

Wireless Lockdown Notification System

Installation and Operation Manual



Safety

Suppliers of articles for use at work are required under section 6 of the Health and Safety at Work act 1974 to ensure as reasonably as is practical that the article will be safe and without risk to health when properly used. An article is not regarded as properly used if it is used 'without regard to any relevant information or advice' relating to its use made available by the supplier.

This product should be installed, commissioned and maintained by trained service personnel in accordance with the following:

- Regulations for electrical equipment in buildings specific to the country of use
- Codes of practice
- Statutory requirements
- Any instructions specifically advised by The Manufacturer

Installers of this product are required to take such steps as necessary to ensure that all appropriate information and training is provided to anyone concerned with its use.

This equipment is certified as environmental class A and therefore designed for indoor use only at temperatures between -10°C and +55°C with a maximum relative humidity of 95%. The IP rating for the enclosure is IP30.

Operation outside of these limits may render the equipment unsafe.

Disclaimer

In no event shall The Manufacturer be liable for any damages or injury of any nature or kind, no matter how caused, that arise from the use of the equipment referred to in this manual.

Strict compliance with the safety procedures set out and referred to in this manual, and extreme care in the handling or use of the equipment, are essential to avoid or minimise the chance of personal injury or damage to the equipment.

The information, figures, illustrations, tables, specifications, and schematics contained in this manual are believed to be correct and accurate as at the date of publication or revision. However, no representation or warranty with respect to such correctness or accuracy is given or implied and The Manufacturer will not, under any circumstances, be liable to any person or corporation for any loss or damages incurred in connection with the use of this manual. The information, figures, illustrations, tables, specifications, and schematics contained in this manual are subject to change without notice.

Unauthorised modifications to the fire detection system or its installation are not permitted, as these may give rise to unacceptable health and safety hazards.

By installing this equipment on a computer network, the owner accepts full and unequivocal responsibility for ensuring that it is protected against all cyber threats and illegal tampering during the lifetime of the equipment. Any software forming part of this equipment should be used only for the purposes for which The Company supplied it. The user shall undertake no changes, modifications, conversions, translations into another computer language, or copies (except for a necessary backup copy). In no event shall The Manufacturer be liable for any equipment malfunction or damages whatsoever, including (without limitation) incidental, direct, indirect, special, and consequential damages, damages for loss of business profits, business interruption, loss of business information, or other pecuniary loss, resulting from any violation of the above prohibitions.

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Section 1**Introduction**

Kentec's lockdown system can be used in public and private buildings to provide notification of a lockdown by providing clear voice messages throughout the building/area.

The system is based on Kentec's well established and reliable wireless fire alarm technology. Wireless technology makes the system easy to install with minimum disruption to the end user. Wireless mesh communication provides a reliable system.

In the event of a lockdown situation the Kentec Lockdown Notification System provides the user quick and easy activation of up to 3 messages:

Lockdown activation message -	Notification of an activation to all building occupants, enabling them to take the necessary action to move to a place of safety.
Coded activation message -	The system will play a voice message which is only recognisable to staff allowing emergency procedures to be implemented without panicking other building occupants.
All clear message -	Notification that the lockdown event is over and it is clear to leave the place of safety.

This manual covers all of the components that can be used within a wireless lockdown system, providing details on installation, configuration, testing and maintenance.

Section 2

System components

The wireless lockdown system has multiple components which can be used together to create a lockdown notification solution. These include:

LD-WL8-LIP	Lockdown Indicator Panel
LD-WL8-TRH	Lockdown Wireless Translator Module
LD-WL8-EXP	Lockdown Wireless Expander Module
LD-WL8-LACP	Wireless Lockdown Alarm Control Panel
LD-WL8-IN	Lockdown Wireless Single Input Module
LD-WL8-OUT	Lockdown Wireless Single Output Module
LD-WL8-OUT-FS	Lockdown Wireless Single Output Module (Failsafe Fault)
LD-WL8-OV	Lockdown Wireless Voice Annunciator and VAD

The following sections of this manual detail the functionality of each part within the Wireless Lockdown system.

2.1 Wireless Lockdown Translator



The Wireless Lockdown Translator is the heart of the Wireless Lockdown system, providing monitoring and control of the wireless lockdown devices without any requirement for any additional control panels.

The Translator communicates with all wireless lockdown devices via a reliable bi-directional self-healing mesh wireless network. The fundamental operation for the lockdown system is that when an input on the Lockdown System is activated (for example via operation of a keyswitch) the activation signal is received by the Translator which will send a signal to the Voice Annunciator to play the required voice message.

The Translator would be powered from the detection loop when used with a Lockdown Indicator Panel (LIP). If no LIP is used, the Translator will need to be powered from a EN approved power supply with battery back-up.

The Translator has the capacity to support the following:

- 16 x Wireless Lockdown Input Modules
- 3 x Wireless Lockdown Output Modules
- 1 x Wireless Lockdown Output Modules (Failsafe Fault)
- 106 x Wireless Voice Annunciator with VAD/Wireless Expander Modules

The Lockdown Translator Module is preconfigured so that each address on the Translator is configured for a specific function detailed below:

Translator address	Device Type	Function
1	Wireless Lockdown Input Module	Play message 1
2	Wireless Lockdown Input Module	Play message 2
3	Wireless Lockdown Input Module	Play message 3
4	Wireless Lockdown Output Module	Message 1 playing
5	Wireless Lockdown Output Module	Message 2 playing
6	Wireless Lockdown Output Module	Message 3 playing
7	Wireless Lockdown Output (Failsafe Fault)	Failsafe fault output
8	Wireless Lockdown Input Module	Play message 1
9	Wireless Lockdown Input Module	Play message 2
10	Wireless Lockdown Input Module	Play message 3
11 - 20	Wireless Lockdown Input Module	Play message 1
21 - 126	Wireless Voice Annunciator with VAD or Wireless Expander Module	Audible/Visual warning device or radio signal booster

For details on how to configure the Expander see section 4.1

2.2 Wireless Lockdown Alarm Control Panel



The Wireless Lockdown Alarm Control Panel is an integral part of Kentec's wireless lockdown system solution. Compatible with the Wireless Lockdown Translator and Wireless Lockdown Expander Modules the Panel is a compact enclosure providing a control point for activation of lockdown messages by authorised/trained personnel.

Three key switches are provided for activation of various lockdown messages to notify building personnel of lockdown status. The key switches will operate one of three message types, as shown below:

Key Switch	Message type	Purpose
1	Lockdown	Plays a message notifying building personnel that a lockdown situation has been activated and they should head to a place of safety.
2	All Clear	Plays a message notifying building personnel that the lockdown is over and they can leave their place of safety.
3	Covert	Plays a message that only trained staff will recognise notifying them of a lockdown situation. This enables them to instigate lockdown procedures without panicking building occupants.

Each key switch on the fascia is connected to an associated Wireless Lockdown Input Module mounted inside the enclosure. When a key switch is operated it will activate its associated Input Module, and the relevant lockdown message will be played across all Wireless Lockdown Voice Annunciators on the system.

The system can support two Wireless Lockdown Alarm Control Panels providing two possible points of activation.

It is important the Input Modules within the Wireless Lockdown Alarm Control Panel are configured to the correct addresses to ensure the correct message is played when the key switch is operated.

Important!!!

The Wireless Lockdown Alarm Control Panel is not a stand-alone product and can only be used a part of a complete Wireless Lockdown System.

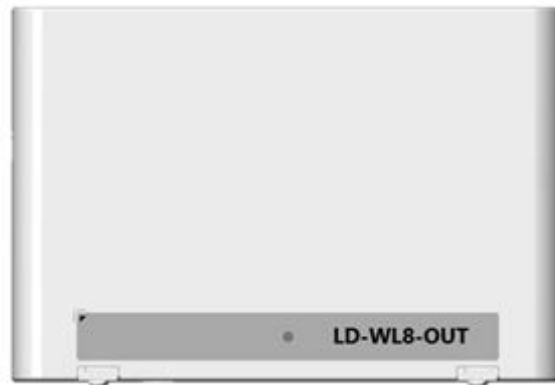
2.3 Wireless Lockdown Input Module



The Wireless Lockdown Input Module provides a single monitored input which can be used to monitor a normally open switch which closes on activation. Three of these modules are installed inside the Wireless Lockdown Alarm Control Panel, with each of the Input Modules monitoring the change in status of the connected key switch. Apart from the Input Modules within the Lockdown Alarm Control Panel the system can support an additional 10 Input Modules. These additional inputs are configured within the Translator to radio addresses 11 – 20 with the functionality “Play Lockdown Message”.

The purpose of these units is to be able to add remote activation points around the building, this can be done by connecting a conventional Manual Call Point to the input. These can be located at key points around the building for persons to activate the lockdown message in an emergency.

2.4 Wireless Lockdown Output Module



The Wireless Lockdown Output Module provides a single monitored output capable of switching up to 30VDC (Recommended) or 250VAC with a maximum rating of 8 Amps. The output is a double pole switch which is normally open and closes on activation which can be used to drive a relay (i.e. 10-2710WSR-S Identifier Auxiliary Relay) to provide a volt free output for signalling of system status to third party equipment or controlling other equipment.

In the case of the Wireless Lockdown Notification System as mentioned earlier the Translator Module has pre-allocated addresses with three addresses being allocated to the Output Module.

Translator Address	Device Type	Functionality
4	Wireless Lockdown Output Module	Message 1 playing output
5	Wireless Lockdown Output Module	Message 2 playing output
6	Wireless Lockdown Output Module	Message 3 playing output

These addresses can support 3 Output Modules which can be used to provide a volt free changeover output which will activate when a particular message is playing i.e. If the Output Module on address 4 is active the volt free changeover output will signal that Message 1 is playing.

2.5 Wireless Lockdown Output Module (Failsafe Fault)



The Wireless Lockdown Output Module (Failsafe Fault) provides a single monitored output capable of switching up to 30VDC (Recommended) or 250VAC with a maximum rating of 8 Amps. The output is a double pole switch which is normally closed and opens on activation which can be used to drive a relay (i.e. 10-2710WSR-S Identifier Auxiliary

Relay) to provide a volt free output for signalling of system status to third party equipment or controlling other equipment.

This functionality allows the output to provide the wireless lockdown system with a failsafe fault output. The failsafe operation will allow the Output Module to signal fault in any fault condition including loss of communication with the Translator Module.

This module is essential if the wireless lockdown system is being used without the Lockdown Indicator Panel to ensure the system can signal a failsafe fault. If the Lockdown Indicator Panel is used as part of the wireless system it can also provide a failsafe fault output.

2.6 Wireless Lockdown Voice Annunciator with VAD



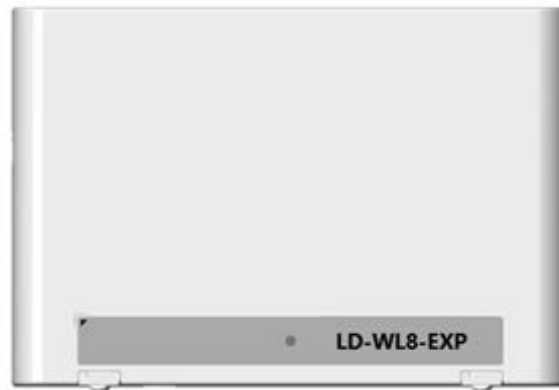
The Wireless Lockdown Voice Annunciator with VAD provides Audible and Visual notification throughout the building of a lockdown event. The Annunciator stores up to 3 voice messages which can be played on selection i.e. Activation of a Lockdown Alarm Control Panel switch. Voice messages enable clear notification of a lockdown activation preventing any confusion with any other alarm signals which may exist in the building

The three default messages provided in the annunciator are as follows:

Message no.	Message type	Message detail
Lockdown message 1	Lockdown	Double alert tone followed by the message "There is an incident in the building. Please make your way to a secure place and wait for further instructions"
Lockdown message 2	All Clear	Double alert tone followed by the message "Attention please, Attention Please. The incident is over and the All Clear can be given."
Lockdown message 3	Covert	Chime followed by the message "Can Mrs Robinson come to reception please."

The Voice Annunciator plays voice messages at a Max Sound Pressure level of 91dB, with all messages being accompanied by a flashing LED indicator. The lockdown Translator has pre-allocated addresses 21 – 126 for either Voice Annunciators or wireless lockdown Expanders.

2.7 Wireless Lockdown Expander



The Wireless Lockdown Expander is used where signal strength between the Translator and the wireless modules is insufficient to provide a reliable system. Expanders can be located around the building to improve signal strength extending wireless communication distances. Multiple Expanders strategically located around the building can provide a wireless mesh by communicating with multiple wireless devices, this enables a robust and reliable wireless communication providing wireless devices the option of multiple communication paths back to the Translator. For example, if the communication to an Expander was lost the wireless devices would automatically connect to the next available Expander with the strongest signal path to maintain wireless system functionality.

Important!!! All wireless systems require a survey to be carried prior to installation to confirm the signal strength between wireless devices and the Expanders or Translator. The wireless survey will then be able to confirm the performance of the wireless devices in their required location and confirm the requirement, number and location of Expanders.

2.8 Lockdown Indicator Panel



The Lockdown Indicator Panel provides monitoring of the Wireless Lockdown Notification System and displays detailed information on which Wireless Lockdown Input has been activated and detailed fault information for diagnostic purposes. The Panel also provides an event log storing up to 500 events for investigation of the sequence of events following an incident.

The Panel is hard wired to the Lockdown Translator Module (LD-WL8-TRH) and receives data regarding the status of the wireless system and its devices; the Panel can then display this status via its LED indications and LCD.

The Lockdown Indicator Panel is also capable of supplying power to the Wireless Lockdown Translator removing the need for a separate power supply.

Important!!

The lockdown system cannot be controlled via the Lockdown Indicator Panel; the Panel is for indication of information only.

The Panel provides the following information which can be useful to the end user, service and maintenance engineers:

- Identification and location for the device that has triggered the lockdown activation
- Indication of any fault conditions with details of fault type i.e. Device fault, battery faults, communication faults etc.
- Event log records all events/activations that occurred, useful for investigations after the event.
- Fault and lockdown active relays can be used to signal lockdown system status to other monitoring equipment.

The Lockdown Indicator Panel is based on the same technology used in the Kentec Syncro AS Addressable control with some variations to suit the requirements. Configuration of the Lockdown Indicator Panel follows the same process as the Syncro AS using the LE2 configuration software.

Section 3

Installation

This section of the manual provides the relevant installation details and recommendations for each of the components that can be part of the wireless installation manual.

Important!

Wireless Lockdown Systems should only be installed, configured and commissioned by engineers that have been trained by Kentec.

A wireless survey MUST be carried out by a trained engineer prior to installation to confirm device location, signal strength, Expander requirements etc.

The Wireless Lockdown Notification System uses the same wireless survey kit as the K-Mesh fire system devices, Kentec part number: KM-WL8-SK.

3.1 Lockdown Indicator Panel installation

It is important that when installing this Panel that the following is adhered to:

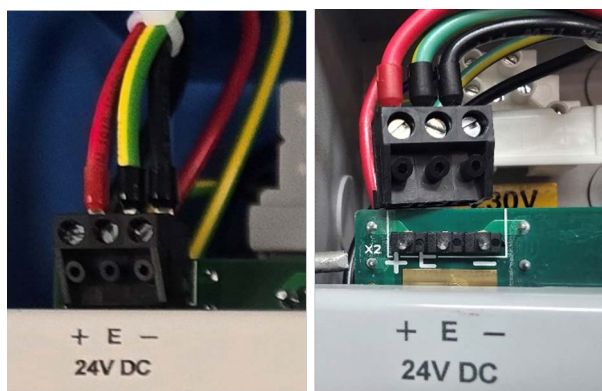
- Wear an antistatic wrist strap – the Panel contains sensitive electronic components which can be damaged by static discharges.
- Must be installed in a clean dry location, within the Panels environmental operating specification: -5°C to 35°C, Max 95% Relative Humidity (Non-condensing).
- Must be mounted on a flat surface, not subject to shock or vibration.

To make mounting of the Panel easier it is recommended to remove the Panel door and fascia plate. This provides easier access to mounting holes and prevents any damage to the PCB or door paintwork during the mounting process.

Removing the fascia assembly

Disconnect the 24V supply connector from the PCB by pulling the connector towards you.

Exposing the three pins as shown in the photos.



Keep a secure hold on the fascia plate (try to avoid touching the PCB) and remove the two fascia securing bolts shown in the picture.

Carefully lift the fascia plate assembly away from the enclosure.

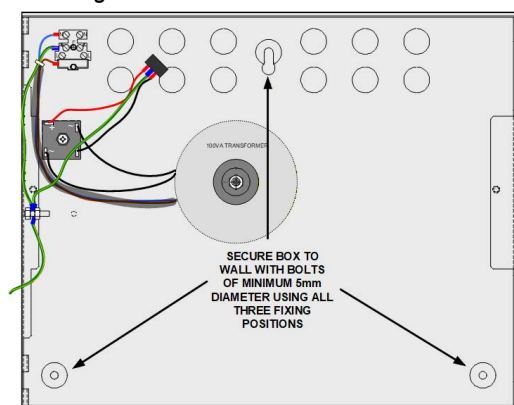
The fixing bolts and fascia assembly should be kept in a safe place until required.

