



## (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 12 ATEX 2020**



(4) Equipment: Limit Switch, type 4747-110.. / -810..

(5) Manufacturer: SAMSON AG Mess- und Regeltechnik

(6) Address: Weismüllerstr. 3, 60314 Frankfurt, 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 13-22146.

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

**EN 60079-0:2009      EN 60079-11:2012      EN 60079-15:2010      EN 60079-31:2009**

(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:



**see (15) description**

Zertifizierungssektor Explosionsschutz  
On behalf of PTB:

Braunschweig, April 26, 2013

Dr.-Ing. U. Johannsmeyer  
Direktor und Professor



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## (13) SCHEDULE

### (14) EC-TYPE-EXAMINATION CERTIFICATE PTB 12 ATEX 2020

#### (15) Description of equipment


The limit switches of types 4747-110.. and 4747-810.. are mounted onto single or double acting control valves. Electrical signals are triggered for further conditioning with the response of inductive limit contacts. Two inductive limit contacts can be connected to external analyzing units as a maximum.

The equipment is intended for installation inside or outside of the hazardous area.


All types of equipment are mounted into certified enclosures which meet the requirements to equipment protected by enclosure according to EN 60079-31:2009.

The marking of the types of switches reads as follows:

Type 4747-110..

II 2 G Ex ia IIC T6 Gb and  
 II 2 D Ex ia IIIC T85 °C Db IP66 and  
 II 2 D Ex tb IIIC T85 °C Db IP66

Type 4747-810..

II 3 G Ex ic IIC T6 Gc and  
 II 3 G Ex nAc II T6 Gc and  
 II 3 D Ex tc IIIC T85 °C Dc IP66

#### Electrical data

For relationship between type of protection, types of equipment, types of sensors and electrical maximum values, reference is made to the following tables:

#### Ex ia IIC/IIIC and Ex ic IIC

| type of equipment | 4747-11001 |        | 4747-11007 |        | 4747-11008     |        |
|-------------------|------------|--------|------------|--------|----------------|--------|
| type of sensor    | NCB2-V3-NO |        | NJ2-V3-N   |        | NJ2-V3-N-0,21M |        |
| Maximum values:   |            |        |            |        |                |        |
| U <sub>i</sub>    | 16 V       | 16 V   | 16 V       | 16 V   | 16 V           | 16 V   |
| I <sub>i</sub>    | 25 mA      | 52 mA  | 25 mA      | 52 mA  | 25 mA          | 52 mA  |
| P <sub>i</sub>    | 64 mW      | 169 mW | 64 mW      | 169 mW | 64 mW          | 169 mW |
| C <sub>i</sub>    | 100 nF     |        | 40 nF      |        |                |        |
| L <sub>i</sub>    | 100 µH     |        | 50 µH      |        |                |        |



Ex nA II or Ex tb IIIC or Ex tc IIIC

|                   |            |            |                |
|-------------------|------------|------------|----------------|
| type of equipment | 4747-81001 | 4747-81007 | 4747-81008     |
| type of sensor    | NCB2-V3-NO | NJ2-V3-N   | NJ2-V3-N-0,21M |
| $U_N$             | 8 V        |            |                |

For relationship between types of protection, electrical and thermal maximum values and the temperature class, reference is made to the following table:

| Ex ia IIC or Ex ic IIC         | temperature class | permissible ambient temperature range      |
|--------------------------------|-------------------|--|
| 16 V, 25 mA, 64 mW             | T4                | $\leq 80\text{ °C}$                        |
|                                | T5                | $-55\text{ °C} \leq T_a \leq 80\text{ °C}$ |
|                                | T6                | $\leq 65\text{ °C}$                        |
| 16 V, 52 mA, 169 mW            | T4                | $\leq 80\text{ °C}$                        |
|                                | T5                | $-55\text{ °C} \leq T_a \leq 60\text{ °C}$ |
|                                | T6                | $\leq 45\text{ °C}$                        |
| Ex ia IIIC                     |                   | $-25\text{ °C} \leq T_a \leq 80\text{ °C}$ |
| Ex nA II<br>$U_N = 8\text{ V}$ | T4                | $\leq 80\text{ °C}$                        |
|                                | T5                | $-55\text{ °C} \leq T_a \leq 80\text{ °C}$ |
|                                | T6                | $\leq 75\text{ °C}$                        |
| Ex tb IIIC or Ex tc IIIC       |                   | $-55\text{ °C} \leq T_a \leq 80\text{ °C}$ |

(16) Test report PTB Ex13-22146

(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:

Dr.-Ing. U. Johannsmeyer  
Direktor und Professor



Braunschweig, April 26, 2013

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