



Ready Made Self Limiting Cable DEVpipeheat 10 V3 Installation Guide

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READY

Ready Made Self Limiting Cable DEVpipeheat 10 V3



Introduction

In this installation guide, the phrase “heating cable” refers to the ready-made self-limiting cable DEVIpipeline™ 10 V3. To get the full installation guide, warranty registration, product information, tips & tricks, addresses, etc. visit www.devi.com.

Safety instructions

Heating cables must always be installed according to local building regulations and wiring rules as well as the guidelines in this installation manual.

- De-energize all power circuits and do not connect the plug to an outlet until installation is completed.
- Residual current device (RCD) protection is required. RCD trip rating is max. 30 mA.
- Maximum fuse size is 10 A.
- In case of plug cutting the screen from each heating cable must be connected to earthing terminal or plug must be connected to outlet, securing a reliable grounding of the screen in accordance with local electricity regulations.
- In case of plug cutting heating cables must be connected via a switch providing all pole disconnection.
- The heating cable must be equipped with a correctly sized fuse or circuit breaker according to local regulations.
- Never exceed the maximum heat density (W/m or W/m²) for the actual application. Refer to Application Guide.
- Heating cable must be used together with an appropriate thermostat to secure against overheating and reduce energy consumption.
- The cold lead is not allowed to be replaced by the user. If cold lead is damaged, it must be replaced by service agent or similarly qualified persons in order to avoid a hazard.
- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.
CAUTION: If the cable is installed inside a drinking water pipe, it is a precondition for the certification for in drinking water application, to secure that the water does not reach a temperature of 23 °C or above. It is a must to secure the installation by a thermostat with a set-point of +5 °C. The presence of a heating cable must
- Be made evident by affixing caution signs in the fuse box and in the distribution board or markings at the power connection fittings and/or frequently along the circuit line where clearly visible (tracing).

- Be stated in any electrical documentation following the installation.

Installation guidelines

- It is not recommended to install heating cables at temperatures below -5°C.
- Heating cable bending diameter must be minimum 50 mm (to the inside of the cable).
- Do not bend and pull connections.
- Ensure that the cable is sufficiently fixed and mounted according to the installation guide.
- The heating cables must be temperature controlled. See safety instructions.
- Ensure controllers and sensors are connected according to the applicable installation guide and/or application guide.
- Measure, verify and record insulation resistance during installation.
- Persons involved in the installation and testing of electrical trace heating systems shall be suitably trained in all special techniques required. Installations are intended to be carried out under the supervision of a qualified person.

Application/Product overview

	Pipe frost protection	Tank frost protection
DEVpipeheat™ 10 V3	ü	ü

DEVpipeheat™ 10 V3 is designed for preventing frozen water pipes. DEVpipeheat™ 10 V3 can be used on the outside of the water pipe and will heat through the pipe and prevent it from freezing. DEVpipeheat™ 10 V3 can also be installed inside water pipe, by using the dedicated fitting. It is certified to be suitable for drinking and common water pipes and is designed to be installed on pipe in all countries and inside pipe in certified countries (DK, EE, FI, LT, LV, SE, NO, RU), on the condition that water temperature is always kept below 23 °C.



On water pipe installation



In water pipe installation

Product specification

Type	Value
Nominal voltage	230 V~
Nominal output (tolerance)	10 W/m @ 10 °C (7,5-13,5 W/m @ 10 °C)
Max. permissible use temperature, powered	65 °C
Max. permissible use temperature, unpowered	65 °C
Minimum installation temperature	– 5 °C
Max. water temperature (inside water pipe installation)	23 °C
Max. water pressure (inside water pipe installation)	10 bar
Heating cable dimensions	8,75 × 5,15 mm
Outer sheath	HDPE + blue PVDF
Minimum Screen Coverage	100% aluminium foil
Maximum resistance of protective aluminum foil and drain wire	36 Ω/Km
Bending Ø, min.	50 mm (to the inside of the cable)
Cold lead with plug	2 m, 3 x 0,75 mm ²
IP Class for ready made unit IP Class for heating part and end termination	IP67 IP68

Specific heating cable length can be chosen from product range and used for different suitable projects. For more details contact your local DEVI sales company.

