



1 **ATEX TYPE TEST CERTIFICATE**

2 Equipment or protective system intended for use in potentially explosive atmospheres –  
Directive 94/9/EC – Annex VIII

3 Certificate No.: **TRAC12ATEX0003X (incorporating variation V1)**

4 Equipment: **Ex Encoders (as listed within the schedule to this certificate)**

5 Manufacturer: **Nidec Avtron Automation Corporation,**

6 Address: **8901 East Pleasant Valley Road, Independence, Ohio 44131,  
United States of America**

7 This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 TRaC Global Ltd certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment or protective system intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential report **TES-004661-33-00A & TRA-026782-33-00A.**

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in section 18 of the schedule to this certificate, has been assured by compliance with:

**EN 60079-0:2012+A11:2013** and **EN 60079-11:2012**

10 If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions of safe use specified in the schedule to this certificate.

11 This certificate relates only to the design and construction of the specified equipment in accordance with Directive 94/9/EC. Further requirements of this Directive apply to the manufacture and supply of this equipment.

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

 **II 3G Ex ic IIC T4 Gc**      **-40...-20 °C ≤ T<sub>amb</sub> ≤ +80 °C**  
**II 3D Ex ic IIIC T200 °C Dc**      **-40...-20 °C ≤ T<sub>amb</sub> ≤ +80 °C**

This certificate and its schedules may only be reproduced in its entirety and without change. This certificate is issued in accordance with the TRaC Ex Certification Scheme.

*S.P. Winsor*

S P Winsor, Certification Manager

Issue date: 2015-08-05

Copy No.: 1e

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Form RF356 is12A

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13 **SCHEDULE TO ATEX TYPE TEST CERTIFICATE**

14 **TRAC12ATEX0003X (incorporating variation V1)**

15 **General description of equipment or protective system included within the scope of this certificate**

**Encoder Overview**

The encoders are made from a selection of 5 simple board combinations depending on the application. The boards in combination are effectively simple apparatus as the capacitance and inductance under mass fault are less than the permitted isolator value. In addition, the boards are potted in to a solid block and mounted in metal cases (offering ingress protection IP54).

**Encoder models covered are:**

XR4F	XR56A	XR485
XR5	XR67A	XR685
XR12	XR85A	XR850
XR45	XR115	XR56S
XR47	XR125	XR97

The Encoders are subject to additional, marked parameter restrictions as follows:

UI			
Ii	IIC	IIB	Ci
250mA	15V	25V	1.8uF
1A		15V	
5A		12V	
Zone 2			



**A list of controlled Manufacturer's Documents is given in Appendix A to this schedule.**

16 **Test report No.:** **TES-004661-33-01A & TRA-026782-33-00A.**

17 **“Special Conditions of Safe Use” for Ex Equipment, if any:**

1. The external power supply shall be SELV (or equivalent) or additional suitable safe area limiting devices shall be included post supply (i.e. fuses) such that the maximum input parameters (Ui and Ii) of the encoder are not exceeded under normal operation.
2. The i.c. encoders require the safe area power supply to be limited to the levels listed on this certificate and cable must be selected and installed in accordance with EN 60079-14 and EN 60079-25.
3. The equipment should be mounted so as to avoid electrostatic charging.

18 **Essential health and safety requirements**

Covered by application of the standards listed in section 9 of this certificate and the assessment conducted in the test report listed in section 16 of this certificate.

19 **Additional information**

**“Routine tests”, if any:**

None.

CONTINUATION OF SCHEDULE TO CERTIFICATE TRAC12ATEX0003X V1

“Special conditions for manufacture”, if any:

None.

Other information, if any:

None.

Photographs



Details of markings

<b>Nidec</b>		<b>AVTRON ENCODERS</b>		Rev <input type="text"/>	S/N <input type="text"/>
NIDEC AVTRON AUTOMATION CORPORATION INDEPENDENCE, OHIO 44131, USA - www.avtronencoders.com				Date Mfg. <input type="text"/>	
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<b>MODEL</b>	<b>OPTIONS</b>	<b>PPR</b>	<b>V</b>	<b>mA</b>	
CE  II 3GD				<b>Zone 2 &amp; 22 Encoder</b>	
Ex ic IIC* T4 Gc	°C ≤ Tamb ≤ 80°C	TRAC12ATEX0003X			
Ex ic IIIC T200°C Dc	°C ≤ Tamb ≤ 80°C	IECEX TRC 12.0009X			
Warning-Potential Electrostatic Charging Hazard-See Instructions					
Ui:15V* li:250mA* Ci:1.8uf (*refer to table certificate)					

