



# Operating Instruction

## SL MICROTHERM DNA

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# Operating Instructions SL MICROTHERM DNA

## 1 General

These operating instructions describe the safe and proper way to work with the device. The safety information and instructions given as well as the local accident prevention regulations and general safety regulations valid in the area of application must be complied with. These instructions are a constituent part of the instrument and need to be kept in the immediate vicinity of the device accessible to personnel at all times.

Before starting any work, the operating instructions should be read in full.

## 2 Use

The SL..THERM heaters are manufactured according to Directive 2014/34/EU and are licensed for direct heating through flange-mounting (conduction) or for room heating (convection) in Ex-zone 1 and Zone 2 for instrument categories G/ D in temperature classes T3 to T6. You will find the temperature class for your device on the label. See Technical Data [▶ Page 4] section.

The areas of application are:

- Frost protection
- Condensation protection
- Maintaining temperature

As an option, thermostats can be integrated in the connecting cable. If a TAE is used, the respective operating instructions must be complied with.

EC type examination certificates PTB 02 ATEX 1116 X with appendices and supplements in German and English, as well as IEC Scheme Certificate IECEX PTB 07.0055X.

See <http://www.intertec.info>

## 3 Explanation of symbols for warnings and signal words

The safety information warns the user about risks and provide information on how risks can be avoided.

Safety information can be found at the start of the chapter before the instructions which may lead to a hazardous situation. Additional safety information can be found at the beginning of this manual.

Safety instructions which must be adhered to are highlighted as follows:

### DANGER

#### DANGER

This sign is warning about an extremely hazardous situation which, if not heeded, will lead to death or serious irreversible injury.

### WARNING

#### WARNING

This sign is warning about a hazardous situation which, if not heeded, may lead to death or serious irreversible injury.

### CAUTION

#### NOTICE

This sign is warning about a hazardous situation which, if not heeded, may lead to slight, reversible injury.

### NOTICE

#### NOTE

It is essential to pay attention to this safety advice as you may otherwise incur material damage.

### INFO

Important notes and useful additional information.

## 4 Safety information

### CAUTION

#### Risk of injury at the rib ends

The sharp edges on the heating ribs may cause injury if handled incorrectly.



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## ⚠ CAUTION

### Risk of burns from a hot surface

Attainable highest temperatures:

- Max. 160°C with T3 heating systems
- Max. 100°C with T4 heating systems
- Max. 70°C with T5 heating systems
- Max. 50°C with T6 heating systems

Do not touch device during operation! Before working on the device, allow it to cool down first.

|   |  |    |
|---|--|----|
| Material                                | Seawater-proof aluminium, black anodized |    |
| Mean Time Before Failure                | 50.000 h                                 |    |
| Storage temperature                     | - 60 to + 80°C                           |    |
| Profile type "N" Height x Width x Depth | 155 x 50 x 50                            | mm |

## i INFO

You will find the precise technical data for your instrument on the label. You will find information on the heating output on the data sheet.

## 5 Installation accessories

The following are included in the scope of delivery:

| Piece | Description                                |
|-------|--|
| 1     | Heating unit                               |
| 1     | Angle bracket made of flat steel           |
| 1     | Packet of screws containing the following: |
| 2     | Hexagon bolts M 6x12                       |
| 1     | T-head bolt type 28/15, M 6x15             |
| 2     | M6 flat square nut                         |
| 1     | Washer shape A 6.4                         |
| 2     | Lock washers shape J 6.4                   |
| 1     | M6 hex nut                                 |

If one of the components listed here is not included in the scope of delivery, then please contact the manufacturer.

## 6 Technical Data

|   |  |
|---|--|
| Protection class                            | IP66/IP68 1bar/30min   |
| Rated voltage                               | max. 265 V AC  |
| Permitted operating voltage                 | max. 275 V AC  |
| Rated current (in compliance with VDE 0298) | max. 10 A  |
| Ambient temperature                         | - 60 to + 60°C   |
| Max. permitted operating temperature        | - 60 to + 180°C  |
| Switching capacity of fault alarm (AM)      | 10 A / 275 V AC  |
| Connecting cable                            | Silicone hose cable, notch- and oil resistant, 3 x 1,5 mm <sup>2</sup>         |
| Connecting cable AM                         | Silicone hose cable, notch- and oil resistant, 5 x 1,0 mm <sup>2</sup> Ø8,5 mm |

## 7 Installation

### NOTICE

#### Carefully remove

When removing from the packaging and during transport, the connection line must not be stressed or bent.

