

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: **BAS21UKEX0667X**  
4 Product: **Series 7 Proximity Switches**  
5 Manufacturer: **Topworx Incorporated**  
6 Address: **3300 Fern Valley Road, Louisville, Kentucky, 40213 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 Baseefa, Approved Body number 1180, in accordance with Regulation 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 confidential Report No. **GB/BAS/ExTR22.0193/00**

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

**EN IEC 60079-0: 2018 EN 60079-11: 2012**

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 1 GD See Schedule for full marking**

SGS Baseefa Customer Reference No. **2191**

Project File No. **21/0357**

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R S SINCLAIR  
TECHNICAL MANAGER  
On behalf of SGS Baseefa Limited

13 **Schedule**

14 **Certificate Number BAS21UKEX0667X**

15 **Description of Product**

The Series 7 Proximity Switches are a range of magnetically operated proximity switches which are actuated by the presence of an external ferrous body. The range includes a number of different switch configurations with single pole, double throw or double pole, double throw switches within the switch body.

The proximity switches comprise a tubular stainless steel enclosure in a variety of body styles, with differing external male threads and a thin section wall at the front end.

The rear end of the tubular enclosure is a hexagonal section with the field wiring to the switches. The integral connection leads for the switches, exit the tubular enclosure via a potted seal assembly and must be terminated within an enclosure provided with protection suitable for the zone of installation. Some variants of the equipment have the option of external connections via a 3-pin, 4-pin or 5-pin polarised plug connection.

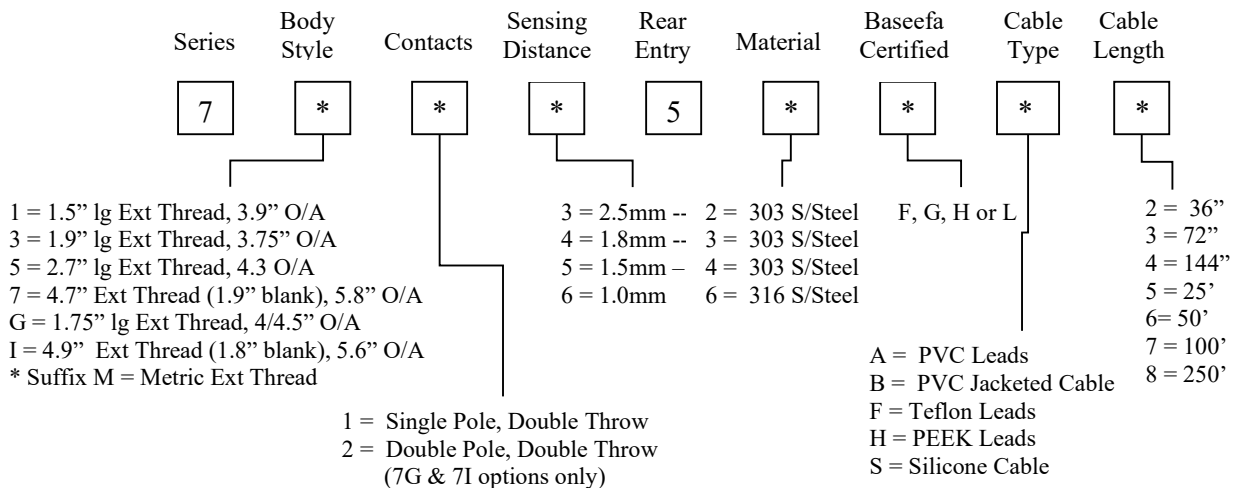
The switches are rated up to 30V peak a.c. or d.c., 0.25A and may be used to switch a circuit from a Certified Ex ia IIC intrinsically safe source. Both sides of each double throw switch and each pole of a double pole switch, within one proximity switch, must form part of the same intrinsically safe circuit. The switched circuit is capable of withstanding a 500V test to earth.

The proximity switches do not require a connection to earth for safety purposes, but an earth connection is provided which is directly connected to the metallic enclosure and must be used with care in any intrinsically safe system.

