




# DET NORSKE VERITAS

## EC-TYPE EXAMINATION CERTIFICATE

- [2] COMPONENT INTENDED FOR USE IN EQUIPMENT OR PROTECTIVE SYSTEM INTENDED FOR USE IN POTENTIALLY EXPLOSIVE ATMOSPHERES DIRECTIVE 94/9/EC
- [3] EC-Type Examination Certificate Number: **DNV 06 ATEX 0183U** Rev. 9
- [4] Component: **Antenna Coupler Types AXabcdefX and AXZ3S400X**
- [5] Applicant – Manufacturer or Authorized representative: **Solexy USA, LLC**
- [6] Address: **10178 International Blvd,  
Cincinnati, Ohio 45246  
USA**
- [7] This component 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 component 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: 2012 , EN 60079-1:2007, EN 60079-11:2012, and EN 60079-18:2009**
- [10] The sign ‘U’ placed after the certificate number indicates that this certificate must not be mistaken for a certificate intended for an equipment or protective system. This partial certification may be used as a basis for certification of an equipment or protective system.
- [11] This EC-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified component. If applicable, further requirements of this Directive apply to the manufacturer and supply of this component.
- [12] The marking of the equipment or protective system shall include the following:

 **I M2 (M1) Ex d mb [ia Ma] I Mb**  
**II 2 (1) G Ex d mb [ia Ga] IIC Gb**  
**II 2 (1) D Ex mb [ia Da] IIC Db**

Høvik, 2014-11-12  
for Det Norske Veritas AS



Asle Kaastad

*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](http://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 06 ATEX 0183U

Rev. 9

### Certificate History

Revision	Description	Report no.	Issue date
1	Original certificate	2006-3218	2006-08-31
2	Certificate revised to a component certificate. Model AXFMS added	2007-3289	2007-07-06
3	Design modification for better high frequency operation	2007-3487	2007-12-03
4	Added Group I certification. Updated standard references, marking, and address.	2009-3258 Rev 1	2009-04-28
5	Corrected wrong standard reference	--	2009-05-12
6	Changed manufacturer and schedule drawings from VenTek to Soldo USA LLC	2009-3258 Rev 2	2010-01-27
7	Add Model AXZ3S400X	2009-3258 Rev 3	2010-11-03
8	Manufacturer change from Soldo USA LLC to Solexy USA, LLC Add alternate coupler capacitance values.	2009-3258 Rev 4	2014-04-04
9	Update to EN 60079-0:2012 and EN 60079-11:2012. Add dust.	2009-3258 Rev 5	2014-11-11

### [15] Description of component

The models *AXabcdefX* and *AXZ3S0400X* antenna couplers act as a capacitive coupling between an RF transmitter installed in an enclosure and a passive antenna installed outside the enclosure. The antenna coupler also acts as a flameproof bushing. It is suitable to be mounted in the wall of a flameproof enclosure. The antenna coupler provides for the blocking of DC signals and provides very high impedance to low frequency AC signals by the use of an infallible blocking capacitor assembly.

#### Electrical Data

$U_m = 250V_{max}$

For the *AXabcdefX* couplers, the maximum capacitance to be considered in the assessment of the system is based on the "Nominal Capacitance Value", which is defined in the model string as character "*f*". This nominal capacitance value is to be increased by 20% for the installation assessment in order to account for tolerance of the coupler capacitors.

For the *AXZ3S0400X* coupler, the maximum capacitance to be considered in the assessment of the system is 2.16 pF

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**EC-TYPE EXAMINATION CERTIFICATE No.:** DNV 06 ATEX 0183U

Rev. 9

**Type Identification**

AXabcdefX, where:

a = Connection Type

F = RP-SMA Connector

N = N Connector

b = Thread Type

M = M25

3 = 3/4-14 NPT

c = Housing Material

S = Series 300 Stainless Steel

d = Coax Connector Type

e = Length of Coax in Inches (up to 30" max)

f = Nominal Capacitance Value\*

A = 4.7nF

B-Y = Any value in between 4.7nF and 1.8pF

Z = 1.8pF

\* 20% tolerance to be added to this value as part of installation assessment.

AXZ3S0400X – SMA-F connector on both ends, 3/4-14 NPT threads on one side, 1 1/8-12 UNF on the other

[16] **Project No.:** PRJC-328274-2011-PRC-USA

**Descriptive Documents**

Number	Title	Rev.	Date
DA00089	Assembly Model AXN3S/AXNMS Exp. Proof Ant. Fitting ATEX, N Female Conn.	06	2014-10-06
DA00095	Assembly Model AXF3S/AXFMS Explosion Proof Antenna Fitting - ATEX	07	2014-10-06
DA00108	Assembly, Model AXZ3S0400X Zebra Coupler, ATEX	04	2014-10-06
DD00061	Exp.-Proof Antenna Coupler, AXZ3S0400X, Zebra Design	04	2014-10-06
DE00075	PCB Assembly for Standard AFX	10	2014-10-06
DE00128	PCB Assembly for AXN-N Female	06	2014-10-06
DE00137	PCB Assembly, Model AXZ3S0400X Zebra Coupler, ATEX	02	2014-10-06
DM00028	ATEX Product Markings – AXF	07	2014-11-06
DM00033	IEC ATEX – AXN N-Female Conn. Product Markings	07	2014-11-06
DM00039	ATEX-AXN N-Female Conn. NPT Product Markings	08	2014-11-06
DM00043	ATEX AXF RP-SMA Conn M25 Product Markings	05	2014-11-06
DM00051	Product Markings AXZ3S0400X, Zebra Design (ATEX)	05	2014-11-06
DS00109	Schematic, Model AXF3S/AXF3S/AXFMS/AXN2S/AXNMS Explosion Proof Antenna Fitting	00	2014-10-06

