RF Ethernet Reader

Wiring Guide - For P/N: 5-RFB00433

Elpas
Active RFID/RTLS Solutions

Introduction

This wiring guide provides basic instructions for common installation scenarios. For advanced functionality, this document should also be used in conjunction with the Elpas RF Ethernet Reader Installation & Configuration Guide.

Download from the **EIRIS Software Download Page** (http://www.visonictech.com/Eiris.html) of the VT Website, the **EIRIS 4.6.3 Installer** file, which contains all the necessary software extensions and updates for enrolling and configuring the RF Ethernet Readers on existing or new EIRIS installations. It is highly recommended that you ensure that the EIRIS installation on the host machine has been properly updated before wiring the readers.

Product Description

The RF Ethernet Reader is a supervised; fixed receiving device that detects and relays 'State' and 'Location' data from Elpas Active RFID RF tags to host applications over wired or wireless Ethernet/Wi-Fi networks in real-time.

The reader's I/O ports enable the local monitoring of one general purpose analogue input and control of two open-collector digital switched devices. The reader also supports full-duplex RS-485 data transmission with up to 15 other Elpas RS-485 BUS devices.
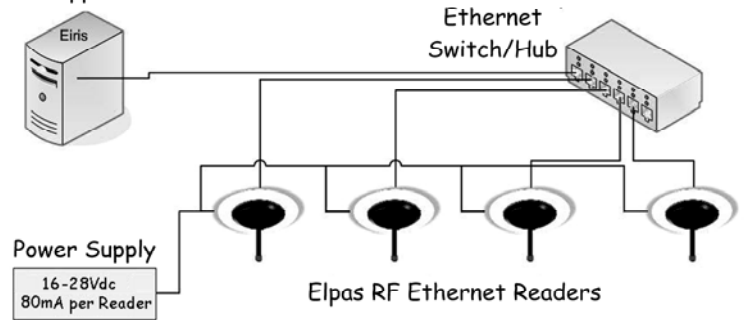
Circuit Board Terminal Blocks

The RF Ethernet Reader has one analogue input (J2) and two digital open-collector outputs (J1) located on the right-hand side of the board. The reader includes a four position color-coded removable terminal block (J3) for RS-485 data and power connections (see page 2 for details).
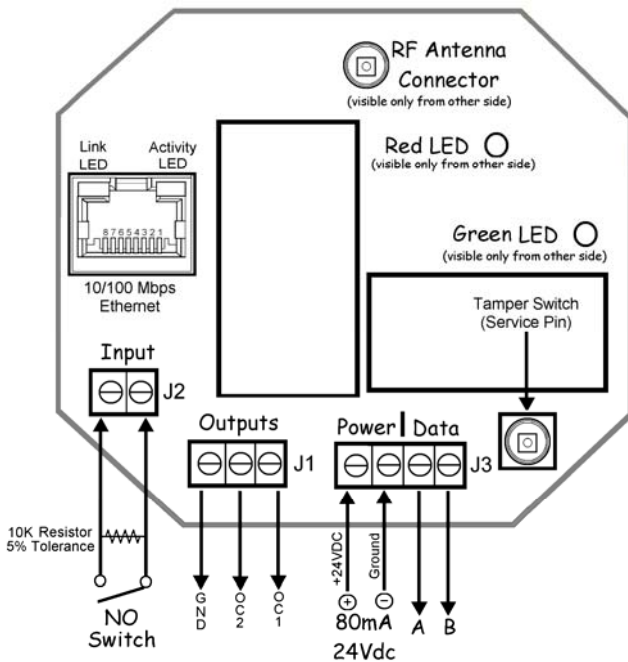
The RF Ethernet Reader has a Service Pin/Tamper Switch that generates service messages when pressed to aide device registration. The Service Pin/Tamper Switch is also used to indicate attempts to remove the device's cover after the device is registered.

