

EU-TYPE EXAMINATION CERTIFICATE



Equipment or Protective System intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

EU-Type Examination Certificate Number: **DEMKO 16 ATEX 1466X Rev. 6**

Product: **Signalling Beacons, Loudspeakers, Sounders, Junction Box and Heat Detectors, Model
STEx*******

Manufacturer: **European Safety Systems Limited**

Address: **Impress House, Mansell Road, Acton, London W3 7QH United Kingdom**

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

UL International Demko A/S, notified body number 0539 in accordance with Article 17 of the Council Directive 2014/34/EU of 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to design and construction of products 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. **DK/ULD/ExTR16.0017/06.**

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

EN IEC 60079-0:2018

EN 60079-1:2014

EN IEC 60079-7:2015/A1:2018


EN 60079-31:2014

IEC 60079-31, Edition 3.0

If the sign "X" is placed after the certificate number, it indicates that the product is subject to special conditions for safe use specified in the schedule to this certificate.

This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by the certificate.

The marking of the product shall include the following:

 **II 2 G Ex db IIC T6...T3 Gb**
Ex eb IIC T6...T4 Gb
Ex db eb IIC T6 Gb

 **II 2 D Ex tb IIIC T75°C...T137°C Db**

Certification Manager

Thomas Wilson

This is to certify that the sample(s) of the Product described herein ("Certified Product") has been investigated and found in compliance with the Standard(s) indicated on this Certificate, in accordance with the ATEX Product Certification Program Requirements. This certificate and test results obtained apply only to the product sample(s) submitted by the Manufacturer. UL did not select the sample(s) or determine whether the sample(s) provided were representative of other manufactured product. UL has not established Follow-Up Service or other surveillance of the product. The Manufacturer is solely and fully responsible for conformity of all product to all applicable Standards, specifications, requirements or Directives. The test results may not be used, in whole or in part, in any other document without UL's prior written approval.

Date of issue: 2016-07-01

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Notified Body

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Description of Product

The STExS1, STExS2, STExL1 and STExL2 series products are a range of Sounders and Loudspeakers housed in the same Flameproof / Dust protected, stainless steel enclosure; that are intended to be used as audible warning / signalling devices. The enclosure is accessible via a threaded cover, the opposite end of the enclosure is fitted with pressed wire breathing element incorporating a cemented joint with enclosure. The STExS1 Sounders and STExL1 Loudspeaker models are fitted with a plastic horn that has a short flare whereas the STExS2 Sounders and STExL2 Loudspeaker models are fitted with plastic horn having a longer flare. Alternatively, all Sounders and Loudspeakers may be fitted with a radial horn. The horns are secured to the end of the enclosure with fasteners.

The STExB2 series products are a range of Electronic Strobe, LED or Rotating Beacons housed in the same Flameproof / Dust protected, stainless steel enclosure; intended to be used as visual warning / signalling devices. The enclosure is accessible via a threaded cover which incorporates a glass dome, the glass dome is cemented into the cover. The glass dome is protected with a stainless steel wire guard which provides for a reduced risk of impact, a plastic lens cover can optionally be fitted over the glass dome without affecting the concept of protection.

The STExC1 series products are a range of combined Sounder with Strobe Beacon housed in the same Flameproof / Dust protected, stainless steel enclosure; intended to be used as audible and visual warning / signalling devices. The enclosure is accessible via a threaded cover which incorporates a glass dome, the glass dome is cemented into the cover. The glass dome is fitted with a stainless steel wire guard which provides for a reduced risk of impact, a plastic lens cover can optionally be fitted over the glass dome without affecting the concept of protection. The opposite end of the enclosure is fitted with pressed wire breathing element incorporating a cemented joint with enclosure, a two piece plastic cover (small horn or radial horn) is fitted over breathing element and secured to the enclosure with fasteners.

Model STExJ2 is a Junction Box which is based on the STExB2 Series Beacon enclosure, the junction box is closed with a single piece stainless steel threaded cover.

Model STExH1 Heat Detector are based on STExJ1 Series enclosure, with heat detector. Ex db marked product may be provided with LED indicator in one threaded entry.

All four types of enclosure utilise threaded covers, the specified ingress protection rating is not reliant on the use of an elastomeric O-ring, although one may be fitted.

A Non Certification suffix may also be utilized to detail the Horn Size Type used, e.g STExS2-R – Radial Horn.+
Loudspeakers and Sounders

STExL1R008, STExL1R016, STExL1V070, STExL1V100, STExL2R008, STExL2R016, STExL2V070, STExL2V100.
STExS1DC024(-SIL), STExS1AC230, STExS2DC024(-SIL), STExS2AC230.

Sounder Beacons

STExC1X05DC012, STExC1X05DC024, STExC1X05DC048, STExC1X05AC230.

