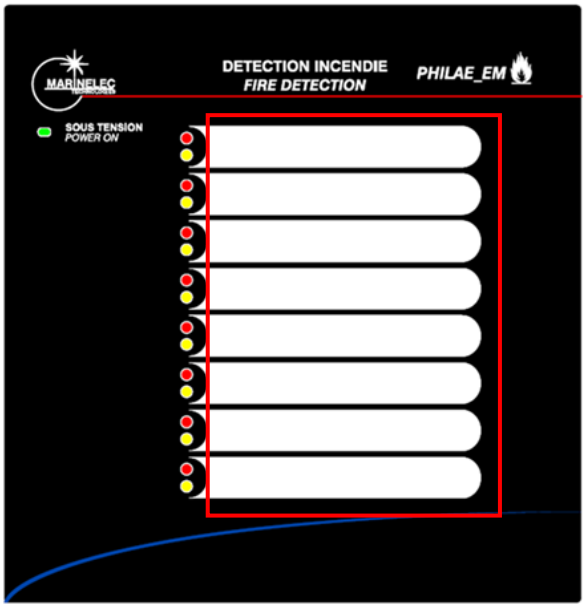
Id.	Description
1	Powered Equipment
2	Fire alarm indicator for zone 05 (or 13 or 21*)
3	Fault / Disablement indicator for zone 05 (or 13 or 21*)

** Each number depends on current PHILAE_EM addressing*

3.4 Zones labelling

Specific areas are available on PHILAE and PHILAE_EM product to allow a clear identification for each zone. It's necessary to use a simple language with no ambiguity for a very fast and precise localization of any fire alarm. Label's height is 10mm which is compatible with 9mm standard labels.





It's not recommended to use a simple pen for ensuring a clear and durable zone marking.

4 USE

4.1 Power ON the system

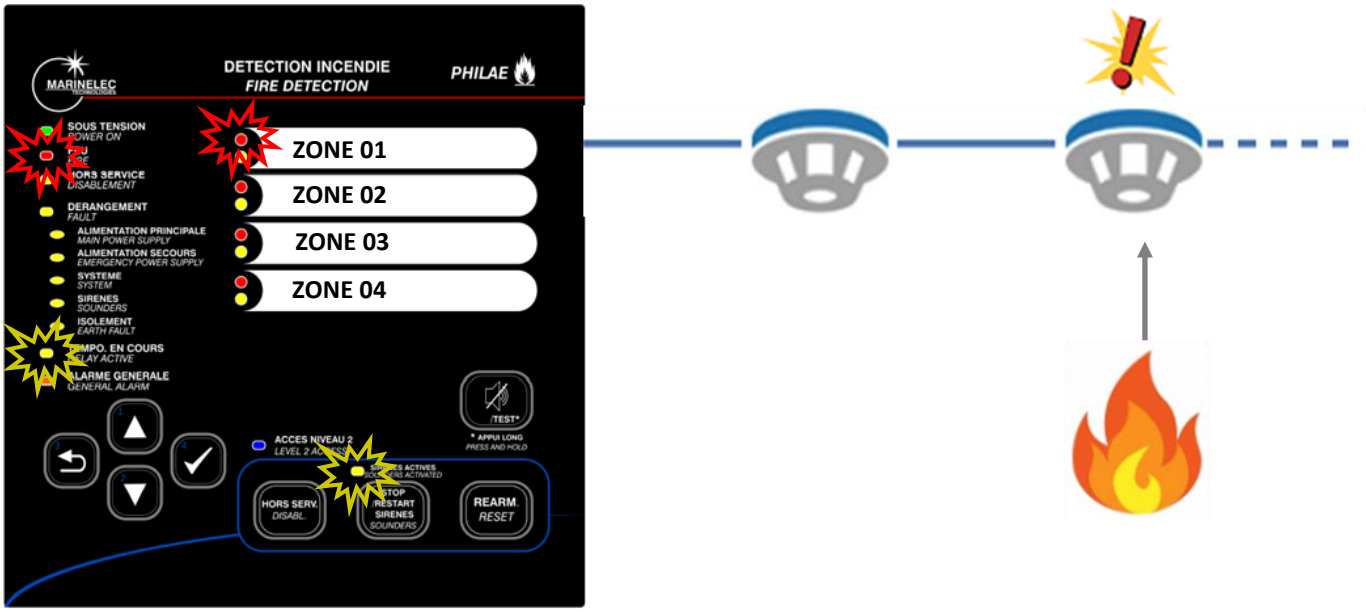
During the power-up phase, “POWER ON” LED lit and a test sequence is launched to allow a quick check of all indicators and internal buzzer.

In case of problem, please refer to “troubleshooting” section of the installation manual.

4.2 Fire alarm

4.2.1 Fire alarm detection

Fire alarm example on zone 1:



Visual & audible sequence :