Power

When the RF Ethernet Reader is connected to the power source, the Green LED flashes one time upon power-up. Then switch off the device till you have wired the I/O and the RS-485 BUS terminal blocks 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 topologies on page 2

Analogue Input

The RF Ethernet Reader is equipped with one general purpose analogue input **(Terminal Block J2)** The input is a two-wired supervised circuit for monitoring alarm detection devices such as ultrasonic motion detectors and door contacts.
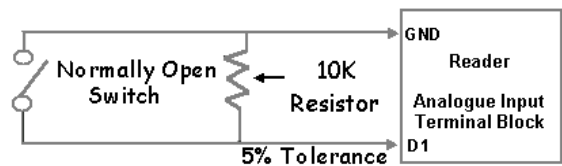
Recommended Cable: 22 AWG, unshielded/twisted pair

Digital Outputs

The RF Ethernet 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

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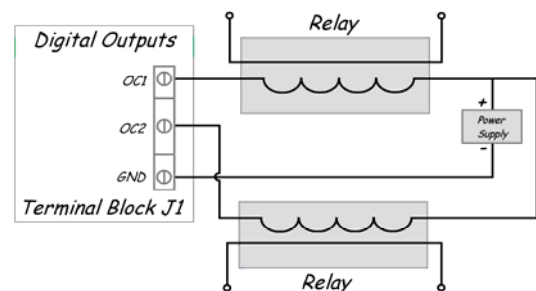
RS-485 BUS/Stub Topology

The Elpas-2 RS-485 BUS may be wired using a BUS/Stub topology. This configuration supports data transmission between **1 RF Ethernet Reader** (BUS-Master) and up to **15 BUS-Slaves** (IR Readers, I/Os, RDUs…etc). Additionally the reader may be connected at any location along the RS-485 data BUS.

