Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin
Nationales Metrologieinstitut

(1) # EU-TYPE EXAMINATION CERTIFICATE

(Translation)

(2) Equipment or Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number:

PTB 98 ATEX 2114 **Issue: 1**

(4) Product: Limit transducer, type 4746-12 and 4746-13

(5) Manufacturer: Samson AG

(6) Address: Weismüllerstraße 3, 60314 Frankfurt am Main, Germany

(7) This product and any acceptable variation thereto is 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 17 of the Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products 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 19-29116.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018 **EN 60079-11:2012**

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and construction of the specified product in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

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

II 2 G Ex ia IIC T6 Gb

Konformitätsbewertungsstelle, Sektor Explosionsschutz Braunschweig, February 4, 2020
On behalf of PTB:

Dr.-Ing. F. Lienesch
Direktor und Professor

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(13) # SCHEDULE

(14) **EU-Type Examination Certificate Number PTB 98 ATEX 2114, Issue: 1**

(15) Description of Product

The limit transducers of types 4746-12 and 4746-13 are used to convert mechanical actuating variables into electrical signals. Depending on the variant they are provided with limit contacts of different designs. The limit transducers are mounted onto pneumatic, electrical or hydraulic positioners which are applied inside and outside of the hazardous area.

The limit transducers of types 4746-12 and 4746-13 are passive two-terminal elements which may be connected to certified intrinsically safe circuits, unless the permissible maximum values U_i, I_i and P_i are exceeded.

Electrical data

Inductiver limit contact
Type 4746-12...
(terminals 41/42 or 51/52)

type of protection Intrinsic Safety Ex ia IIC
only for connection to a certified intrinsically safe circuit

Maximum values per contact:

	SC3,5-N0-YE		SC3,5-N0-WH		SJ3,5-SN		SJ3,5-S1N	
U_i in V	16		16		16		16	
I_i in mA	25	52	25	52	25	52	25	52
P_i in mW	64	169	64	169	64	169	64	169
C_i in nF	150		150		30		30	
L_i in µH	150		150		100		100	
Permissible ambient temperature range depending on temperature class								
T4 in °C	≤100	≤75	≤100	≤89	≤100	≤89	≤100	≤89
T5 in °C	≤80	≤55	≤81	≤60	≤81	≤60	≤81	≤60
T6 in °C	≤65	≤40	≤66	≤45	≤66	≤45	≤66	≤45

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 98 ATEX 2114, Issue: 1

Electrical micro-switch
Type 4746-13...
(terminals 41/42/43 or 51/52/53)

type of protection Intrinsic Safety Ex ia IIC
only for connection to a certified intrinsically safe circuit

Maximum values per switch:

U_i = 45 V
P_i = 2 W

The effective internal capacitances and inductances are negligibly low.

Permissible ambient temperature range depending on temperature class:

T6 = -45 °C ... 60 °C
T5 = -45 °C ... 70 °C
T4 = -45 °C ... 80 °C

Changes with respect to previous editions

- Adaption of the test specification to the currently applicable state of standards
- Update of the type labels and the marking
- Replacement of the DIN rail terminals from Weidmüller by print terminals from Phoenix
- Update of the list of currently applicable documents
- Adaption of the operating instructions manual respecting the changes carried out

(16) Test Report PTB Ex19-29116

(17) Specific conditions of use

(18) Essential health and safety requirements

Met by compliance with the aforementioned standards.

According to Article 41 of Directive 2014/34/EU, EC-type examination certificates which have been issued according to Directive 94/9/EC prior to the date of coming into force of Directive 2014/34/EU (April 20, 2016) may be considered as if they were issued already in compliance with Directive 2014/34/EU. By permission of the European Commission supplements to such EC-type examination certificates and new issues of such certificates may continue to hold the original certificate number issued before April 20, 2016.

Konformitätsbewertungsstelle, Sektor Explosionsschutz
On behalf of PTB:

Braunschweig, February 4, 2020

Dr.-Ing. F. Lienesch
Direktor und Professor

Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin

T R A N S L A T I O N

A D D E N D U M No.: 1

in compliance with Directive 94/9/EC Annex III Clause 6
to the EC Type Examination Certificate PTB 98 ATEX 2114

Equipment:	**Model 4746-12.. and 4746-13.. Limit Switches**
Marking:	 **II 2 G EEx ia IIC T6**
Manufacturer:	**SAMSON AG**
Address:	**Weismüllerstr. 3, D-60314 Frankfurt, Germany**

Description of the additions and modifications

The model description code has been changed. The old and the new designation code numbers are shown in the table below:

Old	New
4746-2…	4746-12…
4746-3…	4746-13…

In future, also the Model SJ-3.5 Slot-type Proximity Switches manufactured by Pepperl & Fuchs approved under the Ex Type Examination Certificate PTB 99 ATEX 2219 X may be used.

