



DET NORSKE VERITAS

EC-TYPE EXAMINATION CERTIFICATE

[2] **EQUIPMENT OR PROTECTIVE SYSTEM INTENDED FOR USE IN POTENTIALLY EXPLOSIVE ATMOSPHERES DIRECTIVE 94/9/EC**

[3] EC-Type Examination Certificate Number: **DNV 11 ATEX 98773**

[4] Equipment or Protective System: **SolarPak; Type FTS-20**

[5] Applicant – Manufacturer or Authorized representative: **Rae Systems Inc**

[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 reports listed in section 14.

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 60079-0: 2006, EN 60079-0: 2009 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 1 G Ex ia IIC T4 Ga -40 °C ≤ Ta ≤ +60 °C**

Høvik, 2011-07-04
for Det Norske Veritas AS

Marianne Spæren
Certification Manager



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

The digitally signed and electronically distributed document is the original and valid certificate. Ref.: www.dnv.com/digitalsignatures

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 11 ATEX 98773

Certificate History

| Revision | Description | Report no. | Issue date |
|----------|----------------------|------------|------------|
| - | Original certificate | 2011-3318 | 2011-07-04 |
| | | | |

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

The SolarPak, type FTS-20 is a charger intended to power or charge intrinsically safe equipment which can match the intrinsically safe conditions by entity parameters attached to the output connector. The unit consist of an integrated solar panel and an encapsulated electronics control unit giving intrinsically safe output voltage and current. SolarPak can be used in hazardous area complying with the intrinsically safe entity parameters.

Type Identification

FTS-20

Electrical Data

Pin1: U_o : 9.96 V, I_o : 3.23 A, P_o : 8.03W, C_o : 3 μ F, L_o : 3.20 μ H

Pin2: U_o : 9.56 V, I_o : 23 mA, P_o : 12 mW, C_o : 3 μ F, L_o : 66 mH

When connected to RAEPowerPak, FTB1000, the intrinsically safe output parameters for FTS-20 will fit the input parameters of FTB-1000 for an extension cable length up to 5m.

Degrees of protection (IP Code): 65

[16] **Project No.:** PRJC-273446-2010-PRC-NOR

Descriptive Documents

| Number | Title | Rev. | Date |
|------------------|---|------|------------|
| F06-1010-BOM | Solarpack PCB BOM (3 sheets) | RevA | 2011-03-30 |
| F06-1000-000 | FTS-20 MAIN BOARD (PCB Layout, 11 sheets) | C | 2011-05-05 |
| F06-1010-SCH | FTS-20 MAIN BOARD (Schematics) | C | 2011-05-05 |
| F06-2003-LBL-001 | Cover plate,with Mark printing, SolarPak, Solatech | 3 | 2011-06-21 |
| F06-2003-LBL-101 | Cover plate,with Mark printing,SolarPak, for SolarFUN | 3 | 2011-06-21 |
| F06-0901-ASY | Solar panel assy, SolarPAK (2 sheets) | 3 | 2010-12-23 |
| F06-3002-ASY | Cable Assembly for SolarPAK | 2 | 2010-12-01 |
| F06-SOLA-000 | Safety Component specification | 1 | 2011-03-30 |

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

None

[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.