An-Institut der TU Bergakademie Freiberg

# [1] EC-TYPE EXAMINATION CERTIFICATE

according to Directive 94/9/EC, Annex III



## (Translation)

- [2] Equipment and Protective Systems intended for use in Potentially Explosive Atmospheres, Directive 94/9/EC
- [3] EC-Type Examination Certificate Number: IBExU06ATEX1049 X

[4] Equipment:

Pressure switch type AX4 - DS4XX

[5] Manufacturer:

BD Sensors s.r.o.

[6] Address:

Hradistska 817 687 08 Buchlovice CZECH REPUBLIC

- [7] This equipment mentioned under [4] and any acceptable variation thereto are specified in the schedule to this EC-Type Examination Certificate.
- IBExU Institut für Sicherheitstechnik GmbH, NOTIFIED BODY number 0637 in accordance with article 9 of the Council Directive 94/9/EC of 23<sup>th</sup> March 1994, certifies that the under [4] mentioned equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

  The examination and test results are recorded in confidential test report IB-06-3-005/1 of 7<sup>th</sup> March 2006.
- [9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 50014:1997+A1+A2, EN 50020:2002 and EN 50284:1999.
- [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 under [17] in the schedule to this EC-Type Examination Certificate.
- [11] This EC-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 mentioned in [4] shall include the following:

🖭 II 1G EEx ia IIC T4

IBExU Institut für Sicherheitstechnik GmbH

Fuchsmühlenweg 7

09599 Freiberg, Germany

★ +49 (0) 3731 3805-0 -

昌 +49 (0) 3731 23650

Authorised for certifications Explosion protection

By order

(Dr. Lösch)

Institut für Sicherheitstechnik GmbH

- Seal-(ID no. 0637) Freiberg, 8th March 2006

Certificates without signature and seal are not valid.
Certificates may only be duplicated completely and unchanged. In case of dispute, the German text shall prevail.

An-Institut der TU Bergakademie Freiberg

[13]

#### Schedule

# [14] to the EC-TYPE EXAMINATION CERTIFICATE IBExU06ATEX1049 X

## [15] Description of equipment

The Pressure switch type AX4 – DS4XX serves in intrinsic safety electrical plants for the transformation of a pressure signal in a 4...20 mA two-wire sensor signal, for measured value indication and produces up to 2 PNP-Open collector switching outputs for a limiting value control.

The sensor of the pressure measuring device may only operate in explosive atmospheres which requires equipment of Category 1, if there are atmospheric conditions (temperature from -20 °C to +60 °C pressure from 0.8 bar to 1.1 bar).

Ambient temperature range

from -25 °C to +70 °C

Supply and signal electric circuit in type of protection Intrinsic Satety EEx ia IIC

(UB+ and UB-)

 $U_i = 28 \text{ V DC}$  $I_i = 93 \text{ mA}$ 

effective inner capacity effective inner inductivity

P<sub>i</sub> = 660 mW C<sub>i</sub> = negligible L<sub>i</sub> = negligible

plus cable inductivities 1 µH/m and cable capacities 100 pF/m

[16] Test report

The test results are recorded in the test report IB-06-3-005/1 of 07<sup>th</sup> March 2006.

The test documents are part of the test report and listed there.

#### Summary of the Test Result:

The Pressure switch type AX4 – DS4XX fulfil the requirements of type of protection Intrinsically safety ,ia' on en electrical component for Equipment Group II Category 1G, Explosion Group IIC and temperature class T4.

#### [17] Special conditions

No energy may be supply from the outside into the active switching exits.

The equipment designed with connector have to be installed in such a way, that the Degree of protection IP20 always will be kept.

The safety and assembly notes contained in the operating instructions and the ambient temperature range -25 °C  $\leq$  T<sub>a</sub>  $\leq$  +70 °C have to be observed.

# [18] Essential Health and Safety Requirements

Confirmed by norms (see [9]).

By order

Freiberg, 08th March 2006

(Dr. Lösch)

An-Institut der TU Bergakademie Freiberg

#### 1<sup>st</sup> Addition to [1] **EC-TYPE EXAMINATION CERTIFICATE IBEXU06ATEX1049 X**

according to Directive 94/9/EC, Annex III

Translation -



[2] Equipment: Pressure switch

a) Type corresponding to IBExU06ATEX1049 X: AX4 - DS4XX

b) Added type:

AX4 - DS2XX

[3] Manufacturer: BD SENSORS s.r.o.