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Rev. 9

**[17] Schedule of Limitations**

- 1) The free end of the cemented bushing shall be protected by a suitable enclosure utilizing one of the protection types listed in Clause 1 of EN 60079-0. The protection type utilized shall be applicable to the specific area of use (i.e. Gas or Dust).
- 2) Care must be taken to not damage the cemented bushing when installing/removing the external antenna. Use only finger tight torque for this connection.
- 3) The maximum service temperature of the antenna coupler when incorporated into apparatus is -40°C to +85°C. When utilized at this service temperature, a T5 temperature classification is suitable.
- 4) When installed in an enclosure, the complete circuit must be assessed for intrinsic safety. The maximum output values of the antenna coupler will depend on the equipment supplying the signal and the antenna/cable setup. The assessment must take into consideration the maximum energy transfer through the antenna coupler based on the maximum safe voltage and the maximum capacitance in the coupler and external devices (cable + antenna), and the maximum current that can flow through the antenna coupler. At high frequencies the impedance in the antenna coupler will be low and can lead to a potential high current. The *Solexy Capacitive Barrier Evaluation Application Note (AN00001)* may be helpful in performing this assessment.
- 5) *For EPL Db Only:* The antenna coupler has only been evaluated for installation via thread entry. For installations via plain entry, additional consideration must be taken with regard to the sealing of the interface between the coupler and the enclosure.

**[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.



# 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](http://www.iecex.com)

Certificate No.: IECEx DNV 11.0015U Issue No: 0 Certificate history:  
Issue No. 0 (2014-11-14)

Status: **Current** Page 1 of 3

Date of Issue: **2014-11-14**

Applicant: **Solexy USA, LLC**  
10178 International Blvd,  
Cincinnati, Ohio 45246  
**United States of America**

Electrical Apparatus: **Antenna Coupler Types AX\*\*\*\*\*X and AXZ3S400X**  
*Optional accessory:*

Type of Protection: **Ex d, Ex mb, and [Ex ia]**

Marking:  
Ex d mb [ia Ma] I Mb  
Ex d mb [ia Ga] IIC Gb  
Ex mb [ia Da] IIIC Db

Approved for issue on behalf of the IECEx  
Certification Body:

Asle Kaastad

Position:

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:

**DNV**  
**Det Norske Veritas AS**  
Veritasveien 1  
1322 Hovik  
Norway





# IECEX Certificate of Conformity

Certificate No: IECEx DNV 11.0015U Issue No: 0  
Date of Issue: 2014-11-14 Page 2 of 3  
Manufacturer: **Solexy USA, LLC**  
10178 International Blvd,  
Cincinnati, Ohio 45246  
**United States of America**

Additional Manufacturing  
location(s):  
**Solexy SRL**  
via Enrico Fermi, 2  
25015 Desenzano del Garda (BS)  
Italy

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 electrical 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:

<b>IEC 60079-0 : 2011</b> Edition:6.0	Explosive atmospheres - Part 0: General requirements
<b>IEC 60079-1 : 2007-04</b> Edition:6	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
<b>IEC 60079-11 : 2011</b> Edition:6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
<b>IEC 60079-18 : 2009</b> Edition:3	Explosive atmospheres Part 18: Equipment protection by encapsulation "m"

*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:

[NO/DNV/ExTR11.0019/00](#)

##### Quality Assessment Report:

[HR/EXA/QAR14.0001/00](#)

[NO/DNV/QAR14.0007/00](#)



# IECEx Certificate of Conformity

Certificate No: IECEx DNV 11.0015U

Issue No: 0

Date of Issue: 2014-11-14

Page 3 of 3

## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

### Description of Component

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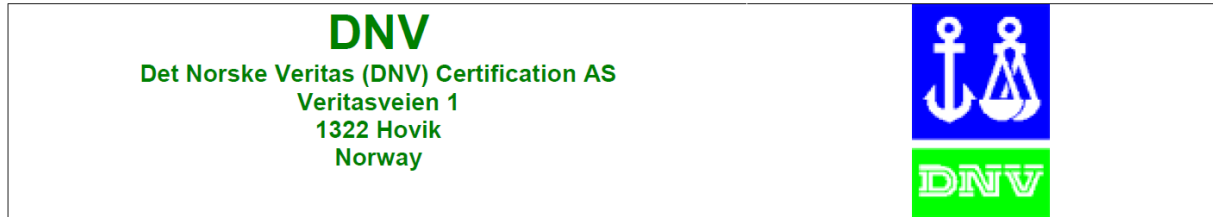
### Electrical Data

See Annex

CONDITIONS OF CERTIFICATION: NO

### Annex:

[IECEx DNV 11\\_0015U annex.pdf](#)



IECEX DNV 11.0015U

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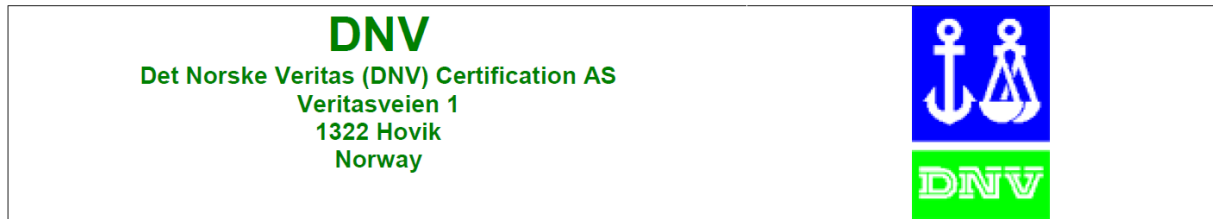
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IECEx DNV 11.0015U

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