

EU-TYPE EXAMINATION CERTIFICATE

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

- EU-Type Examination Certificate Number:** ITS20ATEX105939X **Issue 0**
- Product:** Smart Ground Detector +
- Manufacturer:** Advanced Sys-tek Pvt. Ltd.
- Address:** 299-300, GIDC Makarpura Vadodara - 390010 Gujarat, India
- This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- Intertek Testing and Certification Limited, Notified Body number 0359 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council dated 26 February 2014, certifies that the 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 Annex II of the Directive.

The examination and test results are recorded in confidential Intertek India Report Reference No. CE-JOB-DEL-13-000058-006 to 009 (Intertek UK Certification report No. G101148201 B) dated 02nd October 2020.
- Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN IEC 60079-0:2018, EN 60079-1:2014, EN 60079-11:2012 and EN 60079-31:2014 except in respect of those requirements referred to within item 14 of the Schedule.
- If the sign "X" is placed after the certificate number, it indicates that the product is subject to the special conditions of 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 this certificate.
- The marking of the product shall include the following:



II 2 (1) GD

Ex db [ia Ga] IIB T6 Gb

Ex tb [ia Da] IIIC T85°C Db IP65

-20°C ≤ Ta ≤ +60°C

Certification Officer:

P Moss

Date:

14 October 2020

This Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.

Intertek Testing & Certification Limited, Cleeve Road, Leatherhead, Surrey, KT22 7SA
Registered No 3272281 Registered Office: Academy Place, 1-9 Brook Street, Brentwood, Essex, CM14 5NQ.

SCHEDULE:

EU-Type Examination Certificate Number: ITS20ATEX105939X Issue 0

11. Description of Equipment or Protective System

Smart Ground Detector + is micro controller-based grounding device of Flameproof protection housing the Intrinsic Safe circuits that effectively controls and dissipates static charge with continuous ground loop monitoring and road tanker recognition. Ensures that clamps are connected through loading vehicle only and not through a fix structure.

- Connections to vehicle with rugged plug and socket arrangement & spiral cable.
- Detects resistance in the earth loop and continuous monitoring of earth potential.
- Ensures that it has a secure connection to the general mass of the earth.
- The earthing status can be transmitted over a remote computer via redundant serial ports.
- Used in terminal automation as well as used in Process, Chemical, Petrochemical, Pharmaceutical and Paint Industries.

Supply voltage 230 VAC $\pm 10\%$ / 115 VAC $\pm 10\%$, 10 VA, 50 & 60 Hz ± 3 Hz

$U_m = 240$ V

The Intrinsically Safe output parameters are:

J2 Terminals 1 & 2 Input 1:

$U_o = 11.2$ V dc

$I_o = 636$ mA dc

$P_o = 2$ W,

$C_i = 0$, $L_i = 0$

$C_o = 12.6$ μ F

$L_o = 0.35$ mH

J2 Terminals 3 & 4 Input 2:

$U_o = 5.0$ V dc

$I_o = 37$ mA dc

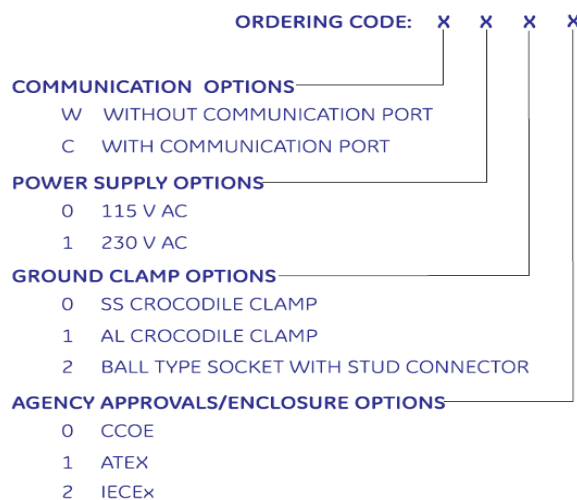
$P_o = 0.233$ W

$C_i = 0$, $L_i = 0$

$C_o = 1000$ μ F

$L_o = 90$ mH

MODEL # : SMART GROUND DETECTOR+



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SCHEDULE:

EU-Type Examination Certificate Number: ITS19ATEX104170X Issue 0

12. Report Number

Intertek UK Certification report reference no. G101148201 B.

