IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

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

Certificate No.:	IECEx KEM 09.0084X	Issue No: 1	Certificate history:
			Issue No. 1 (2014-02-21)
Status:	**Current**	Page 1 of 4	Issue No. 0 (2011-03-29)
Date of Issue:	**2014-02-21**		
Applicant:	**BARTEC GmbH** Max-Eyth-Straße 16 97980 Bad Mergentheim **Germany**		
Electrical Apparatus:	**PSB Heating System type 27-1680-***0/******		
Optional accessory:			
Type of Protection:	**Ex e, Ex tb**		
Marking:	Ex e IIC T5, T6 Gb Ex tb IIIC T 95 °C, T 80 °C Db		

Approved for issue on behalf of the IECEx Certification Body: T. Pijpker

Position: Certification Manager

Signature:
(for printed version)

Date: 2014-02-21

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 the Official IECEx Website.

Certificate issued by:

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

DEKRA

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Manufacturer:	**BARTEC GmbH** Max-Eyth-Straße 16 97980 Bad Mergentheim **Germany**	
Additional Manufacturing location(s):		

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 electrical apparatus 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 : 2007-10 Edition:5	Explosive atmospheres - Part 0:Equipment - General requirements
IEC 60079-30-1 : 2007-01 Edition:1	Explosive atmospheres - Part 30-1: Electrical resistance trace heating - General and testing requirements
IEC 60079-31 : 2008 Edition:1	Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure 't'
IEC 60079-7 : 2006-07 Edition:4	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"

*This Certificate **does not** indicate compliance with electrical 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/KEM/ExTR07.0053/00 NL/KEM/ExTR09.0085/00 NL/KEM/ExTR09.0085/01
NL/KEM/ExTR09.0085/02

Quality Assessment Report:

DE/TUN/QAR06.0017/05

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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

Description

The PSB Heating System type 27-1680-***0/**** is a trace heating system used to raise or maintain the temperature of a workpiece where it is externally applied.

The trace heating systems consist of Self Limiting Heating Cable series PSB (trace heater), non-metallic or metallic junction boxes, terminals, glands, blind plugs and heating cable connection and termination kits in heat shrink, cold applied and PLEXO TCS technology.

For thermal data, product ratings, electrical data, temperature class and description of system elements see Annex 1 to Certificate of Conformity IECEx KEM 09.0084 X, issue no. 1.

CONDITIONS OF CERTIFICATION: YES as shown below:

Supply cables shall be selected per manufacturer's installation instructions for appropriate conductor size and temperature range.

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

1.
upgrade IEC 60079-0 : 2004, ed.4 to IEC 60079-0 : 2007, ed. 5 for EPL Gb
2.
upgrade IEC 61241-0 : 2004, ed.1 and IEC 61241-1:2004, ed.1 to IEC 60079-0 : 2007, ed. 5 and IEC 60079-31 : 2008, ed.1 for EPL Db
3.
addition of cold applied heating cable connection and termination kits for multiple connections and terminations for PSB heating system
4.
addition of heat shrink heating cable connection and termination kits for PSB heating system
5.
replacement of PLEXO HTS by PLEXO TCS for PSB heating system
6.
addoption of new type references for PLEXO TCS Termination and Connection Systems and the heating systems comprising PLEXO TCS

Annex:

216188800_Annex to_08ATEX0111 X-Iss4_KEM09.0084X-Iss1.pdf

Annex 1 to Certificate of Conformity IECEx KEM 09.0084X, issue no. 1
Annex 1 to EC Type Examination KEMA 08ATEX0111 X, issue no. 4
Anhang 1 zu EG Baumunsterprüfbescheinigung KEMA 08ATEX0111 X, Ausgabe Nr. 4

Description

The PSB Heating System type 27-1680-***0/**** is a trace heating system used to raise or maintain the temperature of a workpiece where it is externally applied.

The trace heating systems consist of Self Limiting Heating Cable series PSB (trace heater), non-metallic or metallic junction boxes, terminals, glands, blind plugs and heating cable connection and termination kits in heat shrink, cold applied and PLEXO TCS technology.

