

Elpas RF BUS Ceiling Reader

For P/Ns: 5-RFB00433-1

Wiring Guide

Introduction

This wiring guide provides basic instructions for common installation scenarios using the RF BUS Ceiling Reader.

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.

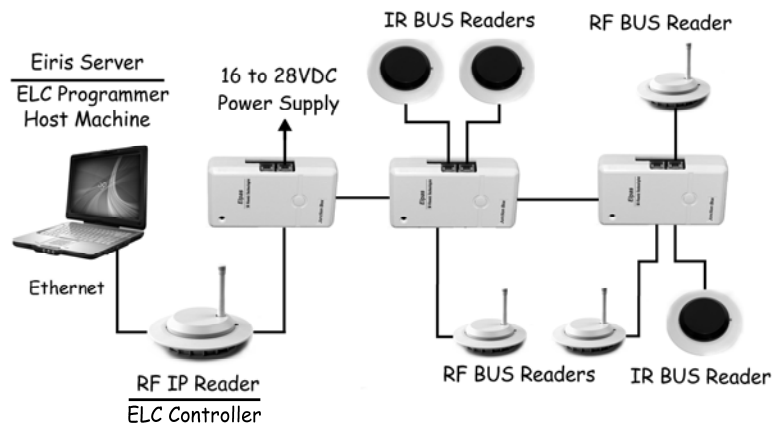
Product Description

The Elpas RF BUS Ceiling Reader is a 433MHz fixed receiver, which forwards real-time 'Location' and/or 'State' data detected from Elpas Active RFID Tags to host RTLS applications such as the Eiris Active Tracking & Management Software.

The RF BUS Ceiling Reader can be mounted onto solid ceilings, flush mounted into dropped (false) ceilings or hung on solid and hollow walls and supports read distances up to 20m/65ft (360° coverage area) in open office environments.

The RF BUS Ceiling Reader can be installed anywhere onto standard Ethernet/Wi-Fi networks (using a RF IP Reader or an ELC Controller as a RS-485 BUS Master) for connection to the host RTLS application. The reader also supports XML messaging technology (again via the RF IP Reader or the ELC Controller) for integration with external systems plus data transmission with up to 15 Elpas RS-485 BUS devices.

On-board I/Os supports the monitoring of one wired device input (such as a door contactor or alarm detector) and the control of two open-collector digital switched outputs (such as alert annunciators and electric door locks).



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

Circuit Board Terminal Blocks

RS-485 Interface: The RF BUS Ceiling Reader includes both a four position color-coded removable terminal block (J3) and a 6-pin female RJ-11 connector (J4) for wiring RS-485 data and power. (See page 2 for details.)

NOTE: Only one of the two interfaces (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 RF BUS Ceiling 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 tamper alert indicating any non-authorized attempts to remove the device's cover.

Reset Button: Reboots the reader's firmware.

Input/Outputs: The RF BUS Ceiling Reader contains one analog input for monitoring alarm sensors and two digital relay outputs for actuating alert response devices (See page 2 for details)

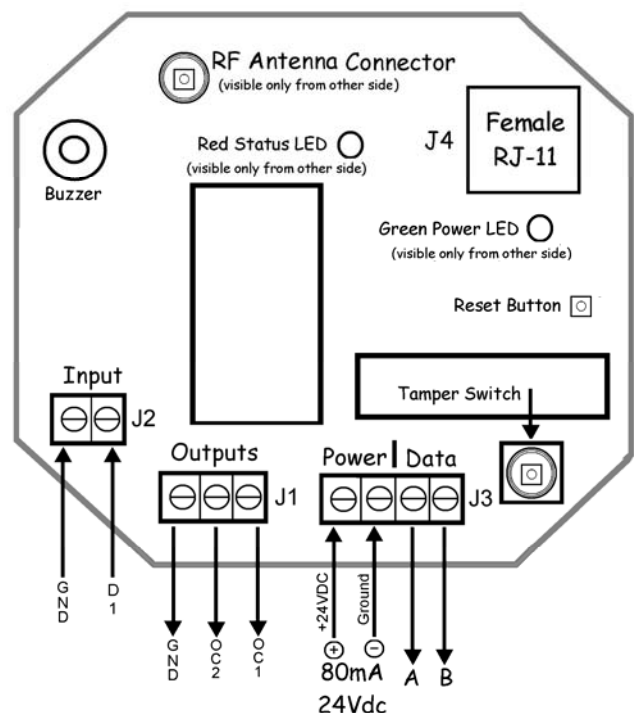
.Max Distance: Refer to wiring topology on page 2.

Power: When reader is connected to the power source, the green LED flashes one time upon power-up.

Power Requirements: 100mA/24VDC

Recommended Cable: CAT5 Stranded (4x2x26AWG)

Max Distance: Refer to wiring topology on page 2.

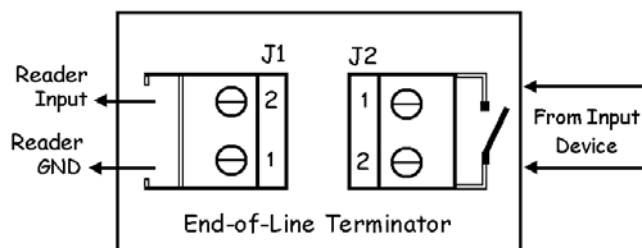


Elpas RF BUS Ceiling Reader – Circuit Board Details

IMPORTANT: The RF BUS Ceiling Reader **MUST BE** powered-down while wiring the unit's I/Os and when connecting to the RS-485 BUS. This will prevent accidental shorts or power spikes causing damage to the reader.