Intertek India Report Reference No. CE-JOB-DEL-13-000058-006 to 009 dated 02nd October 2020.

13. Special Conditions of Certification

(a). Specific Conditions of Safe Use

1. Equipment to be installed in vertical position only.
2. No modifications must be made to the flame paths without consultation of the drawings listed on the ExTR.
3. Yield strength of cover fixing fasteners shall be ≥ 450 MPa with the tolerance limit 6g/6H.

(b). Conditions of Manufacture - Routine Tests

1. A routine overpressure test in accordance with EN 60079-1:2014 Clause 16.0 shall be carried out by the flameproof housing manufacturer on each Smart Ground Detector + enclosure at a pressure of 10 bar / 145 PSI for a period of at least 10 seconds and test results must be recorded. The overpressure test shall be considered satisfactory if no permanent deformation or damage invalidating the type of protection observed, the joints shall in no place have been permanently enlarged and no leakage through the walls of the enclosure observed.
2. Routine test for the mains transformer to be carried out as follows:
 - a) Between input and output windings at 2500V ac.
 - b) Between all the windings and the core of the transformer at 1500V ac (as specified in the drawing number RAD Ex/1270501).
 - c) Between each secondary windings at 1500V ac.The test voltage shall be applied for a period of at least 60 seconds.

14. Essential Health and Safety Requirements (EHSRs)

The relevant Essential Health and Safety Requirements (EHSRs) have been identified and assessed in Intertek India Report Reference No. CE-JOB-DEL-13-000058-006 to 009 and Intertek UK Certification report No. G101148201 B dated 02nd October 2020.

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15. Drawings and Documents

Title:	Drawing No.:	Rev. Level:	Date:
Flameproof Housing of Smart Ground Detector+ Earthing Relay, Sheets 1 & 2	RAD Ex/1270801	0	24/12/2018
Unit Assembly Exp Smart Ground Detector+ without communication board	RAD Ex/1270805	0	28/01/2020
Unit Assembly Exp Smart Ground Detector+ with communication board	RAD Ex/1270806	0	28/01/2020
Name Plate of Ex Approved SGD+ Without Com Port	RAD Ex/1270901	0	12/03/2020
Name Plate of Ex Approved SGD+ With Com Port	RAD Ex/1270902	0	12/03/2020
Field Application Diagram of Smart Ground Detector+ With Single Color Lamps	RAD Ex/1270206	0	06/12/2018
Terminal Detail & Typical Connection Drawing of Smart Ground Detector+ (without communication port)	RAD Ex/1270204	0	06/12/2018
Typical field wiring diagram of Smart Ground Detector+ with SmartLoad Batch Controller	RAD Ex/1270209	0	06/12/2018
Ex ia			
Circuit Diagram of Smart Ground Detector+	RAD Ex/1270101	0	15/05/2019
Bill of Material of Smart Ground Detector+ PCB, Sheets 1 to 10	RAD Ex/1270301	0	02/04/2019
Specification of Smart Ground Detector + Bare PCB 1271301(Rev. 0)	RAD Ex/1270502	0	02/04/2019
PCB Graphics of Smart Ground Detector+, Sheets 1 to 11	RAD Ex/1271303	0	29/04/2019
Minimum separation distance in Top and Bottom Copper of Smart Ground Detector+ PCB, Sheets 1 & 2	RAD Ex/1271304	0	18/06/2020
Circuit Diagram of Single Port Communication Board of SGD+	RAD Ex/1270102	0	16/08/2018
Bill of material of Single Port Communication Board PCB, Sheets 1 & 2	RAD Ex/1270302	0	16/08/2018
PCB Graphics of Single port Communication Board of SGD+, Sheets 1 to 9	RAD Ex/1271307	0	16/08/2018
PCB Graphics of Piggy PCB	RAD Ex/1271308	0	02/11/2018
Specification of Smart Interlock Piggy Bare PCB 1011302	RAD Ex/1270505	0	02/11/2018
Transformer Details of Smart Ground Detector+	RAD Ex/1270501	0	20/03/2019
Construction of Relay OEN 48 Series	RAD Ex/1270802	0	18/06/2020
Potted Assembly of Smart Ground Detector + Piggy PCB	RAD Ex/1270811	0	28/01/2020
User Reference Manual	RAD Ex/1271201	0	03/2020

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