

EU-TYPE EXAMINATION CERTIFICATE

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

- EU-Type Examination Certificate Number:** ITS17ATEX108436X **Issue 01**
- Product:** 330S-Ex & 330SDS-Ex H2S Analyzers
- Manufacturer:** Envent Engineering Ltd.
- Address:** 2721 Hopewell Place NE, Calgary, AB, T1Y 7J7
Canada
- 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.
- Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 60079-0:2012 + A11:2013, EN 60079-1:2014, EN 60079-11:2012 and EN 60079-28:2015 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 G Ex db ib op is IIB-H2 T3 Gb

0°C ≤ Ta ≤ 50°C

Certification Officer: _____ **Date:** 29th July 2019
P Moss

SCHEDULE:

EU-Type Examination Certificate Number: ITS17ATEX108436X

11. Description of Equipment or Protective System

330S-Ex and 330SDS-Ex are analyzers made up of up to three flameproof enclosures two of which are provided component approved.

The drive motor housing enclosure (approved under certificate number DEMKO03ATEX 0303070U) contains a motor with a single rotating shaft exiting to the rear via a custom bushing/shaft assembly. The main analyzer enclosure (approved under certificate number EPSILON 07 ATEX 2251U) contains various electronics and approved intrinsically safe barriers. It is also fitted with an LCD display which can be viewed via the window provided as part of the component approved enclosure. The cover of this enclosure is secured with A4-70 zinc plated steel bolts. Analyzers may be provided with various solenoids and pressure sensors all of which are approved devices (covered by certificates SIRA14ATEX1192X and SIRA08ATEX1046X).

The analyzer can contain up to three MTL7761ac (BAS01ATEX7217) Zener barriers. The Zener barriers are separated from the rest of the electronics by a grounded metal plate. The intrinsically safe circuit outputs from the Zener barriers are routed through a dedicated conduit to the sample handling enclosure. All the Zener barriers share a common IS ground.

The total sulphur furnace is cylindrical and measures approximately 367.5mm long and 147mm in diameter. The housing is manufactured from aluminium pipe and has two end caps fitted to either end via a 6½" NPS thread form. These are secured with grub screws to prevent unintentional separation. Four bosses are welded along one side of the cylinder with ½" NPT thread forms. The furnace housing contains a source of release. The maximum flow through the sampling system shall not exceed 200cc/min (0.2 liters/min) and the inlet pressure shall not exceed 10-15PSIG. Approved flame arrestors are fitted to the inlet and outlet of the process connections (SIRA10ATEX1351U or INE12ATEX9013U) and an additional breather is also fitted to the furnace housing (SIRA07ATEX1174U).

The total sulphur furnace is optional and may be omitted.

The tape enclosure located above the main flameproof enclosure contains up to 2 sensor blocks (603000-ATEX) and one low tape sensor (330047ATEX). Each sensor block is powered by one MTL 7761ac (BAS01ATEX7217) Zener barrier. The low tape sensor is powered by one MTL 7761ac (BAS01ATEX7217) Zener barrier. Refer to H2S-Ex-57 for intrinsically safety wiring control drawing.

Where used, cable glands, entry devices, thread adapters and blanking elements must be suitably approved Ex db IIB+H2 Gb 0°C to +61°C minimum. All unused entries must be plugged.

12. Report Number

Intertek Report: 103780560EDM-002 Issue: 00 Dated: June 2019.

13. Special Conditions of Certification

(a). Special Conditions of Use

- Union fittings used in this assembly shall not be loosened for alignment purposes.
- Entry devices and sealing fittings must be installed in accordance with EN 60079-14.
- Details of all Ex equipment fitted shall be provided to the end user.
- No modifications are to be made without consultation with the controlled drawings.
- Tape enclosure knob has a capacitance of 119.7 μ F, user must determine suitability in the specific application.
- When the furnace is present, flow limiting devices shall be used to prevent the containment system exceeding 200cc/min., Flow limiting devices shall not incorporate polymeric or elastomeric materials but may incorporate ceramic or glass materials.

(b). Conditions of Manufacture - Routine Tests

- A routine overpressure test per clause 16.1.1 of EN 60079-1 is required on the motor enclosure/bushing assembly at 127.7 PSI. The motor/bushing assembly shall withstand the pressure without suffering permanent deformation or damage. It is sufficient to test the enclosure empty. The results of this test shall be documented and records maintained.
- A routine overpressure test per clause 16.1.1 of EN 60079-1 is required on the furnace assembly at 144.2 PSI. The furnace assembly shall withstand the pressure without suffering permanent deformation of the joints or damage to the enclosure. It is sufficient to test the enclosure empty. The results of this test shall be documented and records maintained.
- A routine overpressure test per clause G.4.1 of EN 60079-1 at a test pressure of at least 45PSI shall be applied to the containment system and maintained for a time of at least 2 min. The increase of the test pressure should achieve the maximum pressure within 5 seconds. The test is considered to be satisfactory if no permanent deformation occurs and compliance with the applicable leakage test for a containment system with a limited release is verified. The maximum helium-leakage rate shall be less than 10–2 Pa \times l/s (10–4 mbar \times l/s). The results of this test shall be documented and records maintained.

14. Essential Health and Safety Requirements (EHSRs)

The relevant Essential Health and Safety Requirements (EHSRs) have been identified and assessed in Intertek Report: 103780560EDM-002 Issue: 00 Dated: June 2019.

