Isolator Module

User's Manual

V1.0.1

Foreword

General

This manual introduces the functions and operations of the Isolator Module (hereinafter referred to as "the Device").

Safety Instructions

The following categorized signal words with defined meaning might appear in the manual.

Signal Words	Meaning
⚠️ DANGER	Indicates a high potential hazard which, if not avoided, will result in death or serious injury.
⚠️ WARNING	Indicates a medium or low potential hazard which, if not avoided, could result in slight or moderate injury.
⚠️ CAUTION	Indicates a potential risk which, if not avoided, could result in property damage, data loss, lower performance, or unpredictable result.
🔑 TIPS	Provides methods to help you solve a problem or save you time.
📖 NOTE	Provides additional information as the emphasis and supplement to the text.

About the Manual

- The manual is for reference only. If there is inconsistency between the manual and the actual product, the actual product shall prevail.
- We are not liable for any loss caused by the operations that do not comply with the manual.
- The manual would be updated according to the latest laws and regulations of related jurisdictions. For detailed information, refer to the paper manual, CD-ROM, QR code or our official website. If there is inconsistency between paper manual and the electronic version, the electronic version shall prevail.
- All the designs and software are subject to change without prior written notice. The product updates might cause some differences between the actual product and the manual. Please contact the customer service for the latest program and supplementary documentation.
- There still might be deviation in technical data, functions and operations description, or errors in print. If there is any doubt or dispute, we reserve the right of final explanation.
- Upgrade the reader software or try other mainstream reader software if the manual (in PDF format) cannot be opened.
- All trademarks, registered trademarks and the company names in the manual are the properties of their respective owners.
- Please visit our website, contact the supplier or customer service if there is any problem occurring when using the device.
- If there is any uncertainty or controversy, we reserve the right of final explanation.

Important Safeguards and Warnings

This section introduces content covering the proper handling of the device, hazard prevention, and prevention of property damage. Read carefully before using the device, comply with the guidelines when using it, and keep the manual safe for future reference.

Operation Requirements

⚠️

- Make sure that the power supply of the device works properly before use.
- Transport, use and store the device under allowed humidity and temperature conditions.
- Prevent liquids from splashing or dripping on the device. Make sure that there are no objects filled with liquid on top of the device to avoid liquids flowing into it.
- Do not disassemble the device.

Installation Requirements

⚠️ WARNING

- Strictly abide by local electrical safety standards, and make sure that the voltage in the area is steady and conforms to the power requirements of the device.
- Do not connect the device to more than one power supply. Otherwise, the device might become damaged.

⚠️

- Observe all safety procedures and wear required protective equipment provided for your use while working at heights.
- Do not expose the device to direct sunlight or heat sources.
- Do not install the device in humid, dusty or smoky places.
- Install the device in a well-ventilated place, and do not block the ventilator of the device.

Maintenance Requirements

⚠️

- Use the accessories suggested by the manufacturer. Installation and maintenance must be performed by qualified professionals.
- Clean the device with a soft dry cloth or a clean soft cloth dipped in neutral detergent.
- Contact your local dealer or the service center nearest to you if the device needs internal configuration or maintenance. Do not dismantle or modify the device without a qualified professional present to avoid the risk of danger or damage to the device. We will assume no responsibility for any problems caused by unauthorized modifications or maintenance.

1 Product Information
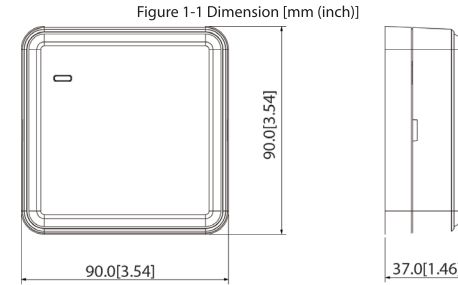
1.1 Introduction

DHI-HY-1431 Isolator Module is a mated product of the Addressable Fire Alarm Control Panel, locating at intervals on the loop. When a short circuit fault occurs at a place at the output end of the short circuit isolator in the bus circuit, the isolator module will cut off all equipment connected to the output end of it, thus ensuring the buses operate normally. After elimination of the short circuit fault, the isolator module can automatically connect the isolated loop section to restore power and data, help confirm the location suffering a short circuit fault. It ensures that in case of a short circuit, only the section between the isolators will be affected. The maximum number of equipment between isolators is 32. Isolator Module is recommended to be installed in electrical wells or in modular boxes in fire compartments.

1.2 Features

- Convenient wiring: Two-wire, polarity-free
- Reliable communication: Built-in microprocessor, stable performance
- Ultra-low power consumption: Ultra-low monitoring current and alarm current
- Simple installation: With a plug-in structure, easy to install and construct

1.3 Dimensions

Figure 1-1 Dimension [mm (inch)]

2 Technical Information

Parameter	Introduction
Electrical	
Working Voltage	24V DC
Current	● Monitoring current: ≤ 50μA ● Alarm current: ≤ 20mA
Activation Current	500mA
Indicator	Red LED remains lit during short circuit and is constantly off during polling
Communication Wiring	
Wiring	Two-wire, polarity-free
Communication Distance	≤ 1500 m
Environment	
Operating Temperature	−10°C to +55°C (+14°F to +131°F)
Storage Temperature	−20°C to +65°C (−4°F to +149°F)
Operating Humidity	≤ 95% RH (no condensation)
Construction	
Color	White
Dimensions (with base)	90 mm × 90 mm × 37 mm (3.54" × 3.54" × 1.46")
Weight (with base)	107 g (0.24 lb)
Certification	GB16806-2006

3 Device Installation

3.1 Packing List

Check the quantity and model. If you find device damage or any loss, contact the after-sales service.

