Elpas

Single-Door Wandering Protection Solution

Installation & User Guide

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Visonic Technologies
Enterprise Protection Solutions

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Introduction

Of vital importance to acute-care hospitals, geriatric care clinics, long-term nursing care facilities or pediatric units is the effective and acceptable protection of patients who exhibit the risk tendency to wander off unnoticed.

The Elpas Single-Door Wandering Protection Solution is a stand-alone, low cost, single-door wandering patient protection solution that responds to the need for cost-effective protection of ambulatory individuals suffering from Alzheimer's Disease (AD) or other forms of dementia.

The Elpas Single-Door Wandering Protection Solution reduces the need to continuously supervise chronic wanderers or to excessively restrict their mobile independence. In simple terms, The solution permits regular movement of staff, visitors and other residents in and out through a protected doorway while preventing un-supervised high-risk patients from wandering through the protected door unnoticed.

Each high-risk patient is given an Elpas active RFID patient wrist tag (worn around the patient's wrist like a wrist watch) which will allow the individual free and unregulated movement within the authorized interior area of the building. Should the high-risk patient approach the protected door through which the patient is not allowed to pass through unescorted; the kit's preconfigured alert intervention functionality will automatically be triggered.

Optionally, whenever an authorized staff member approaches either side of the protected door; while escorting a high-risk patient, the care giver can temporally suspend the kit's alert intervention functionality.

Features & Benefits

- **All in One Kit**: Includes everything needed to install a single-door, stand-alone wandering patient solution.
- **Simple to Install:** Installation can be performed by any experienced electrician or security/alarm technician.
- **Intelligent Alarm**
  Only sounds when a Wanderer has gone though the protected door without authorized staff member escort.
- **Patient Escort Option**: Wanders can be escorted through the protected exit/entrance by staff members without triggering the solution's alert intervention functionality.
- **Unlimited Tag Population:** As many supplemental patient tags or staff badges can be added to the basic installation without risk to patient safety.
- **Unrestricted Life Cycle Tags and Badges**: Patient tags and staff badges use the same low-cost; easy to change, Lithium battery which delivers up to 1.5 years of continuous service between replacements.
- **Total Hardware Compatibility:** From single-door, stand-alone safety solutions to networked, enterprise wide unified risk mitigation and asset tracking solutions.
- **Internationally Safety Compliant**: All Elpas RF Components meets CE, FCC, UL approved, EMI, ESD, EM susceptibility standards.

Component Overview

The Elpas Single-Door Wandering Patient Solution is made of the following main hardware components:

RF Location Reader

Detects and processes transmissions emanating from the patient wrist tags and personnel badges. Also triggers the configured alert functionality.

Refer to page 7 for details.

LF Exciter

Generates a 125KHz LF field around the restricted door. Induces the patient wrist tag or personnel badge to transmit location data to the RF Location Reader.

Refer to page 10 for details.

Patient Wrist Tag

Worn around the patient's wrist. The device's transmitter signals the RF Location Reader when the high-risk patient nears the protected door.

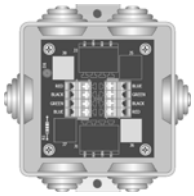
Refer to page 20 for details.

CL-8A Digital Keypad

A wall mountable, microprocessor-controlled digital, keypad that enables authorized users to temporarily suspend the kit's alert functionality

Refer to page 18 for details.

Electrical Junction Box (EJB)



Directs the 24VDC provided by the PS-60 power adapter to the RF Location Reader and to the LF Exciter

Refer to page 15 for details.

External Box (EXB)

A dual output relay interface that controls the local alert functionality plus the patient escort option.

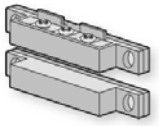
Refer to page 14 for details.

PS60 Power Adapter

A switching AC/DC single output power adapter that supplies 24VDC to the RF Location Reader and the LF Exciter.

Refer to page 16 for details.

Magnetic Door Contact



A magnetic door contact that indicates when the protected door is open.

Refer to page 17 for details.

Ensure that the Elpas Single-Door Wandering Patient kit you have received contains the following its:

Qua	Part Number	Description
1	**5-RDF0000-31**	Reader RF 433 MHz WHT Pre Prog (LFID1) - Includes antenna extension kit
2	**5-ERS02721**	Reader Cable (2.5m/8.2ft)
1	**5-RLE00125-1W**	LF Exciter Reader LF, Master WHT
2	**5-RDT09113**	Surface-Mount Plastic Ring
2	**5-RDT09100**	Reader Mounting Bracket
1	**5-WTA00433-B**	Healthcare Positioning Tag, Button Disabled, RF/LF
1	**3-6206-0**	CL-8A Digital Keypad
1	**5-ERS02601**	PS6- Power Supply
1	**5-FJB00001**	Junction Box (2-position EJB)
1	**5-NXB00001**	External Box (EXB)
2	**MWD011166**	Magnetic Door Contact, White
10	**5-PB063011**	Disposable Clincher Wrist ID Band, White

NOTE: The Part Numbers that appear in the table above are for reordering purposes. Reorder quantities may vary from the actual quantities shipped in the original Elpas Single-Door Wandering Patient kit

Fixed System Hardware

RF Location Reader

Description & Specifications

The RF Location Reader (P/N: 5-RDF0000-31) is a fixed ceiling mounted 433.92 MHz RF receiver. The reader identifies in real-time the patient and/or staff member that is approaching or is already near the protected exit/entrance door by detecting and processing the RF transmissions emanating from the worn patient wrist tags and staff personnel badges.

Additionally, the reader's local processing functionality causes the EXB External Box (P/N: NXB00001) to automatically trigger the kit's alarm interventional functionality. The location reader also has an audible annunciator plus a red LED for operational status indication. Additionally, each time the reader detects a patient wrist tag or a staff badge the LED indicator will flash once.

The reader can be mounted in suspended ceilings using the Flush Mount Bracket (P/N: 5-RDT09113) or surface mounted from conventional ceilings using the Surface Mounting Ring (P/N: 5-RDT09100-1). *(Refer to page 12 of this manual for installation details.)*

NOTE: To detach the reader from its base, insert a small screw driver into the square slot of the base. Then gently lever the screw driver outwards until the reader releases from the base.

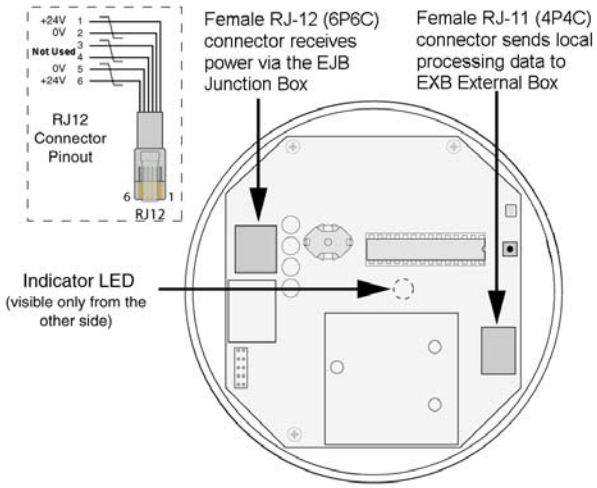
Electrical	Description
Frequency	433.92 MHz
Memory Capacity	400 Badge/tag IDs
Sensitivity	-102dbm
Encoding	Factory programmed ID
Current & Power Consumption	30mA at 24VDC; 750mW
Input Voltage	24VDC
Read Range	From 10 to 15m (33 to 50ft) radius
Message Length	4 to 31 bytes (encapsulated for messages > 4 bytes)
Device Interfaces	**RJ-12 (6P6C):** For power via EJB Box **RJ-11 (4P4C**): For external outputs via EXB box
Buzzer Indicator	**Upon Power-up:** Beeps once **Device Malfunction:** Beeps continuously
Red LED	**Power On:** Flashes 1 time **Device Malfunction:** Flashes continuously **Tag/Badge Detection:** Flashes 1 time
General	**Description**
Construction	White polymer plastic
Dimensions	17cm x 4 cm (6.6 inches x 1.6 inches)
Weight	200 grams (0.45 lbs) approximate
Temperature & Humidity	-10°to 70°C (14°to 159°F) 20% to 80% non-condensing
Warranty	One year limited warranty
Compliance	FCC Part 15.209, EN300220-1

Electrical Interfaces

The location reader contains two female RJ-12 (6P6C) connectors; one for connecting to the 24VDC power supply via the Electrical Junction Box (EJB); the other for connecting to the kit's alert intervention functionality such as local alert annunciators (such as sirens, & buzzers), electric door locks plus the patient escort option via the External Box (EXB).

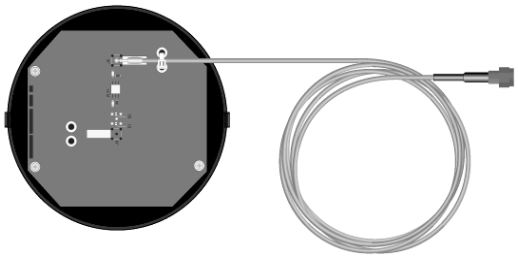
The 2.5m/8.25ft RJ-12 terminated flat 6-wire AWG 26 cable (P/N: 5-ERS02721) is used to connect the reader to the EJB. *Refer to page 24 for system configuration details.)*

The 2.5m/8.25ft RJ-11 terminated flat 4-wire AWG 26 cable (supplied with the EXB) is used to connect the reader to the EXB. *(Refer to page 24 for system configuration details.)*



