Introduction

Product: ESSENTIAL 2, ESSENTIAL 4

This manual contains necessary details on the FireClass Essential Panels for users.

The following panels are in this range:

- FireClass Essential 2 Zone Panel
- FireClass Essential 4 Zone Panel

The following supporting documentation is also available:

- *FireClass Essential Panels Application Manual (A16381GKC_EN)*
- *FireClass Essential Panels Installation and Commissioning Manual (A16381G5K2_EN)*

User interface

The following sections provide an overview of the indications and buttons on the panel user interface (UI).

Figure 1: 2 Zone panel UI

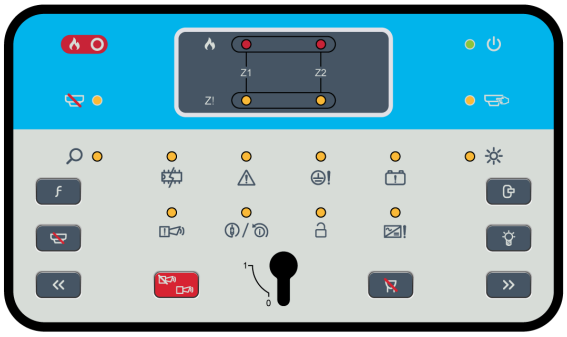


Figure 2: 4 Zone panel UI

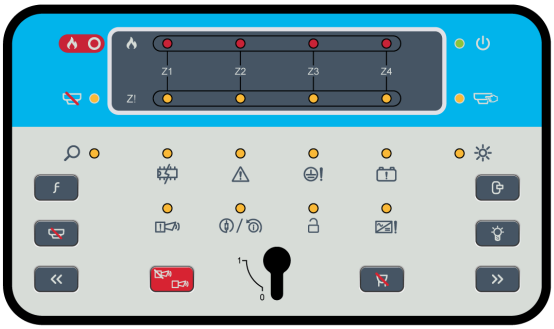
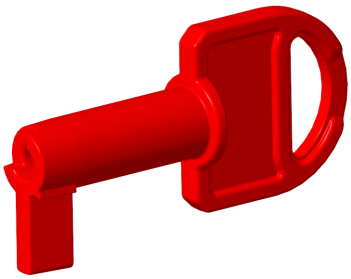


Figure 3: Enable key



UI indications

Table 1: General indicators

Indicator icon	Indicator description	Indicator colour	Operating condition
	Power supply	Green	Illuminates steady for mains or battery power on
	Test	Yellow	Flashes when any zone is in test condition
			Steady on while you select the test programming
	Accessed	Yellow	Steady on in access level 3 and flashing in access level 2
	Enabled/disabled	Yellow	Flashes during enable/ disable programming
			Steady on when any zone or sounder is disabled
			Steady on while you select the enable/ disable programming
	General fire/zone fire	Red	Flashes for a fire alarm and turns steady on when the alarm buzzer is silenced
			The general fire indication and individual zone fire indications are identical
	Common fault	Yellow	See Common fault detection

Table 1: General indicators

Indicator icon	Indicator description	Indicator colour	Operating condition
	Power supply fault	Yellow	Flashes for mains failure or power supply failure
			Flashes twice continuously for panel overcurrent
			Flashes four times continuously for PSU over voltage
			See Power supply fault detection
	System fault	Yellow	Steady on for all system faults
			See System fault detection
	Earth fault	Yellow	Flashes when an earth fault occurs
			See Earth fault detection
	Sounder fault	Yellow	Flashes for any sounder fault
			See Sounder fault detection
			Steady on when the sounders are disabled
	Aux fault	Yellow	Flashes for an auxiliary fault
			See Auxiliary power fault detection
	Battery fault	Yellow	Flashes for a battery fault
			See Battery fault detection
	Reserved for future use		

