



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx SIR 16.0074

Issue No: 1

Certificate history:

Issue No. 1 (2018-10-16)

Issue No. 0 (2016-06-28)

Status: **Current**

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Date of Issue: **2018-10-16**

Applicant: **Bartec Orb, Inc**
4724 South Christina Avenue
Chicago
Illinois 60632
United States of America

Equipment: **Model P-xxx-1600 Analyzers**

Optional accessory:

Type of Protection: **Flameproof**

Marking:
Ex db IIB+H2 T6 Gb
Refer to the Schedule for Ambient Temperatures

*Approved for issue on behalf of the IECEx
Certification Body:*

C Ellaby

Position:

Deputy Certification Manager

*Signature:
(for printed version)*

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

SIRA Certification Service
CSA Group
Unit 6, Hawarden Industrial Park
Hawarden, Deeside, CH5 3US
United Kingdom

sira
CERTIFICATION





IECEX Certificate of Conformity

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Manufacturer: **Bartec Orb, Inc**
4724 South Christina Avenue
Chicago
Illinois 60632
United States of America

Additional Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2011 Explosive atmospheres - Part 0: General requirements
Edition:6.0

IEC 60079-1 : 2014-06 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

[GB/SIR/ExTR16.0159/00](#) [GB/SIR/ExTR18.0179/00](#)

Quality Assessment Report:

[CA/CSA/QAR10.0004/05](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

This certificate covers the following models:

Model P-500-1600 Flash Point

Model P-700-1600 RVP

Rating - Input 100-240 Vac, 50/60 Hz, 15 Amps

Model P-800LT-1600 Low Temp Freeze Point

Model P-820LT-1600 Low Temp Cloud Point Analyzer

Rating - Input 120 Vac, 50/60Hz, 5 Amps or 240 Vac, 50/60Hz, 2.5 Amps

Model P-600-1600 Salt-in-Crude Analyzer

Model P-840LT-1600 Pour Point Analyzer

Model P-860LT-1600 Cold Properties Analyzer

Rating - Input 120Vac, 50/60Hz, 5 Amps or 240 Vac, 50/60Hz, 2.5 Amps

Refer to the Annexe for the full description

SPECIFIC CONDITIONS OF USE: NO



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

This issue, Issue 1, recognises the following changes; refer to the certificate annex to view a comprehensive history:

1. An alternative, 240 VAC rating was retrospectively recognised for the Model P-800LT-1600 and the Model P-820LT-1600, the description of the equipment was amended to state both ratings that are applicable to these models.
2. Nonessential information was removed from all the label drawings.

Annex:

[IECEX SIR 16.0074 Annex Iss 1.pdf](#)

Annexe to: IECEx SIR 16.0074 Issue 1
Applicant: Bartec Orb, Inc.
Apparatus: Model P-xxx-1600 Analyzers



The **Model P-500-1600** Flash Point Analyzer ($T_a = -18^{\circ}\text{C} \leq T_a \leq +40^{\circ}\text{C}$) and the P-700-1600 RVP Analyzer ($T_a = -20^{\circ}\text{C} \leq T_a \leq +40^{\circ}\text{C}$) are on-line instruments designed to continuously measure the flash point of mid-distillate products and the Model P-700-1600 is designed to measure Reid Vapour Pressure. These products consist of three, previously certified, ATEX, Ex d enclosures, a connection enclosure, a control enclosure and a measurement enclosure, which are attached to a back plate. They require a single phase, 100-240 VAC, 50/60 Hz, 15 A power supply and the AC power connections are made in the connections enclosure. The Analyzer incorporates sample leak detection and vent/drain mounted on the bottom of the measurement enclosure. If an internal sample leak occurs, accumulation of fluid in the bottom of the enclosure activates the leak detection and this causes the power from the measurement and electronics enclosures to be removed. Once the leak has been corrected and fluid removed from the measurement enclosure, the power can be restored via the reset button on the side of the customer connections enclosure. The Model P-500-1600 Flash Point Analyzer and the P-700-1600 RVP Analyzer are programmed and controlled via a magnetic keypad on the front of the electronics enclosure, a magnetic pencil is supplied with the instrument for this purpose. The Model P-700-1600 RVP Analyzer utilizes a digitally controlled, syringe sampling system, micro-volume solenoid valves and an angled, temperature-controlled measurement cell with magnetic stirrer and high-resolution pressure sensor, these precisely meter, sample and measure vapour pressure at a 4:1 gas to fluid ratio with a 100°F (37.8°C) test temperature.

