TEDDINGTON GROUP

FROST SENTRY

Model: THS-FS-01

Patent Applied For: GB1014462.4

Installation Instructions

Teddington Group
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Introduction

The Frost-Sentry is an electronically controlled trace heater designed to prevent the condensate pipe from condensing boilers (or air-conditioning units) from freezing in temperatures below 2.0°C. Trace heaters use very little power and are very economical to run. The Frost Sentry constantly monitors the external temperature of the building, ensuring that it only switches itself on when temperatures are likely to cause the Condensate Pipe to freeze. If a condensate pipe freezes, the boiler will shut down. The Frost-Sentry gently warms the inside of the condensate pipe to prevent freezing.

Placement of the Unit

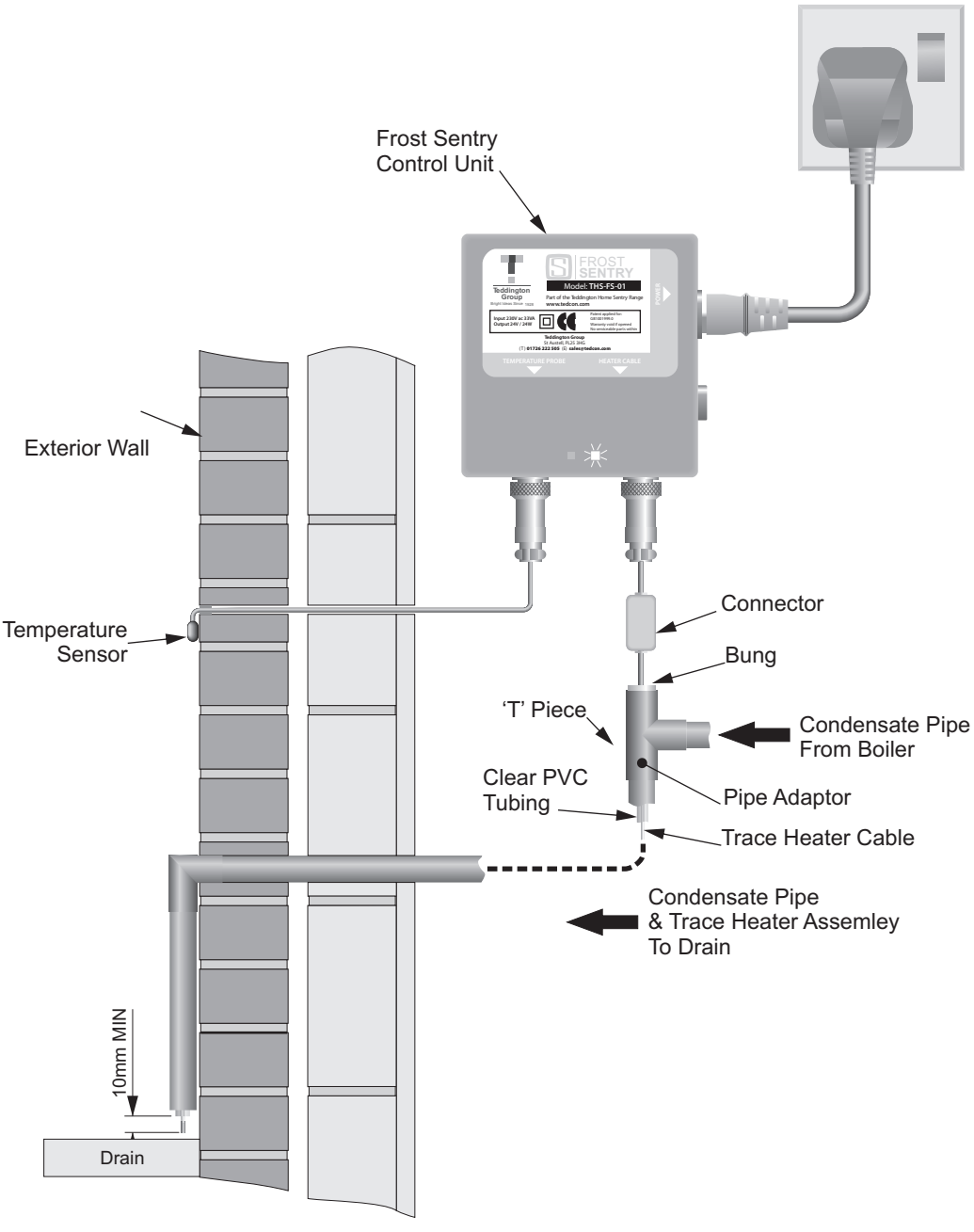
This unit is designed to be located either inside the boiler housing or mounted on the wall where there is easy access to the Condensate Drain Pipe. Fix using the screws provided.