Note: In case of cold lead extension it is the full responsibility of the installer/designer to use proper cold lead dimensioned for the purpose and assembly sets that establish sufficient mechanical strength, flammability resistance and water proofing – and to design the heating unit with correct output for the specific application to avoid overheating of the cable or building materials. Regarding other types of applications please contact your local DEVI sales company. More information about applications (maximum linear output, specific output, heating circuit length, voltage etc.) can be found at www.devi.com

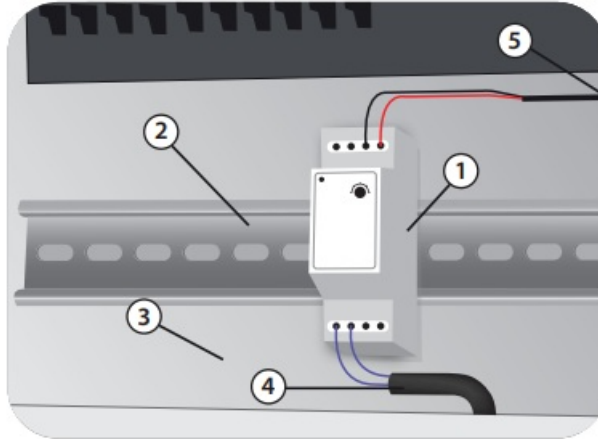
Thermostats/controllers

	Pipe frost protection	Tank frost protection
DEVlreg™ 330	ü	ü
DEVlreg™ 610	ü	
DEVlreg™ Multi	ü	ü

The DEVlreg™ thermostat/controller must be commissioned as prescribed in the installation instruction for the actual controller and adjusted where local conditions vary in relation to factory settings. Before every heating season or at least once per year, check for faults in the switchboard, thermostat and sensors. Each heating cable screen must be earthed in accordance with local electric regulations and connected to a residual current device (RCD). The heating cables must be temperature controlled and not operate at ambient temperature higher than 5 °C. More information about thermostats and controllers can be found at www.devi.com.

Sensors:

- Sensors can be live (230 V) components and must be treated according to specific Installation Guide and local standards.
- Sensors can be extended using cable with the same cable construction and cross sections (up to 50 m).
- See section 7 for specific installations.



1. Controller;
2. DIN-rail;
3. Electric cabinet;
4. Cold lead connection;
5. Sensor connection

Accessories

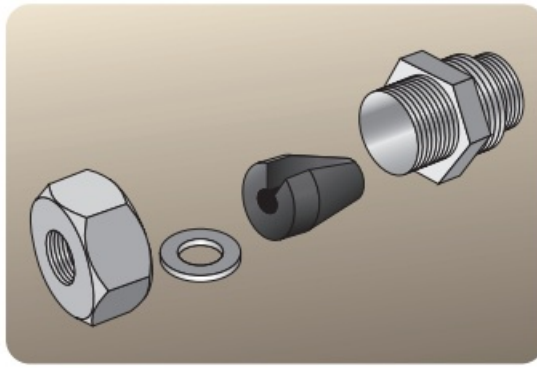
A comprehensive range of accessories for self-limiting cables is available. In order to find all accessories please refer to Product Catalogue or visit www.devi.com

Fixing elements



DEVI Aluminium Tape (19805078)

For ensuring efficient heat transfer.



3/4" + 1" Pipe fitting for DEVpipeheat™ 10 V3 (140F0956)

Wadding for internal mounting in pipe Rubber conic sliced sleeve, oval hole. Max. water pressure – 10 Bar at max. water temperature 23 °C.