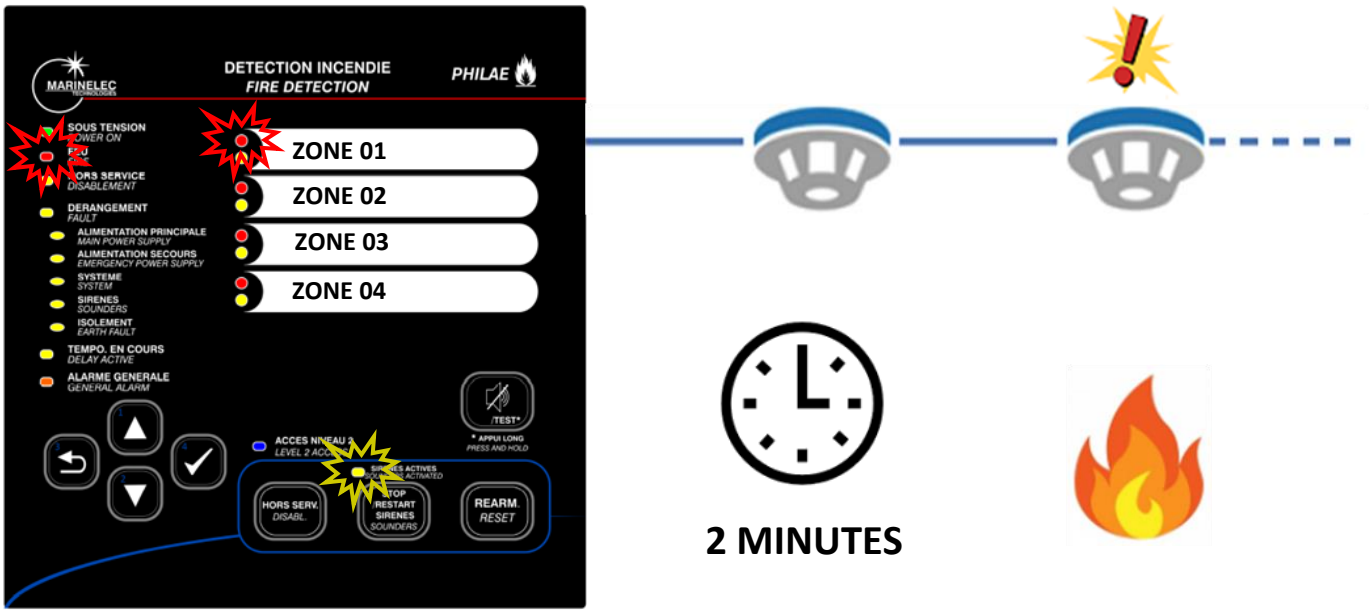
Indication	Status
Fire alarm LED	Flashing at 1Hz frequency
Fire alarm - zone 01 LED	Flashing at 1Hz frequency
Delay active LED *Note 1*	ON until « not acknowledged fire 2min » output activation
Internal buzzer	0.5s ON / 0.5s OFF
Sirens output *Note 2*	ON
Fire alarm output	ON

Note 1: It’s possible to clear the delay on « not acknowledged fire 2minutes » output, for zone 11 and zone 12 only. This setting is designed for manual call points.

Note 2: With the default settings, the sirens output is activated only for the first zone in alarm. Refer to installation manual.

4.2.2 Not acknowledged fire alarm after 2 minutes

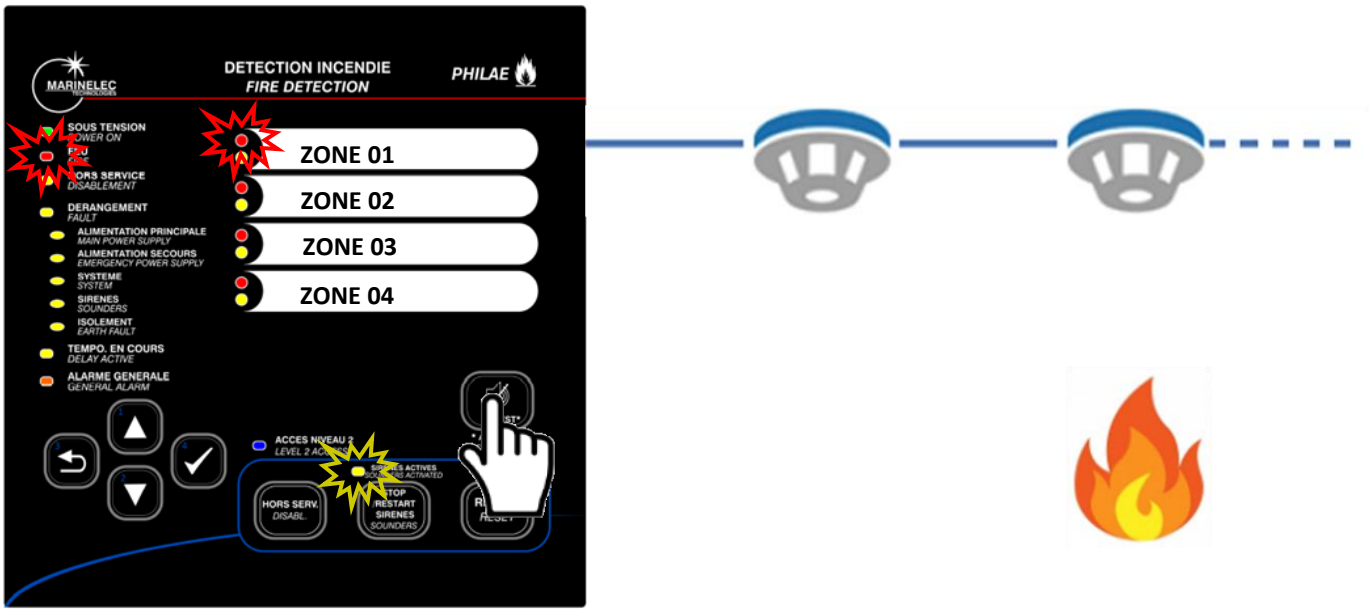
After 2 minutes, if the fire alarm is not acknowledged:



Indication	Status
Delay active LED	OFF
"Not acknowledged fire alarm 2minutes" output	ON

4.2.3 Fire alarm acknowledgement

Fire alarm on zone 1 is acknowledged by pressing on acknowledgement button:



Indication	Status
Fire alarm LED	ON (steady)
Fire alarm - zone 01 LED	ON (steady)
Internal buzzer	OFF

Delay active indicator	OFF
Sirens output" *Note 1*	Remains activated
Fire output	ON until reset action
"Not acknowledged fire alarm 2minutes" output	OFF

Note 1: It's possible to stop the sirens output with acknowledgement button using a specific setting.
Refer to installation manual.