Table 1: General indicators

Indicator icon	Indicator description	Indicator colour	Operating condition
	Delay	Yellow	Steady on for delay programming mode selection
			Flashes twice when the delay time is overridden
			Flashes continuously when the alarm is activated on delay enabled zones
			Off when the delay is disabled for all zones
	Zone fault	Yellow	See Zone fault detection

Table 2: Zone location indicators

Indicator icon	Indicator description	Indicator colour	Operating condition
	Separate fire LED indicator for each zone	Red	Flashes when a zone is in an alarm condition
			Steady on when the alarm buzzer is silenced
	Separate fault LED indicator for each zone	Yellow	Depending on the type of fault, this flashes when a zone is in a fault condition
			Steady on when a zone is disabled

UI buttons

Table 3: UI buttons

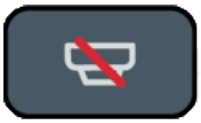
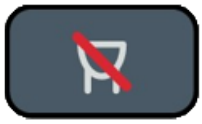
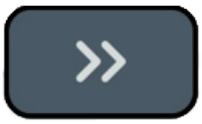
Button icon	Button description	Button functionality	Button availability
	Enable/disable	See Using the enable/ disable button	In access level 2 and 3
	Reset	See Using the reset button	In access level 2 and 3

Table 3: UI buttons

Button icon	Button description	Button functionality	Button availability
	Buzzer silence	See Using the buzzer silence button	In access level 1, 2, and 3
	Lamp test	See Using the lamp test button	In access level 1, 2, and 3
	Function	See Using the function button	In access level 1, 2 and 3
	Silence/resound/ evacuation	See Using the silence/ resound/evacuation button	In access level 2 and 3
	Right navigation	See Using the right navigation button	In access level 2 and 3
	Left navigation	See Using the left navigation button	In access level 2 and 3

Using the enable/disable button

Press the **Enable/Disable** button in the following events:

- To enable or disable the zone test condition on the zones.
- To enable or disable the sounder and zones.
- To turn on and off the delay to output on individual zones.

Using the reset button

To reset the state of the panel, press the **Reset** button. The following events then occur:

- The panel turns off the detectors for 2 seconds. The alarm clears from the panel after reset.
  If an alarm condition remains, the alarm indications and sounder restart.
  The power to auxiliary outputs turns off for 5 seconds.
  The reset output then activates for 5 seconds and turns off. See Resetting the fire alarm.

Using the buzzer silence button

- To silence the buzzer in either a fire or fault event, press the **Buzzer Silence** button.

Using the lamp test button

- When you press the **Lamp Test** button for 5 seconds, all the LEDs on the panel and the buzzer turn on for 10 seconds, then turn off again.

Using the function button

Press the **Function** button in the following events:

- To enter programming mode in access level 2 and 3.
- To navigate through functions such as test mode, enable/disable, and delay to output for individual zone programming.

Using the silence/resound/evacuation button

1. Following a fire alarm condition, to silence the sounders and deactivate the remote output, press the **Silence/Resound/Evacuation** button.

   The fire alarm LED is unaffected by the sounder silence/resound/evacuation button.
2. To turn on the previously silenced sounders and reactivate the remote output, press the **Silence/Resound/Evacuation** button.
3. To turn on the sounders, fire relay, and remote output for manual evacuation, press the **Silence/Resound/Evacuation** button, if the panel is selected to drive all the evacuation outputs.

   The general fire LED starts to flash in evacuation.

   ⓘ **Note:** For evacuations, you can configure sounders, fire relays, and remote outputs through the panel programming jumper. In the Netherlands, you are only required to configure sounders for evacuations.

Using the right navigation button

Press the **Right Navigation** button in the following events:

- To navigate between zones and the sounder in enable/disable programming.
- To navigate between zones in test programming.
- To navigate between zones in delay to output programming.

Using the left navigation button

Press the **Left Navigation** button in the following events:

- To navigate between zones and the sounder in enable/disable programming.
- To navigate between zones in test programming.
- To navigate between zones in delay to output programming.