Typical installations

Typical pipe tracing installation

On water pipe installation

1. Heating cable
2. Aluminum tape
3. Wire sensor
4. Insulation
5. Warning label/tap

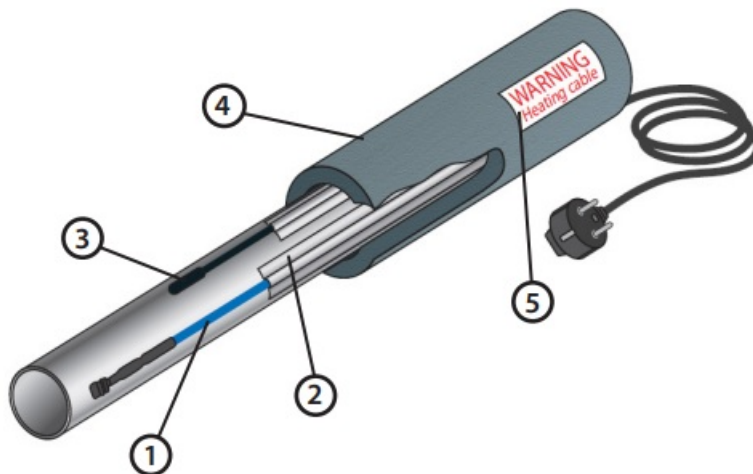


Fig. 1

1. Apply aluminum tape below (mandatory for plastic pipes) and on top on the whole length of the cable.
2. Insulate the pipe with at least 30 mm insulation or thicker if required based on heat loss calculation.

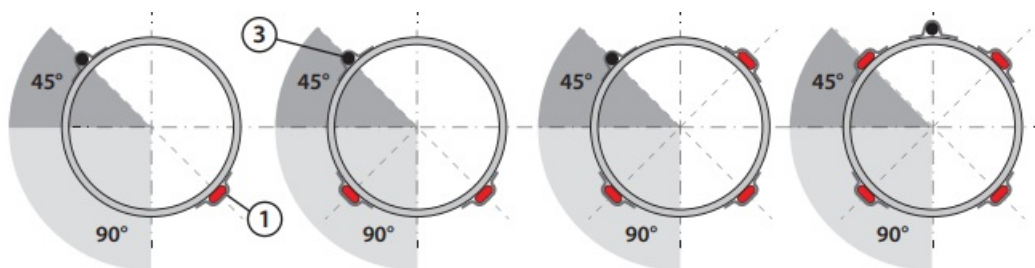


Fig. 2

In water pipe installation

1. – Heating cable;
2. Aluminum tape;
3. Wire sensor;
4. Insulation;
5. Warning label/tape;
6. 3/4" + 1" Pipe fitting

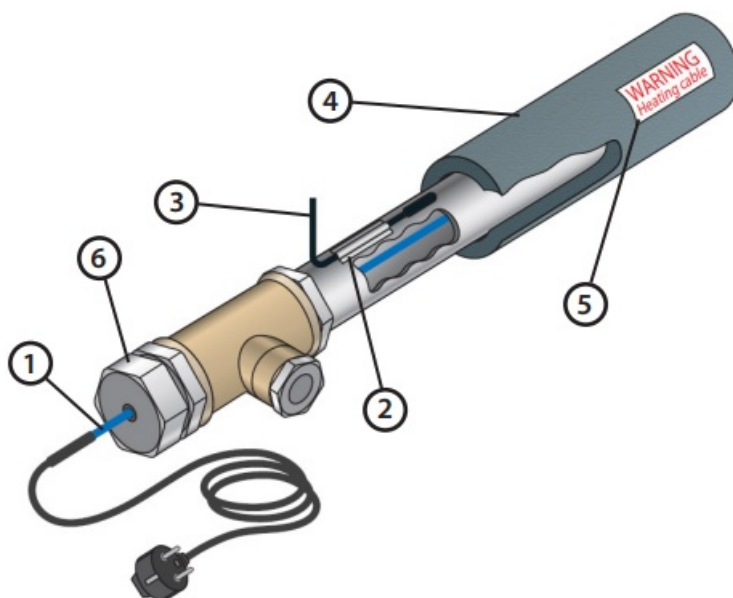
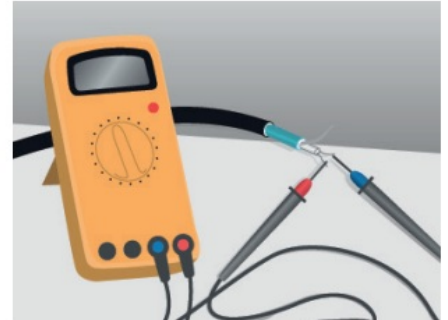
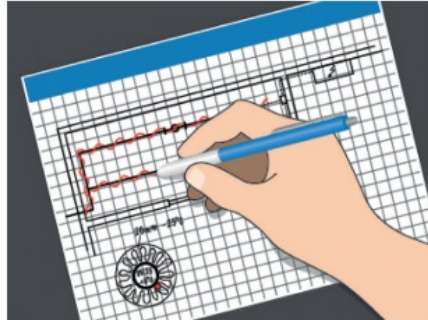
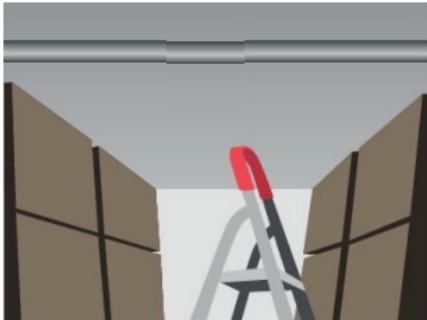