Antenna Extension Kit

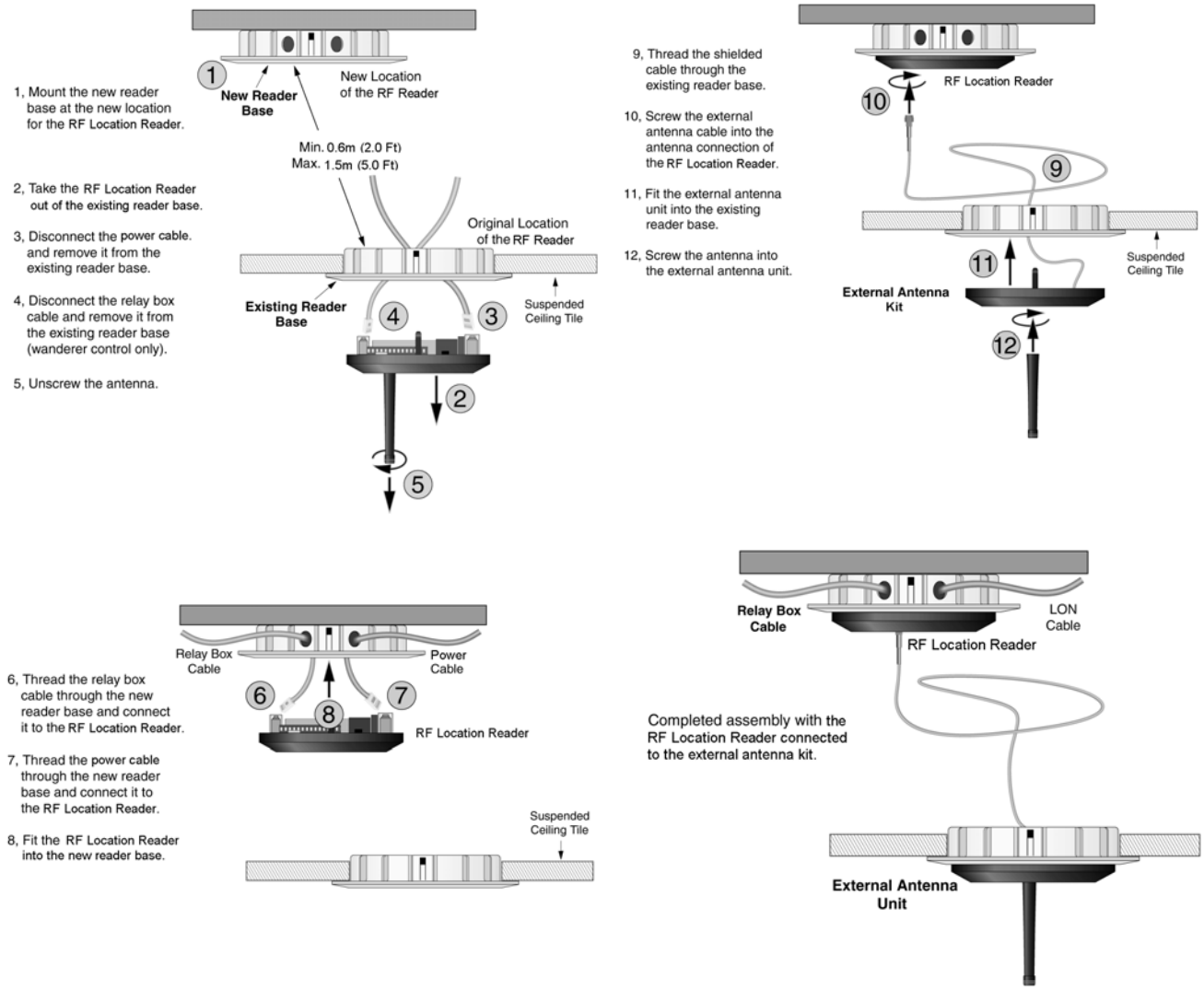
An Antenna Extension Kit is supplied with the RF Location Reader.



The kit is used to physically relocate the receiving antenna up to a maximum of 1.5m/5ft away from the detection circuitry of the reader. This boosts overall signal sensitivity of the location reader by reducing the detrimental effects of ambient RF noise levels in the region of 8 to11 dB and to filter out inter-modulation interference.

The Antenna Extension Kit consists of an antenna housing assembly mounted in a white RF reader circuitry cover; one RF shielded cable with an attached female coaxial connector, a new white reader base and mounting hardware.

Installing the Antenna Extension



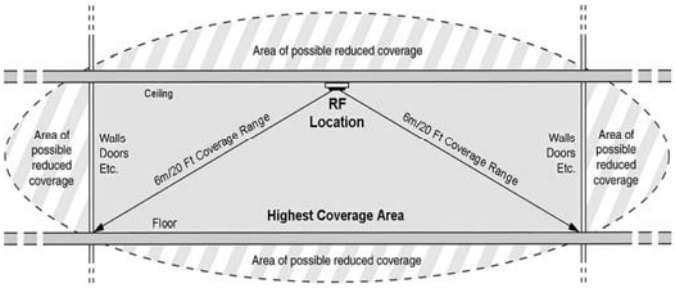
Placement Guidelines

The RF Location Reader (including the Antenna Extension kit) must be situated inside the protected door area where it can reliably receive the RF transmissions generated by the patient wrist tags as well as the staff personnel badges.

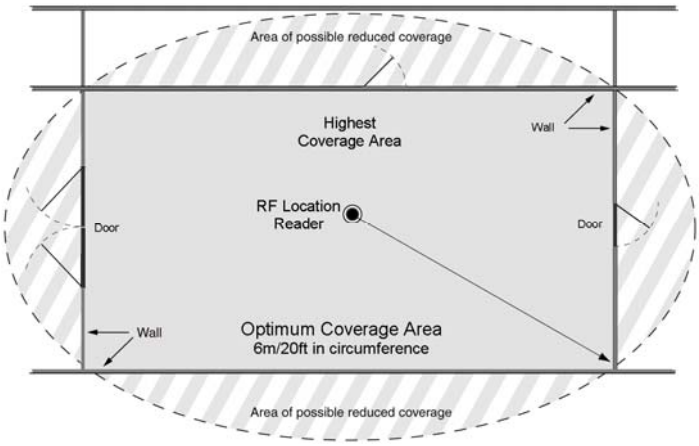
NOTE: The optimum coverage area is approximately 6m/20ft in circumference from the RF Location Reader (depending on the environment).

The designated area must have complete reader coverage to ensure that any event triggered by a wrist transmitter in that area will be detected. Background RF noise will affect the reader, therefore it is important to mount the device as far away as possible from sources of RF interference such as transmitters, wireless telephone system repeaters, large electrical motors, electronic ballasts, microwave ovens and air conditioning units.

The following diagram shows an example of the RF Location Reader coverage area in the vertical plane. Depending on the type of construction, signals could be received through floors and ceilings, as shown in the following illustration:



The RF Location Reader has a similar coverage distribution pattern in the horizontal plane. Reception is optimized at a distance of 6m/20Ft in circumference from the device (free of obstructions), as shown in the following illustration. Reduced coverage is possible through walls of light weight construction.



Note: The size and shape of the reader coverage areas in the above illustrations are theoretical. In practice the coverage can be distorted by environmental influences such as metal objects, strong magnetic fields and other sources of RF radiation.

LF Exciter

Description & Specifications

The Elpas LF Exciter (P/N: 5-RLE00125-1W) is an adjustable, low frequency (125KHz) emitter that generates an omni-directional sphere shaped, magnetic field up to 3.0 meters (10 feet) in radius.

The emitted field is user tunable so that it can be adjusted to precisely cover any shaped indoor doorway or restricted entrance/exit area. As a result, when a patient wearing a wrist tag or a staff member wearing a personnel badge enters the magnetic field; the exciter induces the worn tag/badge to transmit a data message to the RF Location Reader for processing and triggering the kit's alarm interventional functionality.

The device can be flush mounted in ceiling tiles using the Flush Mount Bracket (P/N: 5-RDT09113) or surface mounted on solid walls or ceilings using the Surface Mounting Ring (P/N: 5-RDT09100-1). *(Refer to page 12 of this manual for installation details.)*

The LF Exciter also has an audible annunciator plus a red LED for operational status indication.

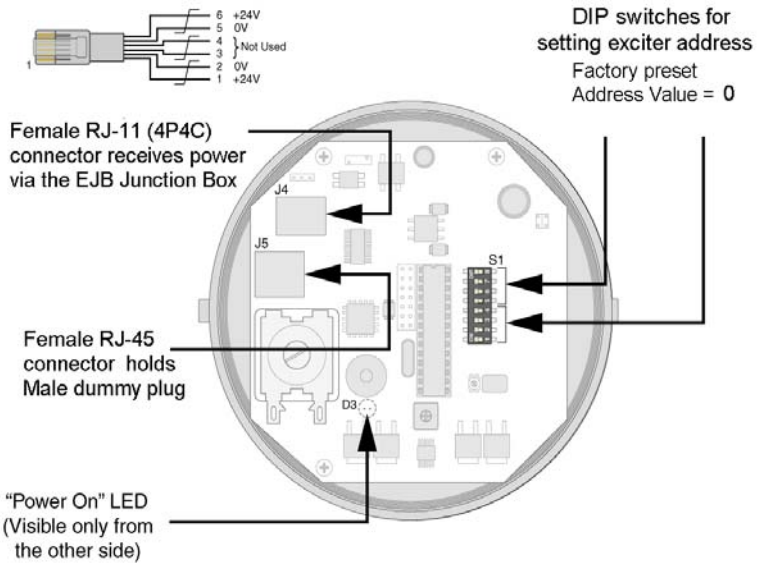
NOTE: To detach the exciter from its base, for installation, insert a small screw driver into the square slot of the housing. Then gently lever the screw driver outwards until the reader releases from its base.

Electrical	Description
Power Requirements	24 VDC nominal ± 30%; 200mA (500mA at start-up)
Power Consumption	Approx 2 Watts
Freq Output & Format	125KHz; 3 byte messages (Preamble, Exciter ID and CRC)
Output Bit Rate	2,000 bits per second
Output Power	Adjustable, using on-board trim POT
Effective Range	Up to up to 3m (10ft) radius
Device Interfaces	**RJ-12 (6P6C)**: To power via EJB box **RJ-45 (8P8C)**: For RJ45 dummy plug
Power Output	Less than 60 dbμv at 30 meters (100 feet)
Exciter ID code	Set by on-board 8 position DIP-switch
Audible Annunciator	**RJ-45 Plug Removed:** Beeps continuously **Invalid ID Code**: Beeps repetitively
LED Indications	**Power-up**: Flashes 5 times upon power-up; then remains constantly lit. **Invalid ID Code**: Flashes continuously;
General	**Description**
Construction	White polymer plastic
Dimensions	17cm x 4 cm (6.6 inches x 1.6 inches)
Weight	200 grams (0.45 lbs) approximate
Temperature & Humidity	-10°to 70°C (14°to 159°F) 20% to 80% non-condensing
Warranty	One year limited warranty
Compliance	FCC Part 15.209, EN300 220-1

Electrical Interfaces

The LF Exciter contains one female RJ-12 (6P6C) connector for connecting to the 24VDC power supply using the 2.5m/8.25ft Reader Cable (P/N: 5-ERS02721) via the EJB box.

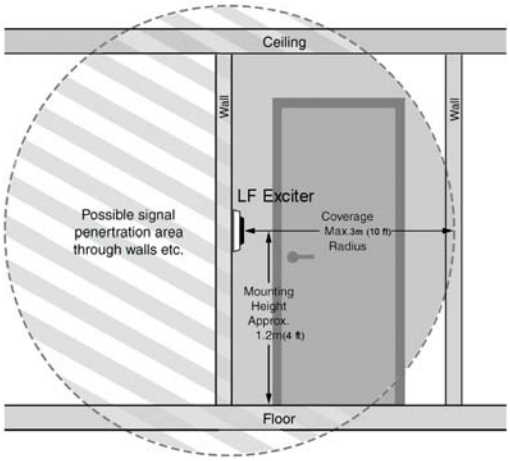
NOTE: The device also has a female RJ-45 (8P8C) connector with a male dummy plug inserted. Once the unit is powered, should the plug be accidentally removed; the onboard audible annunciator will beep constantly.



