Installation and user guide

869 MHz Universal Sensor
41005/30

All the reassurance you need **Tunstall**

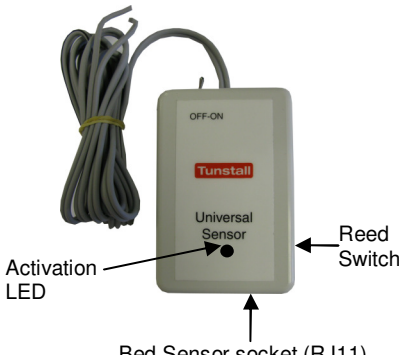# Table of Contents

Introduction

The 869 MHz Universal Sensor is a telecare sensor intended for use with Tunstall home units and other Tunstall telecare enabled systems operating on the European social alarm frequency 869 MHz. Please refer to the Tunstall home unit documentation for compatibility and related information.

The Universal Sensor is predominantly used either as a door usage sensor (using the supplied door contacts), connected to a bed sensor mat or connected to other devices that are required to send radio messages to the Tunstall home unit.

The Universal Sensor;
- Can be used either with external switching contacts or the internal reed switch and is configurable for normally open or normally closed switching contacts.
- Is fitted with an RJ11 socket for connection to the Tunstall bed sensor mat (part number D4106009A or S2010004) for use as part of a virtual sensor application or for sending activities of daily living data (ADLife).
- Is fitted with an external on/off switch which can be used to switch the Universal Sensor on or off if necessary. This switch can optionally be disabled by a configuration setting (see 'How to Configure'), if it is important that the Universal Sensor should not be switched off.
- Can be easily configured to generate different radio messages that are appropriate to the equipment that the Universal Sensor is connected to. This allows 'plug and play' operation with Tunstall's range of home units.
- Incorporates an LED to indicate when the Universal Sensor has been activated
- Is powered by an internal battery with a minimum life of 5 years (typical usage). This battery is automatically tested and when found to be low, an automatic radio signal will be sent to the Tunstall home unit.

What's in the box

Universal Sensor with wire	2 x Door Contacts

How to install

The Universal Sensor should be installed in a clean, dry environment and for optimum radio performance should be mounted away from metallic surfaces.

The Universal Sensor can be fastened to the wall etc. by a variety of methods – integral keyhole slots, sticky pads, Velcro etc. The installer must determine the most appropriate method. Note that if the integral keyhole slots are used, then care must be taken to ensure that the screw heads do not come into contact with the circuit board within the Universal Sensor.

How to connect to other equipment

1. **Door Usage (including use as part of a virtual property exit sensor or ADLife)*** –
   a. Connect the Universal Sensor by either;
      i. Wiring it to the door contacts supplied (using the supplied wire)

      ii. Using the internal reed switch with the magnetic door contact (the wire on the Universal Sensor can be cut off)
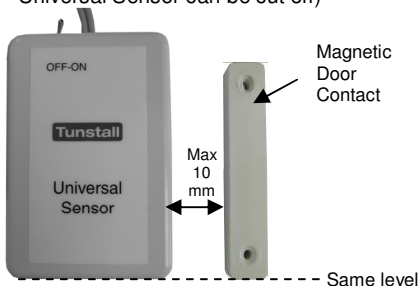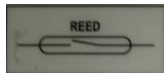
   b. Then configure the sensor to send the 'Door' 869MHz radio message (see 'How to Configure')

2. **Bed Sensor Mat (for use with the virtual bed sensor or ADLife)*** – plug the bed sensor mat into the socket on the bottom of the Universal Sensor. Then configure the sensor to send the Bed ADLife radio message to the Tunstall home unit (see 'How to Configure').

3. **Other equipment** - Connect the Universal Sensor to the output of the other equipment using the wire supplied. Then configure the sensor to send the appropriate 869MHz radio message (see 'How to Configure').