Removing the Panel door



The Panel door is held in place by two hinges one at the top and one at the bottom as shown in the photograph. First disconnect the earth cable from the door and then remove the hinges using a pair of pliers.

Mounting the enclosure



The Panel enclosure is provided with three mounting points as shown in the picture. Screws or bolts of a minimum 5mm x 40mm with washers should be used. Hold the Panel on the wall and use the keyhole mounting slot to mark the position of the top screw. Remove the enclosure from the wall and fix the mounting screw into the wall.

Note: If using the rear knockouts of the enclosure these should be removed before securing the Panel to the wall.

Hang the enclosure onto the screw using the keyhole slot, using a spirit level ensure the enclosure is level and then mark and fit the two lower mounting screws.

Once the enclosure is mounted it is advisable to install the required external cabling before refitting the Panel fascia and door assemblies.

Wiring connections

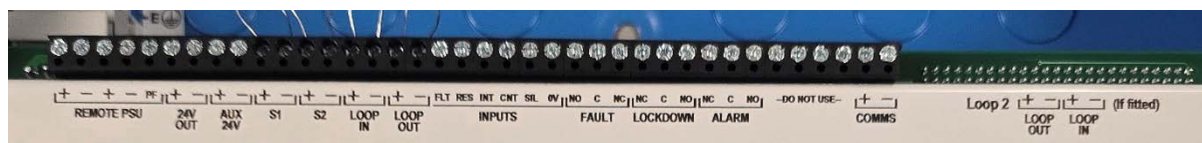
All cables coming into and out of the Panel should be glanded following the relevant electrical safety standards. Mains cabling should be kept as short as possible and routed away from the PCB and any other cables within the Panel. Multi-strand cables should be ferruled to prevent loose strands from causing a short circuit.

The Panel provides the following terminal connections:



Mains supply cabling (230V AC) is terminated into a fused terminal block located in the upper left corner of the enclosure.

Screw terminals are provided at the top of the fascia assembly for external wiring connections.



Remote PSU These terminal connections are for connection of an external EN54-4 compliant power supply. This would only be required if the Panel required larger back-up batteries than the internal power supply can support. There are two sets of terminals which allow two transmission paths, the fifth terminal PF (Power Fault) allows the Panel to monitor the status of the external power supply and indicate any faults on its fascia.

24V OUT	These terminals on the circuit board are NOT to be used. These terminals are reserved for powering additional equipment that is factory fitted only. Using these outputs to power equipment outside of the Panel enclosure will compromise the integrity of the system.
AUX 24V	These terminals provide a 24V fused at 500mA which can be used to power other equipment connected to the Panel.
S1 & S2	These terminals provide two monitored outputs for conventional sounders, these should not be required on a lockdown system as all notifications should be via the Wireless Voice Annunciators with VAD.
LOOP IN/LOOP OUT	These four terminals are for the detection loop and are used to connect the Lockdown Indicator Panel to the Wireless Lockdown Translator.
INPUTS	These terminals are NOT to be used on a lockdown system.
FAULT	These terminals provide a failsafe fault relay output (1 Amp @ 30V DC), a set of Volt Free contacts that can be used to signal the fault status of the Panel to other equipment.
LOCKDOWN	A Volt Free Changeover relay output (1 Amp @ 30V DC) that will operate on a lockdown initiation. This can be used to signal lockdown status to other equipment.
ALARM	Not applicable to the lockdown system
COMMS	A serial output which is used for connection of a repeater Panel.
LOOP 2	Loop in/Loop Out connections, these terminals will only be available when a second loop card is fitted inside the Panel.

3.2 Wireless Lockdown Translator installation

There are key requirements to consider when installing the Wireless Lockdown Translator.

Avoid installing the Translator close to:

- High voltage or high current equipment
- Large metal objects, structures or metal ceiling structures
- Fluorescent lighting fixtures
- Computer terminals, IT peripherals

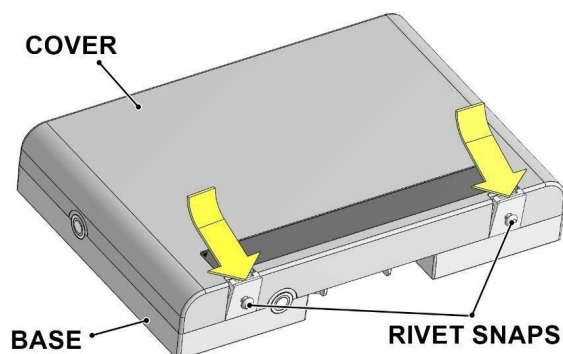
Mounting the Wireless Translator Module

The Translator should be located in the optimum location to provide the best communication signal strength for the wireless system devices.

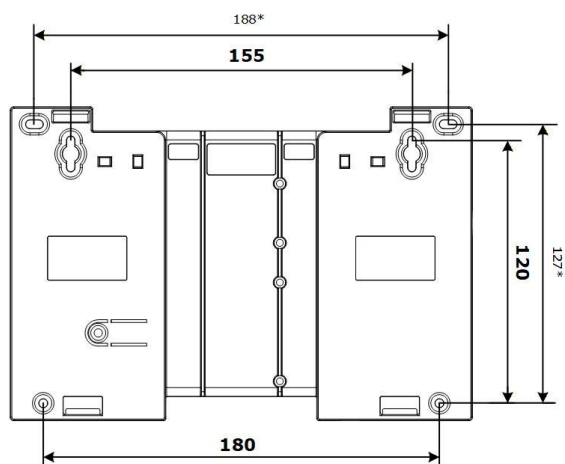
Before installing any wireless devices, a radio survey **MUST** be carried out to ensure the best signal strengths and performance.

Installation of the Translator should follow the manufacturers recommended guidelines, failure to do so may impact performance, reliability and any warranty:

- Translator should be installed 2-2.5m from the floor on a flat surface
- A minimum distance of 2 meters should be kept between the Translator and other wireless devices on the system.
- If the Lockdown Indicator Panel is installed as part of the system, there must be a minimum distance of 2m between the Panel and the Translator.



To access the mounting holes, remove the cover by gently pulling on the two cover clips to remove the two rivet snaps. Keep the rivet snaps safe as they will be needed to secure the cover back on the module.



The module provides multiple fixing points as shown in the diagram. Secure to the wall with suitable fixing screws or bolts.

Once the module has been successfully mounted external wiring connections can be made.

Installation accessories

Where additional space for cabling is required especially where surface mounting of cable is required the KM-BB0X-01 backbox can be used. The backbox provides 4 x 20mm pre-drilled cable entries and is supplied with 2 x M20 x 1.5 cable glands.

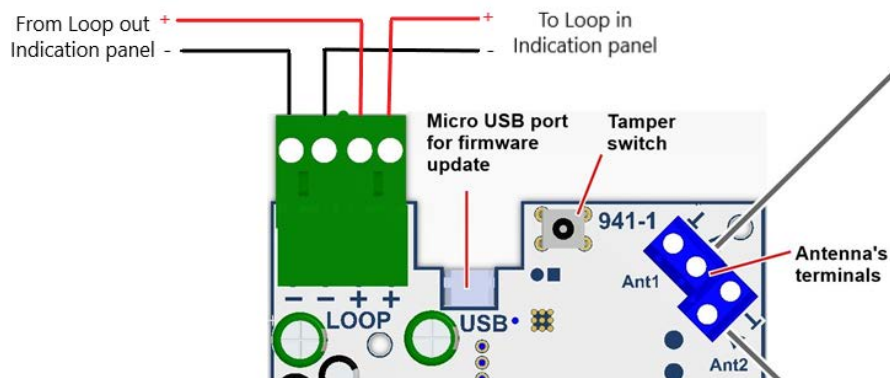
The backbox has two parts as shown in the photo below, a mounting plate which clips to the back of the of the Translator Module and then clips on to the backbox itself.



Wiring connections

System configuration will determine the connectivity of the Translator Module.

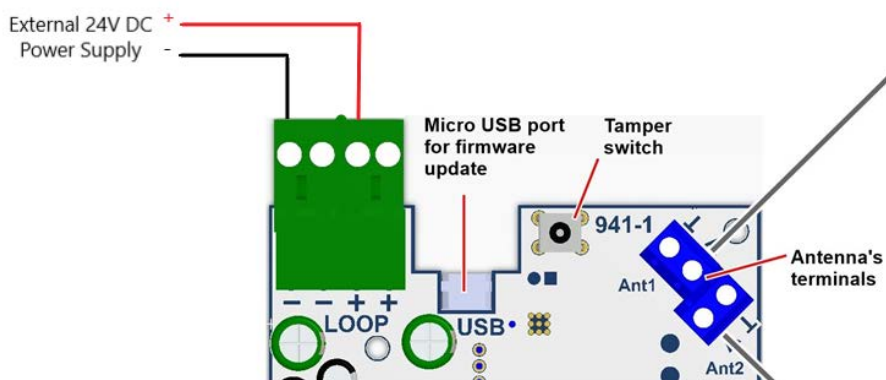
If the lockdown system includes a Lockdown Indicator Panel, the LOOP terminals on the Translator must be connected to the loop terminals of the Lockdown Indicator Panel as shown below:



The loop from the Lockdown Indicator Panel provides the voltage required to power the Translator therefore no other connections are required.

If the system is not using the Lockdown Indicator Panel, then a power source is required for the Translator Module. This should be an EN approved 24V DC with space for back-up batteries such as the Kentec 1.2A boxed PSU, model number STX2401-C.

The Translator does not have a dedicated external 24V DC input therefore the power supply is connected to the +ve and -ve of the LOOP terminals on the Translator as shown below.



3.3 Wireless Lockdown Alarm Control Panel installation

There are key requirements to consider when installing the Wireless Lockdown Alarm Control Panel.

Avoid installing the Panel close to:

- High voltage or high current equipment
- Large metal objects, structures or metal ceiling structures
- Fluorescent lighting fixtures
- Computer terminals, IT peripherals

Mounting the Wireless Lockdown Alarm Control Panel

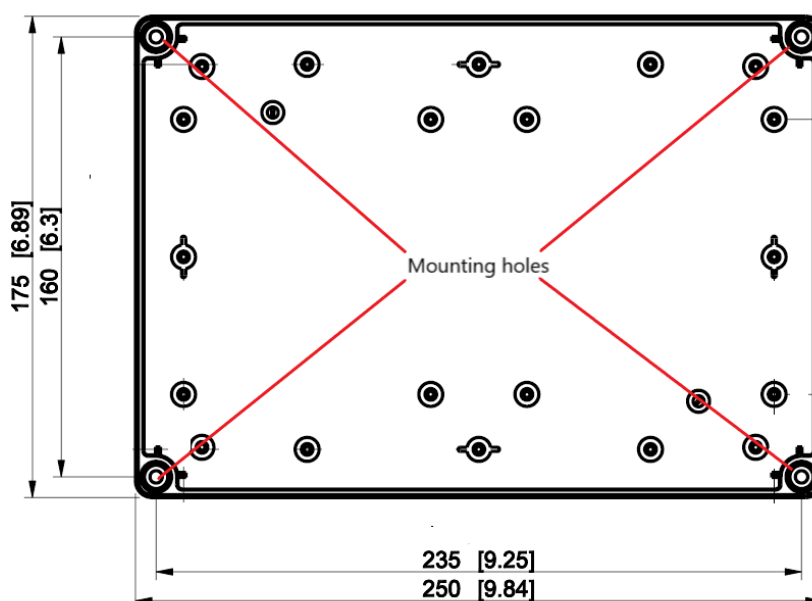
The Panel should be located in the optimum location to provide the best communication signal strength for the wireless system devices.

Before installing any wireless devices, a radio survey **MUST** be carried out to ensure the best signal strengths and performance.

The wireless lockdown alarm control Panel is provided with 4 x 4.5mm mounting holes these are accessible by removing the lid from the unit. The lid is secured by 4 plastic screws located in the corners of the unit as shown in the photograph.



Removing the cover will reveal the four mounting holes located in the same position as the cover screws. The sketch below shows the dimensions of the enclosure and positions of the mounting holes.



The unit must be installed on a flat surface with suitable securing screws or bolts.

Wiring connections

The Lockdown Alarm Control Panel is a fully wireless module therefore requires no external wiring connections required.

3.4 Wireless Lockdown Input Module

There are key requirements to consider when installing the Wireless Lockdown Input Module.

Avoid installing the module close to:

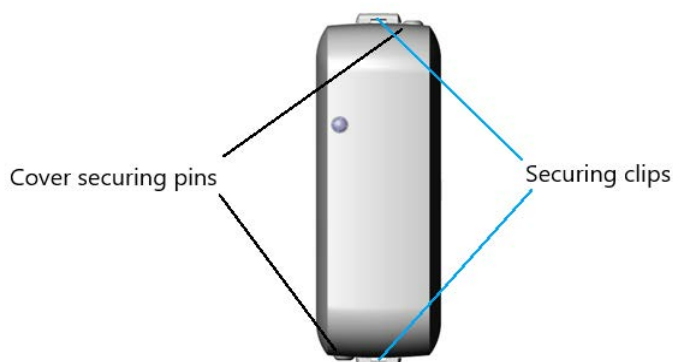
- High voltage or high current equipment
- Large metal objects, structures or metal ceiling structures
- Fluorescent lighting fixtures
- Computer terminals, IT peripherals

Mounting the Wireless Lockdown Input Module

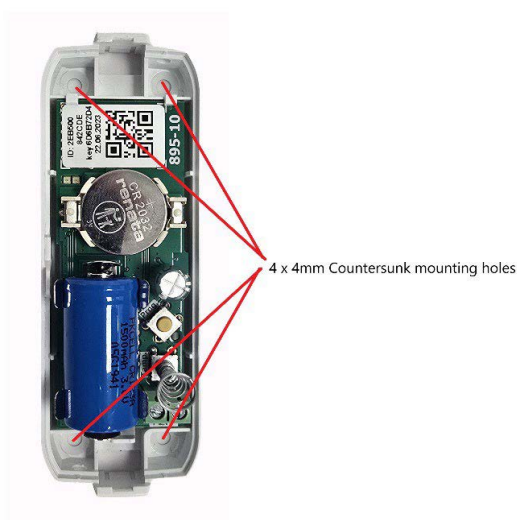
The Input Module should be located in the optimum location to provide the best communication signal strength to the Translator or Expander Modules.

Before installing any wireless devices, a radio survey **MUST** be carried out to ensure the best signal strengths and performance.

To access the mounting holes the cover must be removed from the module



Remove the two securing pins and then use a thin flat bladed screwdriver to apply pressure to one of the securing clips and the cover will lift off. The unit has four 4mm countersunk holes, positions shown in the photo below.



The unit can be mounted directly on to a clean flat surface or where additional protection is required can be installed within the KM-BOX-02 enclosure.

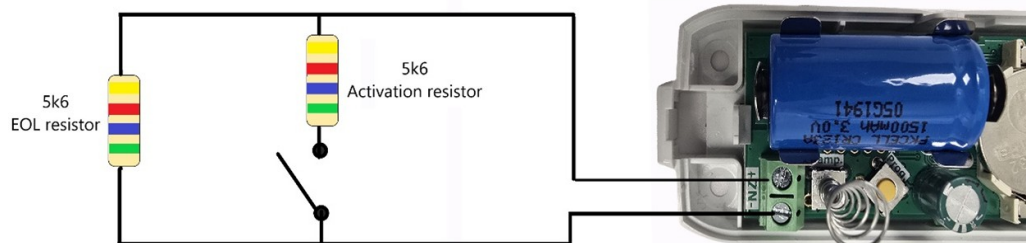


The KM-BOX-02 is an IP65 enclosure for use with the Wireless Lockdown Input Module. A transparent lid allows for visibility of the Input Modules status LED. Multiple cable gland knockouts are provided 4 x M25/32 top and bottom, 4 x M20/25 on the left and right sides. The enclosure is provided an M20 x 1.5mm cable gland.

Wiring connections

The Wireless Lockdown Input Module provides one monitored input for monitoring of a switched contact. The switch is capable of monitoring Normally Open or Normally Closed contacts, and the following sketches show the required wiring configuration in both cases.

Normally open contact wiring



Important!!

The length of cable from the Input Module to the monitored device should not exceed 3m.

The resistance across the input circuit will determine the status of the Wireless Input Module see table below:

Input Module State	Total resistance of input circuit
Fault (Short Circuit)	$\leq 0.2 K\Omega$
Alarm	0.5 - 3 $K\Omega$
Normal Operation	4-7 $K\Omega$
Alarm	10-20 $K\Omega$
Fault (Open Circuit)	$\geq 40 K\Omega$

3.5 Wireless Lockdown Output Module/Output Module (Failsafe Fault)

The Wireless Lockdown Output Module and the Wireless Lockdown Output Module (Failsafe Fault) are identical regarding the installation. The only difference between the two modules is functionality, the Wireless Lockdown Output Module is fitted with special firmware which will operate the modules output if there is a wireless communications fault.

