

INSTRUCTION MANUAL

IS-pA1 Intrinsically Safe

ATEX and IECEx Panel Mount Sounder



The equipment has the following safety parameters:-

$U_i = 40V$ $I_i = 660mA$ $P_i = \text{See below}$
 $L_i = 0$ $C_i = 32.5nF$

With respect to Temperature Class the following limitations on maximum input power P_i are applicable:

| Temperature Class | Maximum input Power P_i |
|-------------------|---------------------------|
| T1, T2, T3, T4 | 1.3W |
| T5 | 0.6W |
| T6 | 0.3W |


1) Introduction

The IS-pA1 is an ATEX, IECEx and UKEX certified intrinsically safe Panel Mount Sounder which can produce a loud warning signal in a hazardous area. The sounder has been designed to operate in gas groups IIA and IIB via ATEX and IECEx certified Zener Barriers or Galvanic Isolators. The sounder may be tested or used in safe areas without using a Zener Barrier or Galvanic Isolator,

2) Intrinsic Safety Certification

2.1 ATEX, IECEx and UKEX certificates

SIRA 10ATEX2137
 IECEx SIR 10.0073
 CSAE 21UKEX2557

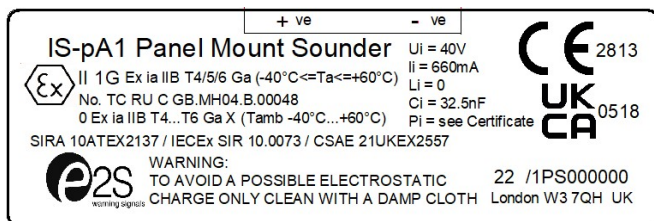

 II 1G Ex ia IIB T4/5/6 Ga (-40°C ≤ Ta ≤ +60°C)

The IS-pA1 sounder complies with the following standards:-

EN IEC 60079-0:2018 IEC60079-0:2017 (Ed7)
 EN60079-11:2012 IEC60079-11:2011 (Ed6)
 IEC60079-26:2014-10 (Ed3)

The sounder carries the Community Mark and subject to local codes of practice, may be installed in any of the EEA member countries. This instruction sheet describes installations which conform to standard EN60079:14:2008 Electrical Installation in Hazardous Areas. When designing systems for installation outside the UK, the local Code of Practice should be consulted.

1 The certification marking is as follows:



The equipment may be used in Zones 0, 1 and 2
with flammable gases and vapours
with Apparatus Groups IIA and IIB
Temperature Classes T1, T2, T3, T4, T5 and T6.

- 4 The equipment is only certified for use in ambient temperatures in the range -40°C to +60°C and shall not be used outside this range.
- 5 Installation of this equipment shall only be carried out by suitably trained personnel in accordance with the applicable code of practice e.g. IEC 60079-14 / EN 60079-14.
- 6 Repair of this equipment is not possible and shall not be attempted.
- 7 The equipment has not been assessed as a safety-related device (as referred to by Directive 94/9/EC Annex II, Clause 1.5).
- 8 The certification of this equipment relies on the following materials used in its construction:

Enclosure:
 ABS
 Encapsulation:
 Polyurethane casting compound

If the equipment is likely to come into contact with aggressive substances, then it is the responsibility of the user to take suitable precautions that prevent it from being adversely affected, thus ensuring that the type of protection is not compromised.

“Aggressive substances” - e.g. acidic liquids or gases that may attack metals, or solvents that may affect polymeric materials.

“Suitable precautions” - e.g. regular checks as part of routine inspections or establishing from the material’s data sheet that it is resistant to specific chemicals.

2.2 Zones, Gas Groups and Temperature Class

The IS-pA1 sounder has been certified Ex ia IIB T4/5/6 and when connected to an approved system it may be installed in:

- Zone 0 explosive gas air mixture continuously present.
- Zone 1 explosive gas air mixture likely to occur in normal operation.

Zone 2 explosive gas air mixture not likely to occur, and if it does, it will only exist for a short time.