200M / 650Ft: Max. BUS length   **10M / 30Ft**: Max. Stub length   **100 Ohm Termination**: Required each end of the BUS
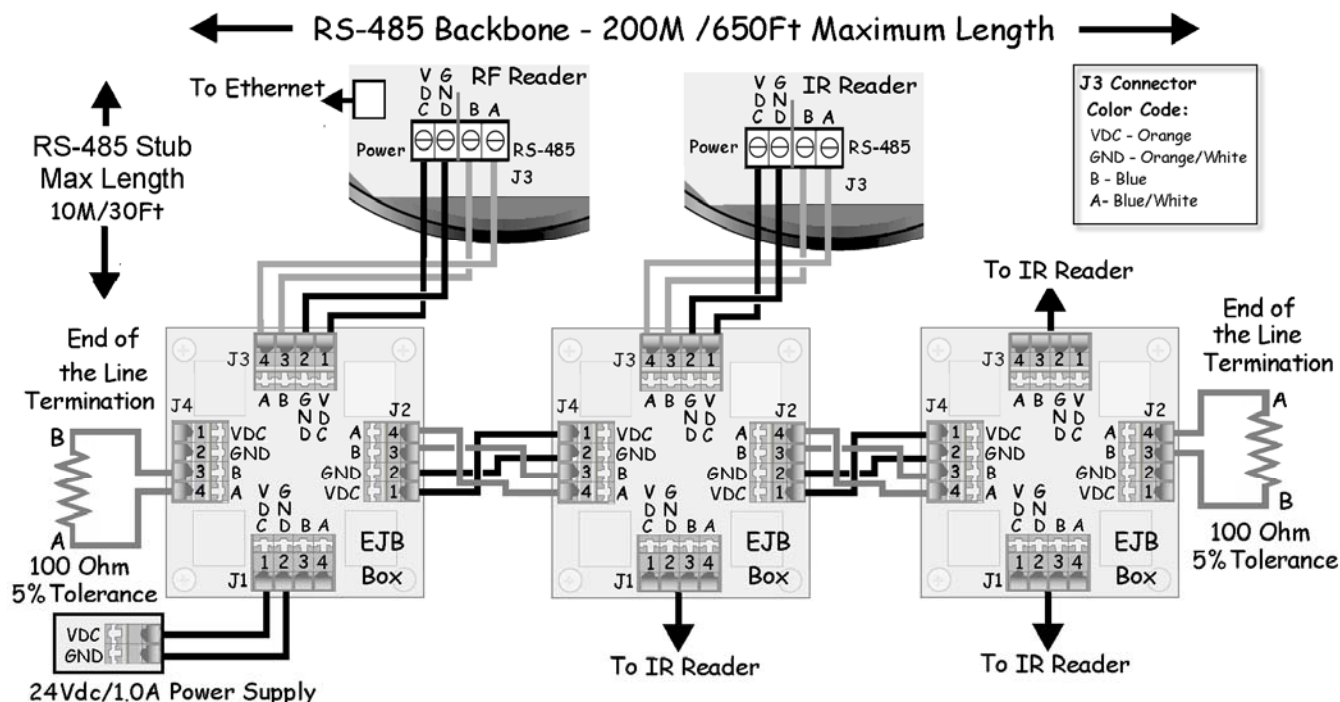
Recommended Cable Type: CAT5 Stranded (4x2x26AWG)
 For Power: Use three-twisted pairs (six conductors) between EJBs   Use one twisted pair (two conductors) between each EJB and Reader.
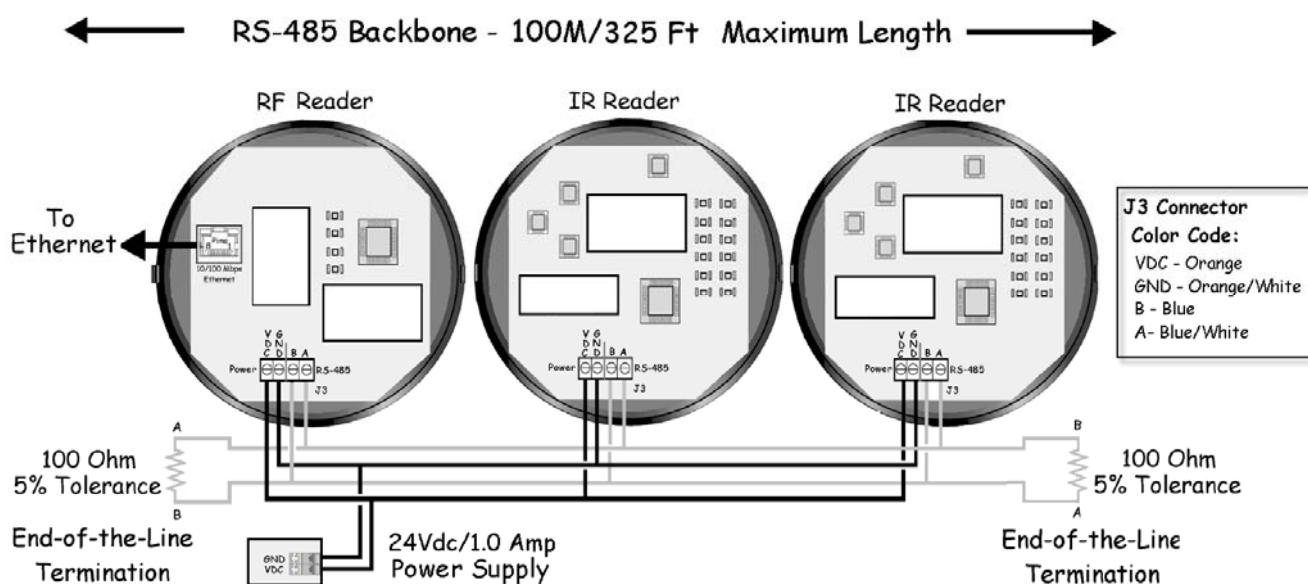 **For Data:** Use one-twisted pair (two conductors)

RS-485 Daisy Chain Topology

The Elpas-2 RS-485 BUS may be wired using a Daisy Chain topology. This configuration supports data transmission between **1 RF Ethernet Reader** (BUS-Master) and up to **7 BUS-Slaves** (IR Readers, I/Os, RDUs…etc).

The RF Ethernet Reader may be connected at any location on the RS-485 data chain as long as the power supply is connected to the power BUS in close proximity to the RF reader.

100M / 325 Ft: Maximum cable length   **100 Ohm Termination**: Required at each end of the daisy chain

Recommended Cable Type: CAT5 Stranded (4x2x26AWG)
For Power: Use one-twisted pair (two conductors)   **For Data**: Use one-twisted pair (two conductors)

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