Free convection may not be impeded. You will find the minimum distances and installation position in the following figure.

The label needs to remain legible.

Please make sure that the absolute heat transfer coefficient of the surrounding housing is not smaller than 0.5 W/K.

To ensure operational safety, the heater must operate under temperature conditions which will NOT exceed the trigger temperature of the limiter.

The operating temperatures must be adhered to.

The connection cable must be permanently installed up to the inlet into the on-site junction box, taking the permissible bending radius = 5 x outer diameter into consideration.

In the dust Ex area, the applicable requirements of EN 60079-14 must be complied with.



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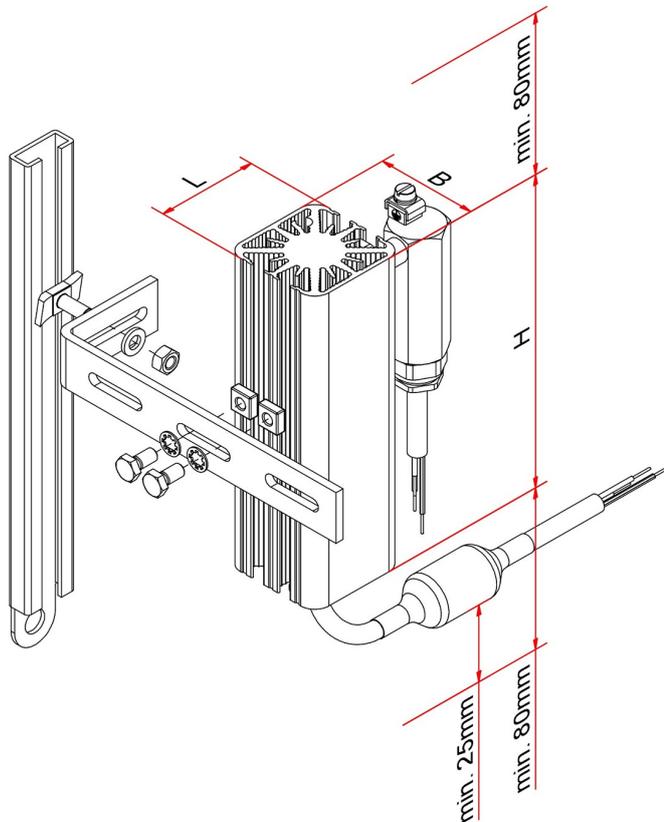


Illustration 1: Installation example MICROTHERM with TAE or TS and clearance

Additional installation material, such as rails or panels and also junction boxes, are not included in the standard scope of delivery (see Installation accessories [Page 4]) and must be ordered additionally.

## 8 Connection

### **i** INFO

The device may only be connected up and secured by a trained person, taking into account the "rated voltage" and "rated current" specified on the nameplate.

Where operating voltage = measured voltage (rated voltage), then the heater is at its rated output. Mains voltage fluctuations up to 10 % are then permissible.

Each heater with integrated TS thermostat must be preceded by a 10 A fuse or a motor protection switch with short-circuit and thermal quick release (set to 10 A) as short-circuit protection. When using a heater without integrated thermostat, the fuse protection can be selected according to the cross-section of the supply cable.

Additional equipotential bonding is required. The terminal block designated for this purpose has the ground sign.

In a TT or TN system, a residual current device (RCD) must be used where the measured triggering residual current does not exceed 100 mA. Residual current devices with a measured triggering residual current of 30 mA are preferable. In an IT system, an insulation monitoring device needs to be used which switches off the supply as soon as the insulation resistance is no greater than 50  $\Omega$  per Volt of the rated voltage (refer also to DIN EN 60079-14; section 7.4).

