FireCell

Wireless Dual Input / Output Device

Installation Guide



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MK432-0001-99 | Issue 003| 17/04/2026 MSL

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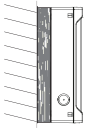
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Part number	Product description
FC-41-0202	Wireless Dual Input / Output Device

Pre installation

Installation must conform to applicable local installation codes and should only be installed by a fully trained competent person.



The use of a non-metallic spacer should be considered if mounting the device on to a metal surface.

This device contains electronics that may be susceptible to damage from Electrostatic Discharge (ESD). Take appropriate precautions when handling electronic boards.



Two resistor monitored inputs are available.

To ensure correct operation, products must be used within the specified environmental operating conditions.

To retain an IP65 rating, ensure that the device is installed as outlined in these instructions, e.g. by using the correct fixing holes, fixings and suitable cable glands.

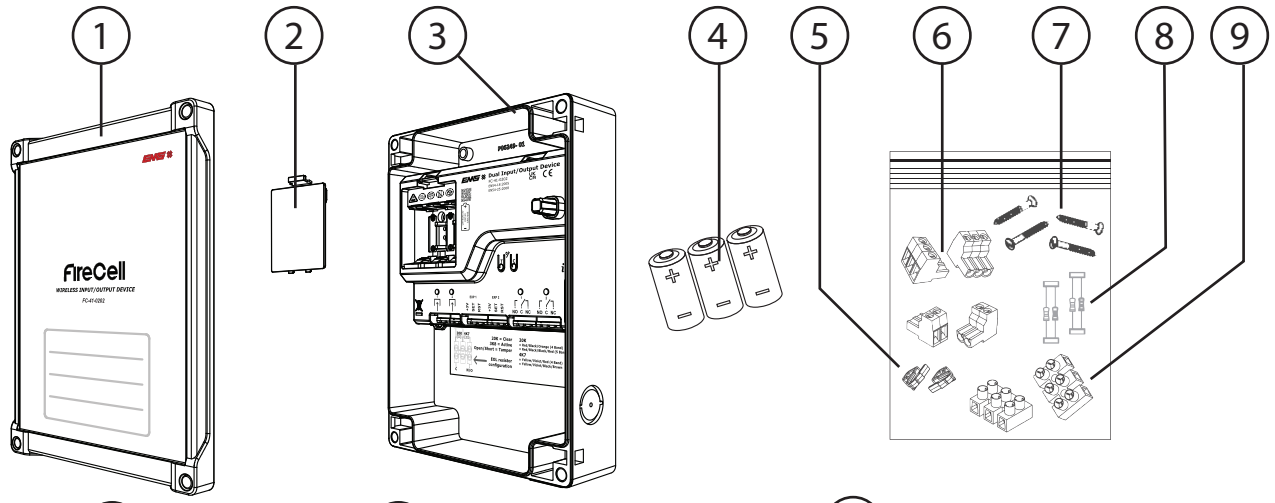
You can test the device's inputs and outputs on the device itself before logging it onto the system. Refer to the Status indications and Local testing sections for more information.

Mains can be switched using the FireCell Auxiliary Relay Module (FC-620-001). Refer to document TSD058 for details.
Download from www.emsgroup.co.uk

Isolate mains supply before starting work when connected to an Auxiliary Relay Module.

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Components



1 Lid

2 Battery cover

3 Back box

4 Batteries*

5 Door hinges

6 Terminal blocks

7 4x Lid screws

8 2 x Resistor packs

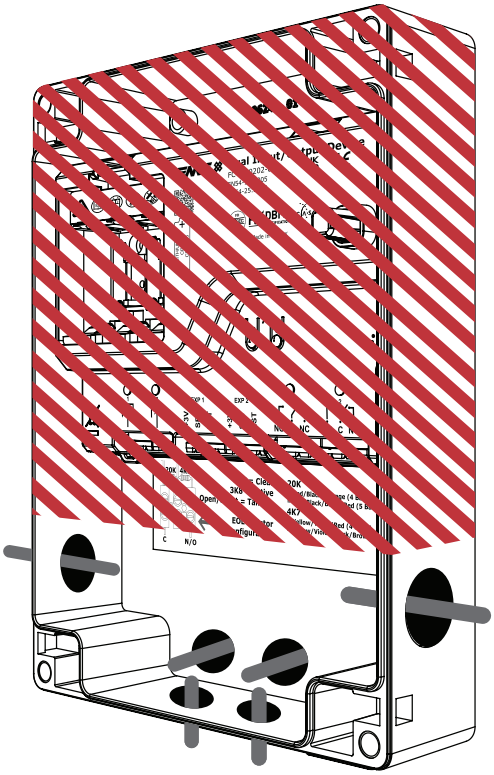
9 Connector blocks

** Not included in some regions. When batteries are not included, only fit specified batteries.*

Prepare back box

- Remove the lid.
- Drill through the marked cable entry points as necessary.
- Suitable cable glands should be used.