The following model ranges are covered by the certificate:

**Series 71, 73, 75, 77, 7G & 7I Proximity Switches**

Model Range



The seventh character of the Model Number (F, G or H) indicates the temperature classification / maximum surface temperature and ambient temperature range of the equipment, which are as follows:

Seventh character of Model Number	Certification Marking
F	Ex ia IIC T6 Ga (-65°C ≤ T <sub>a</sub> ≤ +50°C) Ex ia IIIC T <sub>200</sub> 85°C Da (-65°C ≤ T <sub>a</sub> ≤ +50°C)
G	Ex ia IIC T4 Ga (-65°C ≤ T <sub>a</sub> ≤ +100°C) Ex ia IIIC T <sub>200</sub> 135°C Da (-65°C ≤ T <sub>a</sub> ≤ +100°C)
H	Ex ia IIC T3 Ga (-65°C ≤ T <sub>a</sub> ≤ +150°C) Ex ia IIIC T <sub>200</sub> 200°C Da (-65°C ≤ T <sub>a</sub> ≤ +150°C)

The model range described here includes an alternative label that carries third-party certification marks not ratified by SGS Baseefa. These models are identified by the inclusion of an “L” as the seventh character of the model number. For those carrying this character the model nomenclature is not relied upon to define the certification parameters.

Input Parameters

$$U_i = 30V \quad C_i = 33nF$$

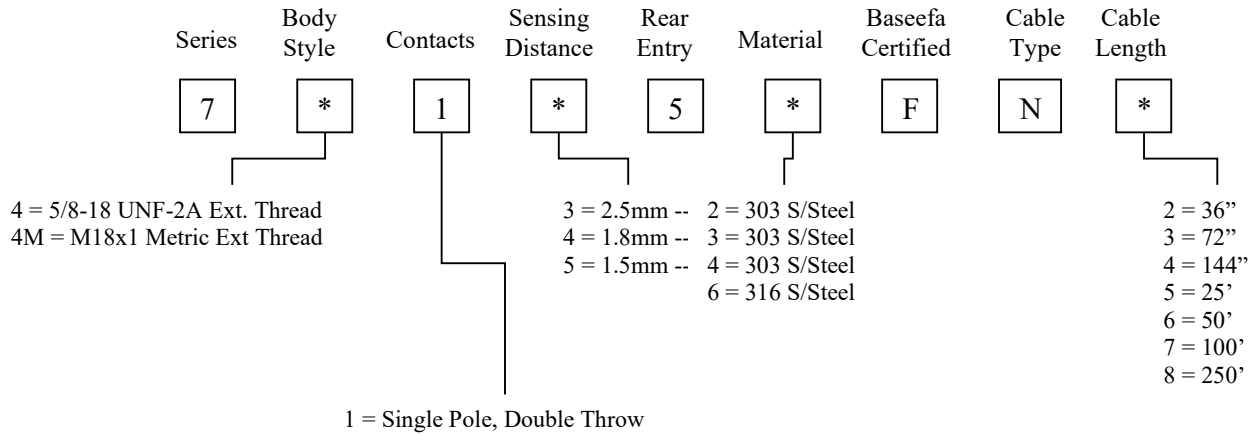
$$I_i = 0.25A \quad L_i = 200\mu H$$

**74 Series Proximity Switches**

The 74 Series Proximity Switches comprise a stainless steel enclosure with a Single Pole Double Throw (SPDT) switch mechanism identical to those used in the Series 7 Proximity Switches. External connections to the switch mechanism are made via either Niltox, PVC, Teflon, Peek or Silicone insulated integral cable / leads which exits the equipment via a potted seal assembly and must be terminated within an enclosure provided with protection suitable for the zone of installation. All models of the switches have a degree of protection of IP66 & IP67.