Type	PSB 27-1680-**00/****	PSB 27-1680-**10/****
Heating cable connection and termination technology:	heat shrink	cold applied
Ambient temperature range, per EN 60079-30-1:	-40 °C ... +55 °C	-55 °C ... +55 °C
Degree of protection:	IP 65	IP 65
Maximum cross section power supply conductors:	16 mm²	16 mm²
For trace heater: Heating Cable Series:	PSB	PSB
Maximum operating temperature, power "on":	+65 °C	+65 °C
Maximum withstand temperature, power "off":	+85 °C	+85 °C
Minimum start-up temperature:	-40 °C	-40 °C
Minimum bending radius:	25 mm	25 mm

Type	PSB 27-1680-**50/****	PSB 27-1680-**60/****	PSB 27-1680-**70/****
Heating cable connection and termination technology:	PLEXO TCS	PLEXO TCS with cold applied	PLEXO TCS with heat shrink
Ambient temperature range, per EN 60079-30-1:	-40 °C ... +55 °C	-40 °C ... +55 °C	-40 °C ... +55 °C
Degree of protection:	IP 65	IP 65	IP 65
Maximum cross section power supply conductors:	4 mm²	4 mm²	4 mm²
For trace heater: Heating Cable Series:	PSB	PSB	PSB
Maximum operating temperature, power "on":	+65 °C	+65 °C	+65 °C
Maximum withstand temperature, power "off":	+85 °C	+85 °C	+85 °C
Minimum start-up temperature:	-40 °C	-40 °C	-40 °C
Minimum bending radius:	25 mm	25 mm	25 mm

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Description (continued)

The heating systems may consist the following heating cable connection and termination kits:
05-0091-0097: heat shrink heating cable connection and termination kit, 1 set
05-0091-013001: cold applied heating cable connection kit, 1 set
05-0091-013002: cold applied heating cable termination kit, 1 set
05-0091-013601: cold applied heating cable connection kit, 10 sets
05-0091-013602: cold applied heating cable termination kit, 10 sets
05-0091-013603: cold applied heating cable connection kit, 50 sets
05-0091-013604: cold applied heating cable termination kit, 50 sets
27-1100-*150/****: PLEXO TCS system for PSB heating cable

Electrical data

Type of Heating System	PSB 27-1680-**0****0/****	PSB 27-1680-**1****0/****
Rated voltage:	110 to 120 Vac	208 to 254 Vac
Rated power output at 10 °C:	10 W/m 13 W/m 15 W/m 25 W/m 33 W/m	10 W/m 13 W/m 15 W/m 25 W/m 33 W/m
Maximum rating of over current protection:	32 A	32 A

The rated current is limited by the maximum circuit length and the applied supply cables, specified for each individual heating cable in the design documentation and installation instructions. The applicable maximum circuit length shall not be exceeded for installation.

Temperature class and maximum surface temperature "T"

The maximum surface temperature "T" is based upon exposure to the temperatures listed under "Description" and the "Electrical Data" above.

For use with		Product classification approach	
Rated voltage	Rated power output	T-class	Max. surface temperature "T"
208 Vac to 254 Vac	10, 13, 15 W/m	T6	80 °C
	25, 33 W/m	T5	95 °C
110 Vac to 120 Vac	10, 13, 15, 25, 33 W/m	T5	95 °C

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Beschreibung

Das PSB Heizsystem Typ 27-1680-***0/**** ist ein Begleitheizungssystem, das an einem Werkstück außen angebracht, zur Temperaturerhöhung oder Temperaturerhaltung von diesem Werkstück dient.

Das Heizsystem besteht aus Selbstbegrenzender Heizleitung PSB, Anschlussgehäusen aus Kunststoff oder Metall, Reihenklemmen, Kabeleinführungen, Blindstopfen und An- und Abschlusssets in Warmschrumpftechnik, Kaltklebetechnik und dem PLEXO TCS Anschlusssystem.