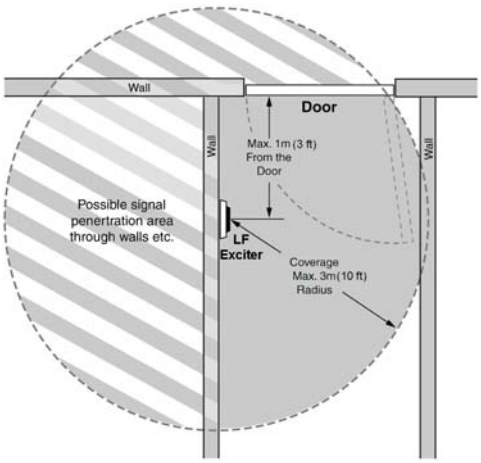
Installation Considerations

Depending on the environment, the exciter emits a 125Hz LF magnetic field up to 3m/10ft radius or 6m/20ft diameter in all directions (360°). Consequently, the exciter is best mounted on a fixed or in a dropped ceiling (not more than 3m/10ft above the floor) or on a wall about 1.2m/4ft above the floor.

The LF Exciter should be wall mounted, adjacent to the opening side of the door, at a height of approximately 1.2 meters (3.9 feet) above the floor.



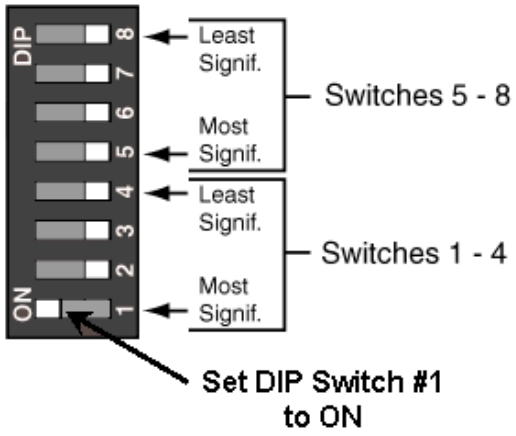
The coverage area has a radius 3 meters radius from the LF Exciter (free of obstructions), as shown in the following illustration.



NOTE: The LF field can penetrate certain building materials which means the signals might be detected through walls, doors and ceilings etc.

DIP Switch Setup

The LF Exciter is shipped from the factory with all 8 DIP switches set to OFF. The LF Exciter **MUST** have DIP Switch #1 set to ON before power is applied. Failure to setup the DIP Switch correctly will cause the Elpas kit will not to operate correctly.

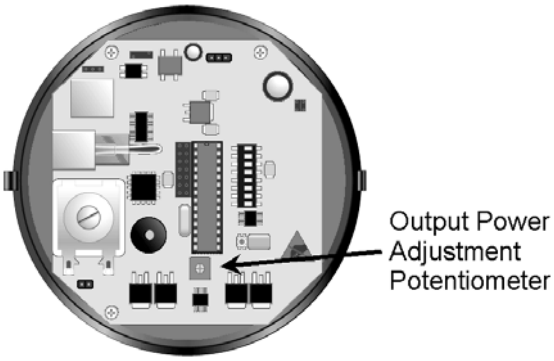


CAUTION: Set the DIP switch before powering up the Exciter. Never change the DIP switch settings once the LF Exciter is powered up.

Installing the kit on adjacent doors that are closer than 12m/40ft from each other may cause unpredictable operation. Should this limiting parameter present installation problems, contact your Visonic Technologies representative for further assistance.

Field Strength Adjustment

The field strength of the LF Exciter can be adjusted using the field strength adjustment potentiometer. This feature is used to reduce the effect of signal overlap and unwanted signal penetration.



NOTE: The unit's default setting is full power. To reduce the signal strength the potentiometer is turned counter-clockwise.

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Mounting Accessories

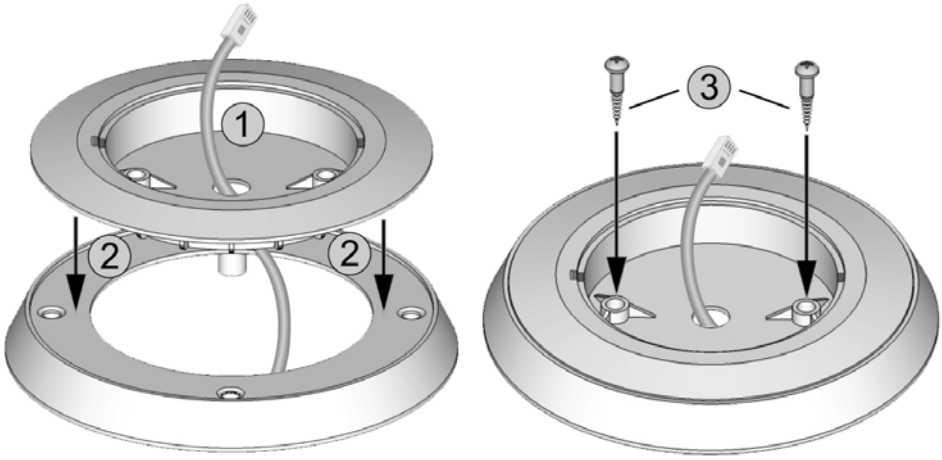
Surface-Mount Ring

The Surface-Mount Ring (P/N: 5-RDT09113) is used to surface mount the RF Location Reader or the LF Exciter onto solid ceilings or walls where drilling large access openings are not possible or where concealed cabling is impractical.

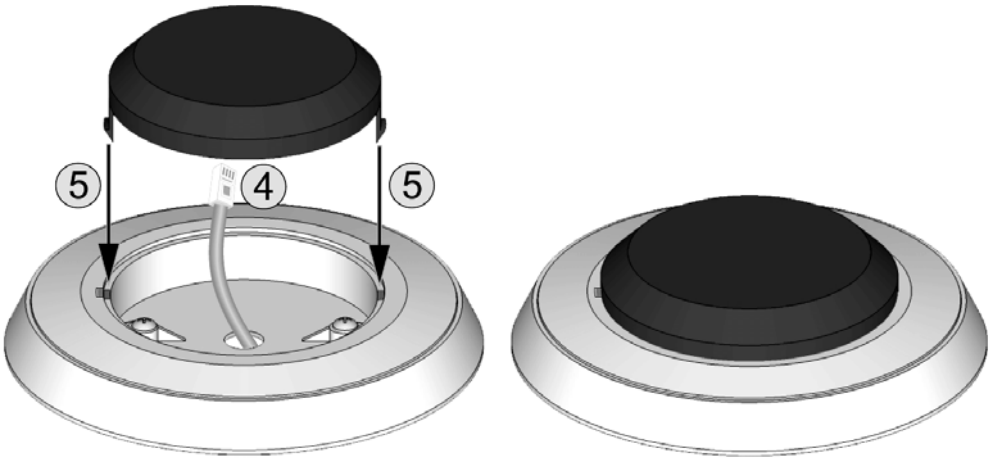
NOTE: To detach the exciter from its base, insert a small screw driver into the square slot of the housing. Then gently lever the screw driver outwards until the reader releases from its base.

Mounting Details

Place the surface-mount ring in the appropriate location on the wall or ceiling (usually over an electrical back box or opening for the connection cable to the reader or exciter).Pull the cable through the surface-mount ring and through the hole (1) in the center of the housing. Place the housing on the surface-mount ring (2). Fix the housing to the wall or ceiling with two suitable screws (3).



Connect the cable to the reader or exciter as required (4) and then insert the two catches of the black cover in the slots in the housing (5) press the reader/exciter firmly into the housing.



Reader Mounting Bracket

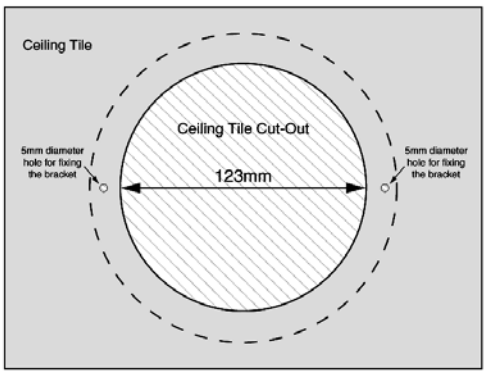
The Reader Mounting Bracket (P/N: 5-RDT09100) is used to flush mount the LF Exciter or the RF Location Reader in suspended ceiling tiles. The bracket is constructed of coated steel and has a 15mm/0.59inch center hole to allow cables to pass through. The bracket also contains two 4mm/0.16inch diameter threaded holes; (83mm/3.26 inches apart) for clamping the base of the device into place, plus two 5mm/0.2 inch holes at each end of the bracket for fixing the bracket to the ceiling tile.

NOTE: Two M4 x 35mm Phillips head screws are included.

Mounting Information

Separate the reader/exciter from its base by inserting a small screw driver into the square slot of the base and levering the screw driver outwards until the device releases from the base.

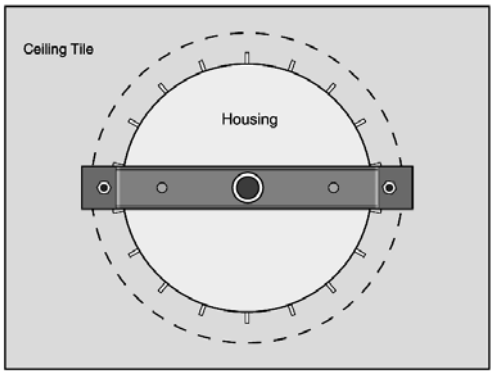
Cut a 123mm (4.8 inch) diameter mounting hole in the tile where the device is to be flush mounted.



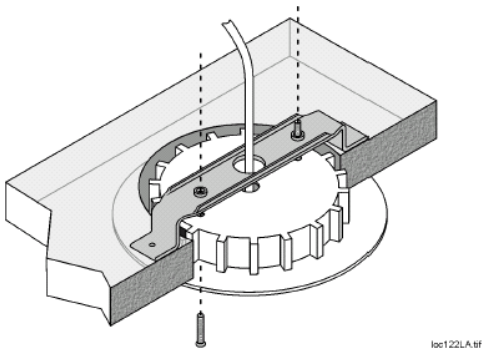
Pull a Reader Cable (P/N: 5-ERS02721) through the cable entry hole of the flush mount bracket and into the base of either the reader or exciter. This cable is for supplying power to the device via the EJB.

For the Local Positioning Reader pull an additional Reader Cable into the base of the reader. This cable is for connecting to the remote alarm annunciator and the electric door strike of the protected door via the EXB.

Insert the bracket through the mounting hole placing it on top of the ceiling tile. Position it so that the bracket is firmly supported by the ceiling tile.



Insert the base of the reader/ exciter into the mounting hole. Next, screw the base to the mounting bracket place using the 2 supplied M4 x 35mm Philips head screws. Ensure that the screw heads are recessed inside the screw holes. If not the reader/exciter will not close properly and damage may occur.



