



[1] **TYPE EXAMINATION CERTIFICATE - Translation**

[2] for non-electrical products of equipment-groups I and II,  
equipment-categories M2 and 2 plus products of equipment-category 3

[3] Type examination certificate number **IBExU13ATEXB007 X** | Issue 1

[4] Product (equipment / component):

**BoWex® - Couplings**

Design curve-tooth gear coupling M No. 003 with standard bush or conductive bush or GT bush,

Design BoWex® Elastic

- Flange couplings HE No. 055 (designs HE1, HE2, HE3 and HE4)
- Shaft couplings HEW No. 065 (designs HEW1, HEW2 and HEW Compact)
- Design SSR No. 008 with Seeger support rings with standard bush or conductive bush
- Design S.-St (special plug-in coupling with steel core and steel hub) with standard bush or conductive bush

[5] Manufacturer: KTR Systems GmbH

[6] Address: Carl-Zeiss-Straße 25  
48432 Rheine  
GERMANY

[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 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 Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014.

The examination and test results are recorded in the confidential test report IB-18-2-0020.

[9] Compliance with the essential health and safety requirements has been assured by compliance with:  
EN ISO 80079-36:2016 EN ISO 80079-37:2016 EN ISO/IEC 80079-38:2017  
except in respect of those requirements listed at item [18] of the schedule.

[10] If the sign "X" or "U" 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 type examination certificate relates only to the design of the specified equipment and not to specific items of equipment subsequently manufactured or supplied.

[12] The marking of the product shall include the following:

- Design M with standard bush (light), sizes M-14 and M-19
- Design S.-St with standard bush (light), sizes S14-St up to and including S24-St
- Design M with conductive bush (black) or GT bush, sizes M-14 and M-80
- Design SSR with Seeger support rings with conductive bush (black), sizes 24 SSR up to and including 125 SSR
- Design S.-St with conductive bush (black), sizes S14-St up to and including S55-St

	I	M2	Ex h I	Mb		
	II	2G	Ex h IIC	T6 ...	T4	Gb
	II	2D	Ex h IIIC	T80°C ...	T120°C	Db
			-30°C ≤ Ta ≤	+60°C ...	+100°C	

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- Design M with standard bush (light), sizes M-24 and M-65
- Design SSR with Seeger support rings with standard bush (light), sizes 24 SSR up to and including 45 SSR
- Design S..-St with standard bush (light), Sizes S28-St up to and including S55-St

Ex I	M2 Ex h I	Mb		
Ex II	2G Ex h IIB	T6 ...	T4	Gb
Ex II	2D Ex h IIIC	T80°C ...	T120°C	Db
	-30°C ≤ Ta ≤	+60°C ...	+100°C	

- BoWex® ELASTIC HE1, HE2, HE3, HE4

Ex II	2G Ex h IIB	T6 ...	T4	Gb
Ex II	2D Ex h IIIC	T80°C ...	T115°C	Db
	-30°C ≤ Ta ≤	+45°C ...	+80°C	

- BoWex® ELASTIC HEW, HEW COMPACT

Ex II	2G Ex h IIB	T6 ...	T4	Gb
Ex II	2D Ex h IIIC	T80°C ...	T115°C	Db
	-30°C ≤ Ta ≤	+45°C ...	+80°C	

- BoWex® Design GT

Ex I	M2 Ex h I	Mb		
Ex II	2G Ex h IIC	T6 ...	T4	Gb
Ex II	2D Ex h IIIC	T80°C ...	T120°C	Db
	-30°C ≤ Ta ≤	+60°C ...	+100°C	

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By order

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

Freiberg, 2020-03-18



[13]

## Schedule

[14]

**Certificate number IBExU13ATEXB007 X | Issue 1**

[15] **Description of product**

The BoWex® - Couplings are flexible shaft couplings for a form-locking torque transmission. They are particularly suitable to compensate axial, radial and angular shaft misalignments. The metallic hubs of the couplings are manufactured from sintered compacts (sintered steels), which do not contain light metals, or from stainless steels.

The coupling sleeves are made of polyamide (standard sleeve "light" of ultramide, conductive sleeve "black" of PA12C15).

Details on the design of the equipment or components can be found in the manufacturer's documentation and the test reports IB-13-4-014 and IB-18-2-0020.

*Variations compared to issue 0 of this certificate:*

*Variation 1*

Name and address of the manufacturer have changed.

*Variation 2*

The couplings were checked for compliance with the requirements of current standards.

[16] **Test report**

The test results are recorded in the confidential test report IB-18-2-0020 of 12.03.2020.

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

*Summary of the test results*

The equipment or components mentioned in [4] meet(s) the requirements of explosion protection for equipment of Equipment Group II, Categories 2D or 2G or M2 in type of protection "c" (constructional safety, marking with "Ex h") for use with explosive dust and gas atmospheres and for underground use.

[17] **Specific conditions of use**

1. The temperature marking indicates that for determining the maximum surface temperature occurring on the coupling a temperature increase  $\Delta T$  to the ambient or operating temperature  $T_a$  must be considered. The temperature increase  $\Delta T$  is stated in the operating instructions.
2. The BoWex® - Couplings may only be used, if their materials resist, under the respective operating conditions, the mechanical and/or chemical effects and corrosion, so that the explosion protection is always maintained.
3. The users must provide the BoWex® - Couplings with fixed covers in order to protect the couplings against falling objects. The covers can have openings for the necessary heat dissipation. When used in the mining industry (Equipment Group I), the covers of the couplings must be able to withstand higher mechanical loads than for use in other industries (Equipment Group II). Detailed information on the cover design is given in the operating / assembly instructions.  
The covers must be electrically conductive and included in the equipotential bonding.
4. When using the couplings in potentially explosive dust atmospheres, the users must make sure that no dust in dangerous quantities accumulates between cover and coupling. The coupling must not run in a dust accumulation.
5. All screws for fixing must be secured against self-loosening.
6. For use of the couplings in the mining industry, the requirements of the national mining regulations valid for the respective area of application must 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:

<i>Clause</i>	<i>Subject</i>
-	-

**[19] Drawings and Documents**

<i>Number</i>	<i>Sheet</i>	<i>Issue</i>	<i>Date</i>	<i>Description</i>
-	-	-	-	-

The documents are listed in the test report.

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Freiberg, 2020-03-18