Large Xenon Strobe Beacons and Rotating Halogen Beacons

STExB2X05DC012, STExB2X05DC024, STExB2X05DC024-SIL, STExB2X05DC048, STExB2X05AC115, STExB2X05AC230,
STExB2X10DC024, STExB2X10DC024-SIL, STExB2X10DC048, STExB2X10AC115, STExB2X10AC230, STExB2X15DC024,
STExB2X15DC024-SIL, STExB2X15DC048, STExB2X15AC115, STExB2X15AC230, STExB2X21DC024, STExB2X21DC048,
STExB2X21AC115, STExB21AC230
STExB2RT1DC012, STExB2RT1DC024, STExB2RT1AC115, STExB2RT1AC230

Large LED Beacons

STExB2LD2DC024, STExB2LD2AC115, STExB2LD2AC230

Large Junction Box

STExJ2-A/H

STExJ2-E

Heat Detector

STExH1-A Heat detector Ex d

STExH1-H Heat detector Ex d

STExH1-E Heat detector Ex e

Performance testing

The optical radiation output of the product with respect to explosion protection, according to Annex II clause 1.3.1 of the Directive 2014/34/EU is not covered in this certificate.

The optical radiation output of the LED included in this product with respect to explosion protection, according to Annex II clause 1.3.1 of the Directive 2014/34/EU is covered in this certificate based on Exception 2 to the scope of EN 60079-28:2015.

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Temperature range

Ratings (Sounders):

Type Designation	Description	Rated Voltage Range	Rated Current (mA)	IP	T Class @ Ambient temperature (-50°C to [Max]°C)			
					(Gas)			(Dust)
					55	65	70	70
STExS1DC024 STExS1DC024-SIL	15W Sounder (Small Horn)	11.5-54Vdc	221 / 185 / 115	IP66	-	T6	T5	T82°C
STExS1AC230	15W Sounder (Small Horn)	100-240Vac, 50/60Hz	73 / 48	IP66	-	T6	T5	T82°C
STExS2DC024 STExS2DC024-SIL	25W Sounder (Large Horn)	11.5-54Vdc	356 / 740 / 391	IP66	T6	-	T5	T94°C
STExS2AC230	25W Sounder (Large Horn)	100-240Vac, 50/60Hz	282 / 167	IP66	-	T6	T5	T84°C

Ratings (Loudspeakers):

Type Designation	Description	Rated Voltage Range	Rated Current (mA)	IP	T Class @ Ambient temperature (-50°C to [Max]°C)				
					(Gas)				(Dust)
					45	55	60	70	70
STExL1R008	15W Loudspeaker (Small Horn)	10.95V	-	IP66	-	T6	-	T5	T95°C
STExL1R016	15W Loudspeaker (Small Horn)	15.49V	-	IP66	-	T6	-	T5	T95°C
STExL1V070	15W Loudspeaker (Small Horn)	70V	-	IP66	-	T6	-	T5	T95°C
STExL1V100	15W Loudspeaker (Small Horn)	100V	-	IP66	-	T6	-	T5	T95°C
STExL2R008	25W Loudspeaker (Large Horn)	14.14V	-	IP66	T6	-	T5	T4	T105°C
STExL2R016	25W Loudspeaker (Large Horn)	20.00V	-	IP66	T6	-	T5	T4	T105°C
STExL2V070	25W Loudspeaker (Large Horn)	70V	-	IP66	T6	-	T5	T4	T105°C
STExL2V100	25W Loudspeaker (Large Horn)	100V	-	IP66	T6	-	T5	T4	T105°C

Ratings (Combined Sounder / Xenon Strobe):

Type Designation	Description	Rated Voltage Range	Rated Current (mA)	IP	T Class @ Ambient temperature (-50°C to [Max]°C)			
					(Gas)			(Dust)
					45	50	70	70
STExC1X05DC012	Combined Sounder / Xenon Strobe	11.5-14Vdc	885	IP66	-	T5	T4	T114°C
STExC1X05DC024	Combined Sounder / Xenon Strobe	20-28Vdc	508	IP66	-	T5	T4	T114°C
STExC1X05DC048	Combined Sounder / Xenon Strobe	42-54Vdc	325	IP66	-	T5	T4	T114°C
STExC1X05AC230	Combined Sounder / Xenon Strobe	220-240Vac 50/60Hz	127	IP66	T5	-	T4	T117°C

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Ratings (Beacons):

