

Elpas Proximity BUS Reader

P/N: 5-LFA00125

Installation Guide

Introduction

This installation guide provides basic instructions for common Proximity BUS Reader installation scenarios. For UL 294 Compliant Applications refer to page 4 of this document for a listing of applicable installation considerations.

⚠ CAUTION: It is important that you read, understand, and follow the instructions in this document. If you have questions, call your local Elpas support representative. All reasonable efforts have been made to ensure that the specifications and other information in this guide are accurate and complete at the time of its publication. Nonetheless, all information contained within this document is subject to change at any time without prior notice. Any modifications to this equipment without prior written consent of Elpas Solutions Ltd. will void all warranties including the pertinent regulatory certifications and as such revoke your authority to operate this product. Furthermore unauthorized modifications may also result in damage to this device and may cause a safety hazard to the users.

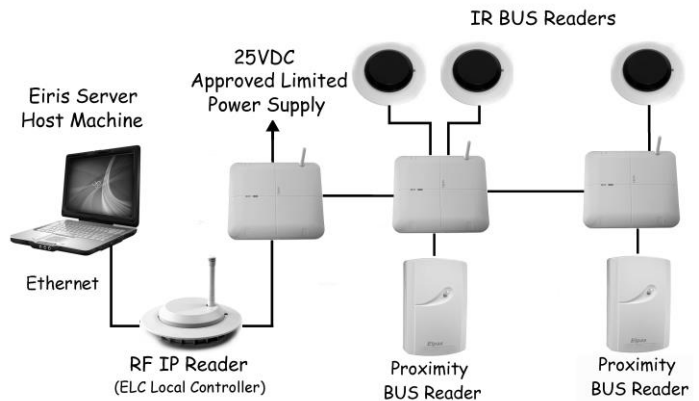
Product Description

The Elpas Proximity BUS Reader is a 125KHz, EM4100 compatible; indoor/outdoor surface mounted proximity reader. The reader features low power consumption, high reliability, and consistent read ranges (up to 10cm /4 inches), regardless of card or tag.

Designed for indoor/outdoor environments, the reader's solid state electronics is housed in an epoxy potted, (IP-67 rated), of thermoplastic casing that ensures years of maintenance free deployments.

The Proximity BUS Reader contains an onboard I/O that enables the monitoring of one alarm sensor and control of one digital open-collector output. The proximity reader also includes a 2m/6.5ft long RS-485 power/data cable for interfacing to a Elpas BUS Master (a RF IP Reader or an ELC Controller) via a RS-485 Junction Box (P/N:5-JBA00485).

Note: An Elpas RS-485 BUS may contain up to fifteen Elpas BUS devices (such as RF or IR Readers, Elpas Display Panels, LF Beacons, or other Proximity BUS Readers) which are wired together using Elpas RS-485 Junction Boxes.



LF Proximity BUS Reader - Network Topology

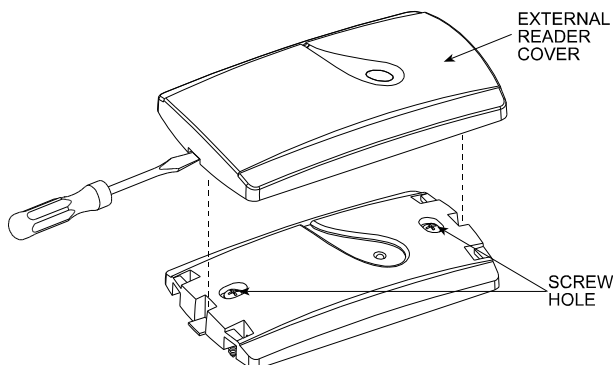
Mounting Considerations

The Proximity BUS Reader should be wall mounted, adjacent to the opening side of the door (outside of the protected area), at a height of approximately 1.2m/4ft above the floor

