Eaton CIOP-7273 door release module application guide

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Addressable Door Release Module
CIOP-7273

CE [18]

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DoP0435

EN54-18:2005
EN54-17:2005

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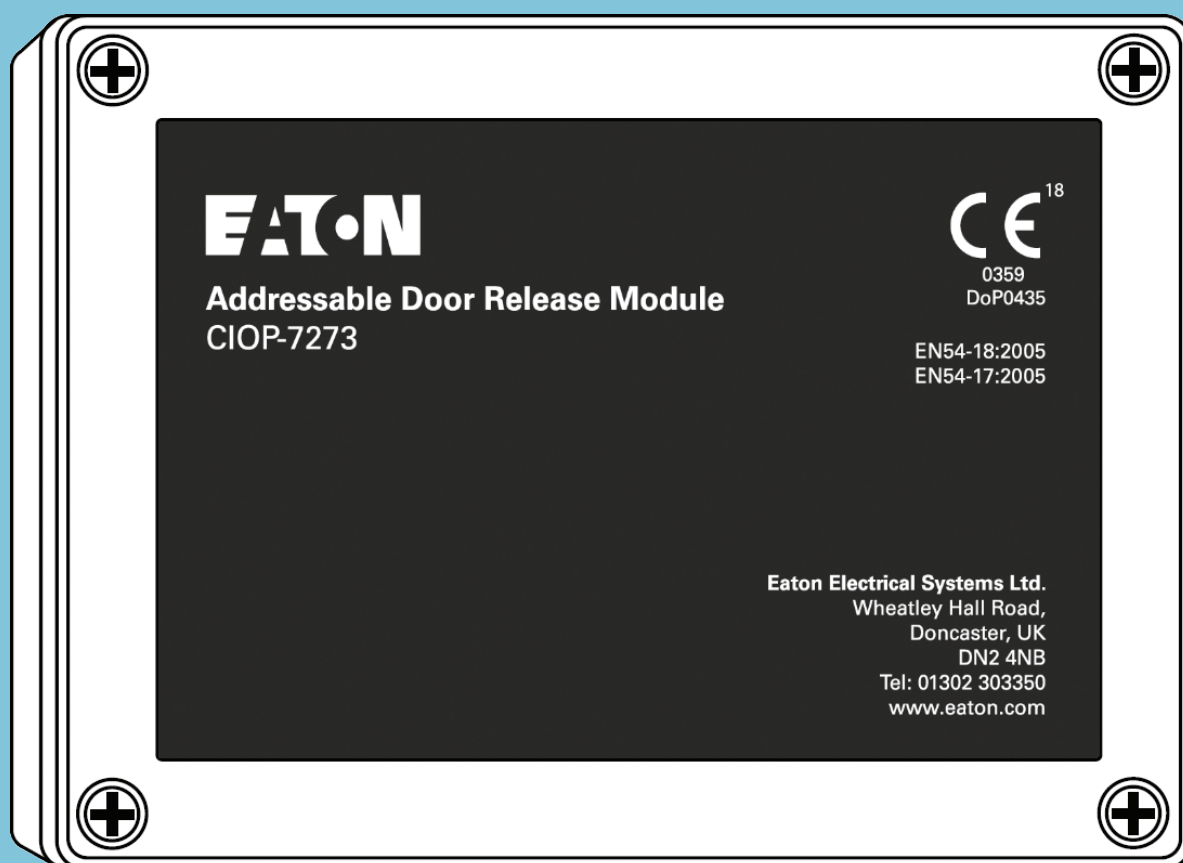
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Contents

1. System requirements

The CIOP-7273 is a new intelligent addressable interface designed by Eaton. It is a critical part of UK fire systems that conform to the BS 7273-4:2015 code of practise for door release mechanisms and door holders.

BS 7273-4 was updated in 2015 to give fire safety enforcers clear criteria for fail safe operation. The update ensures that, in the event of a fire, or a fault on the fire alarm system, any doors that are electronically controlled will operate correctly. This is essential for making sure evacuation routes are not blocked, and that specific fire doors are closed to slow the spread of fire and smoke.

The interface is designed to work seamlessly with the Eaton range of intelligent addressable sensors and systems. It functions to the exact requirements of BS 7273-4:2015, even to the most stringent Category A requirements for critical operation in the event of a fire or a fire alarm system fault.

CIOP-7273 has a number of benefits for installers too. It uses pluggable cable terminals for ease of wiring. In addition, soft addressing technology ensures the module can be easily detected by the main control panel and quickly configured via Eaton Site Installer software.