Important

The Frost-Sentry should only be fitted by a qualified technician.

Please read these instructions fully before installing the unit.

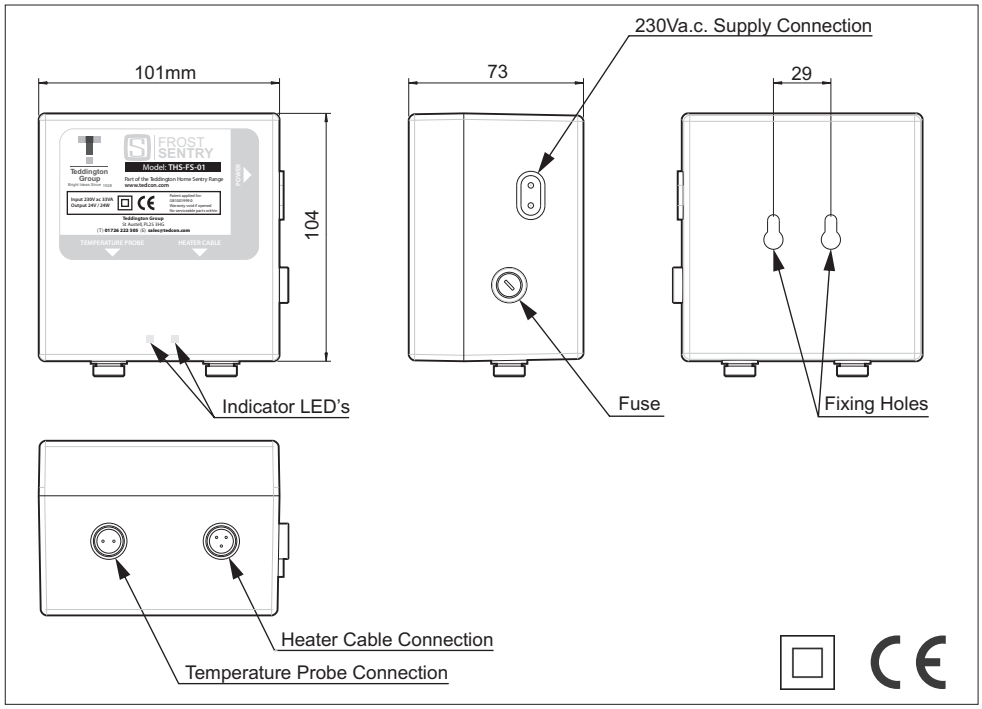
System Schematic



Technical Data

Supply	230Va.c. 30VA
Output	24V 24W
Mass(Unit Only)	0.88kg
Working Temp	-20 to +40°C
I.P. Rating	I.P. 40

No user serviceable parts inside, return to manufacturer for repair.



Package Contents

Frost Sentry Unit	x 1
Power Cable 2m	x 1
Temperature Sensor 3m	x 1
Trace Heater Cable 3m	x 1
Clear PVC Tubing 2.75m	x 1
Twin Core Extn Cable 1m and Connector	x 1
22mm T Piece	x 1
Tube Adaptor	x 1
Electrical Connection Ferrule	x 4

Installation of the Trace Heater Cable

The Trace Heater cable is pre-threaded into the Clear PVC Tubing. Ensure that the Ferrule end protrudes by at least 10mm. The entire assembly needs to be threaded through the condensate pipe such that the condensate will run down the centre of the clear plastic tube and will remain in close contact with the heating element.