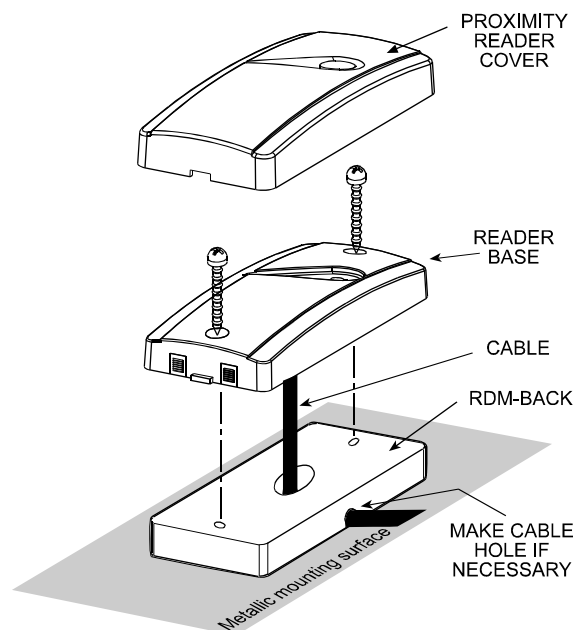
Note: When installing Proximity BUS Readers on adjacent doors, make certain that the minimum distance between readers is at least 60cm/2.0ft to ensure proper operation.

Mounting Procedure

1. Insert a screwdriver into the recess at the bottom of the case, and separate the cover from the reader.
2. Place the base on the installation surface, mark two screw holes, drill the holes, and insert the supplied plastic anchors, if necessary.
3. Fasten the base to the mounting surface, using the two #6 Tap screws supplied with the reader.
4. Replace the reader's cover, ensuring that the cover is aligned with the reader. This enables the LED to be visible.



Note: Do not install the Proximity BUS Reader directly onto a metal surface, since can significantly decrease the effective read range of the device. If you have to mount the reader onto a metal surface, insert a RDR-BACK (P/N: 3-6317-0) between the device's reader base and the metal surface.



LED Status Indicator

The Proximity BUS Reader contains a tri-colored (Red, Green and Orange) software configurable LED array that can be used to specify the status of the device.

Refer to the Eiris Software (V4.7.1 or higher) or the ELC Programmer Software (V2.1 or higher) Configuration Guides for setup details.

By default, the Red LED is used to indicate the following device trouble conditions:

- o The reader is unregistered (flashes once/sec.)
- o The reader has lost RS-485 communication (flashes once/sec.)

RS-485 Interface

The Proximity BUS Reader has one 2m/6.5ft, 6-wire AWG-26 power/data cable with a male RJ-11 connector (6P6C) for connecting to the RS-485 Junction Box.

I/O Interface

The Proximity BUS Reader also has a 2m/6.5ft, 4-wire AWG-22 cable with ends for connecting two inputs and one digital output.

Color	Conductor Details
Black	Ground
Red	Digital Output
Green	Input 1 (IN1)
White	Input 2 (IN2)

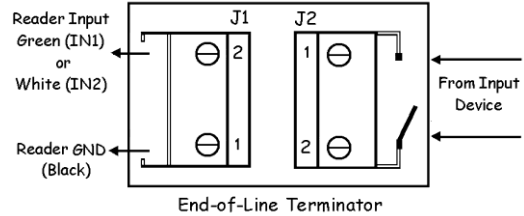
IMPORTANT: BUS Beacons MUST BE powered-down while wiring the unit's I/Os and when connecting to the RS-485 BUS. This will prevent accidental shorts/spikes to cause damage to the devices.

General Purpose Inputs

The Proximity BUS Reader has two general purpose analog (N.O.) dry contact inputs for monitoring alert sensors or emergency call buttons designated IN1 and IN2.

EOL supervision may be added to either of these inputs to detect: Open, Close, Line Cut and Line Short conditions using an End-of-Line Terminator (P/N: 5-IOX00001).

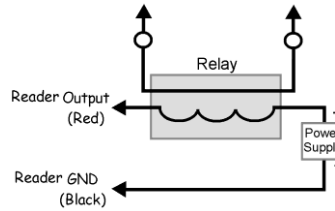
Note: Elpas End-of-Line Terminators have not been evaluated for use in UL Applications.



Recommended Cable: 22 AWG, unshielded/twisted pair.

Digital Output

The Proximity BUS Reader has one dry contact open-collector digital output (up to 100mA, 28VDC) for actuating an alert response device.



Note: The output is resistive loading only, there is no power factor.

Recommended Cable: 22 AWG, unshielded/twisted pair.

