

## FC410QIO Quad Input/Output Module

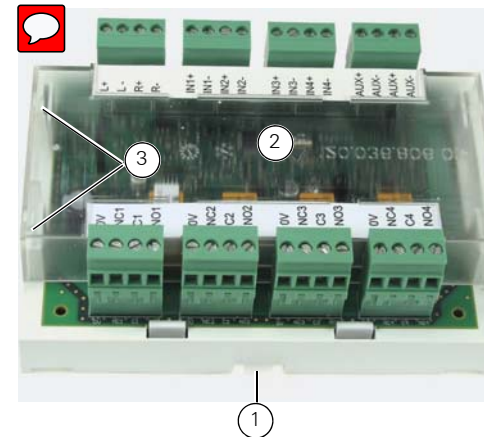


Fig. 1: FC410QIO Quad Input/ Output Module

1 – Release clip

2 – Clear cover

3 – Cover retaining tabs

### Introduction

Figure 1 shows the FC410QIO Quad Input/Output Module, part number 555.800.771.

The module provides four monitored inputs and four potential free relay changeover outputs.

The outputs are monitored with parallel contacts of the relays. The outputs can be connected to an Auxiliary Voltage source and its voltage can be monitored.

Additionally, all the outputs can be connected to the HVR800, for switching high power galvanic isolated loads. For more details refer to the HVR800 documentation.

The module has an integral loop isolator. If this activates a yellow LED illuminates. The activation remains in place until the short is removed.

The digital input monitoring and isolator functions are both configurable.

### Installation Notes

The module is DIN rail mounted. This will typically be within a suitable enclosure, providing protection against mechanical shocks, electrostatic discharge and support for the cabling.

A suitable enclosure can be ordered under part number 557.201.410. This is rated to IP66, and is supplied complete with a mounting plate (Item 3 in Figure 2) and a piece of DIN rail.

Snap the FC410QIO module onto the DIN rail with the release clip protruding. The complete assembly is as shown in Figure 2.

For using another housing, ensure that it has a minimum weight of 0.8 kg with an IP rating of 20 or higher.

Refer to the section “Technical Specifications” to determine the required module configuration. Then connect the wiring and set the jumpers as appropriate.

Set an appropriate loop address for the module, using a FC490ST service tool. Use the module’s programming port, shown as item 6 in Figure 3.

To remove the clear plastic cover, release each of the four locking tabs in turn (see item 3 in Figure 1). Use a screwdriver to press the tab inwards, while pulling upwards on the cover.

Select all cables in accordance with local standards, such as BS5839.

Check all conductors are free of earths.

If you need to remove the module from the rail, pull the DIN rail release tab (item 2 in Figure 2).

### Site Drawings



Once the address has been programmed, take note of the device location and address number, to include on site drawings.

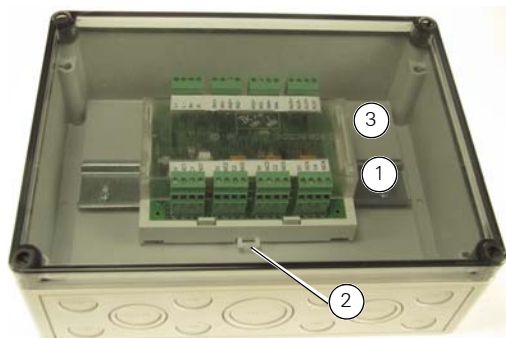


Fig. 2: FC4 10QIO Module fitted in the optional IP66 rated enclosure  
 1- DIN rail  
 2- DIN rail release clip  
 3- Mounting plate

### Technical Specifications

Table 1 shows the technical specifications.