15. Drawings and Documents

Title:	Drawing No.:	Rev. Level:	Date:
(H2S-Ex-00) 330S/330SDS H2S Analyzer BOM for ATEX/IEC	H2S-Ex-00	0	07.May.17
330S-Ex & 330SDS-Ex XP Enclosure Enclosure Machining	H2S-Ex-01	0	25.Nov.16
330S-Ex H2S Analyzer General Arrangement	H2S-Ex-02	00	25.Nov.16
330SDS-Ex H2S Analyzer General Arrangement	H2S-Ex-03	00	25.Nov.16
330S-Ex & 330SDS Analyzer Blue Chassis Side View General Arrangement	H2S-Ex-04	00	25.Nov.16
330S-Ex with Standard Backpan General Arrangement	H2S-Ex-05	00	25.Nov.16
330SDS-Ex w/ Standard Backpan General Arrangement	H2S-Ex-06	00	25.Nov.16
330S-Ex Analyzer with Solenoid General Arrangement	H2S-Ex-07	00	25.Nov.16
330SDS-Ex Analyzer w/ Solenoid General Arrangement	H2S-Ex-08	00	25.Nov.16
330S-Ex Analyzer w/ Pressure Switch General Arrangement	H2S-Ex-09	00	25.Nov.16
330SDS-Ex Analyzer w/ Pressure Switch General Arrangement	H2S-Ex-10	00	25.Nov.16
330S-Ex H2S and Total Sulfur General Arrangement	H2S-Ex-11	00	25.Nov.16
330SDS-Ex H2S & Total Sulfur General Arrangement	H2S-Ex-12	00	25.Nov.16
330S-Ex & 330SDS-Ex Electrical Termination 12-24 VDC Power - 1E Controller Board	H2S-Ex-13	00	25.Nov.16
330S-Ex & 330SDS-Ex Electrical Termination 110-240 VAC Power - 1E Controller Board	H2S-Ex-14	00	25.Nov.16
330S-Ex & 330SDS-Ex H2S-Total Sulfur Electrical Termination 110-240 VAC Power - 1E Mainboard	H2S-Ex-15	00	25.Nov.16
330S-Ex & 330SDS-Ex Analyzers Total Sulfur Enclosure (Event Part#: 330425-01)	H2S-Ex-16	00	25.Nov.16
330S-Ex & 330SDS-Ex Analyzers Total Sulfur Furnace End Caps (Event Part#: 330425-02)	H2S-Ex-17	00	25.Nov.16
TS Inner Furnace Shell Total Sulfur (Event Part#: 330426-01)	H2S-Ex-18	00	25.Nov.16
330S-Ex & 330SDS-Ex TS Inner Furnace Left End Total Sulfur (Event Part#: 330426-02)	H2S-Ex-19	00	25.Nov.16
330S-Ex & 330SDS-Ex TS Inner Furnace Right End Total Sulfur (Event Part#: 330426-03)	H2S-Ex-20	00	25.Nov.16
330S-Ex & 330SDS-Ex Analyzers Total Sulfur Ceramic Fibre Heater (Part #: 330429)	H2S-Ex-21	00	25.Nov.16

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.

330S-Ex & 330SDS-Ex Total Sulfur Total Sulfur to Controller Board Wiring	H2S-Ex-22	00	25.Nov.16
Ex & 330SDS-Ex Adalet XJD Motor Box General Arrangement	H2S-Ex-23	00	25.Nov.16
330S-Ex & 330SDS-Ex Motor Dimensions General Arrangement	H2S-Ex-24	00	25.Nov.16
330S-Ex 330SDS-Ex H2S Analyzers XP Shaft and Bushing (Envent Part#: 330083)	H2S-Ex-25	00	25.Nov.16
330S-Ex & 330SDS-Ex Motor Enclosure Assy. Enclosure Assembly	H2S-Ex-26	00	25.Nov.16
*330S-Ex & 330SDS-Ex Series H2S Analyzers Intertek Nameplate Overview	H2S-Ex-27	01	21.May.19
330S-Ex & 330SDS-Ex Serial Number Nameplate Overview	H2S-Ex-28	00	28.Nov.16
Sensor Block PCB BOM	H2S-Ex-46	00	15 May 17
330S-Ex & 330SDS-Ex H2S Sensor Block Layout	H2S-Ex-47	00	15.Apr.17
330S-Ex & 330SDS-Ex H2S Sensor Block Schematics	H2S-Ex-48	00	15.Apr.17
Low Tape Sensor BOM	H2S-Ex-49	00	15 May 17
330S-Ex & 330SDS-Ex H2S Low Tape Sensor Layout	H2S-Ex-50	00	15.Apr.17
330S-Ex & 330SDS-Ex H2S Low Tape Sensor Schematics	H2S-Ex-51	00	15.Apr.17
330S-Ex & 330SDS-Ex H2S Sensor Block & Wiring	H2S-Ex-52	00	15.Apr.17
330S-Ex & 330SDS-Ex H2S Analyzers Low Tape Sensor & Wiring	H2S-Ex-53	00	15.Apr.17
330S-Ex & 330SDS-Ex H2S Analyzers IS Barriers Wiring (Worst Case Scenario)	H2S-Ex-54	00	15.Apr.17
330S-Ex & 330SDS-Ex H2S Analyzer IS Barriers Wiring (Worst Case Scenario)	H2S-Ex-55	00	15.Apr.17
Conformal Coating Procedure	H2S-Ex-56	00	08.May.17
330S-Ex & 330SDS-Ex H2S Installation for IS System (Zone 1 ib IIB + H2)	H2S-Ex-57	00	08.May.17
330S-Ex & 330SDS-Ex H2S Analyzer LT Sensor & Sensor Block Installation for IS System	H2S-Ex-58	00	16.May.17
Hydrogen Sulfide Analyzer Model 330S-Ex / Model 330SDS-Ex	H2S-Ex-59*	0	May 2017

16. Details of Certificate changes Issue 1

Description Drawings and Documents

This update was to revise the manufacturers address only; no changes were made to the equipment. The descriptive document H2S-Ex-27 was revised as a result of the address change.