

# Certificate of Conformity

## Ex EQUIPMENT

Certificate No.: **ANZEx 18.3018X**

Current Issue: 0

Date of Issue: 2018-07-03

**Applicant:** **Pepperl+Fuchs GmbH**  
Lilienthalstrasse 200  
Mannheim 68307  
Germany

**Equipment:** Cylindrical Inductive Proximity Sensors  
types NC... and NJ...

**Type of Explosion Protection:** Intrinsic safety "ia"

**Explosion Protection Marking:** Ex ia I Mb  
ANZEx 18.3018X

*This certificate is granted subject to the conditions as set out in  
Standards Australia/Standards New Zealand Miscellaneous Publication **MP87.1***

Signed for and on behalf of issuing body



Name & Position

Ujen Singh – Quality & Certification Manager

*This certificate is not transferable and remains the property of the issuing body.*

*The status of this certificate can be confirmed through the database located at [www.anzex.com.au](http://www.anzex.com.au)*

Certificate issued by:

TestSafe Australia  
919 Londonderry Road, Londonderry NSW 2753 Australia

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**Manufacturer:** **Pepperl+Fuchs GmbH**  
Lilienthalstrasse 200  
Mannheim 68307  
Germany

**Additional Manufacturing Location(s):** Pepperl+Fuchs PTE Ltd.  
P+F Building  
18 Ayer Rajah Crescent  
Singapore 139942

PT. Pepperl+Fuchs Bintan  
Jl. Asoka SD 56  
Bintan Industrial Estate  
Lobam, Bintan Island  
Indonesia

Pepperl+Fuchs Co. Ltd.  
Lot S 12-16a, Street 20 Tan Thuan EPZ  
Ward Tan Thuan Dong, District 7  
Ho Chi Minh City  
Vietnam

Pepperl+Fuchs Manufacturing s.r.o.  
Tovarni 10  
54102 Trutnov  
Czech Republic

### STANDARDS:

The equipment 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 Explosive atmospheres – Part 0: Equipment - General requirements

IEC 60079-11:2011 Explosive atmospheres – Part 11: Equipment protection by Intrinsic safety "i"

This Certificate does not indicate compliance with safety and performance requirements other than those expressly included in the Standards Listed above.

### TEST & ASSESSMENT REPORTS:

The equipment listed has successfully met the examination and test requirements as recorded in:

Test Report No. & Issuing Body: DE/PTB/ExTR13.0012/01; PTB

Quality Assessment Report No. DE/PTB/QAR06.0008/08; PTB  
& Issuing Body:

File Reference: 2017/020202

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### Schedule

#### Equipment Description:

The cylindrical inductive proximity sensors of types NC... and NJ... are used to convert mechanical displacements into an electrical signal.

The sensors are supplied from an intrinsically safe circuit and they are suitable to be used in hazardous areas of group I.

The area classification of the inductive sensor depends on the level of protection of the intrinsically safe circuit the sensor is connected to.

#### Electrical Ratings/Parameters

For relationship between type of the connected circuit, maximum permissible ambient temperature for group I (EPL Mb) equipment and temperature class as well as safety electrical parameters for the individual types of cylindrical inductive proximity sensors, reference is made to the following table:

type	Ci (nF)	Li (µH)	maximum permissible ambient temperature in °C			
			Power type 1 Ui = 16 V Ii = 25 mA Pi = 34 mW	Power type 2 Ui = 16 V Ii = 25 mA Pi = 64 mW	Power type 3 Ui = 16 V Ii = 52 mA Pi = 169 mW	Power type 4 Ui = 16 V Ii = 76 mA Pi = 242 mW
NCB1,5...M...N0...	90	100	100	100	85	67
NCB10-30GK...-N0...	105	100	100	100	80	61
NCB10-30GM...-N0...	105	100	100	100	81	63
NCB15-30GM...-N0...	120	150	100	100	85	67
NCB2-12GK...-N0...	90	100	100	100	80	61
NCB2-12GM...-N0...	90	100	100	100	81	63
NCB4-12GM...-N0...	120	50	100	100	85	67
NCB5-18GK...-N0...	95	100	100	100	80	61
NCB5-18GM...-N0...	95	100	100	100	81	63
NCB8-18GM...-N0...	120	50	100	100	85	67
NCN15-30GK...-N0...	110	100	100	100	80	61
NCN15-30GM...-N0...	110	100	100	100	81	63
NCN4-12GK...-N0...	95	100	100	100	80	61
NCN4-12GM...-N0...	95	100	100	100	81	63
NCN8-18GK...-N0...	95	100	100	100	80	61
NCN8-18GM...-N0...	95	100	100	100	81	63
NJ0,2-10GM-N...	20	50	100	100	67	41
NJ0,8-4,5-N...	30	50	100	100	67	41
NJ0,8-5GM-N...	30	50	100	100	67	41
NJ1,5-10GM-N-Y...	20	50	100	100	67	41

