

# TX7240

## Loop Relay Module Installation and Operation Manual



## Product Safety

To prevent severe injury and loss of life or property, read the instruction carefully before installing the module to ensure proper and safe operation of the system.



### European Union directive

2012/19/EU (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points.



For more information please visit the website at [www.recyclethis.info](http://www.recyclethis.info)

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## 1 Introduction

### 1.1 Overview

TX7240 loop relay module uses DC24V power supply, through the internal electrical isolation circuit, realize the input bus signal and the output bus signal isolated real-time transmission, output standard bus waveform. The loop relay module can improve the anti-interference ability of the bus, and has the function of extending the communication distance of the bus. The bus signal is mainly used in the field of external interference distortion or need to extend the communication distance of the bus.

The unit manufactured base on the requirement of EN 54 part 18, European Standard. The unit is aesthetically pleasing with unobtrusive design that will complement modern building designs and its plug-in type assemblies make installation and maintenance more convenient to the installer. The unit is compatible to the TX7004 Analogue Intelligent Fire Alarm Control Panel, produced by single manufacture T&A, to avoid addressable communication compatibility problem.

### 1.2 Feature and Benefits

- EN54-18 Compliance
- Built-in MCU processor
- Input bus, the output bus signal between the electrical isolation, electromagnetic interference has a good inhibitory capacity, stable and reliable work Input Fire or Supervisory signal configuration
- LED status indicator
- To correct the bus signal, the output standard bus waveform
- Fast intelligent bus output short circuit judge function, bus output short circuit protection function; after the bus is normal, it can recover the bus output in time
- Aesthetically pleasing design

### 1.3 Technical Specification

- |  |  |
|--|--|
| • Compliance                           | EN 54-18:2005  |
| • Input Voltage                        | Loop Power:24VDC [16V to 28V]<br>External PSU: 20 to 28VDC   |
| • Current Consumption                  | Loop: $\leq 5\text{mA}$<br>External PSU: $\leq 500\text{mA}$ |
| • Bus input range: $\leq 1000\text{m}$ | Bus output range: $\leq 1000\text{m}$                        |
| • Most cascade three                   |  |
| • Protocol/Addressing                  | T&A, Value range from 1 to 254                               |
| • Indicator Status                     | Normal: Single blink/Fault: Steady-on                        |
| • Material / Colour                    | metal / gray   |
| • Dimension / LWH                      | 155.0mm $\times$ 97.0mm $\times$ 40.0mm                      |
| • Operating Temperature                | -10°C to +55°C   |
| • Humidity                             | 0 to 95% Relative Humidity, Non condensing                   |

## 2 Installation

### 2.1 Installation Preparation

This interface module must be installed, commissioned and maintained by a qualified or factory trained service personnel. The installation must be installed in compliance with all local codes having a jurisdiction in your area or BS 5839 Part 1 and EN54.

T&A products has available range of interfaces, each interface module is designed for specific application, it is essential to consider the requirement of both sides of the interface to avoid malfunction and typical fault scenario. The main caution is to ensure that the voltage rating of the equipment and interface module are compatible.

### 2.2 Installation and Wiring

1. The loop relay module is used for anti interference when used outside the site should be installed in the presence of disturbances, such as the shielding effect of the iron shell; relay module as extended bus communication distance is used, should be installed at the output end of long distance bus controller within 1000m; fixed by screws, installed in the room.
2. External wiring terminal diagram is shown below:

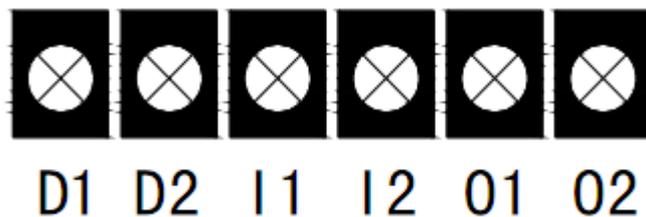


Figure 1: Schematic diagram of external terminals

D1、 D2: 24V power input terminal

I1、 I2: Bus input terminal

O1、 O2: Bus output terminal, O1 is the positive, O2 is the negative.