1. Cut the Condensate Drain Pipe at a convenient place (Fig.1) and thread the Trace Heater/PVC tube (Ferrule end first) into the Condensate Drain Pipe (Fig.2). If this proves too difficult, this can be overcome by dis-assembling the Condensate Drain Pipe, threading the heater/tube through and then re-assembling.

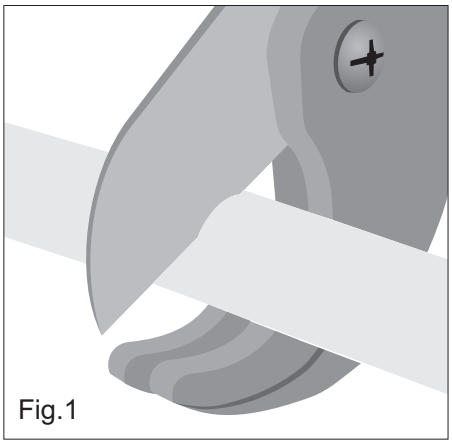


Fig.1

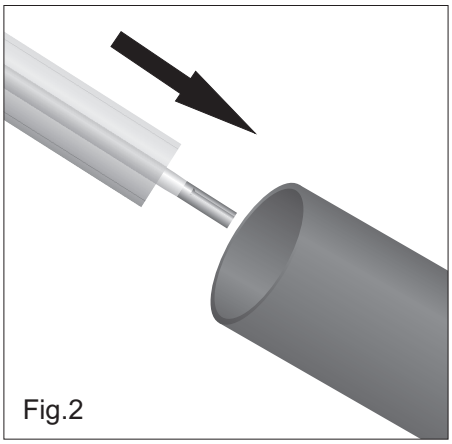


Fig.2

2. The heating cable should run the full length of the condensate pipe as shown in Fig.3.

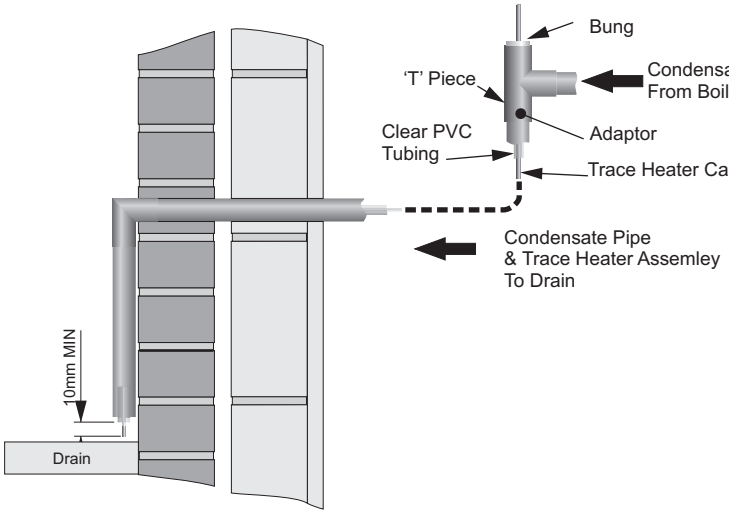


Fig.3

3. If the Condensate Drain Pipe is shorter than 3 metres, cut the Trace Heater Cable/PVC Tubing to reduce the length as appropriate. Extra care must be taken when shortening the trace heater cable as the heating elements are both few and delicate. These will need to be folded to ensure good electrical contact (Fig.4). If you have shortened the Trace Heater Cable, carefully pare back the PTFE outer sheath to reveal the shielding. You will need to prepare a connection using the shielding and then prepare a connection of the inner core (See Fig.4). Crimp supplied ferrules over the exposed conductors. Remember to leave enough Trace Heater Cable to extend through the T Piece and to allow you to connect to the connector box. Do NOT attempt to shorten the heating cable from the sealed end. Make sure that the trace heating cable is NOT shorter than 1 metre in length.