[4] Address: Hradistska 817 687 08 Buchlovice Czech Republic

#### [5] Addition / Alteration

The additions / alterations of the equipment mentioned in [2] compared with the equipment already certified concern in detail:

a) The pressure switches are equipped alternatively with new pressure measuring devices.

b) Extension for a new type with another constructive design.

c) The equipment fulfils also the requirements of the current standard series EN 60079:2009.

#### [6] **Test Report**

The proof of the explosion protection of the equipment mentioned in [2] is documented in the Test Report IB-10-3-397 of 11 April 2011. The test documents are part of the Test Report.

#### [7]

IBExU certifies that the equipment mentioned in [2] fulfils the Essential Health and Safety Requirements fixed in Annex II of the Directive 94/9/EC by compliance with EN 60079-0:2009, EN 60079-11:2007 and EN 60079-26:2007.

The equipment stated under [2] fulfills the requirements of explosion protection for electrical equipment in type of protection Intrinsic safety 'ia', Explosion Group IIC/IIB, Temperature Class T4 for Equipment Group II, Category 1G or 2G.

The marking of the equipment stated under [2] have to include one of the following:

Type AX4-DS4XX

( II 1G Ex ia IIC T4 or II 1G Ex ia IIB T4

Type AX4-DS2XX

( II 2G Ex ia IIC T4 or II 2G Ex ia IIB T4

This addition is only valid in combination with the EC-Type Examination Certificate IBExU06ATEX1049 X of 8 March 2006.

The safety instructions are unchanged and have to be taken into account furthermore.

IBExU Institut für Sicherheitstechnik GmbH

Fuchsmühlenweg 7

- 09599 Freiberg, Germany

★ +49 (0) 3731 3805-0 - 昌 +49 (0) 3731 23650

Authorized for certifications

- Explosion protection -

By order

(Dr. Wagner)

Institut für Sicherheits technik GmbH enn-Nr. 06

- Seal

(Identification No. 0637)

Freiberg, 11 April 2011

Certificates without signature and seal aren't valid.

Certificates may only be duplicated completely and unchanged. In case of dispute, the German text

shall prevail.

An-Institut der TU Bergakademie Freiberg

# [1] 2<sup>st</sup> Addition to EC-TYPE EXAMINATION CERTIFICATE IBExU06ATEX1049 X

according to Directive 94/9/EC, Annex III

- Translation -



[2] Equipment:

**Pressure switch** 

a) Type corresponding to IBExU06ATEX1049 X: AX4 - DS4XX or DS2XX

b) Added type: Plug-on Display AX4 - PA430

[3] Manufacturer:

BD SENSORS s.r.o.

[4] Address:

Hradistska 817 687 08 Buchlovice Czech Republic

[5] Addition / Alteration

The additions / alterations of the equipment mentioned in [2]b compared with the equipment already certified concern in detail:

Extension to a new type with a different construction and integrated digital display.

All other parameters remain unchanged.

[6] Test Report

The proof of the explosion protection of the equipment mentioned in [2]b is documented in the Test Report IB-12-3-134 of 11 July 2012. The test documents are part of the Test Report.

[7] Test result

IBExU certifies that the equipment mentioned in [2]b fulfils the Essential Health and Safety Requirements fixed in Annex II of the Directive 94/9/EC by compliance with EN 60079-0:2009 and EN 60079-11:2007.

The equipment stated under [2]b fulfills the requirements of explosion protection for electrical equipment in type of protection Intrinsic safety 'ia', Explosion Group IIC, Temperature Class T4 for Equipment Group II, Category 2G.

The marking of the equipment stated under [2]b have to include the following:

🖾 II 2G Ex ia IIC T4 Gb

This addition is only valid in combination with the EC-Type Examination Certificate IBExU06ATEX1049 X of 8 March 2006 and their 1<sup>st</sup> addition.

The safety instructions are unchanged and have to be taken into account furthermore.

IBExU Institut für Sicherheitstechnik GmbH

Fuchsmühlenweg 7 - 09599 Freiberg, Germany

★ +49 (0) 3731 3805-0 - ♣ +49 (0) 3731 23650

Authorized for certifications - Explosion protection -

By order

(Dr. Magner)

(Dr. Wagner)



- Seal - (Identification No. 0637)

Freiberg, 11 July 2012

Certificates without signature and seal aren't valid.
Certificates may only be duplicated completely and unchanged.
In case of dispute, the German text shall prevail.