



## [1] EC-TYPE EXAMINATION CERTIFICATE

[2] **Equipment or Protective Systems intended for use in  
Potentially Explosive Atmospheres  
Directive 94/9/EC**

[3] Certificate Number:  
**SP13ATEX3645X**

[4] Equipment or Protective System: Level sensors type LS, KS and RS

[5] Applicant (manufacturer): AQ Elteknik AB

[6] Address: Alsikegatan 4, SE-753 23 Uppsala, Sweden

[7] This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] SP, Notified Body No. 0402 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 a confidential report No. PX28693:A

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

- EN 60079-0:2012 (SS-EN 60079-0 ed 4)
- EN 60079-11:2012 (SS-EN 60079-11 ed 2)

[10] If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

[11] This EC Type examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. This certificate does not cover these requirements.

[12] The marking of the equipment or protective system shall include the following:

**II 2G Ex ia IIB T4 Gb**

Borås 27<sup>th</sup> March 2013

**SP Technical Research Institute of Sweden  
Certification**

Lennart Månsson  
Certification Manager

Peter Bremer  
Certification Officer

SP ref.: 379309

[13]

## Schedule

[14]

**EC-TYPE EXAMINATION CERTIFICATE No. SP 13ATEX31645X**

[15]

### Description of equipment

The Level Switches according to tables below measures liquid levels in containers. The Level Switch is mounted on the outside of the container and measures the level by transmitting and receiving ultrasound (2 MHz) through the container. Type LS level switches has outer enclosure made of POM plastic and other types has PEI plastic in the enclosure. The plug of the level switches is connected to the socket on the contact of the up to 40 m long PVC cable. The cable has four wires (of which two are disconnected) with a common screen which is intended to be earthed outside the hazardous area. The electrical circuit is isolated from the enclosure.

The equipment is intended to be installed in zone 1 or 2 but the ultrasound may pass in to zone 0.

Level Switch LS	Fit container diameter (mm)	Level Switch KS	Fit container diameter (mm)	Level Switch RS	Fit container diameter (mm)
LS46 Ex	44 – 47	KS27 Ex	26-28	RS27 Ex	26-28
LS49 Ex	47 – 51	KS30 Ex	29-31	RS30 Ex	29-31
LS53 Ex	51 – 56	KS34 Ex	32-35	RS34 Ex	32-35
LS65 Ex	57 – 70	KS38 Ex	36-40	RS38 Ex	36-40
LS75 Ex	70 – 79	KS42 Ex	40-43	RS42 Ex	40-43
LS85 Ex	79 – 91	KS46 Ex	44-49	RS46 Ex	44-49
LS100 Ex	91 – 106	KS53 Ex	50-57	RS53 Ex	50-57
LS115 Ex	106 – 123	KS65 Ex	58-69	RS65 Ex	58-69
LS135 Ex	123 – 146	KS75 Ex	70-79	RS75 Ex	70-79
LS165 Ex	146 – 180	KS85 Ex	80-89	RS85 Ex	80-89
LS200 Ex	180 – 240	KS115 Ex	98-135	RS115 Ex	98-135
LS300 Ex	240 – 370	KS165 Ex	135-200	RS165 Ex	135-200
LS500 Ex	370 – 700	KS250 Ex	201-350	RS250 Ex	201-350
LS1300 Ex	700 – 2000	KS600 Ex	551-1000	RS600 Ex	551-1000
LSF EX	Flat wall	KSF Ex	1000-Flat	RSF Ex	1000-Flat

### Data

Ambient temperature ( $T_{amb}$ ): -15 to +60 °C

Max. input voltage ( $U_i$ ): 10,0 V

Max. input power ( $P_i$ ): 1,1 W

Max. internal capacitance ( $C_i$ ): 200 nF

Maximum input current ( $I_i$ ): 250 mA

Max. internal inductance ( $L_i$ ): 0,050 mH

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[17] **Special conditions for safe use**

- 1) The cable from the barrier to the level switch shall be permanently installed, mechanically protected and protected from other environmental stress in order to ensure explosion protection.
- 2) The current limitation of the intrinsically safe barriers connected to the level switch must be resistive with linear characteristic.
- 3) External source of heating and cooling shall be considered so that the ambient temperature is kept in the range -15 to +60 °C.
- 4) The specifications detailed according to the section "Data" above shall be observed.

[18] **Essential health and safety requirements**

None additional to those covered by the standards listed in item 9.

[19] **Drawings and documents**

Title:	Drawing No.:	Rev. Level:	Date:	pages
ATEX Sammanställning Level switch	LSA-050620	C	2012-10-18	1
ATEX sammanställning Level Switch RS65-RS600 & RSF	RSD-130204	A	2013-02-20	1
ATEX sammanställning Level Switch RS27-RS53 & KS	LKR-121001	A	2013-02-20	1
Level hus Ex	LSR-050901	B	2005-05-16	1
Level hus platt Ex	LSF-051202	B	2005-05-16	1
RS hus Ex	RSE-130121	A	2013-02-19	1
KS hus Ex	KSE-130121	A	2013-02-19	1
Märkskylt Level switches LS ATEX	LSA-050610	C	2013-03-01	1
Märkskylt Level switch RS& KS ATEX	LMS-121003	A	2013-03-01	1
Level Switch LS Ex KS Ex RS Ex Manual		Ver. 3.0	March 2013	14