With full EN54-17 and EN54-18 certification, the CIOP-7273 can also be used outside of the UK if required.

The core Eaton Addressable devices, required to interface with door release hardware, are as follows:

- CF3000/DF6000/FX6000 series control panel
  - P2 Software needs to be used. Panels must run Loop Software v3.2.8.40 and Display Software v3.03.53.25 or later.
- CIOP-7273. Limited to 20 interfaces per loop.
- External power supply for CIOP-7273.
- Site Installer
  - Software v3.0.8.3. or later.



CF3000 Control Panel
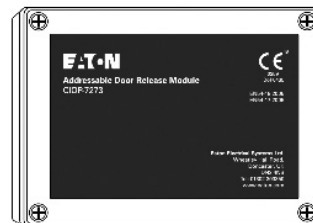
CIOP-7273 Door Release Module

All existing Eaton Addressable devices such Callpoints, Detectors, Base Sounders and VADs will still work as required.

2. System diagrams

The following diagrams are intended to show how the CIOP-7273 device can be implemented with the devices from the System Requirements section.

The interface is connected to loop and powered by an external power supply. It has two relays that can be connected to a door release, or close mechanism. The power supply to the interface will only power the relays on the device. The door mechanisms themselves would need their own power supply connection.

When programmed via Site Installer, the interface can enable a specific door to open or close based on the hardware configuration and the requirement for the building.
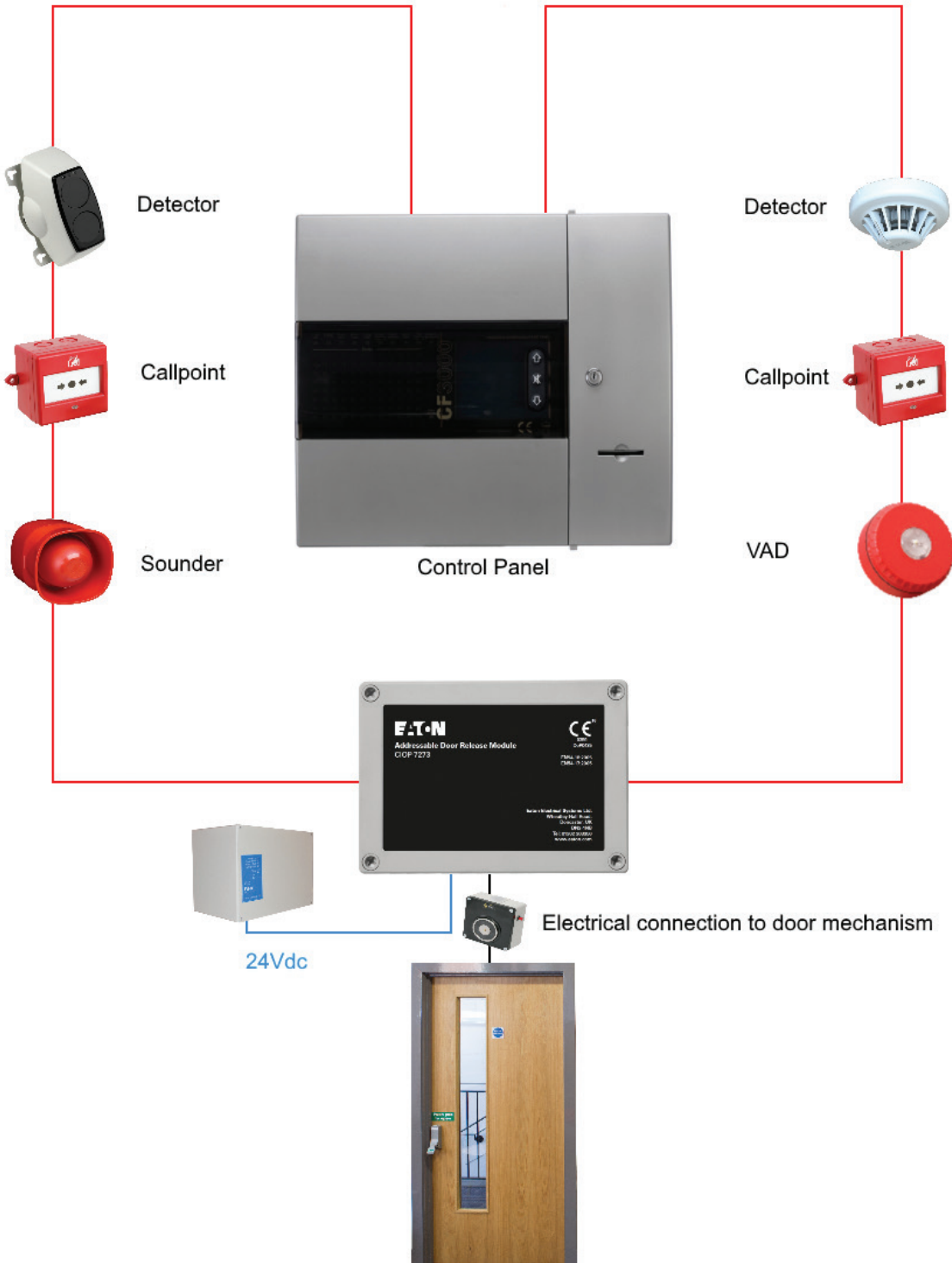
3. PCB overview