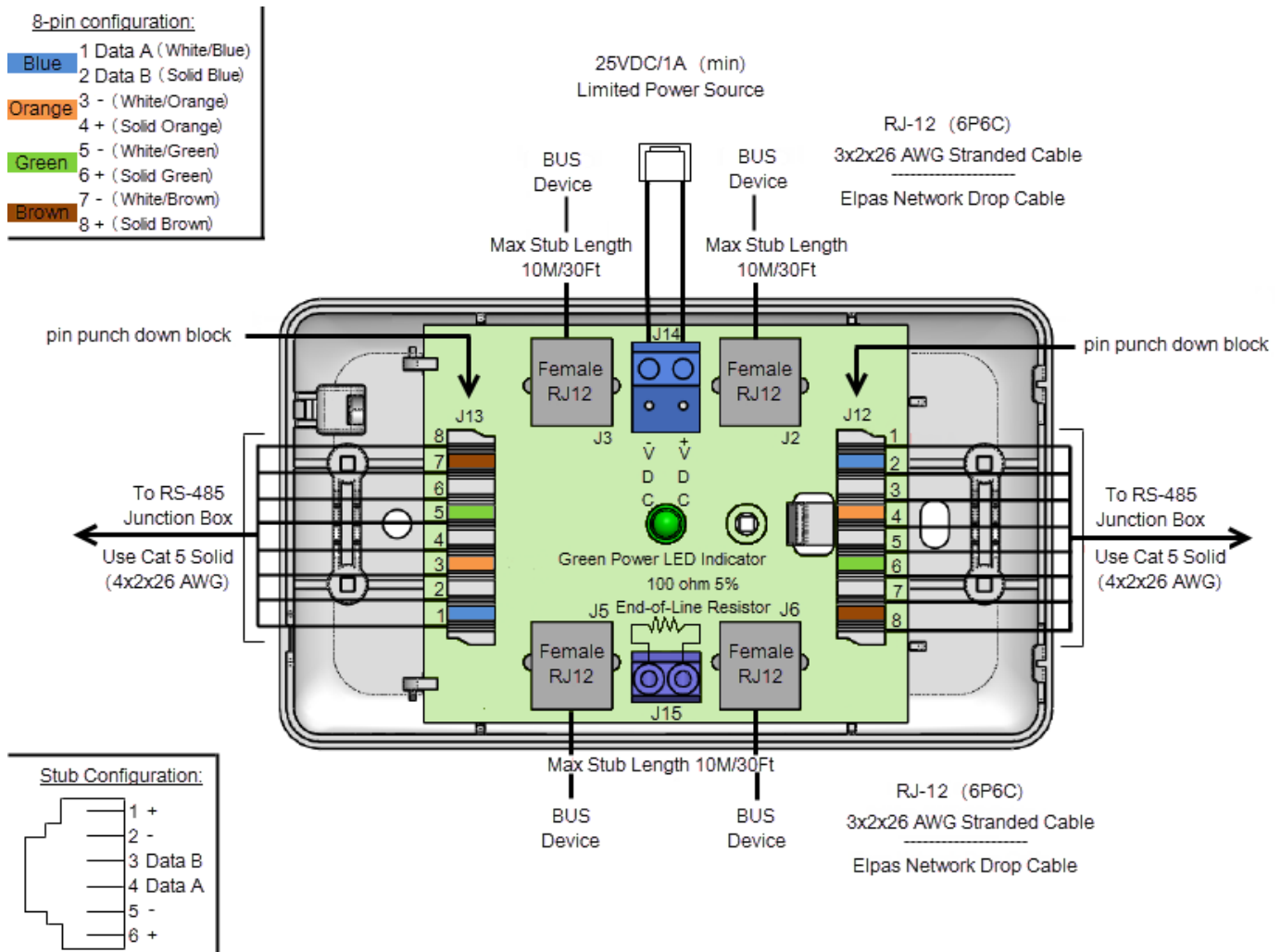
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RS-485 BUS/Stub Topology

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 Beacons primary & secondary), Elpas Display Panels and 6x6 I/O Modules using 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.



Recommended Cable/Power Supply Types:

BUS Backbone:

CAT5 solid (4x2x26AWG).

Power:

Three twisted pairs (six conductors) between junction boxes.

Data: One twisted pair (two conductors) between junction boxes.

Power: 16 to 28 VDC/2.5A Limited.

Note: For UL installations use only UL 294 (ALVY) compliant power supplies (see page 4 for details).

