

MSH<sup>ex</sup>

## **Betriebsanleitung**

HSB Stillstandsheizung

## **Operating Manual**

HSB anti condensation heating

## **Instructions de service**

HSB Chauffage à l'arrêt

## **Руководство по эксплуатации**

HSB Устройство обогрева при простое

## **Manual de Instruções**

HSB Calefação estacionária para moto



**Vorbehalt**

Technische Änderungen behalten wir uns vor.  
Änderungen, Irrtümer und Druckfehler begründen keinen Anspruch auf Schadenersatz.

**Reservation**

Technical data subject to change without notice.  
No claims for damages arising from alterations, errors or misprints shall be allowed.

**Réserve**

Sous réserve de modifications technique sans préavis.  
Les modifications, erreurs et fautes d'impression ne peuvent donner lieu à aucun dédommagement.

**Примечание**

Мы оставляем за собой право на технические изменения.  
Изменения, ошибки и опечатки не являются основанием для предъявления претензий на возмещение ущерба.

**Embargo**

Reservamo-nos o direito de fazer alterações técnicas.  
Mudanças, erros e erros de impressão não terá direito a qualquer indemnização.

**1. Product description**

The **HSB anti-condensation heating Type 27-177.-... consisting of the HSB self-limiting parallel heating tape (Type 07-5803...A)** and temperature-resistant core wires pre-assembled with crimp connectors and a remote-end termination for the heat shrink-able tube. It is used as a stationary heating component inside electrical machines. It is advisable to use anti-condensation heating in electric motors, generators, actuators, which are exposed to high humid ambient temperatures or significant fluctuations in temperature when stopped. This keeps the air in the motor a few Kelvin above the outside temperature and prevents condensation inside the motor.

It is used in Zone 1 or 2 in accordance with the certified explosion group II and the temperature classes T2, T3, fitted into a certified enclosure with the Ex e or Ex d type of protection in accordance with IEC/EN 60079-0 (degree of protection at least IP 54) supply lines and protective braiding on the heating cable are connected as a basic rule to Ex e terminals in an enclosure with the "increased safety" type of protection (in conformance to the relevant standards IEC/EN 60079-0 and IEC/EN 60079-7).

**2. Explosion protection**

**Ex protection type**

II 2G Ex e IIC 200 °C (T2), T3 Gb

**EC Type Examination Certificate**

KEMA 08 ATEX 0109

**IECEx protection type**

Ex e IIC 200 °C (T2), T3 Gb

**Certification**

IECEX KEM 09.0082

**INMETRO protection type**

Ex e IIC 200 °C (T2), T3 Gb

**Certification**

UL-BR 15.0009X

**Technical data**

**Rated voltage**

110 to 120 V/208 to 254 V

**Rated current**

max. 32 A

**Referenced rated power**

max. 60 W/m at 10 °C

**Minimum bending radius**

25 mm

**Protection class**

min. IP 54

**max. operating temperature**

+120 °C, power on

**max. withstand temperature**

+170 °C, power off

**min. withstand temperature**

-40 °C

**Conformity to standards**

EN 60079-0:2009, EN 60079-7:2007, EN 60079-30-1:2007

IEC 60079-0:2007-10, IEC 60079-30-1:2007-01, IEC 60079-7:2006-07

ABNT NBR IEC 60079-0:2008 + Errata 1:2011 ABNT NBR IEC 60079-30-1:2014, ABNT NBR IEC 60079-7:2008 + Errata 1:2010

**3. Safety Instructions**

**Symbols**

Important parts in this document are shown and marked with these symbols.



DANGER shows the risk of death or lethal and/or serious injury and or damage to property.



WARNING shows the risk of death or lethal and/or serious injury.



CAUTION shows the risk of serious injury.



NOTICE shows means to avoid damage to property.



INFO shows means for economic and environmental use of the product.

- When using electric systems in hazardous areas, the relevant installation and operation regulations must be observed (e.g. Directive 1999/92/EC, Directive 94/9/EC, EN60079-14 and the DIN VDE 0100 series).
- The requirements in EN 60519-1 and EN 60519-2 must be observed.
- Thermal safety class 0 in accordance with EN 60519-2 section 13 is fulfilled by the heating cable's design characteristics.
- The copper braiding with a resistance of < 18.2 Ω/km suitable as an earthing conductor.
- Conductive parts from other companies must be included in the (earthing conductor) protective measures as a protection against indirect contact.
- For each circuit it is necessary to have a residual current device and a means of isolating all outer conductors from the power supply.
- Before installation or maintenance, turn off all circuits.

- The operator of an electrical system in a hazardous environment has to keep the equipment in an orderly condition, operate it correctly, monitor it and do the required maintenance and repairs (IEC/EN 60079-14, IEC/EN 60079-17 and IEC/EN 60079-19).
- The specifications in the EC Type Examination Certificate must be observed.
- The specifications in the EC Type Examination Certificate KEMA 02 ATEX 2327 U (4th issue), IECEx KEM 07.0048 U and in the Installation Instruction HSB must be observed.