These models differ in the enclosure body style and cable type and are available with various integral cable lengths. The model numbering and certification markings & input parameters of the 74 Series Proximity Switches ranges with Niltox & the other integral cables types are as follows:

74 Series Proximity Switches with Niltox Cable Model Range



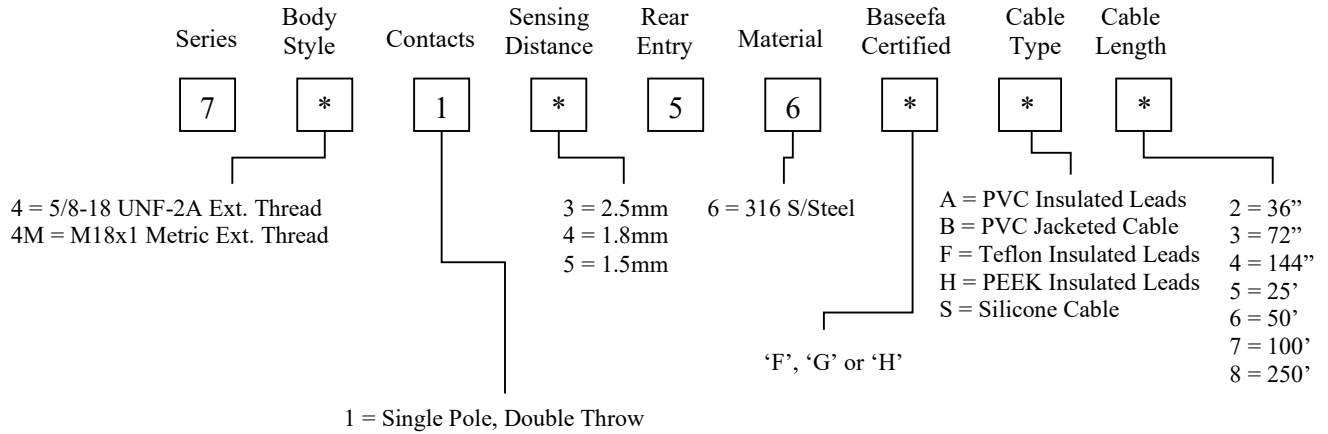
Ex ia IIC T6 Ga (-65°C ≤ T<sub>a</sub> ≤ +50°C)  
 Ex ia IIIC T85°C Da (-65°C ≤ T<sub>a</sub> ≤ +50°C)

Input Parameters

$$U_i = 30V \quad C_i = 33nF$$

$$I_i = 0.25A \quad L_i = 200\mu H$$

**74 Series Proximity Switches with PVC, Teflon, Peek & Silicone Leads / Cables Model Range**



The seventh character of the Model Number (F, G or H) indicates the temperature classification / maximum surface temperature and ambient temperature range of the equipment, which are as follows:

Seventh character of Model Number	Certification Marking
F	II 1GD Ex ia IIC T6 Ga (-65°C ≤ T <sub>a</sub> ≤ +50°C) Ex ia IIIC T <sub>200</sub> 85°C Da (-65°C ≤ T <sub>a</sub> ≤ +50°C)
G	II 1GD Ex ia IIC T4 Ga (-65°C ≤ T <sub>a</sub> ≤ +100°C) Ex ia IIIC T <sub>200</sub> 135°C Da (-65°C ≤ T <sub>a</sub> ≤ +100°C)
H	II 1GD Ex ia IIC T3 Ga (-65°C ≤ T <sub>a</sub> ≤ +150°C) Ex ia IIIC T <sub>200</sub> 200°C Da (-65°C ≤ T <sub>a</sub> ≤ +150°C)