It is possible to remove the PCB and its casing from the back box. Refer to the Optional PCB and casing removal section for details.



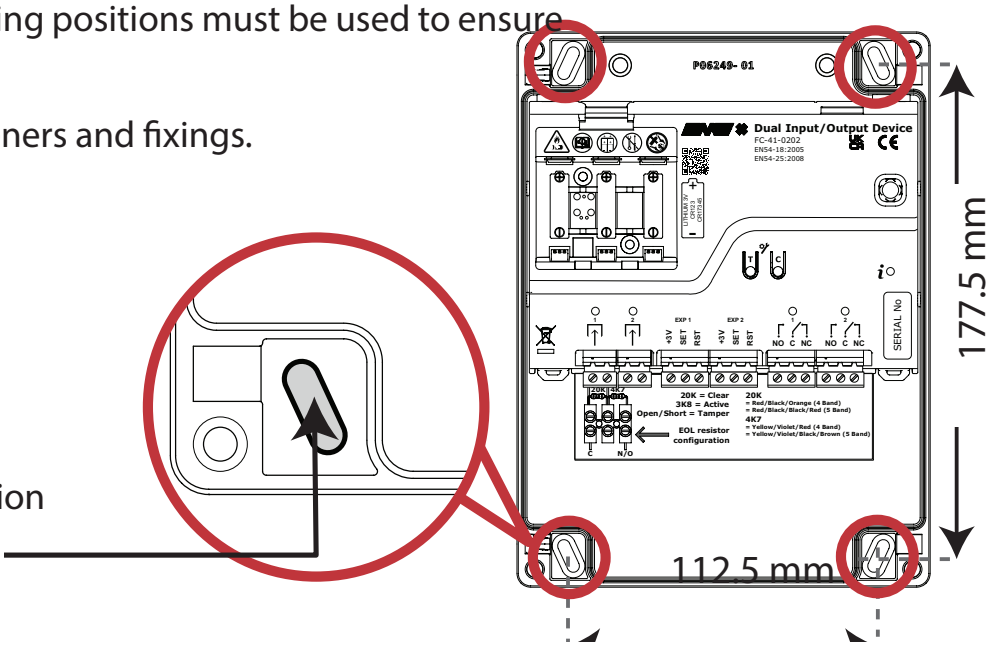
DO NOT use the shaded area

The unshaded area is available for cable entry

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Fix back box to the wall

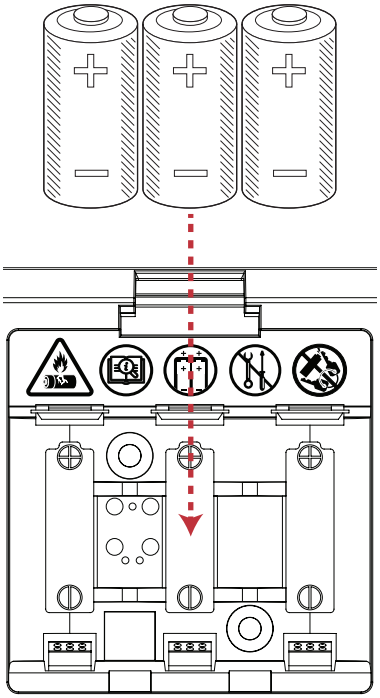
- All four corner fixing positions must be used to ensure a firm fixing.
- Use suitable fasteners and fixings.



Note: If you are enabling fail-safe mode, do this before fitting the batteries. Refer to the Optional fail-safe mode section for details.

Fit batteries

- Unclip the battery cover.
- When fitting / replacing batteries, observe correct polarity, using only specified batteries.
- Insert the negative side of each battery first.
- Re-fit the battery cover once all batteries are correctly in place.



Battery care & management

WARNING. Risk of venting or ignition if ruptured

DO observe battery polarity

DO NOT remove batteries with a sharp or metallic object

DO NOT short circuit

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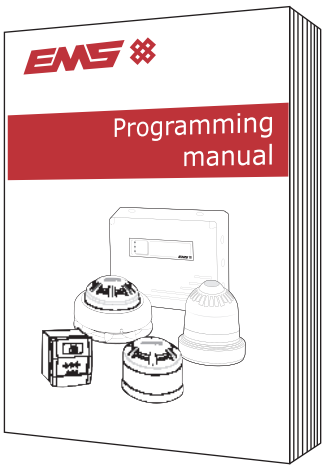
Configuration

The device's loop address is configured within the user interface's menu structure.

- Refer to the Programming Guide for full details.

