

**ELEKTRA**  
***SelfTec***<sup>®</sup> **16**  
***ready2heat***



- Self-regulating heating cables



## Application

**ELEKTRA SelfTec®16 ready2heat** heating cables are intended for the antifrost protection of:

- pipeline systems up to 50 mm in diameter,
- sprinkler systems,
- drain pipes for condensate outlets in air conditioning and ventilation systems,
- actuators,

as well as for the protection against snow and ice of:

- gutters,
- downpipes,
- roof drains.

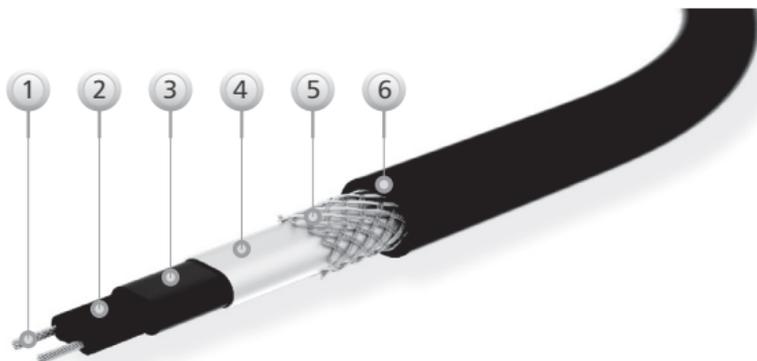
## Characteristics

**ELEKTRA SelfTec®16 ready2heat** self-regulating heating cables increase their heating power when the temperature of the heated system drops and adequately decrease it when the temperature increases. Change of power only occurs in these places where ambient temperature changes. Self-regulating heating cables are never in danger of overheating and that is why they may touch and cross.

ELEKTRA  
**SelfTec®16 ready2heat**

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Construction of the *ELEKTRA SelfTec®16 ready2heat* heating cable



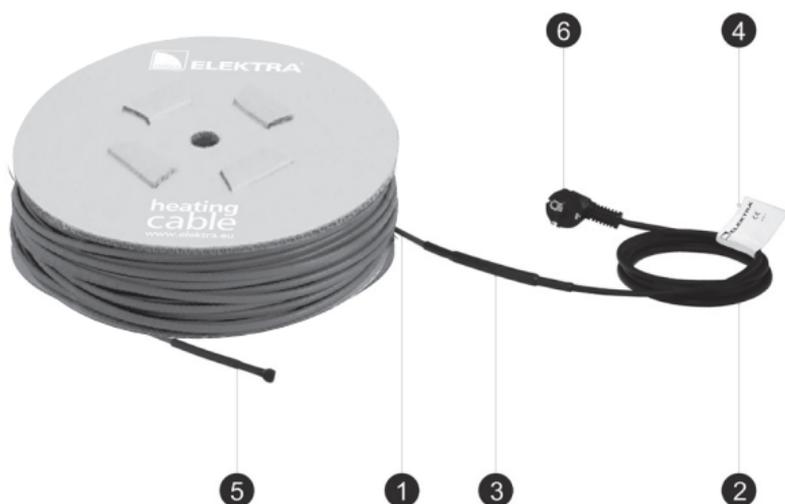
- 1 tinned multi-wire copper conductor
- 2 self-regulating conductive polymer
- 3 modified polyolefin insulation
- 4 PET covered aluminum foil shield
- 5 tinned copper braiding
- 6 UV resistant halogene-free outer sheath

## Technical properties

*ELEKTRA SelfTec®16 ready2heat* self-regulating heating cables are terminated at one end with a 3 metre-long power supply conductor with a hermetic plug, and a connecting joint at the other.

Technical parameters:

- specific heat output (at +10°C) 16 W/m
- power supply voltage 230V/~50/60 Hz
- external dimensions of the cable ~6x9 mm
- min. installation temperature -25°C
- max. exposure temperature +65°C
- min. cable bending radius 3.5D
- IP rating IPX7
- max. protection type C 16 A



- ① **ELEKTRA SelfTec® 16** heating cable
- ② “cold tail” power supply conductor
- ③ connecting joint between the power supply conductor and the heating cable
- ④ label
- ⑤ end joint
- ⑥ hermetic plug

**Note:**



Never bend the joint and end seal.

## Selection

### Pipeline systems, sprinkler systems, etc.

Length of the heating cables depends from:

- pipe's diameter,
- min. ambient temperature on the installation site.

