**1** # UK-TYPE EXAMINATION CERTIFICATE

**2** **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres**
**UKSI 2016:1107 (as amended) – Schedule 3A, Part 1**

**3** UK-Type Examination Certificate Number: **BAS21UKEX0503X Issue 0**

**4** Product: **VPL Range of Power-Limiting Trace Heating Systems**

**5** Manufacturer: **Chemelex LLC**

**6** Address: **899 Broadway Street, CA, 94063-3104 United States of America**

**7** This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

**8** SGS United Kingdom Ltd. (formerly SGS Baseefa Ltd.), Approved Body number 1180, in accordance with Regulations 42 and 43 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended), 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 Schedule 1 of the Regulations.

The examination and test results are recorded in a confidential report identified in the revision table at item 20.

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

**EN IEC 60079-0:2018 EN IEC 60079-7:2015+A1:2018 EN 60079-18:2015+A1:2017**
**EN 60079-30-1:2017 EN 60079-31:2014**

except in respect of those requirements listed at item 18 of the Schedule.

**10** If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

**11** This UK-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Regulations 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 2GD Ex 60079-30-1 eb IIC T* Gb Ex 60079-30-1 tb IIIC IP66 T**°C Db**
**or**
**II 2 GD Ex 60079-30-1 eb mb IIC T* Gb Ex 60079-30-1 mb tb IIIC IP66 T**°C Db**
**Tmin -60°C (*/** see schedule)**

SGS Customer Reference No. **865** Project File No. **23/0333**

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UKAS PRODUCT CERTIFICATION
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D BREARLEY
LEAD CERTIFICATION ENGINEER
On behalf of SGS United Kingdom Limited

13 # Schedule

14 ## Certificate Number BAS21UKEX0503X – Issue 0

### 15 Description of Product

The VPL Range of Power-Limiting Trace Heating Systems is of the parallel circuit power limiting type, rated at up to 480V; with a nominal power output from 16 W/m to 66 W/m at 10°C and a maximum maintain temperature as detailed in the tables below. The systems are designed for use as part of a stabilised design. The limiting temperatures of the end seals, splices and power connections must be observed as part of the stabilised design.

Each trace heating system comprises:

- the active heating cable
- an end seal for terminating the remote end of the unit
- a cable gland for connecting the powered end of the unit to a suitable terminal enclosure, or alternative integrated power connection systems.

The heating cables consist of two fluoropolymer insulated nickel-plated copper 3.3 mm2 conductors. Both bus wires are further contained within a fluoropolymer pairing jacket. A helical heating element is wound evenly around the pairing jacket. Alternating, a short length of insulation is removed from the pairing jacket and the bus wire to establish the electrical connection between the heating element and the conductor. An extruded layer of fluoropolymer covers the heating element which itself is covered by a conductive covering. A protective anti corrosion fluoropolymer sheath may be extruded over the conductive covering.

A primary 0.5mm thick fluoropolymer jacket covers the heating element which itself is covered by a steel or copper braid equivalent to a 3.31mm$^2$ conductor. The final outer jacket is another 0.5mm thick layer of fluoropolymer.

The resistance of the heating element changes as its surrounding temperature changes resulting in the power output of the heating cable reducing with increasing temperature.

The declared maximum withstand temperature for the range is 260°C and the minimum installation temperature is -60°C.

| Heating Cable | Maximum maintain temperature (°C) | |
|---|---|---|
| | 110V | 220V |
| 5VPL1 -CT | 235 | 235 |
| 10VPL1 –CT | 215 | 210 |
| 15VPL1 –CT | 190 | 165 |
| 20VPL1 –CT | 150 | 150 |

| Heating Cable | Maximum maintain temperature (°C) | | | |
|---|---|---|---|---|
| | 208V | 230V | 254V | 277V |
| 5VPL2 -CT | 235 | 230 | 225 | 225 |
| 10VPL2 –CT | 220 | 210 | 200 | 195 |
| 15VPL2 –CT | 200 | 180 | 145 | 105 |
| 20VPL2 –CT | 150 | 150 | - | - |

| Heating Cable | Maximum maintain temperature (°C) | |
|---|---|---|
| | 400V | 480V |
| 5VPL4 -CT | 230 | 230 |
| 10VPL4 –CT | 215 | 205 |
| 15VPL4 –CT | 195 | 160 |
| 20VPL4 –CT | 150 | 150 |