Access levels

There are four access levels in the Essential Panel:

Access level 1

- **Entry**
  - Level 1 is the default access level for users.
  - The accessed LED remains off in access level 1.
- **Functionality**
  - All users can view the panel status.
  - Additionally, the internal buzzer silence, lamp test and override delay features are available.
- **Exit**
  - Level 1 is the default access level for users.

Access level 2

- **Entry**
  - To enter access level 2, insert the enable key and rotate it to position 1.
  - The accessed LED flashes continuously to indicate that the panel is in access level 2.
- **Functionality**
  - All functions applicable at access level 1 are available at level 2.
  - Additionally, sounder silence/resound, reset of the system, manual evacuation, enable/disable of delays for zones, enable/disable of zones and sounders, and test mode features are available.
- **Exit**
  - To exit access level 2, turn the enable key switch to position 0 and remove the key.
  - The accessed LED turns off to indicate that the panel is in the default access level.

Access level 3

- **Entry**
  - Ensure that the enable key is removed from the panel.
  - To enter access level 3, use the appropriate tools to open the front door of the panel.
  - Press the **Enable/Disable** button, **Left Navigation** button, **Right Ravigation** button, and **3rd Level Access** button in sequence.
  - ⓘ **Note:** The time taken between button presses must not exceed 10 seconds.
  - The accessed LED turns steady on, to indicate that the panel is in access level 3.

    ⓘ **Note:** If the button sequence is not completed in 10 seconds, then the buzzer beeps to indicate a login timeout.
- **Functionality**
  - Only qualified users with authorized access are allowed to enter this level.
  - All functions applicable at access levels 1 and 2 are applicable at this level.
  - Set delay to output time in minutes for all zones.
- **Exit**
  - Press the **3rd Level Access** button to exit access level 3.
  - The accessed LED turns off.
  - Close the front door and insert the screws into the designated areas.

ⓘ **Note:** Access level 3 automatically logs out after 8 hours of inactivity, if you have not manually logged out.

Access level 4

- Access level 4 is restricted to the manufacturer.
- This level is reserved for repairing and replacing the internals of the panel by the manufacturer.

User operation: fire and fault conditions

The following section contains information about the fire and fault conditions.

DANGER

Risk of Death, Serious Personal Injury, or Equipment Damage

This equipment contains hazardous voltages. It contains no serviceable parts. Refer all maintenance to suitably qualified personnel.

Silencing the buzzer

- Press the **Buzzer Silence** button.
  The buzzer is silenced.
  The common fault LED is steady on, and the fault LED flashes for the respective fault.
  The fire LED on the respective zone and the general fire LED turn steady on.

Fire detection

If a fire is detected on the panel, the following events occur:

1. The buzzer tuns on.
2. The general fire and zone fire LED flash to indicate the location of the fire.
3. If the delay to output is disabled on a zone in fire condition then the sounders, fire relay and remote output activate immediately.
4. If the delay to output feature is enabled on any zone, the following events occur:
   a. The delay LED flashes once continuously when the alarm is active in the delay enabled zones.
   b. The delay LED flashes continuously until the delay to output expires.
   c. The general fire LED and zone fire LED flash.
   d. The sounders, fire relay, and remote output turn on when the delay expires.
   e. When the delay expires the delay LED flashes twice in a pattern.
5. In the event of fire, immediately evacuate the premises. Only re-enter the premises when it is safe to do so. Then, locate the source of the fire alarm.
   An illuminated LED is visible on the detector or callpoint, which is now activated.

Silencing the fire alarm sounders

- To silence the fire alarm sounders, press the **Silence/Resound** button in access level 2. The sounders and remote output turn off.

Resounding the fire alarm sounders

- If the sounders are silenced, press the **Silence/Resound** button. The sounders and remote output turn on.

Manual evacuation

- To do a manual evacuation, press the **Silence/Resound/Evacuation** button.

  The sounders, remote output, and fire relay turn on immediately if the panel is selected to drive all evacuation outputs.

