



## EC - TYPE EXAMINATION CERTIFICATE

### Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

**UNCONTROLLED DOCUMENT**  
THIS DOCUMENT IS NOT  
SUBJECT TO AMENDMENTS

T.E.L. ENGINEERING LIMITED

- 3 EC – Type Examination Certificate Number : **Baseefa02ATEX0190X**
- 4 Equipment or protective system: **Type TX4705 Slip Ring Units**
- 5 Manufacturer : **T.E.L Engineering Limited** also trading as **Trox Engineering**
- 6 Address : **Stockport, Cheshire, SK7 5DA**
- 7 This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- 8 Baseefa (2001) Ltd. Notified body number 1180, in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system 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 Report No. **02(C)0180/1**
- 9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:  
**EN50014: 1997 + Amendments 1 & 2**  
**EN50018: 2000**  
**EN50281-1-1: 1998**
- 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 equipment or protective system is subject to special conditions of safe use specified in the schedule to this certificate.
- 11 This EC - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified equipment or protective system. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment or protective system.
- 12 The marking of the equipment or protective system shall include the following :
- ⊕ II 2 GD EEx d IIB T85°C (T<sub>amb</sub> = -40°C to +40°C) or T135°C (T<sub>amb</sub> = -40°C to +60°C)**
- This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa (2001) Ltd. Customer Reference No. **1428**

Project File No. **02/0180**

This certificate is granted subject to the general terms and conditions of Baseefa (2001) Ltd. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

R S SINCLAIR

DIRECTOR

On behalf of

Baseefa (2001) Ltd.

### Baseefa (2001) Ltd.

Health and Safety Laboratory Site, Harpur Hill,  
Buxton, Derbyshire SK17 9JN

Telephone +44 (0) 1298 28255 Fax +44 (0) 1298 28216  
e-mail [info@baseefa2001.biz](mailto:info@baseefa2001.biz) web site [www.baseefa2001.biz](http://www.baseefa2001.biz)  
Registered in England No. 4305578 at 13 Dovedale Crescent, Buxton,  
Derbyshire, SK17 9BJ



13

## Schedule

14

**Certificate Number Baseefa02ATEX0190X**

**UNCONTROLLED DOCUMENT**  
THIS DOCUMENT IS NOT  
SUBJECT TO AMENDMENTS

T.E.L. ENGINEERING LIMITED

15 **Description of Equipment or Protective System**

A **Type TX4705 Slip Ring Unit** comprises a machined housing incorporating a bearing and a flange manufactured from aluminium or stainless steel with a stainless steel fabricated cover of various lengths from 70mm to 335mm enclosing slip rings and associated brush gear. Cable entries are provided in the housing and the flange. The slip rings are individually rated up to 2000V, 16A and may be used for power, signal and intrinsically safe circuits, with a maximum total throughput of 268A. The maximum voltage is reduced to 60V for intrinsically safe circuits.

Options include:

provision of a cable entry in the end of the cover, in lieu of an entry in the housing, this is provided with a permanently attached cable to form a TX4706 unit

a reduced rating with an increased ambient temperature to + 60°C to form a TX4705P unit.

All the units are suffixed with an "i" when used with intrinsically safe circuits.

Cable entry holes are provided as specified on the certified drawings for the accommodation of suitable BASEEFA certified flameproof cable entry devices, with or without the interposition of a suitable BASEEFA certified flameproof thread adapter. Unused entries are to be fitted with suitable BASEEFA certified flameproof stopping plugs.

Suitable flameproof cable entry devices, thread adapters and stopping plugs certified as Equipment (not a Component) under an EC Type Examination Certificate to Directive 94/9/EC may also be used in the manner specified above.

16 **Report No.**

02(C)0180/1

17 **Special Conditions for Safe Use**

1. The integral cable of the TX4706 unit must be protected against impact and be terminated in a suitable junction facility.

Additionally for Slip Ring Units carrying intrinsically safe circuits:-

- 2.1 The voltage of each intrinsically safe circuit and between separate intrinsically safe circuits shall not exceed 60V.
- 2.2 The sum of the maximum peak voltages of intrinsically safe and non-intrinsically safe circuits shall not exceed 1575V.
- 2.3 Each intrinsically safe circuit shall be separately screened.