There are key requirements to consider when installing the Wireless Lockdown Output Module.

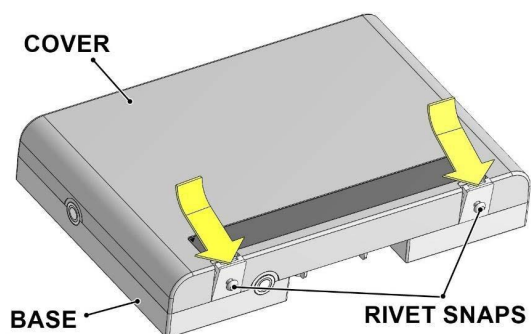
Avoid installing the module close to:

- High voltage or high current equipment
- Large metal objects, structures or metal ceiling structures
- Fluorescent lighting fixtures
- Computer terminals, IT peripherals

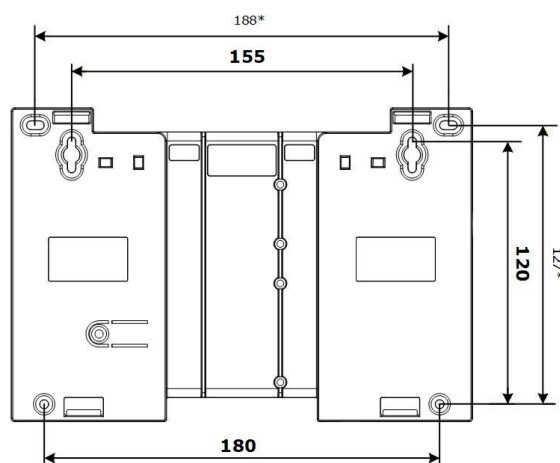
Mounting the Wireless Lockdown Output Module

The Output Module should be located in the optimum location to provide the best communication signal strength to the Translator or Expander Modules.

Before installing any wireless devices, a radio survey **MUST** be carried out to ensure the best signal strengths and performance.



To access the mounting holes, remove the cover by gently pulling on the two cover clips to remove the two rivet snaps. Keep the rivet snaps safe as they will be needed to secure the cover back on the module.



The module provides multiple fixing points as shown in the diagram. Secure to the wall with suitable fixing screws or bolts.

Once the module has been successfully mounted external wiring connections can be made.

Installation accessories

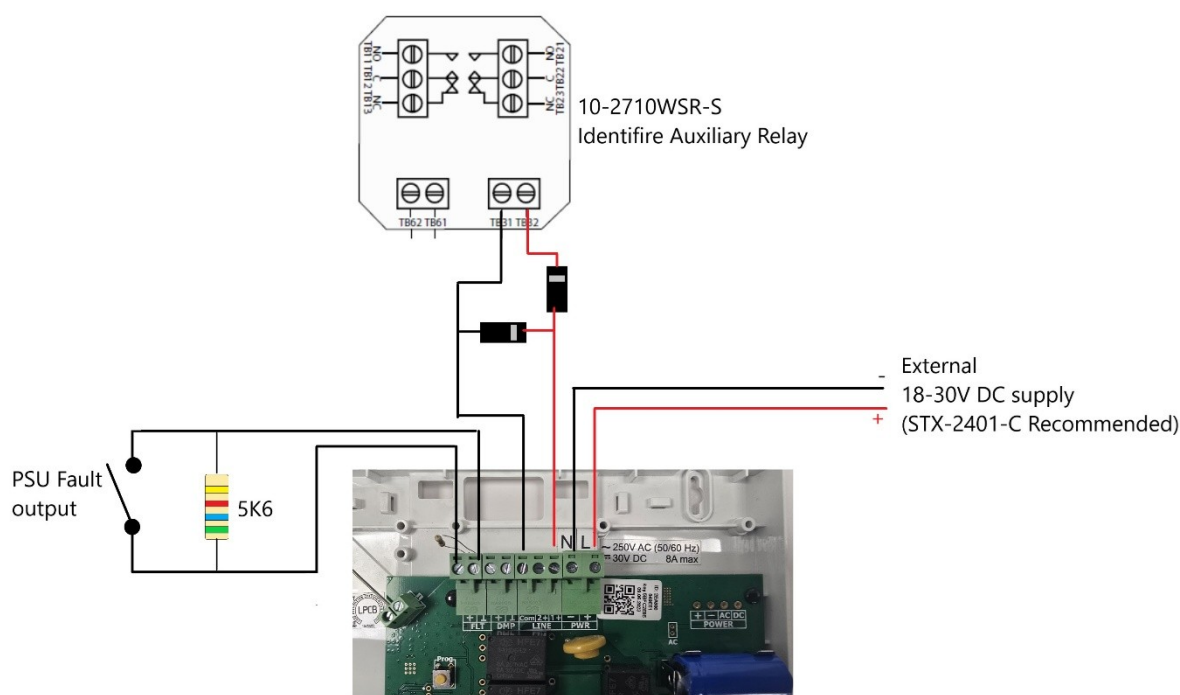
Where additional space for cabling is required especially where surface mounting of cable is required the KM-BB0X-01 backbox can be used. The backbox provides 4 x 20mm pre-drilled cable entries and is supplied with 2 x M20 x 1.5 cable glands.

The backbox has two parts as shown in the photo below, a mounting plate which clips to the back of the of the Translator Module and then clips on to the backbox itself.



Wiring connections

The Output Module provides a single output used for switching a 24V DC supply voltage, this supply voltage is used to drive a Relay Module (10-2710WSR-S) which will then provide the Volt Free Changeover Output for signalling purposes. The proposed wiring diagram for these modules is shown below:



The above configuration on the Wireless Lockdown Output Module will provide a dual pole Volt Free Change Over relay output for signalling of which lockdown message is playing.

When using the Wireless Lockdown Output Module (Failsafe Fault) it will provide a fail-safe dual pole Volt Free Change Over relay output for signalling any system fault that occurs on the wireless lockdown system.

3.6 Wireless Lockdown Voice Annunciator with VAD

The Wireless Lockdown Voice Annunciator with VAD is a fully wireless device therefore does not require any external wiring.

There are key requirements to consider when installing the Voice Annunciator with VAD.

Avoid installing the module close to:

- High voltage or high current equipment
- Large metal objects, structures or metal ceiling structures
- Fluorescent lighting fixtures
- Computer terminals, IT peripherals

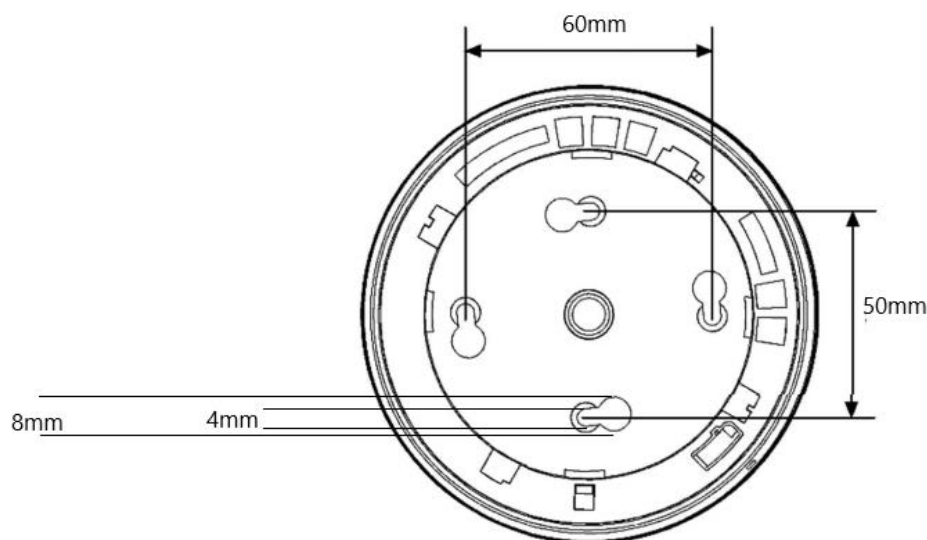
Mounting the Wireless Lockdown Voice Annunciator with VAD

The device should be located in the optimum location to provide the best communication signal strength to the Translator or Expander Modules.

Before installing any wireless devices, a radio survey **MUST** be carried out to ensure the best signal strengths and performance.

The device is provided with its mounting base, to remove the mounting base twist the device anticlockwise. Four keyhole mounting slots are provided on the base as shown in the photo below, this allows the base to be removed without undoing all the mounting screws/bolts.

Note: This device is designed to be mounted on the ceiling only.



The number of Wireless Voice Annunciator with VADs required and the mounting locations will be determined by a qualified system designer and subsequent wireless survey.

Kentec's recommendation is that the design should follow the same requirements set in BS5839 Part 1 for fire alarm notification devices.

3.7 Wireless Lockdown Expander installation

Required where wireless signal strength requires boosting and should be located in key points to create a wireless mesh network providing multiple wireless signal paths for communication redundancy.

There are key requirements to consider when installing the Wireless Lockdown Expander.

Avoid installing the Expander close to:

- High voltage or high current equipment
- Large metal objects, structures or metal ceiling structures

- Fluorescent lighting fixtures
- Computer terminals, IT peripherals

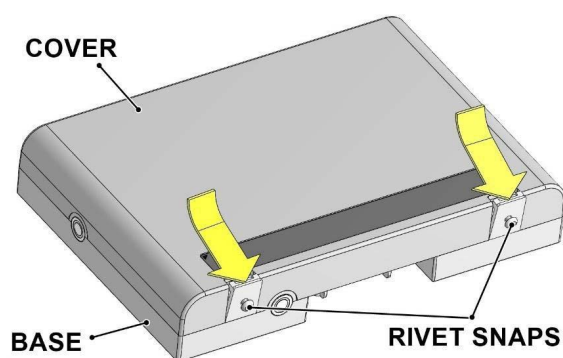
Mounting the Wireless Lockdown Expander Module

The Expander should be located in the optimum location to provide the best communication signal strength for the wireless system devices.

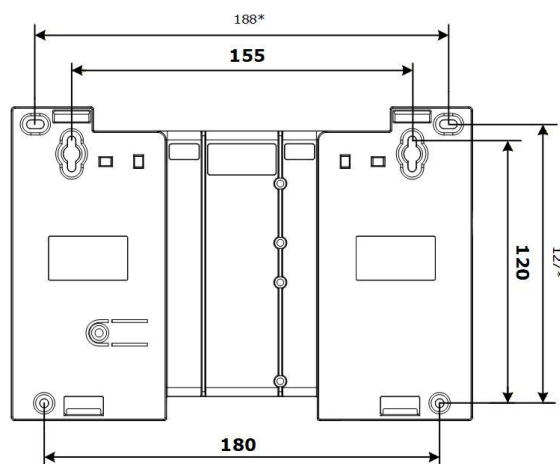
Before installing any wireless devices, a radio survey **MUST** be carried out to ensure the best signal strengths and performance.

Installation of the Expander should follow the manufacturers recommended guidelines, failure to do so may impact performance, reliability and any warranty:

- Expander should be installed 2 - 2.5m from the floor on a flat surface
- A minimum distance of 2meters should be kept between the Expander and other wireless devices on the system.



To access the mounting holes, remove the cover by gently pulling on the two cover clips to remove the two rivet snaps. Keep the rivet snaps safe as they will be needed to secure the cover back on the module.



The module provides multiple fixing points as shown in the diagram. Secure to the wall with suitable fixing screws or bolts.

Once the module has been successfully mounted external wiring connections can be made.

Installation accessories

Where additional space for cabling is required especially where surface mounting of cable is required the KM-BB0X-01 backbox can be used. The backbox provides 4 x 20mm pre-drilled cable entries and is supplied with 2 x M20 x 1.5 cable glands.

The backbox has two parts as shown in the photo below, a mounting plate which clips to the back of the of the Expander Module and then clips on to the backbox itself.

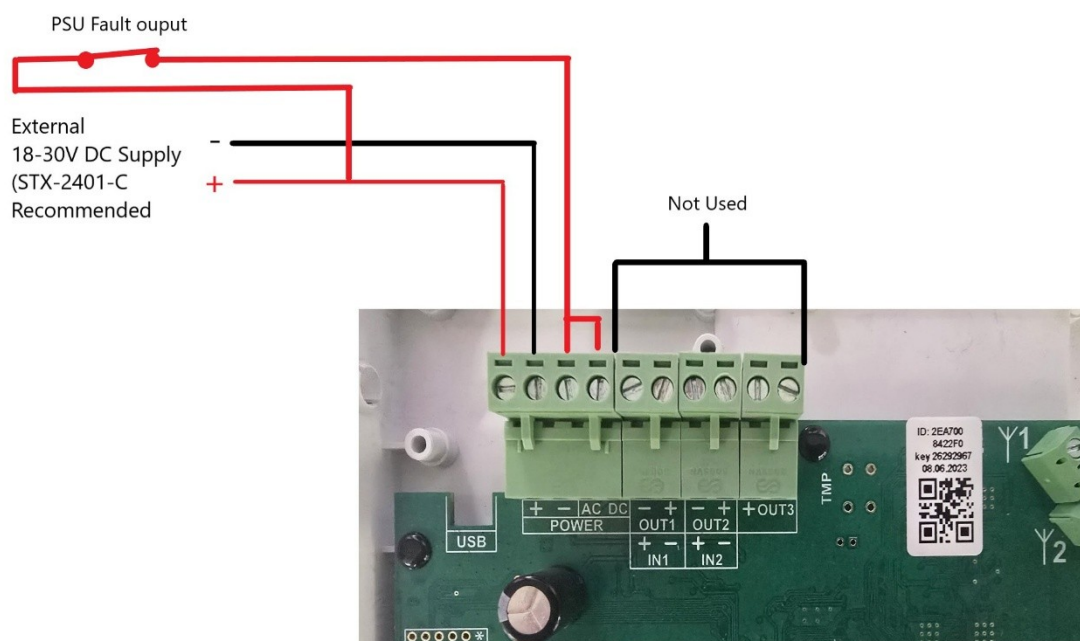


Wiring connections

The Wireless Lockdown Expander requires a 24v supply with battery back-up to operate. We recommend Kentec part STX-2401-C. No other external wiring connections are required for this unit.

It is necessary to be able to monitor the power supply, which is being used to power the Expander, as shown this can done through the Expander by routing the +ve DC Supply Line through the power supplies Normally Closed failsafe fault output and into the AC and DC monitoring terminals on the Expander.

All other terminals within the Expander as shown are not in use.



Section 4

System configuration

As already mentioned in this manual the Wireless Lockdown Notification system has pre-allocated fixed addresses for the Wireless Lockdown devices. Therefore, the configuration process detailed in this manual must be followed exactly to ensure correct operation of the system.

4.1 Wireless Lockdown Translator configuration

To configure the Translator, you will require a PC/Laptop with the K-Mesh wireless configuration software installed.

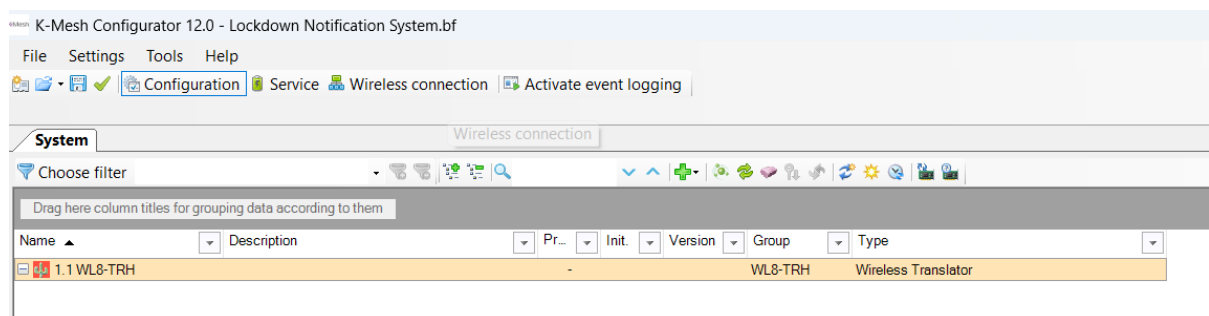
It is important you have a wireless lockdown Translator with the required firmware in, to do this power up the Translator and check the LCD screen on the Translator internal PCB. This should show "WL8-TRH LOCKDOWN A1" as shown in the drawing below:



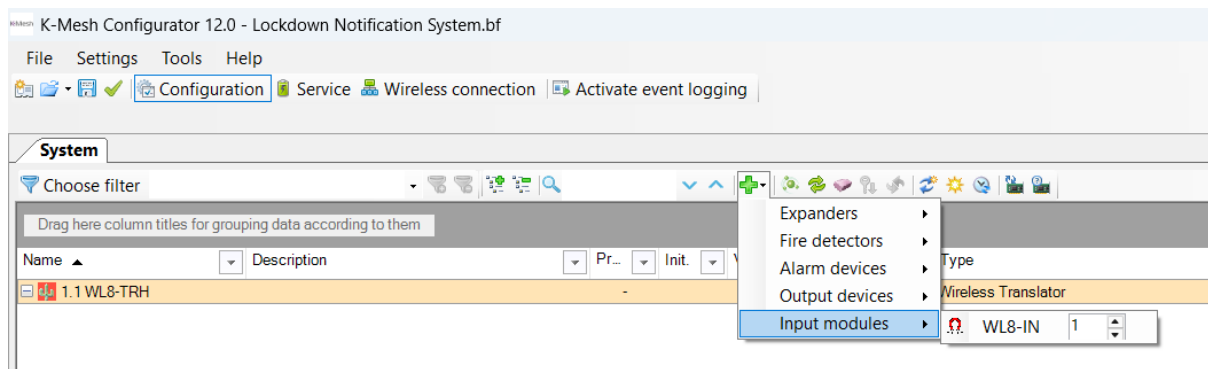
If the Translator LCD does not show as above do not use.

