



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEX Scheme visit www.iecex.com

Ex COMPONENT CERTIFICATE

Certificate No.: **IECEX DEK 17.0004U** Page 1 of 4 Certificate history:
Status: **Current** Issue No: 3 [Issue 2 \(2019-06-20\)](#)
[Issue 1 \(2018-10-10\)](#)
[Issue 0 \(2017-06-22\)](#)
Date of Issue: 2019-12-23
Applicant: **BARTEC GmbH**
Max-Eyth-Str.16, 97980 Bad Mergentheim
Germany
Ex Component: Self-Regulating Heating Cable Series PSB Type 07-5853-**** and MSB Type 07-5854-****

This component is NOT intended to be used alone and requires additional consideration when incorporated into other equipment or systems for use in explosive atmospheres (refer to IEC 60079-0).

Type of Protection: **Ex 60079-30-1**
Marking: Ex 60079-30-1 IIC T6...T3 Gb
Ex 60079-30-1 IIIC T80 °C...T170 °C Db

Approved for issue on behalf of the IECEX
Certification Body:

R.Schuller

Position:

Certification Manager

Signature:
(for printed version)

Date:

2019-12-23

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.



Certificate issued by:

DEKRA Certification B.V.
Meander 1051
6825 MJ Arnhem
Netherlands





IECEX Certificate of Conformity

Certificate No.: **IECEX DEK 17.0004U** Page 2 of 4

Date of issue: 2019-12-23 Issue No: 3

Manufacturer: **BARTEC GmbH**
Max-Eyth-Str.16, 97980 Bad Mergentheim
Germany

Additional manufacturing locations: **BARTEC BENKE GmbH**
Schulstrasse 30
94239 Götteszell
Germany

BARTEC Explosion Proof Appliances (Shanghai) Co., Ltd.
New Building 7
No 188 Xinjung Ring Rd.
Caohejing Pujiang Hi-tech park
Minhang District, Shanghai
China

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC/IEEE 60079-30-1:2015 Explosive atmospheres - Part 30-1: Electrical resistance trace heating - General and testing requirements
Edition:1.0

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

[NL/DEK/ExTR17.0007/03](#)

Quality Assessment Reports:

[NL/DEK/QAR11.0050/06](#)

[NL/DEK/QAR12.0060/04](#)



IECEx Certificate of Conformity

Certificate No.: **IECEx DEK 17.0004U**

Page 3 of 4

Date of issue: 2019-12-23

Issue No: 3

Ex Component(s) covered by this certificate is described below:

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 IEC/IEEE 60079-30-1 clause 5.1.16.

See Annex 1 for nomenclature, product ratings, electrical data and thermal data.

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 as the requirements of IEC/IEEE 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 IEC/IEEE 60079-30-1, clause 4.4 point c) 1) shall be installed.
When used in IT systems an insulation monitoring device according to IEC/IEEE 60079-30-1, clause 4.4 point c) 2) shall be used.



IECEx Certificate of Conformity

Certificate No.: **IECEx DEK 17.0004U**

Page 4 of 4

Date of issue: 2019-12-23

Issue No: 3

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

1. Assessment to recent edition of standards.
2. Removal PSBL, MSB TPC and HSB.
3. Change start-up temperature PSB.
4. Change rated voltage.
5. Changes in power output ratings and tolerances.

Annex:

[222027700_Annex 1.pdf](#)

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.