

AUS

# INSTALLATION INSTRUCTIONS

deviflex™ heating cable

Freezer and Sub Floor Heating



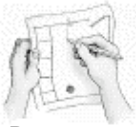
DEVI 

## PLEASE NOTE

The Floor Sensor **MUST** be installed so that it may be **REMOVED** for service if required! The sensor probe should be installed into a conduit with no more than one wide-angle bend. This should be installed from the floor to the thermostat or junction box located directly above the heated area.

**PLEASE READ ENCLOSED INSTRUCTIONS**





Draw up a  
plan of the  
cable layout  
on this page

A large grid area for drawing a cable layout plan. The grid is composed of small squares, with a few larger squares at the top left where the text and illustration are located. The grid is intended for a student to draw a plan of a cable layout.

# Freezer and Sub-Floor Heating

## ***Cable type:***

The cable type should be a deviflex™ type cable which includes 5m of cold tails. The cable should be approved by AS 3000 for embedding in concrete or screeds.

Construction and material specifications should be to IEC Publications 800 for heating cables.

## ***Electrical Loading:***

The electrical cable heating load, in  $W/m^2$ , should be determined from the table below:

<b>Freezer Temperatures</b>	<b>-10°C</b>	<b>-15°C</b>	<b>-20°C</b>	<b>-25°C</b>	<b>-30°C</b>
	<b><math>W/m^2</math></b>	<b><math>W/m^2</math></b>	<b><math>W/m^2</math></b>	<b><math>W/m^2</math></b>	<b><math>W/m^2</math></b>
Frost prevention for slab on ground	7	8	10	12	14
Condensation prevention for suspended slab	12	13	15	17	19

These loadings should be used as minimum requirements and should not be exceeded by more than 25%. The table is based on a minimum of 150mm of thermal insulation, with a k factor of  $0.05 W/mK^{\circ}$ , separating the freezer area from the base slab.

An amendment may be required to the table if this minimum standard does not apply.

These loadings apply to the inside area of the freezer room, commencing 100mm in from the freezer walls.

## ***Circuit Design and Spacing:***

Each circuit, of a twin circuit system, should be designed to achieve the above loading at a spacing not exceeding 600mm between cable runs and commencing at a maximum of 200mm from the inside walls.

When installed, the primary heater circuit should be connected to the supply and the other used as a back up system or spare.

Where the freezer room is small and the range of heating cables does not allow the design to be achieved at 240V, designs should be determined using an extra low voltage supply of either 32V, 24V, 12V or similar.

### **The supply voltage must be clearly labelled at the termination of the cables.**

Where the room is too large for the range of heating cables to permit single 240V circuits, multiple 240V circuits can be used. Cables should be fastened into position at intervals of no more than 1200mm, using fixings that do not damage the cable serving. Cable bending radius should be no less than 15 times the diameter of the cable.

Twin circuits should **NOT** be run together using the same fixings. Rather they should be run at midway spacings, side by side or at right angles.

If the cable is being incorporated into the base slab a screened deviflex™ type cable should be fastened directly to the reinforcing mesh. If the cable is being installed over the surface of an existing base slab, unscreened deviflex™ cables may be used in conjunction with suitable fixing strips maintaining even spacing. After installation cables should be covered by at least 25mm of concrete where the mix aggregate should not exceed 10mm.

---

## ***Testing:***

Heating cables must be tested using a 1000 V insulation tester, before, during and after covering to ensure satisfactory insulation levels.

## ***Termination & Control:***

If only one cable circuit is installed, the cold tails should be run via a conduit to and up the external wall into a junction box. If two or more circuits are to be installed, the cold tails should be bunched together, appropriately de-rated and run in conduits up the wall to the junction box. It is important, however, that the cold tail joints remain inside the perimeter of the room.