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Electrical Specifications	
Frequency	Low frequency electromagnetic field (125 KHz)
ISO Card Standard	EM 4100
*Read Range	Up to 10 cm/4.0 inches (actual range depends on the proximity card or tag)
RS-485 BUS	230Kbit/sec
Device Supervision	Lost Away, Low Voltage, RS-485 BUS Communication Problem
Red LED Indicator	Unregistered in Eiris/ELC Programmer - Flashes once/second Power up/RS-485 Communication Loss - Flashes once/second
Status LED	Software configurable
Inputs/Output	Two dry contact analog inputs (N.O.) One dry contact open collector digital output (up to 100mA)
Input Supervision	4 Levels (Open, Closed, Line Short, Line Cut) using optional Elpas End-of-Line Terminator (Elpas End Of Line Terminators have not been evaluated for use in UL Applications)
Power Requirements	12–28VDC, 48mA @ 24VDC
General Specifications	
Construction	White polycarbonate plastic (IP-67)
Device Interfaces	RS-485 Bus & Power: 2 meter/6.5ft in length, 6-wire AWG 26 cable with male RJ-11 (6P6C) connector Input/Output : 2 meter 2 meter/6.5ft in length, 4-wire AWG 22 cable with ends
Dimensions (H x W x D)	116 x 70 x 16.8mm...(4.5 x 2.76 x 1.62 inches)
Weight	121.5 grams (4.3 ounces)
Operating Environment	Temp: -20°C to 50°C (-4°F to 122°F)..... Humidity: 20% to 100% non-condensing
Minimum Distance Between Readers	30cm/ 12 inches
Management software	Eiris 4.7.1 (or higher) Software

*Actual read range depends on card/tag type, electrical environment and proximity to metal.

Specifications are subject to change without notice.

Selected Compatible Accessories

Part Number	Description
3-6302-2	White proximity reader replacement cover (8 units)
3-6317-0	RDR-BACK, mounting spacer for metal surfaces
5-IOX00001	End-of-Line Terminator for Elpas & AXS Inputs (5 units)
5-JBA00485	RS-485 Junction Box, 4 RJ11 Ports
5-ERS02800	P60 Power Supply, 24VDC/2.2A

UL 294 Compliance Installations

For all Elpas UL 294 compliant installations, the following requirements must be met:

- UL installations are Controller based only and do not include an Eiris Server.
- Elpas Fixed Infrastructure Products (except for Outdoor RF Readers) can only be installed in interior building locations only that do not exceed the following environmental conditions:
 - Temp: 0°C to 49°C (32°F to 120°F)
 - Humidity: 85% non-condensing
- Only 24VDC, UL 294 (ALVY) compliant power supplies such as Altronix model AL600ULPD4 can be used to power Elpas Infrastructure Products

Note: All circuits must be power limited.

- Elpas Outdoor RF Readers (Elpas PNs: 5-RFB00433-6 and 5-ELC00433-4) can only be installed in exterior building locations that do not exceed the following environmental conditions:
 - Temp: -35°C to 66°C (-31°F to 151°F)
 - Humidity: 20% to 95% non-condensing
- Only UL 294 compliant products may be connected to the outputs of any Elpas infrastructure device and may not be used for "Burglary Applications".

Limitations

Elpas Healthcare applications which are designed for hospitals assisted living and nursing care facilities for the protection of staff personnel, patients or residents are not UL 294 compliant.

Specific Conditions

- Elpas End-of-the Line Terminators (Elpas P/N: 5-IOX00001) are not evaluated for use in UL 294 Compliant Installations by Underwriters Laboratories. Therefore, supervised inputs are for non UL applications only.
- High-Power LF Beacons need to be powered locally and should not share the same power supply with any other Elpas Fixed Infrastructure Product.

Note: Applies to the following Elpas P/Ns: 5-RLF00001-3, 5-RLF00001-31 and 5-RLF00001-32.

- To ensure RF detection reliability the read range installation grids for all Local Controllers and RF Readers need to be designed so that received messages from the Active RFID Tag does not fall below a RSSI Value of 121 (-90dBm).

Note: Applies to the following Elpas P/Ns: 5-RFB00433, 5-RFB00433-1, 5-RFB10433-2, 5-RFB10433-5, 5-RFB00433-6, 5-ELC00433-1, 5-ELC10433-2, 5-ELC10433-3 and 5-ELC00433-4.

Regulatory

EU Declaration of Conformity

This equipment is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

FCC & IC Compliance Standards

This device (FCC #:04X5-LFA00125 and IC #:1467G-5LFA00125) complies with FCC Rules Part 15 and with industry Canada license exempt RSS.

Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, or that may cause undesired operation.

For industry Canada: Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications to this equipment not expressly approved by the party responsible for compliance (Elpas Solutions Ltd.) could void the user's authority to operate the equipment.