3.2 Installation Steps

Prerequisites

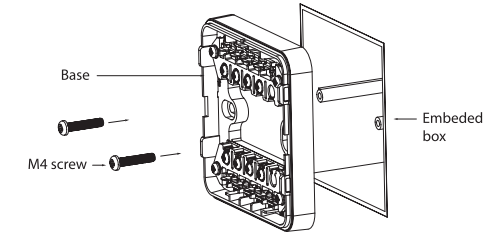- Determine the location, mounting distance and numbers for mounting the device in the protection area according to relevant provisions and regulations of the GB50166-2007 *Code for Installation and Acceptance of Fire Alarm System*, and connect the device correctly according to the construction drawing.
- Disconnect the power supply of the device before installation.
- The insulation resistance between buses should be greater than 20KΩ, and the insulation resistance of the bus to ground should be greater than 20MΩ.
- Use RVS twisted pairs with a section area of 1.5 mm² or 1.0 mm² for the signal buses.

Procedure

Step 1 Use two M4 screws to fix the device base on the embedded box or designated position, and make sure the matched mounting base has been firmly installed.
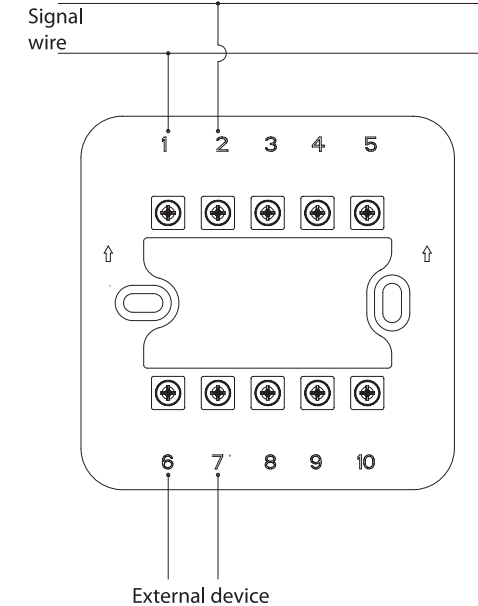
Figure 3-1 Installation (1)

Step 2 Wiring the base. Connect terminals and fix on the base.

📖

- 1, 2: Access terminal for the input signal.
- 6, 7: Access terminal for the output signal.

Figure 3-2 Wiring

Step 3 Mount the device into the base by aligning them together until it is firmly locked.
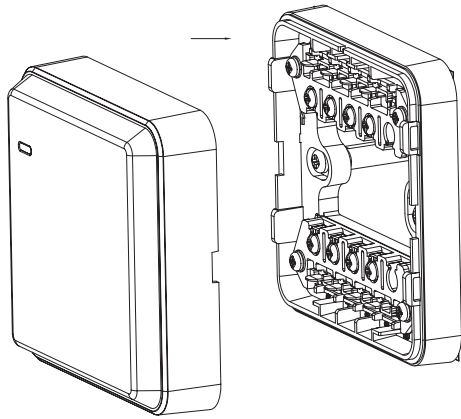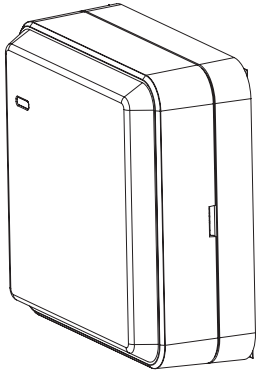
Figure 3-3 Installation (2)

Figure 3-4 Installation (3)

Complete

Step 4 After all devices are installed and checked, connect the power supply of the Addressable Fire Alarm Control Panel and conduct automatic register.

4 FAQ

Problem	Solutions
The indicator light of the module flashes quickly, and the screen of Fire Alarm Control Panel displays "Add or replace equipment"	While adding or replacing equipment, re-register in the **System Debugging** menu on the Fire Alarm Control Panel
The indicator light of the module flashes quickly, and the screen of Fire Alarm Control Panel displays "LA repeated equipment information"	Find and take off the wrong coding device, rewrite the code with the encoder, and re-register on the Fire Alarm Control Panel after installation
The indicator light of the module is constantly on, and the screen of Fire Alarm Control Panel displays "Registered device is offline"	The branch line of the isolator module is short-circuited or the load equipment of the isolator module branch is overloaded, please check and eliminate the short-circuit fault of the branch line of the isolator module, and ensure that the maximum current of the branch load equipment of the isolator module is less than 300mA

5 Test and Maintenance

5.1 Test

- After installation and register, inspect the operation status of module. When the external device works properly, the indicator of module flashes. When in short circuit action, the indicator of module is constantly on.
- After completing the alarm test, reset the Fire Alarm Control Panel and restore to the normal operation, the indicator of module flashes 6 seconds.

5.2 Maintenance

To keep your device in good working condition, please follow these requirements.
- Simulate alarm test: Test the device once half a year (recommended).
- Before testing or maintaining, inform the proper authorities that the system is undergoing maintenance and will temporarily be put out of service. Disable the system to prevent unwanted alarms.