**Input Parameters**

$$U_i = 30V \quad C_i = 33nF$$

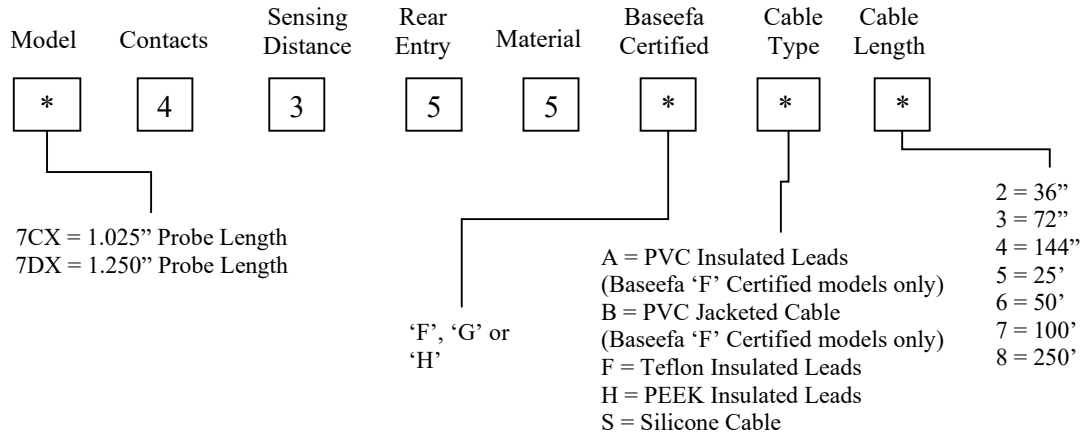
$$I_i = 0.25A \quad L_i = 200\mu H$$

**7CX & 7DX Series Proximity Switch Models**

The 7CX & 7DX Series Proximity Switches comprise a stainless steel enclosure with a Single Pole Double Throw (SPDT) switch mechanism identical to those used in the Series 7 Proximity Switches. The switch mechanism can be additionally hermetically sealed. The switches are fitted with a bracket either 1.025 inch (7CX models) or 1.250 inch (7DX models) from the switch end of the equipment to permit mounting of the switch. External connections to the switch mechanism are made via either PVC, Teflon or Peek insulated integral cable / leads which exits the equipment via a potted seal assembly. These external connections must be terminated within an enclosure provided with protection suitable for the zone of installation.

In addition to the probe length determined by the mounting bracket position, the various models of the 7CX & 7DX only differ in the cable type and lengths.

Model Range



The sixth character of the Model Number (F, G or H) indicates the temperature classification / maximum surface temperature and ambient temperature range of the equipment, which are as follows:

Sixth character of Model Number	Certification Marking
F	⊕ II 1GD Ex ia IIC T6 Ga (-65°C ≤ T <sub>a</sub> ≤ +50°C) Ex ia IIIC T <sub>200</sub> 85°C Da (-65°C ≤ T <sub>a</sub> ≤ +50°C)
G	⊕ II 1GD Ex ia IIC T4 Ga (-65°C ≤ T <sub>a</sub> ≤ +100°C) Ex ia IIIC T <sub>200</sub> 135°C Da (-65°C ≤ T <sub>a</sub> ≤ +100°C)
H	⊕ II 1GD Ex ia IIC T3 Ga (-65°C ≤ T <sub>a</sub> ≤ +150°C) Ex ia IIIC T <sub>200</sub> 200°C Da (-65°C ≤ T <sub>a</sub> ≤ +150°C)

Input Parameters

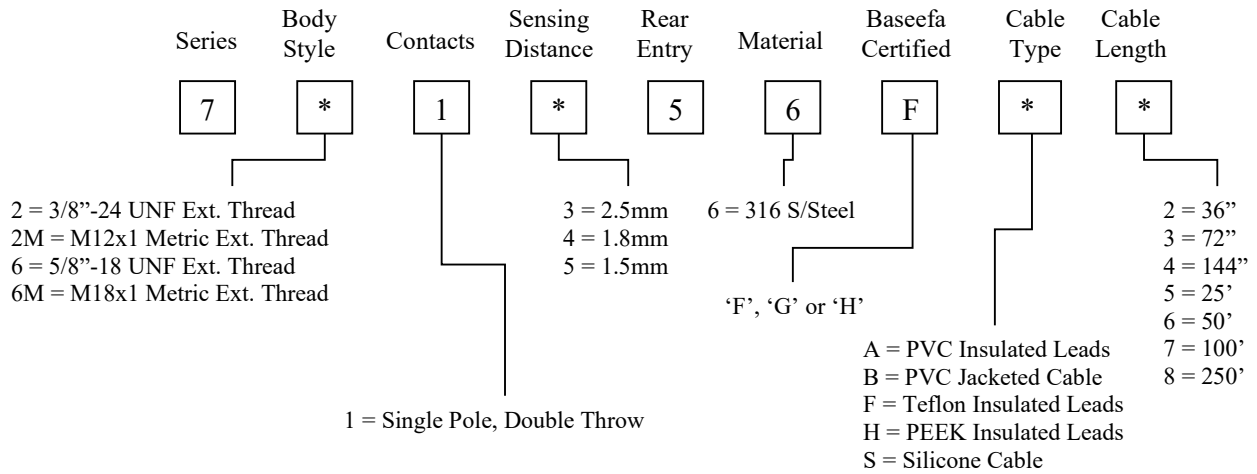
$$U_i = 30V \quad C_i = 33nF$$

$$I_i = 0.25A \quad L_i = 200\mu H$$




**72 & 76 Series Proximity Switch Models**

The 72 & 76 Series Proximity Switches comprise a stainless steel enclosure with a Single Pole Double Throw (SPDT) switch mechanism identical to those used in the Series 7 Proximity Switches. External connections to the switch mechanism are made via an integral cable / leads which exits the equipment via a potted seal assembly and must be terminated within an enclosure provided with protection suitable for the zone of installation.

