



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

Certificate No.: IECEx UL 17.0049X Issue No: 2 Certificate history:
Status: **Current** Issue No. 2 (2019-07-25)
Date of Issue: **2019-07-25** Page 1 of 5 Issue No. 1 (2018-04-17)
Applicant: **Nidec Industrial Solutions** Issue No. 0 (2017-10-23)
8901 E. Pleasant Valley Road
Independence, OH 44131
United States of America

Equipment: **Encoder and Parts Kit - Series XP5 and XPH Modular Encoders**
Optional accessory:

Type of Protection: **Flameproof "db" and Intrinsic Safety "ia"**

Marking: Ex db ia IIB T4 Gb
-50°C to +85°C

Approved for issue on behalf of the IECEx
Certification Body:

Katy A. Holdredge

Position:

Senior Staff Engineer

Signature:
(for printed version)

Date:

2019-07-25

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:

UL LLC
333 Pfingsten Road
Northbrook IL 60062-2096
United States of America





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Manufacturer: **Nidec Industrial Solutions**
8901 E. Pleasant Valley Road
Independence, OH 44131
United States of America

Additional Manufacturing location(s):

Nidec Industrial Solutions
7555 East Pleasant Valley Rd.
Building 100
Independence, OH 44131
United States of America

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 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:

IEC 60079-0 : 2011 Edition:6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-1 : 2014-06 Edition:7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-11 : 2011 Edition:6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

*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:

[US/UL/ExTR17.0051/02](#)

Quality Assessment Report:

[US/UL/QAR12.0002/05](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The XP5 is a series of magnetic flameproof and intrinsically safe encoders designed for rotational sensing. The equipment is comprised of two compartments, and flameproof enclosure housing the galvanic isolator (associated apparatus) and drive electronics, and a second compartment containing the intrinsically safe sensor circuitry. The flameproof enclosure of the XP5 is comprised of the housing and cover, secured together by four metal M5 cover screws. Encapsulation is provided within the flameproof enclosure, and completely fills the intrinsically safe compartment.

The XPH is an assembly of components including the series XP5 sensor, rotor, adapter bracket/housing, adapter housing cover, and sensor cover.

Please see Annex for additional information.

SPECIFIC CONDITIONS OF USE: YES as shown below:

This product has no user serviceable parts. Care must be taken during use to ensure that flameproof joints on the Cover and Housing are not damaged. Repair of flameproof joints is not permissible. Contact Nidec Industrial Solutions for dimensions of flameproof joints.

The circuits shall be limited to overvoltage category I/II/III as defined in IEC 60664-1.

The (4) screws that secure the XP5 cover onto the XP5 enclosure require the minimum tensile strength shown below:

MATERIAL	GRADE	MINIMUM TENSILE STRENGTH
A2 Stainless Steel	A-70	700 MPa (101.5 KSI)
A4 Stainless Steel	A-80	800 MPa (116.0 KSI)
Carbon Steel	8.8	800 MPa (116.0 KSI)
Alloy Steel	12.9	1220 MPa (176.9 KSI)

Protect the cover seal from sunlight during storage and installation.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Issue 1: Changed 'WARNING' content in Marking Plate to comply with non-IEC standard requirements.

Issue 2: Minor editorial changes to the drawings, addition of alternate components, and modification of the PCB layouts.



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Additional information:

Annex:

[Annex to IECEX UL 17.0049X Issue 2.pdf](#)



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TYPE DESIGNATION

Nomenclature:

I	II	III	IV	V	VI
XP5	2	6	AY	A	000

<u>I – Model Designation</u>	<u>Code</u>	<u>Description</u>
-	XP5	
<u>II - Style</u>	* -	Rotor Size and Adapter Configuration
<u>III - Line Driver</u>	2 -	5 to 24V in / OC out
	6 -	5 to 24V in / 5 to 24V out
	8 -	5 to 24V in / 5 to 24V out high power
<u>IV- PPR Left</u>	** -	Pulse Per Revolution to Drive
<u>V - Connector</u>	** -	M25, ½ NPT, ¾ NPT Connection on the Left, Right, or Both Sidewalls of Housing
<u>VI - Mod Code</u>	*** -	Optional Features

I	II	III	IV	V	VI	VII	VIII	IX
XPH	1	TM	F	6	AY	AY	A	000

<u>I – Model Designation</u>	<u>Code</u>	<u>Description</u>
-	XPH	
<u>II - Style</u>	* -	Rotor Size and Adapter Configuration
<u>III – Rotor Type & Size</u>	** -	Rotor Bore Size and Connection to Shaft
<u>IV – Housing Cover Type</u>	* -	XPH Cover Configuration
<u>V – Line Driver</u>	2 -	5 to 24V in / OC out
	6 -	5 to 24V in / 5 to 24V out
	8 -	5 to 24V in / 5 to 24V out high power
<u>VI – PPR Left</u>	** -	Pulse Per Revolution
<u>VII – PPR Right</u>	** -	Pulse Per Revolution



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VIII – Connector

** - M25, 1/2 NPT, 3/4 NPT Connection on the Left, Right, or Both Sidewalls of Housing

IX – Mod Code

*** - Optional Features

- * - A single number or letter
- ** - Any two-digit combination of numbers and letters
- *** - Any three-digit combination of numbers and letters

PARAMETERS RELATING TO THE SAFETY

24V, 500mA, Um = 250V

MARKING

NIDEC INDUSTRIAL SOLUTIONS INDEPENDENCE, OHIO 44131, USA REV S/N DATE MFG.

Max. safe area voltage $U_m = 250V$

MODEL OPTIONS PPR V mA

CE 0539 **Ex** II 2G Ex db ia IIB T4 Gb **DEMKO 17 ATEX 1880X** $-50^{\circ}C \leq Tamb \leq 85^{\circ}C$ **IECEX UL 17.0049X** $-50^{\circ}C \leq Tamb \leq 85^{\circ}C$

Telemetering Equipment for use in Hazardous Locations:

Class I, Division 1, Groups C and D
Ex db ia IIB T4 Gb

Class I Zone 1, AEx db ia IIB T4 Gb
 $-50^{\circ}C \leq Tamb \leq 85^{\circ}C$ T-Code T4

See installation instructions XP5CRT05. Voir les instructions d'installation XP5CRT05.

WARNING/AVERTISSEMENT: A seal shall be installed within 25mm of the enclosure. **WYMG/WYMG7**

+ Un joint doit être installé à moins de 25 mm de l'enveloppe. +
To reduce the risk of ignition of hazardous atmospheres, disconnect the equipment

from the supply circuit before opening enclosure. Keep enclosure tightly closed when in operation.

Pour réduire le risque d'inflammation des atmosphères dangereuses, débranchez l'appareil du circuit d'alimentation avant d'ouvrir le boîtier. Garder le boîtier hermétiquement fermé en fonctionnement.