*Note – The Tunstall home unit must support the virtual sensor and/or ADLife feature. PC Connect is required to configure these features.

How to Configure

The Universal Sensor is configured using a switch module (see figure 1) on the rear of the unit which allows configuration of: -

- 869 MHz radio message (e.g. personal, high temp etc)
- whether external on/off switch is operational
- normally open or normally closed input type
- master on/off switch for the unit – the Universal Sensor is supplied with this switch in the off position.

Figure 1. Configuration Switch Settings

- Switches 1-5 set the appropriate 869 MHz radio message (see following pages for full descriptions)

- Switch 6 enables/disables the external on/off switch

- Switch 7 determines input type (normally open or normally closed)

- Switch 8 is sensor battery on/off switch – must be set to ON

Note: For switches 1-5, ■ corresponds to the switch ON position. Switch 8 is switched to OFF when the sensor is supplied.

Explanation of Radio Messages

Each radio message along with its most common use is described below.

PERSONAL
This simulates the call from a personal trigger. This is not generally used however it could be used to enable third party devices to send a personal trigger alert to the Tunstall system.

HIGH TEMP
This simulates the call from a temperature extreme sensor indicating a high temperature. This is not generally used however it could be used to enable third party devices to send a high temp alert to the Tunstall system.

LOW TEMP
This simulates the call from a temperature extreme sensor indicating a low temperature. This is not generally used however it could be used to enable third party devices to send a low temp alert to the Tunstall system.

TEMP RISE
This simulates the call from a temperature extreme sensor indicating a rapid temperature rise. This is not generally used however it could be used to enable third party devices to send a temp rise alert to the Tunstall system.

FLOOD
This simulates the call from a flood sensor indicating water presence. This is not generally used however it could be used to enable third party devices to send a flood alert to the Tunstall system.

CO DETECT
This simulates the call from a carbon monoxide detector indicating the presence of high levels of carbon monoxide. This is not generally used however it could be used to enable third party devices to send a CO detect alert to the Tunstall system.

SMOKE
This simulates the call from a smoke detector as part of a fire control system. This is not generally used however it could be used to enable third party devices to send a smoke alert to the Tunstall system.

DOOR
This is used in conjunction with either the ADLife mode (where daily door open and closure activity is being monitored e.g. fridge) and/or the Lifeline Connect+ Virtual Sensor mode. To operate the signals must be sent when the door is opened AND when closed. The universal sensor detects doors opening and closing via a magnetic door contact, attached to the door or frame, and the internal reed switch on the right hand side of the sensor. Alternatively the both door contacts (supplied) can be connected to the sensor using the cable provided.

PULL CORD
This simulates the call from a pull cord. This is not generally used however it could be used to enable third party devices to send a pull cord alert to the Tunstall system.

ENURESIS
This simulates the call from an enuresis sensor. This is not generally used however it could be used to enable third party devices to send an enuresis alert to the Tunstall system.

BED ADLIFE
This is used in conjunction with the ADLife mode to monitor the daily in/out bed activity and/or a Lifeline Connect+ Virtual Bed Absence Sensor. To operate signals must be sent when the user gets in and out of their bed/chair. The universal sensor activated by the connection of bed/chair mats via the RJ11 socket. When used as part of a Virtual Bed Absence Sensor, the Tunstall home unit must be set with the correct absence times/monitoring periods etc.

PIR ENTRY
This simulated the call from an Entry/Exit PIR. This is not generally used however it could be used to enable third party devices to send an Entry/Exit PIR activation alert to the Tunstall system.

PIR STANDARD
This simulated the call from a standard PIR. This is not generally used however it could be used to enable third party devices to send a standard PIR activation alert to the Tunstall system.

FALL
This simulates the call from a personal fall detector. This is not generally used however it could be used to enable third party devices to send a fall alert to the Tunstall system.

CARER
This simulates the call from a carer trigger. This is not generally used however it could be used to enable third party devices to send a carer trigger alert to the Tunstall system.

