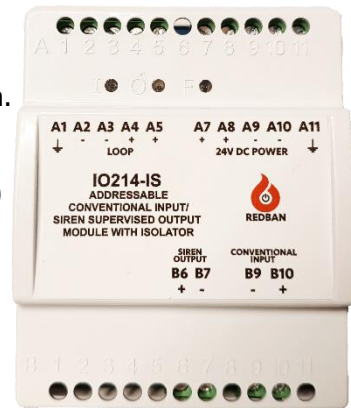


**REDBAN Conventional Input/Siren Supervised Output Module**  
**REDBAN IO214-IS Conventional Input/Siren Supervised Output Module with Built-in Isolator**  
**REDBAN IO214-I Conventional Input Module**  
**REDBAN IO214-I-IS Conventional Input Module with Built-in Isolator**  
**REDBAN IO214-O Siren Supervised Output Module**  
**REDBAN IO214-O-IS Siren Supervised Output Module with Built-in Isolator**

Doc No: UM-IO214-IS-1122-R0-EN

**SPECIFICATIONS**

Operating Voltage Range:	16 to 30 VDC
Standby Current:	<150µA @ 24 VDC (inc. LED blink)
Maximum Alarm Current :	<4 mA @ 24 VDC (Led on)
Operating Humidity Range:	10% to 93% Relative Humidity, Non-con.
Siren Relay Contact Ratings:	24vdc 400mA (IO214 and IO214O)
Operating Temperature Range:	-10°C to50°C
Built-in Isolator Type:	Simple Self Current Sensing (Annex A.3)
Built-in Isolator Switch Current:	230-400mA (Iso <sub>min</sub> – Iso <sub>max</sub> )
Built-in Isolator Reconnect C.:	3 – 13 mA (Isc <sub>min</sub> – Isc <sub>max</sub> )
Built-in Isolator Leakage C.:	<18mA
Serial resistance:	1 Ohm max
External DC power:	24Vdc (%20)
Dimensions:	90x69x40mm
Weight:	90 grams



**GENERAL DESCRIPTION**

IO214/IO214-X-X Module is designed for the gather conventional inputs from outside of the fire alarm system or give output to sounders that will indicate any alarms or trigger any sounder connected to the system.

The device has two circuit parts; the communication side and perception side. Perception side needs extra 24V supply for driving Conventional devices that connected and for driving sounders. The two circuits are optically isolated.

The module is plug-in type input or output with addressable analog communications. When working as conventional input module, it transmits an analog representation of inputs over a communication line to the control panel. When working as output it receives data from the control panel and drives the sounder or sounders.

Inside MCU's EEPROM keep the sensor's address that can be set by a portable Address setting device PP1201 Device Programmer.

The Conventional input is used for connecting conventional products into addressable system as a conventional zone. Conventional detectors as Smoke, Heat, Combined and Manual Call Points can be tied to system. Maximum 32 pieces of detectors and unlimited number of Manual Call Points can be

connected to conventional zone.

For Siren Supervised Output the device can supply 400mA current to sounders. This means up to current consumption of Sounder many sounders can be driven.

The operation mode of the module can be programmed by the PP1201 device programmer. The module can work in three different operation modes;

1. Conventional Input Module
2. Supervised Siren Output Module
3. Conventional Input Module and Supervised Siren Output Module (takes two consecutive addresses).

On IO214/IO214-X-X modules there are necessary connection terminals. After selecting the operation mode the related connections must be used. Useless terminals will not be enabled so wiring to these terminals will not work except needed terminals.

IO214-I is factory default fixed only supervised input module. Address Bus terminals and Input terminals implemented. By programmer only address can be programmed. IO214-I-IS is conventional input module with built-in isolator model.

IO214-O is factory default fixed only Supervised Siren output module. Address Bus terminals and Siren Output terminals implemented. By programmer only address can be programmed. IO214-O-IS is control module with built-in isolator model.

IO214-IS is 1 input 1 Supervised Siren output module with built-in Isolator.

When any shortcircuit occurs on the transmission path, the built in isolator will cut the line. The device will continue on working and it cut the shorted side of the connection. The built-in isolator has no input or output side, both positive sides are similar.

In order to cancel the built-in isolator, R52 and R54 resistors must be shorted by a solder machine by a technician. IO214, IO214-I and IO214-O models are built-in isolator bypassed (shorted) factory default models.

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## INSTALLATION



The IO Module consists of two main parts: a base and the cover. The base consists of a circuit board, connection terminals, indicator leds and enable/disable of EndofLine resistor for Conventional Input.

Under the base there are two different connection types; Hidden brackets for directly mounting on the wall, and DIN tray mounting when mounting in a closed DIN tray box. When mounting, leave at least 10cm around the device to permit adequate ventilation and heat dissipation.

Before wiring the installer must select the device operation mode, enable/disable the related jumpers and give the modules address by the PP1201 Device Programmer.