Company Contact

Elpas, Inc.
Westford, Massachusetts (USA) -Tel: 1-800-223-0020

Product Warranty

Elpas Solutions, Ltd. (the Company), and its affiliates, warrants its products (hereinafter referred to as "the Product") to be free of defects in materials and workmanship under normal operating conditions and use for a period of one year from the date of shipment by Elpas. The Company's obligations shall be limited within the warranty period, at its option, to repair or to replace the defective Product or any defective component or part thereof. To exercise this warranty, the product must be returned to the manufacturer freight prepaid and insured.

This warranty does not apply to repairs or replacement caused by improper installation, Product misuse, failure to follow installation or operating instructions, alteration, abuse, accident, tampering, repair by anyone other than Elpas, external causes, and failure to perform required preventive maintenance. This warranty also does not apply to any products, accessories, or attachments used in conjunction with the Product, including batteries, which shall be covered solely by their own warranties, if any. Elpas shall not be liable for any damage or loss whatsoever, whether directly, indirectly, incidentally, consequentially or otherwise, resulting from a malfunction of the Product due to products, accessories, or attachments of others, including batteries, used in conjunction with the Product.

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Elpas shall have no liability for any death, personal injury, property damage, or other loss whether direct, indirect, incidental, consequential, or otherwise, based on a claim that the Product failed to function. However, if Elpas is held liable, whether directly or indirectly, for any loss or damage arising under this limited warranty or otherwise, regardless of cause or origin, the company's maximum liability shall be limited to the purchase price of the Product, which shall be fixed as liquidated damages and not as a penalty, and shall be the complete and exclusive liability of Elpas.

Elpas shall not, under any circumstances whatsoever, be liable for any inaccuracy, error of judgment, default, or negligence of Elpas, its employees, officers, agents, or any other party, or of the purchaser or user, arising from any assistance or communication of any kind regarding the configuration, design, installation, or creation of security system involving the Product, that being the responsibility of the purchaser or user. If Elpas is unable to make such repair or replacement, the company's entire liability shall be limited to the cost of a reasonable substitute product. Elpas shall not be responsible for any dismantling, installation, reinstallation, purchasing, shipping, insurance, or any similar charges.

Elpas shall have no liability for any damages, including without limitation, any direct, indirect, incidental, special, or consequential damages, expenses, costs, profits, lost savings or earnings, or other damages arising out of the use of the Product or the removal, installation, reinstallation, repair or replacement of the Product or any related events. In the event that there is any liability against Elpas, such liability shall be limited to the purchase price of the Product which amount shall be fixed as liquidated damages.

The purchaser and user understand that this Product may be compromised or circumvented by intentional acts; that the Product will not in all cases prevent death, personal injury, property damage, or other loss resulting from burglary, robbery, fire or other causes; and that the Product will not in all cases provide adequate warning or protection. The purchaser and user also understand that a properly installed and maintained alarm may reduce the risk of events such as burglary, robbery, and fire without warning, but it is not insurance or a guarantee that such events will not occur or that there will be no death, personal injury, property damage, or other loss as a result of such events.

By purchasing the Product, the purchaser and user shall defend, indemnify and hold Elpas, its officers, directors, affiliates, subsidiaries, agents, servants, employees, and authorized representatives harmless from and against any and all claims, suits, costs, damages, and judgments incurred, claimed, or sustained whether for death, personal injury, property damage, or otherwise, because of or in any way related to the configuration, design, installation, or creation of a security system involving the Product, and the use, sale, distribution, and installation of the Product, including payment of any and all attorney's fees, costs, and expenses incurred as a result of any such events.

The purchaser or user should follow the Product installation and operation instructions and test the Product and the entire system at least once each week. For various reasons, including but not limited to changes in environmental conditions, electric, electronic, or electromagnetic disruptions, and tampering, the Product may not perform as expected. The purchaser and user are advised to take all necessary precautions for the protection and safety of persons and property.

This statement provides certain legal rights. Other rights may vary by state or country. Under certain circumstances, some states or countries may not allow exclusion or limitation of incidental or consequential damages or implied warranties, so the above exclusions may not apply under those circumstances and in those states or countries.

Elpas reserves the right to modify this statement at any time, in its sole discretion without notice to any purchaser or user. However, this statement shall not be modified or varied except by Elpas in writing, and Elpas does not authorize any single individual to act on its behalf to modify or vary this statement.

Any questions about this statement should be directed to Elpas.



W.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.