

A DRAFT OR A PICTURE OF THE HEATING CABLE, SUPPLY TABLE AND ACCESSORIES

MATEC – ELECTRIC DE-ICING SYSTEMS

MANUAL INSTRUCTION

HEATING DE-ICING CABLE TYPE GPRN FOR GUTTERS AND DRAIN PIPES



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REMARKS

- During installation it is required to follow instructions included in the Heating Cable Manual Instruction.
- Temperature controller's installation must be done according to temperature controller Installation Manual.
- It is forbidden to mount the cable on pins, bolts, screws or other fixing elements that can damage the outer coating of cables.
- The cable installation surface must be smooth with no sharp edges or sharp fixing elements.
- Heating unit cannot be mounted on non-uniform bases.
- Heating cable should not be installed in places with permanent building.
- Heating cable resistance should be measured twice: after opening the package and before installers' work and also after placing the heating cable in an appropriate place.
- Ensure the sub-floor is dust and sharp elements free.
- Don't install the heating cable if the ambient temperature is below + 5°C.
- Don't cut the heating cable or its connection with power supply cable.
- The heating cable should not undergo excessive strain and should be protected against sharp device damage.
- Heating unit must be supplied by means of a device from TN-S electric circuit with RCD (residual current device) of nominal power supply lower than 30 mA. The installation should have surge protection.
- The heating cables must not come into contact, cross with each other or other cables - this could damage the insulation. The minimum distance between the heating cables must not be less than 5-times the diameter.
- It is required to make a draft or add pictures of arrangement of the heating cable, power supply cable and the connection place of the heating cable with power cable („cold wire”). The draft or pictures are an integral part of the as-built documentation.
- The non-detachable supply cable cannot be replaced. If the cord is damaged, the equipment is useless. The power supply cable can be shortened to the desired length, necessary for mounting the temperature controller.
- The device is not intended to be used by people (children) with limited physical, feeling or psychic ability or people without experience or without the device knowledge unless it is under supervision of a person responsible for safety or according to installation manual.
- Pay attention to children - they must not play with the device.
- The radius of heating cable bending shall not be less than 8 times of its diameter.
- The heating cable cannot be permanently immersed in any liquid.
- The heating cable must be used in accordance with manufacturer's specifications.

DESCRIPTION

Heating cables type GPRN are used to protect gutters and drain pipes against de-icing. They are resistant to UV radiation and are laid in gutters in pairs or individually. They are fixed by additional accessories (clips for gutters, clips for drain pipes, suspensions and chains). The cables must be mounted with a temperature controller, equipped with a temperature sensor or ice and snow sensors. The arrangement and application of particular accessories are shown below.

- The GPRN heating cables are designed to operate outdoor. They are prepared to operate at 230 V AC nominal voltage and 18 W/m power.
- The heating cable is connected with power supply cable, which by means of a temperature controller is connected to 230 V AC.
- The device should be connected according to the details included in this operating manual. Installation, connection and control should be carried out by a qualified electrician staff, who act in accordance with the service manual and the device functions. Before installation make sure the connection cables are not under voltage.
- Improper transport, storage, and use of the device influence its wrong functioning. It is not advisable to install the device in the following cases: if any device part is missing or the device is damaged or deformed. In case of improper functioning of the device contact the producer.

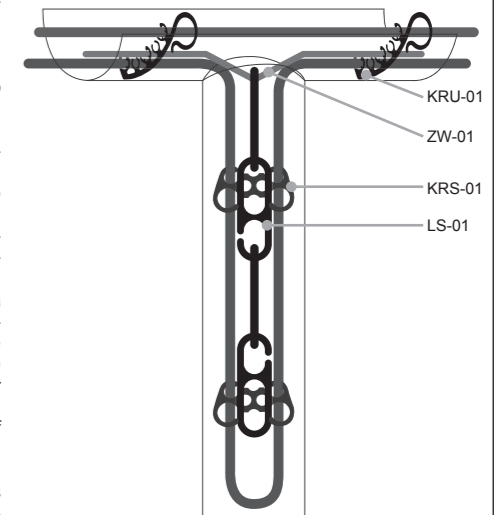


Fig. Arrangement and application of accessories

GPRN heating cable - set includes:

- one-sided power supply heating cable connected with power supply cable,
- installation instruction with the Warranty Card.

A temperature controller is an essential element used to control the GPRN heating cable. It is used to connect the heating cable with electric installation. It is important to choose a correct temperature controller with regard to the application of a heating cable and its function. The ZAMEL Sp. z o.o. company offers the application of temperature controllers by EBERLE.

It is advisable to choose a temperature controller in accordance to power of the connected heating cable as well as to the placement of the heating cable and measurement probes. To control temperature, a controller keeping a constant temperature or a controller with a programmer needs to be used and which allows for the adjustment of heating parameters. Depending on the function the heating system with a temperature controller shall realise, the following sensors are applied: temperature sensors, ice and snow sensors, temperature and humidity sensors.