4.3 Zone Fault

4.3.1 Causes of fault on zone

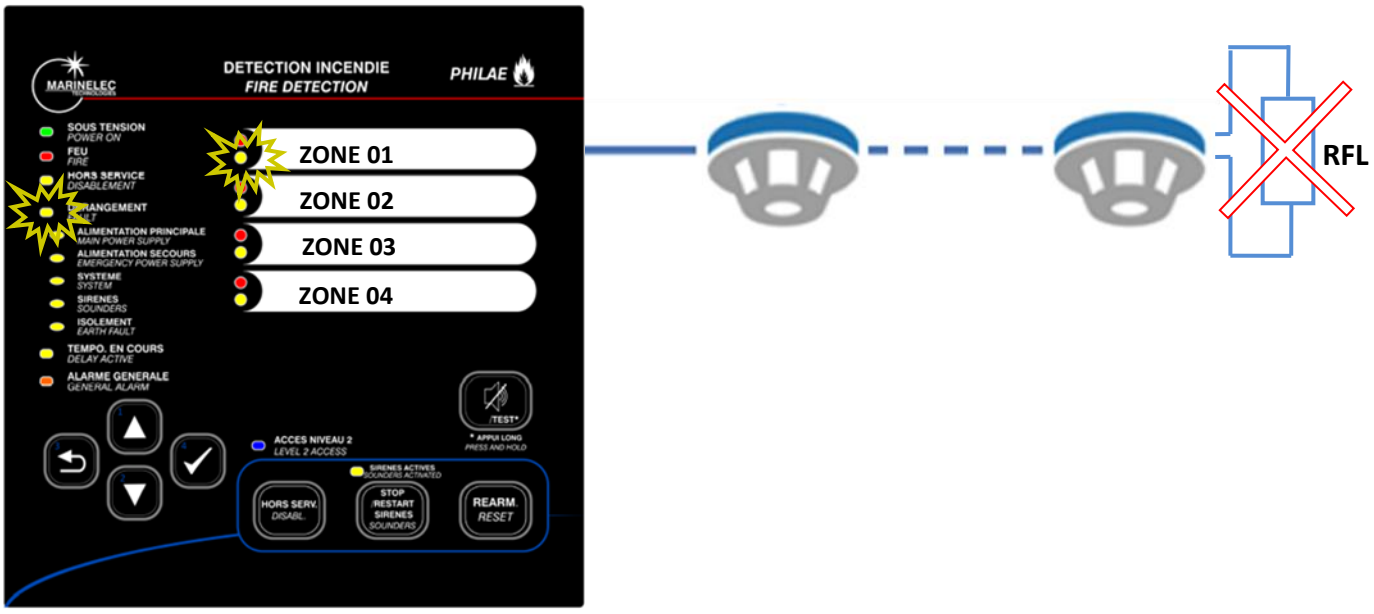
Fault on zone appears in any of these cases:

- Line resistor is missing
- Open line
- Line short-circuited or over current situation detected (>150mA)

If necessary, refer to "troubleshooting" section of Installation manual for details.

4.3.2 Fault detection

Example: The end of line resistor is missing on zone 1.

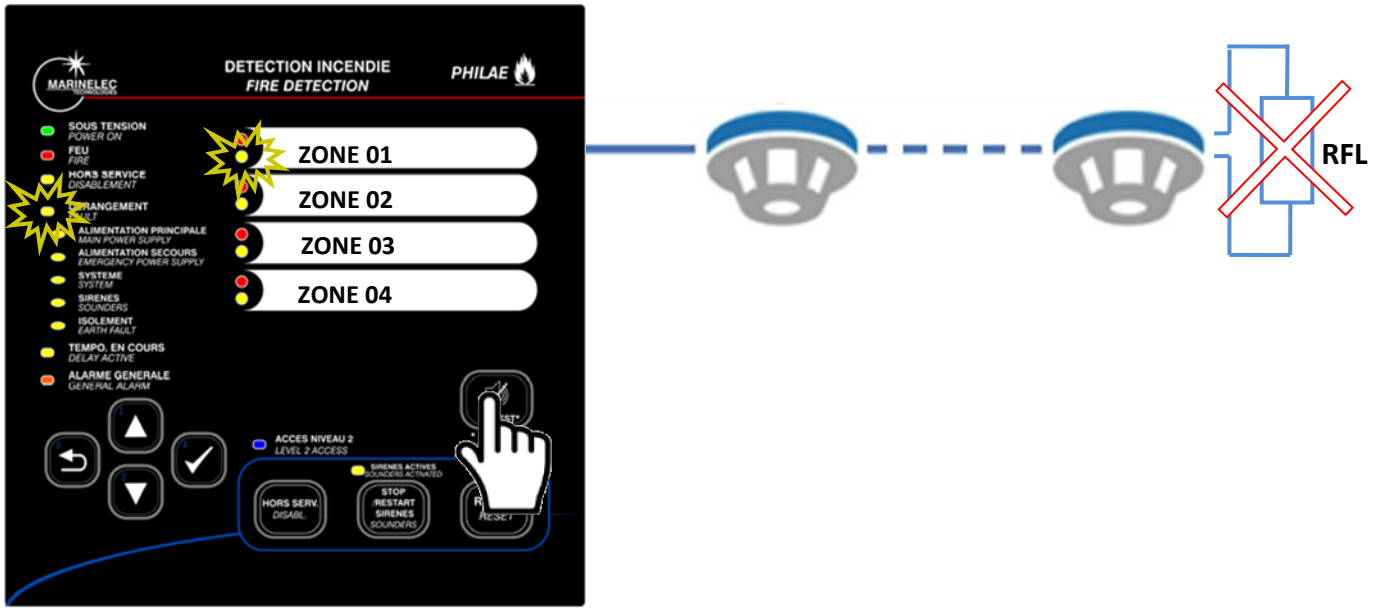


:

Indication	Status
Fault LED	Flashing at 1Hz frequency
Fault - zone 01 LED	Flashing at 1Hz frequency
Internal buzzer	ON
Fault output	OFF