4. Attach the Clear PVC Tube to the adaptor so that all the condensate will drain through the PVC Pipe (see Fig.5).

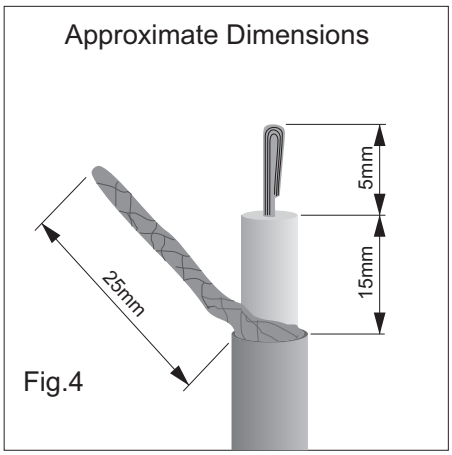


Fig.4

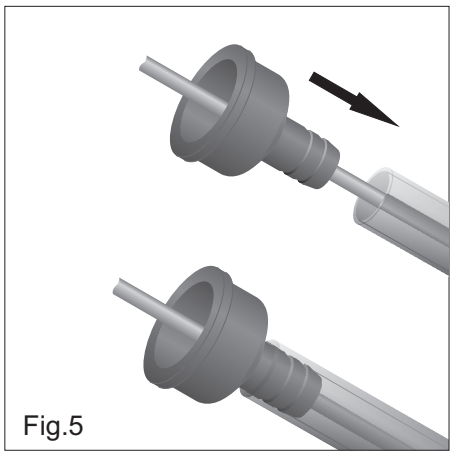


Fig.5

5. Slide the Clear PVC tube and Adaptor back into the Condensate pipe as shown (see Fig.6)

6. Decide how the T Piece will enable the Trace Heater to enter the Condensate Pipe ie Straight through or at 90 degrees (see fig.7).

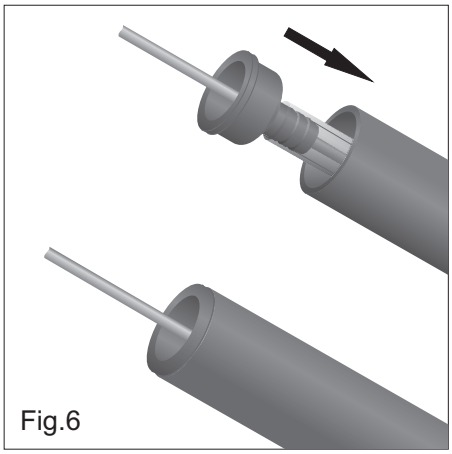


Fig.6

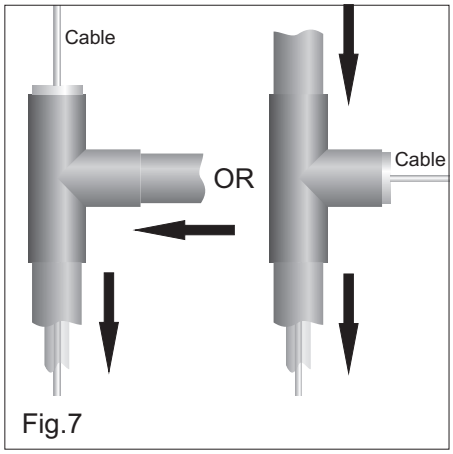


Fig.7

7. Pass the Trace Heater Cable through the selected opening in the T Piece and fit the T Piece to the Condensate Drain Pipe and fix using the appropriate adhesive (see Fig.8a and b)

