

# EC-TYPE EXAMINATION CERTIFICATE



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[2]

**Equipment or Protective System intended for use  
in Potentially Explosive Atmospheres  
Directive 94/9/EC**

[3]

EC-Type Examination Certificate Number: **DEMKO 10 ATEX 0952378X**

[4]

Equipment or Protective System: **RVP 4500 Series Analyzers**

[5]

Manufacturer: **ABB Inc.**

[6]

Address: **Process Automation Division, 843 N. Jefferson Street, Lewisburg, WV 24901 USA**

[7]

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

[8]

UL International Demko A/S, notified body number 0539 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 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 confidential report no. **09CA52378**

[9]

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

**EN 60079-0:2006**

**EN 60079-1:2007**

[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.

These are not covered by the certificate.

[12]

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

**II 2 G Ex d IIB T3**

**Certification Manager**

Jan-Erik Storgaard

**Date of issue:** 2011-01-19

**Notified Body**

UL International Demko A/S, Lyskaer 8, P.O. Box 514, DK-2730 Herlev, Denmark, Tel. +45 44 85 65 65, info.dk@dk.ul.com  
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[14]

**Schedule**  
**EC-TYPE EXAMINATION CERTIFICATE No.**  
**DEMKO 10 ATEX 0952378X**  
**Report: 09CA52378**

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Description of Equipment or protective system

The Series RVP4500 Analyzer operates unattended, automatically sampling and measuring the Reid Vapor Pressure of process samples that are pure substances (e.g., hexane or pentane) or mixtures (e.g., gasoline). The Series RVP4500 Analyzer devices consist of a controller housing and analyzer housing, both certified flameproof enclosures, connected by an empty metallic 2" NPT bushing.

The controller housing has three certified flameproof selector switches located under the enclosure window and houses a control PCB, 24 V power supply, and operator interface mounted to the enclosure door. The analyzer housing contains the RVP subassembly and may contain an optional air saturation subassembly. The air saturation subassembly contains the aeration cell, terminal strips, and six solenoid valves that control the flow into and out of the aeration cell. The RVP subassembly contains the sample measuring cell, terminal strips, and solenoid valves that control the flow into and out of the measuring cell. The sample handling system is located below the analyzer housing, with capillaries entering and exiting via a maximum of 5 ABB flame arrestors, Cat. Nos. 758A009B and 758W005.

The RVP4500 (low pressure) and RVP4503 (extended pressure) are identical, internally with only the RVP output range being different. The RVP4550 Air Saturation Analyzer (low pressure) is the RVP4500 (low pressure) that is equipped with an optional air saturation unit used to mix substances internally. Additionally, the RVP4501 (high pressure) has a different transducer than that used in the RVP4500 and RVP4503. The RVP 4540 (LG gas pressure) has a different transducer and analytical cell than those used in the RVP4500.

Nomenclature for the RVP 4500 Analyzer Series

- Model RVP4500 (Low Pressure) 25 PSI (1,72 bar)
- Model RVP4501 (High Pressure) 40 PSI (2,76 bar)
- Model RVP4503 (Extended Pressure) 25 PSI (1,72 bar)
- Model RVP4540 (LG Gas Pressure) 225 PSI (15,5 bar)
- Model RVP4550 (Air Saturation Option, Low Pressure) 45 PSI (3,10 bar)

Temperature Range

The relation between ambient temperature and the assigned temperature class is as follows:

Ambient temperature range	Temperature class
0°C to +32°C	T3
0°C to +40°C*	T3

\*With vortex cooler option for the process sample.

Electrical Data

Supply Voltage: 100-240 Vac, 50/60 Hz, 250 VA

Installation Instructions

See "Special conditions for safe use".

Routine tests

Routine tests according to EN 60079-1, Clause 16.1, are required at 16,8 bar (243 psi) on the ABB flame arrestors, Cat. Nos. 758A009B and 758W005, due to their welded construction.

[16]

Report No.

Project Report No.: 09CA52378 (Hazardous Location Testing)

Documents:

Description:	Drawing No.:	Rev. Level:	Date:
RVP 4500 Series Analyzer Certification Drawing (5 Sheets)	758C010	E	2011-01-11
RVP 4500 Series Analyzer Label	758T039	E	2010-12-08
RVP 4500 Series Installation Instructions (5 Sheets)	4500-CE	D	2010-10-24

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**Schedule**  
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Special conditions for safe use:

1. All unused openings must be fitted with certified flameproof blanking elements and have a minimum gas marking equal to the marking on the device.
2. When installing cable glands, they must be certified as flameproof and have a minimum gas marking equal to the marking on the device.
3. When installing conduit sealing fittings (stopping box), they must be certified as flameproof and have a minimum gas marking equal to the marking on the device.
4. Any adapters used must be certified as flameproof and have a minimum gas marking equal to the marking on the device.
5. Contact the following manufacturers for original flameproof joint dimensions of the following components: Akron Electric – for selector switches and enclosures, Killark – for enclosures, ABB – for flame arrestors and bushing.

[18]

Essential Health and Safety Requirements

Concerning ESR this Schedule verifies compliance with the ATEX directive only. The manufacturer's Declaration of Conformity declares compliance with other relevant Directives.

Additional information

The manufacturer shall inform the notified body concerning all modifications to the technical documentation as described in ANNEX III to Directive 94/9/EC of the European Parliament and the Council of 23 March 1994.

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**Certification Manager**

Jan-Erik Storgaard

**Date of issue:** 2011-01-19

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