4.3.3 Fault acknowledgement

Fault on zone 01 is acknowledged by pressing on acknowledgement button:



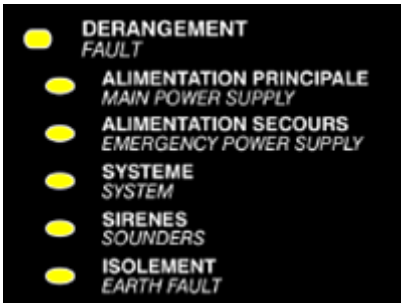
Indication	Status
Fault LED	ON
Fault on zone 01 LED	ON
Internal buzzer	OFF
Fault output	ON until reset action

4.4 Fault from electrical cause

4.4.1 Cause of electrical fault

Electrical fault appears in these cases:

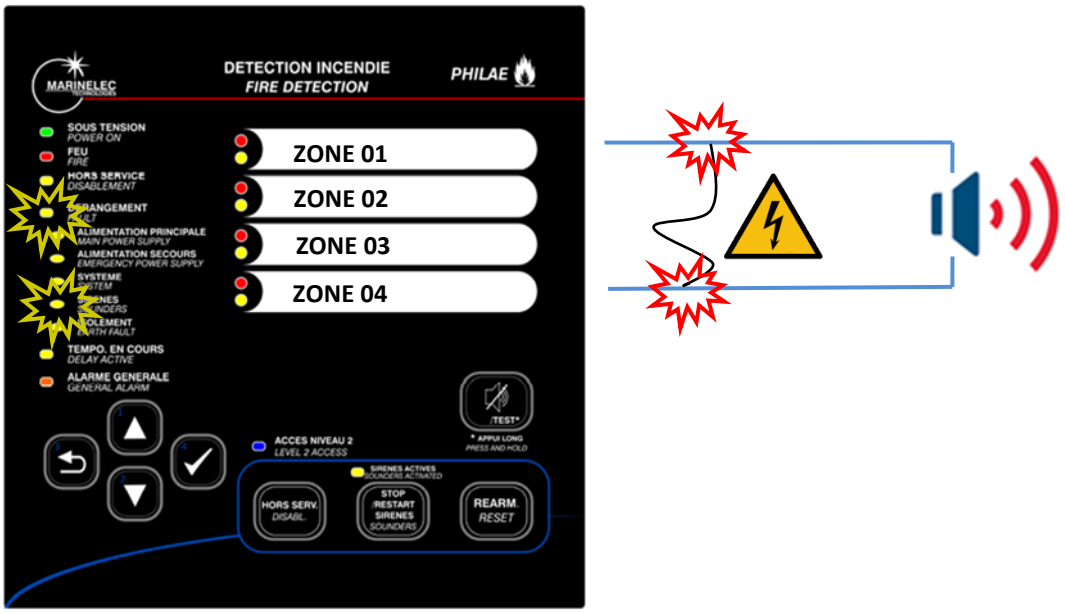
- Electrical fault on main power supply
- Electrical fault on Emergency power supply
- Internal system fault (processor fault, electrical fault alarm on PHILAE_BUS, …)
- Electrical fault on sirens output
- Electrical insulation (Earth) fault
- Communication fault between PHILAE and PHILAE_EM



Refer to “troubleshooting” section of Installation manual for details.

4.4.2 Electrical fault detection

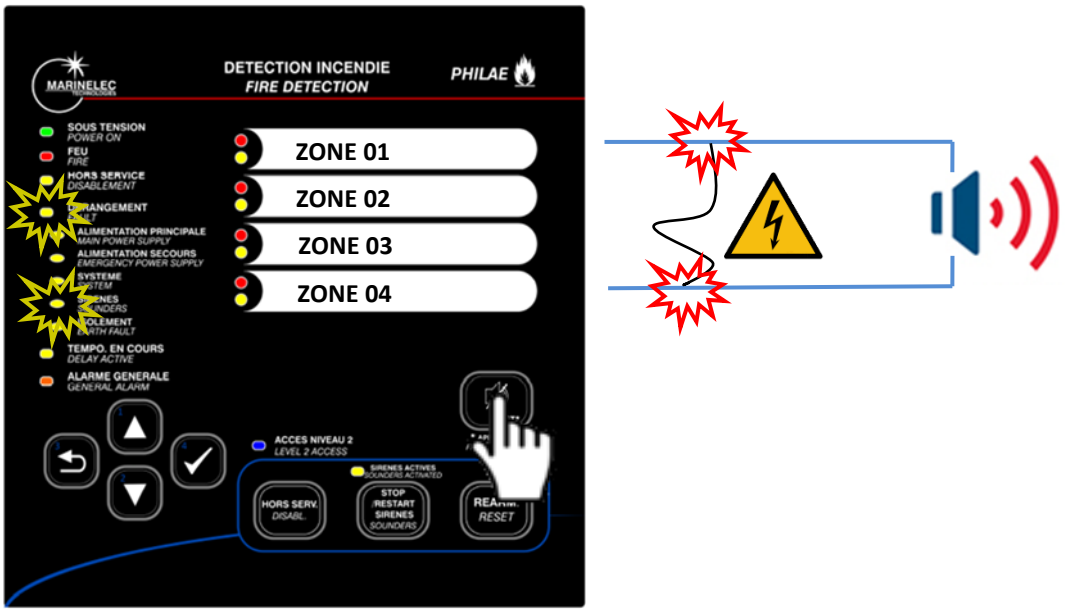
Example: Short-circuit is detected on sirens output.