Be used with gases in groups:

- Group A Propane
- Group B Ethylene

Having a temperature class of:

- T1 450°C
- T2 300°C
- T3 200°C
- T4 135°C
- T5 100°C (Pi ≤ 600mW)
- T6 85°C (Pi ≤ 300mW)

If the IS-pA1 sounder is installed in an application requiring temperature class of T5 or T6, the safety parameter Pi is reduced as shown above.

2.3 Terminals +ve and -ve

Power is supplied to the sounder via the +ve and -ve terminals which have the following input safety parameters:

- Ui = 40V
- Ii = 660mA
- Pi = 1.3W (T4)
- 600mW (T5)
- 300mW (T6)

Ci = 32.5nF Li = 0

The IS-pA1 sounder must be powered from an ATEX or IECEx certified zener barrier or galvanic isolator having output parameters equal to or less than 40V, 660mA and 1.3W(T4) / 600mW(T5) / 300mW(T6), The cable parameters stated on the selected zener barrier or galvanic isolator certificate must be observed.

3) Installation

IS-pA1 sounders should only be installed by trained competent personnel.

3.1 Mounting and Wiring

The IS-pA1 panel mount sounder is design to be mounted into a 28mm diameter hole in a control panel. The control panel must have an IP rating suitable for the environment into which it is being installed.

Electrical connections to the sounder are made using 6.3mm insulated spade connectors to the rear of the unit.

4) Electrical System Design For Installation In Hazardous Areas Using Zener Barriers

The IS-pA1 sounder may be powered by a zener barrier having output parameters within the limits specified in section 2.3, which has been certified Ex ia by an accredited Notified Body. If the control switch is in the positive supply, or the power supply is being turned on and off, only a single channel zener barrier is required as shown in Fig 1. This circuit may also be used if the sounder is being controlled by a mechanically activated switch on the hazardous area side of the barrier.

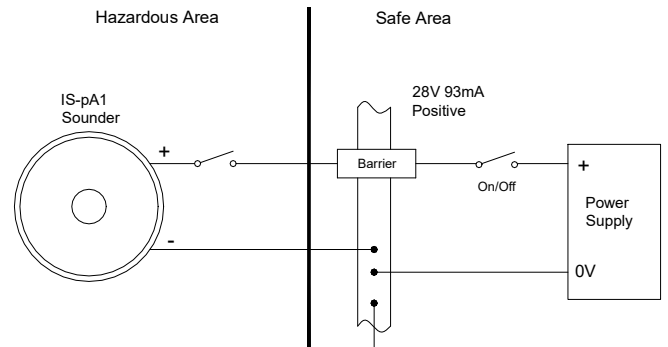


Fig 1 Zener barrier.

5) Electrical System Design For Installation In Hazardous Areas Using Galvanic Isolators

Galvanic isolators do not require a high integrity earth connection. For small systems where a high integrity earth is not already available, the use of galvanic isolators often reduces the overall installation cost and simplifies design.

The IS-pA1 sounder may be powered by any galvanic isolator having output parameters within the limits specified in section 2.3, which has been certified Ex ia by an accredited Notified Body. The sounder may be controlled by turning the galvanic isolator on and off, or by a mechanically activated switch on the hazardous area side of the isolator.

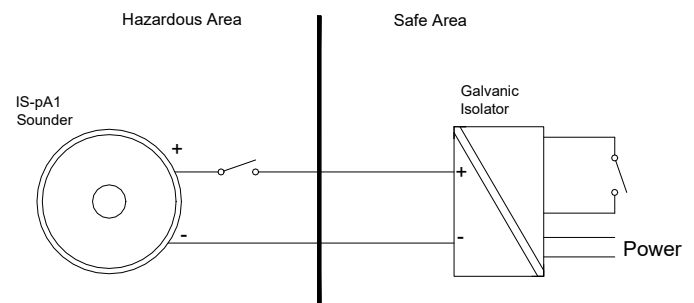


Fig 2 Galvanic isolator.