Supervised Analog Input

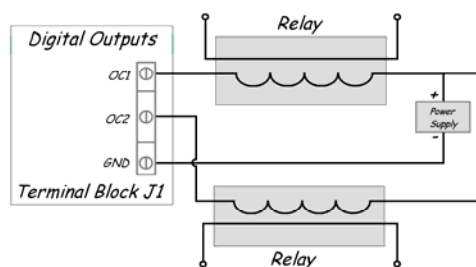
The RF BUS Ceiling Reader has one analog input (Terminal Block J2). Using the Elpas End-of-Line Terminator (P/N: 5-IOX00001), EOL supervision may be added to the input to detect: Open, Close, Line Cut and Line Short circuit conditions.



Recommended Cable: 22 AWG, unshielded/twisted pair

Digital Outputs

The RF BUS Ceiling Reader has two general purpose digital outputs (Terminal Block J1) that provide open-collector switching (up to 100mA, 28VDC).



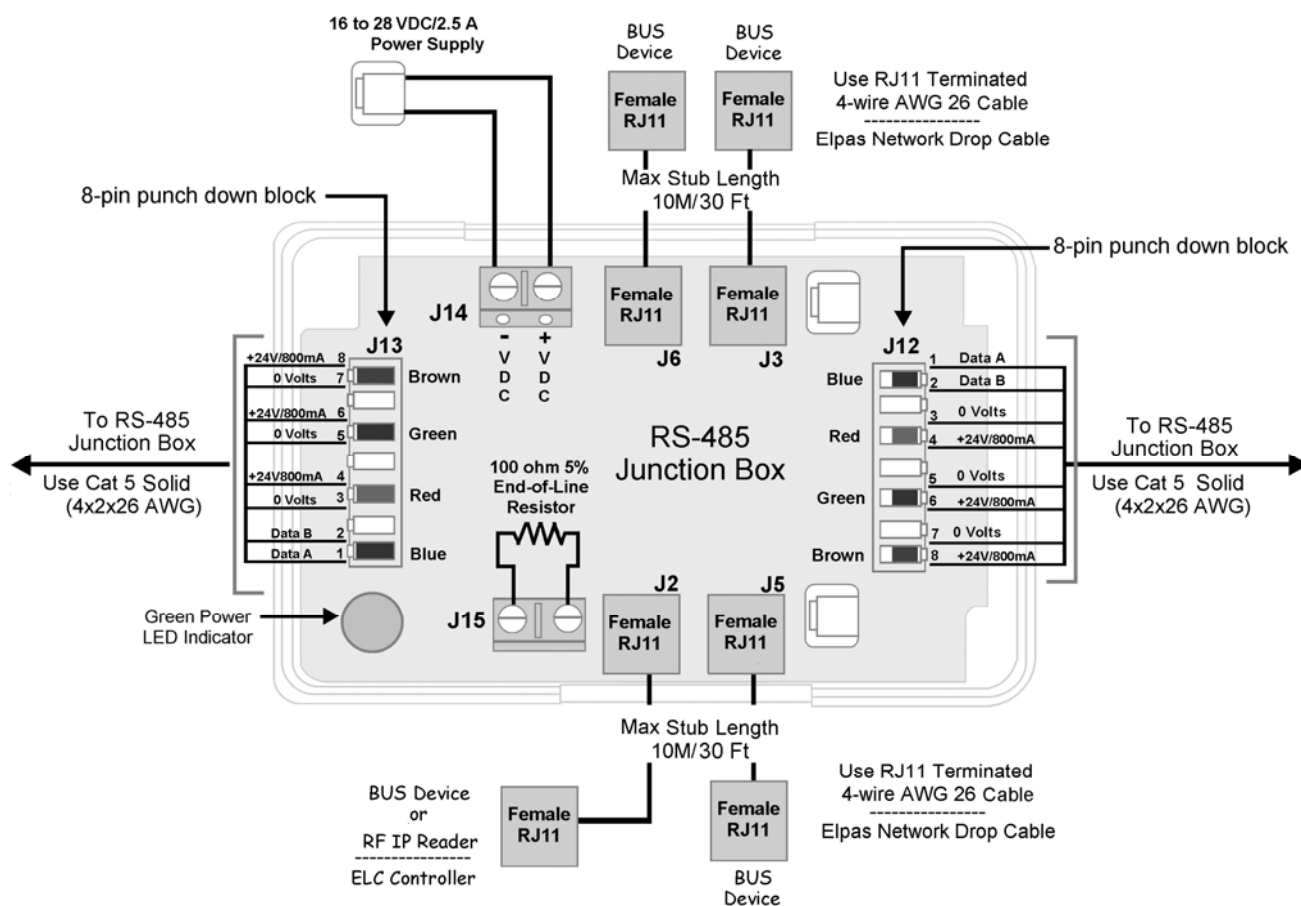
Recommended Cable: 22 AWG, unshielded/twisted pair

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 Controller) is connected anywhere 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, Remote Display Panels I/O Boxes and Proximity Readers) using multiple Elpas RS-485 Junction Boxes (P/N: 5-JBA00485).

IMPORTANT NOTE: Only 1 RF IP Reader/ELC Controller and up to 7 RF BUS Readers may coexist together on a single BUS.

200M/650Ft: Max. BUS length **10M/30Ft:** Max. Stub length **100 Ohm Termination:** Required each end of the BUS.



RS-485 Junction Box - Sample Wiring Topology

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



W.E.E.E. Product Recycling Declaration

For information regarding the recycling of this product, you must contact the company from which you originally purchased it. If you are discarding this product and not returning it for repair then you must ensure that it is returned as identified by your supplier. This product is not to be thrown away with everyday waste. Directive 2002/96/EC Waste Electrical and Electronic Equipment.