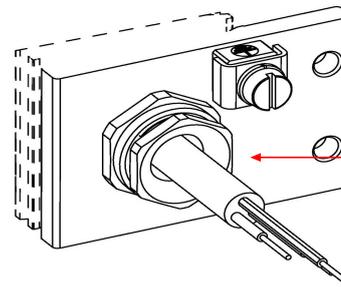


Illustration 2: Example heater with KLE connection

### **⚠ CAUTION**

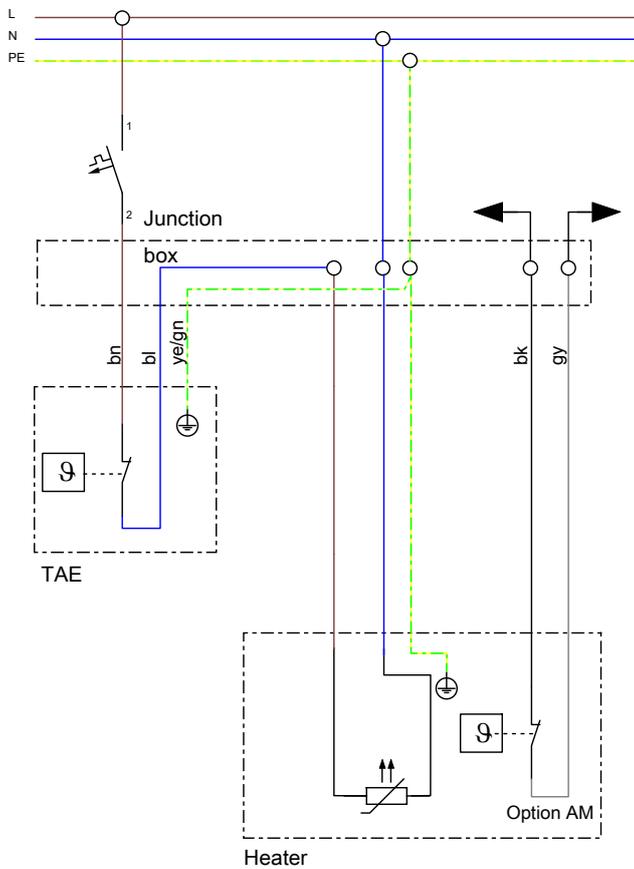
**NOTICE: Do not remove adapter/ cable connection to connect up the heater!**

This would cause irreversible damage to the heater and this would mean that the explosion protection can no longer be warranted.

**The illustration may deviate from the heater.**

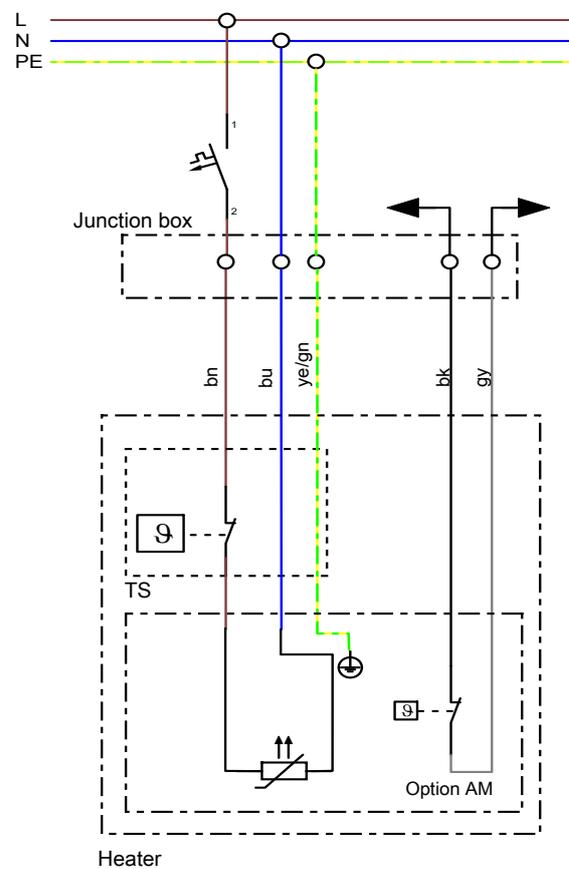


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bn=brown bl=blue ye/gn=yellow/green bk=black gy=grey

