



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEx BVS 06.0003X**

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Status: **Current**

Issue No: 11

Date of Issue: 2025-04-17

Applicant: **ifm electronic gmbh**
Friedrichstraße 1
45128 Essen
Germany

Equipment: **Inductive proximity switches types NE5001, NE5012, NF5001, NF5002, NF5003, NF5004, NF5008, NF5010, NF5012, NF5023, NF5030, NT5001, NT5005, NG5001, NG5002, NG5011, NG5019, NG5003, NG5004, NG5010, NG5016, NG5021, NI5001, NI5002, NI5012, NI5003, NI5004, NI5011, NN5001, NN5002, NN5020, NS5002, NS5003, NS501A, NS503A, N95001, NN5008, NN5009, NN5011, NN5013, NN5017, NN5018, NM500A, NM501A, NF500A, NF501A, NG500A, NG501A, NI500A, NI501A; Capacitive proximity switches types KI5030, KI5031**

Optional accessory:

Type of Protection: **Intrinsic Safety "i"**

Marking: See Annex

Certificate history:

Issue 10 (2022-10-04)
Issue 9 (2022-04-26)
Issue 8 (2018-03-12)
Issue 7 (2017-11-24)
Issue 6 (2016-10-13)
Issue 5 (2016-01-29)
Issue 4 (2013-11-05)
Issue 3 (2010-11-08)
Issue 2 (2009-03-04)
Issue 1 (2007-10-16)

Approved for issue on behalf of the IECEx
Certification Body:

Deniz Pezzutto

Position:

Certification Manager

Signature:
(for printed version)

Date:
(for printed version)

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Certificate issued by:

DEKRA Testing and Certification GmbH
Certification Body
Dinnendahlstrasse 9
44809 Bochum
Germany





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Manufacturer: **ifm electronic gmbh**
Friedrichstrasse 1
45128 Essen
Germany

Manufacturing
locations: **ifm efector gmbh**
Ifm Strasse 1
88069 Tettnang
Germany

ifm efector s.r.l.
Str. L (50) Nr. 3
557085 Com. Christian jud. Sibiu
Romania

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 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 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

This Certificate **does not** indicate compliance with 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 Reports:

DE/BVS/ExTR06.0032/08

DE/BVS/ExTR06.0033/04

DE/BVS/ExTR06.0034/06

Quality Assessment Report:

DE/BVS/QAR06.0010/15



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

Subject and Type

See Annex

Description

See Annex

Parameters

See Annex

SPECIFIC CONDITIONS OF USE: YES as shown below:

See Annex



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Clarification of manufacturer/manufacturer locations.

Annex:

[BVS_06_0003X_ifm_Annex_issue10_1_1_1_1.pdf](#)



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DE/BVS/ExTR06.0032/08

Subject and Type

Inductive proximity switches type N*50**

In the complete marking, the asterisks are replaced by letters and numbers to indicate the different versions of the switches:

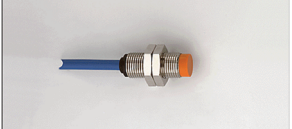
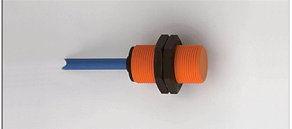
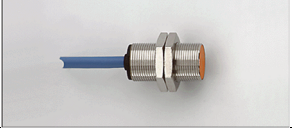
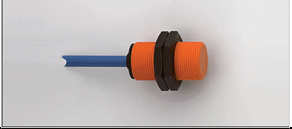
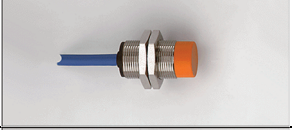
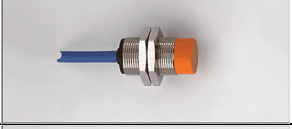
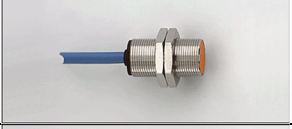
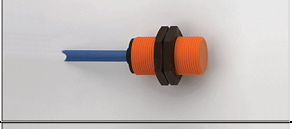
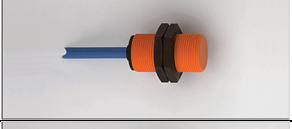
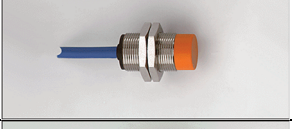
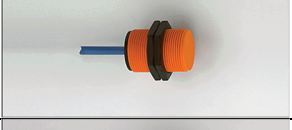
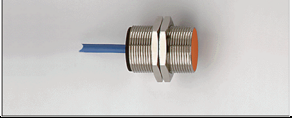
Order code	Housing	Thread	Sensor cap	Cable length (m)	Picture
NE5001	M8 round sleeve	Metal	Plastic	2	
NE5012	M8 round sleeve	Metal	Plastic	20	
NF5001	M12 round sleeve	Plastic	Plastic	2	
NF5002	M12 round sleeve	Metal	Plastic	2	
NF5003	M12 round sleeve	Plastic	Plastic	2	
NF5004	M12 round sleeve	Metal	Plastic	2	
NF5008	M12 round sleeve	Metal	Plastic	6	
NF5010	M12 round sleeve	Plastic	Plastic	6	
NF5012	M12 round sleeve	Metal	Plastic	6	
NF5023	M12 round sleeve	Metal	Plastic	20	



