

# Looped Bus Isolator Module

User's Manual

V1.0.1

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



- 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

The loop circuit connects the detectors, manual call points, sounder strobes, modules, and fire alarm control panel in a loop through the bus. This design enables the FACP to receive information from other devices, facilitating two-way transmission of signals and providing an additional transmission path for the system circuit. If an open circuit fault occurs, the entire circuit will not be affected. If a short circuit occurs, the isolator modules on both sides of the short-circuited area operate, without disrupting the normal operation of the entire system.

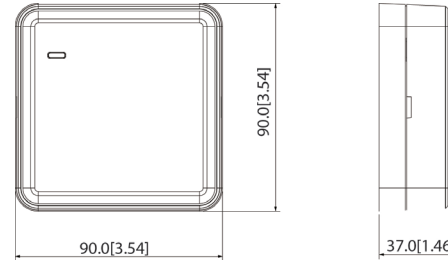
DHI-HY-1431R Looped Bus Isolator Module is indispensable to loop circuit. Characterized by two-wire technology, this module protects the bus communication circuit.

### 1.2 Features

- Compact Solution: With the assistance of a loop bus switch module and wiring, this system can transition from a radial to a loop circuit without replacing control panel
- Convenient wiring: Polarity-free with automatic identification
- Simple configuration: Shares the same configuration logic as the radial circuit without any special requirements

### 1.3 Dimensions

Figure 1-1 Dimension [mm (inch)]



## 2 Technical Information

Parameter	Introduction
<b>Electrical</b>	
Working Voltage	DC16V~ DC28V
Current	<ul style="list-style-type: none"> <li>• Monitoring current: <math>\leq 50\mu\text{A}</math></li> <li>• Operating current: <math>\leq 45\text{mA}</math></li> </ul>
Indicator	Isolate: Yellow LED is constantly off when works normally and remains lit when short circuit occurs
<b>Communication Wiring</b>	
Wiring	Two-wire
Communication Distance	$\leq 1500\text{ m}$
<b>Environment</b>	
Operating Temperature	$-10^{\circ}\text{C}$ to $+55^{\circ}\text{C}$ ( $+14^{\circ}\text{F}$ to $+131^{\circ}\text{F}$ )
Storage Temperature	$-20^{\circ}\text{C}$ to $+65^{\circ}\text{C}$ ( $-4^{\circ}\text{F}$ to $+149^{\circ}\text{F}$ )
Operating Humidity	$\leq 95\% \text{ RH}$ (no condensation)
<b>Construction</b>	
Color	White
Dimensions (with base)	90 mm $\times$ 90 mm $\times$ 37 mm (3.54" $\times$ 3.54" $\times$ 1.46")
Weight (with base)	136.1g (0.3lb)

## 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

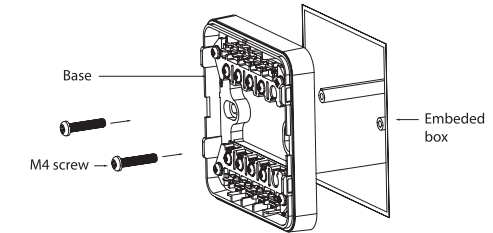
#### Prerequisites

- Disconnect the power supply of the device before installation.
- The insulation resistance between buses should be greater than  $20\text{k}\Omega$ , and the insulation resistance of the bus to ground should be greater than  $20\text{M}\Omega$ .
- Use RVS twisted pairs with a section area of  $1.5\text{ mm}^2$  or  $1.0\text{ mm}^2$  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.

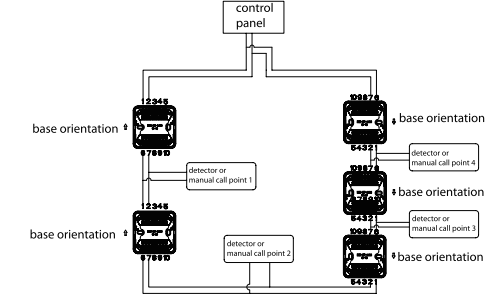
Figure 3-1 Installation (1)



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



- 1, 2, 6, 7: Access terminal for the bus signal, polarity-free.



**Step 3** Mount the device into the base by aligning them together until it is firmly locked.

Figure 3-2 Installation (2)

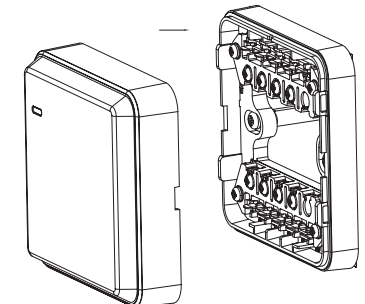
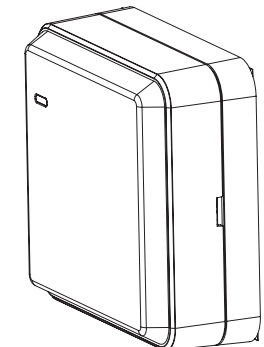


Figure 3-3 Installation (3)

Complete



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## Foreword

### General

This manual introduces the functions and operations of the Looped Bus 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

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
Output terminal is short-circuited, the isolate indicator does not light up	<ul style="list-style-type: none"><li>• Replace device.</li><li>• Check the circuit length.</li><li>• Contact the supplier for advice.</li></ul>

## 5 Test and Maintenance

### 5.1 Test

- The isolate indicator is constantly off when works normally and remains lit when short circuit occurs.

### 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.