These models differ in the enclosure body style and are available with various integral cable types and lengths. The model numbering and certification markings & input parameters of the 72 & 76 Series Proximity Switches ranges are as follows:



The seventh character of the Model Number (F, G or H) indicates the temperature classification / maximum surface temperature and ambient temperature range of the equipment, which are as follows:

Seventh character of Model Number	Certification Marking	
F	 II 1GD	Ex ia IIC T6 Ga (-65°C ≤ T <sub>a</sub> ≤ +50°C) Ex ia IIIC T <sub>200</sub> 85°C Da (-65°C ≤ T <sub>a</sub> ≤ +50°C)
G	 II 1GD	Ex ia IIC T4 Ga (-65°C ≤ T <sub>a</sub> ≤ +100°C) Ex ia IIIC T <sub>200</sub> 135°C Da (-65°C ≤ T <sub>a</sub> ≤ +100°C)
H	 II 1GD	Ex ia IIC T3 Ga (-65°C ≤ T <sub>a</sub> ≤ +150°C) Ex ia IIIC T <sub>200</sub> 200°C Da (-65°C ≤ T <sub>a</sub> ≤ +150°C)

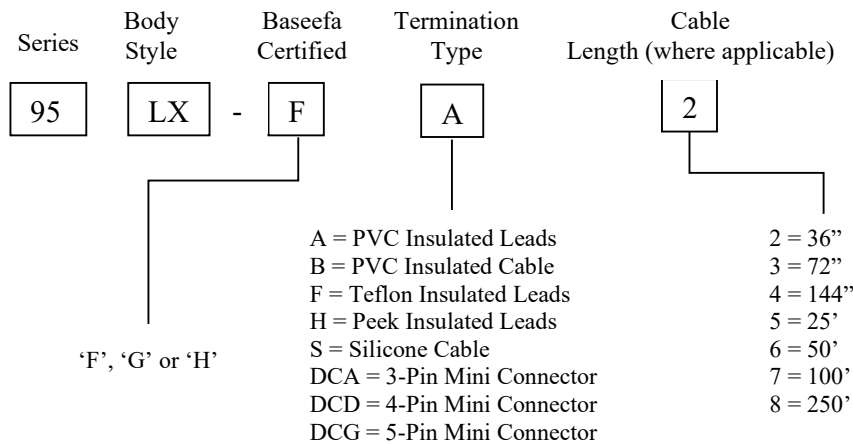
Input Parameters

$U_i = 30V$        $C_i = 33nF$   
 $I_i = 0.25A$      $L_i = 200\mu H$

### 95LX Series Proximity Switch Models

The 95LX Series Proximity Switches comprise a stainless steel enclosure with either a Single Pole Single Throw (SPST) or Single Pole Double Throw (SPDT) switch mechanism identical to those used in the Series 71 & 72 Series Proximity Switches. External connections to the switch mechanism are made either via either PVC, Teflon, Peek or Silicone insulated integral cable / leads which exits the equipment via a potted seal assembly, or via a 3-, 4- or 5-pin plug connector. Where applicable, the integral cable / lead connections must be terminated within an enclosure provided with protection suitable for the zone of installation.