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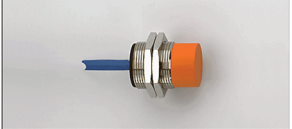
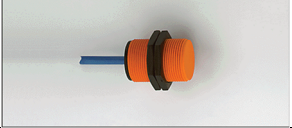
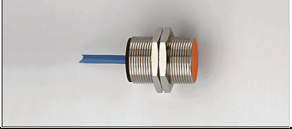
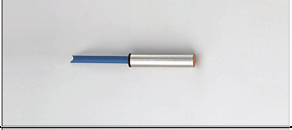
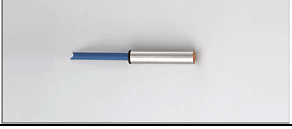
Order code	Housing	Thread	Sensor cap	Cable length (m)	Picture
NF5030	M12 round sleeve	Metal V2A	Plastic	6	
NG5001	M18 round sleeve	Plastic	Plastic	2	
NG5002	M18 round sleeve	Metal	Plastic	2	
NG5003	M18 round sleeve	Plastic	Plastic	2	
NG5004	M18 round sleeve	Metal	Plastic	2	
NG5010	M18 round sleeve	Metal	Plastic	10	
NG5011	M18 round sleeve	Metal	Plastic	10	
NG5016	M18 round sleeve	Plastic	Plastic	15	
NG5019	M18 round sleeve	Plastic	Plastic	6	
NG5021	M18 round sleeve	Metal	Plastic	6	
NI5001	M30 round sleeve	Plastic	Plastic	2	
NI5002	M30 round sleeve	Metal	Plastic	2	

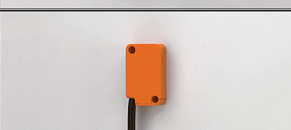
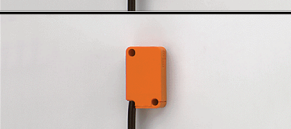


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Order code	Housing	Thread	Sensor cap	Cable length (m)	Picture
NI5003	M30 round sleeve	Plastic	Plastic	2	
NI5004	M30 round sleeve	Metal	Plastic	2	
NI5011	M30 round sleeve	Plastic	Plastic	10	
NI5012	M30 round sleeve	Metal	Plastic	10	
NT5001	6.5 mm diameter, round sleeve	Metal (no thread)	Plastic	2	
NT5005	6.5 mm diameter, round sleeve	Metal (no thread)	Plastic	6	

Order code	Housing	Main housing	Cable length (m)	Switching LED	Picture
NN5001	26 x 40 mm rectangular	Plastic	2	None	
NN5002	26 x 40 mm rectangular	Plastic	2	None	
NN5020	26 x 40 mm rectangular	Plastic	10	None	
NS5002	16 x 27,8 mm rectangular	Plastic	2	None	
NS5003	16 x 27,8 mm rectangular	Plastic	2	Red	



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Order code	Housing	Main housing	Cable length (m)	Switching LED	Picture	
NS501A	16 x 27,8 mm rectangular	Plastic	12	Red		
NS503A	16 x 27.8 mm rectangular	Plastic	0.13	None		

Description

The inductive proximity switches are used for the detection of metallic or non-metallic objects.
The switches are supplied via a permanently connected cable.
The different versions of the switch differ in their internal electronics, their housing and connection cable.
The sensors are permissible for use in areas with Ga or Gb resp. Da requirements.

Parameters

Connection wires L+ (brown) and L- (blue)

Maximum input voltage	U_i	DC	15	V
Maximum input current	I_i		50	mA
Maximum input power	P_i		120	mW
Effective internal capacitance	C_i		and	
Effective internal inductance	L_i			

in accordance with the following table:

order code	C_i [nF]	L_i [μH]
NE5001	80	70
NE5012	83	87
NF5001	140	340
NF5002	140	340
NF5003	140	130
NF5004	140	130
NF5008	141	134
NF5010	141	134
NF5012	141	344
NF5023	143	147
NF5030	141	134
NG5001	145	45
NG5002	145	45
NG5003	155	50
NG5004	155	50
NG5010	157	58
NG5011	147	53
NG5016	157	62
NG5019	146	49
NG5021	156	54
NI5001	145	140
NI5002	145	140
NI5003	145	110
NI5004	145	110
NI5011	147	118
NI5012	147	148
NT5001	80	70
NT5005	81	74



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order code	C _i [nF]	L _i [μH]
NN5001	110	135
NN5002	110	135
NN5020	112	143
NS5002	80	110
NS5003	80	110
NS501A	85	120
NS503A	80	110

Ambient temperature range

T_a

-20 °C up to +70 °C
-20 °C up to +80 °C

For ambient temperatures up to 70 °C, the sensors are classified as T6 resp. T₂₀₀ 90 °C.