The connection of the heating cable with a temperature controller should be done in accordance with a diagram described in the temperature controller manual instruction.

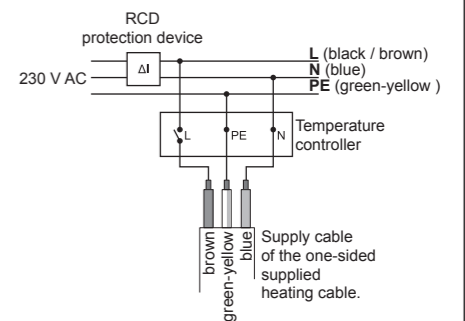


Fig. A connection diagram of a heating cable by means of a temperature controller to the electrical installation

TECHNICAL DATA

Heating cable TYPE	GPRN 12 + 100 m long
Power supply voltage:	230 V AC / 50 Hz
Unit power:	18 W/m
Operating temperature:	80 °C
Supply type:	one-sided
Heating cable:	two-wire, shielded

The heating cable is ended with H05VV-F 3G1 power supply cable at one side

INSTALLATION

1. Before purchase, measure the surface the heating cable will be applied to.
2. Choose a cable of an appropriate length. If the width / diameter of the gutter / drain pipe does not exceed 80 mm, a single arrangement of the heating cable may be used. In case this width / diameter is bigger than the recommended one, it is advisable to arrange the cables in a pair while maintaining the minimum 45 mm distance between the cable runs. The heating cable in the downpipe should be selected that it is 1 meter below ground level. This will allow the water outflow safely eg for drainage wells.
3. Unpack particular elements and inspect visually of what you have received.
4. Make a draft of the heating cable arrangement in a drain pipe / gutters. Specify and mark the installation place of the temperature controller and electric supply as well as of sensors used with the controller. A draft or pictures are an integral part of the as-built documentation.
5. Check the heating cable resistance with the supply cable based on the value given on the label. Write it down in the Warranty Card.
6. Prepare the connection place of the heating cable and a temperature controller to the electrical installation.
7. Prepare the protection corrugated pipes for the separate insertion of: a supply cable of the heating cable and a sensor's signalling cable.
8. Before the heating cable arrangement make sure the surface is free of dust and sharp elements.
9. In order to prevent the heating cables from contact in a gutter, mount clips (type: KRU-01) inside gutters every 25 cm.
10. Then insert the heating cable into the clips. During installation the cable outer insulation must not be damaged.

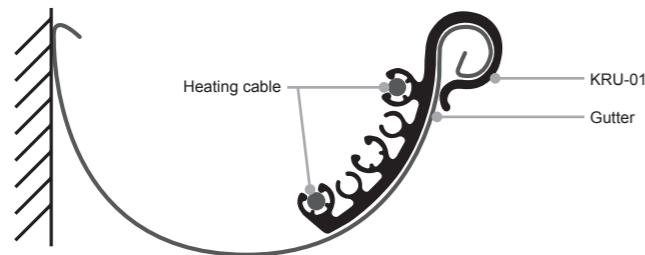


Fig. A diagram of arranging a clips KRU-01 in a gutter with a heating cable

11. In case of mounting the heating cable in a drain pipe before insertion of the heating cable the following should be done:
 - a) Put a suspension ZW-01 on a drain. The suspension can be shortened depending on to the dimensions of the drainage system.
 - b) Attach a chain LS-01 to the suspension, which together with a cable should run along the drain pipe till its end (bottom).
 - c) Attach a KRS-01 clip used for drain pipes to the LS-01 chain.
 - d) Attach the heating cable to the KRS-01 clips. It is important that the cable is laid at the whole length of the gutter – to the bottom.