### **At no point in the installation should heating cables be allowed to become embedded in thermal insulation.**

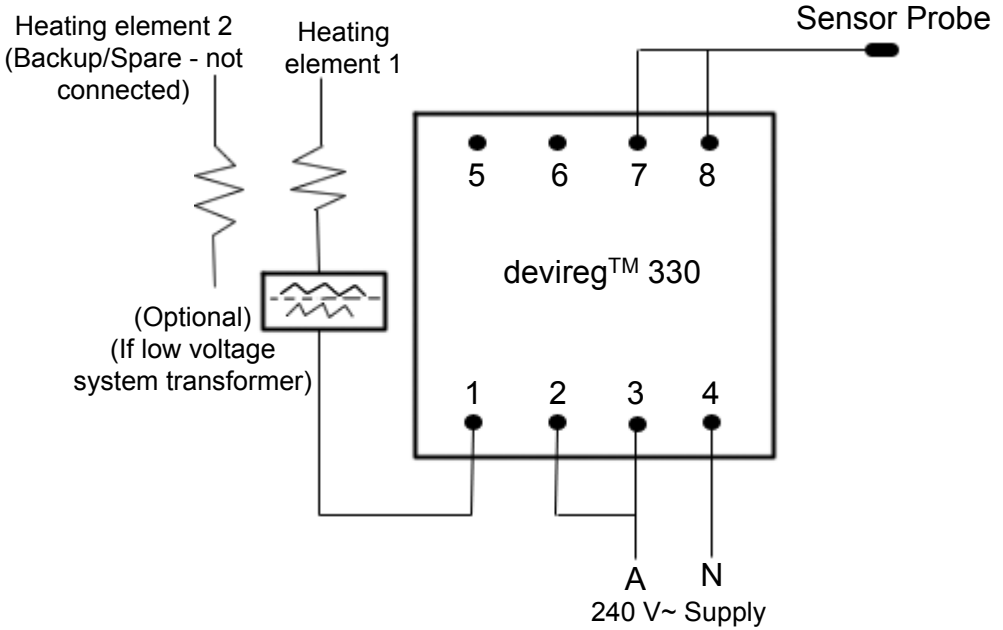
A change over switch should be used to select either of the twin circuits installed. Where the room size is small and the load does not exceed 625W, one circuit may be left on permanently. In all other cases a capillary or electronic remote sensing thermostat must be provided to sense the sub-floor temperature and control the heating cable accordingly. A contactor must be used in all cases where the load exceeds 75% of the thermostats switching capacity. (See thermostat instructions). For frost heave prevention, thermostat settings should be 5°C. For condensation prevention below suspended slabs, the setting should generally be 18°C. A higher setting of up to 25°C is necessary for tropical climates.

To provide for the installation of a floor sensor, a conduit sealed at both ends should be installed in the cable floor area, running one meter in from the external wall to a point midway between cable runs. Conduit size plus any bends must be such to allow the easy insertion and removal of the sensor.

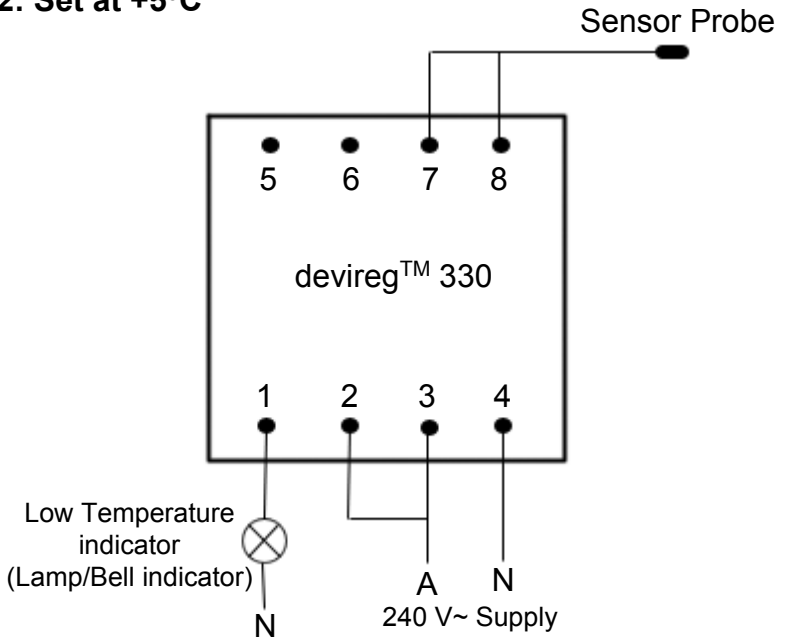
The earthing screen of the heating cable **MUST** be connected to the household Earth.

The 'Cold Tails' have a centre core that is called the cold tail conductor. This conductor is surrounded by an earth braid/shield.

### Controller 1: Set at +10°C



### Controller 2: Set at +5°C





# Australian Warranty Certificate



The following Warranty is provided by DEVI Heating Systems ABN 39 898 434 262, hereinafter referred to as DEVI. It is offered in addition to any relevant statutory Federal or State Warranty. DEVI is a partner of the DEVI Group of Companies, who are a Danish based specialist heating product manufacturer. DEVI A/S Denmark is a member of the European Group of Suppliers, and is at all times subject to EEC general product liability rules.