For ambient temperatures up to 80 °C, the sensors are classified as T5 resp. T₂₀₀ 100 °C (except NS503A).

Marking

Order code	Gas	Dust
NE5001, NE5012	Ex ia IIC T6/T5 Ga	Ex ia IIIC T ₂₀₀ 90°C/ T ₂₀₀ 100°C Da
NF5001, NF5002, NF5003, NF5004, NF5008, NF5010, NF5012, NF5023, NF5030	Ex ia IIC T6/T5 Ga	Ex ia IIIC T ₂₀₀ 90°C/ T ₂₀₀ 100°C Da
NG5001, NG5002, NG5003, NG5004, NG5010, NG5011, NG5016, NG5019, NG5021	Ex ia IIC T6/T5 Gb Ex ia IIB T6/T5 Ga	Ex ia IIIC T ₂₀₀ 90°C/ T ₂₀₀ 100°C Da
NI5001, NI5002, NI5003, NI5004, NI5011, NI5012	Ex ia IIC T6/T5 Gb Ex ia IIB T6/T5 Ga	Ex ia IIIC T ₂₀₀ 90°C/ T ₂₀₀ 100°C Da
NT5001, NT5005	Ex ia IIC T6/T5 Ga	Ex ia IIIC T ₂₀₀ 90°C/ T ₂₀₀ 100°C Da
NN5001, NN5002, NN5020	Ex ia IIC T6/T5 Gb Ex ia IIB T6/T5 Ga	Ex ia IIIC T ₂₀₀ 90°C/ T ₂₀₀ 100°C Da
NS5002, NS5003, NS501A	Ex ia IIC T6/T5 Gb Ex ia IIB T6/T5 Ga	Ex ia IIIC T ₂₀₀ 90°C/ T ₂₀₀ 100°C Da
NS503A	Ex ia IIC T6 Ga	Ex ia IIIC T ₂₀₀ 90°C Da

“Specific Conditions of Use”:

- Due to space restrictions not all markings may be allowed to be applied to the unit. See operating instructions for the complete marking.
- The sensors and cables have to be protected from intensive electrostatic charging for areas with Ga-requirements.
- The sensors with metal enclosure parts have to be included into local potential equalization.

DE/BVS/ExTR06.0034/06

Subject and type

Order code	Housing	Main housing	Cable length (m)	Switching LED	Picture
N95001	55 x 78 mm rectangular	Plastic	RD24x1/8 connector	2 x yellow	



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Order code	Housing	Main housing	Cable length (m)	Switching LED	Picture
NN5008	26 x 40 mm Rectangular	Plastic	M12 connector	2 x yellow	
NN5009	26 x 40 mm Rectangular	Plastic	2 m	2 x yellow	
NN5011	26 x 40 mm Rectangular	Plastic	10 m	2 x yellow	
NN5013	26 x 40 mm Rectangular	Plastic	M18 connector	2 x yellow	
NN5017	26 x 40 mm Rectangular	Plastic	M18 connector	2 x yellow	Customer specific
NN5018	26 x 40 mm Rectangular	Plastic	5 m	2 x yellow	Customer specific
NM500A	40 x 40 mm Rectangular	Plastic	M12 connector	Yellow	
NM501A	40 x 40 mm Rectangular	Plastic	M12 connector	Yellow	

Order code	Housing	Thread	Sensor cap	Connec-tion	Switching LED	Picture
NF500A	M12 round sleeve	Metal	Plastic	M12	yellow	
NF501A	M12 round sleeve	Metal	Plastic	M12	yellow	



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Order code	Housing	Thread	Sensor cap	Connec-tion	Switching LED	Picture
NG500A	M18 round sleeve	Metal	Plastic	M12	yellow	
NG501A	M18 round sleeve	Metal	Plastic	M12	yellow	
NI500A	M30 round sleeve	Metal	Plastic	M12	yellow	
NI501A	M130 round sleeve	Metal	Plastic	M12	yellow	

Description

The inductive proximity switches are used for the detection of metallic or non-metallic objects.

Types N*50*A, NN5008, NN5013 and NN5017 are supplied via a plug connector.