Table 1. Length of the heating cable per 1 m of the heated pipe

			Pipe's diameter [inches]					
			1/2	3/4	1	1 1/4	1 1/2	2
Ambient temperature [°C]	-10	length [m]	1	1	1	1	1	1
		spiraling ratio [cm]	0	0	0	0	0	0
	-15	length [m]	1	1	1	1	1	1
		spiraling ratio [cm]	0	0	0	0	0	0
	-20	length [m]	1	1	1	1.1	1.2	1.5
		spiraling ratio [cm]	0	0	0	29	23	17
	-25	length [m]	1	1	1	1.3	1.4	1.7
		spiraling ratio [cm]	0	0	0	16	15	14
	-30	length [m]	1	1.1	1.3	1.6	1.8	2.2
		spiraling ratio [cm]	0	18.5	12.5	10.5	10	9.5

Value 1 signifies parallel positioning of the cable along the pipe. Values higher than 1 signify the length of the heating cable per 1 m of heated pipe. In this case, the cable should be spiralled along the pipe.



**Note:**



Heated pipeline systems, sprinkler systems, etc., must be insulated.

## Gutters, downpipes

Selection of the adequate length of the heating cables depends from:

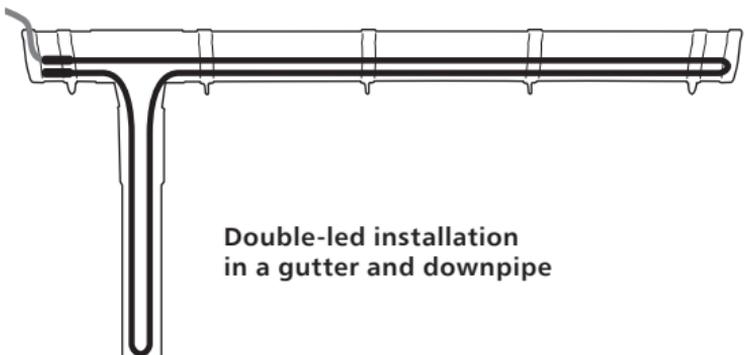
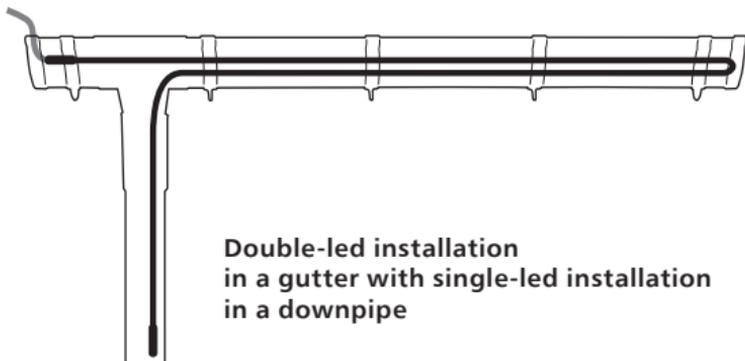
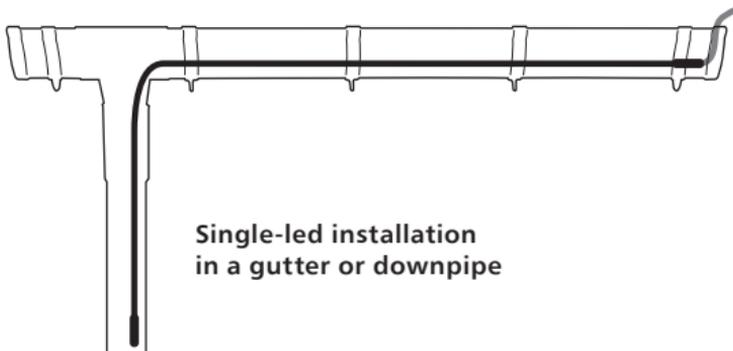
- min. ambient temperature in the area of the installation site.

Min. ambient temperature [°C]	Number of segments of the heating cable	
	Above -5°C	Below -5°C
<b>gutters</b>	1	2
<b>downpipes</b>	1	1 or 2*

\* if the building is located in the regions of intense snowfall

The values are given for gutters of diameters Ø100-125 mm.

