

IBExU Institut für Sicherheitstechnik GmbH
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: **IBExU10ATEX1068 X**

[4] Equipment: **Pressure transmitter**
Type DX19-DMP..., DX19-DMK..., DX19-LMP..., DX19-LMK...and
DX19- 17.600G

[5] Manufacturer: **BD SENSORS GmbH**

[6] Address: **BD-Sensors-Str. 1**
95199 Thierstein
GERMANY

[7] The design of the 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 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 test results are recorded in the test report IB-10-3-065 of 31 August 2010.

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 60079-0:2009, EN 60079-11:2007 and EN 60079-26:2007.

[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:

All types, except DX19-DMK KRO: **II 1G Ex ia IIC T4 Ga**

Type DX19-DMK KRO: **II 1G Ex ia IIB T4 Ga**

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Authorised for certifications Explosion protection

By order

(Dr. Wagner)

Schedule



Freiberg, 31 August 2010

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[13]

Schedule

[14]

to the EC-TYPE EXAMINATION CERTIFICATE IBExU10ATEX1068 X

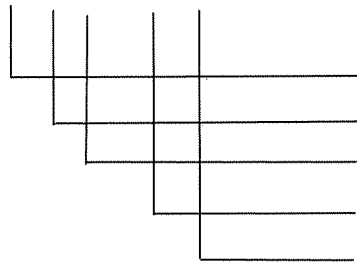
[15]

Description of equipment

The Pressure transmitters DX19 are different pressure measurement devices or level sonde in stainless steel enclosure with different pressure ports. As measuring cell and evaluation electronic serves a separately approved electronic modules. The devices are intended for use in potentially hazardous areas, where Category 1G devices are required. They are supplied by an intrinsically safe power supply of the Category „ia“.

Type code:

DX19- D M P nnn I



D - pressure measurement devices; L – level sonde
M - transmitter
P – stainless steel cell; K - ceramic cell
nnn - design
I - precision; P - process pressure port

Exception:

DMK457 KRO with EMV 45 as clamp platine
17.600G conform to DMP

Type extent:

Name	Type	Electronic-module	Measurement cell
DMP 343	DMU	ELMO-STA	DSP 210 / ELV 66 = DSP 210 Z
DMP 331	DMU	ELMO-STA	DSP 4XX / ELV66 = DSP 4XX Z alternative ICS 86 / ELV 70 = ICS 86 Z
DMP 333	DMU	ELMO-STA	DSP 4XX / ELV 66 = DSP 4XX Z
DMP 335	DMU	ELMO-STA	MSP 12X / ELV 57 = MSP 12X Z
17.600G	DMU	ELMO-STA	MSP 12X / ELV 57 = MSP 12X Z
DMK 331	DMU	ELMO-STA	DSK 511 / ELV 58 = DSK 511 Z
LMP 331	DMU	ELMO-STA	DSP 4XX / ELV66 = DSP 4XX Z alternative ICS 86 / ELV 70 = ICS 86 Z
LMK 331	PS	ELMO-STA	DSK 511 / ELV 58 = DSK 511 Z
LMK 307	PS	ELMO-STA	DSK 511 / ELV 58 = DSK 511 Z
DMP 331 I	DMU	ELMO-PRE	DSP 4XX / ELI 20 = DSP 4XX X alternative ICS 86 / ELI 20 with aid platine PD16
DMP 333 I	DMU	ELMO-PRE	DSP 4XX / ELI 20 = DSP 4XX X
LMP 331 I	PS	ELMO-PRE	DSP 4XX / ELI 20 = DSP 4XX X alternative ICS 86 / ELI 20 with aid platine PD16
DMP 331 P	DMU	ELMO-STA	DSP 4XX / ELV66 = DSP 4XX Z alternative DSP 1XX / ELV66 = DSP 1XX Z
DMK 331 P	DMU	ELMO-STA	DSK 511 / ELV 58 = DSK 511 Z
DMK457 KRO	DMU	ELMO-STA	DSK 511 / ELV 58 = DSK 511 Z additional with EMV 45 as clamp platine.
LMP 307	PS	ELMO-STA	DSP 4XX / ELV66 = DSP 4XX Z alternative ICS 86 / ELV 70 = ICS 86 Z
LMP 307 I	PS	ELMO-PRE	DSP 4XX / ELI 20 = DSP 4XX X alternative ICS 86 / ELI 20 with aid platine PD16