These models differ in the enclosure body style, and external connection facilities, with the integral cable variants available with various integral cable lengths. The model numbering and certification markings & input parameters of the 95LX Series Proximity Switches ranges are as follows:



The third character of the Model Number (F, G or H) indicates the temperature classification / maximum surface temperature and ambient temperature range of the equipment, which are as follows:

Third character of Model Number	Termination Option(s)	Certification Marking
F	A, B, F, H, S, DCA, DCD & DCG	$\sqrt{\text{Ex}}$ II 1GD Ex ia IIC T6 Ga (-65°C ≤ T <sub>a</sub> ≤ +50°C) Ex ia IIIC T <sub>200</sub> 85°C Da (-65°C ≤ T <sub>a</sub> ≤ +50°C)
G	F, H & S	$\sqrt{\text{Ex}}$ II 1GD Ex ia IIC T4 Ga (-65°C ≤ T <sub>a</sub> ≤ +100°C) Ex ia IIIC T <sub>200</sub> 135°C Da (-65°C ≤ T <sub>a</sub> ≤ +100°C)
H	F only	$\sqrt{\text{Ex}}$ II 1GD Ex ia IIC T3 Ga (-65°C ≤ T <sub>a</sub> ≤ +150°C) Ex ia IIIC T <sub>200</sub> 200°C Da (-65°C ≤ T <sub>a</sub> ≤ +150°C)

### 95LX Series Proximity Switches fitted with Integral Cables

$$U_i = 30V \quad C_i = 33nF$$

$$I_i = 0.25A \quad L_i = 200\mu H$$

### 95LX Series Proximity Switches fitted with 3, 4 or 5-pin Plug Connections

$$U_i = 30V \quad C_i = 0$$

$$I_i = 0.25A \quad L_i = 0$$

### 16 Report Number

GB/BAS/ExTR22.0193/00

**17 Specific Conditions of Use**

1. Both contacts of the Double Throw and the separate poles of the Double Pole switch, within one proximity switch must form part of the same intrinsically safe circuit.
2. The proximity switches do not require a connection to earth for safety purposes, but an earth connection is provided which is directly connected to the metallic enclosure. Normally an intrinsically safe circuit may be earthed at one point only. If the earth connection is used, the implications of this must be fully considered in any installation. i.e. by the use of a galvanically isolated interface.
3. The switch must be supplied from a Certified Ex ia IIC intrinsically safe source.
4. The flying leads must be terminated in a manner suitable for the zone of installation.

**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	Protection against other hazards (LVD type requirements, etc.)
14	Overloading of equipment (protection relays, etc.)
21 (1)	External effects
21 (2)	Aggressive substances, etc.

**19 Drawings and Documents**

Number	Sheet	Issue	Date	Description
CERT-ES-09210	1 of 1	AA	10/21/2022	Stencil-Artwork Approval, 70 Switch UKEX Intrinsically Safe (-65°C to 50°C)
CERT-ES-09211	1 of 1	AA	10/21/2022	Stencil-Artwork Approval, 70 UKEX Hi-Temp Intrinsically Safe (-65°C to +150°C)
CERT-ES-09212	1 of 1	AA	10/21/2022	Stencil-Artwork Approval, 70 UKEX Hi-Temp Intrinsically Safe (-60°C to 100°C)
CERT-ES-09213	1 of 1	AA	10/21/2022	Artwork, Label Go Switch Series 72, 74, 76 with Silicone Cable Intrinsically Safe
CERT-ES-09214	1 of 1	AA	10/21/2022	Stencil, 74 Switch with Niltox Cable Intrinsically Safe (-65°C to +50°C)
CERT-ES-09215	1 of 1	AA	10/21/2022	Stencil-Artwork Approval, 7CX / 7DX UKEX Intrinsically Safe (-65°C to +50°C)
CERT-ES-09216	1 of 1	AA	10/21/2022	Stencil-Artwork Approval, 7CX / 7DX UKEX Hi-Temp Intrinsically Safe (-65°C to +100°C)
CERT-ES-09217	1 of 1	AA	10/21/2022	Stencil-Artwork Approval, 7CX / 7DX UKEX Hi-Temp Intrinsically Safe (-65°C to +150°C)
CERT-ES-09218	1 of 1	AA	10/21/2022	Markings 95LX Ex ia BAS21UKEX0667X
*CERT-ES-09585-1	1 of 1	AA	05/18/2023	Nameplate – 70 Series ATEX Ex ia – CLI Zone 0

For all other drawings refer to Baseefa09ATEX0173X.

\*This drawing is common to Baseefa09ATEX0173X and IECEx BAS 09.0080X.