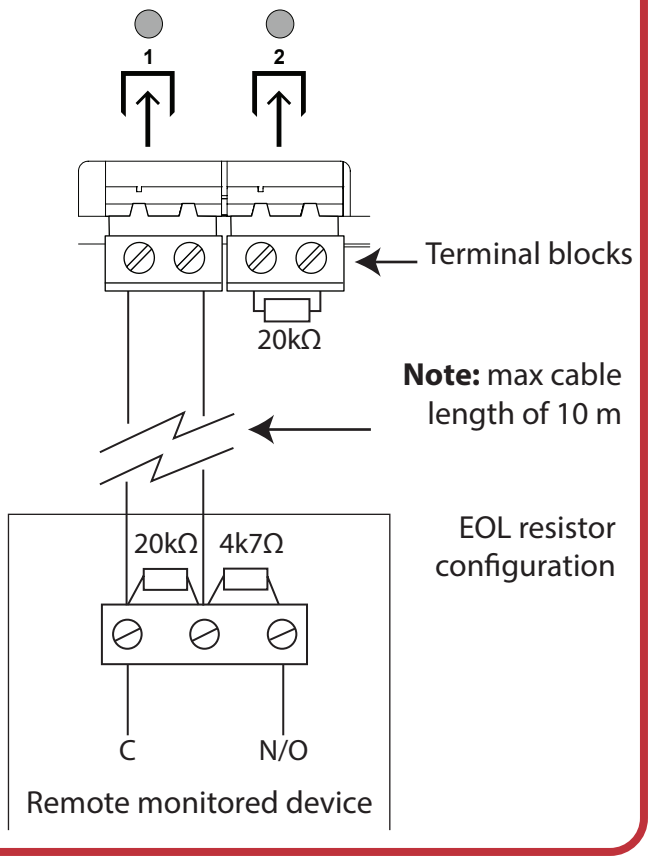
FireCell = Programming Guide MK098
Fusion = Programming Guide TSD062

Download from www.emsgroup.co.uk



Input wiring

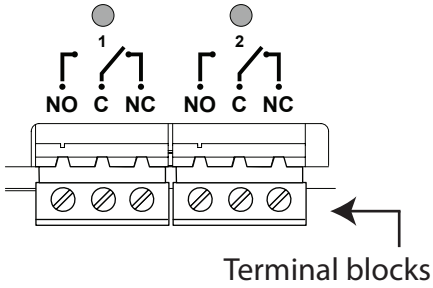
- Fit the supplied terminal blocks.
- Two resistor monitored inputs are available.
- Both inputs monitor: normal, active, open circuit and short circuit conditions.
- To connect inputs to external devices, wire as shown, using the resistors provided.
- Minimum input detection time is 2 seconds.
- If an input is not being used, fit the supplied 20 kΩ resistor.



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Output wiring

- Fit the supplied terminal blocks.
- Two outputs are available.
- Both outputs are voltage free, with a maximum switching capacity of 1 A at 30 VDC.



WARNING. DO NOT CONNECT TO MAINS.

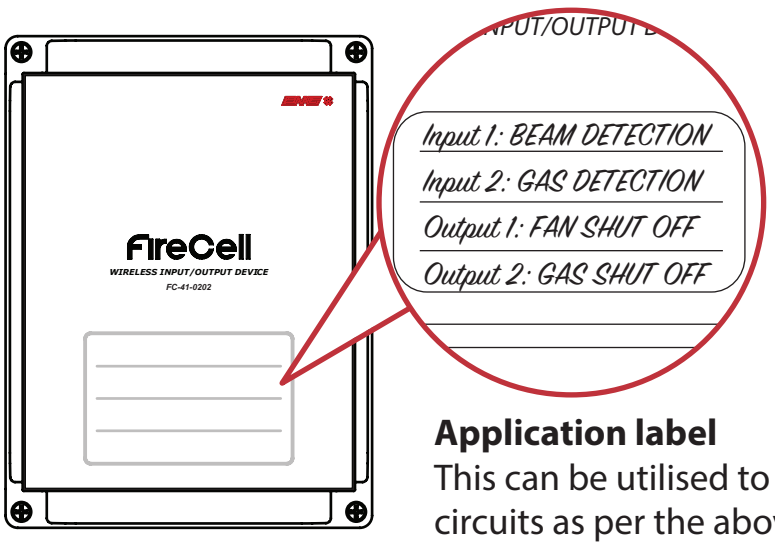
Outputs 1 and 2 must NOT be used when connected to an FC-620-001 Auxiliary Relay Module.

This product contains relays which when subjected to severe mechanical shock may cause momentary transitions from the currently active state. The transitions will be less than 1 second and any equipment connected must not respond to such momentary changes of the relay. This product should be fixed to a stable and secure structure that is not subject to severe mechanical shock.

Completing the installation

The front lid must now be re fitted to the device using all four provided fixing screws. Closing the lid will clear the device tamper fault.