## Examples of installation in gutters and downpipes

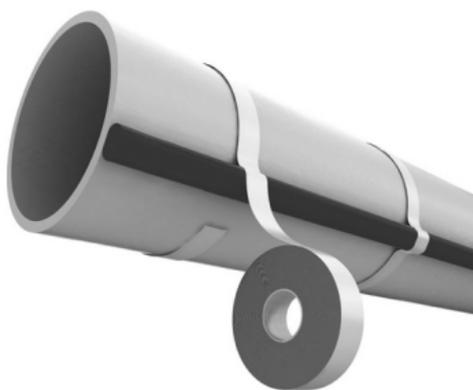


## Materials

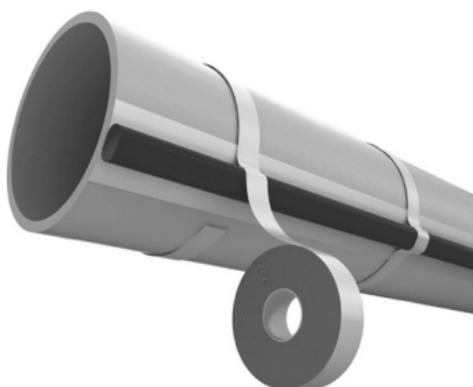
- required for the installation of heating cables on pipes and pipelines:
  - **ELEKTRA SelfTec®16 ready2heat** self-regulating heating cable (in the box),
  - self-adhesive installation tape (in the box),
  - self-adhesive aluminium foil min. 0.06 mm thick, approx. 50 mm wide (available in the offer),
  - thermal insulation for pipes.
  
- required for the installation of heating cables in gutters and downpipes:
  - **ELEKTRA SelfTec®16 ready2heat** self-regulating heating cable (in the box),
  - gutter and downpipe holders (available in the offer),
  - support bar (available in the offer).

## Installation on pipes

- *ELEKTRA SelfTec®16 ready2heat* self-regulating heating cable should be selected matching the pipe's length according to table 1,
- The heating cable should be mounted along the pipeline in its bottom part with self-adhesive installation tape fixed every 30 cm. If, basing on the table, the selected cable is longer than the heated pipe, the cable should be installed spirally,



- For plastic pipelines, install self-adhesive aluminium foil on the pipe before fixing the heating cable. This will improve the temperature distribution on the surface of the pipeline,



- After the cable has been installed, the entire length of the cable should be covered by self-adhesive aluminum foil (min. thickness: 0.6 mm, min. width: 50 mm), which facilitates heat transfer from the cable, as well as to the pipeline. Additionally, aluminium foil will prevent the cable from being pushed into thermal insulation,



- After the installation of the heating cable has been completed, thermal insulation should be placed on the pipeline.



## Installation in gutters and downpipes

### Preliminary proceedings:

- measure the length of gutters and downpipes,
- assess the required heat output resulting from the climate conditions in which the installation is to be made,
- select the proper length of the heating cable taking into account the number of the cable's segments in the gutter and downpipe.

Min. ambient temperature [°C]	Number of segments of the heating cable	
	Above -5°C	Below -5°C
gutters	1	2
downpipes	1	1 or 2*

\* if the building is located in the regions of intense snowfall

The values are given for gutters of diameters Ø100-125 mm.

### Note:



If the water from downpipes is discharged directly to the rain channel, the segment of the downpipe from the surface level to the soil freezing depth also should be heated.

