

[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: **IBExU07ATEX1179 X**

[4] Equipment: Pressure measuring device type DX4A DMK 456

[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 23th 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-07-3-372 of 14th January 2008.

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 60079-0:2006, EN 60079-11:2007 and EN 60079-26:2004.

[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] must include one of the following details:

II 1G Ex ia IIC T6
-20 °C ≤ T_a ≤ +60 °C

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Authorised for certifications Explosion protection

By order

(Dr. Lösch)

Schedule



- Seal-
(ID no. 0637)

Freiberg, 14th January 2008

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.

[13]

Schedule

[14]

to the EC-TYPE EXAMINATION CERTIFICATE IBExU07ATEX1179 X

[15]

Description of equipment

The pressure measuring device DX4A DMK 456 is a pressure transmitter in the high-grade steel enclosure with process tap. The equipment is intended for use in potentially hazardous areas, where category 1G devices are required. An intrinsically safe power supply system of the category „ia“ can be used for the power supply.

Category 1 equipment

The sensor of the pressure measuring device may be operated in explosive atmospheres which requires equipment of category 1 only 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 -20 °C to +60 °C
Degree of protection of the enclosure: IP 67

Supply and signal electric circuit in type of protection Intrinsic Safety Ex ia IIC
(Circuit diagram XS1 and XS2)

	U_i	28 V DC
	I_i	93 mA
	P_i	660 mW
effective inner capacity	C_i	52,3 nF
effective inner inductivity	L_i	5 µH

The supply connections have an inner capacity of max. 90.2 nF opposite the enclosure.

[16]

Test report

The test results are recorded in detail in the test report IB-07-3-372. The test documents are part of the test report and listed there.

Summary of the Test Result:

The pressure measuring device DX4A DMK 456 fulfills the requirements of type of protection Intrinsic safety ‚ia‘ for an electrical component for equipment group II category 1G, explosion group IIC and temperature class T6.

[17]

Special conditions

- The ambient temperature range is fixed from -20 °C to +60 °C.
- The safety and assembly notes contained in the operating instructions have to be observed.

[18]

Essential Health and Safety Requirements

Confirmed by compliance with standards (see [9]).

By order

Freiberg, 14th January 2008



(Dr. Lösch)



[1] **1st Addition to
EC-TYPE EXAMINATION CERTIFICATE IBExU07ATEX1179 X
- Translation -**

[2] Equipment: **Pressure measuring device**

a) Type corresponding IBExU07ATEX1179 X: DX4A DMK 456

b) added/appended type: DX4A DMK 458 und LMK 458

[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 stated under [2]b compared to the equipment already certified comprise in particular:

a) add on of two new device type - pressure measuring device type DX4A DMK 458 and dive probe type DX4A LMK 458.

b) the use of another measurement cell in the two new device DX4A DMK 458 and DX4A LMK 458.

[6] **Test Report**

The proof of explosion protection of the equipment stated under [2]b is documented in the Test Report IB-08-3-263 of 9th December 2008. The test documents are part of the Test Report.

[7] **Test result**

IBExU certifies, that the equipment stated under [2]b fulfill the Essential Health and Safety Requirements given in Annex II to the Directive 94/9/EC by compliance with EN 60079-0:2006, EN 60079-11:2007 and EN 60079-26:2004.

The equipment stated under [2]b fulfill 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.

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

Ex II 1G Ex ia IIC/IIB T4

The validity of the marking for the types of protection goes by the marking table in the Test Report.

**This addition is only valid in combination with the EC-Type Examination Certificate
IBExU07ATEX1179 X of 14th January 2008.**

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(Prof. Dr. Redeker)



- Seal
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Freiberg, 10th December 2008

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[1] **2nd Addition to
EC-TYPE EXAMINATION CERTIFICATE IBExU07ATEX1179 X
- Translation -**



[2] Equipment: **Pressure measuring device**
a) Type corresponding IBExU07ATEX1179 X: **DX4A DMK 456**
b) added/appended type after 1st Addition : **DX4A DMK 458 and LMK 458**

[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 stated under [2]b compared to the equipment already certified comprise in particular:

- a) In the equipment - pressure measuring devices type DX4A DMK 458 and LMK 458 is used another EMC-board.
- b) In the equipment - pressure measuring devices type DX4A DMK 458 with plug or cable connector are used an additional EMC-board.

