

[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.
- [8] IBExU Institut für Sicherheitstechnik GmbH, NOTIFIED BODY number 0637 in accordance with article 9 of the Council Directive 94/9/EC of 23<sup>rd</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**

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Authorised for certifications Explosion protection

By order

(Dr. Lösch)



- Seal-  
(ID no. 0637 )

Freiberg, 8<sup>th</sup> 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.

**Schedule**

[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 Safety EEx ia IIC  
(UB+ and UB-)

$U_i$  = 28 V DC

$I_i$  = 93 mA

$P_i$  = 660 mW

effective inner capacity  $C_i$  = negligible

effective inner inductivity  $L_i$  = 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 an 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  $-25\text{ °C} \leq T_a \leq +70\text{ °C}$  have to be observed.

[18] **Essential Health and Safety Requirements**

Confirmed by norms (see [9]).

By order

Freiberg, 08<sup>th</sup> March 2006



(Dr. Lösch)



- [1] **1<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  
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] **Test result**

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] fulfils 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.**

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Authorized for certifications  
- Explosion protection -

By order

(Dr. Wagner)



- Seal -  
(Identification No. 0637)

Freiberg, 11 April 2011

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- [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 fulfils 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.**

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- Seal -  
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Freiberg, 11 July 2012

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- [1] **3<sup>rd</sup> Addition to**  
**EC-TYPE EXAMINATION CERTIFICATE IBExU06ATEX1049 X**  
according to Directive 94/9/EC, Annex III  
- Translation -

[2] Equipment: **Pressure switch**  
Type AX4 – DS4XX or DS2XX  
and 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] compared with the equipment already certified concern in detail:

- a) The pressure switch type AX4 - DS4XX also fulfils the requirements for dust-hazardous areas and is marked accordingly.
- b) The devices also fulfil the requirements of the current series of standards EN 60079.

All other parameters remain unchanged.

[6] **Test Report**

The proof of the explosion protection of the equipment mentioned in [2] is documented in the Test Report IB-15-3-070 of 9 April 2015. The test documents are part of the Test Report.

[7] **Test result**

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 60079-0:2012+A11:2013, EN 60079-11:2012 and EN 60079-26:2007.

The pressure switch type AX4 - DS4XX fulfils the requirements of explosion protection for electrical equipment in type of protection Intrinsic safety 'ia', Equipment Group II, Category 1G und 1D, Explosion Group IIC/IIB or IIIC and Temperature Class T4 with max. Surface temperature 135 °C.

The marking of the equipment shall include the following:

⊕ II 1G Ex ia IIC T4 Ga or ⊕ II 1G Ex ia IIB T4 Ga  
⊕ II 1D Ex ia IIIC T135 °C Da

The pressure switch type AX4 - DS2XX fulfils the requirements of explosion protection for electrical equipment in type of protection Intrinsic safety 'ia', Equipment Group II, Category 2G, Explosion Group IIC/IIB and Temperature Class T4.

The marking of the equipment shall include the following:

⊕ II 2G Ex ia IIC T4 Gb or ⊕ II 2G Ex ia IIB T4 Gb

The Plug-on Display AX4 - PA430 fulfils the requirements of explosion protection for electrical equipment in type of protection Intrinsic safety 'ia', Equipment Group II, Category 2G, Explosion Group IIC and Temperature Class T4.

The marking of the equipment shall include the following:

⊕ II 2G Ex ia IIC T4 Gb

**IBExU Institut für Sicherheitstechnik GmbH**  
An-Institut der TU Bergakademie Freiberg

**This addition is only valid in connection with the EC-Type Examination Certificate  
IBExU06ATEX1049 X of 8 March 2006 and their additions.**

The Special Conditions mentioned in the EC type examination certificates shall be supplemented as follows:

- Excessive dust deposits (above 5 mm) and a complete dust covering must be avoided.

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- Explosion protection -

By order



(Dr. Wagner)



- Seal -  
(Identification No. 0637)

Freiberg, 9 April 2015

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## [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 **IBExU06ATEX1049 X** | Issue 1
- [4] Product: **Pressure switch**  
Type: AX4 – DS4XX or DS2XX  
and Plug-on Display AX4 – PA430
- [5] Manufacturer: BD Sensors s.r.o.
- [6] Address: Hradistska 817  
687 08 Buchlovice  
CZECH REPUBLIC
- [7] This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- [8] IBExU Institut für Sicherheitstechnik GmbH, notified body number 0637 in accordance with Article 17 of 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 IB-20-3-0128.
- [9] Compliance with the essential health and safety requirements has been assured by compliance with:  
EN IEC 60079-0:2018 and EN 60079-11:2012  
except in respect of those requirements listed at item [18] of the schedule.
- [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. 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:

Type AX4 - DS4XX: II 1G Ex ia IIC T4 Ga or II 1G Ex ia IIB T4 Ga  
 II 1D Ex ia IIIC T135 °C Da

Type AX4 - DS2XX: II 2G Ex ia IIC T4 Gb or II 2G Ex ia IIB T4 Gb

Type AX4 - PA430: II 2G Ex ia IIC T4 Gb

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By order

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Freiberg, 2020-09-10



[13] **Schedule**

[14] **Certificate number IBExU06ATEX1049 X | Issue 1**

[15] **Description of product**

The Pressure switch type AX4 – DS4XX or DS2XX 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).

**Technical data:**

Ambient temperature range: from -25 °C to +70 °C

Supply and signal electric circuit in type of protection Intrinsic Safety Ex ia IIC:

(UB+ and UB-)  $U_i$  = 28 V DC

$I_i$  = 93 mA

$P_i$  = 660 mW

effective internal capacitance  $C_i$  negligible

effective internal inductance  $L_i$  negligible

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

*Variations compared to EG-Type Examination Certificate IBExU06ATEX1049 X and its additions:*

- The pressure switch complies with the requirements of EN IEC 60079-0:2018
- For the type AX4 - DS40X: Modification of the existing electronics was carried out and laid out as a new electronic board.

[16] **Test report**

The test results are recorded in the confidential test report IB-20-3-0128 of 2020-09-10.

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

*Summary of the test results*

The Pressure switch type AX4 – DS4XX also fulfil the requirements of type of protection Intrinsically safety 'ia' on an electrical component for Equipment Group II, Category 1G and 1D, Explosion Group IIC/IIB or IIIC and temperature class T4 with a maximum surface temperature of 135 °C.

The Pressure switch type AX4 – DS2XX also fulfil the requirements of type of protection Intrinsically safety 'ia' on an electrical component for Equipment Group II, Category 2G, Explosion Group IIC/IIB and temperature class T4.

The Plug-on Display type AX4 – PA430 also fulfil the requirements of type of protection Intrinsically safety 'ia' on an electrical component for Equipment Group II, Category 2G, Explosion Group IIC and temperature class T4.

[17] **Specific conditions of use**

- 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  $-25\text{ °C} \leq T_a \leq +70\text{ °C}$  have to be observed.

[18] **Essential health and safety requirements**

In addition to the essential health and safety requirements (EHSRs) covered by the standards listed at item [9], the following are considered relevant to this product, and conformity is demonstrated in the test report:

None



[19] **Drawings and Documents**

The documents are listed in the test report.

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By order



Dipl.-Ing.(FH) Henker

Freiberg, 2020-09-10