CABLE ACCESSORIES

END SEALS

The end seals for terminating the remote end of the unit may be the following types:

Types E-100-L or E-100, which are mechanical end seals incorporating an end cap which is filled with silicone grease sealant, covered by certificates Sira14ATEX3015X and PTB09ATEX1060U.

Types E-100-L-A or E-100-A, which are mechanical end seals incorporating an end cap which is filled with silicone grease sealant.

A Raychem Type E-40 heat shrink end seal kit.

Type E-150 mechanical end seals, covered by certificate DEKRA20ATEX0011U.

SPLICES AND JOINTS

The following splicing and jointing arrangements are provided:

A Raychem T-100 tee connection system, certificate PTB20ATEX1008U, for connecting up to three heater cables.

A Raychem Type S-40 heat shrink splice kit for connecting lengths of active heating cable.

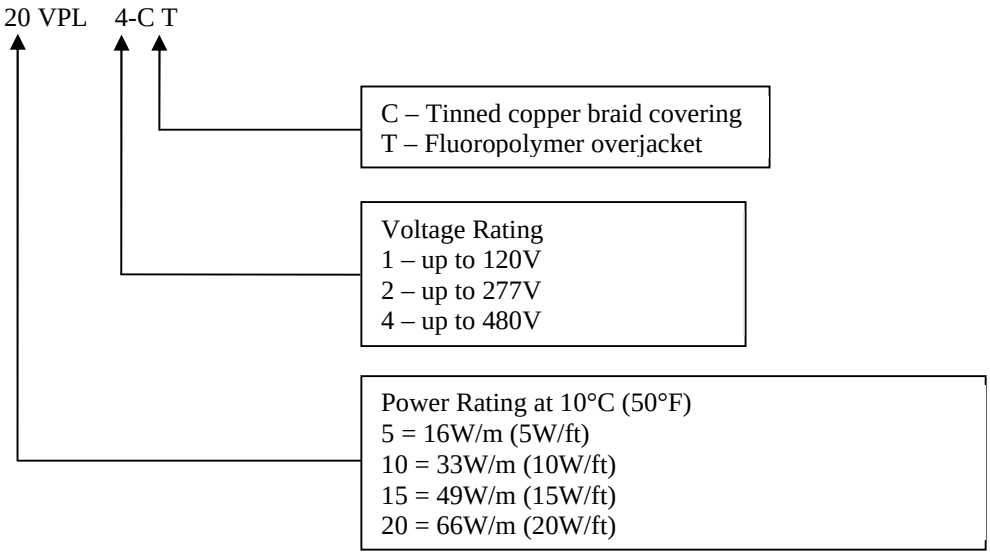
POWER CONNECTIONS

Power connection may be achieved by the following means:

| Connection Type | ATEX Certificate |
|---|---|
| T-100 | PTB20ATEX1008U |
| JBM-100 | PTB20ATEX1008U |
| JBS-100 | PTB20ATEX1008U |
| E-100 | PTB09ATEX1060U |
| E-100-L | Sira14ATEX3015X |
| JBU-100 | PTB20ATEX1008U |
| C-150-E | DEKRA20ATEX0011U |
| C25-21 | Baseefa16ATEX0037U |
| C25-100 | Baseefa16ATEX0038U |
| C25-100-Metal<br>C3/4-100-Metal<br>C25-100-Metal-NP<br>C3/4-100-Metal-NP<br>C25-100-Metal-SS | Baseefa16ATEX0039U |

The C25-100-Metal / C3/4-100-Metal / C25-100-Metal-NP / C3/4-100-Metal-NP / C25-100-Metal-SS Kits include M25 or ¾ NPT gland to Sira01ATEX1270X and core sealer to Baseefa15ATEX0194U.