The preceding models of the same name approved under the Certificate of Conformity PTB No. Ex-95.D-2195 X are permitted to be used until 20 June 2002.

Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin

Addendum No. 1 to the Ex Type Examination Certificate PTB 98 ATEX 2114

Electrical data

Models 4746-12..1/..2 with inductive proximity switch

Inductive proximity switch (terminals 41/42 and 51/52)

Type of Protection: Intrinsic Safety EEx ia IIC
only for connection to a certified intrinsically safe circuit

Maximum values

U_i	=	16 V
I_i	=	52 mA
P_i	=	169 mW
or		
U_i	=	16 V
I_i	=	25 mA
P_i	=	64 mW
C_i	=	50 nF
L_i	=	250 µH

The correlation between temperature classification, permissible ambient temperature ranges, maximum short-circuit currents and power for evaluating instruments is shown in the table below:

Temperature class	Permissible ambient temperature range	I_0 / P_0
T6	-45 °C ... 45 °C	52 mA/169 mW
T5	-45 °C ... 60 °C	
T4	-45 °C ... 80 °C	
T6	-45 °C ... 60 °C	25 mA/64 mW
T5	-45 °C ... 80 °C	
T4	-45 °C ... 100 °C	

All the other electrical data and other data apply also to this Addendum No. 1.

Test report: **PTB EX 03-23049**

Zertifizierungsstelle Explosionsschutz

Braunschweig, 7 March 2003

By order

(Signature) (Seal)
Dr. Ing. U. Johannsmeyer
Regierungsdirektor

Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin

[Federal logo]

T R A N S L A T I O N

(1) EC TYPE EXAMINATION CERTIFICATE

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

(3) EC Type Examination Certificate Number

PTB 98 ATEX 2114

(4) Equipment: Model 4746-2 and 4746-3 Limit Switches

(5) Manufacturer: SAMSON AG

(6) Address: Weismüllerstr. 3, D-60314 Frankfurt

(7) This equipment and any acceptable variations thereof is specified in the schedule to this certificate and the documents referred to therein.

(8) The Physikalisch-Technische Bundesanstalt, certified body number 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 specified in Annex II to the Directive.

The examination and test results are recorded in confidential report: **PTB Ex 98-28184**.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with

EN 50014: 1997 **EN 50020: 1994**

(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) According to the Directive 94/9/EX, this EX TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

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

II 2 G EEx ia IIC T6

Zertifizierungsstelle Explosionsschutz Braunschweig, 03.09.1998
By order

(Signature) (Seal)

(13) # S c h e d u l e

(14) **EC TYPE EXAMINATION CERTIFICATE No. PTB 98 ATEX 2114**

(15) **Description of Equipment**

The Model 4746-2 and 4746-3... Limit Switches serve for converting mechanical manipulated variables into electrical signals. Depending on the version, they are equipped with various types of limit contacts. They are intended for attachment to pneumatic, electrical or hydraulic actuators installed inside and outside of hazardous areas.

The Model 4746-2...and 4746-3... Limit Switches are passive two-terminal networks that may be connected to all certified intrinsically safe circuits, provided the permissible maximum values of U_i, I_i and P_i are not exceeded.

Electrical connection is made by means of plugs and sockets or cable entries.

The relation between temperature classification and the permissible maximum ambient temperature range is specified in the table below:

Temperature class	Ambient temperature range
T6	-45 °C ... +60 °C
T5	-45 °C ... +70 °C
T4	-45 °C ... +80 °C

Electrical data

Contact circuits — Type of protection: Intrinsic safety EEx ia IIC only for connection to a certified intrinsically safe circuits

(Terminals 41/42 — Models 4746-2.0., Model 4746-2.1., Model 4746-2.5. with inductive proximity switch.

Maximum values:

U_i = 16 V
I_i = 52 mA
P_i = 169 mW

Effective internal capacitance: C_i = 60 nF
Effective internal inductance: L_i = 250 µH

(Terminals 41/42/43 and 51/52/53 — Model 4746-3.2, Model 4746-3.6 with electric micros witch

Maximum values: U_i = 45 V
P_i = 2 W

The effective internal capacitances and inductances are negligible.

(16) **Report PTB Ex 98-28184**

(17) **Special conditions for safe use**

Not applicable

(18) **Essential Health and Safety Requirements**

In compliance with standards

Zertifizierungsstelle Explosionsschutz
By order

Braunschweig, 03.09.98

(Signature) (seal)

Dr. Ing. U. Johannsmeyer
Regierungsdirektor