The CIOP-7273 PCB is configured as the diagram below. The product has the following connection points:

• Loop In/Out

• 2 x Output Relays

• External 24 V Power Supply Connection

• Dual Power Supply Fault monitoring (Battery and/or mains)

• RS232 socket, for loading cause and effect to the device.
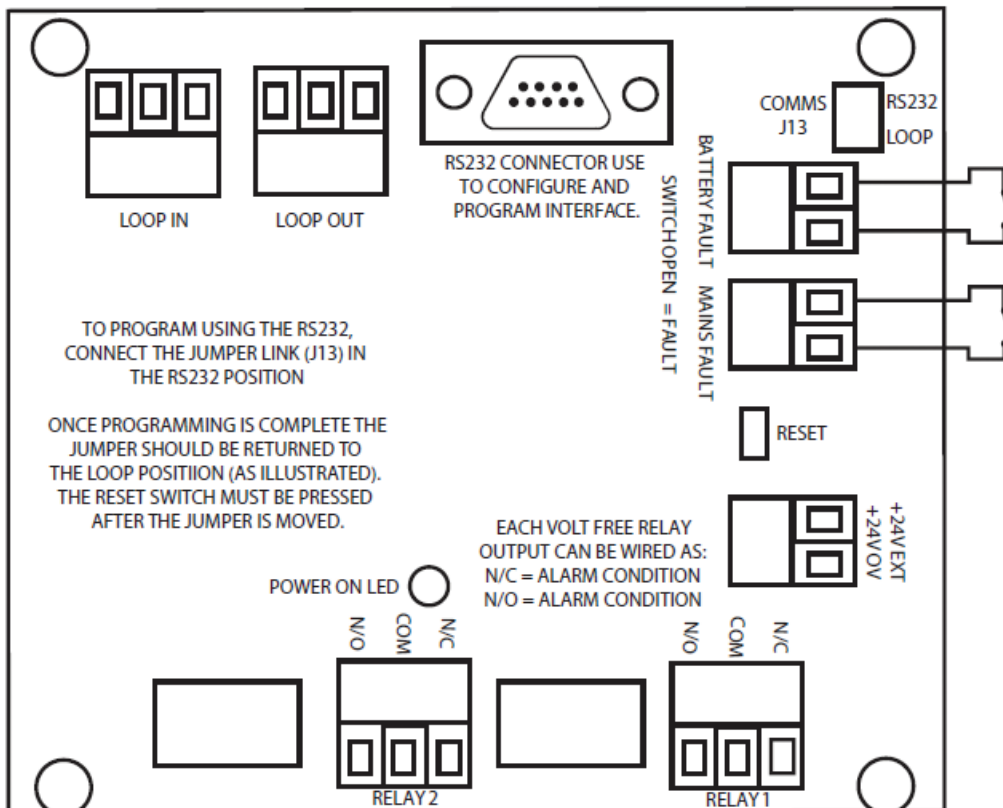
Additional notes:

• The output relays can support hardware that uses a closed contact (N/C) or an open contact (N/O) as the alarm condition.

• The output relay markings indicate their default state for alarm condition. They will be in the opposite state when energized for normal operation.

3. Site installer guide

The following section outlines the critical steps that are required to be carried out in Site Installer to ensure the CIOP-7273 system works correctly.

Note on Setup

- For a new site installation, an auto-learn is recommended. If the device is being retrofitted into an active system, then the Add/Delete device feature can be used to incorporate the unit into an existing loop.