  ⓘ **Note:** If the panel is selected to drive only sounders, in the Netherlands region, then the sounders turn on immediately. Fire relay and remote output do not activate.

  The general fire LED flashes and the buzzer turns on.

Resetting the fire alarm

Before you begin:
Ensure that necessary action is taken for all of the reported fire events are managed, and it is safe to enter the panel installation premises.

1. After the fire has been suppressed, turn the red key on the panel to log on to access level 2.
   a. The buzzer beeps to confirm successful log on to access level 2.
   b. The accessed LED flashes in access level 2.
2. Restore any activated manual call points.
3. Press the Reset button.
   The following events occur:
   a. The zone fire LED, general fire LED, and all fault LEDs turn off.
   b. Alarm and fault events clear from the panel after a reset.
      The fault relay and fire relay turn off. If any fault is present after reset, the fault relay turns on again. The same is applicable for the fire relay.
      If not previously silenced, the sounder and buzzer turn off.
      If the sounders activate due to auxiliary inputs, they turn off momentarily and restart.
   c. If any alarm or fault condition remains, it regenerates the alarm or fault on the panel.
   d. After 5 seconds, if the panel detects an alarm, it turns on the fire LED.

   For an alarm, the system reactivates the buzzer, fire relay, sounders, and remote output.

Fault detection

The following events occur for all new faults:

1. The respective fault LED flashes, depending on the type of fault in the subsystem.
2. The common fault LED flashes on and off continuously for a new fault detection.
3. The buzzer sounds on and off.
4. The fault relay turns on.

The following events occur for restored faults:

1. The fault relay deactivates.
2. The common fault LED and respective fault LED turn off.
3. The buzzer turns off.

ⓘ **Note:** After a fault occurs, fault outputs are not active for a minimum of 10 seconds. This eliminates spurious outputs caused by such conditions as momentary brownouts on the mains supply.

Zone fault detection

The following LED pattern occurs on respective zones when a zone fault is present.

1. Zone open: The respective zone fault LED flashes twice continuously.
2. Zone short: The respective zone fault LED flashes once continuously.

3. Zone disabled: The respective zone fault LED is steady on.
4. Missing detector in a zone: The respective zone fault LED flashes three times continuously.
5. Invalid end-of-line (EOL) device : The respective zone fault LED flashes four times continuously.
6. Zone-in-test: The respective zone fault LED flashes continuously, in sync with the test LED.

Battery fault detection

The battery fault LED flashes as follows:

- When the battery voltage is less than 22.7 VDC, a low battery fault occurs, and the LED flashes twice continuously.
- When the battery voltage is less than 19.7 VDC, a depleted battery fault occurs, and the LED flashes on and off continuously.

  If the panel has a battery depleted fault and there is no mains supply, then the sounder, remote output, zone power, and fire relay turn off immediately, irrespective of faults or alarm events.

  If the battery voltage is less than 19.0 VDC, the panel enters sleep mode, and all audio and visual indications turn off except for the following LEDs:

  - Power supply fault LED
  - Battery fault LED
  - Common fault LED

  The panel restarts all functions if the mains power supply is resumed with a system fault.

  If this condition persists, the batteries are unable to function as intended in the event of a blackout.

  ⓘ **Note:** New batteries are required.

- If the battery is not connected, the LED flashes on and off continuously.
- If the battery has a high internal resistance fault, the LED flashes three times continuously.
- If the battery is overcharged and the voltage is more than 28.5 VDC with a tolerance of +0.5 V, a battery overcharge fault occurs, and the LED flashes four times continuously. The charging is cut off from the battery.

Common fault detection

The common fault indicator flashes continuously when any of the following faults occur on the panel:

- Zone fault
- Sounder fault
- Power supply fault
- Battery fault
- Aux fault
- Earth fault

The common fault indicator is steady on for a system fault or when the **Buzzer Silence** button is pressed.