18 **Essential Health and Safety Requirements**

None additional to those covered by the standards listed at item 9



**UNCONTROLLED DOCUMENT**  
THIS DOCUMENT IS NOT  
SUBJECT TO AMENDMENTS  
T.E.L. ENGINEERING LIMITED

**19 Drawings and Documents**

<b>Number</b>	<b>Sheet</b>	<b>Issue</b>	<b>Date</b>	<b>Description</b>
1/4705/012	1 to 3 inc.	F	20.11.02	General Assembly and Label Details - TX4705 & TX4706 Units
1/4705/220	-	C	20.11.02	General Assembly and Label Details - TX4705P Unit
1/4705/135	-	C	20.11.02	Recovery Techniques – All units
1/4705/245	-	A	20.11.02	Cable and Gland details



1 **SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE**

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres  
Directive 94/9/EC**

3 Supplementary EC - Type Examination Certificate Number: **Baseefa02ATEX0190X/1**

4 Equipment or Protective System: **Type TX4705 Slip Ring Units**

5 Manufacturer: **T.E.L Engineering Limited also trading as Trolex Engineering**

6 Address: **Stockport, Cheshire, SK7 5DA**

7 This supplementary certificate extends EC – Type Examination Certificate No. Baseefa02ATEX0190X to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

**UNCONTROLLED DOCUMENT  
THIS DOCUMENT IS NOT  
SUBJECT TO AMENDMENTS**

**T.E.L. ENGINEERING LIMITED**

This supplementary certificate shall be held with the original certificate.

This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa (2001) Ltd. Customer Reference No. **1428**

Project File No. **03/0825**

This certificate is granted subject to the general terms and conditions of Baseefa (2001) Ltd. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

**Baseefa (2001) Ltd.**

Health and Safety Laboratory Site, Harpur Hill,  
Buxton, Derbyshire SK17 9JN  
Telephone +44 (0) 1298 28255 Fax +44 (0) 1298 28216  
e-mail [info@baseefa2001.biz](mailto:info@baseefa2001.biz) web site [www.baseefa2001.biz](http://www.baseefa2001.biz)  
Registered in England No. 4305578 at 13 Dovedale Crescent, Buxton,  
Derbyshire, SK17 9BJ

  
pp R S SINCLAIR M POWNEY  
DIRECTOR  
On behalf of  
Baseefa (2001) Ltd.



## Schedule

14 Certificate Number Baseefa02ATEX0190X/1

15 Description of the variation to the Equipment or Protective System

UNCONTROLLED DOCUMENT  
THIS DOCUMENT IS NOT  
SUBJECT TO AMENDMENTS  
T.E.L. ENGINEERING LIMITED

### Variation 1.1

Re-designation of type reference and minimum ambient temperature for the Type 4705 and Type 4706 units to  $-20^{\circ}\text{C}$  and for the Type 4705LT and Type 4706LT units to  $-40^{\circ}\text{C}$ .

### Drawings and Documents

Number	Issue	Date	Description
3/4705/273	A	25.09.03	Label details

### Variation 1.2

To permit the option of fibre optic cables through a fibre optic rotary joint.

In this form the units are limited to a maximum of 8A per slip ring, a total throughput of 134A, and an ambient temperature range ( $T_{\text{amb}} = -30^{\circ}\text{C}$  to  $+40^{\circ}\text{C}$ ).

### Drawings and Documents

Number	Issue	Date	Description
1/4705/293	A	23.09.03	Fibre optic details

### Variation 1.3

The option of an alternative stopper box Type EG to Sira00ATEX1073U.

In this form the units are limited to an ambient temperature range ( $T_{\text{amb}} = -20^{\circ}\text{C}$  to  $+40^{\circ}\text{C}$ )

### Drawings and Documents

Number	Issue	Date	Description
1/4705/245	B	25.09.03	Cables and glands details

16 Report Number

None

17 Special Conditions for Safe Use

None additional to those listed previously

18 Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19 Drawings and Documents

See description.



1 **SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE**

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres  
Directive 94/9/EC**

3 Supplementary EC - Type Examination Certificate Number: **Baseefa02ATEX0190X/2**

4 Equipment or Protective System: **Type TX4705 Slip Ring Units**

5 Manufacturer: **T.E.L Engineering Limited also trading as Trolex Engineering**

6 Address: **Newby Road, Hazel Grove, Stockport, Cheshire, SK7 5DA**

**UNCONTROLLED DOCUMENT  
THIS DOCUMENT IS NOT  
SUBJECT TO AMENDMENTS**

**T.E.L. ENGINEERING LIMITED**

7 This supplementary certificate extends EC – Type Examination Certificate No. Baseefa02ATEX0190X to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

This supplementary certificate shall be held with the original certificate.

This certificate may only be reproduced in its entirety, without any change, schedule included.

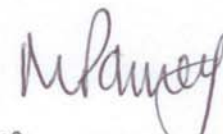
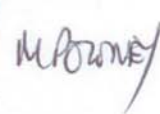
Baseefa Customer Reference No. **1428**

Project File No. **06/0961**

This certificate is granted subject to the general terms and conditions of Baseefa (2001) Ltd. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

**Baseefa**

Rockhead Business Park, Staden Lane,  
Buxton, Derbyshire SK17 9RZ  
Telephone +44 (0) 1298 766600 Fax +44 (0) 1298 766601  
e-mail [info@baseefa.com](mailto:info@baseefa.com) web site [www.baseefa.com](http://www.baseefa.com)  
Baseefa is a trading name of Baseefa (2001) Ltd  
Registered in England No. 4305578 at the above address

  
  
R S SINCLAIR  
DIRECTOR  
On behalf of  
Baseefa (2001) Ltd.