ROM#1
This is not generally used.

GAS
This simulates the call from a natural gas detector. The output on the Natural gas detector is connected to the wire on the universal sensor to send a gas alert message when high levels of gas are detected.

PES DOOR
This simulates the call from a door left open and generates an immediate call to that effect. This is not generally used however it could be used to enable third party devices to send a door left open alert to the Tunstall system.

PES WANDER
This simulates the call of a property exit sensor when a client has left their property. It generates an immediate call to this effect when the door is opened. This is not generally used however it could be used to enable third party devices to send a PES Wander alert to the Tunstall system.

ARM/DISARM
This is not generally used but it could be used for connection to third party devices.

BOGUS CALL
This simulates the call from a bogus caller/panic button fitted near the doorway. This is not generally used however it could be used to enable third party devices to send a bogus caller/panic alert to the Tunstall system.

ELEC USAGE
This simulates the activation of an electrical usage sensor such as switching on and off of a kettle. This is not generally used however it could be used to enable third party devices to send an electrical appliance switched on alert to the Tunstall system.

MED DOSE
This simulates the call from a medical dispenser unit when a particular dose has not been taken. This is not generally used however it could be used to enable third party devices to send a medication missed alert to the Tunstall system.

BATH HIGH
This simulates the call from a device that monitors the water level in a bath. This is not generally used however it could be used to enable third party devices to send a bath high alert to the Tunstall system.

EPILEPSY
This simulates the call from an epilepsy sensor. This is not generally used however it could be used to enable third party devices to send an epilespy alert to the Tunstall system.

ZONING
This simulates the call from a zoning trigger in an intruder system when only a zone 1 arming takes place. This is not generally used however it could be used to enable third party devices operate as a zoning trigger to the Tunstall system.

BED ABSENCE
This simulates the call from a bed occupancy system to raise an alarm immediately a bed is vacated. This is not generally used however it could be used to enable third party devices to send a bed absence alert to the Tunstall system.

How to program to the Tunstall home unit

The Universal Sensor enables Plug and Play programming. This is achieved by putting the Tunstall home unit into radio trigger assign mode and then generating a radio transmission from the Universal Sensor by activating the device to which it is connected (e.g. door contacts, bed sensor mat).

1. Press the cancel button on the Tunstall home unit until it beeps (some units will announce 'programming mode').
2. Press the cancel button again until the Tunstall home unit beeps
3. Then activate the Universal Sensor by activating the device to which it is connected (e.g. switch contacts, bed sensor mat). The LED on the Universal Sensor should flash to confirm a radio transmission has been sent.
4. The Tunstall home unit should beep to confirm the Universal Sensor has been programmed to the unit (some units will announce the name of the sensor that the Universal Sensor is configured to e.g. 'door sensor programmed')

Common set up examples

1. Virtual Bed Absence Sensor.

This is simply used to generate an alarm event if a client has got out of bed for longer than a configurable time and within a set time period. It relies on a period of bed occupancy for at least 30 seconds before it is ready. The Universal Sensor requires an input from a bed mat and is set for normally open. All configuration of times and monitoring periods must be set using PC Connect. Set the Universal Sensor as follows;

BED ADLIFE
On/off switch disabled
Input NO
Battery connected
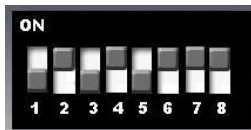
Connect the bed/chair mat to the universal sensor. Then assign the sensor to the Lifeline by going into radio program mode (see page 9) and activating the bed mat, the red LED on the universal sensor will flash and the Lifeline unit should respond correctly.

Cut off the unused wires and place weight onto the mat for at least 60 seconds. Remove weight and check the sensor transmits. You can set the Lifeline into walk test mode to make this easier to verify and to test the radio range (Lifeline will beep when in and out of bed).