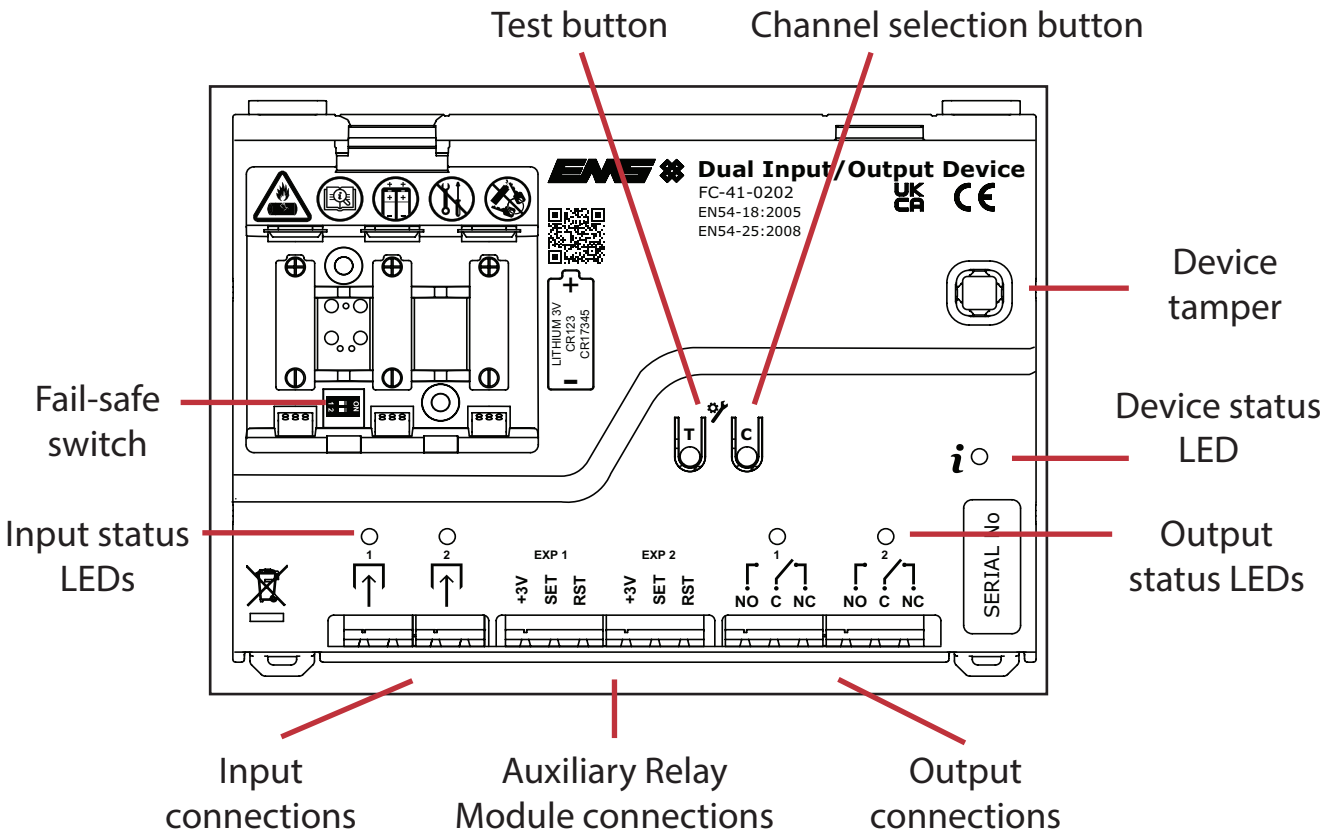
Caution: Do not overtighten the screws. Max torque setting = 0.5 Nm.



Application label
This can be utilised to identify connected circuits as per the above example

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Device overview



Status indications

Device status

The device status is indicated by the Device status LED (Device overview section), as shown in the table below.

Device status LED indications[1]	
State	**LED indication**
Device power up/log on (not on system)	Yellow flash
Device power up (already on system)	Green flash
Test mode	Fast red flash

[1] *Requires device in tamper fault (front lid removed).*

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Status indications *continued*

Input status

The input status is indicated by the Input status LED (Device overview section), as shown in the table below.

Input status LED indications[1]	
State	**LED indication**
Active	Steady red
Fault	Steady yellow
Normal	Off
Test mode [2] Normal Fault[3] Selected for test[4] Test activation	 Steady green Steady yellow Green flash Slow red flash

[1] *Requires device in tamper fault (front lid removed).*

[2] *These indications are only visible when the device is in Test mode. See Local testing for details.*

[3] *This is only shown if in a fault state prior to entering test mode.*

[4] *Not activated.*

Output status

The output status is indicated by the Output status LED (Device overview section), as shown in the table below.

Output status LED indications[1]	
State	**LED indication**
Active	Steady red
Normal	Off
Test mode[2] Normal Selected for test[3] Test activation	 Steady green Slow green flash Slow red flash

[1] *Requires device in tamper fault (front lid removed).*

[2] *These indications are only visible when the device is in Test mode. See Local testing for details.*

[3] *Not activated.*

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Local testing

Local testing feature overview

This feature allows each channel (input and output) to be individually operated from the device. This enables testing without changing wiring or returning to the panel.

The local test also includes LED indication for each of the channels (inputs and outputs) to visually show the test state.

Refer to the Device overview section for referenced device features and the Status indications section for LED operation.