Indication	Status
Fault LED	Flashing at 1Hz frequency
Sirens output LED	Flashing at 1Hz frequency
Internal buzzer	ON
Fault output	ON

4.4.3 Electrical fault acknowledgement

Fault on sirens output is acknowledged with a short press on acknowledgement button:

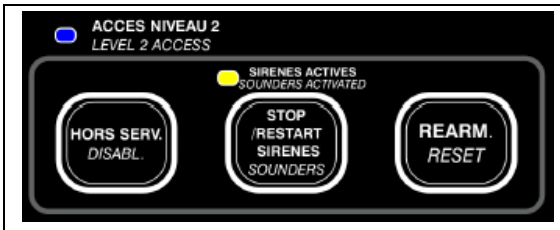


Indication	Status
Fault LED	ON
Sirens output LED	ON
Internal buzzer	OFF

Fault output	ON until reset action

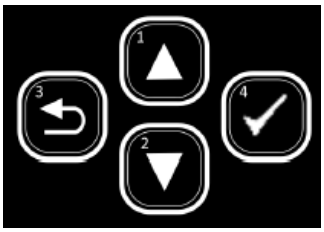
4.5 Level 2 access

These functions require level 2 access to be active:

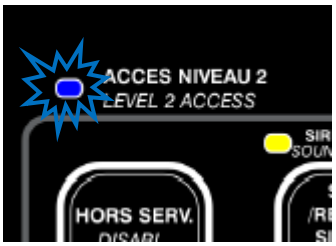
	• Zone disablement/activation • Siren start/stop • Alarms Reset

If you try to use these functions without being logged in at level 2, the *level 2 access* blue LED will flash for 3 seconds to indicate the necessity to be connected with level 2.

Level 2 access is reached using the correct number combination (4 numbers) from the following arrow keys:



When level 2 is active, the corresponding LED lights up:

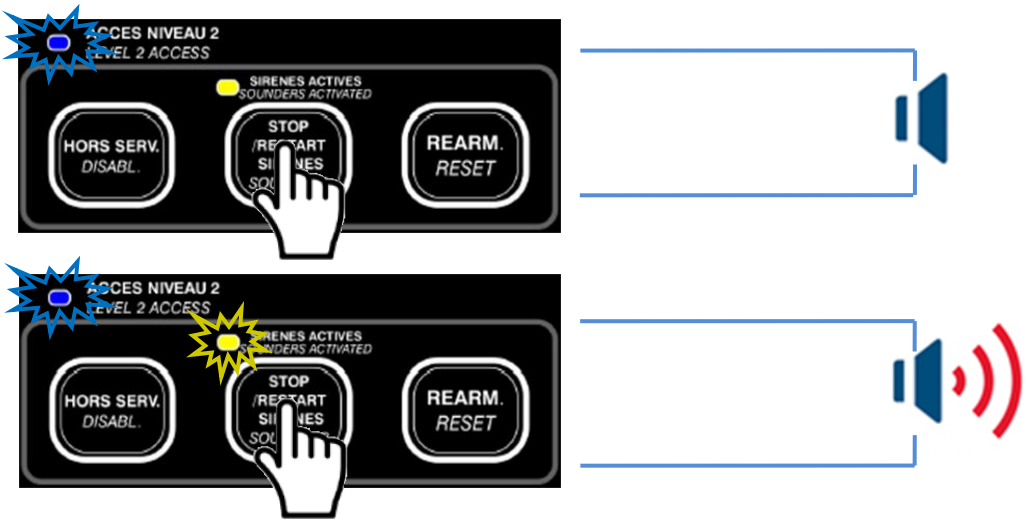


Level 2 access stays active for 1 minute.

4.6 Sirens output Start/Stop [Level 2 access required]

This function required level 2 access.

When sirens output is activated, it's possible to stop it using « STOP/RESTART SIRENS » button, the associated LED turns OFF. A second press will activate the sirens output and the associated LED will light up.



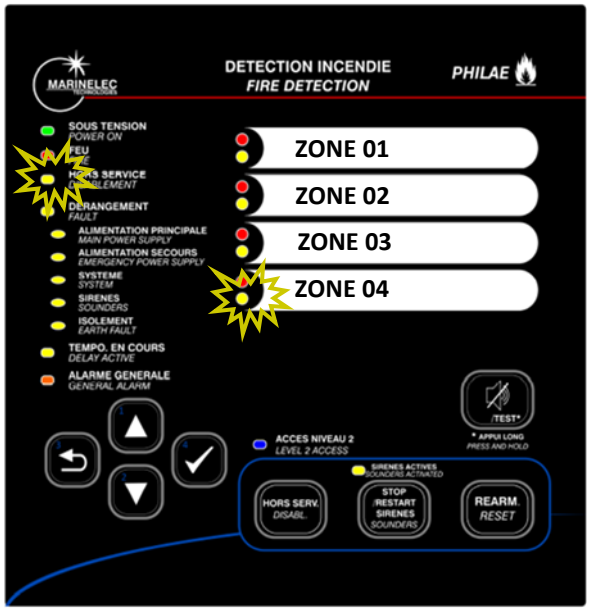
4.7 Zone/Sirens output disablement [Level 2 access required]

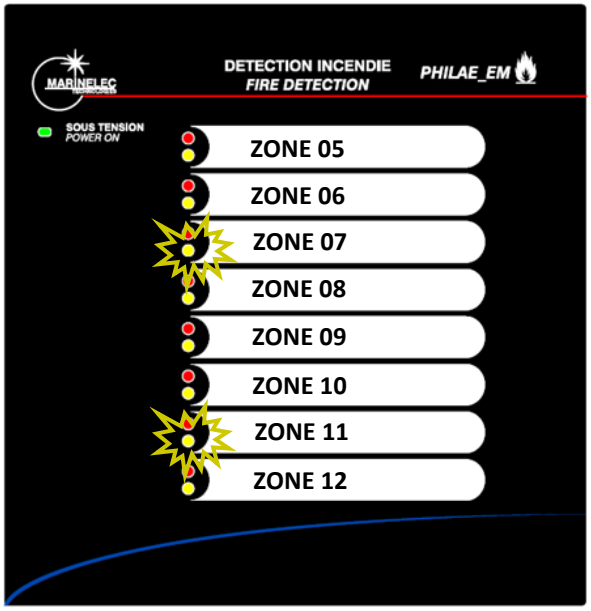
This function required level 2 access.