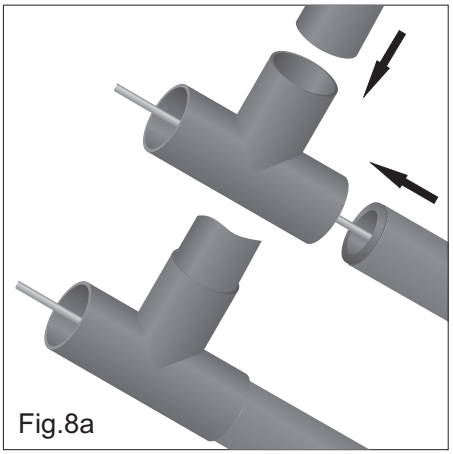


Fig.8a

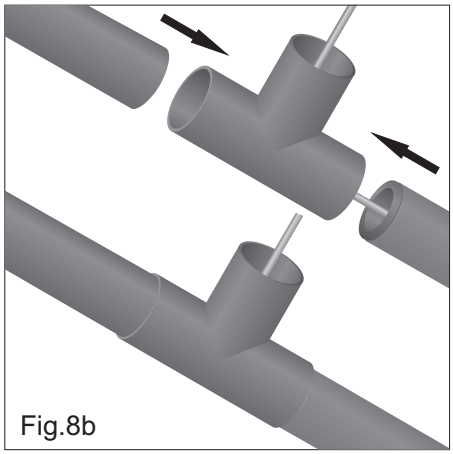


Fig.8b

8. Thread the Trace Heater Cable through the bung (from the narrow end) and push the bung into the T piece to seal the pipe. You may require a sealant at the cable exit (see Fig.9a and b).

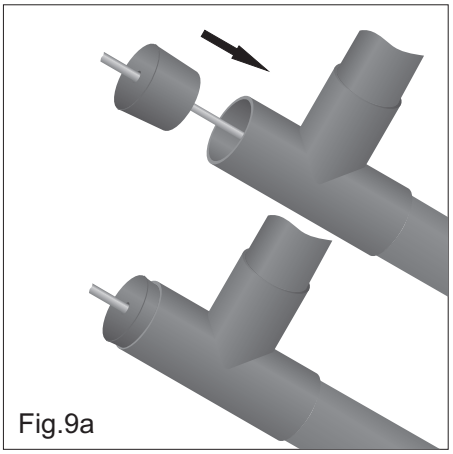


Fig.9a

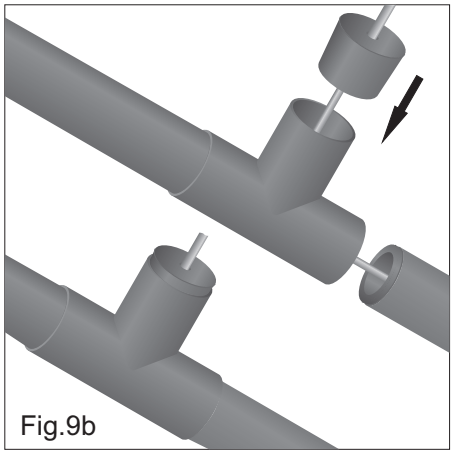


Fig.9b

9. Connect the two wires from the Trace Heater to the connector block. Brown to inner core, Blue to shielding. The twin core electrical cable is used to connect the Trace Heater Cable to the main Frost-Sentry unit. This prevents the Frost Sentry from becoming too warm when the unit is in operation (see Fig.10).

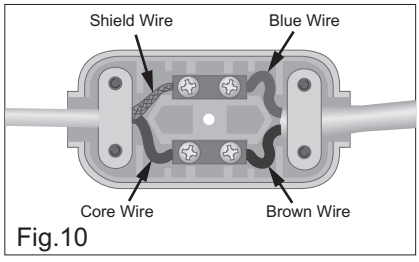


Fig.10

10. Plug the other end into the indicated connection on the Frost-Sentry unit (see Fig.11).

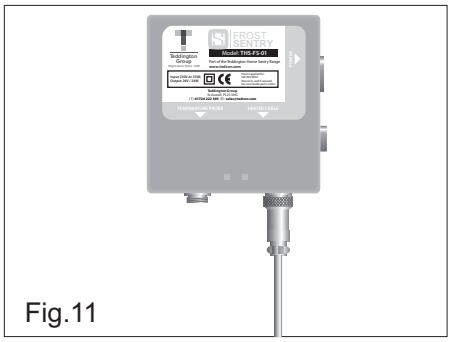


Fig.11

Installation of the Temperature Sensor

1. Drill a hole through the exterior wall and feed the temperature sensor through so that the bulb is outside the building to enable an accurate temperature reading (see Fig.12).