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LMP 308	PS	ELMO-STA	DSP 4XX / ELV66 = DSP 4XX Z alternative ICS 86 / ELV 70 = ICS 86 Z
LMP 308 I	PS	ELMO-PRE	DSP 4XX / ELI 20 = DSP 4XX X alternative ICS 86 / ELI 20 with aid platine PD16

Technical Data

supply electric circuit in type of protection Intrinsic Safety Ex ia IIC
(supply + and -)

U_i 28 V DC

I_i 93 mA

P_i 660 mW

effective inner capacity
effective inner inductivity

C_i negligible

L_i negligible

plus line inductivities 1 μ H/m and line capacities 160 pF/m (cable supplied by the manufacturer)

The supply connections have an inner capacity of max. 27 nF to the housing.

Type DX19-DMK457 KRO in type of protection Intrinsic Safety Ex ia IIB

effective inner capacity C_i 105 nF

effective inner inductivity L_i 5 μ H

The supply connections have an inner capacity of max. 91 nF to the housing.

Ambient temperature range -20 °C to +70 °C (type DX19-*** I to +65 °C)

[16] Test report

The test results are explained in detail in the test report IB-10-3-065. The test documents are part of the test report and listed there.

Summary of the test results:

The highest-pressure transmitters DX19 fulfil the requirements of type of protection Intrinsic Safety 'ia' for an electrical equipment of the Equipment Group II, Category 1G, Explosion Group IIC or IIB and Temperature Class T4.

[17] Special conditions

- The equipment designed with connector have to be installed in such a way that the degree of protection IP 20 is always kept.
- The safety and assembly instructions contained in the operating instruction and the ambient temperature range $-20\text{ °C} \leq T_a \leq +70\text{ °C}$ or at the types DX19-*** I $-20\text{ °C} \leq T_a \leq +65\text{ °C}$ have to be taken into account.
- The device may be operated in explosive atmospheres which requires equipment of Category 1 only when there are atmospheric conditions (temperature of -20 °C to $+60\text{ °C}$, pressure of 0.8 bar to 1.1 bar).

[18] Essential Health and Safety Requirements

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

By order

Freiberg, 31 August 2010



(Dr. Wagner)

[1] **1st Addition to
EC-TYPE EXAMINATION CERTIFICATE IBExU10ATEX1068 X
- Translation -**



[2] Equipment: **Pressure transmitter**
Type DX19-DMP..., DX19-DMK..., DX19-LMP..., DX19-LMK...and
DX19-17.600G

[3] Manufacturer: BD SENSORS GmbH

[4] Address: BD-Sensors-Str. 1
95199 Thierstein
Germany

[5] **Addition / Alteration**

The additions / alterations of the equipment stated under [2] compared to the equipment already certified comprise in particular:

- a) Use in the presence of combustibile dust.
- b) Addition of types DX19-DMP457 and DX19-DMK457 under use a alterations EMC-board.
The table are following added:

Name	Type	Electronic-module	Measurement cell
DMP 457	DMU	ELMO-STA	DSP 4XX / ELV66 = DSP 4XX Z alternative ICS 86 / ELV 70 = ICS 86 Z EMV 58 replaced by EMV 26 of ELMO-STA
DMK 457	DMU	ELMO-STA	DSK 511 / ELV 58 = DSK 511 Z EMV 58 replaced by EMV 26 of ELMO-STA

The effective inner capacity increases with these equipment to C_i 105 nF. The supply connections have an inner capacity of max. 140 nF opposite the enclosure.

