



Protected operating conditions

**INTERTEC**



# Operating Instructions

CP MEGATHERM D.A HI

**Table of contents**

1 General ..... 3

2 Use ..... 3

3 Explanation of symbols for warnings and signal words ..... 3

4 Safety information ..... 3

5 Installation accessories ..... 4

6 Technical Data ..... 4

7 Installation..... 4

8 Connection..... 5

9 Commissioning..... 6

10 Maintenance..... 6

11 Troubleshooting ..... 6

12 Deinstallation ..... 6

13 Disposal..... 6

14 EC declaration of conformity ..... 7

15 Further information and service ..... 7



# Operating Instructions CP MEGATHERM D.A HI



## 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 CP..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

The standard design has a room thermostat integrated in the connecting cable for frost protection applications or a safety thermostat for maintaining temperature. If a TAE is used, the respective operating instructions must be complied with.

The SMART HEATER HI SYSTEM is used for demanding heating tasks in explosive areas to maintain high temperatures in analytical instruments. The temperature controller TC connected to the electrical heater has a temperature sensor in the heating coil serving as a temperature limiter.

EC type examination certificates PTB 02 ATEX 1041 X with appendices and supplements in German and English, as well as IEC Scheme Certificate IECEX PTB 07.0052X.

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.



# Operating Instructions CP MEGATHERM D.A HI



## ⚠ 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.

## 5 Installation accessories

The following are included in the scope of delivery:

Piece	Name
1	Heating unit
4	slide nut/screw plate M6 with spring
4	M 6x45 cheese-head screws with hex socket

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. 250 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> Ø8,8 mm
Connecting cable AM	Silicone hose cable, notch- and oil resistant, 5 x 1,0 mm <sup>2</sup> Ø8,5 mm
Material	Seawater-proof aluminium, black anodized

Special voltages with corresponding power adjustment and component selection are possible.

Profile type "T" Height x Width x Depth	325 x 229 x 60	mm
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Profile type "P" Height x Width x Depth	225 x 229 x 60	mm
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## i INFO

You will find the precise technical data for your instrument on the label.

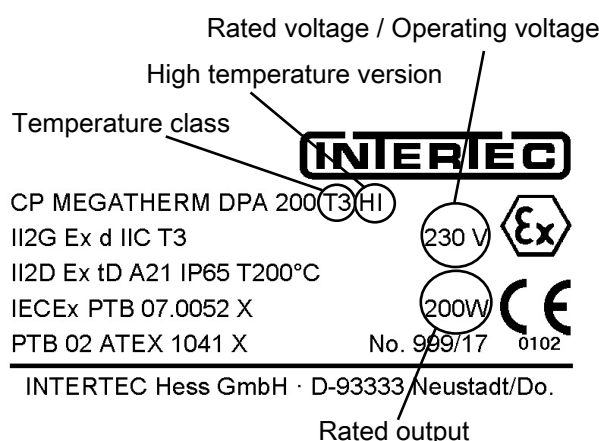


Illustration 1: Example: CP MEGATHERM DPA 200 T3 HI label

## 7 Installation

### NOTICE

#### Carefully remove

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

For free convection, the heater needs to be installed with ribs standing vertically. The minimum distances to the floor and to devices above it must be complied with. The label needs to remain legible.

If an additional TAE thermostat is switched in series, then it can be attached to the surface of the heater (thermal coupling). The minimum distance also needs to be adhered to here. Refer to the following drawing.

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.