Creating a lockdown config file

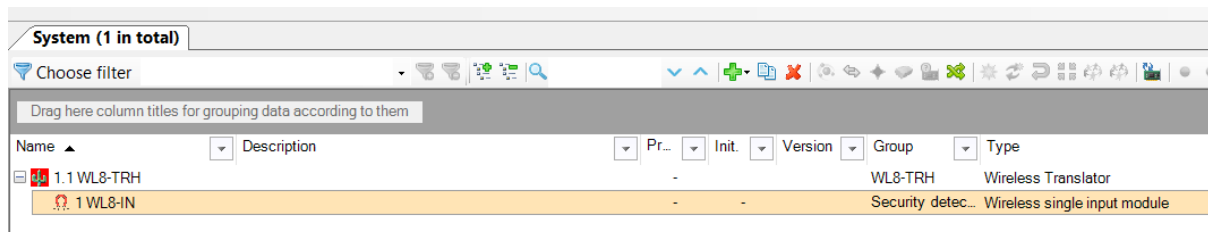
To create your lockdown configuration file, open the configuration software so the main screen is shown as below:



Highlight the Translator line **WL8-TRH** line and click the  icon on the menu bar.

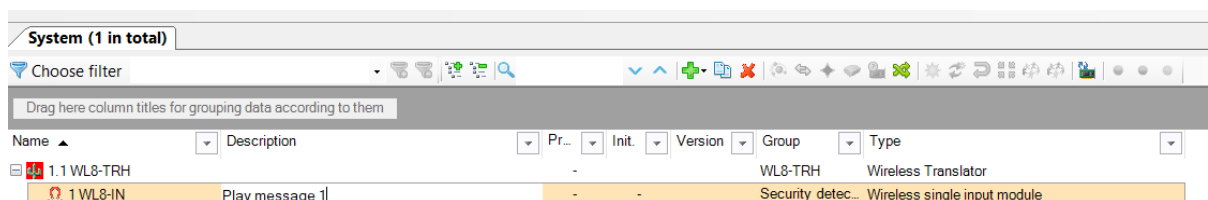


Select the device to add from the drop down list, you can also select how many of the selected device type to add to the configuration.



It is recommended that a description is added to each device so the function of each device is clear. To enter the description double click in the description column for the device you wish to add a description to.

Note: Description text is maximum 16 characters including spaces.



Continue to add the devices to meet your configuration requirement.

An example configuration showing the list of devices is shown in the following screenshot.

The example consists of the following:

- 1 x Wireless Lockdown Translator
- 3 x Wireless Lockdown Input Modules (Lockdown Alarm Control Panel)
- 3 x Wireless Lockdown Output Modules (Message playing status)
- 1 x Wireless Lockdown Output Module (Fault signalling - Failsafe Fault)
- 6 x Wireless Lockdown Input Modules (Lockdown Manual Call Point)
- 16 x Wireless Lockdown Voice Annunciators with VAD
- 3 x Wireless Lockdown Expanders

System (32 in total)						
Choose filter						
Drag here column titles for grouping data according to them						
Name	Description	Pr...	Init.	Version	Group	Type
1.1 WL8-TRH		-	-		WL8-TRH	Wireless Translator
1 WL8-IN	Play message 1	-	-		Security detec...	Wireless single input module
2 WL8-IN	Play message 2	-	-		Security detec...	Wireless single input module
3 WL8-IN	Play message 3	-	-		Security detec...	Wireless single input module
4 WL8-OUT	Msg 1 playing	-	-		Output devices	Wireless output module
5 WL8-OUT	Msg 2 playing	-	-		Output devices	Wireless output module
6 WL8-OUT	Msg 3 playing	-	-		Output devices	Wireless output module
7 WL8-OUT	Failsafe fault	-	-		Output devices	Wireless output module
8 WL8-IN	Lockdown MCP 1	-	-		Security detec...	Wireless single input module
9 WL8-IN	Lockdown MCP 2	-	-		Security detec...	Wireless single input module
10 WL8-IN	Lockdown MCP 3	-	-		Security detec...	Wireless single input module
11 WL8-IN	Lockdown MCP 4	-	-		Security detec...	Wireless single input module
12 WL8-IN	Lockdown MCP 5	-	-		Security detec...	Wireless single input module
16 WL8-IN	Lockdown MCP 6	-	-		Security detec...	Wireless single input module
13 WL8-OV	Lockdown Snd 1	-	-		Alarm devices	Wireless smoke detector with built-in voice soun...
14 WL8-OV	Lockdown Snd 2	-	-		Alarm devices	Wireless smoke detector with built-in voice soun...
15 WL8-OV	Lockdown Snd 3	-	-		Alarm devices	Wireless smoke detector with built-in voice soun...
17 WL8-OV	Lockdown Snd 4	-	-		Alarm devices	Wireless smoke detector with built-in voice soun...
18 WL8-OV	Lockdown Snd 5	-	-		Alarm devices	Wireless smoke detector with built-in voice soun...
19 WL8-OV	Lockdown Snd 6	-	-		Alarm devices	Wireless smoke detector with built-in voice soun...
20 WL8-OV	Lockdown Snd 7	-	-		Alarm devices	Wireless smoke detector with built-in voice soun...
21 WL8-OV	Lockdown Snd 8	-	-		Alarm devices	Wireless smoke detector with built-in voice soun...
22 WL8-OV	Lockdown Snd 9	-	-		Alarm devices	Wireless smoke detector with built-in voice soun...
23 WL8-OV	Lockdown Snd 10	-	-		Alarm devices	Wireless smoke detector with built-in voice soun...
25 WL8-OV	Lockdown Snd 11	-	-		Alarm devices	Wireless smoke detector with built-in voice soun...
26 WL8-OV	Lockdown Snd 12	-	-		Alarm devices	Wireless smoke detector with built-in voice soun...
27 WL8-OV	Lockdown Snd 13	-	-		Alarm devices	Wireless smoke detector with built-in voice soun...
29 WL8-OV	Lockdown Snd 14	-	-		Alarm devices	Wireless smoke detector with built-in voice soun...
30 WL8-OV	Lockdown Snd 15	-	-		Alarm devices	Wireless smoke detector with built-in voice soun...
31 WL8-OV	Lockdown Snd 16	-	-		Alarm devices	Wireless smoke detector with built-in voice soun...
1 WL8-EXP		-	-		Expanders	Wireless expander module
2 WL8-EXP		-	-		Expanders	Wireless expander module
3 WL8-EXP		-	-		Expanders	Wireless expander module

The devices when added to the system are not all aligned to the required addresses associated with Wireless Lockdown system functionality and therefore some devices will need to be allocated new addresses.

4.2 Wireless Lockdown System device addressing

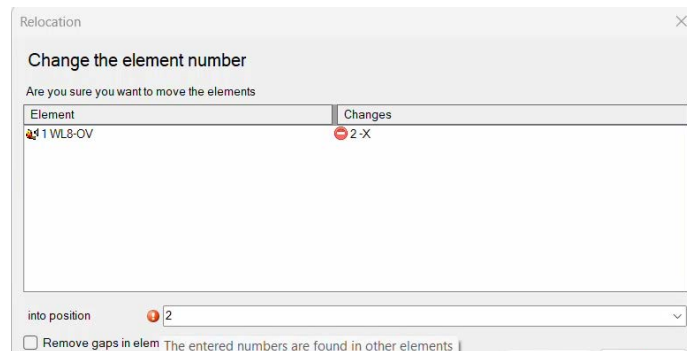
As stated previously in this manual, for the lockdown system to operate as intended specific functionality has been added to specific wireless addresses. The table below is a reminder of the device address allocation for the Wireless Lockdown System.

Translator address	Device Type	Function
1	Wireless Lockdown Input Module	Play message 1
2	Wireless Lockdown Input Module	Play message 2
3	Wireless Lockdown Input Module	Play message 3
4	Wireless Lockdown Output Module	Message 1 playing
5	Wireless Lockdown Output Module	Message 2 playing
6	Wireless Lockdown Output Module	Message 3 playing
7	Wireless Lockdown Output (Failsafe Fault)	Failsafe fault output
8	Wireless Lockdown Input Module	Play message 1
9	Wireless Lockdown Input Module	Play message 2

10	Wireless Lockdown Input Module	Play message 3
11 - 20	Wireless Lockdown Input Module	Play message 1
21 - 126	Wireless Voice Annunciator with VAD or Wireless Expander Module	Audible/Visual warning device or radio signal booster

The configuration created in the last section requires some device address changes to comply to the above table.

Note: When changing device addresses always start by re-addressing the highest device address first, if you attempt to address to a device that is already used the following window will appear asking you to relocate the device to a different address.

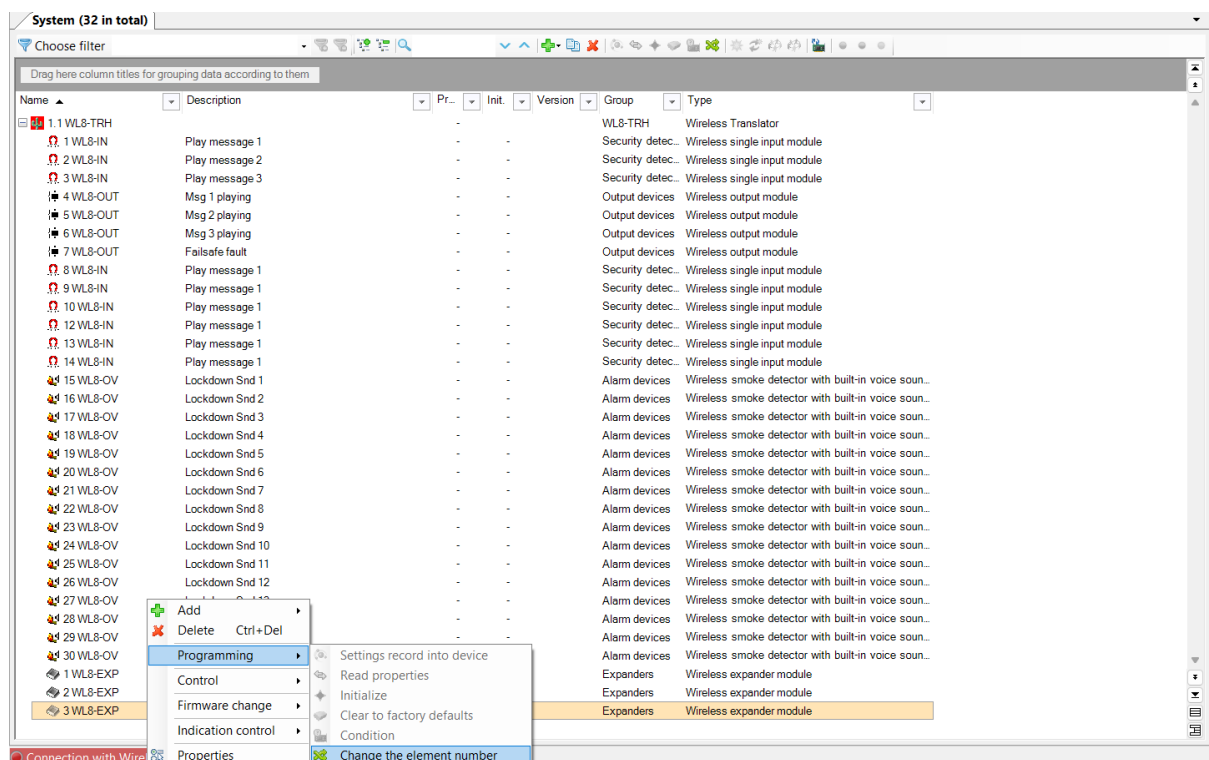


In our example configuration the Wireless Lockdown Inputs associated with the playing of message 1 must be set from address 11 to 20 as shown on the table. Wireless Lockdown Voice Annunciators and Expanders must start their addresses at 21.

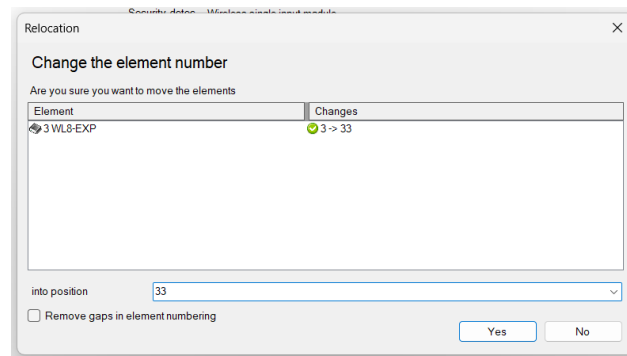
Therefore, the Wireless Expander currently at the bottom of the device list would need to be address, with the following Voice Annunciators and Expanders to be numbered in descending order from that.

Once all Voice Annunciators and Expander addresses have been changed to the correct range the Wireless Input Modules on addresses 8-14 would need to be moved to address 11-16 to match the allocated address table.

To change a device's wireless address right click on the device to open the menu select **Programming** and then **Change the element number** as shown in the screenshot.



A **Change the element number** window will appear. Click on the **into position** box and type the new address as shown in the following screenshot.



Click **Yes** to accept the change.

Repeat the process for all of the addresses that need to be changed to match the Wireless Lockdown address allocations.

The following screenshot shows the addresses re-allocated in accordance to the Lockdown system requirements for the example config:

The screenshot displays the configuration software interface. The main window shows a list of 32 system elements. The 'Name' column lists elements like '1 WL8-TRH', '1 WL8-IN', '2 WL8-IN', etc. The 'Description' column provides details for each. The 'Type' column categorizes them as 'Wireless Translator', 'Security detec...', 'Output devices', 'Alarm devices', 'Expander modules', etc. On the right, the 'Properties' panel is open for the selected 'Mag 3 playing' element, showing details like 'Type: Wireless output module', 'Number: 6', and various control settings. Below the properties, a 'Statistics' table shows the quantity of different device types.

Statistics	Quantity
Child devices	32
Expander modules	3
WL8-EXP	3
Alarm devices	16
WL8-OV	16
Security detectors	9
WL8-IN	9
Output devices	4
WL8-OUT	4
Traffic	
Expected traffic, %	0.16

The additional lockdown activation inputs for message 1 (WL8-IN) are allocated from wireless address 11, and the Lockdown Voice Annunciators (WL8-OV) and Expanders are allocated from address 21.

4.3 Wireless Device Initialisation

Important!

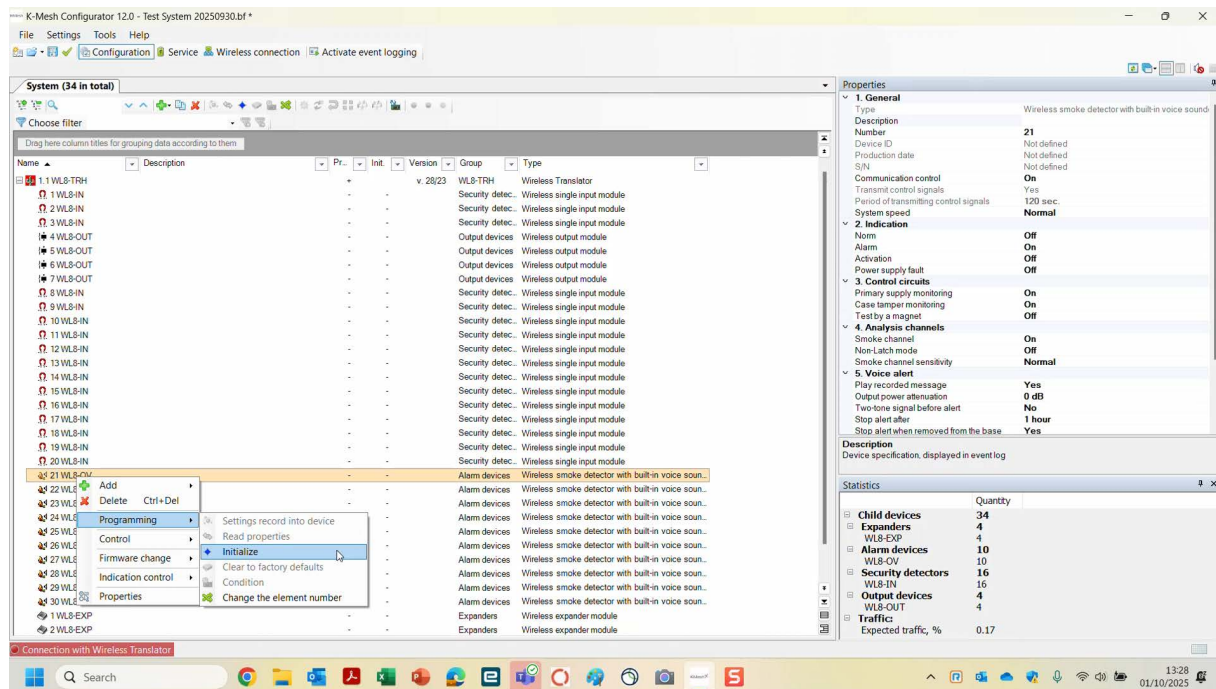
Initialisation of Wireless Lockdown devices **MUST** only be done via the configuration software.