**UNCONTROLLED DOCUMENT**  
THIS DOCUMENT IS NOT  
SUBJECT TO AMENDMENTS  
T.E.L. ENGINEERING LIMITED

13

## Schedule

14

Certificate Number Baseefa02ATEX0190X/2

15 Description of the variation to the Equipment or Protective System

### Variation 2.1

Revised cabling arrangements comprising the use of compression type glands as Baseefa06ATEX0056X, and Baseefa06ATEX0057X only; and barrier compression type glands as Baseefa06ATEX0058X and SIRA 06ATEX1097X only.

To confirm that the equipment covered by this certificate as amended by the above changes has been reviewed against the requirements of EN60079-0: 2004, EN60079-1: 2004, EN 60079-7: 2003, IEC61241-0 and IEC61241-1 in respect of the differences from the standards to which this certificate was issued; none of these differences affect this equipment.

The units so formed are coded

⊕ II 2 GD Exd IIB Ex tD A21 IP66 T85°C or T135°C

### Variation 2.2

Revised cabling arrangements comprising the use of compression type glands as SIRA01ATEX1270X and SIRA01ATEX1272X only; and barrier compression type glands as SIRA03ATEX1479X only.

To confirm that the equipment covered by this certificate as amended by the above changes has been reviewed against the requirements of EN60079-0: 2004, EN60079-1: 2004 and EN 60079-7: 2003 in respect of the differences from the standards to which this certificate was issued; none of these differences affect this equipment.

The units so formed are coded:

⊕ II 2 G Exd IIB T6 or T4

16 Report Number

None

17 Special Conditions for Safe Use

None additional to those listed previously

18 Essential Health and Safety Requirements

Compliance with the Essential Health and Safety requirements is not affected by this variation.

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
1/4705/403	-	A	6 DEC 06	TX4705 EN/IEC Standards Glands
3/4705/400	-	A	9 NOV 06	TX4705 Series Slip Ring EN/IEC Standards
3/4705/404	-	A	1 DEC 06	TX4705 Alternative Code Labels



1 **SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE**

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres  
Directive 94/9/EC**

3 Supplementary EC - Type Examination Certificate Number: **Baseefa02ATEX0190X/3**

4 Equipment or Protective System: **Type TX4705 Slip Ring Units**

5 Manufacturer: **T.E.L Engineering Limited** also trading as **Trox Engineering**

6 Address: **Newby Road, Hazel Grove, Stockport, Cheshire, SK7 5DA**

7 This supplementary certificate extends EC – Type Examination Certificate No. Baseefa02ATEX0190X to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

**UNCONTROLLED DOCUMENT  
THIS DOCUMENT IS NOT  
SUBJECT TO AMENDMENTS  
T.E.L. ENGINEERING LIMITED**

This supplementary certificate shall be held with the original certificate.

This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa Customer Reference No. **1428**

Project File No. **07/0803**

This certificate is granted subject to the general terms and conditions of Baseefa (2001) Ltd. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

**Baseefa**

Rockhead Business Park, Staden Lane,  
Buxton, Derbyshire SK17 9RZ  
Telephone +44 (0) 1298 766600 Fax +44 (0) 1298 766601  
e-mail [info@baseefa.com](mailto:info@baseefa.com) web site [www.baseefa.com](http://www.baseefa.com)  
Baseefa is a trading name of Baseefa (2001) Ltd  
Registered in England No. 4305578 at the above address

*D Brearley*  
PP DBREARLEY  
R S SINCLAIR  
DIRECTOR  
On behalf of  
Baseefa (2001) Ltd.



13

### Schedule

14

Certificate Number Baseefa02ATEX0190X/3

15

#### Description of the variation to the Equipment or Protective System

##### Variation 3.1

Increase in the ambient temperature range to -20°C to +50°C with a reduction in the maximum total throughput to 134A.

The units are now coded

⊕ II 2 GD Exd IIB Ex tD A21 IP66 T85°C (T<sub>amb</sub> = -20°C to +50°C) or T135°C (T<sub>amb</sub> = -20°C to +50°C)

or

⊕ II 2 G Exd IIB T6 (T<sub>amb</sub> = -20°C to +50°C) or T4 (T<sub>amb</sub> = -20°C to +50°C)

16

#### Report Number

None

17

#### Special Conditions for Safe Use

None additional to those listed previously

18

#### Essential Health and Safety Requirements

Compliance with the Essential Health and Safety requirements is not affected by this variation.

19

#### Drawings and Documents

Number	Sheet	Issue	Date	Description
3/4705/419	-	B	8 OCT 07	Amended Label and Thermal Details

UNCONTROLLED DOCUMENT  
THIS DOCUMENT IS NOT  
SUBJECT TO AMENDMENTS

T.E.L. ENGINEERING LIMITED