Elpas IR BUS Reader For P/N: 5-IRB00880

Introduction

This wiring guide provides basic instructions for common IR BUS Reader installation scenarios.

Note: VT is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

Product Description

The Elpas IR BUS Reader is a supervised, fixed infrared locating device that detects and relays sub-room 'Location' and 'State' data in real-time from Elpas Active RFID Asset, Personnel or Infant Protection IR-Enabled Tags to such RTLS host applications as the Eiris Enterprise Software Platform.

The IR BUS Reader is surface mountable onto solid ceilings or flush mounted into dropped (false) ceilings and supports read distances up to 15m/50ft (360° coverage).The on-board I/Os of the IR BUS Reader enables monitoring of one wired analogue input (such as a door contactor or alarm detector) and the control of one open-collector digital switched output (such as alert an annunciator or an electric door lock).

The IR BUS Reader may be integrated onto standard Ethernet/Wi-Fi networks (using an Elpas RF IP Reader or an Elpas Local Controller as a BUS Master) for relaying data to and from the host application.

The IR BUS Reader also supports data transmission with up to fifteen RS-485 BUS devices (such as RF or IR Readers, IO Boxes, RDUs and LF Exciters) using Elpas RS-485 Junction Boxes (P/N: 5-JBA00485).

IR BUS Readers

Elpas IR BUS Reader - Sample Network Topology (Refer to page 2 for wiring & specification details)

Circuit Board Terminal Blocks

RS-485 Interface: The IR BUS Reader includes a four position color-coded removable terminal block (J3) and a 6-pin female RJ-11 connector (J4) for linking the device to the RS-485 BUS for the transfer of data and remote power. (See page 2 for details)

NOTE: Only one of these two interfaces (either the RJ-11 connector or the terminal block) can be used at a time to wire the reader to the RS-485 BUS.

Tamper Switch: The reader contains a spring loaded tamper switch that when pressed, generates a 'State' message that is useful for registering the device in the host application.

Once registered, the tamper switch can also be used as an input trigger for a device supervision tamper alert indicating non-authorized attempts to remove the device's cover.

Input/Outputs: The reader has one analogue input (J2).

End-of-the-Line (EOL) circuit supervision may be employed to detect the following fault conditions: Open, Close, Line Cut and Line Short. (See page 2 for details)

The reader also contains one digital open-collector output (J1) located on the right-hand side of the board.

Power

It is **Important** that the IR BUS Reader is **Powered-Down** while wiring the unit's I/Os and while connecting to the RS-485 BUS in order to prevent accidental shorts or power spikes from causing damage to the reader.

Power Requirements: 100mA/24VDC

Recommended Cable: CAT5 Stranded (4x2x26AWG) Max Distance: Refer to wiring topology on page 2.



Elpas IR BUS Reader – Circuit Board Details



Supervised Analogue Input

The reader has one analogue input (Terminal Block J2). Using the Elpas End-of-Line Terminator (P/N: 5-IOX00001), EOL supervision may be added to the input to detect: Open, Close, Line Cut and Line Short circuit conditions.



Recommended Cable: 22 AWG, unshielded/twisted pair

Digital Outputs

The reader has one general purpose digital output (Terminal Block J1) that provides open-collector switching (up to 100mA, 28VDC).



Recommended Cable: 22 AWG, unshielded/twisted pair

RS-485 BUS/Stub Topology

The RS-485 BUS MUST Be wired using a BUS/Stub topology where the BUS Master (a RF IP Reader or an ELC) is connected at any location along the BUS. The topology supports data transmission between the BUS Master and up to 15 Elpas BUS Devices (such as RF or IR Readers; LF Exciters RDUs and I/O Boxes) using multiple Elpas RS-485 Junction Boxes (P/N: 5-JBA00485).

IMPORTANT NOTE: Only 1 RF IP Reader and up to 7 RF BUS Readers may coexist together on a single RS-485 BUS.

10M/30Ft: Max. Stub length

200M/650Ft: Max. BUS length

100 Ohm Termination: Required each end of the BUS.



Recommended RS-485 Backbone Cable Type: CAT5 Solid (4x2x26AWG) For Power: Use three-twisted pairs (six conductors) between RS-485 Junction boxes For Data: Use one-twisted pair (two conductors) between RS-485 Junction boxes

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