Parameter	Value
Type Identification Value	195
System Compatibility	Use only with FireClass Fire Alarm Controllers
Environment	Indoor application only
Operating Temperature	-25 to +70 °C
Storage Temperature	-40 to +80 °C
Operating Humidity	Up to 95 % non-condensing
Dimensions (HWD)	134 x 103 x 49 mm (including plastic housing and terminal connector)
Mounting Requirements	DIN rail/backbox surface mount

Table 1: Technical Specifications

Parameter	Value
Battery Requirements	Standby current 1.1 mA Alarm current 5.9 mA
Wire Size	Min. 0.5 mm <sup>2</sup> , max. 2.5 mm <sup>2</sup>
Addressable Device Conditions	<ul style="list-style-type: none"> <li>■ Active</li> <li>■ Normal</li> <li>■ Auxiliary Voltage Fault</li> <li>■ Relay Stuck Fault</li> <li>■ Open Circuit Fault</li> <li>■ Short Circuit Fault</li> <li>■ Isolator Fault</li> <li>■ Device No Response</li> </ul>
Device Mode for each input point (Selectable by panel configuration software)	<ul style="list-style-type: none"> <li>■ Style B (Normally Open) Alarm on Short</li> <li>■ Style C (Normally Open) Fault on Short (Default Setting)</li> <li>■ Style C (Normally Closed) Fault on Short</li> <li>■ Style C (Normally Open) Fault on Short EN54-13</li> <li>■ Style C (Normally Closed) Fault on Short EN54-13</li> </ul>
Device Mode for each single output point (Selectable by panel configuration software)	<ul style="list-style-type: none"> <li>■ Door Control</li> <li>■ Alarm Control</li> </ul>

Table 1: Technical Specifications (cont.)

### CPD Information

 0786
Control Equipment Ltd. Hillcrest Business Park Dudley, West Midlands DY2 9AP UK  12 0786-CPD-21158
EN54-17 and EN54-18 <b>Input-/Output device with Short-Circuit Isolator for use in fire detection and alarm systems in buildings</b> FC410QIO