To perform the test:

1. Press and hold the Test (T) button for at least 3 seconds (long press) until the Device status LED flashes red (fast flashing), and then release the button.

   The module enters Test mode. The Device status LED flashes red for the duration of the test.

   The Input/Output status LEDs indicate the input/output state on entering Test mode: normal (steady green), active (steady red), or fault (steady yellow).

   Note: Inputs can only be tested when the input state is normal. If the LED indicates an active or fault state, exit the test. Outputs can be tested in any state. See Device Status LED.

2. Press the Channel selection (C) button (short press).

   The selected input/output status LED flashes to indicate the selection.

   Input 1 is the first channel selected. To test a different input/output, press the Channel selection (C) button repeatedly until the required Input/Output status LED flashes.

3. Press the Test (T) button (short press) to start the test.

   The selected input or output test activates. See Input and output test LEDs for details.

4. To exit Test mode, use one of the following methods:

- Press and hold the Test (T) button for at least 3 seconds (long press).
- Press the Channel Selection (C) button (short press) when the last channel available is selected.
- Close the device tamper switch.

The device also exits Test mode automatically if:

- No action is taken for 5 minutes.
- The control panel sends a command to operate an output (for example, during an alarm condition).

Once Test mode has ended, the input or output returns to its pre-test state.

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Local testing *continued*

Device status LED

FLASHES RED — Indicates test mode has been enabled

Input/Output test LEDs indication

When test mode starts, the Input/Output LED indicates the current state:

Input/Output test LEDs

STEADY GREEN — Input/Output channel in non-active state and not currently selected for Test

STEADY RED — Input/Output channel in active state prior to entering test mode

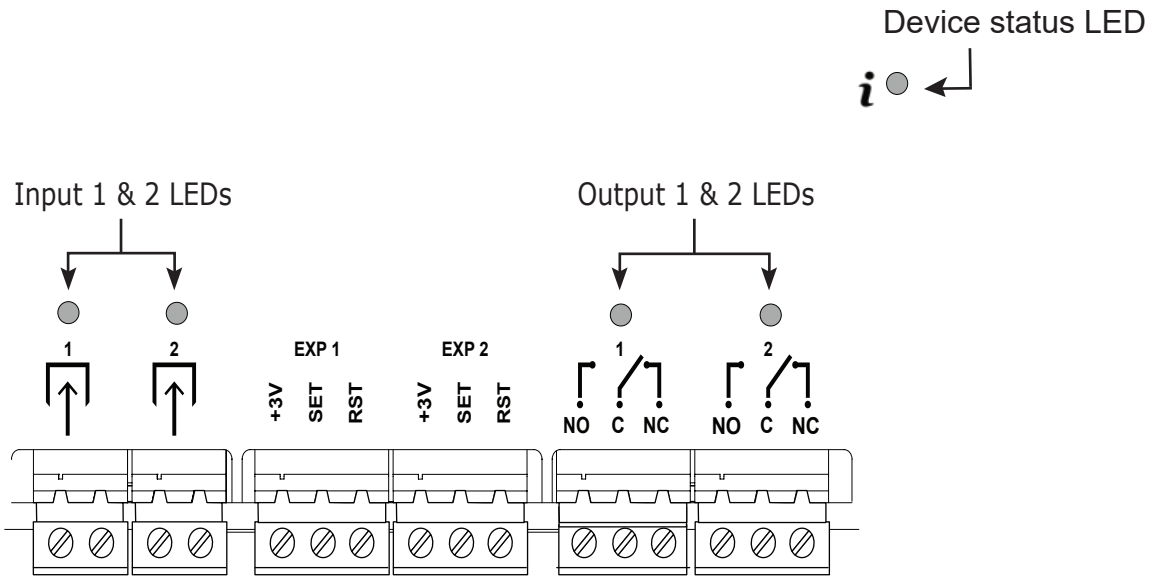
FLASHES GREEN — Input/Output channel selected for Test

FLASHES RED — Input channel activated. **Note:** The input activates for 30 seconds and the activation status is sent to the control panel.

Press the Test (T) button again to extend the input activation test for another 30 seconds, if required.

Output channel activated.

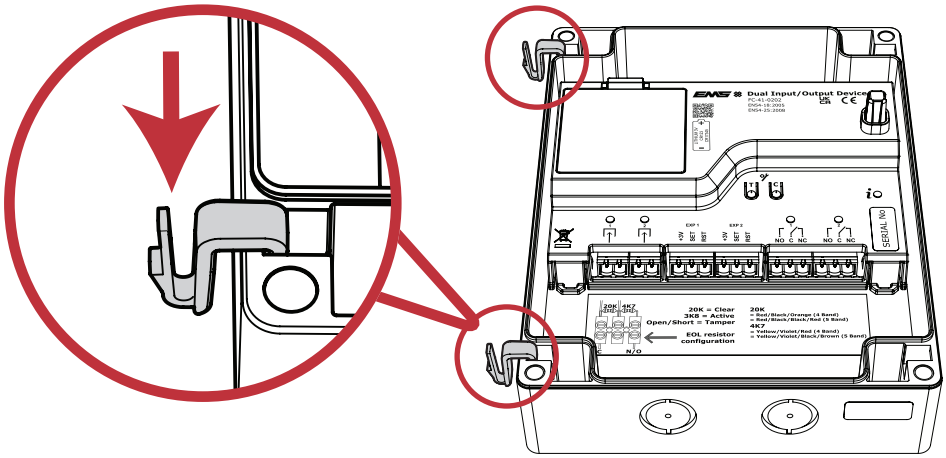
Press the Test (T) button again to change the output state, if required.