Type Designation	Description	Rated Voltage Range	Rated Current (mA)	IP	T Class @ Ambient temperature °C (-50°C to [Max]°C)									
					(Gas)								(Dust)	
					40	45	55	65	70	75	80	85	65	70
STExB2X05DC0 12	5J Xenon Strobe 12Vdc	10-14Vdc	585	IP6X	-	-	T6	-	T5	-	-	T4	-	T92°C
STExB2X05DC0 24	5J Xenon Strobe 24Vdc	20-28Vdc	295	IP6X	-	-	T6	-	T5	-	-	T4	-	T92°C
STExB2X05DC0 24-SIL	5J Xenon Strobe 24Vdc	20-28Vdc	295	IP6X	-	-	T6	-	T5	-	-	T4	-	T92°C
STExB2X05DC0 48	5J Xenon Strobe 48Vdc	42-54Vdc	145	IP6X	-	-	T6	-	T5	-	-	T4	-	T92°C
STExB2X05AC1 15	5J Xenon Strobe 115Vac	110-120Vac 50/60Hz	140	IP6X	T6	-	T5	-	-	-	-	T4	-	T110° C
STExB2X05AC2 30	5J Xenon Strobe 230Vac	220-240Vac 50/60Hz	70	IP6X	T6	-	T5	-	-	-	-	T4	-	T110° C
STExB2X10DC0 24	10J Xenon Strobe 24Vdc	20-28Vdc	605	IP6X	-	T5	-	-	-	-	T4	T3	-	T118° C
STExB2X10DC0 24-SIL	10J Xenon Strobe 24Vdc	20-28Vdc	605	IP6X	-	T5	-	-	-	-	T4	T3	-	T118° C
STExB2X10DC0 48	10J Xenon Strobe 48Vdc	42-54Vdc	230	IP6X	-	T5	-	-	-	-	T4	T3	-	T118° C
STExB2X10AC1 15	10J Xenon Strobe 115Vac	110-120Vac 50/60Hz	220	IP6X	-	-	-	-	T4	-	T3	-	-	T128° C
STExB2X10AC2 30	10J Xenon Strobe 230Vac	220-240Vac 50/60Hz	130	IP6X	-	-	-	-	T4	-	T3	-	-	T128° C
STExB2X15DC0 24	15J Xenon Strobe 24Vdc	20-28Vdc	835	IP6X	-	-	-	-	T4	-	T3	-	-	T127° C
STExB2X15DC0 24-SIL	15J Xenon Strobe 24Vdc	20-28Vdc	835	IP6X	-	-	-	-	T4	-	T3	-	-	T127° C
STExB2X15DC0 48	15J Xenon Strobe 48Vdc	42-54Vdc	330	IP6X	-	-	-	-	T4	-	T3	-	-	T127° C
STExB2X15AC1 15	15J Xenon Strobe 115Vac	110-120Vac 50/60Hz	310	IP6X	-	-	-	T4	-	T3	-	-	-	T131° C
STExB2X15AC2 30	15J Xenon Strobe 230Vac	220-240Vac 50/60Hz	170	IP6X	-	-	-	T4	-	T3	-	-	-	T131° C
STExB2X21DC0 24	21J Xenon Strobe 24Vdc	20-28Vdc	1130	IP6X	-	-	-	T4	-	T3	-	-	-	T131° C
STExB2X21DC0 48	21J Xenon Strobe 48Vdc	42-54Vdc	530	IP6X	-	-	-	T4	-	T3	-	-	-	T131° C
STExB2X21AC1 15	21J Xenon Strobe 115Vac	110-120Vac 50/60Hz	500	IP6X	-	-	T4	T3	-	-	-	-	T137° C	-
STExB2X21AC2 30	21J Xenon Strobe 230Vac	220-240Vac 50Hz	195	IP6X	-	-	T4	T3	-	-	-	-	T137° C	-
STExB2RT1DC0 12	12Vdc Rotating Beacon	12Vdc	1730	IP6X	T5	-	-	-	T4	-	-	-	-	T125° C
STExB2RT1DC0 24	24Vdc Rotating Beacon	24Vdc	970	IP6X	T5	-	-	-	T4	-	-	-	-	T125° C
STExB2RT1AC1 15	115Vac Rotating Beacon	115-120Vac 50/60Hz	216	IP6X	T5	-	-	-	T4	-	-	-	-	T125° C
STExB2RT1AC2 30	230Vac Rotating Beacon	230Vac 50/60Hz	111	IP6X	T5	-	-	-	T4	-	-	-	-	T125° C
STExB2LD2DC0 24	LED Beacon, 24Vdc	18-54Vdc	240	IP6X	-	-	-	T6	-	-	T5	T4	-	T85°C
STExB2LD2AC1 15	LED Beacon, 115ac, 50/60Hz	103.5- 126.5Vac 50/60Hz	95	IP6X	-	-	-	T6	-	-	T5	T4	-	T85°C

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Type Designation	Description	Rated Voltage Range	Rated Current (mA)	IP	T Class @ Ambient temperature °C (-50°C to [Max]°C)									
					(Gas)					(Dust)				
					40	45	55	65	70	75	80	85	65	70
STExB2LD2AC2 30	LED Beacon, 230ac, 50/60Hz	207-253Vac 50/60Hz	48	IP6X	-	-	-	T6		-	T5	T4	-	T85°C