Illustration 3: SL...THERM with TAE



bn=brown bu=blue ye/gn=yellow/green bk=black gy=grey

Illustration 4: SL...THERM with TS

## 9 Commissioning

If the heater is installed in accordance with the notes in the Installation [▶ Page 4] section and Connection [▶ Page 5] sections, then the radiator may be commissioned.

### CAUTION

**Sufficient heat dissipation must be ensured.**

Unauthorized covers must be removed as otherwise there is the risk of the heater overheating.

The heating circuit is permanently disconnected by a temperature melt fuse which can't be reset if these installation instructions are not adhered to.

## 10 Maintenance

The design of the device does not require any maintenance.



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Functional and safety test intervals can be freely selected by the operator in accordance with the applicable regulations.

Repairs may only be carried out by the manufacturer in the factory.

All components have to be kept clean and free of dust and harmful substances that could lead to excessive temperature rise.

In the dust Ex area, the applicable requirements of EN 60079-17 and EN 60079-19 must be complied with.

## 11 Troubleshooting

If the heater fails, check the installation. Carry out a continuity test on the heating circuit. Pay attention to the connection diagram and switching point of the thermostat!

## 12 Deinstallation

Disassembly may only be carried out by a trained person.

### DANGER

#### Risk of fatal injury from electric current!

If contact is made with live components, there is the risk of fatal injury.

For this reason, switch off the voltage supply, secure against being switched on again and check that no more voltage is present.

Disconnect connection line from the clamps and from the connection socket, disconnect device from bracket and remove it.

## 13 Disposal

Disassemble the components of the product, taking the applicable local labour protection and environmental regulations into consideration and make sure that the components are recycled:

- Scrap metal
- Send plastic elements to recycling
- Sort other components according to their material properties and dispose of them.

## NOTICE

### Environmental damage may be caused if disposed of incorrectly!

Electrical scrap and electronics components are subject to hazardous waste treatment and must only be disposed of by certified specialists!

The local community authorities or specialist waste disposal companies can provide information on environmentally friendly disposal.

## 14 EU declaration of conformity

The manufacturer, INTERTEC-Hess GmbH, Raffineriestrasse 8, 93333 Neustadt/Donau, Germany, hereby declares in sole responsibility that the product

#### Product / Type designation:

SL MICROTHERM

complies with the provisions of the following directives 2014/34/EU (ATEX), 2014/30/EU (EMC), 2011/65/EU (RoHS), 2012/19/EU (WEEE) complies with the following standards, harmonized standards, where appropriate and/or standardized documents:

EN IEC 60529:1991+A1:2000+A2:2013

EN IEC 60079-0:2018

EN IEC 60079-1:2014

EN IEC 60079-31:2014

EN IEC 61000-6-4:2007+A1:2011

#### Harmonized Standard (RoHS):

DIN EN IEC 63000:2019

#### Designation:

CE0102

II 2 G Ex db IIC T6, T5, T4, T3 Gb

II 2 D Ex tb IIIC T85°C, T100°C, T135°C, T200°C Db

PTB 02 ATEX 1116 X

Neustadt, January 28th, 2020



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Dipl.-Ing. Martin Hess, Managing Director

## 15 Further information and service

If the information contained in this instruction manual should not be sufficient in any way, then INTERTEC would be glad to be at your disposal to provide further information and service.

Please contact your INTERTEC contact person or directly contact

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Website: [www.intertec.info](http://www.intertec.info)

### Warranty

The legally defined warranties and warranty periods of 24 months are applicable to our scope of supply and services.

You will find more detailed information in the manufacturer warranty from INTERTEC for heating systems and accessories.



These instructions do not claim to take all designs, options or changes into consideration, even in association with installation, operation or maintenance. INTERTEC does not accept responsibility for providing information about changes made retrospectively.