The inductive proximity switches type NF500A, NF501A, NG500A, NG501A, NI500A and NI501A consist of coated brass with plastic active area. All types are supplied via a M12-plug.

Types NN5008, NN5009, NN5011, NN5013, NN5017 and NN5018 consist of a plastic housing with 2 separate inductive sensor circuits. The sensors differ in their connection facilities only: NN5008 is supplied via a M12-plug, NN5013 and NN5017 via a M18-plug. The types NN5009, NN5011 and NN5018 have a permanently connected cable with 2 m cable length (NN5009) resp. 5 m cable length (NN5018) resp. 10 m cable length (NN5011).

Electrical parameters (not changed)

1 Types N*50*A and NN5008, NN5009, NN5011, NN5013, NN5017, NN5018

Voltage	U_i	DC	15	V
Current	I_i		50	mA
Power	P_i		120	mW
Effective internal capacitance	C_i	and		
Effective internal inductance	L_i			

In accordance with the following table:

order code	C_i [nF]	L_i [μH]
NF500A	210	145
NF501A	210	115
NG500A	200	85
NG501A	200	190
NI500A	250	120



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order code	C _i [nF]	L _i [μH]
NI501A	230	210
NN5008	140	130
NN5009	140	130
NN5011	140	140
NN5013	140	130
NN5017	140	130
NN5018	140	135
NM500A	250	450
NM501A	220	710

Ambient temperature range T_a -20 °C up to +70 °C

For ambient temperatures up to 70 °C, the sensors are classified as T6 resp. T₂₀₀ 90 °C.

Types NN5008, NN5009, NN5011 and NN5018: permanently connected cable, 4 wires. The cable carries 2 separate intrinsically safe circuits.

2 Type N95001

2.1 Connector field connection Rd 24x1/8

2.1.1 Circuit sensor 1 (pin 1 (+) and pin 4 (-)) circuit sensor 2 (pin 3 (+) and pin 2 (-)) values for each circuit

Voltage	U _i	DC	15	V
Current	I _i		50	mA
Power	P _i		120	mW
Effective internal capacitance	C _i		150	nF
Effective internal inductance	L _i		150	μH

2.1.2 Circuit valve (pin 5 (+) and pin 6 (-)) direct connected to connector valve 1112 (pin 1 (+) and pin 2 (-))

Voltage	U _i	DC	28	V
Power	P _i		2	W

2.2 Connector valve 1112

output values according to connection at connector valve Rd 24x1/8 (pin 5 (+) and pin 6 (-))

Ambient temperature range T_a -20 °C up to +70 °C

Additional remarks

For types NN5009, NN5011 and NN5017 the permanently connected cables shall be installed fixed and protected. These conditions are included in the manual.

Marking

Order code	Gas	Dust
N95001	Ex ia IIC T6 Gb	Ex ia IIIB T ₂₀₀ 90°C Da
NF500A, NF501A, NG500A, NG501A	Ex ia IIC T6 Ga	Ex ia IIIC T ₂₀₀ 90°C Da
NI500A, NI501A, NN5008, NN5009, NN5011, NN5013, NN5017, NN5018	Ex ia IIC T6 Gb Ex ia IIB T6 Ga	Ex ia IIIC T ₂₀₀ 90°C Da

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NM500A, NM501A	Ex ia IIB T6 Gb	Ex ia IIIC T ₂₀₀ 90°C Da
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“Specific Conditions of Use”:

- Due to space restrictions not all markings may be allowed to be applied to the unit. See operating instructions for the complete marking.
- The sensors and cables have to be protected from electrostatic charging.
- The sensors with metal enclosure parts have to be included into local potential equalization.

DE/BVS/ExTR06.0033/04

Subject and type

Capacitive proximity switches type KI5030 and KI5031



Description

The capacitive proximity switches type KI5030 and KI5031 have a plastic housing with permanently connected cable.

Type KI5031 differs from type KI5030 in the length of the permanently connected cable only.

Type KI5030 has a cable length of 2 m, KI5031 has a cable length of 6 m.

The sensors are permissible for use in areas with 1G- resp. 1D-requirements.

Parameters

Maximum input voltage	U_i	DC	15	V
Maximum input current	I_i		50	mA
Maximum input power	P_i		120	mW
Effective internal capacitance	C_i			
for type KI5030			375	nF
for type KI5031			375.64	nF
Effective internal inductance	L_i			
for type KI5030			1	μH
for type KI5031			3	μH
Ambient temperature range	T_a		-20 °C up to +60 °C	

Marking

Ex ia IIB T6 Ga

Ex ia IIIC T₂₀₀ 90°C Da

“Specific Conditions of Use”:

- Due to space restrictions not all markings may be allowed to be applied to the unit. See operating instructions for the complete marking.
- The proximity switches shall be installed in such a way, that intensive electrical charging of the cables is excluded.