Initialising the wireless devices onto the Translator can be carried out before attending site to reduce installation times.

To initialise the devices, you will require the laptop running the configuration software, the created configuration file, and the powered Wireless Lockdown Translator Module.

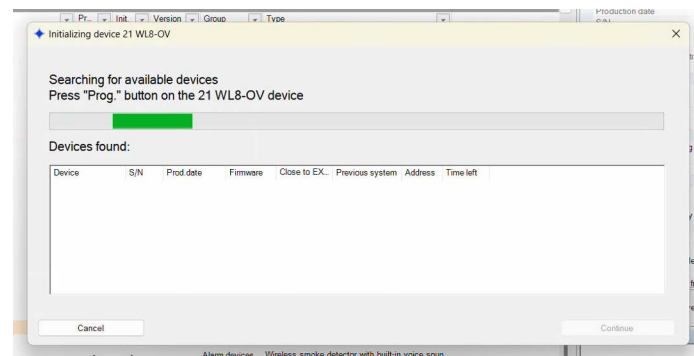
Connect the laptop to the Translator.

On the software configuration screen select the device to initialise right click on it and select **Programming** and **Initialise** options as shown in the following screenshot.

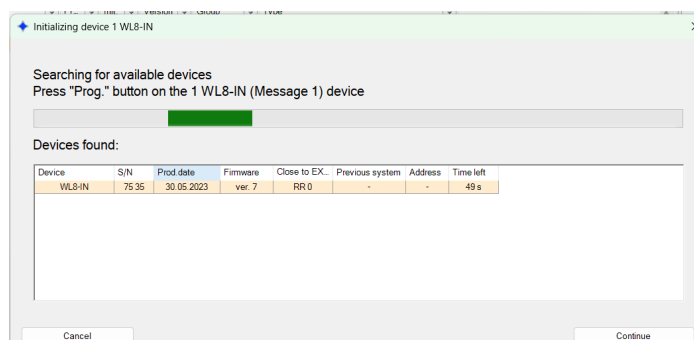


The initialising device window will appear containing the instruction to press the “Prog” button on the device selected.

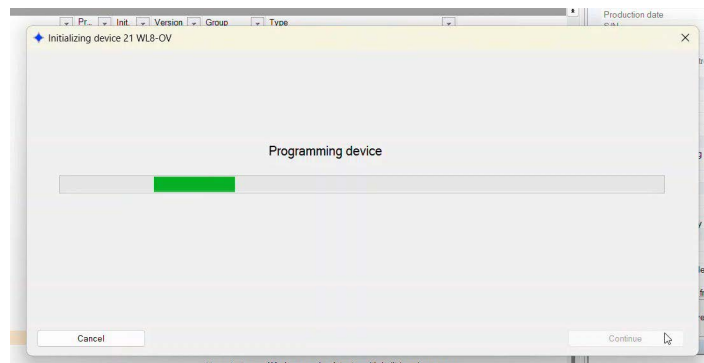
All wireless devices have a **Prog** button, on the Voice Annunciators (LD-WL8-OV) this is on the back of the device visible by removing the mounting base. On Input Modules, Output Modules and Expanders the **Prog** is located internally on the PCB therefore it is necessary to remove the cover on these devices to access.



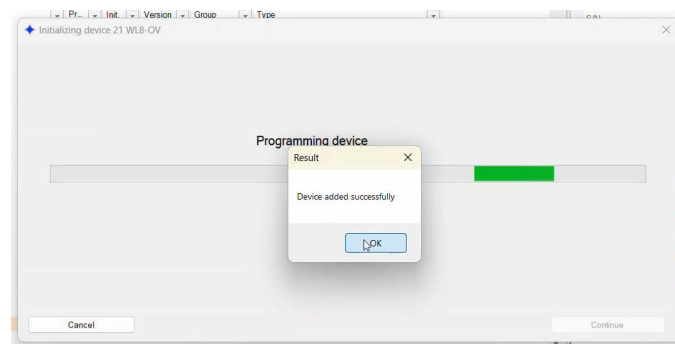
Press the **Prog** button on the wireless device and the details will appear in the devices found box, as shown below. Release the Prog button on the device, when the device is found the display will show the device details. Confirm the serial number on the display matches the one on the device label.



Click **Continue** button and the programming device screen will be displayed.



Once complete the message **Device added successfully** will appear.



This device has now been initialised.

The process can be completed for all wireless devices on the system.

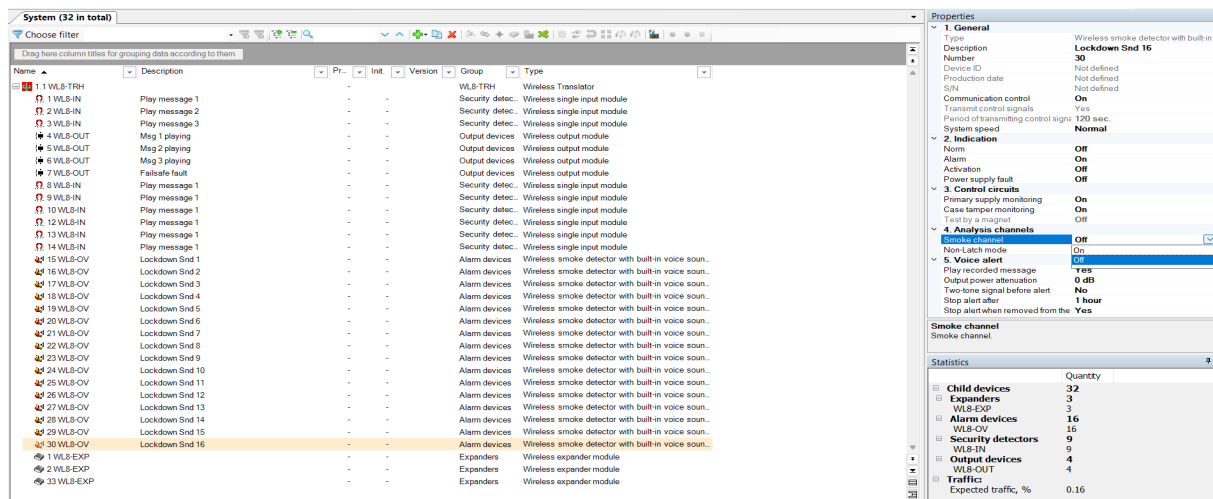
4.4 LD-WL8-OV Lockdown specific configuration

There are configuration options specific to the Wireless Lockdown Voice Annunciator with VAD which need to be considered. This section covers these configuration options/requirements.

4.4.1 LD-WL8-OV smoke channel disablement

The LD-WL8-OV Wireless Lockdown Voice Annunciator with VAD is based on the K-Mesh KM-WL8-OV Optical Smoke Detector with Voice Annunciator and VAD. For the purposes of the Wireless Lockdown System the optical smoke detector element of the LD-WL8-OV **MUST** be disabled.

To ensure the smoke element is disabled select each WL8-OV device in turn, go to the properties window and in section **4. Analysis channels** select **Smoke channel** to **Off** as shown in the following screenshot.



4.4.2 LD-WL8-0V Voice message programming

The Wireless Voice Annunciator is provided with three default messages as already mentioned in this manual:

Message no.	Message type	Message detail
Lockdown message 1	Lockdown	Double alert tone followed by the message “There is an incident in the building. Please make your way to a secure place and wait for further instructions”
Lockdown message 2	All Clear	Double alert tone followed by the message “Attention please, Attention Please. The incident is over and the All Clear can be given.”
Lockdown message 3	Covert	Chime followed by the message “Can Mrs Robinson come to reception please.”

These messages may not be suitable for all requirements therefore it is possible to re-program the LD-WL8-OV with customised messages. This section of the manual provides instruction on how to do this.

Important!

Re-programming of the LD-WL8-OV shall only be carried out by qualified engineers that have been trained by Kentec or a Kentec approved trainer.

Equipment required

To be able to program the LD-WL8-OV voice messages the following equipment will be required:

Laptop installed with K-Mesh configuration software

K-Mesh Voice Message Controller Tool – Part code KM-WL8-FWR

Voice message specifications

There are specific requirements regarding the message formatting of voice messages for use in the LD-WL8-OV, these are as follows:

File type: *.wav file, 16KHz, 8 Bit

Maximum single message duration: 18 seconds

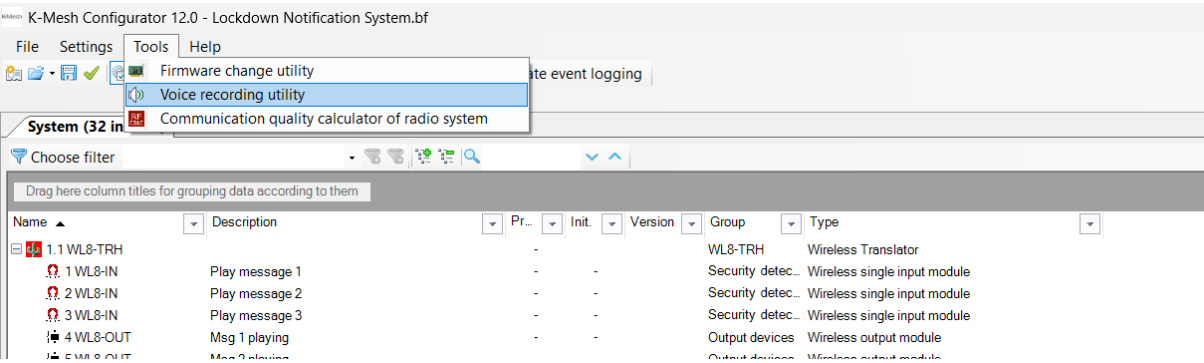
Max total duration for three messages: 32 seconds

The following shows an example of the default lockdown message durations:

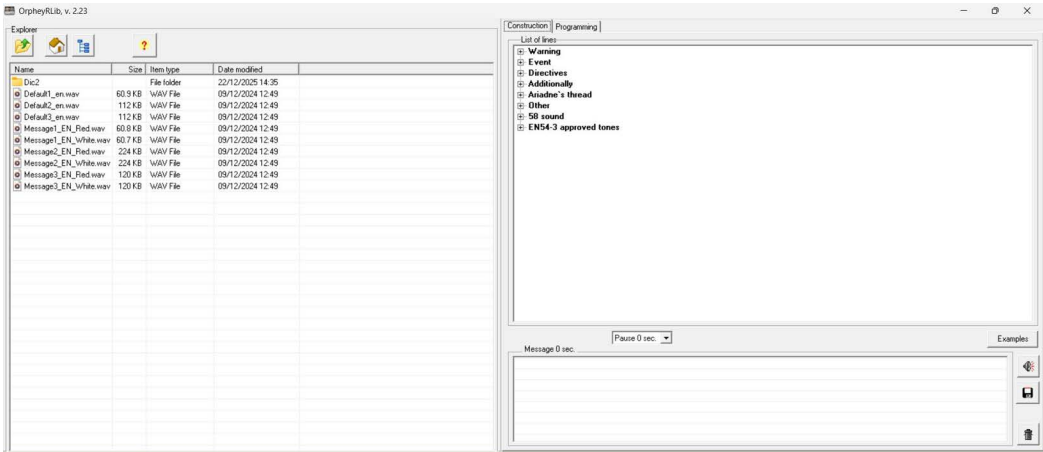
	Duration
Lockdown.wav	14 sec.
Evacuate.wav	7 sec.
Covert.wav	4 sec.
Total/Available	25/7 sec.

Programming LD-WL8-OV voice messages

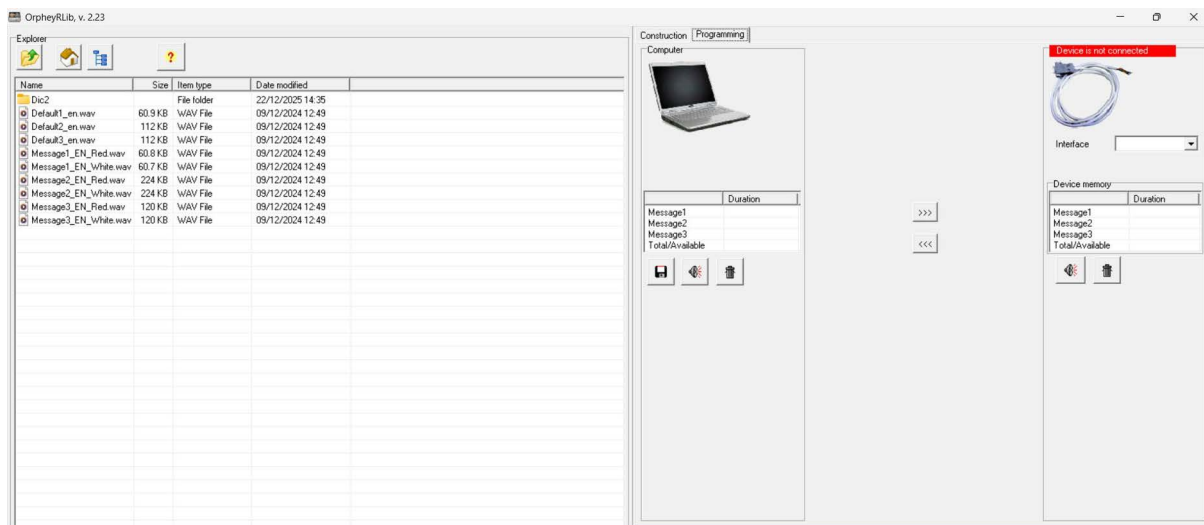
To program voice messages, open the K-Mesh configuration tool and go to the **Tools** menu and select the **Voice recording utility**



The **OrpheyRlib** window will open.

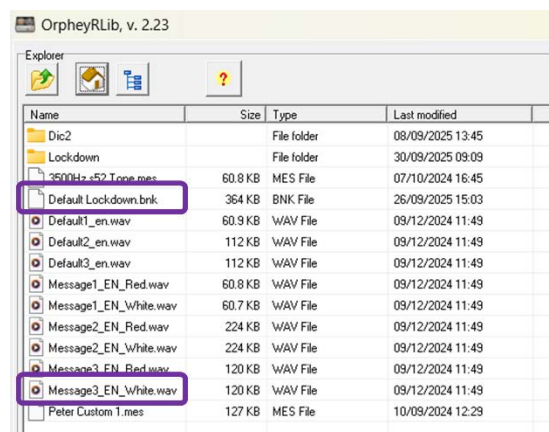


On the window select the **Programming** tab to display the programming screen as shown in the following screenshot.

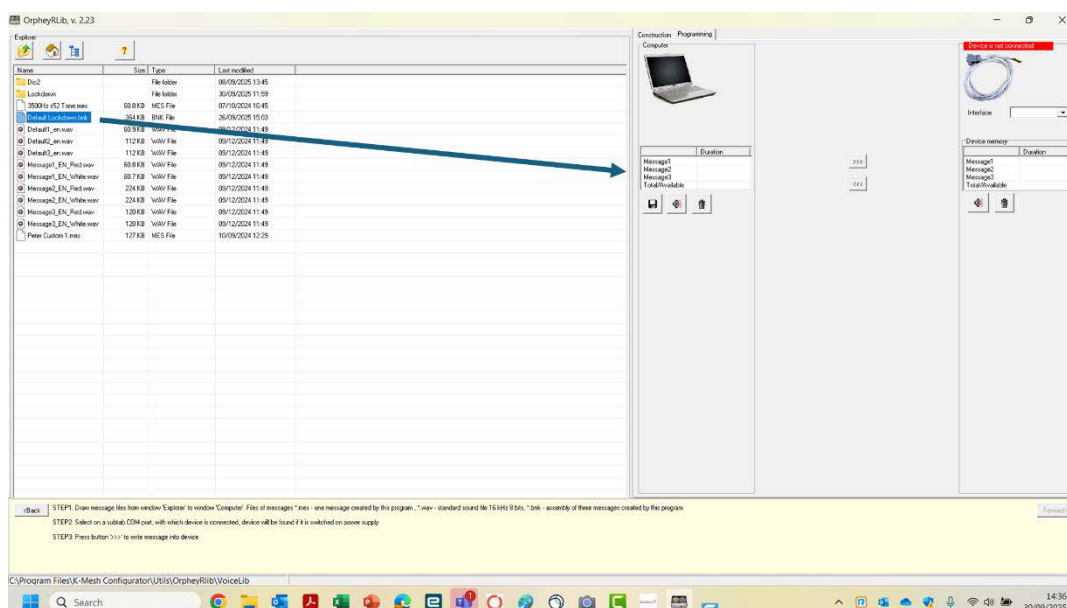


In the explorer window select the message file(s) you wish to import.