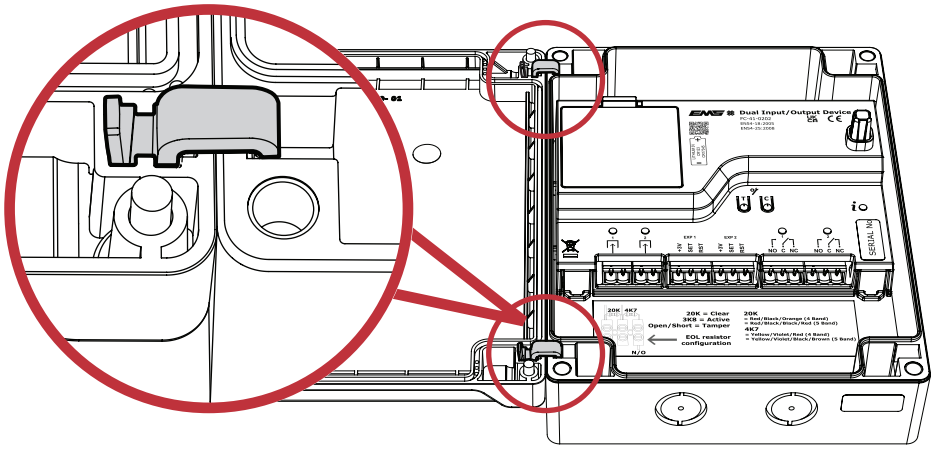
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Optional door hinge fitting

Insert the hinges into the hinge recesses on the back box, as shown.



For each hinge, place the other side into the hinge recess in the door as shown. The hinges will then click into place.

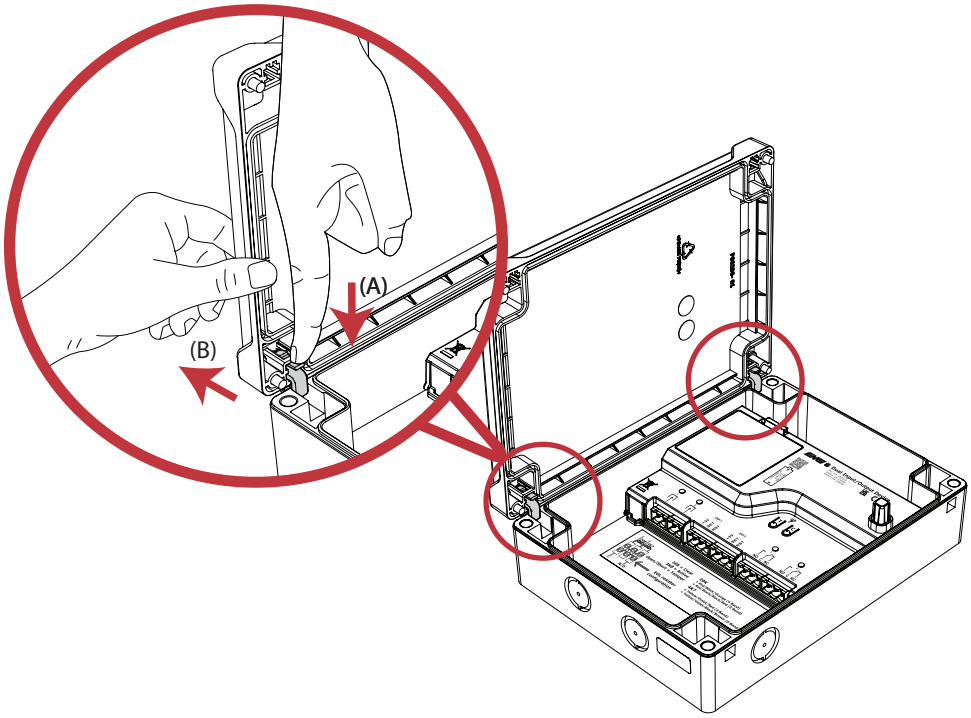


Removing the door hinges

Press the release tab on the hinge (A) while simultaneously pulling the door away from the hinge (B).

Do the same for the second hinge.

The hinges can then be removed from the back box hinge recesses.