°C ≤ Tamb ≤ 80°C  
 -20 OR -40

Encoder label

<b>Nidec</b>		<b>AVTRON ENCODERS</b>		Rev <input type="text"/>	S/N <input type="text"/>
NIDEC AVTRON AUTOMATION CORPORATION INDEPENDENCE, OHIO 44131, USA - www.avtronencoders.com				Date Mfg. <input type="text"/>	
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<b>MODEL</b>	<b>OPTIONS</b>	<b>PPR</b>	<b>V</b>	<b>mA</b>	
CE  II 3GD				<b>Zone 2 &amp; 22 Sensor Sub-Assy</b>	
Ex ic IIC* T4 Gc	°C ≤ Tamb ≤ 80°C	TRAC12ATEX0003X			
Ex ic IIIC T200°C Dc	°C ≤ Tamb ≤ 80°C	IECEX TRC 12.0009X			
Warning-Potential Electrostatic Charging Hazard-See Instructions					
Ui:15V* li:250mA* Ci:1.8uf (*refer to table certificate)					

°C ≤ Tamb ≤ 80°C  
 -20 OR -40

Sensor Sub-Assembly version label

## CONTINUATION OF SCHEDULE TO CERTIFICATE TRAC12ATEX0003X V1

### Details of variations to this certificate

This certificate is a consolidated certificate and reflects the latest status of the certification, including the following variations:

- Variation V1 - . Company name change from Avtron Industrial Automation to Nidec Avtron Automation Corporation, Addition Encoder models XR THINLINE XR56S and XR SMARTach XR97. Update to latest standard to EN 60079-0:2012+A11:2013.

### Notes to CE marking

In respect of CE Marking, TRaC Global Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

### Notes to this certificate

TRaC certification reference: **TRA-026782-32-01**.

Throughout this certificate, the date format yyyy-mm-dd (year-month-day) is used.

This certificate is a consolidated certificate and reflects the latest status of the certification, including all variations.



**CONTINUATION OF SCHEDULE TO CERTIFICATE TRAC12ATEX0003X V1**

**APPENDIX A - LIST OF CONTROLLED MANUFACTURER'S DOCUMENTS**

Title:	Drawing No.:	Rev. Level:	Date:
ATEX / IECEX CERTIFICATION DRAWING INTRINSIC SAFETY ENCODERS XR THINLINE GENERAL ARRANGEMENT	D51748 – 1/12	C	2015/03/24
ATEX / IECEX CERTIFICATION DRAWING INTRINSIC SAFETY ENCODERS XR THINLINE GENERAL ARRANGEMENT	D51748 – 2/12	C	2015/03/24
ATEX / IECEX CERTIFICATION DRAWING INTRINSIC SAFETY ENCODERS XR4_SERIES GENERAL ARRANGEMENT	D51748 – 3/12	C	2015/03/24
ATEX / IECEX CERTIFICATION DRAWING INTRINSIC SAFETY ENCODERS XR45 & XR4F GENERAL ARRANGEMENT	D51748 – 4/12	C	2015/03/24
ATEX / IECEX CERTIFICATION DRAWING INTRINSIC SAFETY ENCODERS XR47 GENERAL ARRANGEMENT	D51748 – 5/12	C	2015/03/24
ATEX / IECEX CERTIFICATION DRAWING INTRINSIC SAFETY ENCODERS XR SMARTach SENSORS GENERAL ARRANGEMENT	D51748 – 6/12	C	2015/03/24
ATEX / IECEX CERTIFICATION DRAWING INTRINSIC SAFETY ENCODERS XR SMARTach SENSORS GENERAL ARRANGEMENT	D51748 – 7/12	C	2015/03/24
ATEX / IECEX CERTIFICATION DRAWING INTRINSIC SAFETY ENCODERS XR SMARTach MODULAR GENERAL ARRANGEMENT	D51748 – 8/12	C	2015/03/24
ATEX / IECEX CERTIFICATION DRAWING INTRINSIC SAFETY ENCODERS XR SMARTach MODULAR GENERAL ARRANGEMENT	D51748 – 9/12	C	2015/03/24
ATEX / IECEX CERTIFICATION DRAWING INTRINSIC SAFETY ENCODERS XR SMARTach SHAFTED GENERAL ARRANGEMENT	D51748 – 10/12	C	2015/03/24
ATEX / IECEX CERTIFICATION DRAWING INTRINSIC SAFETY ENCODERS XR SMARTach SHAFTED GENERAL ARRANGEMENT	D51748 – 11/12	C	2015/03/24
ATEX / IECEX CERTIFICATION DRAWING INTRINSIC SAFETY ENCODERS SENSOR / LINE DRIVER SCHEMATIC	D51748 – 12/12	C	2015/03/24
LABEL, CERTIFICATION ZONE 2, INTRINSIC SAFETY	B35542	F	2015/04/01
ATEX / IECEX, ZONE 2, 22 INSTALLATION DRAWING	D52353	A	2015/03/24
LABEL, CERTIFICATION ZONE 2, INTRINSIC SAFETY	B35544	F	2015/04/01