For the exciter, ensure that its LF field strength is set properly. *(Refer to page 11 for setup details.)*

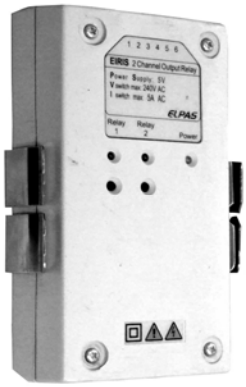
Connect the reader cable(s) to the reader/exciter; then insert the device back into its base.

Fixed System Accessories

External Box (EXB)

Description & Specifications

The External Box, identified throughout this manual as the EXB (P/N: 5-NXB00001) is a simple, dry contact, dual output relay interface that controls the kit's alert intervention functionality such as triggering local alert annunciators (such as sirens, & buzzers), closing electric door locks plus handling the patient escort option.



The EXB contains two independently controlled dry relays, capable of switching loads of up to 5A/240V:

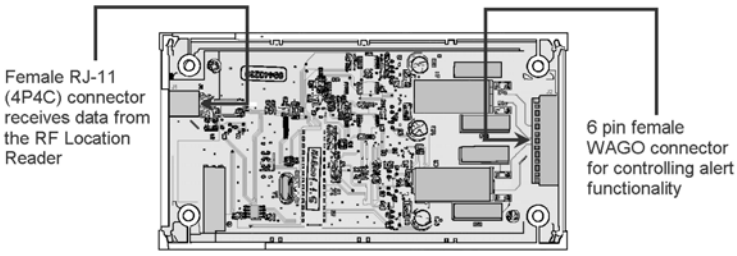
NOTE: One 2.5m/8.25ft RJ-11 terminated flat 4-wire AWG 26 cable; a female 6-pin WAGO connector and a mounting bracket are included.

Relay #1 - Wired Normally Open (NO): Closes when the "Wanderer" enters the LF field that surrounds the protected door. *(The relay remains closed as long as ether individual stays inside the LF field.)*

Relay #2 - Wired Normally Closed (NC): Opens when an authorized staff member inside the LF field button presses the alarm override button of his personnel badge *(The relay closes automatically after 30 seconds).*

Electrical Interfaces

The EXB contains one female RJ-11 (4P4C) connector for connecting to the RF Location Reader via the RJ-11 terminated flat 4-wire cable. The device also contains a standard 6 pin male WAGO connector for wiring the dry relays



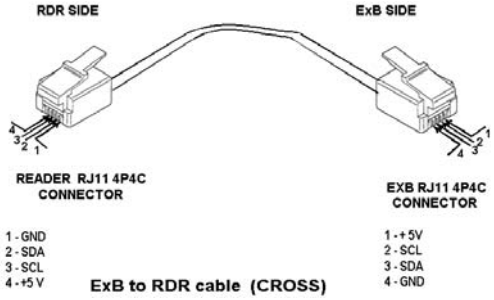
Mounting Details

Mount the EXB on any solid or hollow surface, or above a false ceiling tile up to 8m/24 inches away from the RF Location Reader using the supplied mounting bracket.

Electrical	Description
Power Requirements	5.0 VDC; 20-28mA (via RF Location Reader)
Power Consumption	0.15 Watts
Outputs	Two dry contacts, supports loads up to 5A/240V
Dry Contacts Control	Via the Local Positioning Reader
Contacts at Startup	Normally Open (NO), Normally Closed(NC) & Center (C)
Output Interface	Standard 6 pin female WAGO connector
Reader Interface	RJ-11 (4P4C) female connector
Reader Communication	Standard I^2C
Relay Test Buttons	Button Press: closes relay Button Release: opens relay
Visual Indicators	**Power ON:** Green LED **Relay 1 Closed**: Red LED **Relay 2 Closed:** Red LED
General	**Description**
Construction	Polymer plastic
Weight	225 grams (8.9 ounces)
Dimensions (H x W x D)	14.5 X 7.5 X 3.0 cm (5.7 x 2.9 x 1.2 inches)
Temperature & Humidity	10°C to 70°C (14°F to 159°F) 20% to 80% non-condensing
Compliance Standards	EMI, ESD, EM susceptibility, CE
Warranty	One year limited warranty

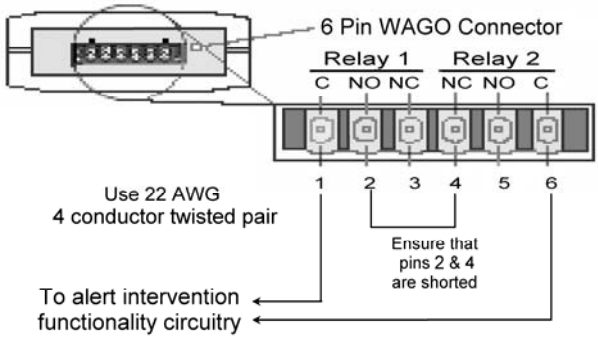
EXB to Reader Connection

Determine the required cable length to connect the EXB to the RF Location Reader (maximum length not to exceed 5m/16 ft). Spice in the required length into the supplied RJ-11 4-wire cable. Use standard cabling testing methodology to verify as shown here.



Wiring the Dry Relay Outputs

Using the supplied 6 pin female WAGO connector, wire the EXB's two dry relays as illustrated below:

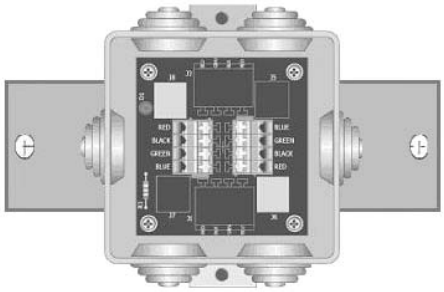


(Refer to page25 for typical circuitry configuration options)

Electronic Junction Box (EJB)

Description & Specifications

The Electronic Junction Box, identified throughout this manual as the EJB (P/N: 5-FJB00001), is used to direct the 24VDC provided by the PS-60 power adapter to the RF Location Reader and to the LF Exciter



The EJB includes a mounting bracket for installing the device above suspended ceiling tiles or onto solid ceilings or walls. The bracket is constructed of aluminum and contains two 5mm/0.2in holes at each end for fixing the bracket to a ceiling tile or solid surface. Additionally, the unit contains a green LED Power ON status indicator.

NOTE: Mounting screws not included with the EJB.

Electrical	Description
Current Flow-throw	5.0 Amp
Power Consumption	0.1 Watt
Power Interface	Two wire clamp terminal blocks
RF Reader/ LF Exciter Interface	Two RJ-12 (6P6C) female connectors
Visual Indicator	**Power ON:** Green LED
General	**Description**
Construction	Polymer plastic
Weight	140 grams (5.0 ounces)
Dimensions	82 X 82 X 43 mm (1.3 x 1.6 x 0.6 inches)
Temperature & Humidity	10°C to 70°C (14°F to 159°F) 20% to 80% non-condensing
Compliance Standards	EN300 220-3, EN300489-3, EN60950, CE/RTTE Directive 1999/5/CE FCC Part 15, UL approved
Warranty	One year limited warranty

Electrical Interfaces

The EJB contains two 4-pole wire clamp terminal blocks, two of which is used for connecting to the PS60 power adapter, the other two for powering the CL-8A Key Pad (P/N: 3-6206).

The EJB also contains two female RJ-12 (6P6C) connectors: one used to connect to the RF Location Reader, the second to connect to the LF Exciter via the 2.5m/8.25ft Reader Cable (P/N: 5-ERS02721).

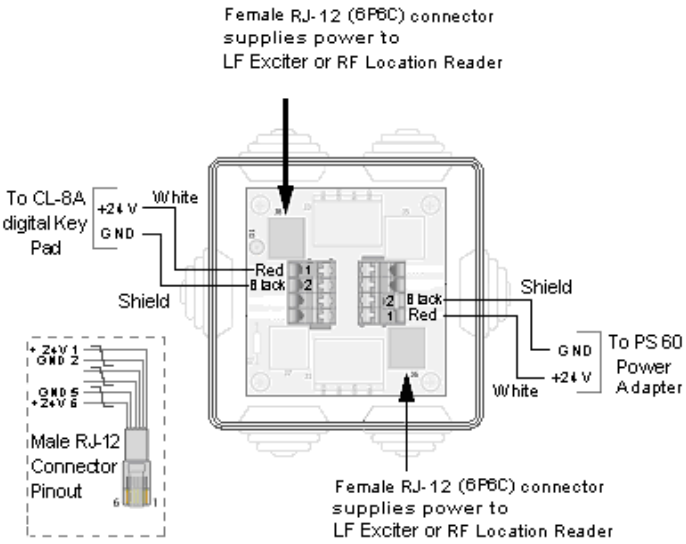
Mounting Procedure

Mount the EJB on any solid or hollow surface, or above a false ceiling tile near to both the LF Exciter and RF Location Reader using the supplied mounting bracket.

Use the mounting bracket as a template to mark the positions of the mounting holes. If installing on a hollow wall, any standard anchoring method may be used such as screws or anchors. Next screw the bracket firmly into place without over tightening. Connect the reader cables to their respective RJ-12 connectors. Add cable lengths to the cables as required. Use standard cabling testing methodology to verify the splices.

Next, connect the PS-60 and the CL-8A's power cables to the wire clamp terminal blocks of the EJB

NOTE: Any of alert intervention accessories (sirens, buzzers, electrical door locks, etc.) which are controlled by output relay #1 of the ExB, may be also be powered by Elpas kit provided that the various accessories operate at 24VDC and that the aggregate current consumption of the combined circuit does not exceed the electrical specifications of the PS60 power adapter.



	PS-60	Pin # (EJB)
Pair 1	24VDC	1 or Red
Pair 1	GND	2 or Black

PS60 Power Adapter

Description & Specifications

The PS60 Power Adapter (P/T: 5-ERS02601) is a high quality AC/DC switching, single output power adapter that supplies 24VDC to the kit's fixed components via the EJB Junction Box.

Electrical	Description
Input Voltage	100 to 240VAC, 50/60Hz
Max Output	24VDC, 2.5Amp, 60 Watt Max.
Ripple/Noise	1.0%
Protection	Over voltage protection, AC recycle; Short circuit protection, Auto recover
Temperature & Humidity	0°C to 55°C (32°F to 131°F) 20% to 80% non-condensing
Storage Temperature	-20 to +65°C (-4°F to 149°F)
Dimensions (L x W x H)	150 x 80 x 50 mm (5.9 x 3.15 x 2.0 inches)
DC Cord Type	24VDC: White conductor GND: Stranded conductor
DC Cord Length	90MM (3.54 inches)
Weight	600 grams (5.0 ounces)
Compliance Standards	FCC Class B, CISPR22, EN55022, CNS 1348, UL60950, CSA C22.2 EN& IEC 60950
Warranty	One year limited warranty

Installation Details

The PS60 power adapter should be connected to a standard AC outlet that is not easily accessible by patients or non-authorized staff members. If power is not available, a qualified electrician must install the required electrical point before the Elpas kit can be installed.