Ratings (Junction box):

Type Designation	Description	Rated Voltage Range	Rated Power / max current	IP	T Class @ Ambient temperature (-50°C to [Max]°C)		
					(Gas)		(Dust)
					65	70	70
STExJ2 (Ex db)	STEx Junction Box	260Vac, 60V dc	5W	IP64	T6	T5	T85°C
STExJ2-E (Ex eb)	STEx Junction Box	260Vac, 60V dc	5A	IP64	-	T6	T75°C

Ratings (Heat Detector):

Type Designation	Description	Rated Voltage Range	Rated Current	Max Power	IP	T Class @ Ambient temperature (-50°C to [Max]°C)						
						(Gas)					(Dust)	
						65	70	75	90	125	70	125
STExH1-A	Heat Detector	125Vac 50/60Hz	5.0A	5W	IP6X	T6	T5	-	-	-	T85°C	-
		125Vdc	0.5A									
		48Vdc	1.0A									
		24Vdc	2.0A									
STExH1-H	Heat Detector	125Vac 50/60Hz	5.0A	1.25W	IP6X	-	-	T6	T5	T4	T75°C	T130°C
		125Vdc	0.5A									
		48Vdc	1.0A									
		24Vdc	2.0A									
STExH1-E	Heat Detector	32Vac 50/60Hz	5.0A	-	IP6X	-	T6				T75°C	-
		32Vdc	1.0A									
		24Vdc	2.0A									

Routine tests

Each STExC1 enclosure shall be subjected to a routine overpressure test of at least that stated on scheduled drawing D199-00-601-SC Revision F for at least 10 s, as required by clause 16.1 of EN 60079-1: 2014. There shall be no sign of damage, deformation or rupture that will invalidate the concept of protection.

Each STExB2 enclosure shall be subjected to a routine overpressure test of at least that stated on scheduled drawings D199-00-201-SC Revision E and D199-00-401-SC Revision B for at least 10 s, as required by clause 16.1 of EN 60079-1: 2014. There shall be no sign of damage, deformation or rupture that will invalidate the concept of protection.

Each STExB2RT1 enclosure shall be subjected to a routine overpressure test of at least that stated on scheduled drawings D199-00-201-SC Revision E for at least 10 s, as required by clause 16.1 of EN 60079-1: 2014. There shall be no sign of damage, deformation or rupture that will invalidate the concept of protection.

STExL1, STExL2, STExS1, STExS2 and STExJ2 enclosures are exempt from routine overpressure testing, since they comply with the overpressure test equal to four time reference pressure in accordance with clause 16.2 of EN 60079-1: 2014.

Heat Detector probe integrity of welds are to be verified by one of the inspection methods in accordance with Clause 16.3 of IEC 60079-1 7th Edition.

The cemented lead seal of the LED modules shall be subjected to a routine overpressure test of at least 274.5 psi / 18.93 bar for at least 10 s in accordance with Clause 16.6 of IEC 60079-1 7th Edition.

All STExH1-E shall be routinely dielectrically strength tested between live/neutral and earth/enclosure. The tests shall be performed as described in IEC 60079-7, clause 6.1, at 500V rms for at least 1 minute (or 600V rms for at least 100 ms).

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Descriptive Documents

The scheduled drawings are listed in the report no. provided under item no. [8] on page 1 of this EU-Type Examination Certificate.

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Specific conditions of use:

- Parts of the enclosure are non-conducting and may generate an ignition-capable level of electrostatic charges under certain extreme conditions. The user should ensure that the equipment is not installed in a location where it may be subjected to external conditions (such as high-pressure steam) which might cause a build-up of electrostatic charges on non-conducting surfaces. Additionally, cleaning of the equipment should be done only with a damp cloth.
- All entries must be fitted with a suitable seal at the interface with enclosure.
- Repair of the flamepaths is not permitted.

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Essential Health and Safety Requirements

The Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9. 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
1.2.7	Protection against other hazards
1.4	Hazards arising from external effects

Additional information

The STExL1R008, STExL1R016, STExL1V070, STExL1V100, STExL2R008, STExL2R016, STExL2V070, STExL2V100, STExS1DC024, STExS1DC024-SIL, STExS1AC230, STExS2DC024, STExS2DC024-SIL, STExS2AC230, STExC1X05DC012, STExC1X05DC024, STExC1X05DC048 and STExC1X05AC230 have in addition passed the tests for Ingress Protection to IP 66 in accordance with EN60529:1991+A1:2000+A2:2013.

The trademark  will be used as the company identifier on the marking label.

The manufacturer shall inform the notified body concerning all modifications to the technical documentation as described in Annex III to Directive 2014/34/EU of the European Parliament and the Council of 26 February 2014.