4.7.1 Disablement menu access

It's possible to access to disablement menu using "DISABLE" button:

The disablement LED flashes (5Hz) to inform that the disablement menu is active:



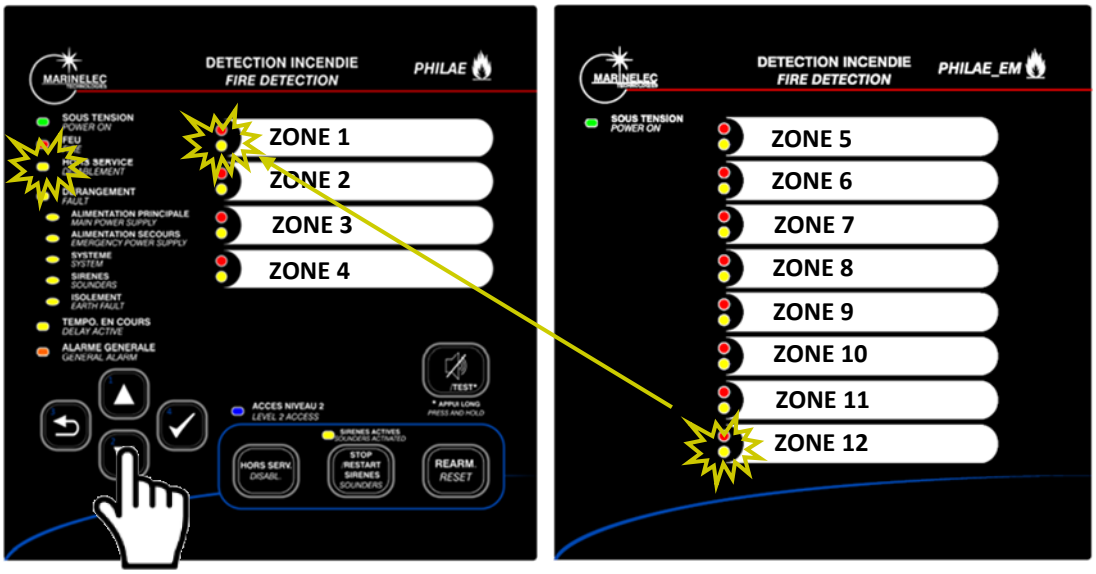


In the disablement menu, the yellow zone fault LED illuminates to indicate that corresponding zone is disabled. In the above example, zones 4, 7 and 11 are disabled.

Note: In the disablement menu, alarms are not displayed. To quit the disablement menu, press the "BACK (left arrow)" button.

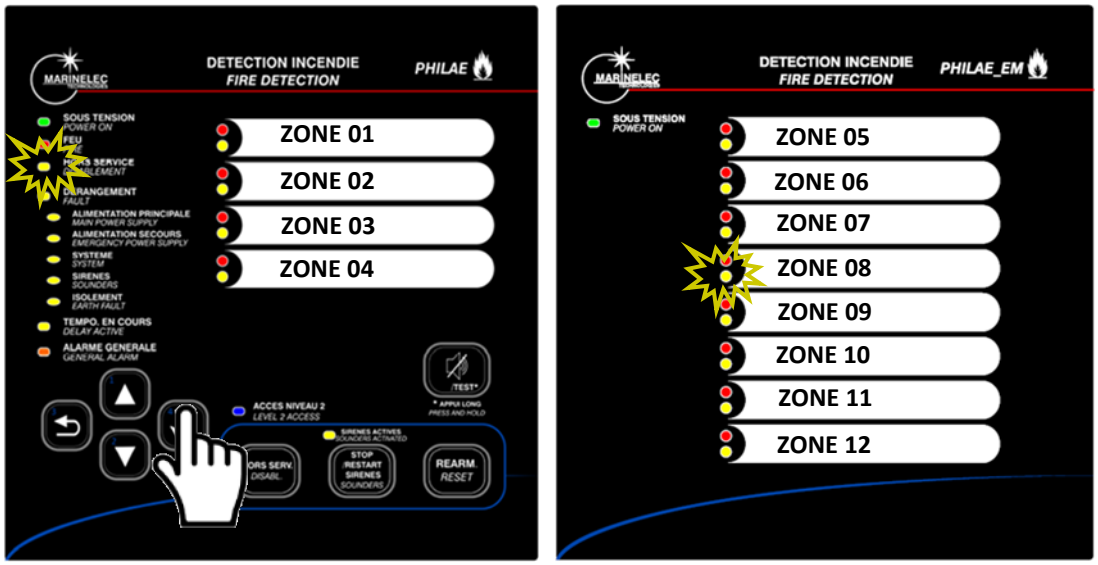
4.7.2 Disablement selection

The zone fault LED flashes to inform the cursor position. Use Up & Down arrow buttons to change the cursor position and disable or enable any particular zone.



If you press the down arrow when the cursor is placed on the last zone, the cursor will be place on siren fault indicator. To disable/enable the current zone/output siren, it's necessary to press "validation" button. After this action, the cursor is automatically placed on the next zone/output siren.