Fig. 3

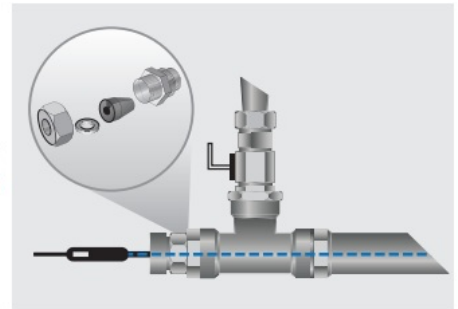
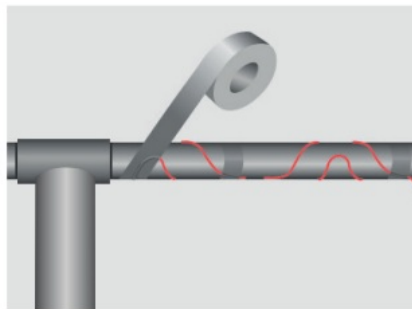
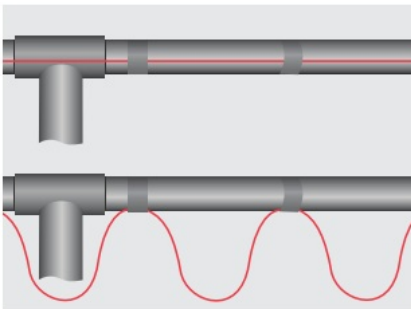
1. Fit a T-shaped pipe of a generous size over the pipe (3/4" and 1").
2. Fit the clean wadding (without side thread or sharp edges) inside the T-shaped pipe with small hole in the center.
3. Keep the cable clean and push the cable through the wadding to facilitate the installation. The connection between heating cable and connecting cable must be outside the wadding. Mount the wadding in the following sequence:
 - use only clean tools before installation as heating cable could be in contact with drinking water;
 - first you put the nut on facing the connection; mount the washer on the cable;
 - mount the threaded part with the threaded part facing the end of the cable;
 - insert almost whole length of the cable inside of the pipe, leave approx. 0,5 m of cable to install rubber

seal afterwards;

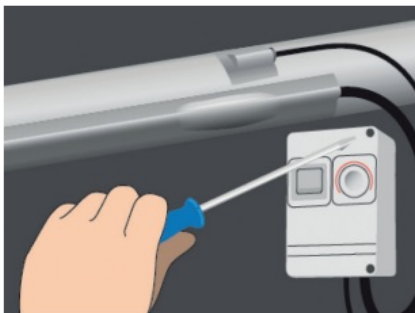
- the heating cable must extend straight through the T-shaped pipe;
 - install rubber seal on the cable. The conic rubber seal has a slice for heating cable.
4. Turn the nut until it fits tightly (max. torque for pipe fitting is 30 N·m).
 5. Insulate the pipe with at least 30 mm insulation or thicker if required based on heat loss calculation



1. Check the pipe system to be heated and make sure that the pipes are dry, smooth and tight. Check and prepare the switchboard.
2. Draw a plan positioning cable(s), sensors and thermostat, cable connections, cold tail, connection box, cable paths and switchboard.
3. Check the insulation resistance of the heating cables. The measured value shall be no less than 50 MΩ.



4. Straight lines and sensor must be fitted as shown at Fig.2. Twisted lines are attached as shown for every approx. 1 m pipe with aluminum tape.
5. Apply aluminum tape below (mandatory for plastic pipes) and on top on the whole length of the cable. Make sure that the cables do not cross sharp edges.
6. For in-pipe installation use 3/4" + 1" Pipe fitting for DEVIpipeline™ 10 V3 to fit cable inside of pipe. Max. water pressure – 10 Bar at max. water temperature 23 °C. Max. torque for pipe fitting is 30 N·m.