Configure sensor location, virtual bed sensor times, ADLife and other settings using PC Connect.

2. Virtual Property Exit.

This is used to raise a simple alarm if a client opens an exit door and does not return after a pre-configured time and within a set time period. It relies on the use of magnetic door contacts fitted to the exit door and a PIR to detect activity through the door. Set the Universal Sensor as follows;

DOOR
External switch enabled
Input NC
Battery connected
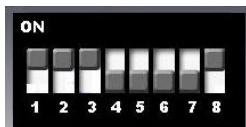
Assign the sensor to the Lifeline by going into radio program mode (see page 9) and then holding the door magnet to the side of the sensor where the reed switch relay is located. Then remove the magnet (simulating door opening). The red LED on the universal sensor will flash and the Lifeline unit should respond correctly. When configuring do not forget to allocate the location.

Connect the door contacts with the wires or use the magnetic door contact with the internal reed switch. The wires can be cut off if not being used. Install sensor opposite the hinge side of the door and in line with the magnetic door contact. Check with walk test that opening and closing the door makes the Lifeline beep.

Assign a Fast PIR as a standard PIR and ensure it can be fitted to monitor the door entrance.

The external switch on the universal sensor can be used to disarm the virtual property exit sensor during an active time period if required.

Once set and during the set time period, the activation process is started when the door is opened. If the PIR does not see activity after that time and for a set period then an alarm is raised. The door must be closed to reset. Note it is important to fit the PIR so it does not detect the person moving beyond the open door (i.e. outside).

Configure sensor location, virtual property exit sensor times and other settings using PC Connect.

3. Natural Gas

This is wired to a mains powered natural gas detector that has a relay contact output. The Universal Sensor is set as follows;

GAS
External switch disabled
Input NC
Battery connected
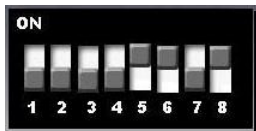
To assign to the Lifeline, go to radio program mode and then touch together and release the two wires connected to the universal sensor. The red LED on the universal sensor will flash and the Lifeline unit should respond correctly.

Connect the wires to the NC output of the gas detector. Test the gas detector and check the Lifeline activates.

4. Property Exit

This is used to raise an immediate alarm when any allocated door is opened. It can only be reset when the door is closed again. It does not conform to any timers. Set the Universal Sensor as follows;

PES DOOR
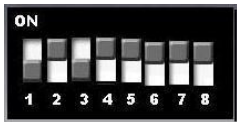External switch disabled
Input NC
Battery connected
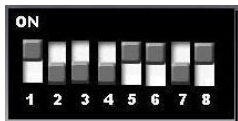
The external switch can be used to disable when required otherwise an alarm will be sent every time the door is opened. A magnetic contact is fitted to the door/frame and the internal reed relay used to recognise state changes. The wires on the universal sensor can be cut off.

5. Bed Absence

This is used to raise an immediate alarm when a bed is vacated. It can only be reset when the bed is occupied again. It does not conform to any timers. Set the Universal Sensor as follows;

BED ABSENCE
External switch disabled
Input NO
Battery connected

The external switch can be used to disable if required otherwise an alert will be sent every time the bed is vacated. A bed mat must be connected to the bed sensor input socket (the wires can be cut off).

Service Information

The Universal Sensor contains no user serviceable parts. It contains a Lithium battery, which has an anticipated minimum life of 5 years (typical usage). This battery is not user-replaceable and when it has expired, the Universal Sensor should either be disposed of according to current local regulations or returned to Tunstall for a new battery to be fitted.

Notices

Please refer to www.tunstall.co.uk for information regarding the statutory approvals and notices for this product.

Declaration of conformity

We, Tunstall declare that this telecare equipment is in compliance with the essential requirements and other relevant provisions of the R&TTE Directive 1999/5/EC.

Tunstall

$C\,C$ ⌧

www.tunstallhealth.com