Wiring requirements: no polarity signal two bus using RVS twisted pair, Sectional area $\geq 1.0\text{mm}^2$  ;

DC24V power using BV line, Sectional area $\geq 1.5\text{mm}^2$

**NOTE: the TX7240 cannot be used in the loop.**

## 3 Loop relay module Configuration

### 3.1 structure characteristics and Working principle

#### 3.1.1 Outline dimension chart

Loop relay module Outline dimension chart, As shown in Figure 2:

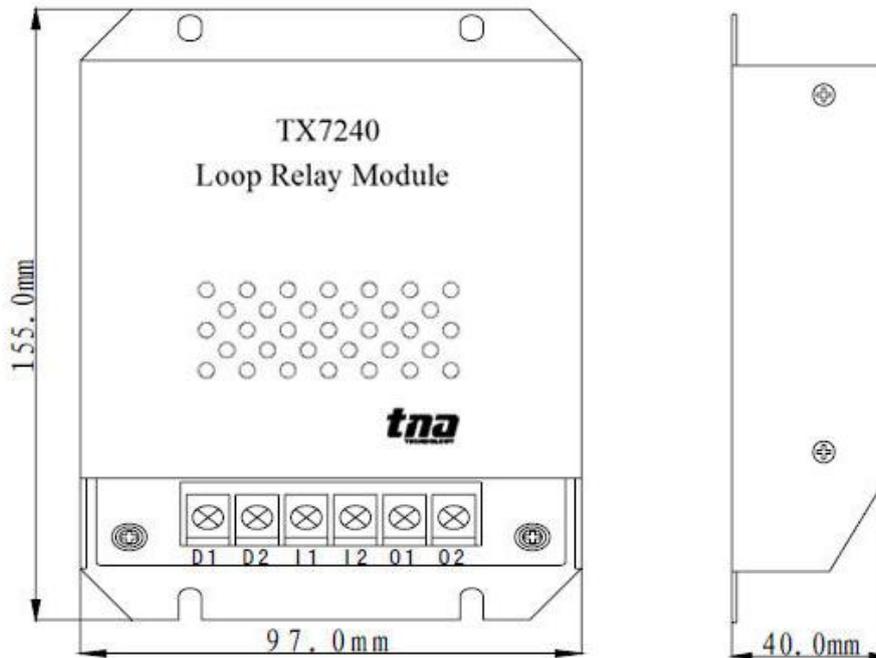


Figure 2: Loop relay module figure size

### 3.1.2 Working principle

The loop relay module collects the bus signal through the bus transceiver circuit, and outputs the control bus output circuit after the MCU processing the standard bus waveform; signal isolation circuit bus input and output through optocoupler can extend bus communication distance and can correct the bus waveform

### 3.2 Use and Operation

1. The use of the loop relay module must follow the following requirements:
  - (1) Meet the technical parameters defined in this specification
2. After the loop relay module is installed, or in the use of the process to be tested every six months, the test method is as follows:
  - (1) The fire alarm controller is used to connect the front end coding device with the relay module, and the coding equipment should be able to log in correctly.
  - (2) The detector which is connected to the bus through the relay module is reported to the fire alarm, and the controller should be able to receive the alarm information correctly.

### 3.3 Handling and storage

Transport, storage and handling equipment shall be carried out in a packing condition, loading and unloading process must be handled with care, to prevent the collision damage. Storage Keep the environment should keep ventilation, dry, avoid open storage.

## 4 General Maintenance

1. Inform the suitable personnel before conducting the maintenance.
2. Disable the loop relay module on the control panel to prevent false alarm.
3. Do not attempt to repair the circuitry of the loop relay module, it may affect the operation to respond to a fire condition and will void the manufacturer's warranty.
4. Notify again proper personnel after conducting the maintenance and make sure to enable the loop relay module and confirm if up and running.
5. Perform the maintenance on semi-annually or depending on the site conditions.

## 5 Matters needing attention

1. On duty personnel should be familiar with the operation of the equipment, not the wrong operation.
2. This module for fire protection products, must strictly implement the duty system and the shift in use, and make a running record.
3. Not every half a year to be a function of the module test.

## Appendix 1

### Limitation of loop relay module

The loop relay module cannot last forever. In order to keep the loop relay module working in good condition, please maintain the equipment continuously according to recommendations from manufacturers and relative nation codes and laws. Take specific maintenance measures on the basis of different environments.

These loop relay module contains electronic parts. Even though it is made to last for a long period of time, any of these parts could fail at any time. Therefore, test your module at least every half-year according to national codes or laws. Any loop relay module, fire alarm devices or any other components of the system must be repaired and/or replaced immediately as they fail.