

NBS Category:

Trace heating systems

NBS Manufacturer:

DEVI™ by Danfoss

NBS Sub Category:

Self-regulating trace heating cables

Application

Domestic hot water temperature maintenance

Description

The domestic hot water supply can be designed as a single pipe system, with no return pipes or recirculation pumps, with no hydraulic balancing needed. An energy efficient, self-regulating temperature maintenance cable is installed on the flow pipe to compensate for the unavoidable heat losses and to maintain pipe temperatures.

The domestic hot water supply can also be designed as a hybrid system, with recirculation loops only on the main supply pipes and an energy efficient, self-regulating temperature maintenance cable is installed on all branch pipe run outs to optimise and maintain pipe temperatures.

The self-regulating temperature maintenance cable system maintains and optimises domestic hot water temperature. It complements the domestic hot water supply, by providing the convenience of instant hot water, accurate temperature control and the option for thermal disinfection. The system is complete with low smoke, self-regulating temperature maintenance cables, an advanced energy efficient controller and cold applied components for interconnection and termination. All are covered by Environmental Product Declarations (EPD), CE marked and certified according to IEC (EN) codes.

System components:

- Low smoke, self-regulating temperature maintenance cables
- Cold applied, insulation displacement components for interconnection
- Cold applied, gel-filled end seals for end termination
- Multi circuit, programmable control and monitoring system

Self-regulating temperature maintenance cables (DEVIhotwatt™):

DEVIhotwatt™ is a range of low smoke, self-regulating temperature maintenance cables designed specifically for domestic hot water temperature maintenance. All are covered by an Environmental Product Declaration (EPD) to transparently report and document the environmental impact, based on a product life-cycle assessment (LCA). Each are tested to demonstrate compliance with IEC EN 62395-2:2013, IEEE 515.1, they fulfil the requirements of DGVW and SVGW and are qualified for a useful lifetime in excess of 25 years. The full range also benefit from extended maximum circuit lengths.

The self-regulating temperature maintenance cables comprise a conductive polymer core, modified low smoke electrical insulation (radiation cross-linked to ensure long life expectancy), tinned copper braid and modified low smoke over jacket (printed with cable type, batch number and metre marks).

As shown on the design plans, the domestic hot water flow pipes are fitted with DEVIhotwatt™ 45 (B) or DEVIhotwatt™ 55 (B) or DEVIhotwatt™ 70 (B). All to be installed within the maximum circuit lengths of 231m for DEVIhotwatt™ 45 (B) on 16 A MCB, 188m for DEVIhotwatt™ 55 (B) on 20 A MCB and 142m for DEVIhotwatt™ 70 (B) on 20 A MCB. The stated maximum lengths assume a minimum 10°C switch on.

Cold applied interconnection and termination components (DEVI™-Connecto):

Interconnection and end terminations are made with high performance, cold-applied, insulation displacement connectors and gel filled end seals. All are UV-resistant, IP66 and 85°C rated and suitable for 2500 V DC insulation resistance test. The DEVI™-Connecto components are covered by an Environmental Product Declaration.

Multi circuit, programmable control and monitoring system (DEVIreg™Hotwater):

All hot water temperature maintenance circuits are controlled with a 4-channel electronic programmable unit installed on a DIN rail (DEVIreg™Hotwater), providing the user with:

- Easy set up
- Definable accuracy
- Two control modes – hot water temperature maintenance, with or without thermal disinfection
- Manual thermal disinfection option
- Four independent channels, each capable of controlling a separate pipe system
- Two temperature sensors per channel
- Seven different compatible sensors, including NTC15k (15kOhm at 25°C)
- BMS control through a Modbus RS485 serial interface

The DEVIreg™Hotwater controller is covered by an Environmental Product Declaration and tested to demonstrate compliance with:

- Low Voltage Directive 2014/35/EU EMC Directive 2014/30/EU
- IEC EN 60730-1
- IEC EN 60730-2-9

Thermal insulation:

Insulation selection and thickness is strictly in accordance with the design plans and the DEVI Domestic Hot Water Application Manual.

