



## (1) EC-TYPE-EXAMINATION CERTIFICATE (Translation)

(2) Equipment and Protective Systems Intended for Use in  
Potentially Explosive Atmospheres - **Directive 94/9/EC**

(3) EC-type-examination Certificate Number:

**PTB 03 ATEX 2037**



(4) Equipment: Inductive proximity switches, type series IM08-\*\*\*-N-ZWO,  
IM12-\*\*\*-N-ZWO, IM18-\*\*\*-N-ZWO and IM30-\*\*\*-N-ZWO

(5) Manufacturer: Sick AG

(6) Address: Sebastian-Kneipp-Str. 1, 79183 Waldkirch, Germany

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

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment 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 the confidential test report PTB Ex 03-23019.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:  
**EN 50014:1997 + A1 + A2    EN 50020:1994    EN 50284:1999    EN 1127-1:1997**

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-type-examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

 **II 2 G EEx ia IIC T6**

Zertifizierungssektor Explosionsschutz  
On behalf of PTB:

(signature)

Dr.-Ing. U. Gerlach

Braunschweig, April 9, 2002

**3 pages, correct and complete as regards content**  
On behalf of PTB:

Dr.-Ing. Johannsmeyer  
Direktor und Professor

Braunschweig, November 19, 2012



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## SCHEDULE

(13)

(14)

### EC-TYPE-EXAMINATION CERTIFICATE PTB 03 ATEX 2037

(15) Description of equipment

The inductive proximity switches, type series IM08-\*\*\*-N-ZWO, IM12-\*\*\*-N-ZWO, IM18-\*\*\*-N-ZWO and IM30-\*\*\*-N-ZWO are intended for the application in hazardous areas.

For relationship between equipment category, temperature class and maximum permissible ambient temperature for all types of inductive proximity switches certified within the scope of this certificate, reference is made to the following table.

Equipment category	Temperature class	Maximum permissible ambient temperature
II 1 G	T6	55 °C
II 1 G	T5	65 °C
II 2 G	T6	70 °C
II 2 G	T5	80 °C

The assignment of the individual type series to groups for the application in certain categories is given in the following table.

Type series	Equipment category	Permissible groups
IM08-***-N-ZWO IM12-***-N-ZWO	II 1 G	IIC / IIB
IM08-***-N-ZWO IM12-***-N-ZWO	II 2 G	IIC / IIB
IM18-***-N-ZWO IM30-***-N-ZWO	II 1 G	IIB
IM18-***-N-ZWO IM30-***-N-ZWO	II 2 G	IIC / IIB



Electrical data

Supply and signal circuit

type of protection Intrinsic Safety  
EEx ia IIC or EEx ia IIB,  
only for connection to intrinsically safe  
circuits

Maximum values:

$U_i = 15 \text{ V}$   
 $I_i = 50 \text{ mA}$   
 $P_i = 120 \text{ mW}$

For effective internal inductances and capacitances for the individual types provided with an open-ended cable with a length of 2 m, reference is made to the following table.

Type	$C_i$	$L_i$
IM08-01B-N-ZWO	80 nF	70 $\mu\text{H}$
IM12-02B-N-ZWO	140 nF	340 $\mu\text{H}$
IM12-04N-N-ZWO	140 nF	130 $\mu\text{H}$
IM18-05B-N-ZWO	145 nF	45 $\mu\text{H}$
IM18-08N-N-ZWO	155 nF	50 $\mu\text{H}$
IM30-10B-N-ZWO	145 nF	140 $\mu\text{H}$
IM30-15N-N-ZWO	145 nF	110 $\mu\text{H}$

(16) Test report PTB Ex 03-23019

(17) Special conditions for safe use

none

(18) Essential health and safety requirements

met by compliance with the standards mentioned above

Zertifizierungssektor Explosionsschutz  
On behalf of PTB:

Braunschweig, April 3, 2003

(signature)

Dr.-Ing. U. Gerlach

## 1. SUPPLEMENT

according to Directive 94/9/EC Annex III.6

to EC-TYPE-EXAMINATION CERTIFICATE PTB 03 ATEX 2037

(Translation)

Equipment: Inductive proximity switches, type series IM08-\*\*\*-N-ZWO, IM12-\*\*\*-N-ZWO, IM18-\*\*\*-N-ZWO, IM30-\*\*\*-N-ZWO

Marking:  II 2 G EEx ia IIC T6

Manufacturer: Sick AG

Address: Erwin-Sick-Straße 1, 79183 Waldkirch, Germany  
formerly  
Sebastian-Kneipp-Str. 1, 79183 Waldkirch, Germany

### Description of supplements and modifications

In the future the inductive proximity switches, type series IM08-\*\*\*-N-ZWO, IM12-\*\*\*-N-ZWO, IM18-\*\*\*-N-ZWO and IM30-\*\*\*-N-ZWO may also be manufactured and operated according to the test documents listed in the test report. The modifications concern the internal construction, the electrical data as well as the manufacturer's address and the adaption to the current state of the standard series EN 60079- et seq. and, therefore, the marking of the equipment.