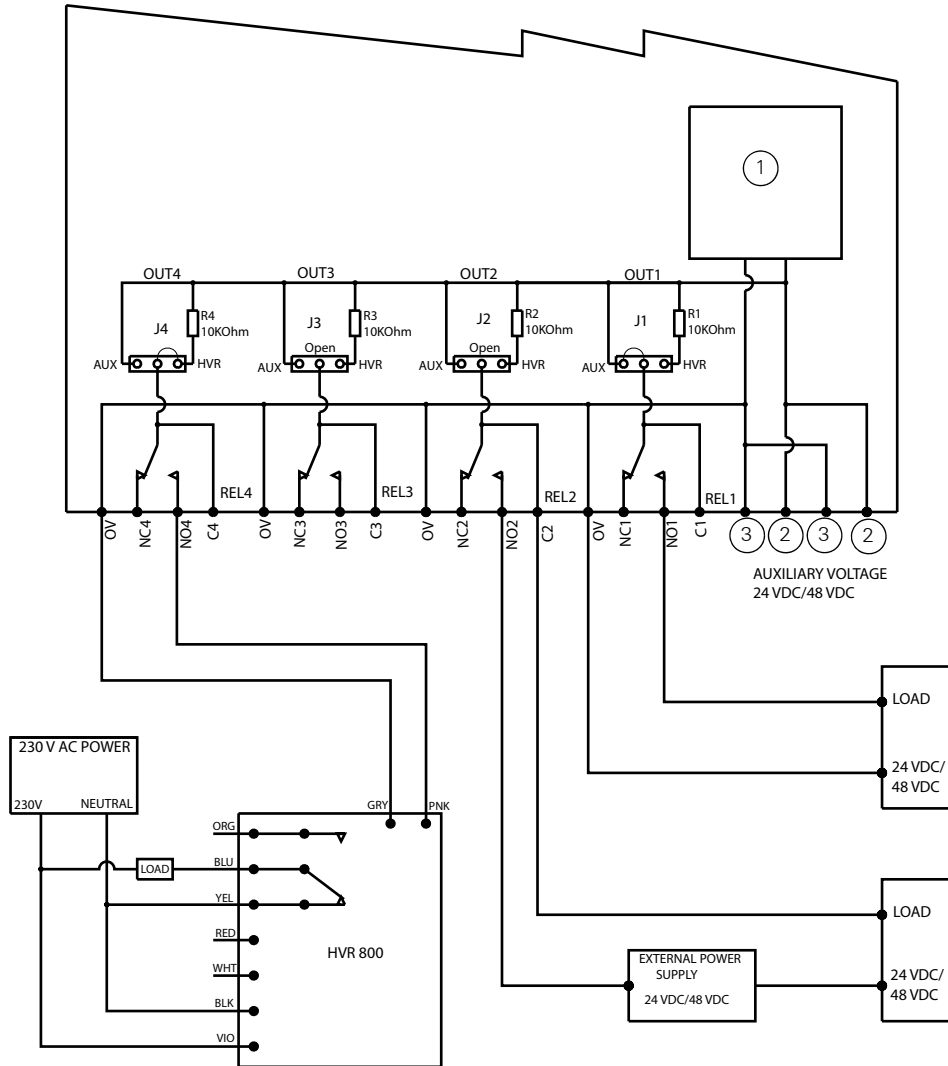


Fig. 4: Terminals  
 1- External Voltage and Wire Monitor  
 2- Positive External Voltage  
 3- Negative External Voltage  
 Jumpers J1, J2, J3 and J4 must be set according to Table 3 on page 4

Parameter	Value
Electromagnetic Compatibility	<ul style="list-style-type: none"> <li>EN50130-4 for immunity</li> <li>EN61000-6-3 for emissions</li> </ul>

Table 1: Technical Specifications (cont.)


### Features

#### Input Circuit

- EOL terminator: nominal 3.3 Kilo Ohms
- Alarm resistor: nominal 0.68 Kilo Ohms
- Open and Short circuit detection can be set to:
  - Maximum cable resistance: 50 Ohms
  - Maximum cable length: 200 m (standard cable J-Y(ST)Y nx2x0.8)

#### Output Circuit (Relay Contact)

- Nominal switching capacity 2 A 30VDC (resistive load)
- Max. switching power 60 W, 125 VA (resistive load)

**WARNING**  
 **Danger from Electric Shock**  
 Do not use the relay contacts to switch the mains voltage.

#### Auxiliary Voltage Input

- Auxiliary voltage 24 VDC max 55 VDC (Threshold voltage for auxiliary voltage fault indication: 18 VDC ± 1 VDC)
- Auxiliary voltage 48 VDC max 55 VDC (Threshold voltage for auxiliary voltage fault indication: 36 VDC ± 2 VDC)

### Terminals

Table 2 shows the terminal information.

Description	Marking	Comment
FireClass Loop Interface	L+	Loop+ to left
	L-	Loop- to left
	R+	Loop+ to right
	R-	Loop- to right
Monitored Input 1	IN1+	
Monitored Input 2	IN2+	
Monitored Input 3	IN3+	
Monitored Input 4	IN4+	
	IN1-	
	IN2-	
	IN3-	
	IN4-	
Relay Output 1	NC1	Normally closed contact
Relay Output 2	NC2	
Relay Output 3	NC3	
Relay Output 4	NC4	
	C1	Common contact
	C2	
	C3	
	C4	
	NO1	Normally open contact
	NO2	
	NO3	
	NO4	
	OV	Connected to AUX -

Table 2: Terminals

Description	Marking	Comment
Auxiliary Voltage Input	AUX+	Auxiliary Voltage input+ (both in parallel)
	AUX-	Auxiliary Voltage input- (both in parallel)
	AUX+	Auxiliary Voltage input+ (both in parallel)
	AUX-	Auxiliary Voltage input- (both in parallel)

Table 2: Terminals (cont.)

**Jumpers**

Table 3 shows the jumper information.

Jumper	Description
ISO. ON / ISO. OFF	Isolator Activated/ Deactivated Connect either link depending on whether or not the Isolator Function is required.
Auxiliary Voltage	2-3 24 VDC, 1-2 48 VDC

Table 3: Jumpers

Jumper	Description
OUT1 OUT2 OUT3 OUT4	HVR 1-2= HVR compatible, AUX 2-3= C1/C2/C3/C4 connected to AUX+, not fitted = general voltage free relay output.  The HVR option is not permissible if a 48 VDC Auxiliary Voltage is connected.

