

CERTIFICATE

(1) EU-Type Examination

(2) **Component intended for use on/in equipment or protective systems intended for use in potentially explosive atmospheres - Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number: **DEKRA 17ATEX0007 U** Issue Number: **3**

(4) Product: **Self-Regulating Heating Cable Series PSB Type 07-5853-**** and MSB Type 07-5854-******

(5) Manufacturer: **BARTEC GmbH**

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

(7) This product 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 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential test report number NL/DEK/ExTR17.0007/03.

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

EN IEC 60079-0 : 2018

EN 60079-30-1 : 2017

(10) The sign "U" is placed after the certificate number. It indicates that this certificate must not be mistaken for a certificate intended for an equipment or protective system. This partial certification may be used as a basis for certification of an equipment or protective system.

(11) This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

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



II 2 G Ex 60079-30-1 IIC T6...T3 Gb
II 2 D Ex 60079-30-1 IIIC T80 °C...T170 °C Db

Date of certification: 23 December 2019

DEKRA Certification B.V.

R. Schuller
Certification Manager

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(13) **SCHEDULE**

(14) **to EU-Type Examination Certificate DEKRA 17ATEX0007 U**

Issue No. **3**

(15) **Description**

The Self-Regulating Heating Cable Series PSB and MSB are parallel trace heaters used to raise or maintain the temperature of a workpiece where it is externally applied. The trace heaters consist of an electrical resistance heater element with positive temperature coefficient. This means that the Self-Regulating Heating Cable Series PSB and MSB reduce their power output with increasing temperature.

These cables are rated for outdoor exposure in accordance with EN 60079-30-1 clause 5.1.16.

For nomenclature, product ratings, electrical data and thermal data see Annex 1.

Installation instructions

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

(16) **Report Number**

No. NL/DEK/ExTR17.0007/03.

(17) **Schedule of Limitations**

Connections and terminations for installation with the Self-Regulating Heating Cable Series PSB and MSB shall be certified according to the requirements of the applicable standards for the types of protection for potentially flammable gas or combustible dust atmosphere, or according to the requirements of EN 60079-30-1 as integral components. The connections and terminations shall be suitable for the application and correctly installed.

When used in TT and TN systems a residual current device according to EN 60079-30-1, clause 4.4 point c) 1) shall be installed. When used in IT systems an insulation monitoring device according to EN 60079-30-1, clause 4.4 point c) 2) shall be used.

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

Covered by the standards listed at item (9).

(19) **Test documentation**

As listed in Report No. NL/DEK/ExTR17.0007/03.

(20) **Certificate history**

Issue 0 - 221337900 Initial certificate.

Issue 1 - 222717700 Assessment to recent edition of standards, small material and construction changes PSBL and PSB.

Issue 2 - 223537800 Addition new type MSB.

Issue 3 - 222027700 Assessment to recent edition of standards, removal PSBL, MSB TPC and HSB, change start-up temperature PSB, change rated voltage, changes in power output ratings and tolerances.

Annex 1 to Test Report IECEx NL/DEK/ExTR17.0007/03

Thermal data

Heating Cable Series	PSB	MSB
Maximum continuous operating temperature, energized [°C]	+65	+110
Maximum continuous exposure temperature, de-energized [°C]	+85	+130
Minimum start-up temperature [°C]	-55	-60
Minimum installation temperature [°C]	-55	-60
Minimum bending radius [mm]	25	25

Nomenclature

07 - 5 8 5 4 - 7 6 0 F / * * * *
 A B C D E F G H I J K L M

Designation	Explanation	Value	Explanation
A, B, C, D	General	07-585	Parallel heating cable for use in potential explosive atmospheres
E	Cable Series Designation	3 4	Self-Regulating PSB Self-Regulating MSB
F	Rated voltage	1 7	110 Vac to 120 Vac 208 Vac to 277 Vac
G, H	Power output rating at 10 °C	10 15 25 30 33 45 60	10 W/m (PSB, MSB) 15 W/m (PSB, MSB) 25 W/m (PSB) 30 W/m (MSB) 33 W/m (PSB) 45 W/m (MSB) 60 W/m (MSB)
I	Overjacket option	F P	Fluoropolymer (PSB, MSB) Polyolefin (PSB)
J, K, L, M	Custom		Not relevant for certification

Annex 1 to Test Report IECEx NL/DEK/ExTR17.0007/03

Electrical data, temperature class and specified maximum surface temperature “T”

Product classification approach

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

Heating Cable Series	Power output rating [W/m]	T-class	Maximum surface temperature “T” [°C]
PSB	10, 15	T6	80
	25, 33	T5	95
MSB	10, 15	T4	130
	30, 45, 60	T3	170

Systems approach, design verification method

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

Heating Cable Series	Power output rating [W/m]	T-class	Maximum surface temperature “T” [°C]
MSB	10, 15	T6...T4	80...130
	30, 45, 60	T6...T3	80...170

Conditions for system approach, design verification method

For insulated externally heated surface lower T-class and/or maximum surface temperature "T" systems may be obtained by stabilized design of a trace heating system using methods described in EN-IEC/IEEE 60079-30-1 and -2 made under the manufacturers responsibility.

The T-class and/or maximum surface temperature "T" obtained through stabilized design is based on the energy balance of heat loss and heat production of the system. That energy balance is based on parameters as mentioned in EN-IEC/IEEE 60079-30-1 clause 7.3.3.

Those parameters including the resulting T-class and/or maximum surface temperature "T" shall be retained as a record of system documentation for as long as the system is in use.

The parameters in the system documentation shall be checked during commissioning of the system.