Design:

The manufacturer or operations partner shall be able to provide all design calculations, including heat loss and corresponding selection of temperature maintenance cables; electrical schedules providing cable lengths, circuit breakers, circuit start up currents, operating currents and loads, line list summary and single line details; system layout and schematic drawings indicating power connections, tees and end seals; controller configuration listing and wiring diagrams.

Installation:

All temperature maintenance cables shall be installed, tested and commissioned in strict accordance with the design plans and the DEVI Domestic Hot Water Application Manual, within the defined maximum circuit lengths and using a 2500 V DCMegger. Installation of thermal insulation shall be closely coordinated with the responsible sub-contractors. Professional grade aluminium tape shall be used on plastic pipes:

Electrical connection:

- Supply voltage: 230 V AC / 50 Hz
- Connections between the electrical supply, control panel and temperature maintenance circuits shall be installed by an approved electrical contractor
- Circuit breaker protection required by MCB (BS EN 60898 type C). Residual current device required, RCD (30 mA sensitivity, tripping within 100ms). Maximum approximately 500 m of self-regulating temperature maintenance cable can be monitored per RCD

General Information

Warranty Description

Manufacturers Guidance

Warranty of 5 years on self-regulating temperature maintenance cables, 2 years on controllers and cold applied connection systems

Uniclass

CAWS

Specification data – Self-regulating trace heating cables

Application

Domestic hot water temperature maintenance

Self regulating trace heating cables

DEVIhotwatt™ 45 (B)

Guidance for specification option:

45°C domestic hot water temperature maintenance

DEVIhotwatt™ 55 (B)

Guidance for specification option:

55°C domestic hot water temperature maintenance

DEVIhotwatt™ 70 (B)

Guidance for specification option:

55°C domestic hot water temperature maintenance, when thermal disinfection is required

Cold applied insulation displacement interconnection components and gel filled end terminations

DEVI™-Connecto-B-S

Guidance for specification option:

Powered connection to temperature maintenance cable. Supplied with 1.5m length power cable and 1 gel filled trace heating cable end termination.

DEVI™-Connecto-B-A

Guidance for specification option:

Powered connection to temperature maintenance cable. Supplied with 1.5m length power cable.

DEVI™-Connecto-B-E

Guidance for specification option:

Gel filled end termination for temperature maintenance cable.

DEVI™-Connecto-B-C

Guidance for specification option:
Splice to connect 2 lengths of temperature maintenance cable.
DEVI™-Connecto-B-T

Guidance for specification option:

Y-junction to connect 3 temperature maintenance cables. Supplied with 1 gel filled trace heating cable end termination.

DEVI™-Connecto-B-TE-2

Guidance for specification option:

Powered Y-junction to connect 3 temperature maintenance cables. Supplied with 1.5m length power cable and 2 gel filled trace heating cable end terminations.

DEVI™-Connecto-B-TE-3

Guidance for specification option:

Powered Y-junction to connect 3 temperature maintenance cables. Supplied with 1.5m length power cable and 3 gel filled trace heating cable end terminations.

DEVI™-Connecto-B-X

Guidance for specification option:

X-junction to connect 4 temperature maintenance cables. Supplied with 2 gel filled trace heating cable end terminations.

DEVI™-Connecto, bracket

Guidance for specification option:

Support bracket to install DEVI™-Connecto modules outside the pipe thermal insulation. Supplied with 6 cable ties.

BIM objects

Platform	Compatible	Version
Revit	Revit 2017	1

[Download BIM](#)

Similar products from DEVI™ by Danfoss

DEVipeeguard™ 10/25/33

DEVliceguard™ 18(T) Ready-made

DEVIsnow™ 20/30T

DEVIsnow™ 300T

DEVlasphalt™

DEViflex™

DEVimat™

