(1) # EC-TYPE EXAMINATION CERTIFICATE

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

(3) EC-Type Examination Certificate Number: **KEMA 08ATEX0112** Issue Number: **1**

(4) Equipment: **PSBL Heating System type 27-1580-**10/*****

(5) Manufacturer: **BARTEC GmbH**

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

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

(8) KEMA Quality 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 equipment 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 test report number 211394200/4.

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

EN 60079-0 : 2006	**EN 60079-7 : 2007**	**EN 60079-30-1 : 2007**
EN 61241-0 : 2006	**EN 61241-1 : 2004**	

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

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

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

II 2 G Ex e II T5
II 2 D Ex tD A21 IP65 T 95 °C

This certificate is issued on September 4, 2009 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.

KEMA Quality B.V.

T. Pijpker
Certification Manager

KEMA Quality B.V. Utrechtseweg 310, 6812 AR Arnhem P.O. Box 5185, 6802 ED Arnhem The Netherlands
T +31 26 3 56 20 00 F +31 26 3 52 58 00 customer@kema.com www.kema.com Registered Arnhem 09085396

(13) # SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 08ATEX0112** Issue No. **1**

(15) **Description**

The PSBL Heating System type 27-1580-**10/**** is a trace heating system used to raise or maintain the temperature of a workpiece where it is externally applied. It consists of Self Limiting Heating Cable series PSBL (trace heater), non-metallic or metallic junction boxes, terminals, glands, blind plugs and termination kits types 05-0091-0131 and 05-0091-0137 (both cold applied) as specified in the test documentation listed under (19).

Ambient temperature range, per IEC 60079-30-1:	-50 °C ... +55 °C
Degrees of protection:	IP 65
For trace heater:	
Maximum operating temperature, power "on":	+65 °C
Maximum withstand temperature, power "off":	+85 °C
Minimum start-up temperature:	-30 °C
Minimum bending radius:	25 mm

The maximum surface temperature "T" is based upon exposure to the temperatures listed above and the "Electrical data" below.

Electrical data

Type	27-1580-**0***10/****	27-1580-**1***10/****
Rated voltage:	110 to 120 Vac	208 to 254 Vac
Rated power output:	10, 15, 20, 25 W/m at 10 °C	10, 15, 20, 25, 30 W/m at 10 °C
Maximum cross section power supply conductors:	16 mm²	
Maximum rating over current protection:	16 A	

Rated current is limited by the maximum circuit lengths specified for each individual heating cable in the design documentation and installation instructions. These maximum circuit lengths shall not be exceeded for installation.

Installation instructions

The maximum circuit lengths specified in the design documentation and installation instructions shall be observed.

After installation, the PSBL Heating System shall be subjected to an insulation resistance test according to EN 60079-30-2, clause 8.3.4, using a test voltage of 500 Vdc, applied between the life conductors and the metallic braid of the power or heating cables. The measured insulation resistance shall not be less than 20 MΩ.

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 IEC 60079-30-1, clause 4.3 point e) shall be used.

(13) # SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 08ATEX0112** Issue No. **1**

(16) **Test Report**

KEMA No. 211394200/4.

(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. 211394200/4.

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 08ATEX0112** Issue Number: **2**

(4) Equipment: **PSBL Heating System type 27-1580-**10/******

(5) Manufacturer: **BARTEC GmbH**

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

(7) This equipment 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 equipment 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 test report number 211394200/4.

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

EN 60079-0 : 2006	**EN 60079-7 : 2007**	**EN 60079-30-1 : 2007**
EN 61241-0 : 2006	**EN 61241-1 : 2004**	

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

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

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

II 2 G Ex e II T5
II 2 D Ex tD A21 IP65 T 95 °C

This certificate is issued on 29 March 2011 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

PRODUCTS RvA C 001

All testing, inspection, auditing and certification activities of the former KEMA Quality are an integral part of the DEKRA Certification Group

DEKRA Certification B.V. Utrechtseweg 310, 6812 AR Arnhem P.O. Box 5185, 6802 ED Arnhem The Netherlands
T +31 26 3 56 20 00 F +31 26 3 52 58 00 www.dekra-certification.com Registered Arnhem 09085396

(13) # SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 08ATEX0112** Issue No. **2**

(15) **Description**

The PSBL Heating System type 27-1580-**10/**** is a trace heating system used to raise or maintain the temperature of a workpiece where it is externally applied. It consists of Self Limiting Heating Cable series PSBL (trace heater), non-metallic or metallic junction boxes, terminals, glands, blind plugs and termination kits types 05-0091-0131 and 05-0091-0137 (both cold applied) as specified in the test documentation listed under (19).