NOTE: Do not power-up the PS60 power adapter until all the fixed components have been properly installed and configured.

Wiring Specifics

Remove the factory fabricated power connector from the end of the adapter's DC power cord.

Determine the cable length required to connect the PS60 to the Electrical Junction Box (EJB). Splice in the required length into the DC power cord.

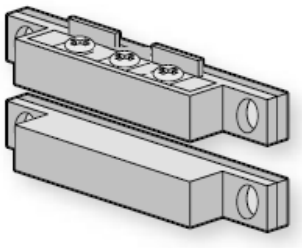
Strip the sheathing back far enough to allow the white and shield wires to reach the wire clamp terminal blocks of the EJB.

Connect the white wire to the red terminal block, and then connect the shield wire to the black terminal block of the EJB. *(Refer to page 15 of this manual for further detail).*

Magnetic Door Contact

Description & Specifications

The Magnetic Door Contact (P/N: MWD011166) is a surface mounted Normally Open (NO) magnetic contact switch that attaches with wood or sheet metal screws (not included) to the frame of the door.

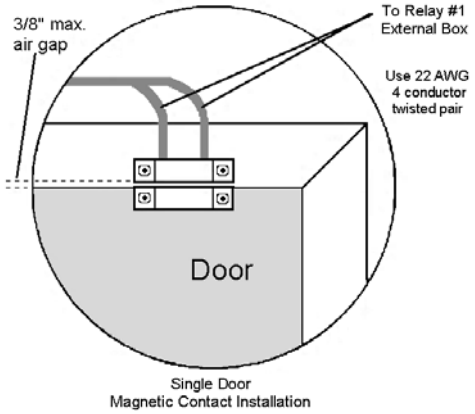


The door contact is comprised of two separate parts: the normally opened (NO) switch with three screw terminals, mounted on the door frame and the door magnetic fitted to the door.

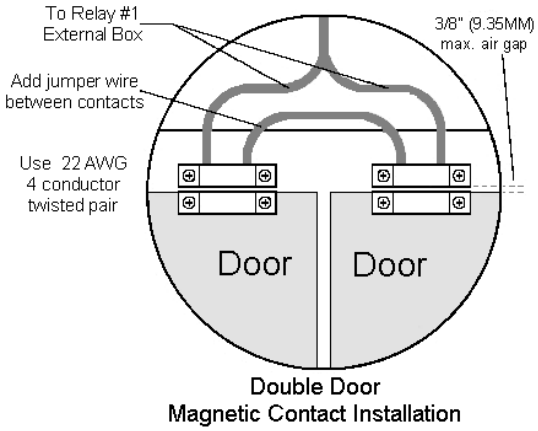
NOTE: Two spacers, a terminal cover and four mounting screws are included with each door contact.

Electrical	Description
Switch Cycles	10 million
Switch Type	Normally Closed (NC)
Operation Gap	¾ inch
Contact Type	SPST rhodium plated
Magnet	Ferrite
Ratings	0.1Amp/100VDC max.
Construction	White, polymer plastic
Weight	225 grams (8.9 ounces)
Dimensions (L x D x H)	63 X 18.5 X 13 mm approx (2.5 x 0.7 x 0.5 inches)
Temperature & Humidity	-25°C to 70°C (-15°F to 159°F) 20% to 80% non-condensing
Mounting Hardware	Two spacers, terminal cover, four mounting screws
Warranty	One year limited warranty

Electrical Connections



Single Door
Magnetic Contact Installation



Double Door
Magnetic Contact Installation

NOTE: For double door installations, two magnetic contacts must be wired in parallel.

Mounting Procedure

Facing the inside of the door, select a mounting location at the top of the doorframe on the side opposite the door hinges.

Attach the switch to the doorframe, making sure that the terminal screws are on top; then attach the magnetic to the door. The switch and the magnetic should be installed parallel to each other with a gap that does not exceed 9mm or 3/8 of an inch.

CL-8A Digital Keypad

Description & Specifications

The CL-8A Digital Keypad (P/T: 3-6206-0) is a wall mountable, microprocessor-controlled digital, keypad that adds patient escort 12 or 24VDC Relay override functionality to the Elpas kit.

Mounted immediately adjacent to the protected exit/entrance, the keypad permits a family member or caregiver (who keys in an authorized user access code) to temporarily suspend the kit's alert functionality long enough (programmable up to 98 seconds) to escort the 'patient outside the protected area.

The CL-8 features up to 56 valid user codes to support override functionality for family members, care givers and authorized support services. All programming is performed locally via the CL-8 keypad, by master code holders. Additionally power failures do not erase the stored user data.

A special request-to-enter input is also provided for suspending the kit's alert functionality from outside without a code, thereby permitting entrance into the protected area.

Main Circuit Board Interfaces

The CL-8A contains a 12-position Terminal Block: for wiring the device to the kit's 24VDC power source and into the system's alert intervention circuitry.

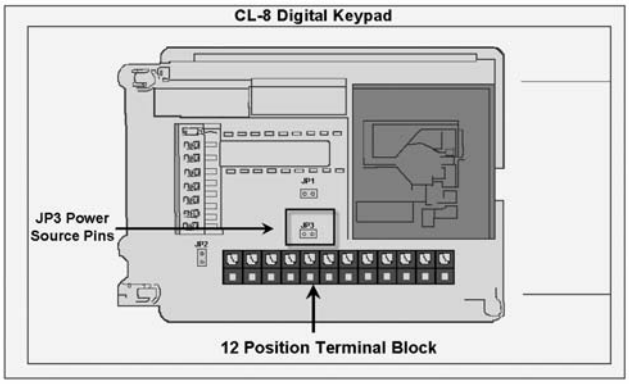
Terminal Block – Pin Details

Pin	Polarity	Description
1	+	Red LED (optional - user defined)
2	-	Red LED (optional - user defined)
3	+	Yellow LED (optional - user defined)
4	-	Yellow LED (optional - user defined)
5	-	Request to Enter Pushbutton (NO)
6	+	To PS-60 Power Supply via EJB (24VDC)
7		Power Supply GND via EJB
8	+	Alert Intervention Relay (12 or 24VDC)
9	+	Alert Intervention Relay (12 or 24VDC)
10		COM
11	+	Door Strike Relay (NO)
12	+	Door Strike Relay (NC)

NOTE: Use standard 26 AWG 4 conductor twisted pair alarm type cable to wire the CL-8 into the external alert intervention circuit via the device's NO terminal.

Electrical	Description
Code Composition	1 to 8 digits (any combination)
Keypad type	12 keys, 3 x 4, tactile operation
Power Requirements	9-16 VDC or 22-26V AC/DC (selected with jumper)
Current Drain	15mA – standby state 55mA with relay & aux output active
Power Failure Immunity	EEPROM retains all programmed data durin power loss
Relay Contact Ratings	10A, 28VAC or DC
Relay Control	Programmable for 1-98 seconds pull-in duration/toggle (latching/unlatching) modes
AUX & PANIC Output current sinking	Up to 100 mA
LED Indicators	**Green:** Keypad status **Red**: (Optional) user defined **Yellow:** (Optional) user defined
General	**Description**
Construction	White polymer plastic (indoor usage only)
Weight	122 grams (4.3 ounces)
Dimensions (H x W x D)	118 X 72 X 33 mm (4.6 x 2.2 x 1.4 inches)
Temperature & Humidity	0°C to 65°C (32°F to 149°F) 20% to 80% non-condensing
Compliance Standards	EMI, ESD, EM susceptibility, CE
Warranty	One year limited warranty

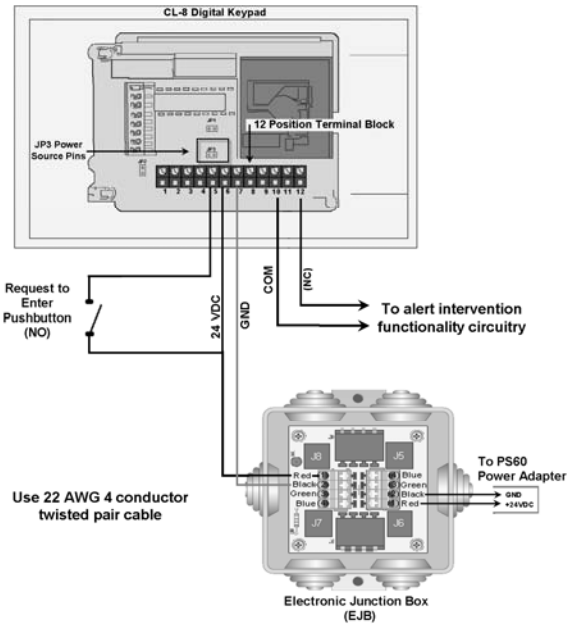
NOTE: A white polymer plastic back box (for surface mounting) and two Phillip head #6 x 3/4 locking screws are included with the keypad.



IMPORTANT: Before connecting the CL-8A keypad to the PS60 24VDC power supply (wired through the EJB) ensure that you have place the power source jumper across one pin of JP3.

Installation Details

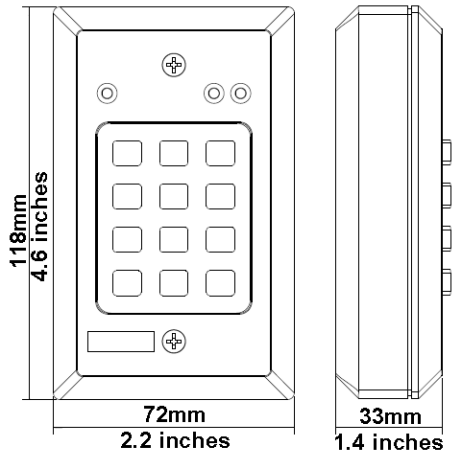
1. Remove the CL-8A from its back box by loosening and removing the two locking screws using a Phillips-type screw driver.
2. **(Optional)** If surface mounting, pull the required interface and power cables through back box's cable knock outs. Then fix the back box to wall with two suitable screws and/or anchors.
3. Connect all the cables to the CL-8A as illustrated here.



Pushbutton	PS60	Pin# (CL8A)	Pin# (EJB)
	+24V		1 or Red
	Ground		2 or Black
+24V		6 (+24VDC)	1 or Red
		7 (GND)	2 or Black
-		5 (-)	
		10 (COM)	
		12 (NC)	

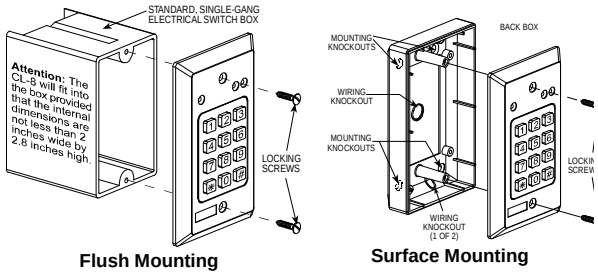
4. Gently push the CL-8A into place over its back box or the electrical switch box. Finally, retighten the two locking screws to hold the entire assembly in place.