Messages can be imported individually as a *.wav file or as a group of 3 messages as a *.bnk file as shown below.



Drag the message(s) from the file explorer area of the window to the **Computer** section of the window as shown in the graphic below.



Connect the K-Mesh Voice Message Controller Tool (KM-WL8-FWR) to the laptop.

Take the LD-WL8-OV device and remove the primary and secondary batteries from the back of the device.



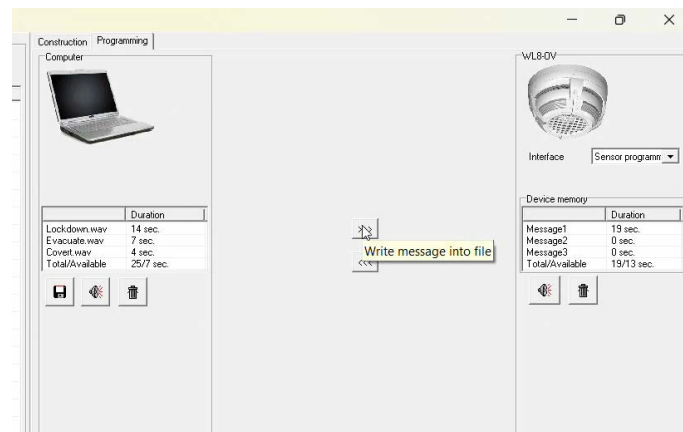
Under one of the batteries there are five pads identified by the word programming. Press and hold the K-Mesh Voice Message Controller Tool onto the pads making sure the embossed star on the tool aligns with the white star on the LD-WL8-OV device.



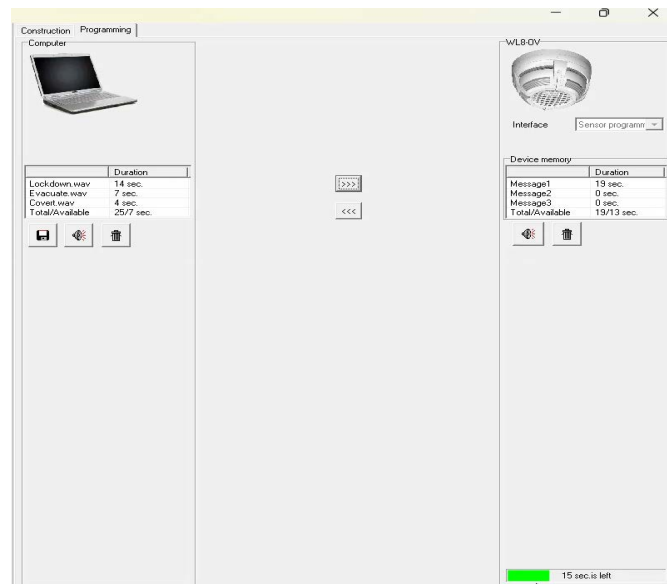
On the software click on the **Interface** box on the right hand side of the programming window and from the drop down menu select the **Sensor programmer** option.



Click on the **Write message into file** button as shown in the screenshot.



The messages will be copied across to the device, with a progress bar showing the time left to completion in the bottom right corner of the window.



Once message programming is complete the progress bar disappears and the duration times in the Device memory table are displayed:

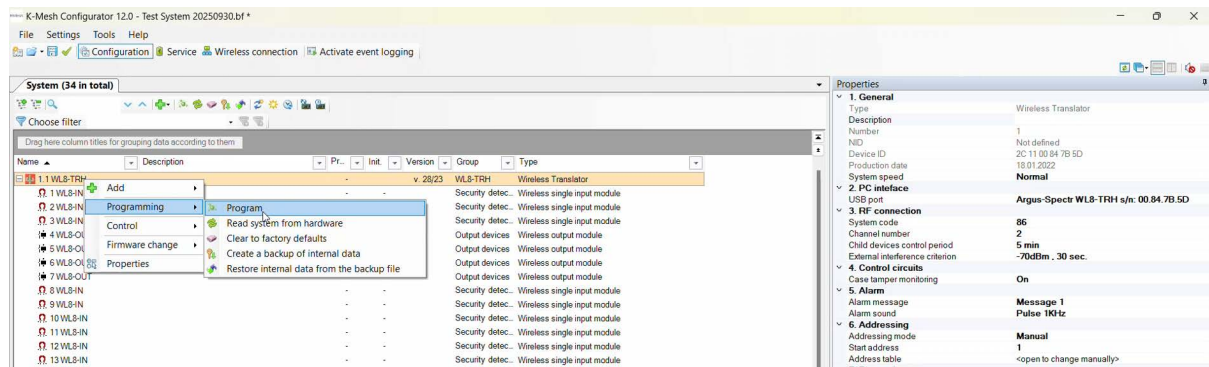


To ensure the message has transferred correctly, you can preview the various messages by selecting them in the Device Memory list and pressing the button with the sounder icon below the list.

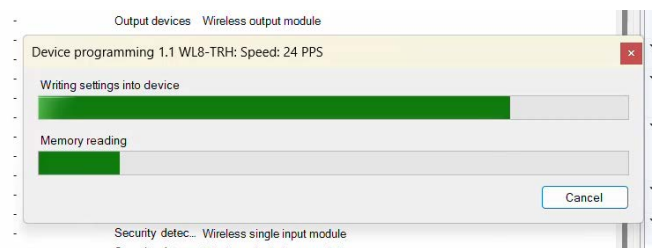
4.5 Wireless Lockdown Translator programming

Once all devices are initialised and all configuration requirements are complete the configuration can be programmed into the Translator.

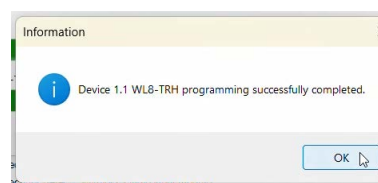
Right click on the WL8-TRH device on the screen to bring up the menu options and select **Programming** followed by **Program** as shown in the screenshot.



The Device programming window will appear showing progress bars for **Writing settings info into device** and **Memory reading**.



Once the programming of the Wireless Lockdown Translator is complete the following confirmation window is displayed.



This concludes the setup of the Wireless Lockdown devices ready for installation, commissioning etc.

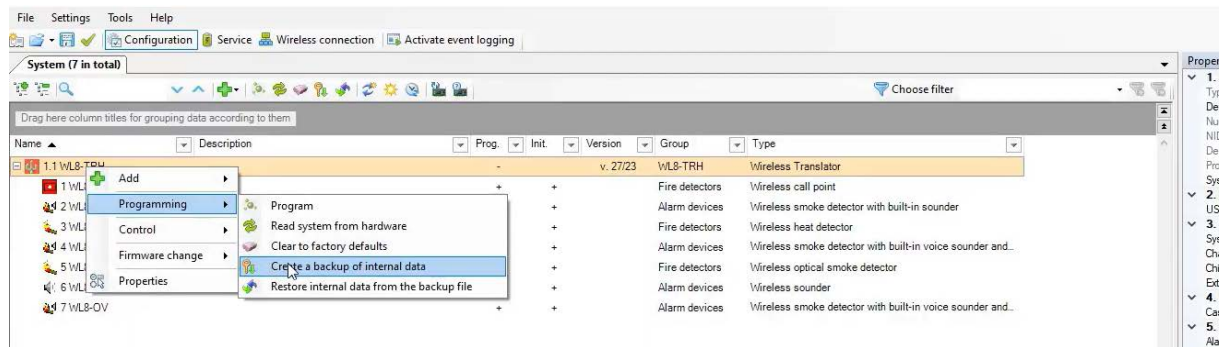
4.5.1 Creating back-up files

It is important to create a back-up file for the LD-WL8-TRH and the configuration files, this ensures any problems the LD-WL8-TRH can be re-programmed to its original configuration.

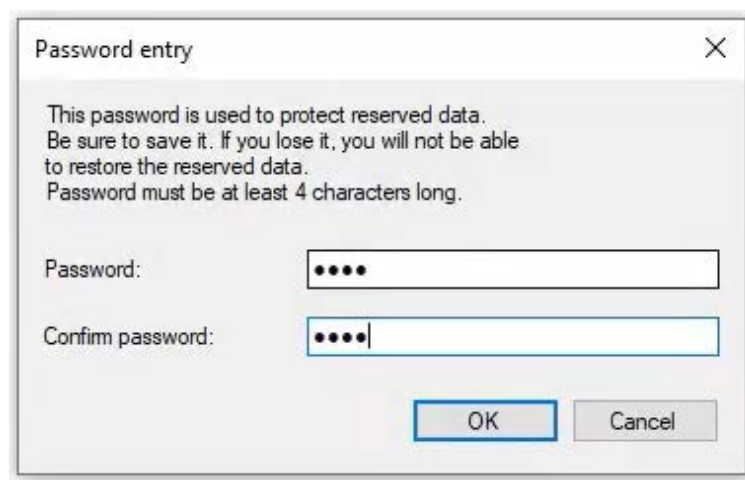
If any changes are made to the system a new back-up file must be created, it is important that the back-up file is kept up to date.

Back-up files must be kept in a safe secure location on the site so that they are easily accessible to engineers if required.

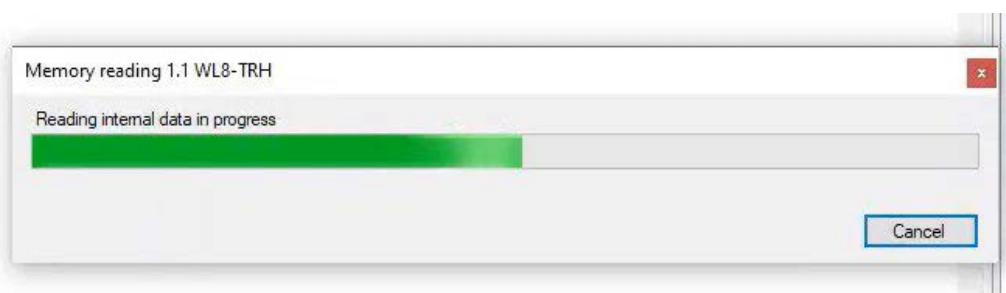
To create a Back-up of the LD-WL8-TRH's internal data, the PC must be connected to the TRH. Right click on the WL8-TRH in the device list to display the menu. From the menu select **Programming** and **Create a backup of internal data** menu options as shown below.



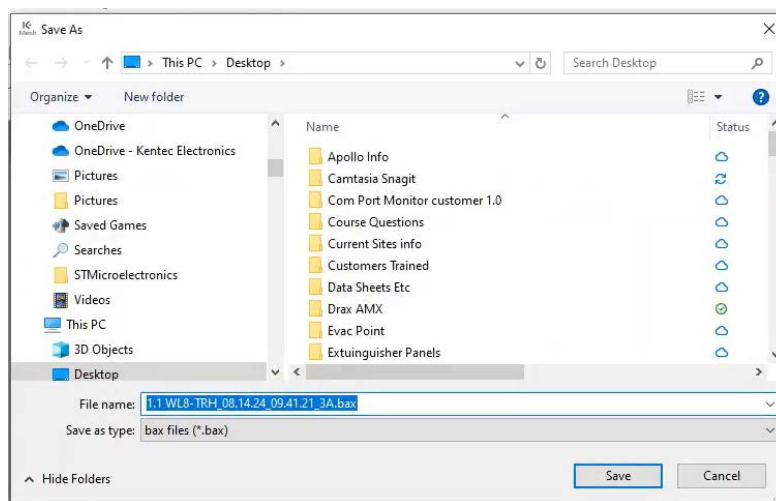
The screen will request you to set a password for the backup, this protects the data in the Translator. Every time you attempt a backup or restore task you will be requested to enter the password.



Enter a password, as stated this must be at least 4 characters long, then click OK. The memory reading progress bar will be displayed.



Once the read has completed the Save As window will appear enter the filename and click **Save**.

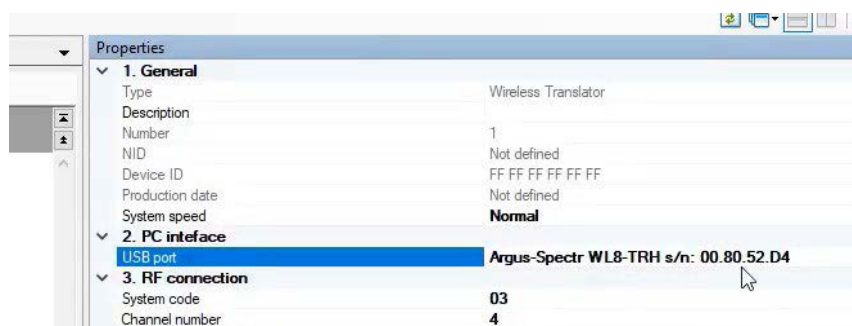


4.5.2 Restoring Translator data

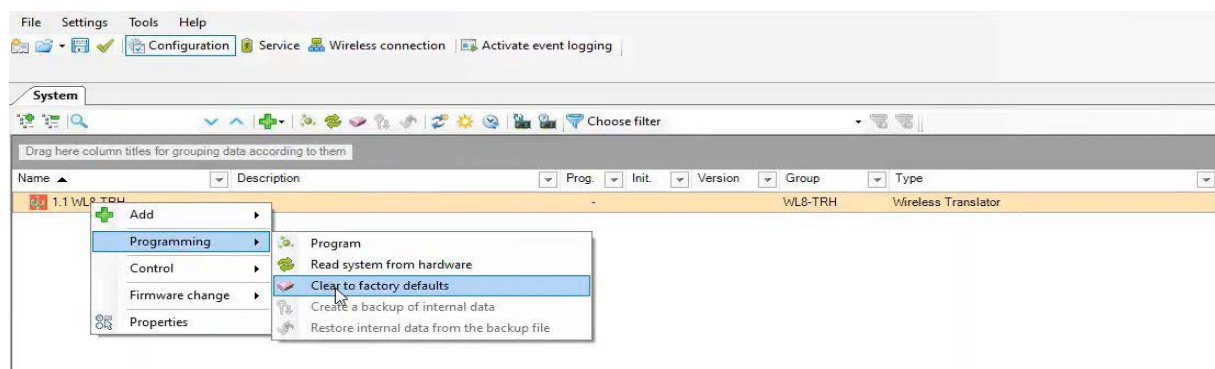
If there is an issue with the Translator or there is a need to replace the Translator, the backup file can be used to restore the Translator data.

To restore a backup file into the Translator, connect your PC to the Translator and run the software.

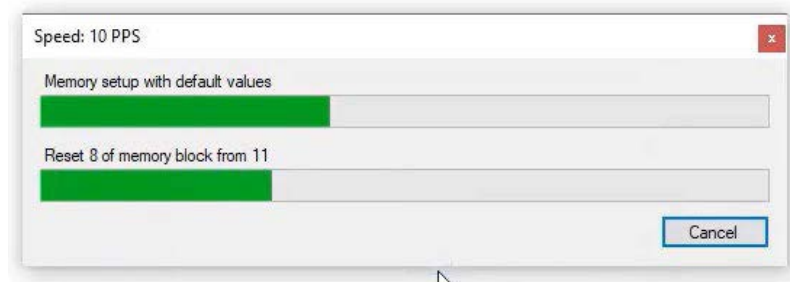
Open a new configuration file, this will show a workspace with the WL8-TRH in the properties window check the USB port property and check the serial number shown for the Translator matches the serial number on the Translator itself, if they match this confirms a connection has been established.



Before restoring the data in the Translator, it is necessary to clear the Translator back to Factory Defaults to enable a clean restore. Right click on the WL8-TRH and select the **Programming** and **Clear to Factory Defaults** menu options as shown in the following screenshot.



