CNEX-GLOBAL

[1] EU-TYPE EXAMINATION CERTIFICATE

[2] **Equipment or Protective System intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU**

[3] EU-Type Examination Certificate Number: **CNEX 23 ATEX 0035 X Issue 0**

[4] Equipment : **Explosion proof displacement sensor model GD series**

[5] Manufacturer : **Beijing Tebeifu Electronic Technology Co., Ltd.**

[6] Address : **2/F, Building 6, Yard 8, Liangshuihe Second Street, Beijing Economic and Technological Development Zone, Beijing, P.R. China**

[7] This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] CNEX-Global B.V., Notified Body number 2614, in accordance with Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in confidential Report No. **P23047IA-CS**

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018 **EN 60079-1:2014**

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 equipment or protective system is subject to specific conditions for use specified in the schedule to this certificate.

[11] This EU – Type examination certificate relates only to the design of the specified equipment or protective system. Further requirements of the Directive apply to the manufacture and supply of this equipment or protective system. These are not covered by this certificate.

[12] The marking of the equipment or protective system shall include the following:

I M2 Ex db I Mb or **II 2G Ex db IIC T5 Gb**

Certification officer : Hou Yandong

Date of issue : 2024-01-10

Signature:

CNEX-GLOBAL

[13]
[14]

SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE No.
CNEX 23 ATEX 0035 X Issue 0
Report: 23047

[15] Description of equipment:

The explosion proof displacement sensors model GD series, are position measurement sensors constructed in type of explosion protection flameproof enclosure 'db'. The main flameproof enclosure is made of stainless steel 304 with a minimum thickness of 3.0mm. The measuring rod is connected to the PCB board inside the flameproof enclosure and is encapsulated with the base. The flameproof enclosure is fitted with an ATEX certified cable gland with permanently attached cable.

Nomenclature for model GD series Explosion proof displacement sensor

GD	*	*	****M	*	*	*(*)	**	*
1	2	3	4	5	6	7	8	9

	Content	Interpretation	Code
1	Product code	Design sequence	GD
2	Shape	External dimensions Ø79×34 (with installation holes) External dimensions Ø88×56 (with flange) External dimensions Ø61×56 (no flange)	B C M
3	Installation mode	Squeeze Seal Installation Ø18h6 Mounting Thread Specifications M18×1.5	R M
4	Range	Defined scope of work (in mm)	eg.: 0100M
5	Outgoing mode	Straight Out Cable Side Out Cable	R S
6	Cable performance	High performance cable High temperature resistant cable	P T
7	Cable length	Cable length (in m, one or two digits)	eg.: 8, 10
8	Output mode	4~20mA 20~4mA 0~20mA 20~0mA 0~10V 10~0V 0~5V 5~0V	A0 A1 A2 A3 V0 V1 V2 V3
9	Number of magnetic rings	One magnetic ring Two magnetic rings	1 2

Electrical Data:

Rated voltage …..…… : 24 VDC

Operating current…….. : ≤ 80 mA

[13]
[14]

SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE No. CNEX 23 ATEX 0035 X Issue 0

Report: 23047

Mounting Instructions:

See manufacturer's instructions.

Installation Instructions:

See manufacturer's instructions.

Routine tests:

None required.

[16] Descriptive Documents:

Detailed in the Test Report Cover document. (**P23047IA-CS**).

[17] Specific Conditions for Use:

The ambient temperature range is limited to -20°C...+60°C.

The free end of the permanently attached cable shall be terminated in an suitable ATEX certified terminal box, or be terminated in a non-hazardous area.

[18] Essential Health and Safety Requirements:

The Essential Health and Safety Requirements are covered by the standards listed at item [9].

The manufacturer shall inform the notified body concerning all modifications to the technical documentation as described in ANNEX III to Directive 2014/34/EU of the European Parliament and the Council of 26 February 2014.

Additional Information:

The enclosure of the explosion proof displacement sensor model GD series, successfully passed the tests for the Ingress Protection Level IP68 (1.5m/2h) to EN 60529.

IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	**IECEx CNEX 23.0032X**	Page 1 of 4	Certificate history:
Status:	**Current**	Issue No: 0	
Date of Issue:	2024-01-10		
Applicant:	**Beijing Tebeifu Electronic Technology Co., Ltd.** 2/F, Building 6, Yard 8, Liangshuihe Second Street, Beijing Economic and Technological Development Zone Beijing **China**		
Equipment:	**Explosion proof displacement sensor model GD series**		
Optional accessory:			
Type of Protection:	**Ex db**		
Marking:	Ex db I Mb Ex db IIC T5 Gb		

Approved for issue on behalf of the IECEx Certification Body: **Hou Yandong**

Position: **Certification Officer**

Signature:
(for printed version)

Date:
(for printed version)

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.