The effective inner capacity increases with equipment DX4A LMK 458 and DMK 458 with plug or cable connector to C_i 105 nF. The supply connections have an inner capacity of max. 140 nF opposite the enclosure.

[6] **Test Report**

The proof of explosion protection of the equipment stated under [2]b is documented in the Test Report IB-09-3-042 of 11 March 2009. The test documents are part of the Test Report.

[7] **Test result**

IBExU certifies, that the equipment stated under [2]b fulfill the Essential Health and Safety Requirements given in Annex II to the Directive 94/9/EC by compliance with EN 60079-0:2006, EN 60079-11:2007 and EN 60079-26:2004.

The equipment stated under [2]b fulfill 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.

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

II 1G Ex ia IIC/IIB T4

The validity of the marking for the types of protection goes by the marking table in the Test Report.

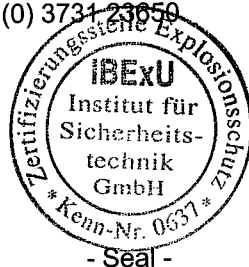
This addition is only valid in combination with the EC-Type Examination Certificate IBExU07ATEX1179 X of 14 January 2008 and their 1st Addition of 10 December 2008.

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By order

(Dr. Wagner)



(Identification No. 0637)

Freiberg, 11 March 2009

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

[1] **3rd Addition to**
EC-TYPE EXAMINATION CERTIFICATE IBExU07ATEX1179 X
according to Directive 94/9/EC, Annex III



- Translation -

[2] Equipment: **Pressure measuring device**
a) Type corresponding IBExU07ATEX1179 X: **DX4A DMK 456**
b) added/appended type after 1st Addition : **DX4A DMK 458 and LMK 458**

[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 stated under [2]a compared to the equipment already certified comprise in particular:

The pressure measuring device DX4A DMK 456 with the sensor element DSK 701C fulfills the requirements of the temperature class T6.

[6] **Test Report**

The proof of explosion protection of the equipment stated under [2]a is documented in the Test Report IB-09-3-222 of 21 August 2009. The test documents are part of the Test Report.

[7] **Test result**

IBExU certifies, that the equipment stated under [2]a fulfills the Essential Health and Safety Requirements given in Annex II to the Directive 94/9/EC by compliance with EN 60079-0:2006, EN 60079-11:2007 and EN 60079-26:2004.

The equipment stated under [2] fulfill the requirements of explosion protection for electrical equipment in type of protection Intrinsic safety 'ia', Explosion Group IIC/IIB, Temperature Class T6/T4 for Equipment Group II, Category 1G.

The marking of the equipment stated under [2] shall include the following:

Device	Connection	Type	Ex-Marking
DMK 456	terminal	pressure measuring device	⊕ II 1G Ex ia IIC T6
DMK 458	terminal	pressure measuring device	⊕ II 1G Ex ia IIC T4
DMK 458	plug, cable	pressure measuring device	⊕ II 1G Ex ia IIB T4
LMK 458	cable	submersible probe	⊕ II 1G Ex ia IIB T4

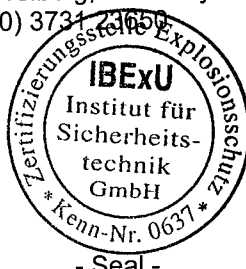
This addition is only valid in combination with the EC-Type Examination Certificate IBExU07ATEX1179 X of 14 January 2008 and their 1st and 2nd Addition.

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By order

Wagner
(Dr. Wagner)



- Seal -
(Identification No. 0637)

Freiberg, 21 August 2009

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