

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: **BAS21UKEX0628X**

4 Product: **Belenus X**

5 Manufacturer: **Novosound Limited**

6 Address: **BioCity, Bo’Ness Rd, Newhouse, ML1 5UH**

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/ExTR21.0149/00**

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 G Ex ia IIC T6...T1 Ga See Schedule

SGS Baseefa Customer Reference No. **8093**

Project File No. **21/0506**

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0191



R S SINCLAIR
TECHNICAL MANAGER
On behalf of SGS Baseefa Limited

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Schedule

14

Certificate Number BAS21UKEX0628X

15 Description of Product

The Belenus X is an ultrasonic sensor, primarily intended for permanent or semi-permanent asset monitoring. It comprises a proprietary piezoelectric material and sensor stack assembly housed within a stainless steel enclosure. The enclosure is intended to be mechanically affixed to an asset such as a pipe, vessel or similar structure. The sensor stack may then be acoustically coupled to the asset surface through mechanical compression. The fixture includes an attached cable for termination to appropriate ultrasonic drive hardware.

T Class	Tmax (°C)	Tamb (°C)
T1	450	440
T2	300	290
T3	200	190
T4	135	125
T5	100	90
T6	85	75

There are two modes of operation:

- When in a hazardous area the sensor may be either unconnected or supplied from equipment satisfying $U_0 \leq 28V$, $I_0 \leq 120mA$ & $P_0 \leq 0.8W$.
- When in a safe area, or in an area covered by a gas free Certificate or hot work permit, the sensor may be connected to and operated from unspecified equipment that by definition may allow mains supply voltages to reach the sensor.

Entity Parameters (Hazardous Area)

$U_i = 28 V$, $I_i = 120 mA$, $P_i = 0.8 W$, $C_i = 3.95nF$, $L_i = 75\mu H$

Entity Parameter (Gas Free Certificate / Hot Work Permit / Safe Area)

$U_m = 253V$

16 Report Number

GB/BAS/ExTR21.0149/00

17 Specific Conditions of Use

1. The Belenus X Ultrasonic Transducer terminal parameter of $U_m = 253V$ is applicable only when in a safe area. Deriving the supply to the transducer from un-assessed equipment will not cause Intrinsic Safety to have been invalidated for subsequent use in hazardous areas.
2. Models with a serial number ending “-C” have an exposed copper gasket edge so may not be used in atmospheres containing acetylene. Models with a serial number ending “-A” may be used in any Group II atmosphere.
3. The Belenus X Ultrasonic Transducer is not proven to be capable of withstanding 500V a.c. between circuits and earth. This must be taken into account when connected to in a hazardous area.
4. The link between the Temperature Class and the permitted upper ambient temperature is defined in the certificate schedule.

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
DWG-AX1027-002-07	1 to 7	10	17.11.21	BELENUS -ATEX

This drawing is held with IECEX BAS 21.0043X, and is common to SGS21ATEX0128X.