Ambient temperature range, per IEC 60079-30-1:	-55 °C ... +55 °C
Degrees of protection:	IP 65
For trace heater:	
Maximum operating temperature, power "on":	+65 °C
Maximum withstand temperature, power "off":	+85 °C
Minimum start-up temperature:	-30 °C
Minimum bending radius:	25 mm

The maximum surface temperature "T" is based upon exposure to the temperatures listed above and the "Electrical data" below.

Electrical data

Type	27-1580-**0***10/****	27-1580-**1***10/****
Rated voltage:	110 to 120 Vac	208 to 254 Vac
Rated power output:	10, 15, 20, 25 W/m at 10 °C	10, 15, 20, 25, 30 W/m at 10 °C
Maximum cross section power supply conductors:	16 mm²	
Maximum rating over current protection:	16 A	

Rated current is limited by the maximum circuit lengths specified for each individual heating cable in the design documentation and installation instructions. These maximum circuit lengths shall not be exceeded for installation.

Installation instructions

The maximum circuit lengths specified in the design documentation and installation instructions shall be observed.

After installation, the PSBL Heating System shall be subjected to an insulation resistance test according to EN 60079-30-2, clause 8.3.4, using a test voltage of 500 Vdc, applied between the life conductors and the metallic braid of the power or heating cables. The measured insulation resistance shall not be less than 20 MΩ.

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.

(13) # SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 08ATEX0112** Issue No. **2**

(16) **Test Report**

No. 211394200/4.

(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. 211394200/4.

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 08ATEX0112 X** Issue Number: **3**

(4) Equipment: **PSBL Heating System type 27-1580-***0/******

(5) Manufacturer: **BARTEC GmbH**

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

(7) This equipment 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 equipment 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 test report numbers NL/KEM/ExTR07.0053/** and NL/KEM/ExTR09.0085/**.

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

EN 60079-0 : 2009
EN 60079-30-1 : 2007
EN 60079-7 : 2007
EN 60079-31 : 2009

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

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

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

II 2 G Ex e IIC T5 Gb
II 2 D Ex tb IIIC T 95 °C Db

This certificate is issued on 21 February 2014 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

PRODUCTS RvAC 001

DEKRA Certification B.V. Meander 1051, 6825 MJ Arnhem P.O. Box 5185, 6802 ED Arnhem The Netherlands
T +31 88 96 83000 F +31 88 96 83100 www.dekra-certification.com Registered Arnhem 09085396

(13) # SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 08ATEX0112 X** Issue No. **3**

(15) **Description**

The PSBL Heating System type 27-1580-***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 EC Type Examination Certificate KEMA 08ATEX0112 X, issue no. 3.

Installation instructions

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

(16) **Test Reports**

No's. NL/KEM/ExTR07.0053/** and NL/KEM/ExTR09.0085/**.

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

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

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

Covered by the standards listed at (9).

(19) **Test documentation**

As listed in Test Report No's. NL/KEM/ExTR07.0053/** and NL/KEM/ExTR09.0085/**.

Annex 1 to Certificate of Conformity IECEx KEM 09.0085, issue no. 1
Annex 1 to EC Type Examination KEMA 08ATEX0112 X, issue no. 3
Anhang 1 zu EG Baumunsterprüfbescheinigung KEMA 08ATEX0112 X, Ausgabe Nr. 3

Description

The PSBL Heating System type 27-1580-***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	PSBL 27-1580-**00/****	PSBL 27-1580-**10/****
Heating cable connection and termination technology:	heat shrink	cold applied
Ambient temperature range, per EN 60079-30-1:	-30 °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:	PSBL	PSBL
Maximum operating temperature, power "on":	+65 °C	+65 °C
Maximum withstand temperature, power "off":	+85 °C	+85 °C
Minimum start-up temperature:	-30 °C	-30 °C
Minimum bending radius:	25 mm	25 mm

Type	PSBL 27-1580-**50/****	PSBL 27-1580-**60/****	PSBL 27-1580-**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:	-55 °C ... +55 °C	-55 °C ... +55 °C	-30 °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:	PSBL	PSBL	PSBL
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:	-30 °C	-30 °C	-30 °C
Minimum bending radius:	25 mm	25 mm	25 mm

DEKRA Certification B.V. Meander 1051, 6825 MJ Arnhem P.O. Box 5185, 6802 ED Arnhem The Netherlands
T +31 88 9683000 F +31 88 9683100 www.dekra-certification.com Registered Arnhem 09085396

Annex 1 to Certificate of Conformity IECEx KEM 09.0085, issue no. 1
Annex 1 to EC Type Examination KEMA 08ATEX0112 X, issue no 3
Anhang 1 zu EG Baumunsterprüfbescheinigung KEMA 08ATEX0112 X, Ausgabe Nr. 3

Description (continued)

The heating systems may consist the following heating cable connection and termination kits:

05-0091-0198:	heat shrink heating cable connection and termination kit, 1 set
05-0091-013101:	cold applied heating cable connection kit, 1 set
05-0091-013102:	cold applied heating cable termination kit, 1 set
05-0091-013701:	cold applied heating cable connection kit, 10 sets
05-0091-013702:	cold applied heating cable termination kit, 10 sets
05-0091-013703:	cold applied heating cable connection kit, 50 sets
05-0091-013704:	cold applied heating cable termination kit, 50 sets
27-1100-*050/****:	PLEXO TCS system for PSBL heating cable

Electrical data

Type of Heating System	PSBL 27-1580-**0**0/****	PSBL 27-1580-**1**0/****
Rated voltage:	110 to 120 Vac	208 to 254 Vac
Rated power output at 10 °C:	10 W/m 15 W/m 20 W/m 25 W/m	10 W/m 15 W/m 20 W/m 25 W/m 30 W/m
Maximum rating of over current protection:	16 A	16 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 above and the "Electrical data" above.

Annex 1 to Certificate of Conformity IECEx KEM 09.0085, issue no. 1
Annex 1 to EC Type Examination KEMA 08ATEX0112 X, issue no 3
Anhang 1 zu EG Baumunsterprüfbescheinigung KEMA 08ATEX0112 X, Ausgabe Nr. 3

Beschreibung

Das PSBL Heizsystem Typ 27-1580-***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	PSBL 27-1580-**00/****	PSBL 27-1580-**10/****
Heizleitung An- und Abschlusstechnik:	Warmschrumpf-technik	Kaltklebetechnik
Umgebungstemperaturbereich, nach EN 60079-30-1:	-30 °C ... +55 °C	-55 °C ... +55 °C
Schutzart:	IP 65	IP 65
Maximaler Leiterquerschnitt der Anschlussleitungen:	16 mm²	16 mm²
Für Heizleitung: Heizleitungsserie:	PSBL	PSBL
Maximale Arbeitstemperatur, Versorgung eingeschaltet:	+65 °C	+65 °C
Maximale Einsatztemperatur, Versorgung ausgeschaltet:	+85 °C	+85 °C
Minimale Einschalttemperatur:	-30 °C	-30 °C
Minimaler Biegeradius:	25 mm	25 mm

Typ	PSBL 27-1580-**50/****	PSBL 27-1580-**60/****	PSBL 27-1580-**70/****
Heizleitung An- und Abschlusstechnik:	PLEXO TCS	PLEXO TCS mit Kaltklebetechnik	PLEXO TCS mit Warmschrumpf-technik
Umgebungstemperaturbereich, nach EN 60079-30-1:	-55 °C ... +55 °C	-55 °C ... +55 °C	-30 °C ... +55 °C
Schutzart:	IP 65	IP 65	IP 65
Maximaler Leiterquerschnitt der Anschlussleitungen:	4 mm²	4 mm²	4 mm²
Für Heizleitung: Heizleitungsserie:	PSBL	PSBL	PSBL
Maximale Arbeitstemperatur, Versorgung eingeschaltet:	+65 °C	+65 °C	+65 °C
Maximale Einsatztemperatur, Versorgung ausgeschaltet:	+85 °C	+85 °C	+85 °C
Minimale Einschalttemperatur:	-30 °C	-30 °C	-30 °C
Minimaler Biegeradius:	25 mm	25 mm	25 mm

Annex 1 to Certificate of Conformity IECEx KEM 09.0085, issue no. 1
Annex 1 to EC Type Examination KEMA 08ATEX0112 X, issue no 3
Anhang 1 zu EG Baumunsterprüfbescheinigung KEMA 08ATEX0112 X, Ausgabe Nr. 3

Beschreibung (fortgesetzt)

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

05-0091-0198:	Warmschrumpf An- und Abschlussset für Heizleitungen, 1 Set
05-0091-013101:	Kaltklebe Anschlussset für Heizleitungen, 1 Set
05-0091-013102:	Kaltklebe Abschlussset für Heizleitungen, 1 Set
05-0091-013701:	Kaltklebe Anschlusssets für Heizleitungen, 10 Sets
05-0091-013702:	Kaltklebe Abschlusssets für Heizleitungen, 10 Sets
05-0091-013703:	Kaltklebe Anschlusssets für Heizleitungen, 50 Sets
05-0091-013704:	Kaltklebe Abschlusssets für Heizleitungen, 50 Sets
27-1100-*050/****:	PLEXO TCS System für PSBL Heizleitung

Elektrische Daten

Typ Heizsystem	PSBL 27-1580-**0****0/****	PSBL 27-1580-**1****0/****
Bemessungsspannung:	110 bis 120 Vac	208 bis 254 Vac
Bemessungsleistung bei 10 °C:	10 W/m 15 W/m 20 W/m 25 W/m	10 W/m 15 W/m 20 W/m 25 W/m 30 W/m
Maximaler Bemessungswert der Stromabsicherung:	16 A	16 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.

Temperature class and maximum surface temperature "T"

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