Power supply fault detection

The power supply fault LED flashes as follows:

- For a mains disconnection, the LED flashes on and off continuously.
- For panel overcurrent, the LED flashes twice continuously.
- For PSU over voltage above 28.5 VDC with a tolerance of +0.5 V, the LED flashes four times continuously.

Earth fault detection

If an earth fault is detected, the earth fault LED flashes on and off continuously.

Auxiliary power fault detection

If an auxiliary power fault or auxiliary output fault is detected, the aux fault LED flashes on and off continuously.

Sounder fault detection

The sounder fault LED flashes as follows:

- For sounder short, the LED turns on and off continuously.
- For sounder open, the LED flashes twice continuously.

  Both sounder 1 and sounder 2 circuits use the sounder fault LED.

System fault detection

If a system fault is detected, the system fault LED and common fault LED turn steady on.

Enable and disable

The following section contains information about the enabling or disabling of zones and sounders.

Entering enable or disable programming

1. Enter access level 2.
2. Press the **Function** button twice, to select the programming mode.
   The enable/disable LED turns steady on.
3. To select a zone or sounder, press the **Right Navigation** button.
   The zone 1 fault LED flashes in sync with the enable/disable LED if the zone is enabled, or is steady on if the zone is disabled.

Selecting a zone or sounder

- To select a zone or sounder for enabling or disabling, use the **Left Navigation** or **Right Navigation** buttons.

Enabling/disabling the zone or sounder

Before you begin:
See Entering enable or disable programming and Selecting a zone or sounder.

- Press the **Enable/Disable** button.
  The selected zone or sounder fault LED either flash in sync with the enabled/disabled LED or turn steady on, depending on the state:
  - Flashing zone or sounder fault LED - enabled
  - Steady on zone or sounder fault LED - disabled

Exiting the enable/disable mode

- Press the **Function** button to save the enable/disable status of respective zones or sounders. The enabled/disabled LED turns on or off depending on the enable/disable status.
  - If any of the zones or sounders are disabled, the enabled/disabled LED turns steady on.
  - If all of the zones and sounders are enabled, the enabled/disabled LED turns off.

  ⓘ **Note:** A disabled output is prevented from operating under any circumstances.

  ➤ **Important:** When a zone is disabled, power is still supplied to the zone, but alarms and faults are prevented from triggering in that zone. If devices in disabled zones are activated for any reason, their LEDs light up as power is supplied to those zones.

Zone test condition

The following section contains information about the zone test condition.

Accessing test selection mode

1. Log on to access level 2 or 3.
2. Press the **Function** button.
   The test LED turns steady on in program selection mode.
3. Press the **Right Navigation** button to enter test mode.
   The test LED and zone fault LED flash in sync.

   ⓘ **Note:** Only test each zone after the panel is free of faults and has no active events. Only the enabled zones are selected for the test mode.

Selecting the zone to enable or disable a test

- To select the zone to test, use the **Left Navigation** or **Right Navigation** buttons.
  The selected zone fault LED and test LED flash in sync.

Enabling/disabling the test for zones

Before you begin:
Enter test mode and select the test zones.

1. Press the **Enable/disable** button.
   The selected zone fault LED flashes in sync with the test LED, or turns steady on, depending on the state:
   - The The zone fault LED flashes when the test is enabled.
   - The zone fault LED is steady on when the test is disabled.
2. When the test mode is enabled on the zone, press the **Function** button to exit test mode.

   ⓘ **Note:** Test mode on the selected zones remains enabled after the power cycle until you disable it.

Applying the test mode to the selected zone

- To activate the test condition on the selected zone, activate a detector or a manual call point.
  When the detector or call point is active, the zone fault LED, test LED, and the respective fire alarm LED flash in sync with each other until the sounder turns on and off the selected zone number of times. For example, if zone 3 is selected for test mode, the sounder turns on and off three times.

  ⓘ **Note:**
  - Restore the call point if it is used to test a zone. Otherwise, it continues to run the test on the respective zone.
  - Wait 20 seconds after completion of the detector zone test before you test the next detector.
  - If two zones are activated at the same time in test condition, then the latest activated detector has priority and the sounder activates.