1. Run the Site Installer application, Add site and Retrieve Panel site.

2. At first, the device appears as a repeater with a question mark. Select the Repeater by right-clicking on the icon, then select 'Edit Repeater'. Make sure Repeater Type is set to CIOP-7273.
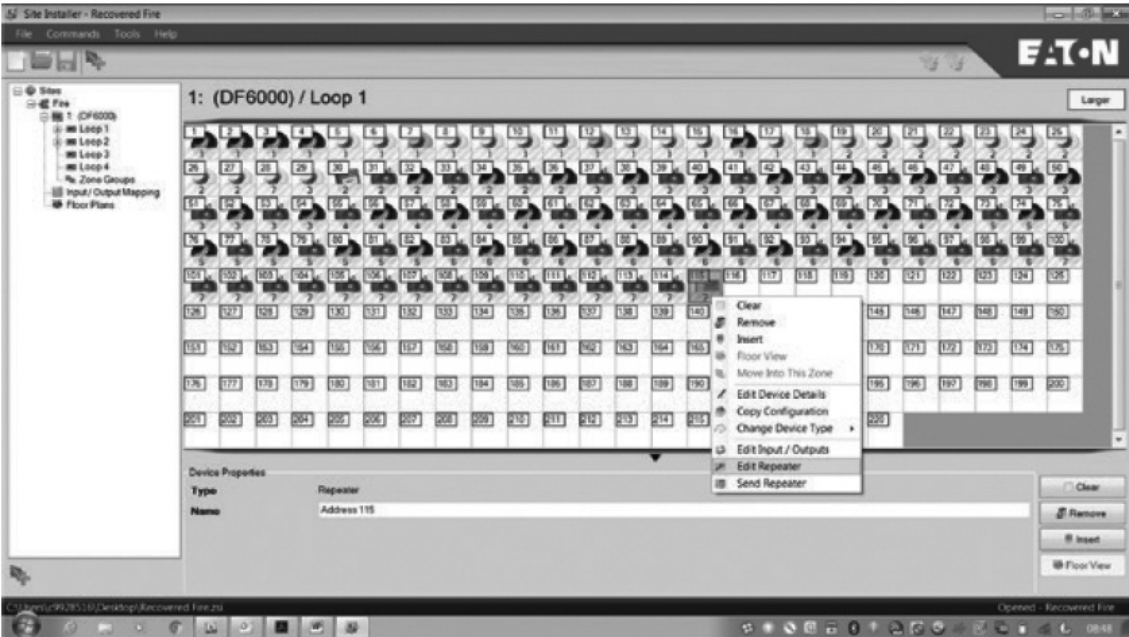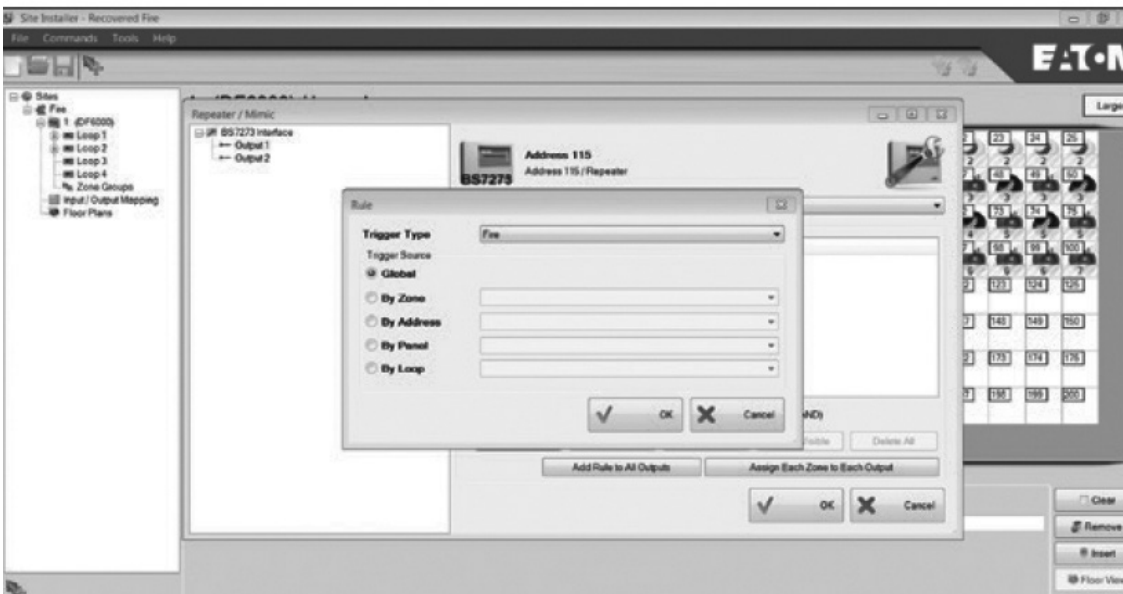
3. Select an Output and select 'Add Rule'. The rules that can be selected