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: **BAS21UKEX0419X**

4 Product: **Series 7 Proximity Switches**

5 Manufacturer: **Topworx Incorporated**

6 Address: **3300 Fern Valley Road, Louisville, Kentucky 40213, USA**

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/ExTR21.0096/00**

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

EN IEC 60079-0: 2018 EN 60079-1: 2014 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:

Ⓔx II 2 GD Ex db IIC T6* Gb (-40°C ≤ Ta ≤ 50°C)*
Ex tb IIIC T85°C* Db (-40°C ≤ Ta ≤ 50°C)* IP66
*** See Schedule for alternative Temperature Class / Ambient Temperature combinations.**

SGS Baseefa Customer Reference No. **2191** Project File No. **21/0331**

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UKAS PRODUCT CERTIFICATION
0191

R S SINCLAIR
TECHNICAL MANAGER
On behalf of SGS Baseefa Limited

13 # Schedule

14 ## Certificate Number BAS21UKEX0419X

15 Description of Product

The Series 7 Proximity Switches are rated up to 240V a.c., 2A or 24V d.c., 3A and comprise a tubular stainless-steel enclosure in a variety of body styles, with an external male thread and a thin section wall at the front end.

The rear of the enclosure incorporates an additional thread which may be male, or a hexagonal section incorporating a female thread suitable for connection to conduit or a suitably certified cable entry device. The cable entry device must be certified as equipment, not a component. See Annex for details of typical thread and body length details.

The internal cavity contains a magnetically operated switch assembly, and the integral connection leads exit the enclosure via a potted seal assembly within the rear entry. Various insulation material options are permitted for the integral connection leads.

An internal earth connection is provided by one of the integral conductors. External earth bonding may be achieved by the external switch mounting thread or by the rear cable entry thread.

General Markings:

Ex db IIC Gb T6 (-40°C ≤ Ta ≤ +50°C)
or T4 (-40°C ≤ Ta ≤ +100°C)
or T3 (-40°C ≤ Ta ≤ +150°C)

Ex tb IIIC Db T85°C (-40°C ≤ Ta ≤ +50°C) IP66
or T135°C (-40°C ≤ Ta ≤ +100°C)
or T200°C (-40°C ≤ Ta ≤ +150°C)

The Series 7 Proximity Switches have typical general body parameters as detailed below:

Switch Model	Body length	Front male thread	Rear hex. A/F	Rear thread
71	3-15/16”	3/8”-24UNF or M12 x 1.0p	1”	½”-14 NPT or M20 x 1.5p
72	3-3/4”	3/8”-24UNF or M12 x 1.0p	None	9/16”-18UNF (not for cable entry connection)
73 / H7 / N7 / M7	3-3/4”	5/8”-18 UNF or M18 x 1.0p	1”	1/2”-14 NPT or M20
74	2-13/16”	5/8”-18 UNF or M18 x 1.0p	None	9/16”-18 UNF (not for cable entry connection)
75	4-5/16”	5/8”-18 UNF or M18 x 1.0p	1”	1/2”-14 NPT or M20
76	3-1/4”	5/8”-18 UNF or M18 x 1.0p	None	9/16”-18UNF (not for cable entry connection)
77	5-13/16”	3/4"-16UNF or M20 x 1.5p	1”	1/2"-14 NPT or M20
7CX / 7DX	4-1/4”	5/8”-18 UNF	1”	1/2”-14NPT
7G	4-1/2”	5/8”-18 UNF or M18 x 1.0p	1-1/4”	3/4”-14 NPT or M24
7I	5-5/8”	1”-14 UNS	1-1/16”	1/2”-14 NPT
C7 / R7	4”	5/8”-18 UNF	1-1/4”	3/4”-14 NPT
C8 / H8 / M8	4-1/4”	1”-14 UNS	1-1/4”	3/4”-14 NPT

For switch models with metric thread options, a ’M’ suffix on the switch type denotes the inclusion of Metric threads, e.g. Type 74M

The Series 7 Proximity Switches are rated up to maximum values as follows:

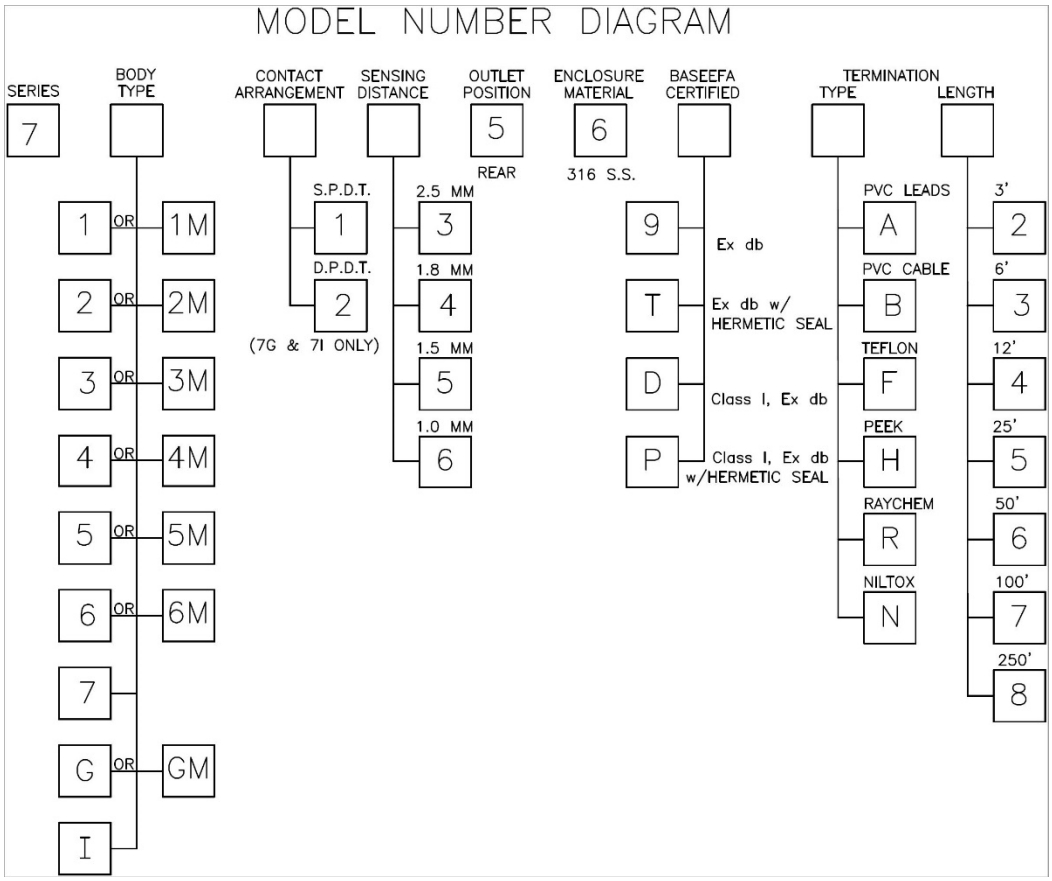
	V a.c.	V d.c.	A
SPDT Switch	240	-	2
	120	-	4
	-	24	3
DPDT Switch	240	-	2
	120	-	3
	-	24	1

As the heat dissipated by the switch is a function of the switch passing current ($P=I^2R$) rather than consuming current the maximum values stated above can be considered to include any values for current which dissipate less energy across the switch than the maximum listed above for example: 120 V a.c / 0.5A.

The alternative markings for temperature class and ambient temperature combinations, dependent on integral cable type are as follows:

Switch Model	Cable Type	Ambient	Temperature class
71, 73, 74, 75, 77, 7G, 7I	PVC leads or cable	-40°C to +50°C	T6/T85°C
72, 74 & 76	Raychem cable	-55°C to +50°C	T6/T85°C
		-55°C to +100°C	T4/T135°C
		-55°C to +100°C	T3/T200°C
71, 73, 74, 75, 77, 7G, 7I	Teflon leads	-40°C to +100°C	T4/T135°C
71, 73, 74, 75, 77, 7G, 7I	Peek leads	-40°C to +150°C	T3/T200°C
74	Niltox	-20°C to +50°C	T6/T85°C

The switch model number is used to further describe each assembly as follows:



Not all options listed above are available together. See schedule drawings for clarity.

Alternative model variations:

Model 73-13529-H* High Temperature Proximity Switch may alternatively carry the type designation N7-000-P(XX).

The Type 73 Series Proximity Switch may be alternatively configured with 'B' leads PVC and Insulcast 116FR potting. This variant may carry the following markings:

Ex db IIC T6 Gb (-60°C ≤Ta + 50°C) with Type 'B' PVC cable.

Ex tb III C T85°C Db (-60°C ≤Ta + 50°C) IP66 with Type 'B' PVC cable.

16 Report Number

GB/BAS/ExTR21.0096/00

17 Specific Conditions of Use

1. The integral supply cables must be mechanically protected and terminated in a suitable terminal or junction facility.
2. An external earth bonding connection may be maintained by either the external mounting thread and/or the internal cable gland/conduit entry thread

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
21 (1)	External effects
21 (2)	Aggressive substances, etc.

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
CERT-ES-09034-1	1	AA	10/22/2021	STENCIL, 72, 74, 76 SWITCH WITH RAYCHEM CABLE
CERT-ES-09035-1	1	AA	10/22/2021	STENCIL – ARTWORK 73 & 7G SWITCH W/HS & "B" CABLE
CERT-ES-09207-1	1	AA	10/14/2021	STENCIL, 74 SWITCH WITH NILTOX CABLE
CERT-ES-09208-1	1	AA	10/14/2021	STENCIL FOR 7CX / 7DX WITH UKEX APPROVAL
CERT-ES-09209-1	1	AA	10/13/2021	STENCIL FOR 7CX / 7DX with UKEX APPROVAL, HI-TEMP
CERT-ES-09237-1	1	AA	12/03/2021	STENCIL – ARTWORK APPROVAL, 70 SWITCH UKEX
CERT-ES-09238-1	1	AA	10/22/2021	STENCIL – ARTWORK APPROVAL, 70 UKEX HITEMP
*CERT-ES-09586-1	1	AA	5/25/2023	ARTWORK 7 SERIES – IECEx/NEC (-40°C to +50°C)
*CERT-ES-09589-1	1	AA	5/25/2023	ARTWORK 70 IECEx/NEC (-40°C to +100°C/150°C)
*CERT-ES-09590-1	1	AA	5/25/2023	ARTWORK – 73 & 7G IECEx/NEC (-60°C TO +50°C)
Baseefa08ATEX0360X				Certificate

* The above drawings are common to Baseefa08ATEX0360X, IECEx BAS 08.0122X and BAS21UKEX0419X