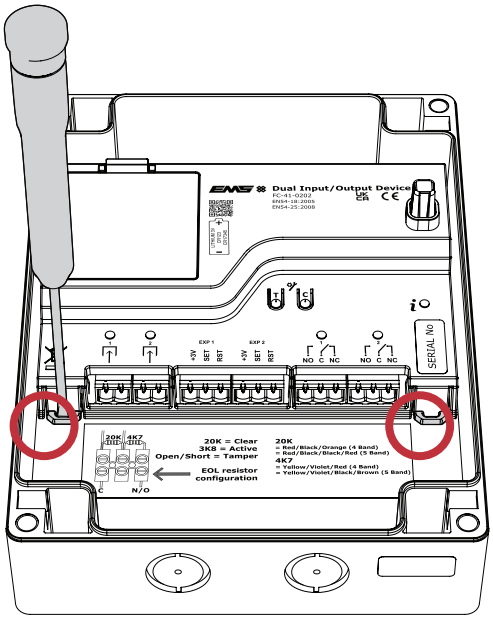
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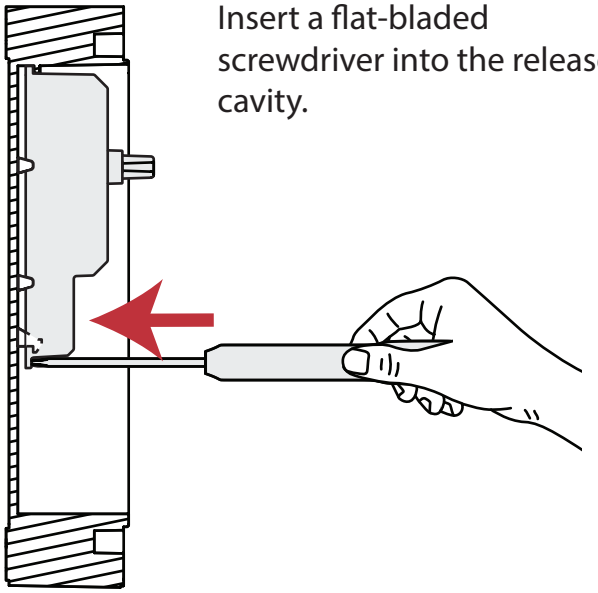
Optional PCB and casing removal

The PCB and its casing can be removed from the back box by releasing the hooked tab mechanisms.

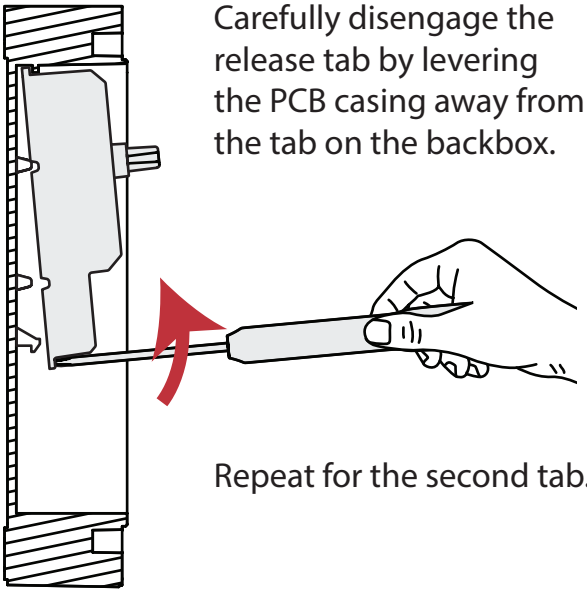
There are two hooked tabs that need to be disengaged. Their locations are shown.

Disengage each tab one by one, as follows:





Insert a flat-bladed screwdriver into the release cavity.

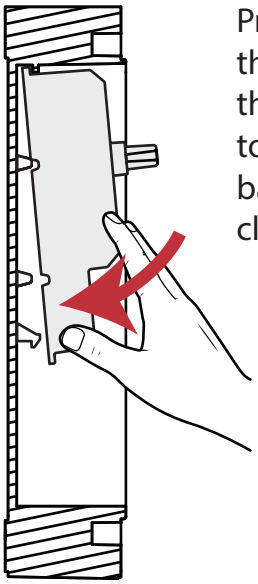


Carefully disengage the release tab by levering the PCB casing away from the tab on the backbox.

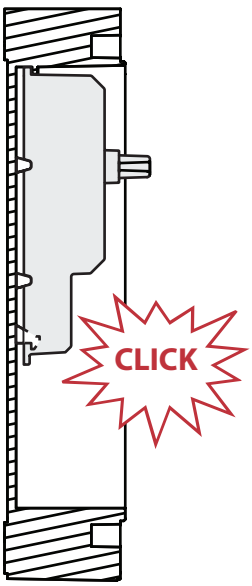
Repeat for the second tab.



To re-insert the PCB, insert the top of the PCB casing at an angle so it slides under the ridges.



