EC-TYPE EXAMINATION CERTIFICATE
according to Directive 94/9/EC, Annex III

(Translation)


EC-Type Examination Certificate Number: IBExU06ATEX1049 X

Equipment: Pressure switch type AX4 – DS4XX

Manufacturer: BD Sensors s.r.o.

Address: Hradistka 817
687 08 Buchlovice
CZECH REPUBLIC

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 23rd 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 7th March 2006.

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.

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.

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.

The marking of the equipment mentioned in [4] shall include the following:

\(\text{II} 1G \text{EEx ia IIC} \text{T4}\)

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Authorised for certifications Explosion protection

By order

(Dr. Lösch)

Schedule

Certificates without signature and seal are not valid.
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[14] **Schedule**

**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).

<table>
<thead>
<tr>
<th>Ambient temperature range</th>
<th>from -25 °C to +70 °C</th>
</tr>
</thead>
</table>

Supply and signal electric circuit in type of protection Intrinsically Safe Ex ia IIC (UB+ and UB-)

- \( U_i = 28 \text{ V DC} \)
- \( I_i = 93 \text{ mA} \)
- \( P_i = 660 \text{ mW} \)

**effective inner capacity**

- \( C_i = \text{negligible} \)

**effective inner inductivity**

- \( L_i = \text{negligible} \)

plus cable inductivities 1 \( \mu \text{H/m} \) and cable capacities 100 \( \text{pF/m} \)

[16] **Test report**

The test results are recorded in the test report IB-06-3-005/1 of 07\(^{th}\) 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 fulfill the requirements of type of protection Intrinsically safe Ex 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 °C ≤ \( T_a \) ≤ +70 °C have to be observed.

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

Confirmed by norms (see [9]).

**By order**

Freiberg, 08\(^{th}\) March 2006

(Dr. Lösch)
1st Addition to
EC-TYPE EXAMINATION CERTIFICATE IBExU06ATEX1049 X
according to Directive 94/9/EC, Annex III

- Translation -

   a) Type corresponding to IBExU06ATEX1049 X: AX4 - DS4XX
   b) Added type: AX4 – DS2XX


[4] Address: Hradistska 817
            687 08 Bucharovice
            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 fulfills also the requirements of the current standard series EN 60079:2009.

   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

   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 Ex II 1G Ex ia IIC T4 or II 1G Ex ia IIB T4
   Type AX4-DS2XX Ex 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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- Explosion protection -

By order

(Dr. Wagner)

(Identification No. 0637)

Freiberg, 11 April 2011

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Page 1 of 1
1st Addition to IBExU06ATEX1049 X
2nd Addition to EC-TYPE EXAMINATION CERTIFICATE IBExU06ATEX1049 X
according to Directive 94/9/EC, Annex III

- Translation -

Equipment: Pressure switch
a) Type corresponding to IBExU06ATEX1049 X: AX4 - DS4XX or DS2XX
b) Added type: Plug-on Display AX4 - PA430

Manufacturer: BD SENSORS s.r.o.

Address: 
Hradistska 817
687 08 Buchlovice
Czech Republic

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.

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.

Test result

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 1st addition.

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

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Authorized for certifications
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By order
(Dr. Wagner)
(Identification No. 0637)

Freiberg, 11 July 2012

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Page 1 of 1
2nd Addition to IBExU06ATEX1049 X
3rd Addition to
EC-TYPE EXAMINATION CERTIFICATE IBExU06ATEX1049 X
according to Directive 94/9/EC, Annex III
- Translation -

    Type AX4 – DS4XX or DS2XX
    and Plug-on Display AX4 - PA430


[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.

The proof of the explosion protection of the equipment mentioned in [2] is documented in the Test

[7] Test result
IBExU certifies that the equipment mentioned in [2] fulfils the Essential Health and Safety Require-

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 and 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:

\[ \text{\textcopyright 1G Ex ia IIC T4 Ga or } \text{\textcopyright 1G Ex ia IIB T4 Ga} \]
\[ \text{\textcopyright 1D Ex ia IIC T135 °C Da} \]

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:

\[ \text{\textcopyright 2G Ex ia IIC T4 Gb or } \text{\textcopyright 2G Ex ia IIB T4 Gb} \]

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:

\[ \text{\textcopyright 2G Ex ia IIC T4 Gb} \]
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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Authorized for certifications
- Explosion protection -

By order

(Dr. Wagner)

- Seal -

(Identification No. 0637)

Freiberg, 9 April 2015

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