2. Seal the hole with a suitable sealant (Not included) to prevent draughts, water ingress and to hold the probe in place (see fig.12).

3. Plug the other end into the indicated connection on the Frost-Sentry unit (see Fig.13).

   Note:
   The temperature sensor wire can be shortened as required to suit the installation by removing the plug from the end of the cable, shortening the cable and re-installing the plug as per the original fitting.

   DO NOT attempt to shorten the temperature sensor from the bulb end.

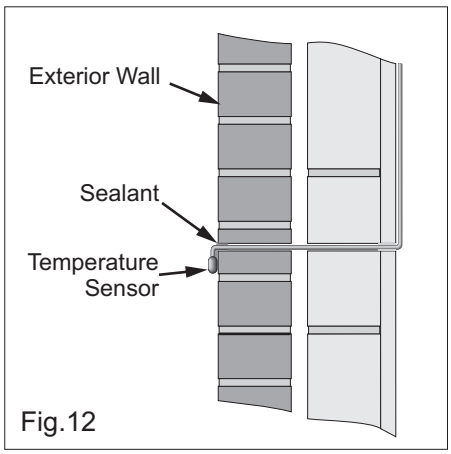


Fig.12

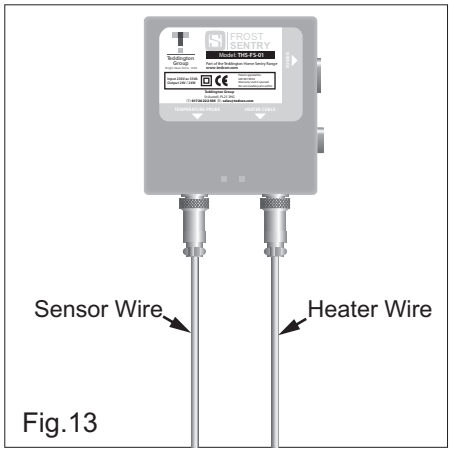


Fig.13

Activating and operation of the Frost-Sentry

To activate the unit, connect the power cable to the Frost-Sentry unit, plug into a switched 230V fused supply and switch on.

The Frost-Sentry Unit cover is semi transparent so that when the unit is in stand-by a GREEN LED is visible (see Fig.14).

When temperatures drop below 2.5 degrees C, the Frost Sentry will turn itself on. A RED LED will show that the Frost Sentry is active (see Fig.15). As temperatures drop further, the warmer the heating element will become.

If the RED LED is always on, irrespective of the outside temperature, please check the connections for the temperature sensor.