This will read in future:  II 1 G Ex ia IIC T6

or  II 2 G Ex ia IIC T6

The marking of the intrinsically safe supply and signal circuit specified in the electrical data changes as follows:

### Electrical data

Supply and signal circuit

type of protection Intrinsic Safety  
Ex ia IIC or Ex ia IIB  
only for connection to intrinsically safe  
circuits

Maximum values:

$U_i = 15 \text{ V}$

$I_i = 50 \text{ mA}$

$P_i = 120 \text{ mW}$

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## 1. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 03 ATEX 2037

For effective internal inductances and capacitances for the individual types provided with an open-ended cable with a length of 2 m, reference is made to the following table.

Type	$C_i$	$L_i$
IM08-01B-N-ZWO	80 nF	70 $\mu$ H
IM12-02B-N-ZWO	140 nF	340 $\mu$ H
IM12-04N-N-ZWO	140 nF	130 $\mu$ H
IM18-05B-N-ZWO	145 nF	45 $\mu$ H
IM18-08N-N-ZWO	155 nF	50 $\mu$ H
IM30-10B-N-ZWO	145 nF	140 $\mu$ H
IM30-15N-N-ZWO	145 nF	110 $\mu$ H

For equipment variants provided with permanently mounted cable in excess of 2 m the values of  $L_i$  and  $C_i$  shall be increased by 0.9  $\mu$ H and 140 pF per additional meter cable length.

All other specifications of the EC-type examination certificate apply without changes also to this 1<sup>st</sup> supplement.

### Applied standards

EN 60079-0:2006

EN 60079-11:2007

EN 60079-26:2007

EN 1127-1:2007

Assessment and test report: PTB Ex 10-29260

Zertifizierungssektor Explosionsschutz  
On behalf of PTB:

Braunschweig, January 18, 2010

(signature)

Dr.-Ing. U. Johannsmeyer  
Direktor und Professor

**2 pages, correct and complete as regards content.**

On behalf of PTB:

Dr.-Ing. Johannsmeyer  
Direktor und Professor



Braunschweig, November 19, 2012

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## 2. SUPPLEMENT

according to Directive 94/9/EC Annex III.6

to EC-TYPE-EXAMINATION CERTIFICATE PTB 03 ATEX 2037

(Translation)

Equipment: Inductive proximity switches, type series IM08-\*\*\*-N-ZWO,  
IM12-\*\*\*-N-ZWO, IM18-\*\*\*-N-ZWO, IM30-\*\*\*-N-ZWO

Marking:  II 1 G Ex ia IIC T6

Manufacturer: Sick AG

Address: Erwin-Sick-Straße 1, 79183 Waldkirch, Germany

### Description of supplements and modifications

In the future the inductive proximity switches of type series IM08-\*\*\*-N-ZWO, IM12-\*\*\*-N-ZWO, IM18-\*\*\*-N-ZWO and IM30-\*\*\*-N-ZWO may also be manufactured and operated according to the test documents listed in the test report. The modifications concern the adaption to the current state of standard series EN 60079- et seq., the specifications of the maximum permissible ambient temperatures and the marking of the equipment.

For relationship between maximum permissible ambient temperature and temperature class for all type series, reference is made to the following table.

Temperature class	Maximum permissible ambient temperature
T6	70 °C
T5	80 °C

Table 1

ZSEx10101e.dotm



## 2. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 03 ATEX 2037

The assignment of the individual type series to groups for the application in certain categories is given in the following table.

Type series	Equipment category	Permissible groups
IM08-***-N-ZWO IM12-***-N-ZWO	II 1 G	IIC / IIB
IM08-***-N-ZWO IM12-***-N-ZWO	II 2 G	IIC / IIB
IM18-***-N-ZWO IM30-***-N-ZWO	II 1 G	IIB
IM18-***-N-ZWO IM30-***-N-ZWO	II 2 G	IIC / IIB

Table 2

In consideration of table 2 the marking will read in future:

 II 1 G Ex ia IIC T6 Ga or  
 II 1 G Ex ia IIB T6 Ga or  
 II 2 G Ex ia IIC T6 Gb

All other specifications of the EC-type examination certificate as well as the 1<sup>st</sup> supplement apply without changes also to this 2<sup>nd</sup> supplement.

### Applied standards

EN 60079-0:2009

EN 60079-11:2012

EN 60079-26:2007

Test report: PTB Ex 12-22176

Zertifizierungssektor Explosionsschutz

Braunschweig, June 14, 2012

On behalf of PTB:

(signature)

Dr.-Ing. U. Johannsmeyer  
Direktor und Professor

**2 pages, correct and complete as regards content.**

On behalf of PTB:

Dr.-Ing. Johannsmeyer  
Direktor und Professor



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