

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: **DEKRA 12ATEX0044 U** Issue Number: **2**

(4) Component: **Self Limiting Heating Cable series MSB type 07-5804-2*****

(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 no. NL/DEK/ExTR12.0005/01

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

EN 60079-0 : 2012 + A11 : 2013

EN 60079-30-1 :2007

EN 60079-31 : 2014

(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 150 °C (T3), T4 Gb
II 2 D Ex tb IIIC T 150 °C, T 130 °C Db

This certificate is issued on 11 August 2015 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.

R.H.D. Pommé
Certification Manager

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(13) **SCHEDULE**

(14) **to EC-Type Examination Certificate DEKRA 12ATEX0004 U** Issue No. 2

(15) **Description**

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

For nomenclature, thermal data, product ratings and electrical data see Annex to EC Type Examination Certificate DEKRA 12ATEX0044 U, issue no. 2.

Schedule of limitations

Connections and terminations for installation with the MSB 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 IEC 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.

When the maximum surface temperature of the MSB heating cable is limited by controlled design, thermal protective devices according to EN 60079-30-1, clause 4.4.3 shall be used.

Installation instructions

The instructions provided with the equipment shall be followed in detail to assure safe operation.

(16) **Report**

No. NL/DEK/ExTR12.0005/01

(13) **SCHEDULE**

(14) **to EC-Type Examination Certificate DEKRA 12ATEX0004 U** Issue No. 2

(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 No. NL/DEK/ExTR12.0005/01.

Annex to IECEx Test Report NL/DEK/ExTR12.0005/01
Annex to Certificate of Conformity IECEx DEK 12.0004U, issue 1
Annex to EC Type Examination Certificate DEKRA 12ATEX0044 U, issue no. 2

Description

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

Maximum operating temperature, power “on”: +110 °C
 Maximum withstand temperature, power “off”: +130 °C
 Minimum start-up temperature: -50 °C
 Minimum installation temperature: -40 °C
 Minimum bending radius: 25 mm

Nomenclature and electrical data

07 - 5 8 0 4 - 2 40 X
 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	4	Self Limiting MSB
VI	Rated voltage	2	208 Vac to 254 Vac
VII	Power output rating at 10 °C	10 15 25 30 40	10 W/m 15 W/m 25 W/m 30 W/m 40 W/m
VIII	Overjacket option	X Y	Fluoroplastic Copolymer overjacket Thermoplastic Copolymer overjacket

Temperature class and specified maximum surface temperature “T”

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	All	110 °C	150 °C (T3)	150 °C
	10 W/m	100 °C	T4	130 °C
	15 W/m	90 °C	T4	130 °C
	25 W/m	80 °C	T4	130 °C
	30 W/m	70 °C	T4	130 °C
	40 W/m	60 °C	T4	130 °C

Annex to IECEx Test Report NL/DEK/ExTR12.0005/01

Annex to Certificate of Conformity IECEx DEK 12.0004U, issue 1

Annex to EC Type Examination Certificate DEKRA 12ATEX0044 U, issue no. 2

Conditions for systems approach, design verification method

For insulated externally heated surfaces lower T-class and maximum surface temperature “T” 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 and maximum surface temperature “T” are 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, maximum surface temperature “T” 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.