# Operating Instructions CP MEGATHERM D.A HI



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

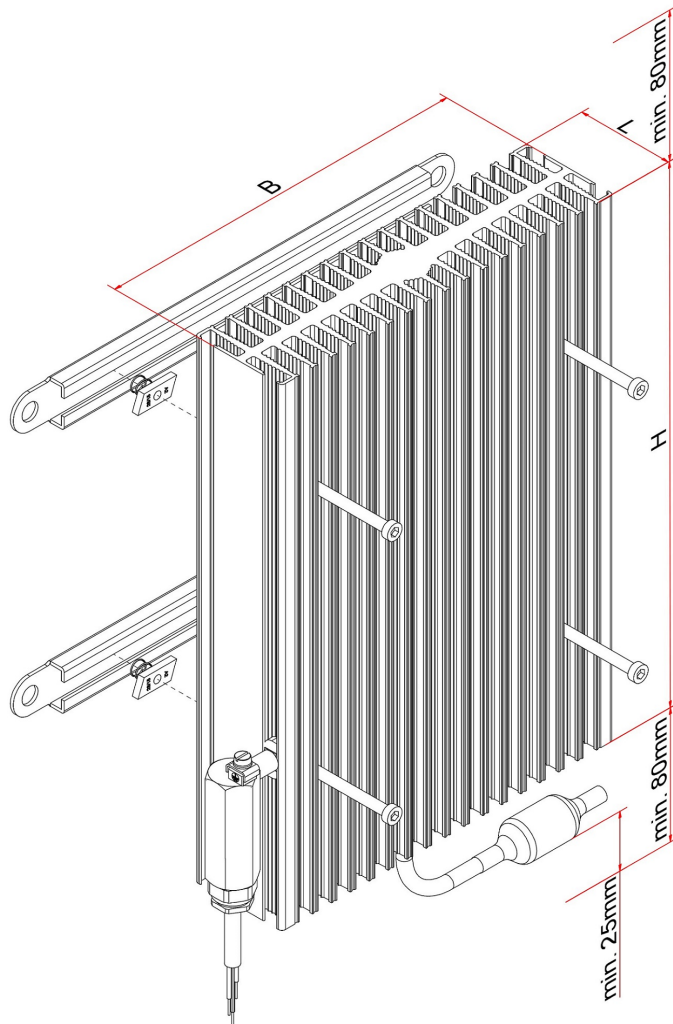


Illustration 2: Installation example MEGATHERM with TS or TAE and clearance

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.

For protection against short circuit and line protection you can use circuit breakers up to 10 A.

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 Ω per Volt of the rated voltage (refer also to DIN EN 60079-14:2008; section 7.4).

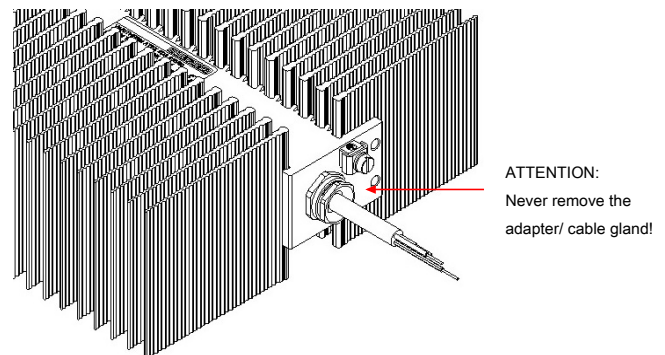


Illustration 3: Example heater with KLE connection

### **⚠ CAUTION**

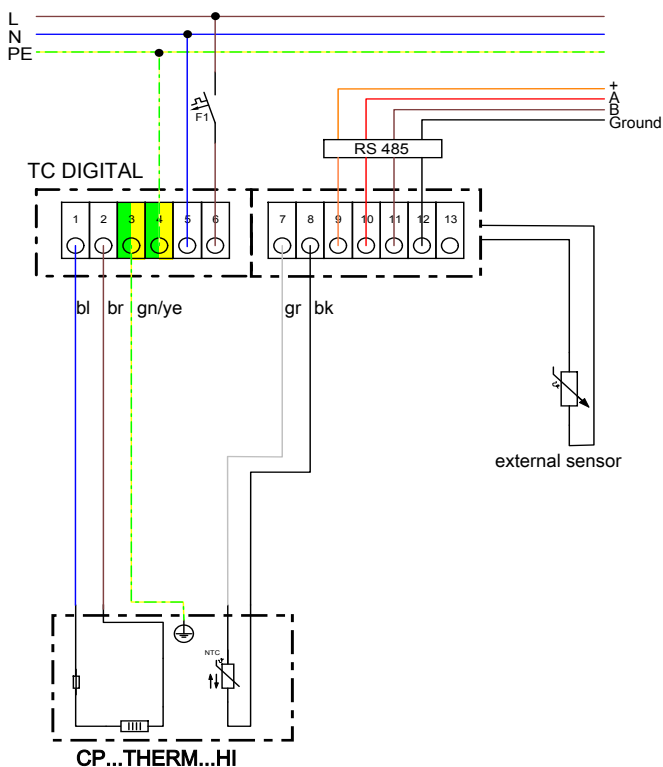
**NOTICE: Do not remove adapter/ cable connection to connect up the heater!**

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.**



# Operating Instructions CP MEGATHERM D.A HI



br=brown bl=blue ye/gn=yellow/green bk=black gr=grey

Illustration 4: Smart Heater HI System with TC ATEX

## 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.

Unauthorised 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.

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.

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!

In the case of overheating, the thermal indicator (see figure) indicates a discoloration. If more than four fields are blackened, the heater must be uninstalled and returned to the manufacturer for inspection.



Illustration 5: Temperature indicator

## 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.



# Operating Instructions CP MEGATHERM D.A HI



## 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 EC 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:

CP MEGATHERM

complies with the provisions of the following directives **2014/34/EU (ATEX)**, **2006/95/EC (LVD)**, **2004/108/EC (EMC)**, **2011/65/EU (RoHS)**, **2012/19/EU (WEEE)** complies with the following standards or standardized documents:

EN IEC 60529:1991+A1:2000+A2:2 013	EN IEC 60079-0:2012
EN IEC 60079-1:2007	EN IEC 60079-31:2014
EN IEC 61000-6-4:2007+A1:2011	

### Designation:

CE0102

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

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

PTB 02 ATEX 1041 X

Neustadt, 01.06.2017

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

INTERTEC-Hess GmbH

Raffineriestr. 8

93333 Neustadt/Donau

Germany

Phone: +49 9445 9532-0

e-mail: [info@intertec.info](mailto:info@intertec.info)

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.