## **Operation Mode**

For factory fixed devices

IO214-I or IO214-I-IS Conventional Input Device  
and

IO214-O or IO214-O-IS Supervised Siren Output Module

no need to select operation mode. Simply installation can be done after address programming.

For IO214 and IO214-IS; 1 Conventional Input + 1 Supervised Siren device, it is possible to program the operation mode by the PP1201 device programmer. In order to set the Operation Mode by the PP1201 Programmer;

Setting the Working Mode of IO214/-IS Module will select the operation mode as follows:

1 : Conventional Input Module	>>Operation Mode 01
2 : Supervised Siren Output Module	>>Operation Mode 02
3 : Conventional Input and Supervised Siren Output	>>Operation Mode 03

In order to program IO214/IO214-IS Operation Mode by PP1201 Programmer, simply press SET for two seconds to enter SET Mode, by pressing SET consecutively select WM. WM indicates WorkMode. Enter 1,2 or 3 and press Write Button. When the module reads address, it will indicate input/output or IO module.

When IO214 used in both input and output the device will get two addresses. The conventional input address is given address and Siren Supervised Output address is given address+1.

For further information please refer to PP1201 Programmer Users Manual.

**IO214 / IO214-X-X (Mode 1 or 3 Selected) Conventional Input Module**

The module will operate as conventional input module. This modes allow the system integrator to connect conventional type detectors and modules to the Fire Alarm Control Panel (FACP). The module will work as an one zone Conventional Panel.

In order to supervise the wiring connection of the line, an EOL(EndofLine) resistor 6K8 must be connected at the end of the line. If the module can not see the 6K8 resistor it will transmit Open Error to the FACP. If there is a short circuit on Conventional Input terminals IO214 will transmit Short Error to the FACP. The EOL resistor must be connected to the last device on the line. So the module can supervise the wire connection up to last device. By connecting the jumper EOL-CON the open-short recognition can be cancelled. If the installer connects the 6K8 EOL resistor, he should not forget to remove the EOL-CON jumper.

When reset occurred in the system, the module will cut the 24V power although 24V external power exists. So, the installer or system integrator has no need to take care of the external power in reset. There are two indication leds for conventional input onboard. Alarm and Fault will be indicated by these leds. These leds are only active when the module is working as Conventional Input Module. These leds are only for technical supervision inside of the case. General Fault led indicates that there is a fault in conventional input in mode 1 or a general fault from both siren output or conventional input in mode 3.

In Figure 1 the connection schematic of Conventional Input Module is given. The wiring must be done properly and the polarity should be taken into consideration.

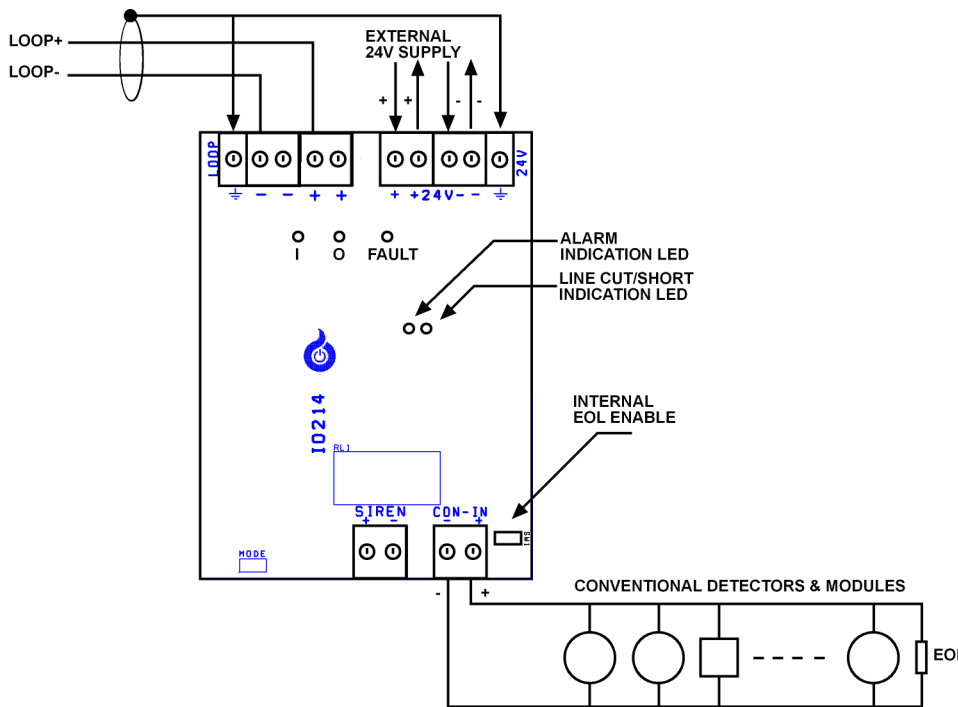


Figure 1- IO214-I or IO214-X-X Operation Mode:1/3 Conventional Input Module Connection Diagram

**IO214 / IO214-X-X (Mode 2 or 3 selected) Supervised Siren Output Module**

The module will operate as Supervised Siren Output Module. When FACP sends a command to activate the sounder, module triggers the sounder. This output is a supervised output. The sounder output will supervise by connecting resistors. In order to supervise the wiring connection to the sounder, an EOL(EndofLine) resistor 2K2 must be supervised. If the module can not see the 2K2 EOL resistor it will transmit Open Error to the FACP. If there is a short on the siren output, the module will send Short Error to the panel. In both conditions general fault led will indicate the module.

