

## Welcome!

Thank you for choosing Ebeco. We hope that you will come to enjoy your snow melting installation for a long time to come. For the guarantee to apply, the product must be installed and used as described in this manual. It is therefore important that you read the manual.

If you have any questions, please contact us at Ebeco. Call +46 (0)31-707 75 50 or send an email to support@ebeco.se. Visit ebeco.com for more information.



## Important

The snow melting installation is a strong current installation and must therefore be installed in accordance with current regulations by an authorised electrician. For the guarantee to apply, the guarantee certificate must be correctly and completely filled in, and signed by an authorised electrician.

- The purpose of a snow melting installation is to keep an open channel for drainage of the water, so that it does not freeze on its way down to the frost-free zone.
- T-18 is used for installations on gutters, plastic or metal downpipes
- The T-18 CT (8960482) has an outer casing that is resistant to oil and is for use on installations for felt and asphalt roofs
- Clipped cable ends must be protected against moisture penetration during installation. Seal the ends temporarily to prevent water penetration

- Max connection length at 10 A: 50 m
- Max connection length at 13 A: 65 m
- Max connection length at 16 A: 80 m
- Max self-supporting length: 30 m
- Operating voltage: 230 V
- Fuses must have C characteristics
- The installation must be protected by 30 mA earth fault breaker
- The cable is metre marked
- Heating cable signs (8960963) must be installed at joints and downpipes.
- Before an installation is started for the first time, it must be tested and the results documented in the included test report.

## Operation and maintenance

For the best possible operation, the sensors should be cleaned after installation and before each season. Gutters must be cleared of leaves and debris. T-18 should be tested at the beginning of each season, and the result compared to the initial test report. Bear in mind that the cables are self limiting and that the current therefore varies with the outside temperature.

## Installation instructions Smarta Tak

### Control EB-Therm 800 Temp/humidity control

The thermostat is factory-set to the "Max/Min" program where the temperature range is +2°C to -10°C.

It is very important to place the sensors carefully because they control the installation. Temperature sensors (8581622) are placed where the sun cannot access, e.g. to the north or on a shaded side. It must not be affected by heat discharges from the property or the heating cable.

Roof sensors (8935075) are attached to Smartclip T (8960978) and locked around the heating cable in the gutter with the supplied strips. To best detect moisture, the roof sensor should be placed at the lowest point of the gutter, that is, where the risk of snow and water gathering is greatest, see fig. 1.

Roof sensors must be cleaned after installation. Prefabricated sensor cable is 15 m and can be extended with 3x1.5 mm<sup>2</sup>, but for a maximum of another 50 m. The temperature sensor is placed with 2x1.5 mm<sup>2</sup>.

### General installation

The heating cable is placed one way in the gutter with a maximum width of 15 cm. The heating cable is connected directly to Smartlock P (8935077) for incoming feed. A termination kit is needed for each heating cable length.



Fig. 1

## Placement of Smartlock and end terminations

To ensure a long service life of the installation, end terminations must be pulled up towards the edge of the gutters, see fig. 2. Smartlocks must not be placed where water can stand or flow, for example in gutters or gutter valleys. Placement should therefore, if possible, be in a protected place such as under roof eaves or indented in an attic. An alternative location may be on a snow cover, see fig. 3.