for the **CIOP-7273** are Fire, Fault, Disablement, Test Panel, Test Zone, Pre-Alarm, FRE, FPE, and RESET.
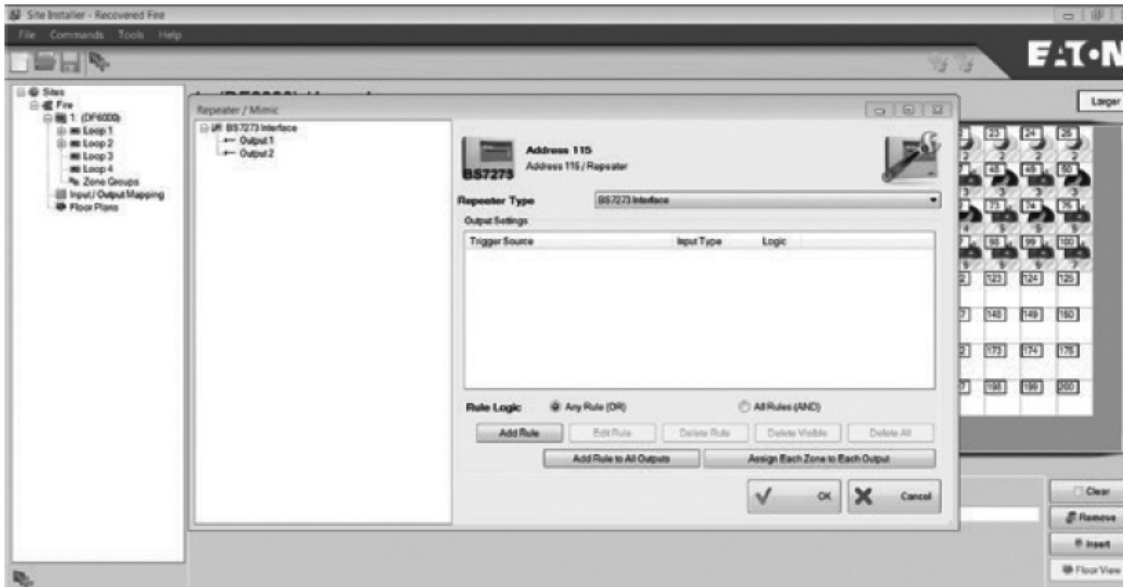
Each Output on the **CIOP-7273** can have a number of different rules defined. The different options are Global, By Zone, By Address, By Panel, and By Loop.
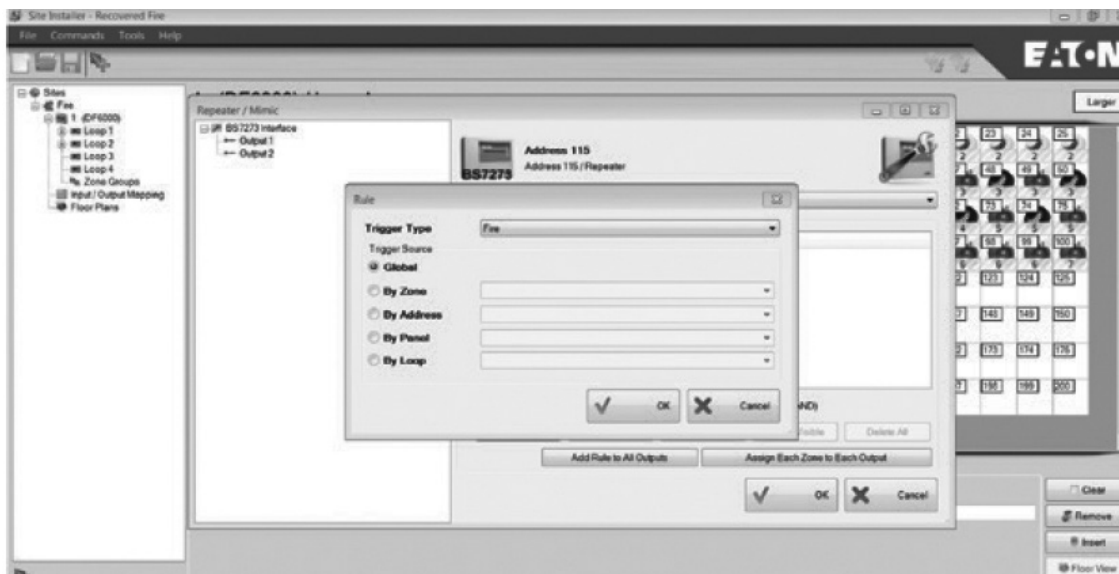

Note: Trigger Types; FRE and FPE can only go by Global Trigger Source.