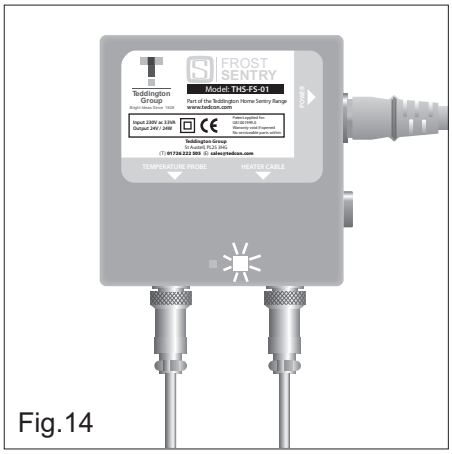


Fig.14

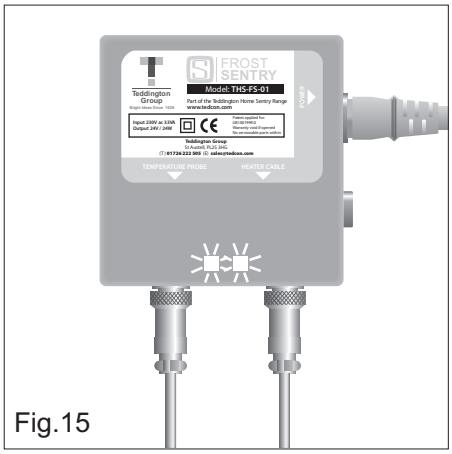


Fig.15

Verifying the operation of the Frost-Sentry

To check that the Frost Sentry has been correctly installed, unplug theSensor Lead - this will set the unit into default - auto ON mode. The red LED will glow and the Trace Heater Cable will become warm within 2 to 3 minutes. To check this, place a finger on the exposed cable between the drain pipe and the connection box.

Remember to reconnect the Sensor Lead after this test.

PLUG REPLACEMENT

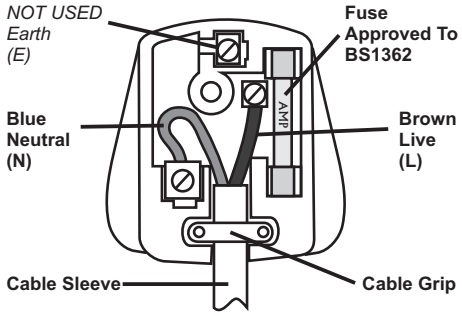
The fuse in the main plug of this unit should always be replaced with one of identical rating. This unit is supplied with a fitted plug, however if you should need to fit a new plug follow the instruction below.

IMPORTANT
The wire in the mains lead are coloured in accordance with the following code:

Blue ---Neutral, Brown ---Live

The wire that is coloured blue must be connected to the terminal that is marked with the letter N.

The wire that is coloured brown must be connected to the terminal that is marked with the letter L.



Warranty

The Frost Sentry is warranted to be free from defects in materials or workmanship for one year from the date of purchase. Within this period, Teddington Appliance Controls Ltd will, at its sole option, repair or replace any components that fail in normal use. Such repairs or replacement will be made at no charge to the customer for parts or labour, provided that the customer is responsible for the transportation cost to return the product to Teddington Appliance Controls Ltd. This warranty does not apply to: (i) cosmetic damage, such as scratches, nicks and dents; (ii) damage caused by accident, abuse, misuse, water, flood, fire, or other acts of nature or external causes; (iii) damage caused by service performed by anyone other than Teddington Appliance Controls Ltd. In addition, Teddington Appliance Controls Ltd reserves the right to refuse warranty claims against products that are obtained and/or used in contravention of the laws of any country.

Note: Repairs have a 90 day warranty. If the unit sent in is still under its original warranty, then the new warranty is 90 days or to the end of the original one year warranty, depending upon which is longer.

IN NO EVENT SHALL TEDDINGTON APPLIANCE CONTROLS LTD BE LIABLE FOR ANY INCIDENTAL, SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, WHETHER RESULTING FROM THE USE, MISUSE OR INABILITY TO USE THE PRODUCT OR FROM DEFECTS IN THE PRODUCT

TEDDINGTON ELECTRONICS LTD

Declaration of Conformity

We, TEDDINGTON ELECTRONICS LIMITED

Daniels Lane
Holmbush Industrial Estate
St Austell,
Cornwall PL25 3HG.

Declare under our sole responsibility that the product

Frost Sentry

(all variants) to which this declaration relates is in conformity with the following standards:

EN60730-1:2001
Automatic electrical controls for household and similar use.
General requirements

Following the provisions of the following directives

2006/95/EC - The Low Voltage Directive

2004/108/EEC - The Electromagnetic Compatibility Directive

CE 10

FM 538622

Signature:

Name: Graham Tonkin
Title: Managing Director
Date: 30-11-2010

Issue: 01

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TE1-004M Iss.3