



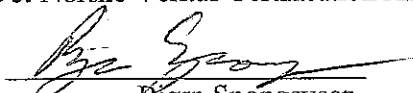
# DET NORSKE VERITAS

## EC-TYPE EXAMINATION CERTIFICATE

- [2] EQUIPMENT OR PROTECTED SYSTEM INTENDED FOR USE IN POTENTIALLY EXPLOSIVE ATMOSPHERES DIRECTIVE 94/9/EC
- [3] EC-Type Examination Certificate Number: **DNV-2003-OSL-ATEX-0169**
- [4] Equipment or Protective System: **Preamplifier and sensors type 1276**
- [5] Applicant – Manufacturer or Authorized representative: **Physical Acoustic Corp.**
- [6] Address: **195 Clarksville rd. Princeton Jct. NJ  
08550-5303 New Jersey  
USA**
- [7] This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to
- [8] DNV, notified body number 0575 in accordance with Article 9 of 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 the 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 **2003-3231**
- [9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:  
**EN 50014:1997+A1:1999+A2:1999, EN 50020: 2002, EN 50284:1999, EN 50281-1-1: 1998 + A1: 2002**
- [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 and construction of the specified equipment or protected system. If applicable, further requirements of this Directive apply to the manufacturer and supply of this equipment or protective system.
- [12] The marking of the equipment or protective system shall include the following:

 II 1 GD EEx ia IIC T4 -30°C ≤ T<sub>a</sub> ≤ +70°C

Høvik, 2003-09-16  
for Det Norske Veritas Certification AS

  
Bjørn Spongsveen  
Head of Section



  
Håkon S. Håkonsen  
Senior Engineer

Notice: This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



[13]

## Schedule

[14] **EC-TYPE EXAMINATION CERTIFICATE No:** DNV-2003-OSL-ATEX-0169

[15] **Description of Equipment or protective system**

The 1276 series is an Acoustic Emission system for non-destructive testing. The system comprises a pre-amplifier and various sensors. The pre-amplifier is housed in an Aluminium enclosure and the sensors are completely encapsulated. The following models are included:

1276 IS ASL-C SUBSYSTEM  
1276 IS PREAMPLIFIER

Sensors: ISR 45, ISR1 5, ISR3, ISR6, ISR15, ISR30, ISR50, ISWD, ISD9203

**Intrinsically safe parameters**

$U_i = 12V$        $C_i = 1,3\mu F$   
 $I_i = 164mA$      $L_i = 21mH$

**Degree of Protection**

IP 66

[16] **Report No.:** 2003-3231

**Project No.:** 42035165

**Descriptive Documents:**

Number	Title	Rev.	Date
1276-3010	Schematic IS-ASL-C preamp subsystem cover sheet, 3 sheets	1	2003-07-30
1276-5015	Assembly drawing 1276 IS-ASL-C subsystem	0	2003-07-30
1276-5025	Assembly drawing 1276 IS preamplifier	0	2003-07-30
1276-6000	1276 Series, I.S. Sensors	0	2003-07-30
ISXXXXX-6001	ISR6, ISR15, ISR30 & ISR50 Assembly	0	2003-04-07
ISR.45-6001	ISR.45, Assembly	0	2003-04-07
ISR1.5/3-6001	ISR1.5 & ISR3 Assembly	0	2003-04-07
ISWD/ISD9203B-6001	ISWD & ISD9203, Assembly	0	2003-04-07
IS9203B-3010	IS9203B Sensor schematic	0	2003-04-10
ISXXXX2-3010	ISWD, ISR1.5, ISR3 sensor schematic	0	2003-04-10
ISR.45-3010	ISR.45 sensor schematic	0	2003-04-10
ISXXXXX-3010	ISR6, ISR15, ISR30 & ISR50 sensor schematic	0	2003-04-10

[17] **Special conditions for safe use**

NA

[18] **Essential Health and Safety Requirements**

See part 9 of this certificate.

END OF CERTIFICATE

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## SUPPLEMENT 1 to EC-TYPE EXAMINATION CERTIFICATE

EC-TYPE EXAMINATION CERTIFICATE No.: DNV-2003-OSL-ATEX-0169

This EC-Type Examination Certificate is extended to include minor constructional changes:  
Nylon washers are used underneath the PCB according to descriptive documents

Report No.: 2003-3231 Rev. 03

Project No.: 42035165

### Descriptive Documents

Number	Title	Rev.	Date
1276-5015	Assembly drawing 1276 IS-ASL-C subsystem	0A	2003-10-01
1276-5025	Assembly drawing 1276 IS preamplifier	0A	2003-10-01

Høvik, 2003-10-08  
for Det Norske Veritas Certification AS

Line Gangeskar  
Line Gangeskar  
Head of Section

Håkon S. Håkonsen  
Håkon S. Håkonsen  
Senior Engineer

END OF SUPPLEMENT

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



## SUPPLEMENT 2 to EC-TYPE EXAMINATION CERTIFICATE

EC-TYPE EXAMINATION CERTIFICATE No.: DNV-2003-OSL-ATEX-0169

This EC-Type Examination Certificate is extended to include minor constructional changes described in the descriptive documents and change of ambient temperature range.

New temperature range is:  $-40^{\circ}\text{C} \leq T_{\text{amb}} \leq 70^{\circ}\text{C}$


Report No.: 2003-3231 Rev. 04

Project No.: 42035165

### Descriptive Documents

Number	Title	Rev.	Date
1276-5015	Assembly drawing 1276 IS-ASL-C subsystem	1	2004-09-09
1276-5025	Assembly drawing 1276 IS preamplifier	1	2004-09-09
1276-3010	Schematic IS-ASL-C Pramp subsystem cover sheet 3 sheets	2	2004-09-10

Høvik, 2004-09-29  
for Det Norske Veritas Certification AS

  
Line Gangeskar  
Head of Section

  
Bjørn Spongsveen  
Senior Engineer

END OF SUPPLEMENT

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



## SUPPLEMENT 3 to EC-TYPE EXAMINATION CERTIFICATE

EC-TYPE EXAMINATION CERTIFICATE No.: DNV-2003-OSL-ATEX-0169

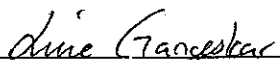
This EC-Type Examination Certificate is extended to include the use of alternative type designations for the Subsystem and preamplifier. There are no technical changes to the products

**Alternative type designations:**

GDU IS ASL-C SUBSYSTEM  
GDU IS PREAMPLIFIER

Project No.: 42035516

Høvik, 2004-12-16  
for Det Norske Veritas Certification AS

  
Line Gangeskar  
Head of Section



  
Håkon S. Håkonsen  
Senior Engineer

END OF SUPPLEMENT

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.