EU Declaration of Conformity



Manufacturer: European Safety Systems Ltd.
Impress House, Mansell Road, Acton
London, W3 7QH
United Kingdom

Authorised Representative: E2S Warnsignaltechnik UG
Charlottenstrasse 45-51
72764 Reutlingen
Germany

Equipment Type: IS-pA1

Directive 2014/34/EU: Equipment and Protective Systems for use in Potentially Explosive Atmospheres (ATEX)

| | |
|---|--|
| Notified Body for EU type Examination (Module B): | Sira Certification Service Notified Body No.: 2813 CSA Group Netherlands B.V, Utrechtseweg 310, 6812 AR, Arnhem, Netherlands |
| EU-type Examination Certificate (Module B): | SIRA 10ATEX2137 |
| Notified Body for Quality Assurance Notification / Conformity to EU-type based on quality assurance of the production process (Module D): | Sira Certification Service Notified Body No.: 2813 CSA Group Netherlands B.V, Utrechtseweg 310, 6812 AR, Arnhem, Netherlands |
| Quality Assurance Notification (Module D): | SIRA 05 ATEX M342 |
| Provisions fulfilled by the equipment: | II 1G Ex ia IIB T4/5/6 Ga (-40°C ≤ Ta ≤ +60°C) |
| Standards applied: | EN IEC 60079-0:2018 EN 60079-11:2012 IEC 60079-26:2014 |

Directive 2004/108/EC (until 19th April 2016) / Directive 2014/30/EU (from 20th April 2016): Electromagnetic Compatibility Directive (EMC)

| | |
|--------------------|--|
| Standards applied: | EN 61000-6-1:2007 EN 61000-6-2:2005 EN 61000-6-3:2007 / A1:2011 / AC: 2012 EN 61000-6-4:2007 / A1: 2011 |
|--------------------|--|

Directive 2011/65/EU: Restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

The product and all the components contained within it are in accordance with the restriction of the use of hazardous substances in electrical and electronic equipment, including amendment by Directive 2015/863/EU.

Regulation (EC) 1907/2006: Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

The product and all the components contained within it are free from substances of very high concern.

Other Standards and Regulations

EN 60529:1992+A2:2013 - Degrees of protection provided by enclosures (IP code) – enclosure rated IP66

On behalf of European Safety Systems Ltd., I declare that, on the date the equipment accompanied by this declaration is placed on the market, the equipment conforms with all technical and regulatory requirements of the above listed directives, regulations and standards.

This Declaration is issued under the sole responsibility of the manufacturer.


Martin Streetz
Quality Assurance Manager

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UKCA Declaration of Conformity



Manufacturer: European Safety Systems Ltd.
Impress House, Mansell Road, Acton
London, W3 7QH
United Kingdom

Equipment Type: IS-pA1

Directive UKSI 2016:1107 (as amended by UKSI 2019:696) – Schedule 3A, Part 1 : Product or Protective System Intended for use in Potentially Explosive Atmospheres (UKCA)

| | |
|---|--|
| Notified Body for UK type Examination (Module B): | Sira Certification Service Notified Body No.: 0518 Rake Lane, Eccleston, Chester CH4 9JN, UK |
| UK-type Examination Certificate (Module B): | CSAE 21UKEX2557 |
| Notified Body for Quality Assurance Notification / Conformity to EU-type based on quality assurance of the production process (Module D): | Sira Certification Service Notified Body No.: 0518 Rake Lane, Eccleston, Chester CH4 9JN, UK |
| Quality Assurance Notification (Module D): | CSAE 22UKQAN0046 |
| Provisions fulfilled by the equipment: | II 1G Ex ia IIB T4/5/6 Ga (-40°C ≤ Ta ≤ +60°C) |
| Standards applied: | EN IEC 60079-0:2018 EN 60079-11:2012 IEC 60079-26:2014 |

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Martin Streetz
Quality Assurance Manager

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