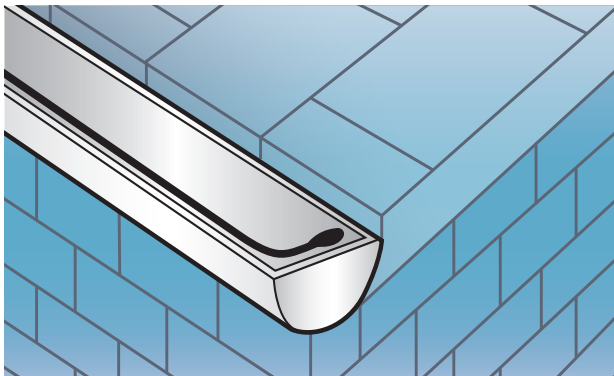


Fig. 2

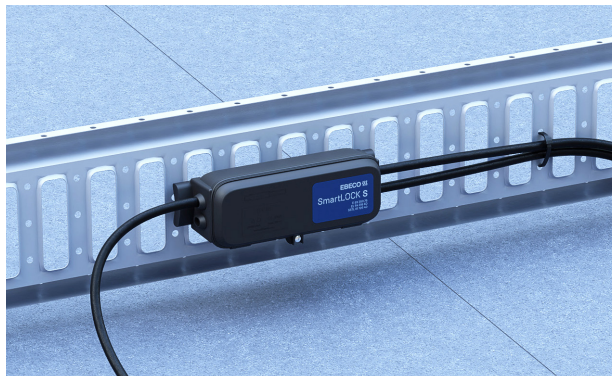


Fig. 3

## Hopper/Downpipe

For detours to downpipes, the heating cable is branched with Smartlock S (8935076). Be sure to lay the cable so that the entire gutter is heated. There should be a small amount of slack in the cable. To protect the cable against mechanical damage where it goes into the downpipe it should be laid and locked in place with a Smartclip T (8960978), see fig. 4. The length of hanging cable should not exceed 30 m. With greater lengths, the cable must be relieved using a support wire or similar.



Fig. 4

## Attachment

The heating cable is secured with Smartclip H (8960974) in the gutter, see fig. 4, or Smartclip F (8960973) for the eaves plate, see fig. 5. For longer and straight stretches, attach Smartclips at c/c distance intervals of about 1 m but secure slightly more frequently for insetting and bends in the heating cable.



Fig. 5

## Hopper/Funnel

The heating cable is laid internally once around the funnel and fastened with two Smartclips U (8960976), see fig. 6.



Fig. 6

## Spout

If the downpipe has spouts, the heating cable should be about 0.5 m longer than the downpipe. This part is folded back into the downpipe and fastened with Smartclip U (8960976). See fig. 7.



Fig. 7

## Internal downpipe or roof drain

In the case of internal downpipes, roof wells or detours of less than 3 m, the heating cable with Smartclip T (8960978) is placed in a loop instead of a branching. See fig. 9.

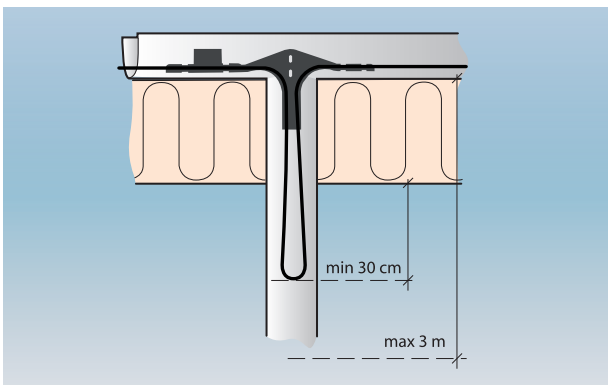


Fig. 9

## Connection to stormwater pipe

If the downpipe is connected to a stormwater pipe, the heating cable must be routed far enough underground that there is no longer a risk of frost (approximately 1-1.5 m). See fig. 8.

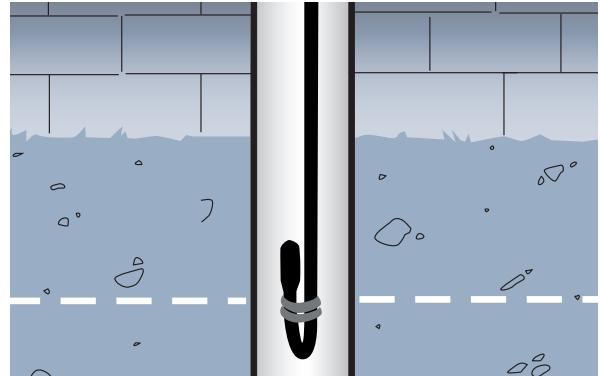


Fig. 8

## Box gutters

In gutters wider than 15 cm or in box gutters, the heating cable must be laid in several runs and fixed with glue. Spot glue with a c/c distance of approx. 1 m, but more closely at recesses and bends. Also glue over the heating cable to ensure attachment. The distance between the cables must not exceed 12 cm. See fig. 10.