When using the module as Supervised Sounder Output the external 24v power has to be supplied to the module. The siren output is 24 V and it is protected by a 400 mA resettable fuse. When connecting sirens, attention should be paid to polarity. When the siren output is not active, a voltage of 1,2 V is measured at reverse polarity, this is for supervision property.

When connecting voice warning devices to the siren output, it is necessary to calculate how many devices can be connected. The total current to be drawn should not exceed 400 mA. This limitation is due to the fact that the siren output is protected by resettable fuse. The maximum number of sounders that can be connected to the supervised output can be calculated by formula:

$$\text{Number of Siren Connected} = 400\text{mA} / \text{Siren Current Consumption.}$$

In Figure 2 the connection schematic of Sounder connection has given.

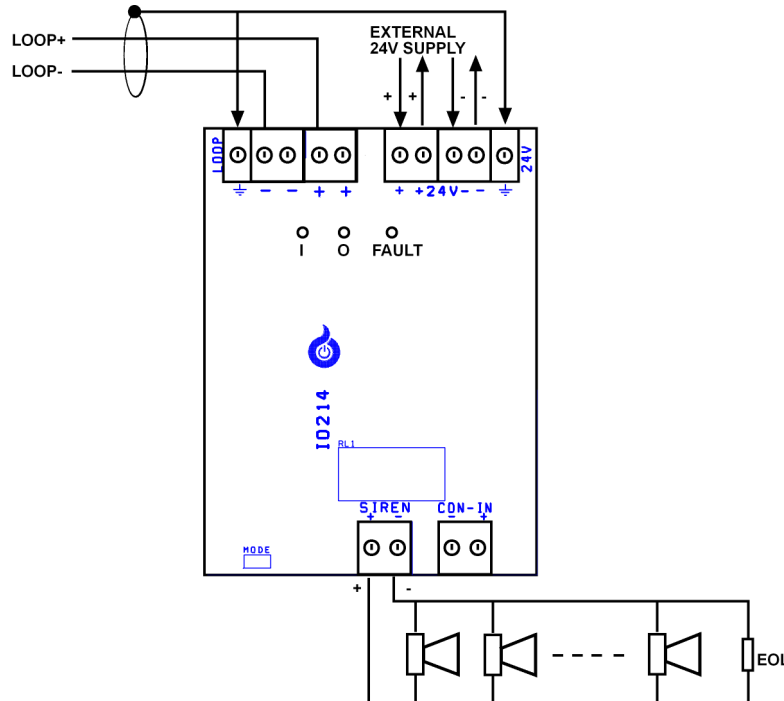


Figure 2- IO214-O or IO214-X-X Operation Mode:2/3 Supervised Siren Output Module Connection Diagram

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## **WIRING**

The wiring should be done as shown in figures. Proper wire gauges should be used. The installation wires should be color-coded to limit wiring mistakes and ease system troubleshooting. Improper connections will prevent a system from responding properly in the event of a fire.

Earth Connection of the device must be done to the earth connection of FACP and cable screens.

While using Digital input mode, the input connection cable screens must be connected to the earth of the device and FACP.

Remove power from the communication line before installing module.

1. Wire the modules and controlled devices as shown in wiring diagrams.
2. Set the desired address by PP1201 Device Programmer portable address setting device.
3. After all devices have been installed, apply power to the control unit and activate the communication line.
4. Test the modules as connected devices as described in this manual.

When using IO214-IS built in isolator, two plus terminals must be connected Loop+ Vin and Loop+ Vout separately. If not the built-in isolator will not work.

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## **TWO-YEAR LIMITED WARRANTY**

We warrant its enclosed module to be free from defects in materials and workmanship under normal use and service for a period of two years from date of manufacture. We make no other express warranty for this module. No agent, representative, dealer, or employee of the Company has the authority to increase or alter the obligations or limitations of this Warranty. The Company's obligation of this Warranty shall be limited to the repair or replacement of any part of the module which is found to be defective in materials or workmanship under normal use and service during the two year period commencing with the date of manufacture. After calling Redban technical support number for a Return Authorization number, send defective units postage prepaid to Redban local representative office. Please include a note describing the malfunction and suspected cause of failure. The Company shall not be obligated to repair or replace units which are found to be defective because of damage, unreasonable use, modifications, or alterations occurring after the date of manufacture. In no case shall the Company be liable for any consequential or incidental damages for breach of this or any other Warranty, expressed or implied whatsoever, even if the loss or damage is caused by the Company's negligence or fault. This Warranty gives you specific legal rights.

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