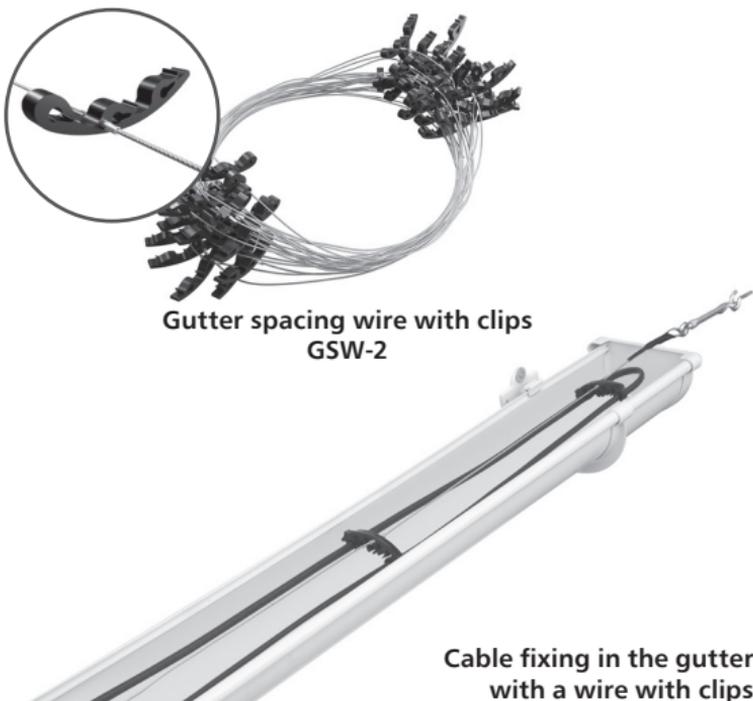
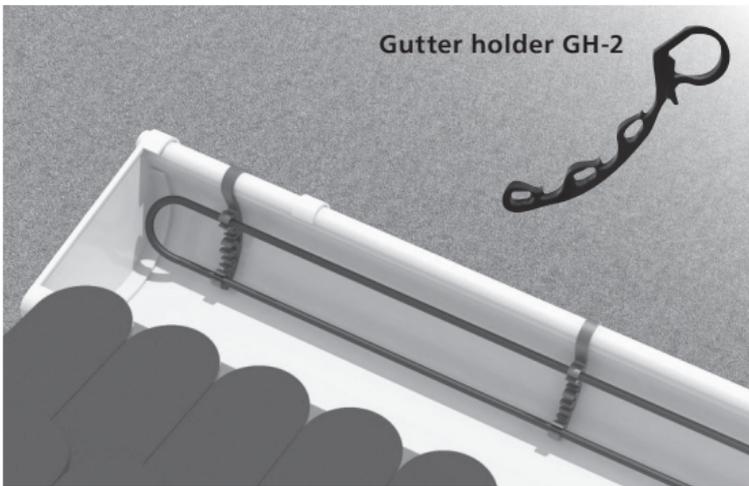
If the calculated heating cable length has no direct equivalent in the available ready-made units, select the longer cable and leave excess cable in the pipe.

## Heating cable fixing in gutters and downpipes

Heating cables should be fixed in order to maintain steady spacing between neighbouring cable's segments.

### Gutters

Heating pipes can be fixed with holders (holder spacing should not exceed 30 cm) or a wire with clips.



## Downpipes

Single-led heating cables – do not require fixing if the length of the heated downpipe does not exceed 6 m.

Double-led heating cables – to be fixed with holders (holder spacing should not exceed 40 cm) or a wire with clips. Wire with clips are applied when the length of the heated downpipe exceeds 6 m.



Downpipe  
spacing clip  
DSC-2



Downpipe spacing wire with clips  
DSW-2



Leading the cables  
in gutters  
and downpipes

Protect the joining spot of the gutter and downpipe with a flexible cable support to prevent possible damage to the cable.

When using the wire with clips in the downpipe, suspend it on the support bar.



- 1 support bar DSW-SB-1
- 2 flexible cable support FCS-1-SS

## Operation

The system runs after the hermetic plug has been connected to the mains. Self-regulating heating cables are characterised by changeable heating power depending on ambient temperature. The lower the temperature, the higher the heating cable's power, and thus the amount of heat generated. Even though the cables are self-regulating, they operate also in ambient temperatures above 0°C and charge certain amount of electric energy.

To eliminate electric energy consumption in ambient temperatures above 0°C, disconnect the power supply of a self-regulating heating cable.

**Note:**

Residual current device (RCD) having a residual current not exceeding 30 mA is required.

Screen of the heating cable shall be connected to an earth terminal.

The installed heating cable shall be designated with appropriate caution signs or markings, positioned in relevant locations, such as power connection fittings. The heating cable route constitutes a part of electrical documentation following the installation, and it should be acknowledged in such documentation.

## Warranty

ELEKTRA company grants a 3 year-long warranty (from the date of purchase) for the *ELEKTRA SelfTec®16 ready2heat self-regulating heating cables*.

### Warranty conditions

1. Warranty claims require:
  - that the heating system has been executed in full accordance with the Installation Instructions herein,
  - presentation of the proof of purchase of the heating cable under complaint.
2. The Warranty loses validity if any attempt at repair has been undertaken by an installer unauthorised by the ELEKTRA company.
3. The Warranty does not cover the damages inflicted as a result of:
  - mechanical fault,
  - incompatible power supply,
  - lack of adequate overload and differential protection measures of the electric energy system supplying the heating cable in question,
  - no power supply disconnection for the heating cable in ambient temperatures above 0°C.
4. Within the Warranty herein, ELEKTRA company undertakes to bear exclusively the costs required to cover the necessary repairs to the heating cable itself, or to exchange the cable.

#### Note:



The Warranty claims must be registered with the proof of purchase, in the place of purchase or the offices of ELEKTRA company.