CL-8A - Front View/ Side View Dimensions



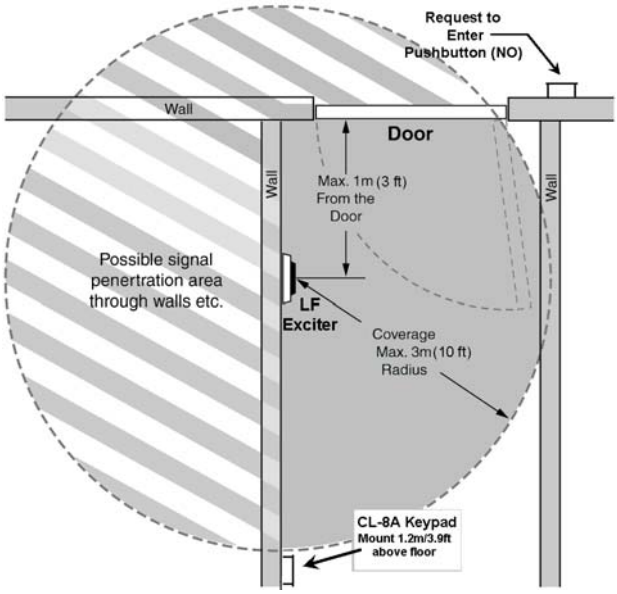
Mounting Considerations

The CL-8A keypad can be either flush mounted (using a standard, single-gang electrical switch box) or surface mounted, use the back box that is supplied with the unit.



Flush Mounting **Surface Mounting**

The keypad should be mounted adjacent to the opening side of the door (within the protected area), at a height of approximately 1.2 meters (3.9 feet) above the floor.



The Request to Enter Pushbutton (user supplied) should be wall mounted exterior to the protected area and also outside of the LF field, at a height of approximately 1.2 meters (3.9 feet) above the floor.

Programming and Operation

Programming should be carried out as soon as the installation is completed. This provides a set of "commands" which determines how the keypad will react to various code inputs.

Refer to the CL-8A Installation Guide that is enclosed with the device for programming and operational guidelines.

The guide (in PDF format) can also be downloaded from: www.visonictech.com.

Mobile Wrist Tags

Patient Wrist Tag

Description & Specifications

The Elpas Single-Door Wandering Protection Solution uses the Elpas Healthcare Positioning Tag as its patient wrist tag (P/T: 5-WTA00433-B). The device is a battery powered, active long-range Radio Frequency (RFID) device designed for the discreet real-time monitoring of high-risk patients who exhibit 'Wandering' and 'Elopement' tendencies.

The tag is worn around the patient's wrist like a wrist watch using a disposable hospital wrist band (P/T: 5-PB062115). The device contains an on-board 433MHz RF transmitter, a LF receiver and a red battery LED status indicator. So whenever a 'Wanderer' nears the protected exit/entrance, the kit's alarm interventional functionality is automatically triggered.

The patient wrist tag uses one commercially available 3.0V Lithium replaceable battery which typically supplies 15 months of continuous service. The tag is also small in size and weight and is housed in a shock resistant, shower/bath proof (IP66 water rated) outer casing.

NOTE: One 3V Lithium battery and two omega rings for attaching the disposable wrist band are included with each patient wrist tag.

Electrical	Description
Technologies	RF and LF
Battery	One 3V lithium battery, type: CR2430
Operating Temperature	-10°C to 70°C (14°F to 159°F)
ID Code	Unique, factory programmed
LED Indicator	Tag activation & battery check
RF Rates	Every 10 seconds when in-motion Every 60 seconds when stationary
LF Field Entry	6 RF transmissions, 400 milliseconds apart. Then every 10 seconds as when in motion
Physical	**Description**
Weight	20 grams (0.75 ounces)
Dimensions (L x H x W)	34 X 40 X 15 mm (1.3 x 1.6 x 0.6 inches)
Housing	IP66 water rated enclosure
Temperature & Humidity	10°C to 70°C (14°F to 159°F); 100% maximum - condensing
Compliance Standards	EN 300 220-3, EN301 489-03, EN50130-4:95+A1(98) +A2(03), EN60950-1:01, 60601-1-1 Safety, 60601-1-2 EMC, FCC Part 15.231 Level C
Warranty	One year limited warranty (excluding battery)
Battery Life	15 Months (approximate)

NOTE: One Elpas Healthcare Positioning Tag plus ten; disposable hospital wrist bands are supplied with each Elpas system. Extra tags, supplemental bands and replacement Lithium batteries may be ordered from Visonic Technologies. Additional information about these items may be found at: www.visonictech.com

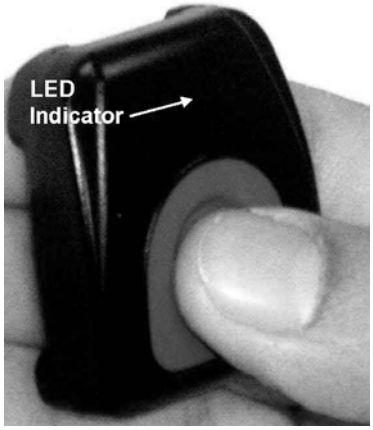
Ordering Information

Part #	Description
5-WTA00433-B	Healthcare Positioning Tag, Disabled Button TX, RF/LF,433MHz, 10/60
5-PB063011	Disposable Clincher Wrist ID Band, White (set of 50)
5-BC012430	3V Lithium Battery, CR 2430 (pack of 25)

Tag Activation

Note: The Elpas Healthcare Positioning Tag **MUST** be activated prior to initial usage or after battery replacement.

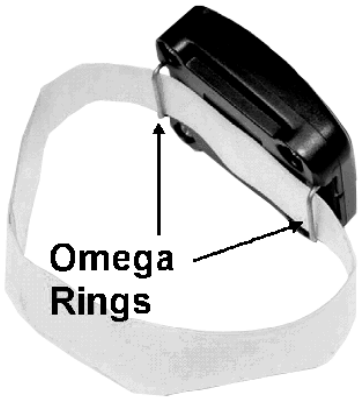
1. Orient the tag front-cover side up. Press and hold down the green button for at least 5 seconds.



2. Upon successful activation, the LED illuminates continuously for 3 seconds.

Wrist Band Attachment

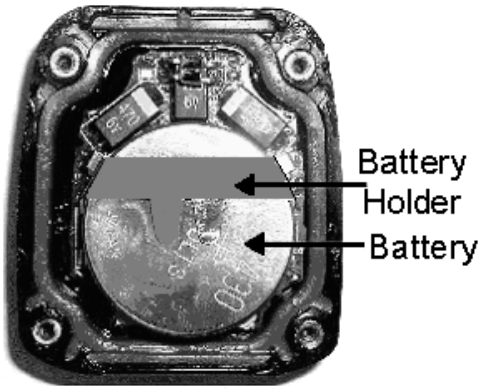
1. Place the tag back-cover side up on a clear dry level surface.



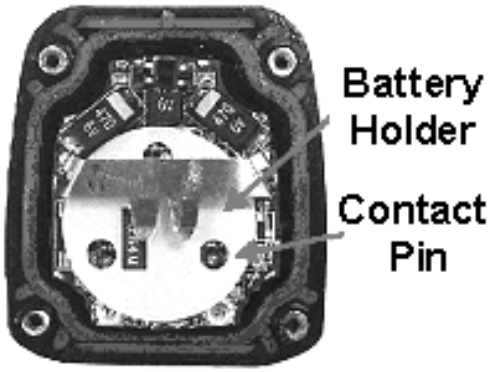
2. Slide the hospital band through the two omega rings (included on the tag). The tag is ready to be worn.

Battery Replacement

1. Suspend usage of the tag using the EIRIS software.
2. Place the tag back cover side up on a clear dry level surface. Using a Phillips-type screwdriver that fits the back cover screws, unscrew the 4 screws on the back of the tag. Then gently remove the back cover.
3. Slide the battery out from under the battery holder. Promptly dispose of the worn-out battery according to local recycling practices in your area.



4. Before sliding a new battery into place, ensure that the holes of the Battery Isolator is properly aligned with the three vertical contact pins.



5. Replace the battery ensuring that the positive (+) side of the battery faces up.
6. Close the back cover such that the screw holes are aligned. Next carefully tighten the 4 screws into place.

Optional System Accessories

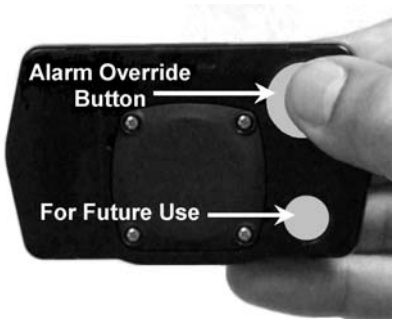
Active Identity Badge

Description & Specifications

The optional Active Identity Badge (P/T: 5-PBA00433-3) adds patient escort override functionality to the solution. This allows a 'Wanderer' (a high-risk patient wearing a wrist tag) to be escorted through the protected exit/entrance by an individual care giver or family member who is wearing a personal badge.

The Active Identity Badge is a miniature; battery powered active long-range Radio Frequency (RFID) device. The unique form factor of the badge makes it usable as a clip-on photo ID personnel badge. Or, when inserted into its corresponding card holder (sold separately) the device may be bundled with any standard credit-card size access control card; and user worn either horizontally (landscape format) or vertically (portrait format).

The badge contains an on-board 433MHz RF transmitter and an alarm override button. So whenever the authorized employee or family member is within 3m/10ft of either side of the protected door; while escorting a 'Wanderer', the staff member can suspend the kit's alert functionality for thirty seconds by pressing the badge's alarm override button located on its rear cover.



NOTE: One 3V Lithium battery a clip attachment and a card holder are included with each active identity badge.

Electrical	Description
Technology	RF (433.92MHz)
Power Source	3V/600mAh Lithium Battery, type: CR2450
Operating Temperature	-10°C to 70°C (14°F to 159°F) 100% non-condensing
Badge ID	Unique, factory programmed
Visual Indicator	Red LED specifics radio transmission
RF Rates	Every 10 seconds when in-motion Every 60 seconds when stationary
Button Press	4 IR/RF transmissions (each transmission @ 2ms in duration), 400 ms apart
Physical	**Description**
Weight	32 grams (1.128 ounces)
Dimensions (L x H x W)	5.0cm x 8.3cm x 0.9cm (2.0 inches x 3.27 inches x 0.35 inches)
Temperature & Humidity	10°C to 70°C (14°F to 159°F) 100% non-condensing
Housing	IP66 water rated enclosure
Warranty	One year limited warranty (excluding battery)
Battery Life	15 Months (approximate)

NOTE: Elpas Personnel Badges must be ordered separately from Visonic Technologies. Further information about this device may be found at: www.visonictech.com.