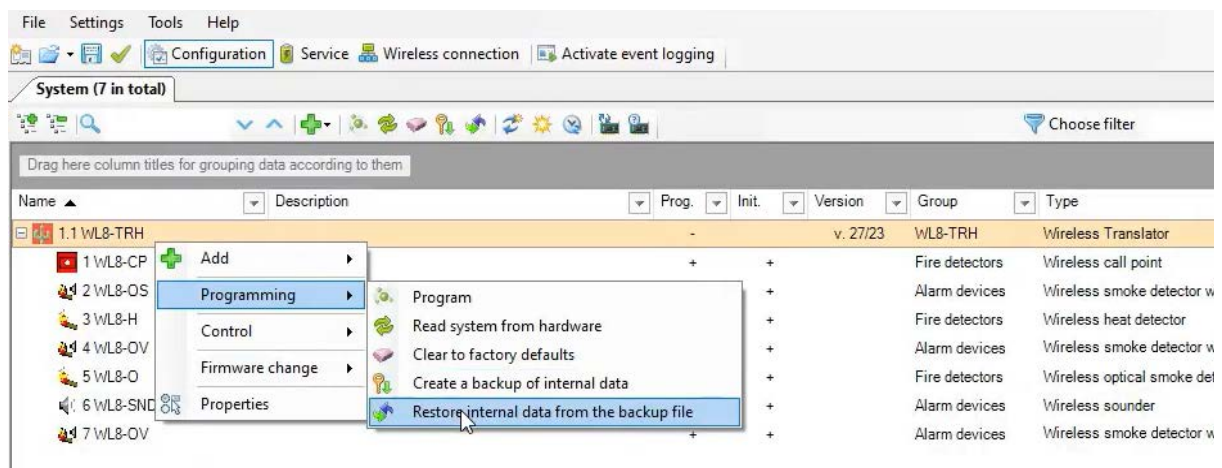
A warning window will appear asking you to confirm you wish to proceed with device cleaning, click on **Yes**. The progress bars will be displayed.



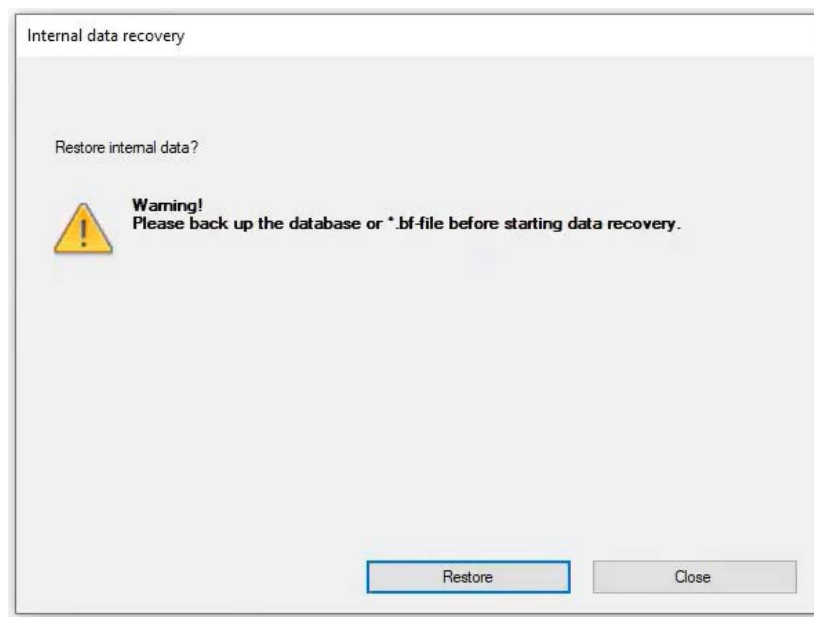
On completion a confirmation window will appear, click on **OK** to clear.



On the software open the original configuration file for the Translator. Right click on the WL8-TRH and select the **Programming** and **Restore internal data from the back-up file** menu options as shown below.

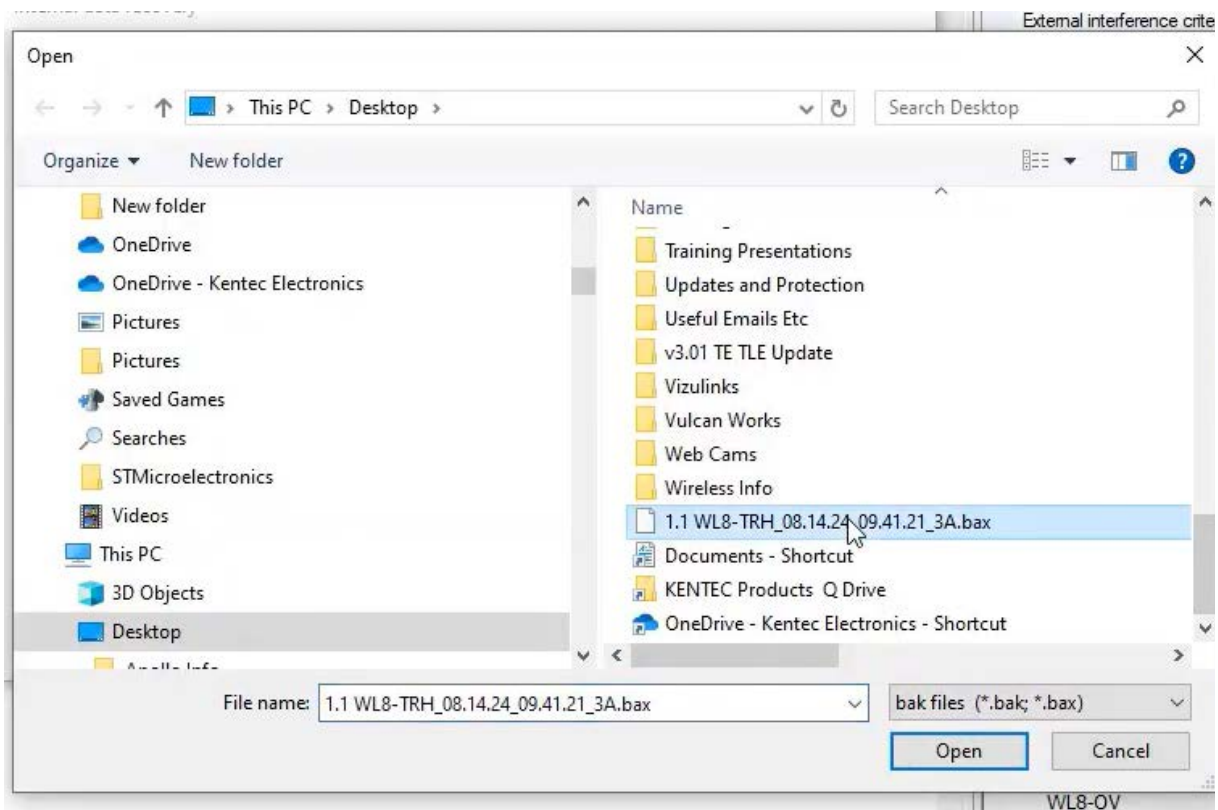


A warning window will appear asking you to backup the database or *.bf file this is the configuration file.



Click on the **Restore** button to begin the restore process.

This will open the file window, locate the required backup file for the Translator (*.bak or *.bax) and click **Open**.

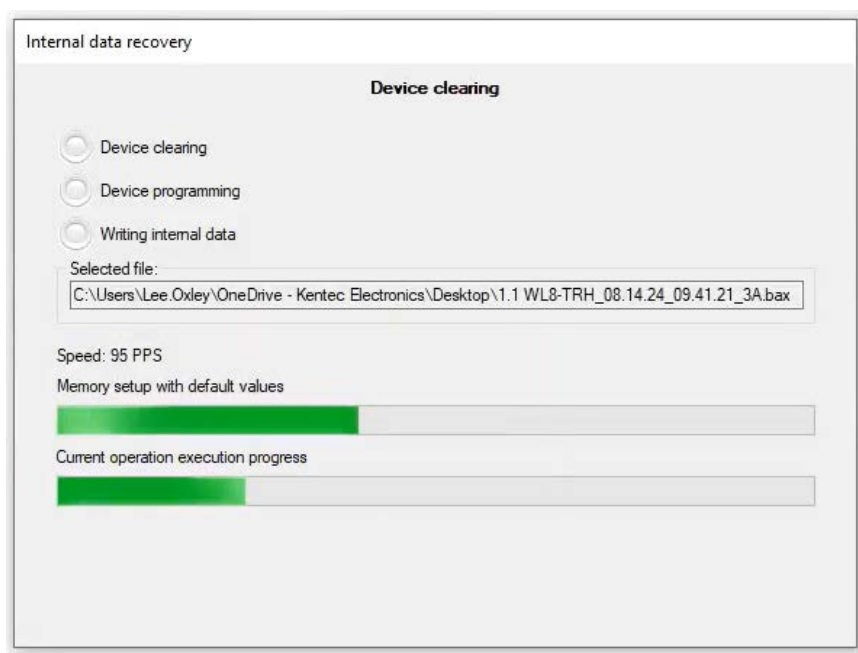


The password entry window will appear and you will need to enter the password that was setup when the backup file was created.

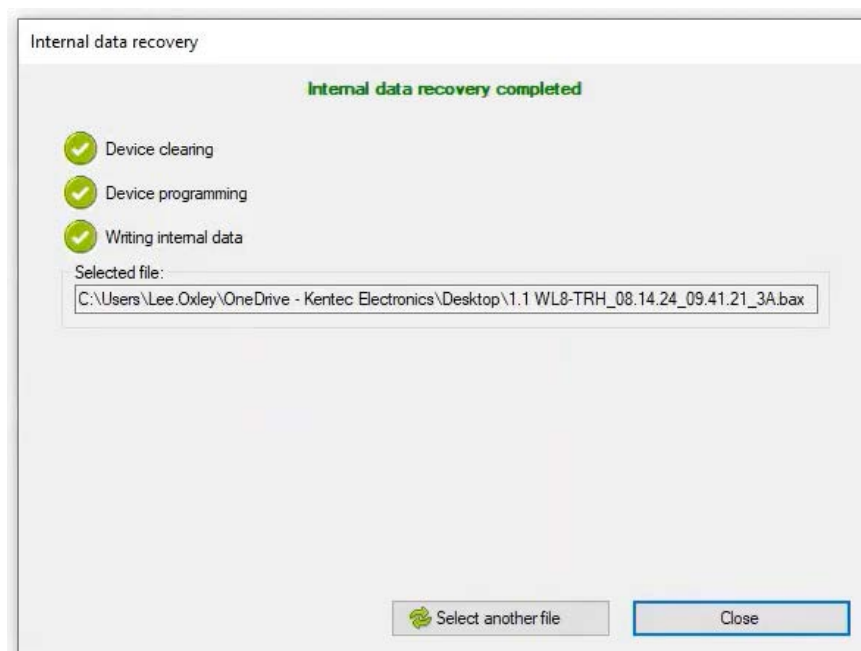


Enter the password and click **OK**.

The Device cleaning process will begin Device programming and Writing internal data. Progress will be shown in the Internal Data Recovery window as shown below.



The window will display as follows when the backup has successfully completed.



On completion of the backup click on **Close**.

It is important following a backup restore that the system is fully tested to ensure it is still working as intended

4.6 Lockdown Indicator Panel configuration

The Lockdown Indicator Panel can be configured using the standard Kentec LE2 configuration software. The Panel is a variation of the Kentec Syncro AS Analogue Addressable and therefore is configured in the same way.

Any programming or configuration changes required to the Lockdown Indicator Panel shall only be carried out by a qualified engineer.

Section 5

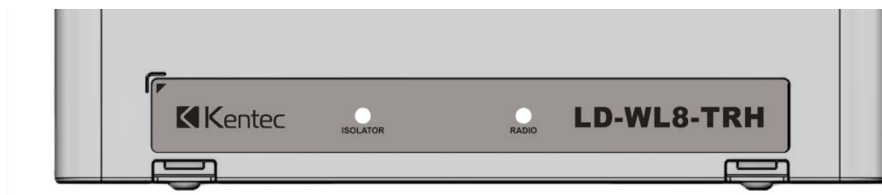
System Controls and Indications

The following section provides details of the User controls and indications provided on the Wireless Lockdown System elements.

5.1 Wireless Lockdown Translator Controls and Indicators

The Wireless Lockdown Translator LD-WL8-TRH has limited external indications, but does have internal indications and controls for engineer use only:

5.1.1 External Indications



On the fascia of the Translator there are two status LEDs which relate to its operational status, these LEDs indicate the following:

ISOLATOR This LED will only be applicable if the Translator is connected to a Lockdown Indicator Panel. The LED will be illuminated green in normal state, the LED will be illuminated yellow if there is a short circuit on the loop connection between the Lockdown Indicator Panel and the Translator. It indicates the Short Circuit Isolator within the Translator. This does not impact the operation of the Wireless elements of the system, however it will prevent information being transmitted from the Translator to the Lockdown Indicator Panel.

RADIO This LED indicator will only be applicable if the Translator is being used as an Expander. The LED will be illuminated green if the radio communication with the Translator which is controlling the system is good, the LED will illuminate yellow if radio communication has been lost.

5.1.2 Internal Controls and Indications

The Wireless Lockdown Translator has an internal LCD which can be used for setup and maintenance. It is recommended that setup is done via the K-Mesh programming software only and therefore should only be used for maintenance by trained engineers.

5.2 Wireless Lockdown Alarm Control Panel

The Lockdown Alarm Control Panel has no external indicators but has controls for the user to be able to activate the system. Internal indicators are provided for use by trained engineers.

5.2.1 External Controls



The LACP is provided with three key operated switches, operation of these switches will activate the relevant messages that have been programmed into the Wireless Lockdown Annunciators.

The top key switch will active Message 1, middle key switch activates Message 2 and the bottom key switch activates Message 3.

As default, Message 1 in the Annunciators is the Lockdown activation message, Message 2 is the All Clear message, and Message 3 is the Covert lockdown activation message.

The keys for this unit should be kept in a secure location that is easily accessible in an emergency, the keys should not be left in the control Panel.

Important!!

Only operate one keyswitch at a time, operating multiple key switches at the same time will impact the correct playing of the messages.

To play a different message first turn off the message that is playing by turning the relevant key switch to the normal position and wait for the message to stop, then operate the key switch for the new message.

Message 1 has priority over other messages, therefore if operated while the Covert or All Clear messages are playing the Lockdown message will override them.

5.2.2 Internal indications

The Panel contains three wireless Input Modules each module has a status led, see section 5.3 for status details.

5.3 Wireless Lockdown Input Module

The module provides no controls only a simple status indication via a single LED as shown below:

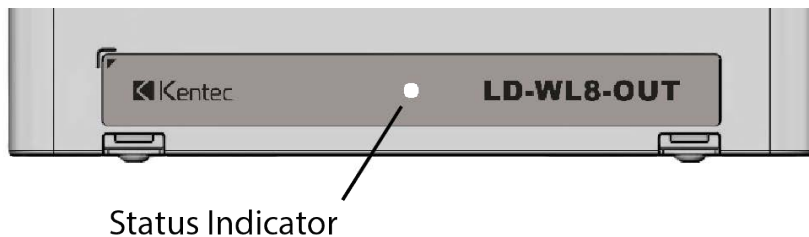


The LED indicates the following states:

STANDBY MODE	The led will either be off or will flash green.
LOW BATTERY FAULT	Flashes yellow every 4 seconds to indicate the internal battery voltage is low and the battery requires replacing.
INPUT ACTIVATED	Flashes red every 4 seconds to indicate the input has been activated.

5.4 Wireless Lockdown Output Module

The module provides no controls only a simple status indication via a single LED as shown below:



The LED indicates the following states:

STANDBY MODE	The LED will either be off or will flash green.
FAULT	The LED will flash yellow when the unit is in fault i.e. Low battery, monitored output open/short circuit, FLT input active.
OUTPUT ACTIVATED	The LED will flash red to indicate that the output has activated.

5.5 Wireless Lockdown Voice Annunciator with VAD

The Annunciator provides no controls only a simple status indication via a single LED on the device housing as shown below:



The LED indicates the following states:

STANDBY MODE	The LED will either be off or will flash green.
FAULT	The LED will flash yellow when the unit is in fault i.e. Low battery, internal electronics fail. By default indication of a fault condition by the status indicator will be off. This can be turned on during programming if required.

5.6 Wireless Lockdown Expander Module

The module provides no controls only simple status indication via two fascia LEDs as shown below:



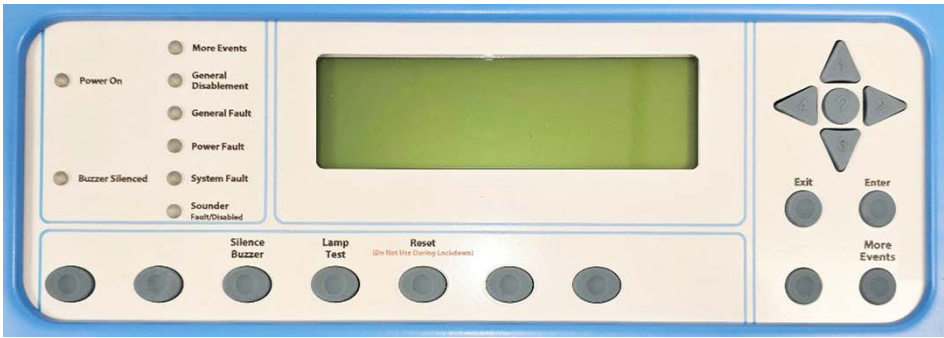
The LEDs are used to indicate the following:

PW	This LED will only be applicable if the Expander Module is monitoring the fault output of its connected power supply, see section 3.7. The LED will illuminate green when no power faults are present and will illuminate yellow when a power Fault exists. By default indication of a fault condition by the status indicator will be off. This can be turned on during programming if required.
RF LINK	This LED will indicate the status of the radio communication signal. The LED will illuminate green when the radio signal is OK and will illuminate yellow when the communications fails.