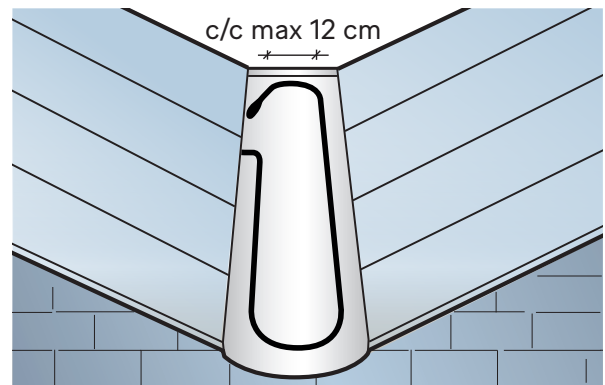


Fig. 10

## Terms & Conditions of Guarantee Smarta Tak

Ebeco AB provides a 10-year warranty for material faults to products and accessories delivered by Ebeco hereafter referred to as the "Products". Should material faults occur to the Products during the period of the warranty, Ebeco AB agrees to repair or replace the Products without cost to the purchaser.

Ebeco provides a 5 years warranty for material faults for the accompanying thermostat.

The warranty only applies under the condition that installation is performed by an authorised electrician in accordance with applicable regulations and the installation instructions issued by Ebeco. This guarantee certificate including the test documentation below must be completed in full, and along with material specifications or an invoice, signed by the electrician who performed the installation. The heating cable installation must also be documented with diagrams or drawings that show cables lengths, positions of joints, feeds, etc.

The warranty does not apply for installations performed by non-authorised electricians or if a non-authorised electrician has made changes or repairs. Furthermore, the warranty does not apply to faults that have occurred as a result of improper materials and constructions, or as a result of faulty installation. Damage caused by vandalism, fire, lightning or water, or damage caused by carelessness, abnormal use or as a result of accidents, is not covered either.

In cases in which a material fault is covered by the warranty, Ebeco AB must be notified of this.

In cases in which a claim will be submitted under the guarantee, this guarantee certificate with the associated invoice for installation, material specifications and completed and signed test documentation must be presented.

EBECO AB  
Martin Larsson, VD



## Test report (Smart Roofs)

Object: .....

Type of heating cable: .....

Art. no.: .....

Outdoor temp during test: .....

Fuse no.*	Cable no.*	Cable length* (m)	Insulation resistance (MΩ) min 10 MΩ	Current (A)

\*Information taken from the installation diagram or record drawing. The heating cables must be connected for minimally 5 minutes before a current reading is taken. The heating cable installation shall also be documented through a diagram or drawing that shows the lengths of cables, positions of joints, supplies etc.

### Resistance value sensors

Temperature sensor	Measured resistance	Theoretical resistance
Sensor A	..... kΩ	..... (from the table below)
Sensor B	..... kΩ	..... (from the table below)

### Theoretical resistance

Ambient temperature	-10 °C	±0 °C	+10 °C	+20 °C	+30 °C
Temperature sensor	42,7 kΩ	27,5 kΩ	18 kΩ	12 kΩ	8,3 kΩ

### Voltage value sensor

Roof sensor	Status	Voltage*	Set-point
Sensor C	Dry Humid	..... V DC ..... V DC	0 V DC 24 V DC

\*Measured between the black and blue sensor cable or between connection blocks 12 and 13 on EB-Therm 800.

- ☐ The system is documented with photos/drawings
- ☐ Joints, boxes and end parts are placed to protect them from water penetration, and boxes are filled with sealant.

Electrical installation performed by:

Company: .....

Date: .....

Installer (block capitals): .....

Signature: .....

Pidennetty takuu aika 25 vuoteen ja yksinkertaisempi dokumentaatio **Takuu-sovelluksella**

Haluatko välttää paperisen pöytäkirjan täyttämistä ja ylläpidolta? Takuu on palvelu, joka helpottaa työtäsi valtuutettuna asentajana. Palvelun avulla dokumentoit mittaustiedot, tallennat asennusvalokuvat ja luot digitaalisen takuutodistuksen lähetettäväksi asiakkaalle. Lue lisää palvelusta ja sen käytöstä osoitteessa **takuu.ebeco.fi**.

**Vinkki!**