Typ	PSB 27-1680-**00/****	PSB 27-1680-**10/****
Heizleitung An- und Abschlusstechnik:	Warmschrumpf-technik	Kaltklebetechnik
Umgebungstemperaturbereich, nach EN 60079-30-1:	-40 °C ... +55 °C	-55 °C ... +55 °C
Schutzart:	IP 65	IP 65
Maximaler Leiterquerschnitt der Anschlussleitungen:	16 mm²	16 mm²
Für Heizleitung: Heizleitungsserie:	PSB	PSB
Maximale Arbeitstemperatur, Versorgung eingeschaltet:	+65 °C	+65 °C
Maximale Einsatztemperatur, Versorgung ausgeschaltet:	+85 °C	+85 °C
Minimale Einschalttemperatur:	-40 °C	-40 °C
Minimaler Biegeradius:	25 mm	25 mm

Typ	PSB 27-1680-**50/****	PSB 27-1680-**60/****	PSB 27-1680-**70/****
Heizleitung An- und Abschlusstechnik:	PLEXO TCS	PLEXO TCS mit Kaltklebetechnik	PLEXO TCS mit Warmschrumpf-technik
Umgebungstemperaturbereich, nach EN 60079-30-1:	-40 °C ... +55 °C	-40 °C ... +55 °C	-40 °C ... +55 °C
Schutzart:	IP 65	IP 65	IP 65
Maximaler Leiterquerschnitt der Anschlussleitungen:	4 mm²	4 mm²	4 mm²
Für Heizleitung: Heizleitungsserie:	PSB	PSB	PSB
Maximale Arbeitstemperatur, Versorgung eingeschaltet:	+65 °C	+65 °C	+65 °C
Maximale Einsatztemperatur, Versorgung ausgeschaltet:	+85 °C	+85 °C	+85 °C
Minimale Einschalttemperatur:	-40 °C	-40 °C	-40 °C
Minimaler Biegeradius:	25 mm	25 mm	25 mm

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Beschreibung (fortgesetzt)

Die Heizsysteme können mit folgenden An- und Abschlusssets ausgestattet sein:

05-0091-0097:	Warmschrumpf An- und Abschlussset für Heizleitungen, 1 Set
05-0091-013001:	Kaltklebe Anschlussset für Heizleitungen, 1 Set
05-0091-013002:	Kaltklebe Abschlussset für Heizleitungen, 1 Set
05-0091-013601:	Kaltklebe Anschlusssets für Heizleitungen, 10 Sets
05-0091-013602:	Kaltklebe Abschlusssets für Heizleitungen, 10 Sets
05-0091-013603:	Kaltklebe Anschlusssets für Heizleitungen, 50 Sets
05-0091-013604:	Kaltklebe Abschlusssets für Heizleitungen, 50 Sets
27-1100-*150/****:	PLEXO TCS System für PSB Heizleitung

Elektrische Daten

Typ Heizsystem	PSB 27-1680-**0****0/****	PSB 27-1680-**1****0/****
Bemessungsspannung:	110 bis 120 Vac	208 bis 254 Vac
Bemessungsleistung bei 10 °C:	10 W/m 13 W/m 15 W/m 25 W/m 33 W/m	10 W/m 13 W/m 15 W/m 25 W/m 33 W/m
Maximaler Bemessungswert der Stromabsicherung:	32 A	32 A

Der Bemessungsstrom ist durch die maximale Heizkreislänge und den verwendeten Anschlussleitungen beschränkt, die für jede Heizleitung in der Systemdokumentation und den Errichtungshinweisen spezifiziert ist. Der jeweilige Wert der maximalen Heizkreislänge darf nicht überschritten werden.

Temperaturklasse und maximale Oberflächentemperatur „T“

Die maximale Oberflächentemperatur „T“ basiert auf der Anwendung bei Temperaturen, die unter „Beschreibung“ genannt sind, mit den oben genannten „Elektrischen Daten“.

Anwendung mit		Produktklassifizierungsannäherung	
Bemessungs-spannung	Bemessungsleistung	T-Klasse	Maximale Oberflächentemperatur „T“
208 Vac bis 254 Vac	10, 13, 15 W/m	T6	80 °C
	25, 33 W/m	T5	95 °C
110 Vac bis 120 Vac	10, 13, 15, 25, 33 W/m	T5	95 °C