**4. Assembly and Commissioning**

**Assembly**

Only qualified specialists may do any of the work on the machine. Before work is done on the machine, it must be stopped completely, disconnected and precautions must be taken to ensure that it cannot be switched on again.

Before and during installation: keep the anti-condensation heating's ends and connection components dry. The earth conductor (green/yellow) for the anti-condensation heating must be connected to a suitable earthing connection. The connection is made to the appropriate Ex e terminals for auxiliary circuits, either in the main terminal box or through an additional terminal box with the "increased safety" type of protection. The applicable terminal connection diagram must be adhered to.

The mains voltage must agree with the data on the marking plate. The motor must be switched off first before the anti-condensation heating may be switched on. Do not switch on the heating while the motor is running.

The relevant installation and operating regulations must be observed when setting up or operating explosion-proof electrical systems (e.g. IEC/EN 60079-14, IEC/EN 60079-30-2 and the DIN VDE 0100 series and Installation Instruction INST200807 for the heating cable). The heating cable must be installed on the workpiece in accordance with the project engineering specifications.

In motors the radiator is usually placed around the winding armature and fastened with appropriately temperature-resistant self-adhesive tapes.



To prevent wrinkling, the bending radius must be at least 25 mm. Do not bend the heating cable on its narrow side.



Use only plasticiser-free adhesive tapes (no PVC tapes)!

To ensure effective heat transfer, the heating tape must have surface contact over the entire length.

Once the installation of the HSB anti-condensation heating has been completed, the insulation capacity between the supply lines and the metallic braiding must be verified.

The testing voltage should be between DC 500 V and DC 2500 V, the insulation resistance should be at least 20 MΩ/km (IEC/EN 60079-30-2 exp. 8.3.4).

**Commissioning**

The equipment may be operated only if it is clean and not damaged in any way.

Electrical systems must be examined by an electrician before commissioning and afterwards at certain intervals of time.

**5. Operation, Maintenance and Fault Clearance**

The heating circuits must be used in conformance to regulations and the operating data specified by BARTEC.

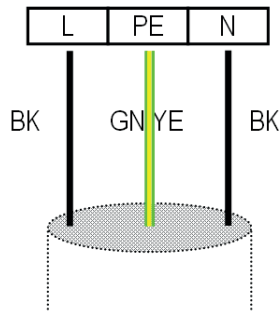
The operator of an electrical system in a hazardous environment must keep it in good condition, operate and monitor it properly and do maintenance and repairs. (IEC/EN 60079-14).

Maintenance and fault clearance work may be done only by a qualified electrician.

Observe the applicable laws and directives when putting into operation again.

Before maintenance and/or fault elimination, make sure that the specified safety regulations are adhered to.

**6. Terminal connection diagram**



**7. Accessories, spare parts**

See the BARTEC catalogue for accessories and spare parts.

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Erklärung der Konformität  
 Declaration of Conformity  
 Attestation de conformité

**BARTEC**

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 97980 Bad Mergentheim  
 Germany

N<sup>o</sup> 21-1770-7C0001

Wir

We

Nous

**BARTEC GmbH,**

erklären in alleiniger Ver-  
 antwortung, dass das  
 Produkt

declare under our sole  
 responsibility that the  
 product

attestons sous notre seule  
 responsabilité que le pro-  
 duit

**HSB Stillstandsheizger****HSB anti-  
condensation heater****HSB anti-chauffe-  
eau de condensation****Typ 27-177\*-\*\*\*\*/\*\*\*\*/\*\*\*\***

auf das sich diese Erklä-  
 rung bezieht den Anforde-  
 rungen der folgenden  
**Richtlinien (RL)**  
 entspricht

to which this declaration  
 relates is in accordance  
 with the provision of the  
 following **directives (D)**

se référant à cette attesta-  
 tion correspond aux dispo-  
 sitions des  
**directives (D)** suivantes

**ATEX-Richtlinie  
94/9/EG****ATEX-Directive  
94/9/EC****ATEX-Directive  
94/9/CE**

und mit folgenden Normen  
 oder normativen Doku-  
 menten übereinstimmt

and is in conformity with  
 the following standards or  
 other normative docu-  
 ments

et est conforme aux  
 normes ou documents  
 normatifs ci-dessous

**EN 60079-0:2006****EN 60079-7:2007****EN 60079-30-1:2007****Kennzeichnung****Marking****Marquage****II 2 G Ex e II 200°C (T2), T3****Verfahren der EG-  
Baumusterprüfung****Procedure of EC-  
Type Examination****Procédure d'examen  
CE de type****KEMA 08 ATEX 0109****CE 0044**

Bad Mergentheim, den 08.12.2009

ppa. Ewald Warmuth  
 Geschäftsleitung / General Manager