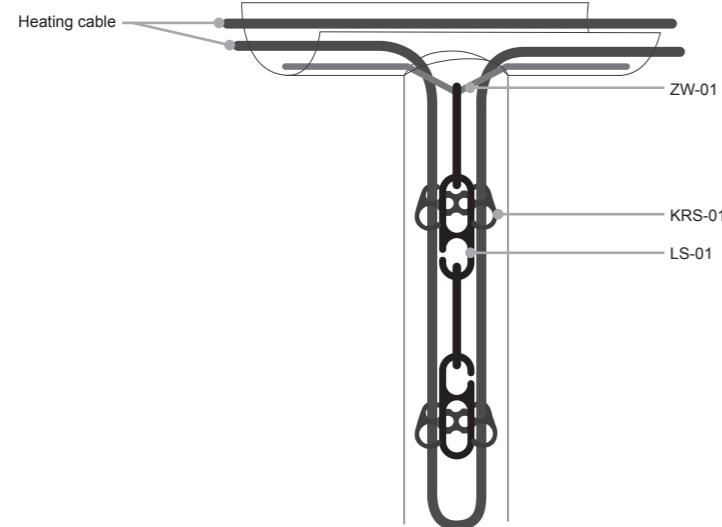


Fig. A diagram of a heating cable arrangement and equipment in a drain pipe

12. The heating cable must not be shortened. Its excess length should be lain down as an additional cable run. (keeping the minimum 45 cm distance).
13. The supply cable and cables from the sensors should be pulled through in a separate protection corrugated pipe and install the temperature controller in a previously arranged place. To pull cables through a protection corrugated pipe use the so called „pilote”. In order to avoid damaging the cables' connection with the heating cable do not pull or stretch them, etc.
14. Carry out the second resistance measurement just after the heating cable has been mounted but before connecting it to the temperature controller and write the results in the Warranty Card.

Connection of the heating cable to the electrical installation should be carried out by a qualified electrician staff with suitable authorisations. The installation should be in accordance with standards valid in a particular country. The electrical installation, the GPRN heating cable is connected to with a supply cable, should be made in accordance with applicable national regulations.

OPERATION

- Before starting the seasonal heating system, visual inspection of the heating and power cable should be done in order to eliminate the risk of faulty wiring operation.
- The heating system operation is limited to switching on the temperature controller and to adjust the required parameters.



UWAGA

The device is designed for single-phase installation and must be installed in accordance with standards valid in a particular country. The device should be connected according to the details included in this operating manual. Installation, connection and control should be carried out by a qualified electrician staff, who act in accordance with the service manual and the device functions. Before installation make sure the connection cables are not under voltage. Improper transport, storage, and use of the device influence its wrong functioning. It is not advisable to install the device in the following cases: if any device part is missing or the device is damaged or deformed. In case of improper functioning of the device contact the producer.



The symbol means selective collecting of electrical and electronic equipment. It is forbidden to put the used equipment together with other waste.

WARRANTY

Zamel Sp. z o.o. declares and assures that the electric heating systems MATEC (heating cables) manufactured and supplied by Zamel Sp. z o.o. are compliant with current standards in the Company and binding norms in Poland. The warranty includes all MATEC products under the condition of proper storage, transport, installation and operation according to binding norms. There is 2 year warranty for MATEC products and the warranty refers to defects made by the manufacturer itself.

GENERAL WARRANTY CONDITIONS AND CLAIM CONSIDERATION BY Zamel Sp. z o.o.

1. Zamel Sp. z o.o. assures warranty for MATEC products. There is 2 year warranty for the heating cables. Warranty time starts at the moment of product sell by Zamel Sp. z o.o. to the Purchaser. Be able to provide as a proof of purchase of the product an invoice by Zamel Sp. z o.o.
2. Zamel Sp. z o.o. shall process the claim at its own discretion.
3. The purchaser must inform about the claim which will be considered within 14 workdays only after proper claim notification. The PURCHASER shall lay any claims in writing to the Authorised Point or Zamel Sp. z o.o. only on presentation of an invoice (or its number and date of issue)
4. The properly filled Warranty Card should include (the scheme or photos):
 - installed heating cable with supply cable (including distances between the places of the heating cable) and arrangement of joints (a part connecting the heating cable with the supply cable),
 - installation place of the temperature controller, connection of the supply cable „cold” to the thermocontroller,
 - location of control sensors and thermocontroller control and their connection to the electrical installation.
5. In case it appears that Zamel Sp. z o.o. is not the manufacturer of the claimed product or in case the claim is deemed void by Zamel Sp. z o.o., the Purchaser will bear all the costs connected with claim consideration.
6. When your Warranty is invoked, your damaged product will be replaced free of charge to yourself by Zamel Sp. z o.o.
7. The manufacturer warranty is not valid in below cases:
 - damage caused by unauthorised modifications made by the PURCHASER or any third parties to the product
 - mechanical damage of the device
 - wrong power supply
 - electric installation which is not compliant with current IEE wiring regulations and installations
 - damage caused by incorrect product mounting - not according with MATEC Installation Manual.
8. In case of product claim by an indirect Purchaser of Zamel products, the Purchaser is obliged to present the claim to the Supplier (where the product was purchased).

WARRANTY CARD

ZAMEL sp. z o.o.

Installation place

Post code, city/town

Street, Home/Flat No

Telephone

Filled by the electrician

Electrician Name/Surname

Telephone

No of a Certified Electrician /
Expire date of a Certified Electrician

Installation date

Resistance measurement results of the Heating Cable:

After the package was opened
(before installation) [Ω]:

After laying the heating cable
(before connection to the temperature controller) [Ω]:

Signature / stamp

Place for the Heating Mat label