Elpas Local Controller with I/Os

Introduction

This wiring guide provides basic instructions for common installation scenarios using the Elpas Local Controller with I/Os.

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 Local Controller with I/Os (ELC) is a programmable security and safety appliance that provides stand-alone, realtime monitoring and control of RTLS based security and safety applications. The controller features the same functionality of a RF IP Reader and can be mounted onto walls and ceilings or placed above dropped ceilings.

The ELC can simultaneously monitor up to 5,000 Elpas Active RFID Tags at read distances up to 20m/65ft and can monitor as well as control up to fifteen fully supervised Elpas BUS Devices (such as RF or IR Readers, IO Boxes, Elpas Display Panels, LF Exciters and Proximity Readers). The controller also supports thirty-two programmable logic rules that define which device outputs on the BUS will be set in response to detected tag and input events and store in memory up to 3,000 event transactions.

The ELC contains seven supervised analog inputs for monitoring alarm sensors (such as motion detectors and door contacts) as event triggers. The controller also has two open collector digital outputs plus three digital relay outputs that actuate devices (such as electric door locks, sirens, visual indicators) when an alert is triggered.



Elpas Local Controller with I/Os- Illustrative Topology (Refer to page 2 for wiring & specification details)

Terminal Blocks – ELC Main Board

Ethernet Quick Release Interface: The board has a female RJ-45 (8P8C) connector for linking the ELC via Ethernet to the host RTLS application machine.

RS-485 Interface: The main board has a four position color-coded removable terminal block (J3) and a 6-pin female RJ-11 connector (J4) for connecting the ELC to the RS-485 Junction box. (See page 2 for details)

NOTE: Only one of the 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 main board 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.

Reset Button: Reboots the ELC's firmware.

Input/Outputs: The ELC has one analog input. (See page 2 for details)

Terminal Blocks – I/O Expansion Board

RS-485 Interface: The expansion board has three RJ-11 connectors for connecting to other Elpas BUS devices. (See page 2 for details)

Input/Outputs: The board contains six analog inputs for monitoring alarm sensors and three digital relay outputs for actuating alert response devices (See page 2 for details).

Battery Backup (Optional): The board has a two-position terminal block for adding a 12Vdc lead-acid backup battery to the ELC.



Elpas Local Controller with I/Os - Circuit Board Details

Wiring Warnings!

The three RJ-11 connectors located on the I/O expansion board Should Not Be Used To Connect to RS-485 Junction Boxes. Each connector should only be used to link to one Elpas RS-485 BUS device.

It is Important that the ELC 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 device.



Supervised Analogue Input

The ELC has seven analog inputs. Using optional End-of-Line Terminators (P/N: 5-IOX00001), four levels of input supervision may be supported: Open, Close, Line Cut and Line Short.





Digital Outputs

The ELC has two open collector digital outputs (Terminal Block J1 on the ELC Main Board) that provides open-collector switching (up to 100mA, 28Vdc).



The ELC also has three digital relay outputs located on the I/O Expander board).

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 ELC Controller (BUS Master) is connected anywhere along the BUS. The topology supports data transmission between the ELC Controller and up to 15 Elpas BUS Devices (such as RF or IR Location Readers; LF Exciters, Elpas Display Units I/O Boxes and Proximity Readers) using multiple Elpas RS-485 Junction Boxes (P/N: 5-JBA00485).

IMPORTANT NOTE: Only 1ELC 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.





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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For information regarding the recycling of this product you must contact the company from which you orignially 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.

