



DET NORSKE VERITAS

EC-TYPE EXAMINATION CERTIFICATE

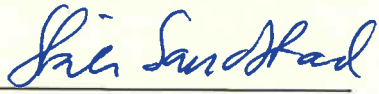
- [2] **EQUIPMENT OR PROTECTED SYSTEM INTENDED FOR USE IN POTENTIALLY EXPLOSIVE ATMOSPHERES DIRECTIVE 94/9/EC**
- [3] EC-Type Examination Certificate Number: **DNV 09 ATEX 55726X**
- [4] Equipment or Protective System: **RAE Powerpak model FTB-1000**
- [5] Applicant – Manufacturer or Authorized representative: **Rae Systems**
- [6] Address: **3775 North First Street, San Jose
California 95134, 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. : **2009-3350**
- [9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 60079-0: 2006 and EN 60079-11: 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 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 1G **Ex ia IIC T4 -40°C ≤ Ta ≤ +55°C**
 I M1 **Ex ia I**

Høvik, 2009-07-03
for Det Norske Veritas Certification AS


Marianne Spæren
Certification Manager




Ståle Sandstad
Technical Reviewer

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 300.000. 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 09 ATEX 55726X

Certificate History

Revision	Description	Issue date
-	Original certificate	2009-07-03

[15] **Description of Equipment or Protective System**

The RAEPowerPak, type FTB1000 is a battery pack intended to power intrinsically safe equipment which can match the intrinsically safe conditions by entity parameters attached to the input and output connector. RAEPowerPak can be charged in hazardous area by a charger complying to the intrinsically safe input entity parameters and can be charged outside hazardous area by a charger complying with the Um parameter. The FTB1000 battery pack can be equipped with 2 or 4 NiMH internal battery units. Each internal battery unit is an encapsulated, intrinsically safe unit, which consists of 4 NiMH battery cells connected in series and encapsulated with safety circuits. The capacity of one unit is 13Ah. The physical dimensions are 265mm x 260mm x 142mm. The weight is 15kg with 4 battery units.

The outline of RAEPowerPak has 2 external connectors, one LCD and one LED. One connector is for charging and the other if for power output. The LCD indicates the battery capacity remaining and error code. LED indicates the charge status.

The internal Main PCB facilitates connection of 2 or 4 encapsulated NiMH battery units. Connected to the main board is one passive LCD Display.

Type Identification

FTB-1000

Electrical Data

Input connector: Li: 0.1 μ H, Ci: 0.1 μ F, Ui: 10V, Ii: 3.33A, Pi: 8.88W, Um: 11V

Output connector: Lo: 3.4 μ H, Co: 100 μ F, Uo: 3.6V, Io: 3.2A, Po: 3.1W, Lo/Ro: 20.6 μ H/ Ω

[16] **Report No.:** 2009-3350

Project No.: PRJC-113479-2009-PRC-NOR / 44260374

Descriptive Documents

Number	Title	Rev.	Date
904-E300-004.11	FTB1000 Shcedule doc list	2	2009-06-25

[17] **Special Conditions for Safe Use**

RAEPowerPak can be charged in hazardous area by a charger complying with the intrinsically safe input entity parameters.

RAEPowerPak can be charged outside hazardous area by a charger complying with the Um parameter.

The internal encapsulated battery units can only be exchanged by the original RAE SYSTEMS battery, Part Number: F03-3002-000.

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

See part 9 of this certificate

END OF CERTIFICATE



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 300.000. 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.