Ordering Information

Part #	Description
5-PBA00433-3	Personnel Badge, RF, 433 MHz,10/60
5-PBA90002	Open Front Card Holder, Horizontal/Vertical, (5 pcs)
5-PBA90003	3V/600mAh Lithium Battery, CR2450 (25 pcs)
5-PBA90004	Name Labels (pack of 25)

NOTE: Each Elpas Active Identity Badge is shipped with one clip attachment, one card holder and a lithium battery.

LF Field Test Instrument

It is extremely important to make sure that the LF Exciter is generating a reliable low frequency electromagnetic field in the required area in front of the door that is to be protected. A check of the exciter's coverage area can be done using the optional Elpas LF Field Meter or using an Elpas Asset Tracking Tag (P/N: 5-ETC00433C).

Description & Specifications

The LF Field Meter (P/N: 5-LFM00125) is a battery powered hand-held, magnetic field meter. The device employs an on-board 3-axis sensor and microprocessor to process and display representative amplitude values of the detected low frequency (125 KHz) flux density within the theoretical coverage area of the exciter.

The meter is designed for system integrators, field service or maintenance engineers that need to: identify and eliminate exciter field overlaps, reduce/expand field penetration or just speedup the process of maximizing overall field coverage.

The LF Field Meter is especially useful for identifying and isolating detrimental ambient noise (125 KHz) such as magnetic fields emanating from overlapping exciters, HVAC compressors electric motors or metal barriers (such as ceiling tiles/signs/pillars/beams) that may be adversely distorting the coverage area of the exciter.

Electrical	Description
Field Range	125KHz, Low frequency electromagnetic fields
Power Source	Alkaline 9.0 volt transistor battery (Duracell MN1604 or equivalent)
Power Consumption	Less then 20mW (typical usage 50 hours)
Visual Display	3.5 digit Liquid Crystal display (LCD)
Displayed Values	**< 10:** No detected LF field or No ambient noise detected in environment **10< Value < 200:** Usable LF field detected **10< Value < 250**: Ambient noise detected **200 >:** Detected LF field over saturated
Green LED Indicator	**Not Lit:** No LF field/ambient noise detected **Flashing:** Meter set ID does not match Exciter ID **Constant:** Meter set ID matches Exciter ID
DIP Switch	Represents ID address of detected LF Exciter
General	**Description**
Construction	White polymer plastic (not waterproof)
Dimensions (H x W x D)	151mm x 82mm x 33mm (5.9 inches x 3.2 inches x 1.3 inches)
Weight	195 grams (6.8 ounces)
Temperature & Humidity	-10°to 50°C (14°to 122°F) 20% to 80% non-condensing
Warranty	One year limited warranty

NOTE: The LF Field Meter may be ordered separately from Visonic Technologies. Further information about this device may be found at: www.visonictech.com.

Ordering Information

Part Number	Description
5-LFM00125	LF Field Meter

System Configuration

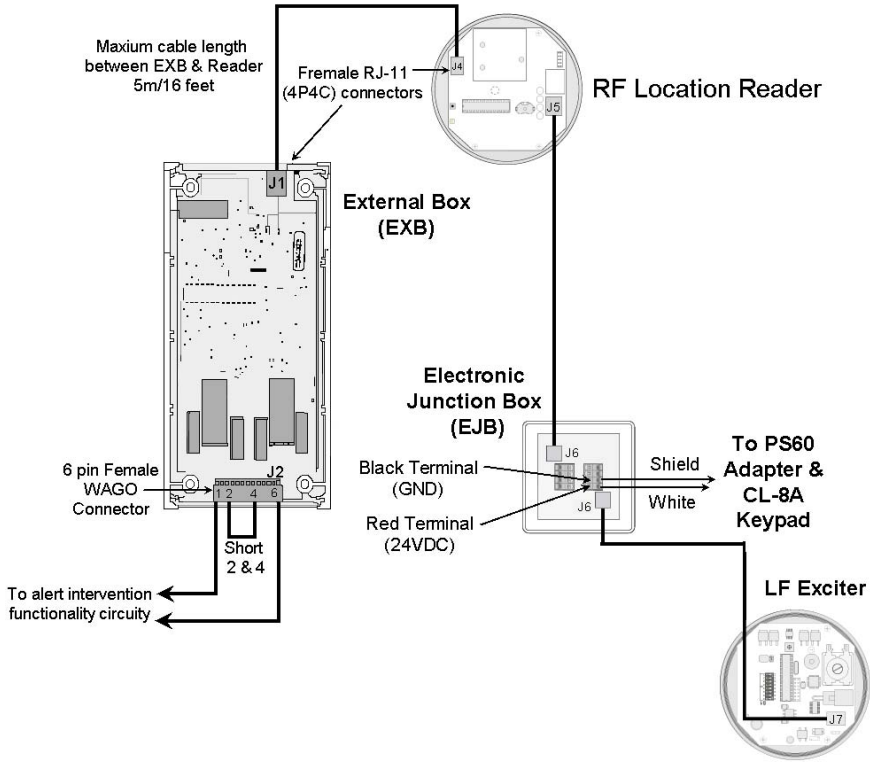
When installing the Elpas Single-Door Wandering Protection Solution, note the following:

- Plan ahead the placement of all the fixed components using an appropriate site floor plan.
- Positioning of the RF Location Reader and the LF Exciter must be done in accordance with the placement guidelines and installation considerations detailed earlier in this document.
- Lay out the cables with the shortest possible path.
- Ensure proper crimping of RJ-11and RJ-12 connectors. If you had need to splice additional cable lengths into the supplied cables, check the cabling for connectivity problems (disconnections, shorts, transposed pins). Use standard cabling testing method to verify your connections.
- Document the final wiring layout.

NOTE: Never apply DC power or try to connect to system ports before testing the cabling.

Connecting Fixed Hardware

The following diagram illustrates how the fixed components are connected:



Wiring & Connectors

The 2.5m/8.25ft RJ-11 terminated flat 4-wire AWG 26 cable (supplied with the EXB) connects the reader to the EXB.

NOTE: Maximum cable length: 5m/16 feet.

The 2.5m/8.25ft RJ-12 terminated flat 6-wire AWG 26 CAT 5 cable (P/N: 5-ERS02721) connects he RF Location Reader to the EJB.

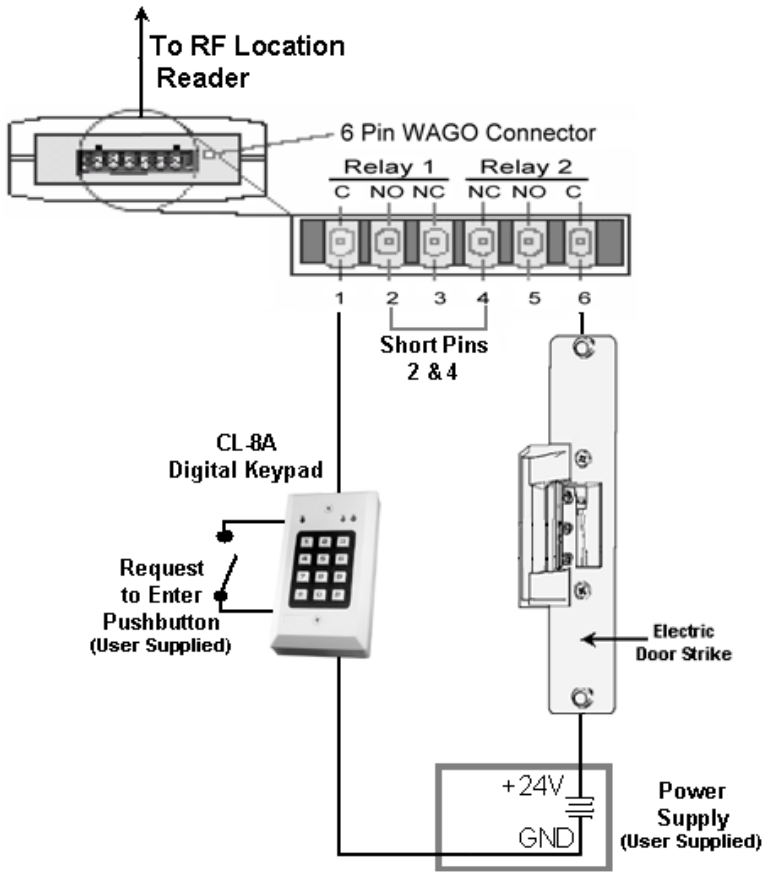
Use standard 22 AWG 4 conductor twisted pair cable alarm type cable to connect the PS60 and the CL-8A to the EJB.

Typical Alert Intervention Options

The External Box (EXB) is a simple, dry contact, dual-output relay interface that controls the kit's alert intervention functionality such as triggering local alert annunciators (such as sirens, & buzzers), energizing electric door locks as well as controlling the patient escort option.

Typical wiring configurations are shown below as examples of possible alert intervention functionalities:

Option 1: The protected door is automatically locked



Scenario

The EXB causes the electric door strike to energize and lock the protected door when a Wanderer wearing an Elpas wrist tag nears the protected doorway (enters the field of the LF Exciter).

The door will remain locked as long as the Wanderer remains within the LF field that surrounds both sides of the protected door.

If an authorized user access code is entered into the CL-8A keypad, prior to the Wanderer entering the LF field, the kit's alert functionality temporarily suspended.

Optional

Should a Wanderer be accompanied by an individual wearing the optional Personnel Badge, within the LF field that surrounds both sides of the door; the kit's alert functionalit will be suspended.