The product is marked TP = 100°C to indicate the maximum fluid temperature allowed.

The **Model P-800LT-1600** Low Temp Freeze Point and **P-820LT-1600** Low Temp Cloud Point are on-line freeze and cloud point analyzers ($T_a = 0^{\circ}\text{C} \leq T_a \leq +30^{\circ}\text{C}$) which provide continuous measurement of freeze/cloud point temperatures in hydrocarbons. The construction of the P-800LT-1600 and P-820LT-1600 differs only in the bottom enclosure. The customer terminal box and the electronic housing (upper enclosure) are identical to the previous P-500-1600 and P-700-1600. A larger bottom enclosure was required for freeze and cloud point application due to the larger measurement equipment required to perform that analysis.

The **Model P-600-1600**, Salt-in-Crude Analyzer ($T_a = -20^{\circ}\text{C} \leq T_a \leq +40^{\circ}\text{C}$) is an on-line analyzer that provides continuous measurement of the amount of salt in hydrocarbons (e.g. crude oil). The product consists of four 'Ex d' boxes that are interconnected with flexible cable. The assembly of these parts is noted in drawing P-600-1600. The construction of the P-600-1600 is similar to the P-500-1600, P-800LT-1600 and P-820LT-1600 analyzers in that they all have the same Electronics Assembly, ORB part number 701232. P-700-1600 also shares the same Electronics Assembly, ORB part number 701232.

The **Model P-840LT-1600**, Pour Point Analyzer, ($T_a = 0^{\circ}\text{C} \leq T_a \leq +30^{\circ}\text{C}$) is an on-line analyzer that provides continuous measurement of the pour point in hydrocarbons (e.g. crude oil). The pour point is the lowest temperature of a liquid at which it loses its flow characteristics. Model P-860LT-1600, Cold Properties Analyzer, is an on-line analyzer that provides continuous measurement of the cloud point (and other properties) in hydrocarbons (e.g. crude oil). The cloud point is the temperature of a liquid at which it is no longer completely soluble. The two products are very similar to each other and each consists of three 'Ex d' boxes that are interconnected with flexible cable. The construction of the P-840LT-1600 and P-860LT-1600 is also similar to the P-500-1600, P-600-1600, P-800LT-1600 and P-820LT-1600 analyzers in that they all have the same Electronics Assembly, ORB part number 701232 and the same Customer Connection Box assembly. P-700-1600 also shares the same Electronics Assembly, ORB part number 701232. The Measurement Assembly for models P-840LT-1600 and P-860LT-1600 are different from all other listed models, but the assemblies are almost identical.

Date: 16 October 2018

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Sira Certification Service

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Annexe to: IECEx SIR 16.0074 Issue 1
Applicant: Bartec Orb, Inc.
Apparatus: Model P-xxx-1600 Analyzers



Conditions Of Manufacture

- i. The Amal flame arrestors, which are of a welded construction, shall be subjected to a 1.5 times hydrostatic pressure test equal to 8.8 bar (129.3 PSIG). The tests may be completed at ambient conditions and may be carried out on the flame arrestors separated from the main enclosure. The Amal flame arrestors shall withstand the pressure without permanent deformation in accordance with IEC 60079-1:2014 clause 15.1.3.
- ii. The products covered by this certificate incorporate previously certified devices, it is therefore the responsibility of the manufacturer to continually monitor the status of the certification associated with these devices, and the manufacturer shall inform Sira of any modifications of the devices that may impinge upon the explosion safety design of their products.

Full Certificate Change History

Issue 1 – this Issue introduced the following changes:

- i. An alternative, 240 VAC rating was retrospectively recognised for the Model P-800LT-1600 and the Model P-820LT-1600, the description of the equipment was amended to state both ratings that are applicable to these models.
- ii. Nonessential information was removed from all the label drawings.