Table 3: Jumpers (cont.)

**Indicators**

Table 4 shows the Indicator information.

Indicator	Description
ISO.	ON = Isolator active
OUT1	ON = Relay Output 1 is set
OUT2	ON = Relay Output 2 is set
OUT3	ON = Relay Output 3 is set
OUT4	ON = Relay Output 4 is set
POLL	<ul style="list-style-type: none"> <li>Flash = Poll of module</li> <li>Steady ON = At least one relay is activated</li> </ul>

Table 4: Indicators

The values for the indicators OUT1, 2, 3, 4 and POLL depends on the software configuration.

**Wiring Diagrams**

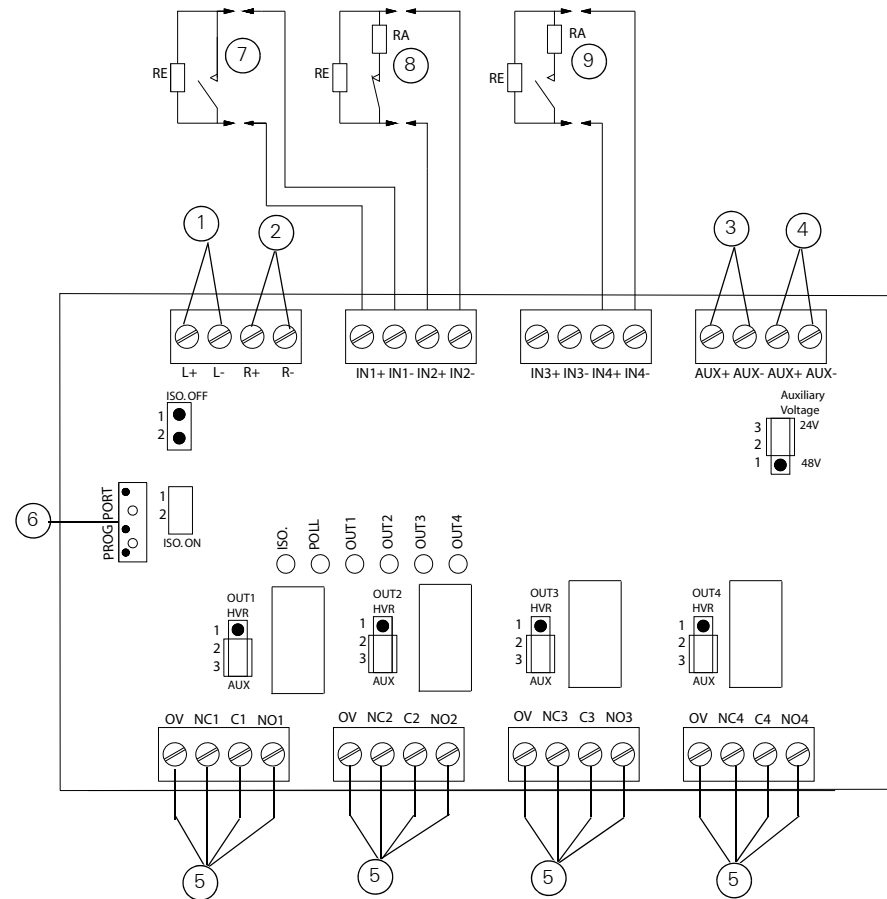


Fig. 3: Terminal Arrangement

- 1- From FireClass Control Panel or Previous Loop Device
  - 2- To the Next Loop Device
  - 3- From FireClass Control Panel or External Power Supply
  - 4- To Next FireClass Device
  - 5- Four Off Configurable Voltage Free Relay Outputs or HVR Drivers or 24 VDC/48 VDC Auxiliary Voltage Supply
  - 6- Address Programming Port
  - 7- Represents Style B- Alarm on Short
  - 8- Represents Style C- Fault on Short (Normally Closed)
  - 9- Represents Style C- Fault on Short (Normally Open)
- RE= EOL Resistor, 3.3kOhm, RA= Alarm Resistor, 680 Ohm