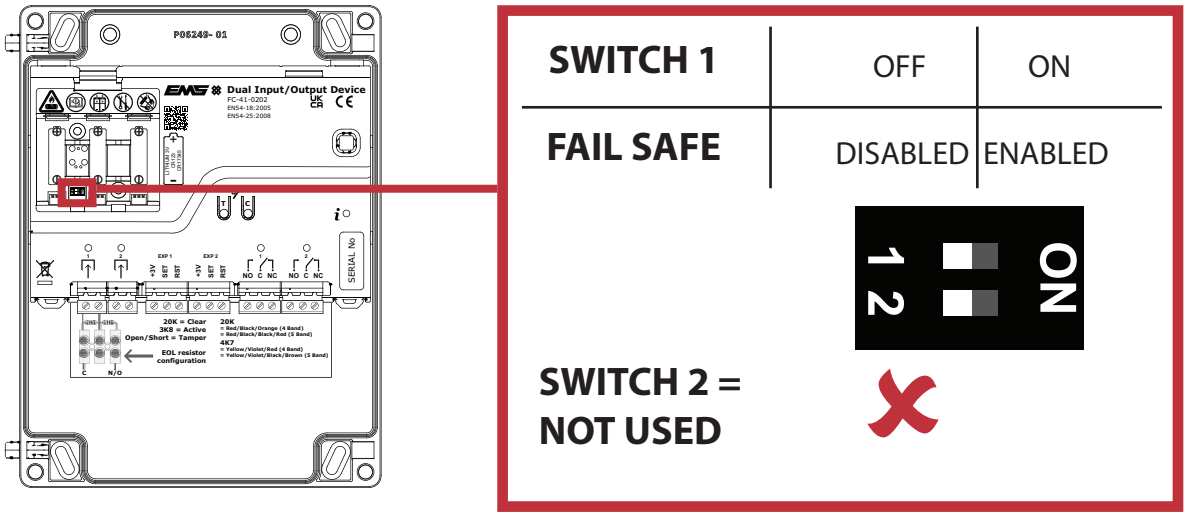
Press firmly the bottom of the PCB casing towards the back box until it clicks into place.



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Optional output fail-safe mode

The output fail-safe mode function can be enabled and disabled using switch 1 on the onboard DIL-switch as shown.



Default setting = Fail-safe mode disabled

When the function is enabled the relay ouputs will assume the output bit state 0 (off) in the event of:

- Communication loss to the RLM (Radio Loop Module)
- Battery failure

To enable the function:

1. Unscrew the lid
2. Unclip the battery cover
3. Remove the batteries
4. Turn switch 1 to the ON position
5. Re-fit supplied batteries
6. Clip the battery cover back into place
7. Screw the lid back in place*

***Caution:** Do not overtighten the screws. Max torque setting = 0.5 Nm.

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Specification

Operating temperature	-10 to +55 °C
Storage temperature	
with batteries without batteries	-10 to +30 °C -10 to +55 °C
Humidity	0 to 95% non-condensing
Location	Indoor
IP rating	IP65
Material	UL94 5VB rated PC+ABS
Output rating	1 A at 30 VDC
Supply	3 x 3V CR123A - lithium manganese dioxide batteries with a capacity of at least 1550mAh.
Certified with	*Duracell DL-123A / CR-123A Intense* *Panasonic CR-123A PA / BD*
Operating voltage	2.7 to 3.3 VDC
Operating frequency	868 MHz
Output transmitter power	0 to 14 dBm (auto adjusting)
Signalling protocol	X
Dimensions (W x H x D)	150 x 200 x 55mm
Weight (fully fitted)	0.6 kg

WARNING: Do not connect to mains.
Outputs 1 and 2 must Not be used when connected to an FC-620-0001 Auxiliary Relay Module.

WARNING: Risk of fire or explosion. Incorrect battery type, incorrect polarity or improper handling could result in fire, explosion or serious injury.
Follow these intructions:

- Use only the specified and approved battery type.
- Observe correct polarity. See Fit batteries section.
- Dispose of batteries in accordance with local regulations.
- Do not expose batteries to fire, heat, crushing, or cutting.
- Store batteries in a cool, dry place.
- Do not expose batteries to extreme temperatures or very low air pressure.

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Regulatory information

Manufacturer	EMS Ltd. Technology House, Herne Bay, Kent, CT6 8JZ, United Kingdom.
Year of manufacture	See devices serial number label
Certification	CE 26 0370 UKCA 26 8508
DoP number	DoP0051
Approved to European Union Directives	EN54-18:2005. Fire detection and fire alarm systems. Part 18: input/output devices. EN54-25:2008. Incorporating corrigenda september 2010 and march 2012. Fire detection and fire alarm systems. Part 25: components using radio links. EMS declares that the radio equipment type FireCell Dual Input / Output Device is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: www.emsgroup.co.uk
	2012/19/EU (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see www.recyclethis.info Dispose of your batteries in an environmentally friendly manner according to your local regulations.

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Technology House
Sea Street
Herne Bay, Kent
CT6 8JZ

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