4.7.3 Enable/Disable a zone

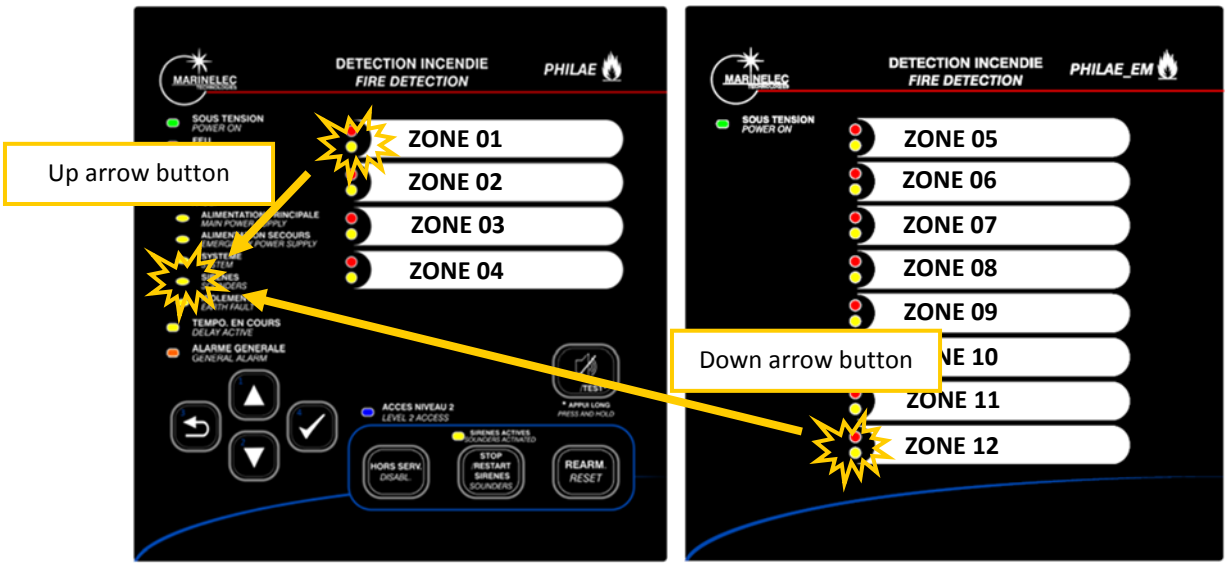


When the cursor selection shows the correct zone (yellow LED flashing), press "validation" button to change the zone status. In the example above, zone 8 will turn from Enabled to Disabled.

Note:
All fault or alarm condition of a zone are cleared when its status changes from Enabled to Disabled.

4.7.4 Disablement of the siren ouput

Place the cursor on the sirens output fault indicator to disable/enable this output (between the last zone fault indicator and the first zone fault indicator => In the example below: between zone 12 and zone 01). If the cursor is placed on the first zone, it's necessary to press "Up" arrow button. If the cursor is placed on the last zone, it's necessary to press the "Down" arrow button.



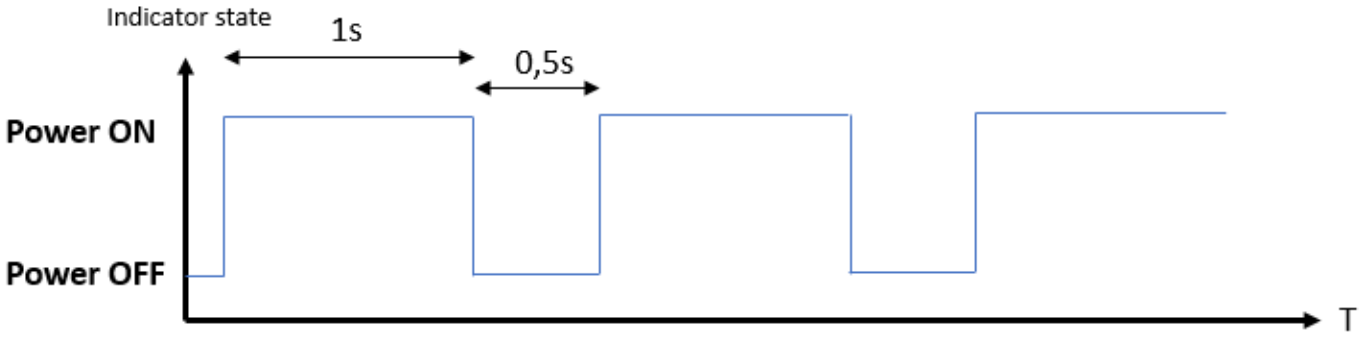
When the cursor is not placed on the sirens output fault indicator, the associated LED switches ON if the sirens output is disabled .

4.7.5 Exit the disablement menu

If no manual action is detected within 60s, the disablement menu automatically ends. It's also possible to exit the disablement menu by pressing "Back" button
Outside the disablement menu, the yellow disablement LEDs flash 1s/0.5s for each disabled.

4.7.6 Representation of disabled zones/sirens output

When at least one element is disabled (zone or sirens output), the general disablement LED flashes as below:

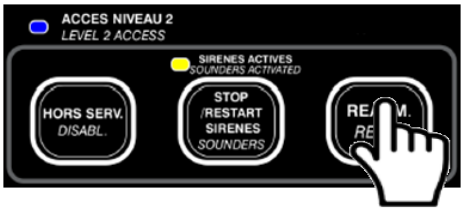


Note : individual yellow LED of zones and sirens output are activated according the same sequence.

