

CERTIFICATE

(1) EC-Type Examination

(2) **Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC**

(3) EC-Type Examination Certificate Number: **KEMA 02ATEX2327 U** Issue Number: 3

(4) Component: **Self Limiting Heating Cable series HSB type 07-5803-******

(5) Manufacturer: **BARTEC GmbH**

(6) Address: **Max-Eyth-Straße 16, 97980 Bad Mergentheim, Germany**

(7) This component and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) DEKRA Certification B.V., notified body number 0344 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this component has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the directive.

The examination and test results are recorded in confidential report NL/KEM/ExTR07.0054/**.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0 : 2012

EN 60079-30-1 : 2007

EN 60079-31 : 2009

(10) The sign "U" placed after the certificate number indicates that this certificate describes components and must not be mistaken for a certificate intended for an equipment or protective system. This EC-Type Examination Certificate may be used as a basis for certification of an equipment or protective system.

(11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified component according to the Directive 94/9/EC. Further requirements of the directive apply to the manufacturing process and supply of this component. These are not covered by this certificate.

(12) The marking of the component shall include the following:



II 2 G Ex e IIC 200 °C (T2), T3, T4 Gb

II 2 D Ex tb IIIC T 200 °C, T 195 °C, T 130 °C Db

This certificate is issued on 23 November 2012 and, as far as applicable, shall be revised before the date of cessation of presumption of conformity of (one of) the standards mentioned above as communicated in the Official Journal of the European Union.

DEKRA Certification B.V.

T. Pijpker
Certification Manager

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(13) **SCHEDULE**

(14) **to EC-Type Examination Certificate KEMA 02ATEX2327 U** Issue No. 3

(15) **Description**

The Self Limiting Heating Cable series HSB is a parallel trace heater and used to raise or maintain the temperature of a workpiece where it is externally applied. The HSB heating cable series consists of an electrical resistance heater element with positive temperature coefficient. This means that the HSB heating cable series reduces its power output with increasing temperature.

Maximum operating temperature, power "on": +120 °C
 Maximum withstand temperature, power "off": +190 °C
 Minimum start-up temperature: -60 °C
 Minimum installation temperature: -60 °C
 Minimum bending radius: 25 mm

Nomenclature and electrical data

07 - 5 8 0 3 - 2 20 A
 I II III IV V VI VII VIII

Designation	Explanation	Value	Explanation
I, II, III, IV	General	07-580	Parallel circuit heating cable for use in potential explosive atmospheres
V	Cable Series Designation	3	Self Limiting HSB
VI	Rated voltage	1	110 Vac to 120 Vac
		2	208 Vac to 254 Vac
VII	Power output rating at 10 °C	10	10 W/m
		15	15 W/m
		20	20 W/m
		25	25 W/m
		30	30 W/m
		45	45 W/m
VIII	Overjacket option	60	60 W/m
		A	Fluoropolymer overjacket

(13) **SCHEDULE**

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Temperature class and specified maximum surface temperature “T”

Product classification approach

The maximum surface temperature “T” is based upon exposure of a heating cable to a workpiece having a temperature not exceeding the maximum surface temperature “T”.

Rated voltage	Power output rating	T-class	Maximum surface temperature “T”
254 Vac	10, 15, 20, 25, 30, 45 W/m	T3	+195 °C
	60 W/m	T2	+200 °C
120 Vac	10, 15, 20, 25, 30 W/m	T3	+195 °C
	45, 60 W/m	T2	+200 °C

Systems approach, design verification method

The maximum surface temperature “T” is based upon exposure of a heating cable to a workpiece having a temperature not exceeding the maximum exposure temperature.

Rated voltage	Power output rating	Maximum exposure temperature	T-class	Maximum surface temperature “T”
254 Vac	10 W/m	105 °C	T4	130 °C
	15 W/m	70 °C	T4	130 °C
	20 W/m	60 °C	T4	130 °C
	25 W/m	55 °C	T4	130 °C
	30 W/m	25 °C	T4	130 °C
	45 W/m	120 °C	T3	195 °C
	60 W/m	120 °C	T3	195 °C

Conditions for systems approach, design verification method

For insulated externally heated surfaces lower T-class systems may be obtained by ensuring that the heating cable shall not be exposed to temperatures exceeding those listed under maximum exposure temperature.

The T-class obtained through systems approach is based on the energy balance of heat loss and heat production of the system at a certain temperature. The maximum exposure temperature of the system including the resulting T-class and heating cable type shall be provided as a record of system documentation for each stabilized designed system. The parameters in the system documentation shall be checked during commissioning of the system.

The system documentation shall be kept by the owner of the system and be available at all times for as long as the system is in use.

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Schedule of Limitations

Connections and terminations for installation with the HSB heating cable series shall be certified according to the requirements of the applicable standards for their types of protection for potential explosive gas and/or combustible dust atmosphere, as well as the requirements of EN 60079-30-1 as integral parts of this trace heating system.

For the connection of the heating cable to power certified glands, enclosures and terminals shall be used that are suitable for the application and are correctly installed. The cable glands shall be mounted in an enclosure in such a way that the ingress protection ratings are ensured as follows. IP54 for use in explosive atmospheres caused by the presence of flammable gas and/or vapours. IP6X for use in explosive atmospheres caused by the presence of combustible dust. Ingress protection ratings according to EN 60529.

When used in TT and TN systems a residual current device according to EN 60079-30-1, clause 4.3 point d) shall be installed. When used in IT systems an insulation monitoring device according to EN 60079-30-1, clause 4.3 point e) shall be used.

(16) **Report**

NL/KEM/ExTR07.0054/**

(17) **Special conditions for safe use**

None.

(18) **Essential Health and Safety Requirements**

Covered by the standards listed at (9).

(19) **Test documentation**

As listed in Test Report NL/KEM/ExTR07.0054/**.