7. Attach and cover the sensor on top of the pipe with aluminum tape. Extend cold tails/leads and keep connections dry. Mount the connection box on the pipe or close to it and install the thermostat on the pipe or near it (depending on the thermostat).
8. Re-check the insulation resistance. Connect cables to connection boxes and to the switchboard.
9. After insulation, place safety marking tape on the insulation jacket or pipe trenches every 5 m. In subsurface

installations, a cover ribbon with a warning sign must be laid 10 cm above the cables.

Standard compliance

EN/IEC 60335-1 Household and similar electrical appliances –
Safety – Part 1: General requirements.

KTW-BWGL – Testing and inspections on products and materials in contact with drinking water.

Holder	Danfoss A/S
Product name, and relevant article number	Refer to the product label
Production site	Refer to the product label
Traceability to the production	To be found on insulation inside the cable
Cable length, nominal voltage, IP class, etc.	Refer to the product label
The registered trademark of Boverket No 241 217	
Certification Body	Kiwa Certification AB 

Accreditation number	1913
Type Approval No	TG 1747
Inspection Body	Danish Technological Institute (DTI)

Warranty

A 5-year product warranty is valid for:

self-limiting cables: DEVIpipeheat™ 10 V3. Should you, against all expectations, experience a problem with your DEVI product, you will find that Danfoss offers DEVIwarranty valid from the date of purchase that was no later than 2 years from the production date on the following conditions: During the warranty period Danfoss shall offer a new comparable product or repair the product if the product is found to be faulty by reason of defective design, materials or workmanship. The repair or replacement. The decision to either repair or replace will be solely at the discretion of Danfoss. Danfoss shall not be liable for any consequential or incidental damages including, but not limited to, damages to property or extra utility expenses. No extension of the warranty period following repairs undertaken is granted. The warranty shall be valid only if the WARRANTY CERTIFICATE is completed correctly and in accordance with the instructions, the fault is submitted to the installer or the seller without undue delay and proof of purchase is provided. Please note that the WARRANTY CERTIFICATE must be filled in, stamped and signed by the authorized installer performing the installation (Installation date must be indicated). After the installation is performed, store and keep the WARRANTY CERTIFICATE and purchase documents (invoice, receipt or similar) during the whole warranty period. DEVIwarranty shall not cover any damage caused by incorrect conditions of use, incorrect installation or if installation has been carried out by non-authorized electricians. All work will be invoiced in full if Danfoss is required to inspect or repair faults that have arisen as a result of any of the above. The DEVIwarranty shall not extend to products which have not been paid in full. Danfoss will, at all times, provide a rapid and effective response to all complaints and inquiries from our customers. The warranty explicitly excludes all claims exceeding the above conditions. For full warranty, text visit www.devi.com. devi.danfoss.com/en/warranty/

WARRANTY CERTIFICATE

The DEVIwarranty is granted to:

The insulation resistance shall be measured by means of a DC voltage of at least 500 V for one minute. The measured value shall be no less than 50 MΩ.

- Address
- Stamp
- Purchase date
- Serial number of the product
- Product
- Art. No.
- Installation Date & Signature
- Insulation [MΩ]

- Connection Date & Signature
- Insulation [MΩ]

Danfoss A/S

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Any information, including, but not limited to information on selection of product, its application or use, product design, weight, dimensions, capacity or any other technical data in product manuals, catalogs descriptions, advertisements, etc. and whether made available in writing, orally, electronically, online or via download, shall be considered informative and is only binding it and to the extent, explicit reference is made in a quotation or order confirmation. Danfoss cannot accept any responsibility for possible errors in catalogs, brochures, videos and other material. Danfoss reserves the right to alter its products without notice. This also applies to products ordered but not delivered provided that such alterations can be made without changes to the form, it or function of the product. All trademarks in this material are property of Danfoss A/S or Danfoss group companies. Danfoss and the Danfoss logo are trademarks of Danfoss A/S. All rights reserved.

Documents / Resources

 <p>Ready-made self-limiting cable DEVIpipeline™ 10 V3</p>	<p>DEVI Ready Made Self Limiting Cable DEVIpipeline 10 V3 [pdf] Installation Guide Ready Made Self Limiting Cable DEVIpipeline 10 V3, Self Limiting Cable, Limiting Cable, Ready Made Cable, Cable</p>
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Manuals+.