# Certificate of Conformity

## Ex EQUIPMENT

Certificate No.: **ANZEx 18.3018X**

Current Issue: 0

Date of Issue: 2018-07-03

Table continued to the next page

NJ1,5-18GM-N-D...	50	60	100	100	81	63
NJ1,5-6,5...-N...	30	50	100	100	67	41
NJ1,5-8GM-N...	30	50	100	100	67	41
NJ1,5-8-N...	20	50	100	100	67	41
NJ10-22-N...	130	100	100	100	80	61
NJ10-30GK...-N...	140	100	100	100	80	61
NJ10-30GM-N...	140	100	100	100	81	63
NJ15-30GK...-N...	140	100	100	100	80	61
NJ15-30GK-N-150...	140	100	139	134	116	104
NJ15-30GM-N...	140	100	100	100	81	63
NJ2,5-14GM-N...	30	50	100	100	81	63
NJ20-40-N...	140	140	100	100	80	61
NJ2-11-N...	45	50	100	100	89	74
NJ2-11-N-G...	30	50	100	100	81	63
NJ2-12GK-N...	45	50	100	100	80	61
NJ2-12GM-N...	30	50	100	100	81	63
NJ2-14GM-N...	30	50	100	100	81	63
NJ25-50-N...	150	140	100	100	80	61
NJ4-12GK-N...	45	50	100	100	80	61
NJ4-12GM-N...	45	50	100	100	67	41
NJ4-14GK-N...	45	50	100	100	80	61
NJ4-30GM-N-200... (amp)	70	100	100	100	89	74
NJ4-30GM-N-200... (osc)	70	100	138	131	110	95
NJ5-10-11-N...	70	100	100	100	78	57
NJ5-11-N...	45	50	100	100	82	63
NJ5-18GK-N...	70	50	100	100	80	61
NJ5-18GK-N-150...	70	50	139	134	116	104
NJ5-18GM-N...	70	50	100	100	81	63
NJ6-22-N...	130	100	100	100	80	61
NJ8-18GK-N...	70	50	100	100	80	61
NJ8-18GK-N-150...	70	50	139	134	116	104
NJ8-18GM-N...	70	50	100	100	81	63

The dots in the labelling represent free definable parameters. These free definable parameters can be omitted or replaced by letters or digits.

When assigning the actual sensor to the table use the model description which describes the sensor best. Letters and digits describe the different types according to the model description key.

The sum of all capacitances and inductances, including tolerance and a 10m cable, result to the given values for Ci and Li shown above.

# Certificate of Conformity

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### Specific Conditions of Use:

1. For relationship between type of the connected circuit, maximum permissible ambient temperature and temperature class as well as safety electrical parameters for the individual types of cylindrical inductive proximity sensors, reference is made to table above.
2. Appropriate measures have to be taken to protect the cylindrical inductive proximity sensors against mechanical damage due to impact if they are used within an ambient temperature range between - 60 °C and - 20 °C. An ambient temperature below - 60 °C is not permissible.
3. The cylindrical inductive proximity sensors including connection facilities shall be installed as such that a minimum degree of protection of IP20 according IEC 60529 is complied with.
4. For the application of the following cylindrical inductive proximity sensors in hazardous area of group I, appropriate measures need to be taken to protect the free resin surface against mechanical damage if the free resin surface is accessible after installation:

NCB5-18GM20-N0-Y106294  
 NJ1,5-10GM-N-Y07451  
 NJ15-30GK-N-Y08943  
 NJ25-50-N...

5. Inadmissible electrostatic charge of parts of the metal housing has to be avoided for the following types of cylindrical inductive proximity sensors. Dangerous electrostatic charge of parts of the metal housing can be avoided by grounding of these parts whereas very small parts of the metal housing (e.g. screws) do not need to be grounded:

NCB1,5...M...N0...	NJ0,8-4,5-N...	NJ4-12GM-N...
NCB2-12GM...-N0...	NJ0,8-5GM-N...	NJ4-30GM-N-200...
NCB4-12GM...-N0...	NJ1,5-6,5...-N...	NJ5-11-N-545...
NCB5-18GM...-N0...	NJ1,5-10GM-N-Y...	NJ5-11-N-G...
NCB8-18GM...-N0...	NJ1,5-8GM-N...	NJ5-18GM-N...
NCB10-30GM...-N0...	NJ1,5-8-N...	NJ6-22-N-G...
NCB15-30GM...-N0...	NJ1,5-18GM-N-D...	NJ8-18GM-N...
NCN4-12GM...-N0...	NJ2-11-N-G...	NJ10-22-N-G...
NCN8-18GM...-N0...	NJ2-12GM-N...	NJ10-30GM-N...
NCN15-30GM...-N0...	NJ2-14GM-N...	NJ15-30GM-N...
NJ0,2-10GM-N...	NJ2,5-14GM-N...	

### Additional Information:

None

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Manufacturer's Documents associated with this Issue:

Document Number	Pages / Sheets	Document Title	Revision	Date
16-1332IE-00	37	Description	-	2017-05-11
16-1332IE-01	6	Schematics	-	2017-05-05
16-1332IE-02	3	Ex-relevant component list	-	2017-05-11
16-1332TE-09	3	ANZEx 18.3018X, cylindrical sensors Instructions	-	2018-06-20
16-1332TE-10	1	ANZEx 18.3018X, cylindrical sensors Marking	-	2018-05-28