- c) Compact field enclosure as new variant of enclosure

[6] **Test Report**

The proof of explosion protection of the equipment stated under [2] is documented in the Test Report IB-10-3-349 of 8 March 2011. The test documents are part of the Test Report.

[7] **Test result**

IBExU certifies, that the equipment stated under [2] fulfill the Essential Health and Safety Requirements given in Annex II to the Directive 94/9/EC by compliance with EN 60079-0:2009, EN 60079-11:2007 and EN 61241-11:2006.

The equipment stated under [2] fulfill the requirements of type of protection Intrinsic Safety ,ia' for an electrical equipment of the Equipment Group II, Category 1G, Explosion Group IIC or IIB and Temperature Class T4 as we as Category 1D with a maximum surface temperature of 85 °C.

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

All types, except DX19-*457*:
 II 1G Ex ia IIC T4
 II 1D Ex iaD 20 T 85 °C

Type DX19-*457*:
 II 1G Ex ia IIB T4
 II 1D Ex iaD 20 T 85 °C

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This addition is only valid in combination with the EC-Type Examination Certificate
IBExU10ATEX1068 X of 31 August 2010.

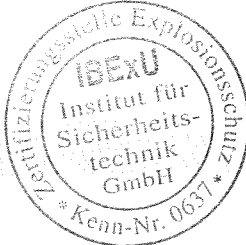
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- Explosion protection -

By order



(Dr. Wagner)



- Seal -
(Identification No. 0637)

Freiberg, 8 March 2011

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[1] **2nd Addition to
EC-TYPE EXAMINATION CERTIFICATE IBExU10ATEX1068 X
- Translation -**



[2] Equipment: **Pressure transmitter**

a) Types corresponding IBExU10ATEX1068 X: DX19-DMP..., DX19-DMK..., DX19-LMP...,
DX19-LMK...and DX19-17.600G

b) Added/appended types: DX19-DMP 339, DX19-17.605 and DX19-26.600

[3] Manufacturer: **BD SENSORS GmbH**

[4] Address: **BD-Sensors-Str. 1
95199 Thierstein
Germany**

[5] **Addition / Alteration**

The additions / alterations of the equipment stated under [2] b) compared to the equipment already certified comprise in particular:

Addition of types DX19-DMP 339, DX19-17.605 and DX19-26.600 under use of new measuring cells as well as electronic configurations on the basis of the partial certification IBExU10ATEX1026 U incl. 1st Addition.

The table is added as follows:

Name	Type	Electronic-module	Measuring cell
DMP 339	DMU	ELMO-STA ELMO-PRE	ICS 89 / ELV 66 / ELV 68 / EMV 26 ICS 89 / ELI 36 / ELI 37 / EMV 52
17.605	DMU	ELMO-STA	SPS 1000 / ELV 49 / ELV 68 / EMV 26
26.600	DMU	ELMO-STA	DSK611 / ELV 49 / ELV 68 / EMV 26

[6] **Test Report**

The proof of explosion protection of the equipment stated under [2] b) is documented in the Test Report IB-11-3-118 of 2 February 2012. The test documents are part of the Test Report.

[7] **Test result**

IBExU certifies that the equipment stated under [2] b) fulfils the Essential Health and Safety Requirements given in Annex II to the Directive 94/9/EC by compliance with EN 60079-0:2009, EN 60079-11:2007 and EN 61241-11:2006.

The equipment stated under [2] b) fulfils the requirements of type of protection Intrinsic Safety ,ia' for an electrical equipment of the Equipment Group II, Category 1G, Explosion Group IIC and Temperature Class T4 as well as Category 1D with a maximum surface temperature of 85 °C.

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

II 1G Ex ia IIC T4
 II 1D Ex iaD 20 T 85 °C

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This addition is only valid in combination with the EC-Type Examination Certificate
IBExU10ATEX1068 X of 31 August 2010 and its 1st Addition.