Example:

To select the **CIOP-7273** to respond to fire by address:

1. Select Trigger Type as Fire

2. Selection Option 'By Address'

3. Select the Address to Respond to (in our example we have selected Address 29)

4. Click OK

The **CIOP-7273** allows additional control. Rules can be evaluated with And Logic, where all conditions must be present for the output to trigger. Alternatively, Or Logic, where any condition may be present to activate the output. The exception to this rule is FRE input trigger type, which if added, means regardless of the selected logic, FRE is always required for the output to activate.

4. Once the rules have been set in Site Installer, they need to be sent to the CIOP-7273 board.

On the **CIOP-7273 Board:**

• Change the jumper on J13 from Loop to RS232 SETUP.

• Press the RESET button on the Graphical Relay Board.

• Connect a serial cable to the RS232 port Graphical Relay Board.

In Site Installer:

• The repeater configuration is not stored on the panel but instead directly uploaded to the repeater hardware directly.

• To perform the upload, right-click on the icon in site installer and select 'Send Repeater'. The download from Site Installer will commence.

On the **CIOP-7273 Board:**

• Remove the serial cable.

• Change the jumper on J13 from RS232 SETUP back to LOOP.

• Press the RESET button on the relay board.

• Reset the panel that the relay board is connected to.

4. Additional information about BS 7273-4:2015

BS 7273-4:2015 is a code of practise that governs door-holders and door release operation and maintenance in the UK. It helps define the best practise for the actuation of mechanisms that unlock, release, or open doors in the event of a fire.

In the event of a fire, the standard can be applied in some of the following scenarios:

1. The release of fire resistant doors that are normally held in the open position. Thereby helping to prevent the spread of smoke and fire.
2. Unlocking doors that are normally locked. To ensure that occupants are not trapped or hindered in their escape.
3. Opening powered sliding doors, gates and turnstiles.

The standard does not apply to:

1. Electrically controlled systems that form part of a smoke ventilating system.
2. Fire resisting shutters.
3. Active fire curtains.

If there is a fault anywhere on the fire system that affects the release of doors in an emergency, fire doors must revert to 'fail-safe' position. This protects escape routes and prevents the spread of smoke in the event of a fire. These systems should be tested weekly.

Previously, a device local to the doors switched the doors to fail-safe mode and electrically secured fire exits and closed fire doors held open on magnetic door retainers. The latest iteration of the standard gives fire safety enforcers the criteria for fail-safe operation, and the standard goes even further by defining three different categories of actuation. Each of which has a set of criteria for fail safe operation under defined conditions.

- A: Critical – Fail-Safe for any fault that affects ability to release in a fire emergency as well as any fault on the critical signal path or a power failure.

- B: Standard – Fail-Safe for any fault on the critical signal path or power failure.

- C: Indirect – Fail-Safe for any fault on the critical signal path up to the interface with the access controller.

The scope of buildings requiring Critical Actuation (Category A) compliance is extensive and includes premises occupied by, or open to, the general public (shops, hotels, boarding houses, public houses, cinemas, theatres, museums, galleries, leisure centres, transport terminals, care homes, hospitals, educational facilities).

Document change history

REVISION	CHANGES	AUTHOR
V1.00	17/11/17 - First Draft	DN
V1.01	18/01/18 – Updated product images. Clarified product power spec. in section 2.	DN
V1.02	27/02/18 – Updated the PCB image to the correct version.	DN
V1.03	28/02/18 – Revised Site Installer section to match actual setup.	DN
V1.04	14/03/18 – Added correct version of Site Installer to the requirements. Updated fire door image to official Eaton library image.	DN
V1.05	20/04/18 – Updated PCB image to reflect final product.	DN
V1.06	21/05/18 – Version Updates • Added panel software requirements. • Added PCB Overview section. • Added Installation note to the Site Installer section.	DN
V1.07	04/06/18 – Version Updates • Updated system diagram image.	DN

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