Exiting the zone test selection mode

- Press the **Function** button to save the test enable/disable status of the respective zones, or to exit test mode.
  The test LED turns on or off depending on the test enable/disable status:
  - If any of the zones are disabled, the test LED turns off.
  - If any of the zones are enabled, the test LED flashes continuously.

Enable or disable the delay to output feature

The following section provides instructions on how to enable or disable the delay to output feature on each zone.

Note: Use potentiometers to ensure that the required delay is set. Refer to *FireClass Essential Panels Installation and Commissioning Manual (A16381G5K2_EN)*.

If the delay is enabled on any of the zones, then it is applicable for 24 hours unless explicitly disabled by the user.

The delay to output feature is for the sounders, remote output, and fire relay.

This delay is activated after an alarm input is received from a zone that has delay to output enabled.

Accessing the delay to output feature

To access the delay to output feature selection, complete the following steps:

- a. Enter access level 2.
  b. Press the **Function** button three times.
     The delay LED turns steady on.
  c. Press the **Right Navigation** button to enter the delay to output selection.
  d. To browse to the required zone, press the **Left Navigation** or **Right Navigation** button.
     The respective zone fault LED flashes in sync with the delay LED, if the delay is enabled on that zone.
     The zone fault LED turns steady on, to indicate that the delay is disabled on that zone.

Enabling and disabling the delay

Before you begin:
See Accessing the delay to output feature to enter the delay programming option.

1. To enable or disable the delay for a selected zone, press the **Enable/Disable** button.
   The respective zone fault LED alternates between flashing and steady on.
   - Flashing zone fault LED - delay to output enabled
   - Steady on zone fault LED - delay to output disabled
2. To save the delay status and to exit from the delay to output feature, press the **Function** button.

   Note: Do not configure the zone with manual callpoints for delay to output.

Display the outputs configured for delay

The delay LED is off when delay to output is not set for any zone or if it is set and the delay is less than 1 minute.

The delay LED flashes continuously when the alarm is active for the delay enabled zones.

After an alarm, the particular delay enabled zone's fire LED flashes continuously. The buzzer turns on for fire indication. The sounders, fire relay and remote output remain off.

When the delay expires, the delay LED flashes twice continuously. The sounders, remote output and fire relay turn on immediately.

Overriding the delay mode

About this task:
When a fire is detected by the panel and the fire LED of a zone in delay to output flashes, complete the following steps to override the delay.

1. In all access levels, press the **Function** button for more than 5 seconds until the sounder turns on.
2. In access level 2 or 3, press the **Silence/Resound** button.

In both situations, the sounders turn on immediately.

Auxiliary Output - 24 V output, OC1 and OC2

Auxiliary 24V Output

This output provides a 24 VDC supply for peripheral loads of OC1 and OC2 outputs.

- To reset this output, press the **Reset** button .

Reset Output OC2

This output is turned on when the panel is reset. This output remains on for 5 seconds after the system is reset and then turns off.

Remote Output OC1

This output only turns on for manual evacuation if the panel is selected to drive all evacuation outputs (other regions) and for a fire event.

Auxiliary Inputs

ⓘ **Note:** The auxiliary inputs do not work when the panel is in active alarm, with the sounders on.

Aux Input-1 Alert Input

Auxiliary input 1, or alert input, activates the sounders intermittently.

When the input is activated, the sounders turn on for 5 seconds and turn off for 5 seconds continuously.

If the input is deactivated, the sounders turn off.

ⓘ **Note:** If the alert input is unattended for 8 hours of continuous operation, the sounders turn off and are only restored when the alert input is deactivated. Sounder operation for other functions is not affected.

Aux Input-2 Class Change Input

Auxiliary input 2, or class change input.

When the input is activated, the sounders turn on continuously

If the input is deactivated, the sounders turn off.

Functionality in access level 1 and 2

Figure 4: Access level 1 and 2 functions