4.8 Alarm reset [Level 2 access required]

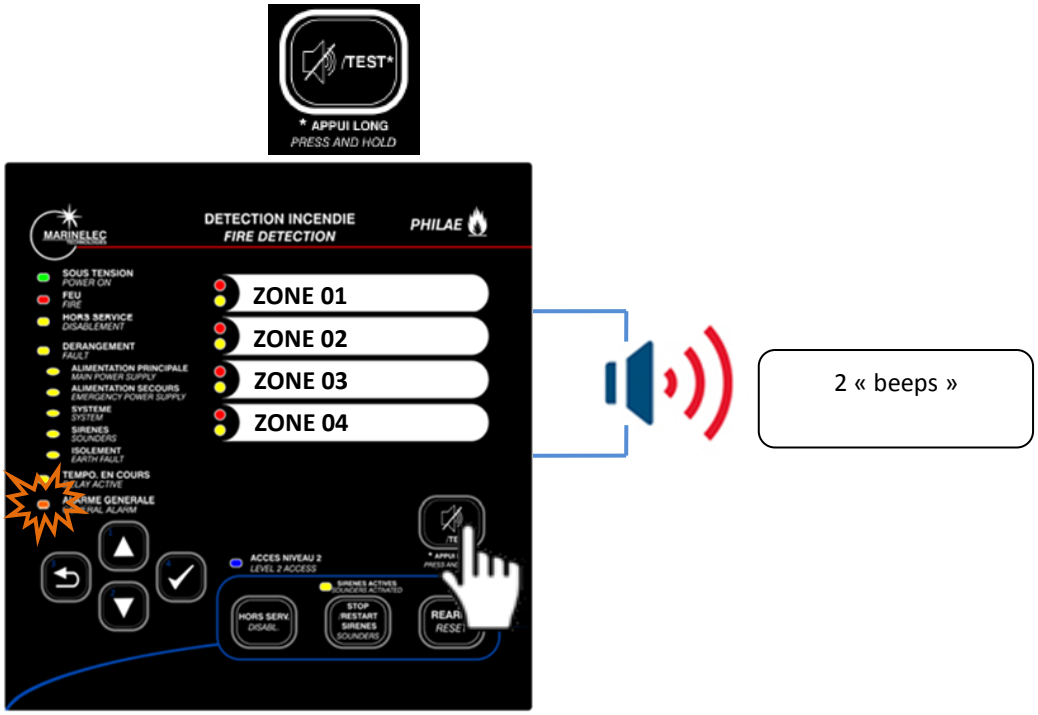
This function requires level 2 access.

It's necessary to check the reason of the alarm before performing any reset action. Some detectors can stay in the alarm state during several minutes. Press "RESET" button to reset all faults and alarms (all acknowledged alarms and all not acknowledged alarm are reset)



The reset action requires about 3 seconds to be achieved.
If the siren output is active at the moment of the reset action, it is immediately deactivated. However, if the alarm condition is still present at the end of the Reset action, all audible and visual alarm signalizations are restored

4.9 Audible and Visible test

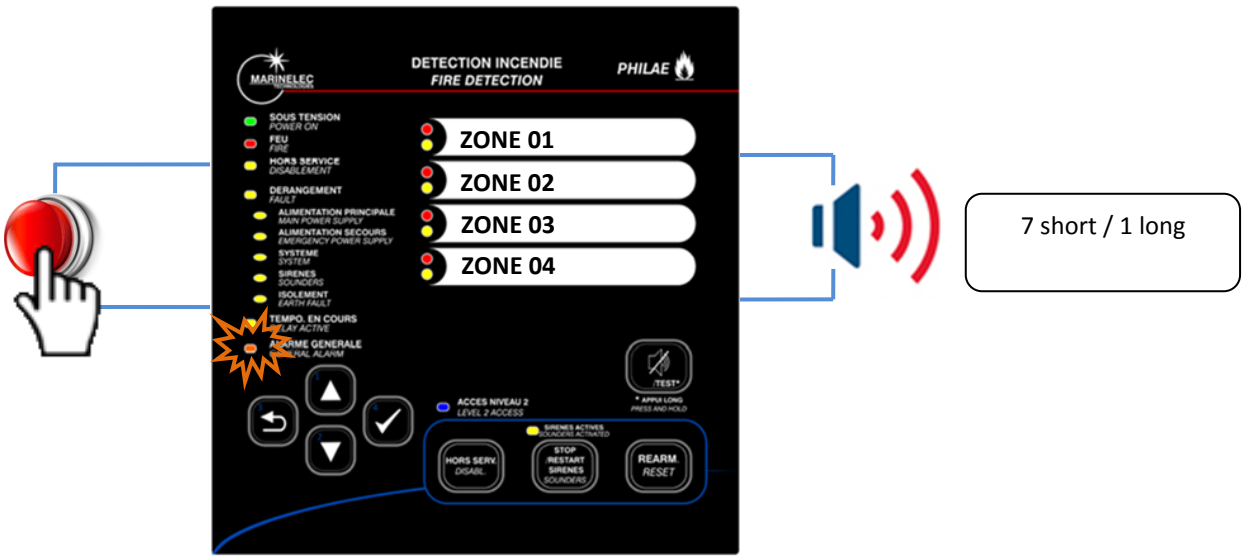


A long press (>3 seconds) on the "acknowledgement" bouton allows to launch an audible and visible test:

- A scanner light is launched to check all indicators (except "POWER ON" indicator that remains ON)
- Two beeps are programmed to test the internal buzzer

4.10 General Alarm sequence

It's necessary to activate the G.A. digital input to launch the general alarm sequence (7 short [1s] / 1 long [5s] sequence) on the sirens output:



This audible sequence informs that it's necessary to evacuate the ship. This sequence is constinoutly repeated as long as the general alarm input is active. The general alarm indicator lights up to indicate that the general alarm sequence is launched.
Regarding the sirens output, General Alarm signal (7S/1L) has priority upon any fire alarm (continuous activation).

5 TEST & TROUBLESHOOTING

A regular checking of the PHILAE system is necessary:

- On a regular basis (once a week or once a month is a good practice), perform a functional test of your fire detection system. MARINELEC can provide some testing tools especially suited for your needs, such as smoke, heat, flame testers, access poles etc...
- Please contact your installer if you have any trouble with the system.
- We advise to replace smoke detectors every 10 years, or less if exposed to high level of dust.
- We recommend to keep some spare parts (detector, manual call point, …) to allow fast maintenance actions and guarantee a maximal security of your vessel.
- After sales service remains available for any technical information:
    - Tel : +33 7 64 57 55 20
    - Mail : aftersales@marinelec.com

MARINELEC
TECHNOLOGIES

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