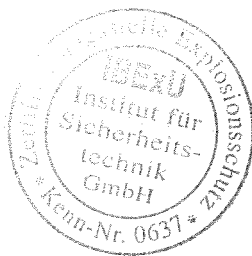
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By order



(Dr. Wagner)



- Seal -
(Identification No. 0637)

Freiberg, 2 February 2012

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- [1] **3rd Addition to
EC-TYPE EXAMINATION CERTIFICATE IBExU10ATEX1068 X**
according to Directive 94/9/EC Annex III
- Translation -



- [2] Equipment: **Pressure transmitters**
- a) Types corresponding IBExU10ATEX1068 X:
DX19-DMP..., DX19-DMK..., DX19-LMP...,
DX19-LMK...and DX19-17.600G
- b) Added/appended types: DX19-DMP 334, DX19-DMP 311 and
DX19-DMP 321
- [3] Manufacturer: BD SENSORS GmbH
- [4] Address: BD-Sensors-Str. 1
95199 Thierstein
GERMANY

- [5] **Addition / Alteration**
The additions / alterations of the equipment stated under [2] compared to the equipment already certified comprise in particular:

- a) Addition of types DX19-DMP 334, DX19-DMP 311 and DX19-DMP 321 under use of new measuring cells as well as electronic configurations on the basis of the partial certification IBExU10ATEX1026 U incl. its Additions.

The table is added as follows:

Name	Type	Electronic-module	Measuring cell
DMP 334	DMU	ELMO-STA ELV68 with EMV26 or ELV93 with EMV65	ST1 with ELV97
DMP 311	DMU	ELMO-STA ELV68 with EMV26	DSP4XX, ICS86, NPI15 with ELV66,ELV70, ELV86
DMP 321	DMU	ELMO-PRE ELI37 with EMV 52	DSP4XX, ICS86, NPI15, ST1 with ELV79, ELV67, ELI68, ELI69, ELI57, ELI63, ELI73
DMK 331*	DMU	ELMO-STA ELV68 with EMV26 or ELV93 with EMV65	DSK 516 with ELV 94

* Type with a different configuration already exists

- b) The devices can also be produced with the amplifier electronics ELV9 with EMV26 and the measuring cells without preamplifier. When using the electronics ELV9 the same safety limit values shall be as in the previous ELMO-STA-modules.
- c) For the devices DX19-DMP331 and DX19-DMP333 with fixed-laid cable the use was extended up to a lower temperature range to -40 ° C.
- d) The devices also fulfil the requirements of the current standard series EN 60079-0:2012.
- [6] **Test Report**
The proof of the explosion protection of the equipment stated under [2] is documented in the Test Report IB-13-3-256 of 22 January 2014. The test documents are part of the test report.





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[7] Test result

IBExU certifies that the equipment stated under [2] fulfils the Essential Health and Safety Requirements given in Annex II to the Directive 94/9/EC by compliance with EN 60079-0:2012, EN 60079-11:2012 and EN 60079-26:2007.

The equipment stated under [2] fulfils the requirements of type of protection Intrinsic Safety 'ia' for an electrical equipment of the Equipment Group II, Category 1G or 2G, Explosion Group IIC and Temperature Class T4 as well as Category 1D or 2D with a maximum surface temperature of 85 °C.

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

Non-metallic pressure connection	 II 2G Ex ia IIC T4 Gb
	 II 2D Ex ia IIIC T 85 °C Db
Metallic pressure connection	 II 1G Ex ia IIC T4 Ga
	 II 1D Ex ia IIIC T 85 °C Da

[8] Special conditions

The special conditions mentioned in the EC-Type Examination Certificate have to be taken into account furthermore.

This addition is only valid in combination with the EC-Type Examination Certificate IBExU10ATEX1068 X of 31 August 2010 and its Additions.

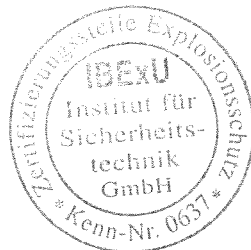
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Freiberg, 22 January 2014

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