

## Translation

# (1) EC-Type Examination Certificate

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

(3) No. of EC-Type Examination Certificate: **BVS 13 ATEX E 040 X**

(4) Equipment: **Heating system PLEXO TCS type 27-1100-\*\*\*\*/\*\*\*\***

(5) Manufacturer: **BARTEC GmbH**

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

(7) The design and construction of this equipment and any acceptable variation thereto are specified in the appendix to this type examination certificate.

(8) The certification body of DEKRA EXAM GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council 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 the test and assessment report BVS PP 13.2149 EG.


(9) The Essential Health and Safety Requirements are assured by compliance with:

|                           |                                    |
|---------------------------|------------------------------------|
| <b>EN 60079-0:2009</b>    | <b>General requirements</b>        |
| <b>EN 60079-7:2007</b>    | <b>Increased Safety "e"</b>        |
| <b>EN 60079-30-1:2007</b> | <b>Resistance trace heating</b>    |
| <b>EN 60079-31:2009</b>   | <b>Protection by Enclosure "t"</b> |

(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 appendix to this certificate.

(11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to 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 2G Ex e IIC T6, T5, T4, 180°C (T3) Gb**  
**II 2D Ex tb IIIC T80°C, T95°C, T135°C, T180°C Db**

DEKRA EXAM GmbH  
Bochum, dated 30<sup>th</sup> July 2013

Signed: Dr. Eickhoff

Signed: Dr. Wittler

Certification body

Special services unit

- (13) Appendix to
- (14) **EC-Type Examination Certificate  
BVS 13 ATEX E 040 X**
- (15) 15.1 Subject and type

Heating system PLEXO TCS type 27-1100-<sup>\*1)\*2)\*3)\*</sup>/\*\*\*\*

1) Rated voltage

- 0: 110 V up to 120 V  
1: 208 V up to 254 V

2) Heating Cable series

- 0: PSBL Heating Cable series, type 07-5807-\*\*\*\*  
1: PSB Heating Cable series, type 07-5801-\*\*\*\*  
2: MSB Heating Cable series, type 07-5804-2\*\*\*  
3: HSB Heating Cable series, type 07-5803-\*\*\*\*

3) Connection system

- 5: PLEXO Tape Connector, with following variations

| Function                       | Type              | Sealing range                       |
|--------------------------------|-------------------|-------------------------------------|
|                                | 27-59P1-1010/**** | $8 \leq D \leq 10$ mm               |
| PLEXO Supply Cable connection  | 27-59P1-2010/**** | $10 \leq D \leq 12$ mm              |
|                                | 27-59P1-3010/**** | $12 \leq D \leq 14$ mm              |
|                                | 27-59P1-4010/**** | $14 \leq D \leq 16$ mm              |
| PLEXO Heating Cable connection | 27-59P2-0110/**** | Heating Cables (see <sup>2)</sup> ) |
| PLEXO End termination          | 27-59P3-0010/**** | Heating Cables (see <sup>2)</sup> ) |

15.2 Description

The heating system PLEXO TCS Type 27-1100-\*\*\*\*/\*\*\*\* serves as a stationary heating device and consists of separately certified heating cable series (PSBL, PSB, MSB or HSB) in conjunction with the PLEXO Tape Connector Type 27-59P\*-\*\*\*\*/\*\*\*\*.

The PLEXO Tape Connector Type 27-59P\*-\*\*\*\*/\*\*\*\* can be used in following different versions:

- Connection supply cable and heating cable (Type 27-59P1-\*\*\*\*/\*\*\*\*)
- Connection of heating cables (Type 27-59P2-\*\*\*\*/\*\*\*\*)
- End termination of heating cables (Type 27-59P3-\*\*\*\*/\*\*\*\*)

The complete heating system is based on the type of protection "e" increased safety and "tb" protected by enclosures. Furthermore, the heating system meets the requirements of EN / IEC 60079-30-1 Electrical resistance trace heating.

### 15.3 Parameters

| Type                            | Heating system PLEKO TCS Type 27-1100-0**/**** (with PSBL Heating cable) | Heating system PLEKO TCS Type 27-1100-1**/**** (with PSB Heating cable) | Heating system PLEKO TCS Type 27-1100-2**/**** (with MSB Heating cable) | Heating system PLEKO TCS Type 27-1100-3**/**** (with HSB Heating cable) | PLEKO Tape Connector Type 27-59P*-****/**** |
|---------------------------------|--|---|---|---|---|
| Rated voltage                   | Max. 254 V   | Max. 254 V  | Max. 254 V  | Max. 254 V  | 320 V (for insulation)                      |
| Ambient temperature range       | -30 °C ≤ Ta ≤ +65 °C (T5)  | -40 °C ≤ Ta ≤ +65 °C (T5/T6)  | -40 °C ≤ Ta ≤ +110 °C (T3)<br>-40 °C ≤ Ta ≤ +70 °C (T4)                 | -60 °C ≤ Ta ≤ +120 °C (T3)<br>-60 °C ≤ Ta ≤ +90 °C (T4)                 | ---   |
| Temperature range supply cable  | Minimum +75 °C (T5)  | Minimum +80 °C (T5)<br>Minimum +75 °C (T6)                              | Minimum +125 °C (T3)<br>Minimum +95 °C (T4)                             | Minimum +140 °C (T3)<br>Minimum +105 °C (T4)                            | ---   |
| Max. fuse (type C)              | 16 A   | 32 A  | 32 A  | 32 A  | ---   |
| Withstand temperature range     | ---  | ---   | ---   | ---   | -60 °C ≤ T ≤ +180 °C                        |
| IP protection                   | IP65   | IP65  | IP65  | IP65  | IP65  |
| Rated connecting capacity range | 0,5 – 4 mm <sup>2</sup>  | 0,5 – 4 mm <sup>2</sup>   | 0,5 – 4 mm <sup>2</sup>   | 0,5 – 4 mm <sup>2</sup>   | 0,5 – 4 mm <sup>2</sup>                     |
| Sealing range supply cable      | 8 ≤ D ≤ 16 mm  | 8 ≤ D ≤ 16 mm   | 8 ≤ D ≤ 16 mm   | 8 ≤ D ≤ 16 mm   | 8 ≤ D ≤ 16 mm                               |

(16) Test and assessment report

BVS PP 13.2149 EG as of 30<sup>th</sup> July 2013

(17) Special conditions for safe use

- The classification of the temperature class of the PLEKO TCS Heating System is done from the operator depending on the used heating cable. The ambient temperature range of PLEKO TCS Heating System depends also of the used heating cable. This information is recorded on the operator side in accordance with the specifications in the operating instructions / acceptance report. The documentation must be kept secure.
- 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 a insulation monitoring device according to EN 60079-30-1, clause 4.3 point e) shall be used.

We confirm the correctness of the translation from the German original.  
In the case of arbitration only the German wording shall be valid and binding.

DEKRA EXAM GmbH  
44809 Bochum, 30<sup>th</sup> July 2013  
BVS-Yil/Ma A20110940

  
Certification body

  
Special services unit