DEVI warrants deviflex™ heating cables for a period of TEN (10) YEARS from the date of purchase and all other DEVI products for a period of TWO (2) YEARS, from the date of purchase. DEVI warrants its products against defects in manufacture, material, or workmanship. Proof of purchase must be provided. Installations must be carried out in accordance with the instructions supplied, and by accredited installers. An authorized DEVI representative must be given the opportunity to inspect and report on any defects.

The obligation of DEVI, under this warranty, is to repair or replace any product, which, within the above stated time periods, is found to our satisfaction to be defective, free of charge to the customer. However, the labour cost for removing and/or refitting any product will be at the customer's expense. In the case of any removable products such as Thermostats, these are to be returned to the place of purchase, or to DEVI Sydney, where DEVI reserves the right to repair or replace the unit at no charge or unreasonable delay to the customer.

In case of parts not of our own manufacture you are entitled only to such benefits as we may receive under any guarantee given to us by the manufacturers in respect thereof. We shall not be liable for consequential or special damages under any circumstances whatsoever.

This Warranty does not cover faults caused by incorrect installation, damage by others, misuse, misapplication, incorrect voltage, lightning, or incorrect design by others, or where payment is in default. Rectification work, performed as a consequence of matters not covered by the Warranty, will be at the expense of the customer. DEVI will respond honestly, efficiently and promptly to all queries and reasonable requests from our customers.

DEVI ABN 39 898 434 262

Head Office:

Tel: (02) 9997 2811

Fax: (02) 9997 7852

Freecall: 1 800 636 091

PO Box 707

MONA VALE

NSW 1660

Australia

## WARRANTY AS SUPPLIED BY DEVI DENMARK

You have purchased a deviheat system, which we are certain will improve your home comfort and economy. deviheat provides complete heating solutions with deviflex heating cables or devimat heating mats, devireg thermostats and devifast fitting bands.

If, however, contrary to all expectations, a problem should occur with your heating system, we at DEVI, with manufacturing units in Denmark, are, as European Union suppliers, subject to general product liability rules, as stated in Directive 85/374/GEE, and all relevant national laws which implies that: DEVI provides a warranty for deviflex heating cables and devimat heating mats for a 10 year period and all other DEVI products for 2 year period against defects in material and production.

The guarantee is granted on the condition that the WARRANTY CERTIFICATE on the overleaf is filled out properly in accordance to instructions and that the defect is inspected by, or presented to, DEVI or authorised DEVI distributor. Please note that the wording of the WARRANTY CERTIFICATE must be provided in English or local language with the ISO coda for your country in the upper left corner of the front page of the installation instructions in order to release the warranty.

The obligation of DEVI will be to repair or supply a new unit, free of charge to the customer, without secondary charges linked to repairing the unit. In case of defective devireg thermostats, DEVI reserves the right to repair the unit free of charge and without unreasonable delay to the customer.

The DEVI warranty does not cover installations made by unauthorised electricians, or faults caused by incorrect designs supplied by others, misuse, damage caused by others, or incorrect installation or any subsequent damage that may occur.

If DEVI is required to inspect or repair any defects caused by any of the above, then all work will be fully chargeable.

The DEVI warranty is void, if payment of the equipment is in default. At all times, we at DEVI will respond honestly, efficiently and promptly to all queries and reasonable requests from our customers.

The above-mentioned warranty concerns product liability whereas matters in relation to legislation on sale of goods shall be referred to national law.

\*This Warranty is provided by DEVI A/S, Denmark. Please contact your local DEVI Company for local Warranty details

# Warranty Certificate

The DEVI™ Warranty is granted to:

Name:

---

---

Address:

---

---

Postal Code:

---

---

Phone:

---

---

Please Observe!

In order to obtain the DEVI™ Warranty, the following must be carefully filled in. See other conditions on the overleaf.

Electrical Installation By:

---

---

Installation Date:

---

---

Type of Thermostat:

---

---

Production Code:

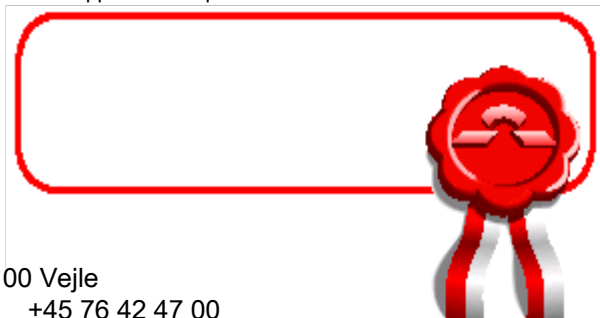
---

---

---

---

Suppliers Stamp



DEVI  
DK . 7100 Vejle  
Tlf +45 76 42 47 00  
Fax +45 76 42 47 03