5.7 Lockdown Indicator Panel

The Lockdown Indicator Panel provides monitoring of the Wireless Lockdown Notification System and displays detailed information on which Wireless Lockdown Input has been activated and detailed fault information for diagnostic purposes. The Panel also provides an event log storing up to 500 for investigation of the sequence of events following an incident.

5.7.1 External indications



The Panel fascia shown above provides the following LED indications:

Power On	Green LED which indicates that there is power provided to the Panel.
Buzzer Silenced	Amber LED which indicates that the local Panel buzzer has been silenced.
More Events	Amber LED which indicates that there are more active events than can be displayed on the screen.
General disablement	Amber LED which indicates that an active disablement exists on the system i.e. A device, input etc. Has been disabled to prevent it from activating. The LCD provides additional information on the disablement(s).
General Fault	Amber LED indicates an active fault event on the system. The LCD provides additional information on the fault(s).
Power Fault	Amber LED indicates a fault with the Panels power supply. The LCD provides additional information on the specific fault i.e. Mains fail, Battery fault, Battery charger fault etc.
System Fault	Amber LED indicates a fault with the Panels internal processor and can only be reset via the Panels internal "Reset" button.
Sounder Fault/Disabled	Amber LED indicates the status of the Panels internal sounder outputs. Illuminates when either an active fault or an active disablement relating to the outputs exists. The LCD provides additional information on the disablement(s).
LCD	The LCD provides additional information with regards to active events: Device activation - Displays which device by loop address along with user programmable location text. Faults - Display which part of the system is in fault i.e. Device, Input, Output etc. Also displays the fault type i.e. Open Circuit, Short Circuit, Tamper Fault, Low Battery fault etc. to assist engineer with diagnostics. Disablements - Display which part of the system is disabled i.e. Device, Input, Output etc.

5.7.2 Internal indications

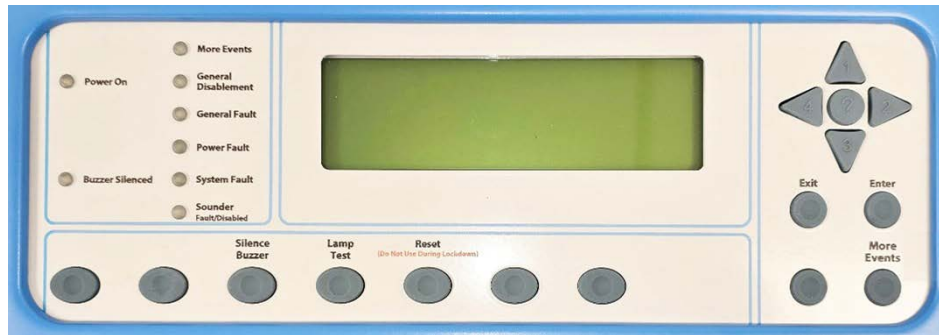
The Panel provides the following internal indications, these are only visible when the Panel door is open and are located along the bottom right edge of the fascia as shown:



Fuse Fail	Amber LED which indicates that the fuse associated with the Aux 24v output has failed.
W/dog Operated	Amber LED indicates that there has been a failure in the Panels internal processor and the Watchdog circuit has performed an automatic reset of the processor chip. This indication can only be cleared by pressing the watchdog reset button.

5.7.3 External controls

The Panel provides a limited selection of control buttons as shown below:



Important!

Buttons which have no description text have no functionality on the Lockdown Notification System.

The buttons in use provide the following user functionality:

Silence Buzzer	When an active event exists on the Panel it will sound an internal buzzer as a local audible notification. This buzzer can be silenced by pressing this button, the event will remain active on the Panel. There are no user restrictions for this button.
Lamp test	When pressed it will illuminate all of the LED indicators on the Panel to confirm they are working; the LCD will show a solid black block and the Panel buzzer will sound.
Reset	Important!! As stated on the Panel fascia “(Do Not Use During Lockdown)” If an active lockdown event is in progress i.e. Voice Annunciators are playing a message, do not press this button as it will stop the Voice Annunciators. This button has restricted operation and can only be operated at access level 2 which requires the access level 2 passcode.
Cursor buttons 1 to 4	These buttons are used to navigate screens and menu options.
Exit	This button allows the operator to exit from the current active access level.
Enter	Allows the operator to select a menu option or function.
More Events	If the More Events LED is illuminated pressing this button will allow the operator to scroll through all of the active events that are not displayed on the LCD.

5.7.4 Internal controls

Additional engineer controls are provided inside the Panel on the bottom right edge of the fascia as shown.



The internal controls provide following functionality:

Reset	This button performs a reset on the processor and can be used to clear a system fault.
W/Dog Reset	If the watchdog circuit has operated it will be indicated by the W/Dog operated LED. The LED can only be cleared by pressing this button.
Contrast	This is a potentiometer which can be turned by using a small terminal driver to adjust the contrast of the LCD.
Write Enable	This switch protects the Panels config programming that is stored in memory and prevents it being accidentally overwritten. The switch should always be in the right hand position to lock the memory from being changed, if a new/modified config is to be uploaded the switch should be placed in the left hand position to allow the new/modified config to be uploaded to the Panel.

Section 6

Testing and Maintenance

This section covers recommendations for testing and maintenance of the Wireless Lockdown Notification System.

The system should be fully inspected and tested before handover of the system to the end user by a competent and qualified commissioning Engineer.

The customer should be fully trained in the correct operation of the system including procedures for routine testing by the installer.

6.1 Commissioning

The system must be fully inspected and tested to ensure it is in full working order before handing over to the end user.

Should any issues occur during the commissioning stage the commissioning should be halted until the issues are resolved and the commissioning can be restarted.

A complete commissioning documentation package should be provided to the customer on handover.

The following commissioning checklist provides a list of recommended tasks that should be performed, the commissioning is not limited to the tasks listed and additional tasks/tests can be performed as required.

To perform the commissioning it is recommended that the minimum equipment is required:

- General hand tools i.e. Screwdrivers, pliers, cutters etc.
- Laptop installed with the latest LE2 Loop Explorer and K-Mesh Configuration software
- Syncro Download Lead (Kentec part no. S187)
- USB A to Micro USB lead (For connection to Lockdown Translator Module)
- Multimeter
- Sound level meter

Note: It is recommended to leave the wireless system running for a period of 10 minutes before beginning any testing, this allows the communications between the wireless devices to synchronize.

Commissioning checklist

1. Check Lockdown Indicator Panel condition and installation i.e. wiring, cable glanding.
2. Check condition and installation of all wireless devices
3. Check Wireless devices are installed in the correct location as per system design and wireless site survey.
4. Check condition and wiring of all power supplies, including back-up batteries.
5. Check the signal strength of all wireless devices at the Translator and compare to the original wireless survey data.
6. Check the configuration setup of the wireless devices at the Translator ensuring devices are allocated to the correct addresses.
7. Check configuration of the Lockdown Indicator Panel and any configured cause and effects match design requirements.
8. Operate the lockdown keyswitches on the Lockdown Alarm Control Panel(s) in turn to check the correct messages are played and the visual indicator is flashing for each Voice Annunciator on the system.
9. Activate any remote wireless Input Modules used to initiate lockdown notification and confirm correct message is played.
10. While messages are playing measure the sound level within each area to ensure it meets the required levels – Sound levels should meet the same requirements set under BS5839 part 1 for the fire alarm.
11. Repeat the test 8 with all power supplies and the Lockdown Indicator Panel running on back-up batteries, to ensure the system functions correctly in this situation.

12. Simulate some random faults on the system i.e. Tamper faults on wireless devices, mains fail etc. and ensure all faults are correctly reported at the Lockdown Indicator Panel.
13. Check all Output Modules and relay outputs within the Lockdown Indicator Panel operate as and when required.

Handover documentation

The end user should be provided the following documentation as a minimum on completion.

- Commissioning test report detailing all tests carried out and the results.
- A marked up drawing showing the location of all installed devices, for wireless devices it is recommended that the radio signal strength recorded at commissioning is recorded next to each device on the drawing.
- A copy of the Lockdown Indicator Panel Event log as confirmation of devices tested
- A copy of the final configuration file for the Lockdown Indicator Panel
- A copy of the final configuration file for the Wireless Lockdown Translator Module
- A logbook for recording events, faults, maintenance and routine testing.

6.2 Maintenance and routine testing

It is important that regular maintenance is carried out on the system to ensure the system remains functional at all times.

Servicing period

It is recommended that the system is tested fully at least once a year carrying out as a minimum all checks that were carried out as part of the commissioning with the addition of checking the battery voltages in all Wireless Devices. Any changes in the results of the testing from the commissioning report should be raised and if necessary action be taken to understand why and what action if any is required to address them.

Modifications to the system

Following any modifications made to the system i.e. devices added, devices replaced, changes to Panel or Translator configurations a full operational test must be carried out to ensure the system is left in full working order.

Routine testing

The end user must be fully trained in the operation of the system and the requirement for routine maintenance of the system.

We recommend the system should be tested on a weekly basis ideally as part of the fire alarm testing.

The weekly test should be performed by operating a different input which is configured to initiate a lockdown each week, the test should be allowed to play as a minimum one complete lockdown message before following it with the "All clear" message.

All testing maintenance and testing carried out shall be logged in the system's logbook for auditing purposes.

Wireless device battery replacement

Most wireless devices are powered by batteries with a primary cell for general power and a secondary cell as a back-up battery.

Primary cells will have a 10 year lifespan dependent on operational usage, when the primary battery reaches its low voltage fault threshold a fault will be displayed on the system and the secondary battery will be used. The secondary allows the device to continue operating while allowing time to get an engineer to site.

Batteries should be replaced as soon as possible after a low battery fault event is reported.

It is important when changing batteries that both batteries should be changed at the same time.

Batteries are polarity conscious so please ensure before fitting they are the correct way round.

See the specification tables in Appendix A for battery types.

Appendix A

Lockdown Notification System Product Specifications

LD-WL8-TRH Wireless Lockdown Translator

Specifications		
Operating frequency range	866 - 869.85 MHz	
Communication range (in open air)	Translator to Expander 2000 m	Translator to Device 1200 m
Modulation type	GFSK	
Operating frequency channels	6	
Max. radiated power	≤ 25 mW	
Time period between wireless signal transmissions	2 minutes	
Current consumption	31 mA	
Operating voltage	17 - 41 VDC	
Max. tolerated humidity	95% RH (non condensing)	
Operating temperature range	- 10 °C to + 55 °C	
Dimensions (mm)	H 145 x W 210 x D 40 without back box (Depth increases to 90mm with back box)	
Weight (g)	300	

LD-WL8-LACP Wireless Lockdown Alarm Control Panel

Specifications		
Operating frequency range	866 - 869.85 MHz	
Communication range (in open air)	1200 m	
Modulation type	GFSK	
Operating frequency channels	6	
Max. radiated power	≤ 25 mW	
Time period between wireless signal transmissions	2 minutes	
Operating temperature range	- 10 °C to + 55 °C	
Max. tolerated humidity	95% RH (non condensing)	
Dimensions (mm)	H 175 x W 250 x D 100	
Weight (g)	350	
Power supply (Dual 3V lithium batteries)	1 x Primary cell (CR123A)	1 x Secondary cell (CR2032)
	1.2 Ahr	0.24 Ahr
	8 - 10 years primary battery life*	3 months secondary battery life

*Dependent on operational usage

LD-WL8-OUT Wireless Lockdown Single Output Module
 LD-WL8-OUT-FS Wireless Lockdown Single Output Module – Fail Safe

Specifications		
Operating frequency range	866 - 869.85 MHz	
Communication range (in open air)	1200 m	
Modulation type	GFSK	
Operating frequency channels	6	
Max. radiated power	≤ 25 mW	
Time period between wireless signal transmissions	2 minutes	
Operating temperature range	- 10 °C to + 55 °C	
Switched voltage rating*	30 VDC @ 1 A / 250 VAC @ 8 A	
Max. tolerated humidity	93% RH (non condensing)	
Dimensions (mm)	H 145 x W 210 x D 40 without back box (Depth increases to 90mm with back box)	
Weight (g)	350	
Power supply (Dual 3V lithium batteries)	1 x Primary cell (CR123A)	1 x Secondary cell (CR123A)
	1.2 Ahr	1.2 Ahr
	8 - 10 years primary battery life*	6 months secondary battery life

*Dependent on operational usage

LD-WL8-IN Wireless Lockdown Single Input Module

Specifications		
Operating frequency range	866 - 869.85 MHz	
Communication range (in open air)	1200 m	
Modulation type	GFSK	
Operating frequency channels	6	
Max. radiated power	≤ 25 mW	
Time period between wireless signal transmissions	2 minutes	
Operating temperature range	- 10 °C to + 55 °C	
Max. tolerated humidity	95% RH (non condensing)	
Input monitoring resistances	≤ 0.2 kΩ	Short circuit fault
	0.5 - 2.5 kΩ	Alarm
	4 - 7 kΩ	Normal operation
	10 - 20 kΩ	Alarm
	≥ 40 kΩ	Open circuit fault
Dimensions (mm)	H 109 x W 37 x D 30 (without back box)	
Weight (g)	70	
Power supply (Dual 3V lithium batteries)	1 x Primary cell (CR123A)	1 x Secondary cell (CR2032)
	1.2 Ahr	0.24 Ahr
	8 - 10 years primary battery life*	3 months secondary battery life

*Dependent on operational usage

LD-WL8-OV

Wireless Lockdown Annunciator and VAD

Specifications		
Operating frequency range	866 - 869.85 MHz	
Communication range (in open air)	1200 m	
Modulation type	GFSK	
Operating frequency channels	6	
Max. radiated power	≤ 25 mW	
Number of messages	3 (only one message can be played at any one time)	
Max message length	32secs (Individual message length can vary, but total combined length must not exceed 32 secs)	
Default messages	Message 1 - Double alert tone followed by the message "There is an incident in the building. Please make your way to a secure place and wait for further instructions" Message 2 - Double alert tone followed by the message "Attention please, Attention Please. The incident is over and the All Clear can be given." Message 3 - Chime followed by the message "Can Mrs. Robinson come to reception please."	
Message format	.wav file (16KHz 8 bit)	
Sound pressure level @ 1m	Max 91 dB(A) for all messages	
Frequency range	500 - 3500 Hz	
VAD LED colour	White	
Flash frequency	0.5 Hz	
Operating temperature range	- 10 °C to + 55 °C	
Max. tolerated humidity	95% RH (non condensing)	
Dimensions (mm)	Ø 111 x H 74	
Weight (g)	215	
Power supply (Dual 3V lithium batteries)	1 x Primary cell (CR123A)	1 x Secondary cell (CR123A)
	1.2 Ahr	1.2 Ahr
	8 - 10 years primary battery life*	2 months secondary battery life

*Dependent on operational usage

LD-WL8-EXP

Wireless Lockdown Expander

Specifications		
Operating frequency range	866 - 869.85 MHz	
Communication range (in open air)	Expander to Expander 2000 m	Expander to Device 1200 m
Modulation type	GFSK	
Operating frequency channels	6	
Max. radiated power	≤ 25 mW	
Time period between wireless signal transmissions	2 minutes	
Current consumption	80 mA	
Operating voltage	11 - 28 VDC	
Operating temperature range	- 10 °C to + 55 °C	
Max. tolerated humidity	93% RH (non condensing)	
Dimensions (mm)	H 145 x W 210 x D 40 without back box (Depth increases to 90mm with back box)	
Weight (g)	320	

LD-WL8-LIP

Wireless Lockdown Indicator Panel

Specification	
Construction	1.2 mm mild sheet steel
IP Rating	IP30
Finish	Epoxy powder coated
Colour - lid & box	RAL 5012 Light blue - fine texture
Colours - control plates & labels	RAL 7047 light grey - satin
Approx weight	6 kg
Display	8 lines of 40 characters graphic LCD
Mains voltage supply	230 VAC 50 or 60 Hz
Mains supply fuse	1.6 A 250 V
Power supply DC rating	24 V 3 Amps
Aux 25V supply	Fused at 500 milliamps
Maximum battery size	9 Ah 12 V (2 per Panel) (non-networked)
Fault contact rating	30 VDC 1 Amp
Fire contact rating	30 VDC 1 Amp
Alarm contact rating	30 VDC 1 Amp
Monitored output rating	Fused at 1 Amp each
Detection loop	400 milliamp output
Loop protocols	Hochiki ESP
Serial expansion port	Serial RS485 (Compatible with all Syncro I/O modules)
PC port	Serial RS232
Download lead	Standard S187, X187LS economy