A number of power levels and voltages, up to the maximum specified, are included in the range. They are identified in the following manner:




TEMPERATURE CLASS

Any of the products in the range may be considered as part of a stabilised design system. In such a system the design is based upon the use of nVent proprietary software Trace calc Pro. The algorithm defined in this software may be used in additional design software. These designs may carry temperature classes of T6 to T2 and are marked with the actual maximum temperature and the appropriate T class in parenthesis.

The minimum bending radii for VPL trace heating cable at specific temperatures are shown in the table below:

| Temperature, T (°C) | Minimum Bending Radius (mm) |
|---|---|
| $-60 \leq T < -20$ | 19 |
| $-20 \leq T < +10$ | 15 |
| $T \geq +10$ | 12 |

**16 Report Number**

See Item 20 – Certificate History

**17 Specific Conditions of Use**

1. The following limiting temperatures for the end seals, splices and power connections shall not be exceeded:

   260°C for the E-40 and S-40
   250°C for the JBU-100
   165°C for the E-100, E-100-L and JBS-100
   155°C for the JBM-100 and T-100
   150°C for the C-150-E and E-150
   110°C for the C25-21 and C25-100
   180°C for the C25-100-Metal / C3/4-100-Metal

   The E-100, E-100-L, JBM-100, JBS-100 and T-100 have limiting temperatures based on an internal component in these accessories. When located on a pipe or other work piece surface, a maximum pipe temperature of 250°C will not cause the limiting temperatures of 165°C or 155°C to be exceeded.

2. The end seals, splices and power connections have the following associated ambient temperatures:

   -60°C to +56°C for the E-40 and S-40
   -55°C to +56°C for the T-100, JBM-100, JBS-100, JBU-100 and E-100
   -55°C to +55°C for the C-150-E and E-150
   -40°C to +56°C for the JBS-100-L, JBM-100-L and JBU-100-L
   -40°C to +40°C for the E-100-L
   -55°C to +110°C for the C25-21 and C25-100
   -60°C to +180°C for the C25-100-Metal / C3/4-100-Metal

3. The assembly of glands, splices and end terminations shall be carried out in accordance with the manufacturer's instructions.

4. The heating element supply circuit must include an electrical protection device in conformity with Clause 4.4 of EN 60079-30-1.

5. The minimum installation temperature is -60°C. The minimum bending radii at specific temperatures for the Type VPL units are shown in the table in the equipment description.

6. The supply to the heating unit must be terminated in a suitably certified terminal enclosure.

7. The installer is to carry out a dielectric strength test on Ex equipment in which the C25-21, C25-100 and C25-100-Metal / C3/4-100-Metal connection kit is fitted. No dielectric breakdown shall occur. (Alternatively, an insulation resistance test may be undertaken in accordance with EN 60079-30-2).

## 18 Essential Health and Safety Requirements

In addition to the Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9, the following are considered relevant to this product, and conformity is demonstrated in the report:

| Clause | Subject |
|---|---|
| 13 | LVD type requirements |
| 14 | Overloading of equipment (protection relays, etc.) |
| 21 (1) | External effects |
| 21 (2) | Aggressive substances, etc. |

## 19 Drawings and Documents

Other than for Issue 0, Drawings and Documents that are introduced at a new edition of the certificate are marked with an asterisk symbol:

| Number | Sheet | Issue | Date | Description |
|---|---|---|---|---|
| 907269-A* | 1 of 1 | X | 08/10/2025 | Generic Print Dwg For VPL-CT Heating Cables |
| SGS20ATEX0045X | | | | |

* This drawing is common to IECEx BAS 20.0008X, SGS20ATEX0045X, BAS21UKEX0503X and are held with IECEx BAS 20.0008X.

## 20 Certificate History

| Certificate No. | Date | Comments |
|---|---|---|
| BAS21UKEX0503X<br>Issue 0 | 11 December 2025 | **Prime Certificate**<br>**Report Number: 23(C)0333** **Project Number: 23/0333**<br>**Original issue of the certificate** |
| For drawings applicable to each issue, see original of that issue. | | |