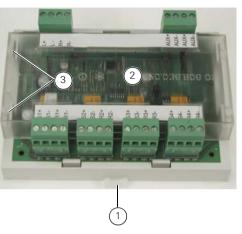# QMO850 Quad Monitored Output Module

Fig. 1: QMO850 Quad Monitored Output Module
1− Release clip
2− Clear cover
3− Cover retaining tabs

Introduction

Figure 1 shows the QMO850 Quad Monitored Output Module, part number 555.800.070.

The module comprises of four relays with selectable wiring supervision.

The output wiring is monitored for any short or open circuit. Spur and Loop configurations are supported as shown in Figure 4.

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

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 supplied complete with a mounting plate (Item 3 in Figure 2) and a piece of DIN rail.

Snap the QMO850 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 0.8kg 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 850EMT service tool. Use the module's programming port, shown as Item 5 in Figure 3. There is also an infra-red port so the address can be set remotely.

To remove the clear plastic cover, release each of the four retaining 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 clip (see 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.
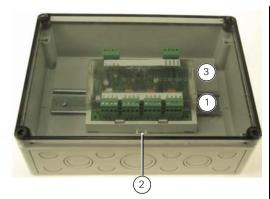
Fig. 2: QMO850Module fitted in the optional IP66 rated enclosure
1– DIN rail
2– DIN rail release clip
3– Mounting plate

Technical Specifications

Table 1 shows the technical specification information.

Parameter	Value
Type Identification Value	166
System Compatibility	Use only with MZX 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)

Table 1: Technical Specifications

Parameter	Value
Mounting Requirements	DIN rail/backbox surface mount
Battery Requirements	Standby current 2.1 mA Alarm current 6.7 mA
Wire Size	Min. 0.5 mm^2, max. 2.5 mm^2
Addressable Device Conditions	■ Normal ■ Active ■ Auxiliary Voltage Fault ■ Isolator Fault ■ Open Circuit Fault ■ Short Circuit Fault ■ Device No Response
Device Mode for each single output point (Selectable by panel configuration software)	■ Sounders ■ Door Control ■ Extinguishing Control ■ Alarm Control
Electromagnetic Compatibility	■ EN50130-4 for immunity ■ EN61000-6-3 for emissions

Table 1: Technical Specifications (cont.)
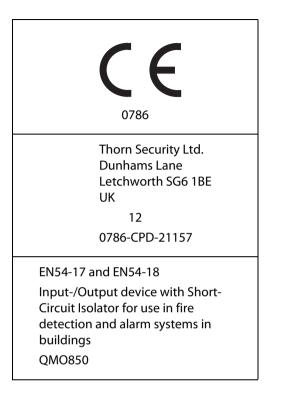
Features

Output Circuit (Relay Contact)

■ Nominal switching capacity 2 A 30 VDC (resistive load)

■ Max. switching power 60 W, 125 VA (resistive load)

Relay outputs have two states defined as follows:

■ Normal- wiring is monitored: Monitoring is provided by injection of a reverse polarity current through the wiring and end of line device, resistor R_{EOL}.
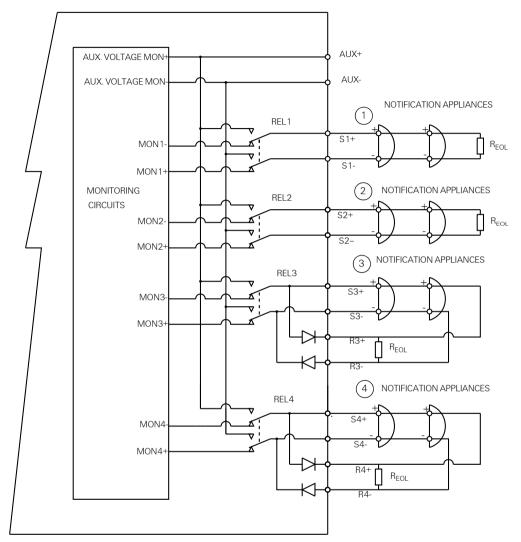
CPD Information

CE 0786
Thorn Security Ltd. Dunhams Lane Letchworth SG6 1BE UK 12 0786-CPD-21157
EN54-17 and EN54-18 Input-/Output device with Short-Circuit Isolator for use in fire detection and alarm systems in buildings QMO850

Fig. 4: Monitored Spur and Loop Relay Configuration
1– Circuit 1 represents Spur configuration
2– Circuit 2 represents Spur configuration
3– Circuit 3 represents Loop configuration
4– Circuit 4 represents Loop configuration
Circuits 1-4 can be either Spur or Loop or a mix of both configurations
For Spur Configuration the Outputs S+/S- have to be used

■ Active- output is activated: The output is supplied by the voltage for the Auxiliary voltage terminals with normal polarity.

Nominal R_{EOL} = 27 Kilo Ohms. Terminator is needed for proper wiring test.

> ⚠ **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 ± 1.5 V)
■ Auxiliary voltage 48 VDC max 55 VDC
  (Threshold voltage for auxiliary voltage fault indication: 36 VDC ± 2.5 V)
■ Wiring monitor (Threshold resistance for auxiliary voltage fault indication: 50 Ohm ± 5 Ohm)

Auxiliary voltage and wiring monitoring can be set with the jumpers as described in table 3.

Terminals

Table 2 shows the terminal information.

Description	Marking	Comment
MZX Loop Interface	L+	Loop+ to left
	L-	Loop- to left
	R+	Loop+ to right
	R-	Loop- to right

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)
Monitored Output 1 Monitored Output 2 Monitored Output 3 Monitored Output 4	S1+ S2+ S3+ S4+	Output
	S1- S2- S3- S4-	Common wire
	R1+ R2+ R3+ R4+	Output at loop configuration
	R1- R2- R3- R4-	Common wire at loop configuration

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.
Wiring monitor of the auxiliary voltage input	1-2 Enabled, 2-3 Disabled
Auxiliary Voltage	Nominal value 2-3 24 VDC, 1-2 48 VDC

Table 3: Jumpers

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	■ Flash = Poll of module ■ Steady ON = At least one relay is activated

Table 4: Indicators
The values for the indicators OUT1, 2, 3, 4 and POLL depends on the software configuration.
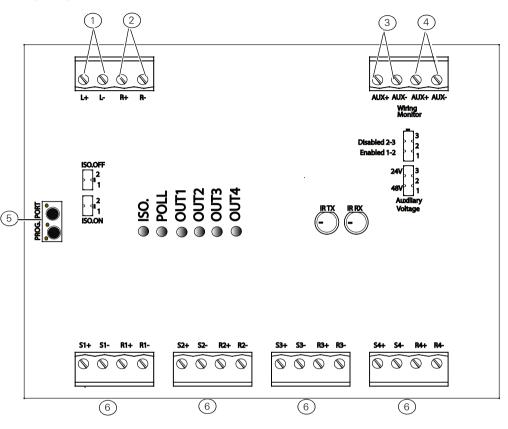
Wiring Diagrams

Fig. 3: Terminal Arrangement
1– From MZX Control Panel or Previous Loop Device
2– To Next Loop Device
3– From MZX Control Panel or External Power Supply
4– To Next MZX Device
5– Address Programming Port
6– Four configurable Relay Outputs with 24VDC/48VDC Auxiliary Voltage Supply