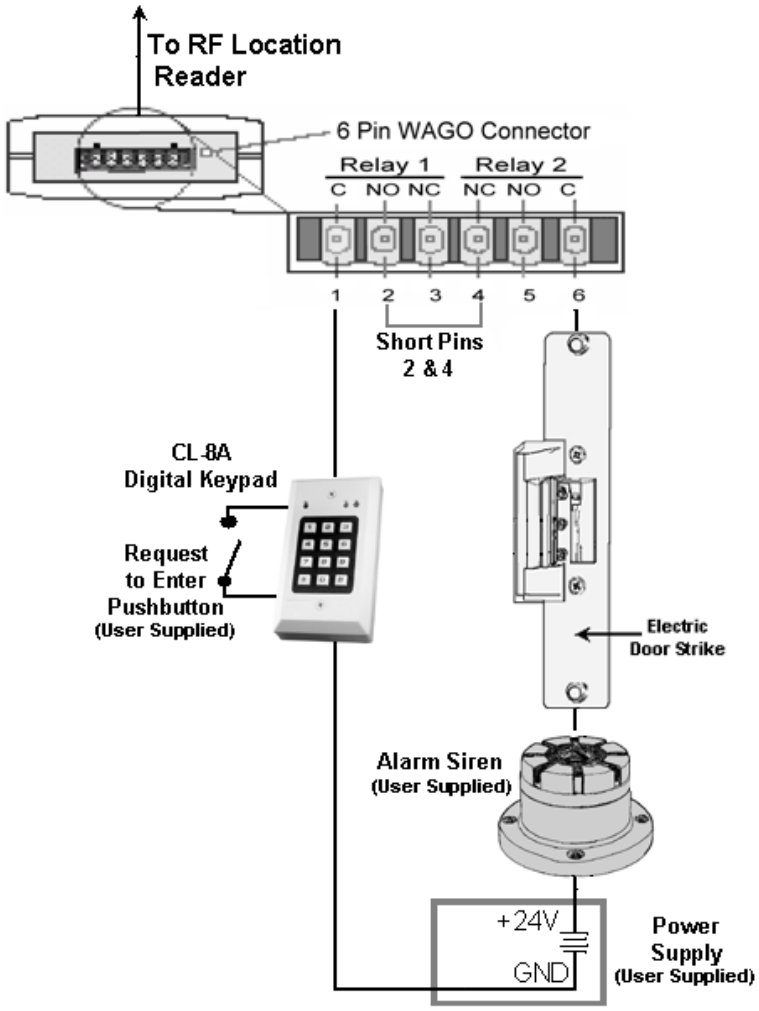
Automatic control of door locking should meet all relevant local safety codes & regulations.

Electrical Details

Use standard 22 AWG 4 conductor twisted pair cable alarm type cable to wire the items that comprise the alert intervention circuit.

NOTE: The request to enter pushbutton (NO) a the power supply are not supplied with the kit.

Option 2: The protected door is locked and a local alarm annunciator is triggered



Scenario

The EXB causes the electric door strike to energize and lock the protected door when a Wanderer wearing an Elpas wrist tag nears the protected doorway (enters the field of the LF Exciter).

Additionally a local alarm annunciator (in this example an indoor alarm siren) will also trigger The door will remain locked and the siren will continue to sound as long as the Wanderer remains within the LF field that surrounds both sides of the protected door.

If an authorized user access code is entered into the CL-8A keypad, prior to the Wanderer entering the LF field, the kit's alert functionality temporarily suspended.

Optional

Should a Wanderer be accompanied by an individual wearing the optional Personnel Badge, when opening and passing through the protected doorway the EXB will not cause the alarm siren to trigger.

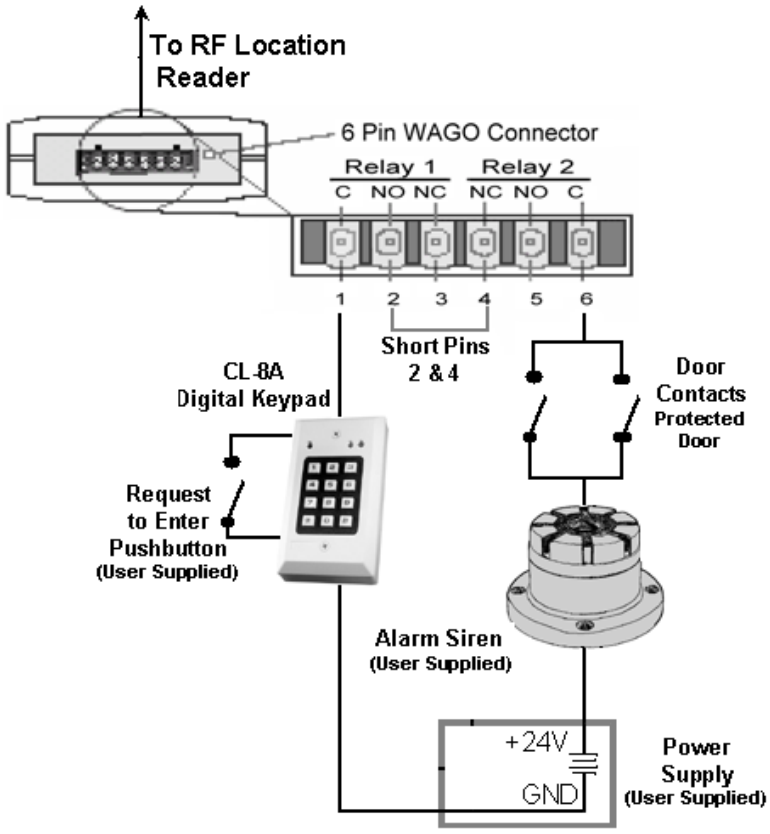
Automatic control of door locking should meet all relevant local safety codes & regulations.

Electrical Details

Use standard 22 AWG 4 conductor twisted pair cable alarm type cable to wire the items that comprise the alert intervention circuit.

NOTE: The alarm siren. The request to enter pushbutton (NO) and the power supply are not supplied with the kit.

Option 3: A local alarm siren is triggered when the protected door is opened



Scenario

The EXB causes a local alarm annunciator (in this example an alarm siren) to trigger whenever a Wanderer wearing an Elpas wrist tag opens and attempts to pass through the protected door.

The siren will continue to sound as long as the door remains open and the Wander remains within the LF field that surrounds both sides of the protected door.

If an authorized user access code is entered into the CL-8A keypad, prior to the Wanderer entering the LF field, the kit's alert functionality temporarily suspended.

Optional

Should a Wanderer be accompanied by an individual wearing the optional Personnel Badge, when opening and passing through the protected doorway the EXB will not cause the alarm siren to trigger.

NOTE: Double-doors require two door contacts (NO) to be wired in parallel to each other

Electrical Details

Use standard 22 AWG 4 conductor twisted pair cable alarm type cable to wire the items that comprise the alert intervention circuit.

NOTE: The alarm siren. The request to enter pushbutton (NO) and the power supply are not supplied with the kit.

Effective Wander Management

The Elpas Single-Door Wandering Protection Solution is designed to assist staff members, not replace them. Because the Elpas solution is so effective when installed properly and maintained, staff personnel may become complacent, thinking the kit will not fail. And as such, the responsibility for maintaining the security of wanderer remains with a conscientious alert staff. Furthermore, Elpas wrist tags may not be suitable for all high-risk residents who display an elevated probability of facility 'Elopement'. The successful monitoring of any given resident depends upon the active or passive agreement of the patient to be monitored. Therefore each patient must be properly evaluated before be assigned a wrist tag.

Reasons for Patient Wandering

- **No backup procedures:** Complacency among staff and reliance solely on the Elpas kit is the number one reason for patient elopement. Like any electronic device components could fail or be damaged, wrist tags may be removed. Effective wanderer management depends on the constant vigilance and care of each staff member.
- **Unmonitored doors:** Any door that is not equipped with the solution means that a patient who has a propensity to wander has an easy way to get out. Install Safeguard on all accesses leading outside of the designated areas to be secured and if any security device is not working properly; be certain that the exit is constantly watched by a responsible staff member until electronic security is restored.
- **Failure to respond promptly**: Some patients may be fleet of foot and if staff members do not promptly respond to an alarm, a determined patient could get away. Be certain that staff members are always within earshot of the alarm signal. Staff should be fully aware that a Wanderer alert is a priority event. Be certain that you have protocols to help staff deal with conflicts that may delay response.
- **Signaling device removal**: Some patients will try to remove their Elpas wrist tags. Staff members need to visually check each resident's tag during each shift.
- **Power failure**: The Elpas Single-Door Wandering Protection Solution will not work during a power outage. You may wish to connect the kit to the emergency power system.
- **Power disconnected:** Maintenance people, visitors, residents, or others may unplug the kit either by accident or an in an attempt to depart. Check system connections on a daily basis.

Usage Warnings and Cautions

Only trained personnel who are thoroughly familiar with Make regular inspections to check for frayed or loose bands the procedures outlined in this User Guide should operate and confirm the signaling device band is in place.

The Elpas Single-Door Wandering Protection Solution is designed to assist staff, not replace them. Staff should guard against complacency and remember that no equipment. Maintaining security of wanderers can best be achieved with conscientious alert staff.

A cognitively aware person, a person with only a few moments of lucidity or an uncooperative person can defeat the system. Properly assess each individual before the Elpas kit is used.

A staff member must be within earshot of the alarm or a remote nurse station alarm at all times. Test your Elpas system immediately after a power failure or lightning strike in the area of your facility.

Make regular inspections to check for frayed or loose bands and confirm the signaling device band is in place.

The kit's signaling devices may not be suitable for all residents with behavior problems. The successful monitoring of any given resident depends upon the active or passive agreement of the resident to be monitored. Properly assess each individual before the Elpas signaling device is used.

Do not use the Elpas system in extremely high or low temperatures. And do not use in humidity that is 90% or greater'

Relevant Staff Training

The Elpas system is a simple to use. However, to get the best from the system, all staff members involved in wanderer care needs to be familiar with the information in this Manual, as well as the established protocols of the protected facility.

Each staff member should also:

Experience the system in operation: Each staff member should pass through the monitored doorway wearing an activated wrist tag.

Operate the solution: Staff must know how an Elpas alarm is activated.

Wrist tag operation: Demonstrate how to activate a wrist tag and how to put the device on a resident or patient. Staff members also need to understand the importance of visually checking for the device every time they see the wandering patient.

Lean and practice testing procedures: Appropriate staff members need to learn why, when and how to test the kit and the healthcare positioning tags – and where to record test results.

Know your facilities 'Wanderer' protocol: All staff should be thoroughly familiar with – and practice - your facility's established protocols.

Know how to get support for the Elpas solution: Know the address and phone number for your local supplier for ordering accessories, supplies and technical assistance.

Product Information

Standards Compliance

All Elpas RF Components complies with Part 15 of the FCC Rules; and its operation is subject to the following two conditions:

- These components may not cause harmful interference
- These components must accept any interference received, including interference that may cause undesired operation.

For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

NOTE: Elpas' RF Components have 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.

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

Product Warranty

Visonic Technologies Ltd. (VT or the Company), and its affiliates, (hereinafter collectively referred to as "the Manufacturer") 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 VT. 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 VT, 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. VT 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.

VT MAKES NO EXPRESS WARRANTIES EXCEPT THOSE STATED IN THIS STATEMENT. VT DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. VT'S SOLE LIABILITY FOR WARRANTY CLAIMS IS LIMITED TO REPAIR OR TO REPLACE AS SET FORTH IN THIS STATEMENT.

VT 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 VT is held liable, whether directly or indirectly, for any loss or damage arising under this limited warranty or otherwise, regardless of cause or origin, VT'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 VT.

VT shall not, under any circumstances whatsoever, be liable for any inaccuracy, error of judgment, default, or negligence of the Company, 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 VT is unable to make such repair or replacement, VT's entire liability shall be limited to the cost of a reasonable substitute product. VT shall not be responsible for any dismantling, installation, reinstallation, purchasing, shipping, insurance, or any similar charges.

VT 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 VT, 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 the VT, 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. VT 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 VT in writing, and VT does not authorize any single individual to act on its behalf to modify or vary this statement.

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