Certificate issued by:

CNEX-Global B.V.
Utrechtseweg 310-B42,
6812 AR ARNHEM
Netherlands

IECEx Certificate of Conformity

Certificate No.: **IECEx CNEX 23.0032X**

Date of issue: 2024-01-10 Issue No: 0

Manufacturer: **Beijing Tebeifu Electronic Technology Co., Ltd.**
2/F, Building 6, Yard 8, Liangshuihe Second Street, Beijing Economic and Technological Development Zone
Beijing
China

Manufacturing locations: **Beijing Tebeifu Electronic Technology Co., Ltd.**
2/F, Building 6, Yard 8, Liangshuihe Second Street, Beijing Economic and Technological Development Zone
Beijing
China

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements.This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :
The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-1:2014 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

NL/CNEX/ExTR23.0032/00

Quality Assessment Report:

NL/CNEX/QAR23.0008/00

IECEx Certificate of Conformity

EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

The explosion proof displacement sensors model GD series, are position measurement sensors constructed in type of explosion protection flameproof enclosure ‘db’. The main flameproof enclosure is made of stainless steel 304 with a minimum thickness of 3.0mm. The measuring rod is connected to the PCB board inside the flameproof enclosure and is encapsulated with the base. The flameproof enclosure is fitted with an IECEx certified cable gland with permanently attached cable.

For nomenclature and other information, see the Annex to this certificate.

SPECIFIC CONDITIONS OF USE: YES as shown below:
The ambient temperature range is limited to -20°C...+60°C.

The free end of the permanently attached cable shall be terminated in an suitable IECEx certified terminal box, or be terminated in a non-hazardous area.

IECEx Certificate of Conformity

Additional information:
The enclosure of the explosion proof displacement sensor model GD series, successfully passed the tests for the Ingress Protection Level IP68 (1.5m/2h) to IEC 60529.

Annex:

P23047IA-CCA certificate IECEx CNEX23.0032X issue 0 Annex_1.pdf

Annex to
Certificate IECEx CNEX 23.0032X Issue 0

Equipment or Protective System:	**Explosion proof displacement sensor model GD series**
Applicant:	**Beijing Tebeifu Electronic Technology Co., Ltd.**
Address:	**2/F, Building 6, Yard 8, Liangshuihe Second Street, Beijing Economic and Technological Development Zone, Beijing, P.R. China**

Electrical Data:
Rated voltage …..…… : 24 VDC
Operating current…….. : ≤ 80 mA

Descriptive Documents:
Detailed in the Test Report Cover document. (ref. P23047IA-CS).

Mounting Instructions:
See manufacturer's instructions.

Installation Instructions:
See manufacturer's instructions.

Routine tests:
None required

Annex to
Certificate IECEx CNEX 23.0032X Issue 0

Nomenclature:

GD	*	*	****M	*	*	*(*)	**	*
1	2	3	4	5	6	7	8	9

	Content	Interpretation	Code
1	Product code	Design sequence	GD
2	Shape	External dimensions Ø79×34(with installation holes) External dimensions Ø88×56(with flange) External dimensions Ø61×56(no flange)	B C M
3	Installation mode	Squeeze Seal Installation Ø18h6 Mounting Thread Specifications M18×1.5	R M
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6	Cable performance	High performance cable High temperature resistant cable	P T
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8	Output mode	4~20mA 20~4mA 0~20mA 20~0mA 0~10V 10~0V 0~5V 5~0V	A0 A1 A2 A3 V0 V1 V2 V3
9	Number of magnetic rings	One magnetic ring Two magnetic rings	1 2

Certificate – Сертификат – 證明書 – Certificat – 증명서 – شهادة

SIL

Functional Safety Certificate

No. 4V241202.BTEW061

Certificate's Holder: Beijing Tebeifu Electronic Technology Co., Ltd.
2/F, Building 6, Yard 8, Liangshuihe Second Street, Beijing Economic and Technological Development Zone, Beijing, China

Product: Explosion proof Displacement Sensor
Model(s): GD, CHR

Standard: Has been assessed per the relevant requirements of:
IEC 61508:2010 Parts 1-7

And meets requirements providing a level of integrity to:
Systematic Capability: SC 3 (SIL 3 Capable)
Random Capability: Type B Element
SIL 2 @ HFT= 0; SIL 3@ HFT=1; Route 1_H
PFD_{AVG} and Architecture Constraints must be verified for each application

* Safety Function:
Explosion proof displacement sensor is a high-precision absolute position measurement sensor using magnetic pulse principle, which can accurately measure displacement.
*Specific requirements:
The unit must be properly designed into a Safety Instrumented Function per the Safety Manual requirements.
* Is suitable to be safety function according to the description and the configuration defined in Annex I.

Verification Mark:

The Verification Mark can be affixed on the product. It is NOT permitted to alter the Verification Mark in any way

Remark: This SIL Verification of Compliance has been issued on a voluntary basis. ECM confirms that a Test Report is existent for the above listed product(s) and found to meet the requirements of above standards for application in safety related system up to Safety Level of **SIL 3**. The unit must be properly designed into a Safety Instrument Function as per the requirements in the Safety Manual. The Verification Mark shown above can be affixed on the product. It is NOT permitted to alter the Verification Mark in any way. In addition the Verification's Holder is NOT allowed to transfer the Verification to third parties. This certificate can be checked for validity at www.entecerma.it

Date of issue 02 December 2024

Expiry date 01 December 2029

For online check:

Approver
Ente Certificazione Macchine
Legal Representative
Luca Bedonni

Ente Certificazione Macchine
Via Cà Bella, 243 - 40053 Valsamoggia Loc. Castello di Serravalle (Bo) Italy
☎ +39.0516705141 🖷 +39.0516705156 ✉ info@entecerma.it 🌐 www.entecerma.it

Certificate – Сертификат – 證明書 – Certificat – 증명서 – شهادة

Annex I

No. 4V241202.BTEW061

1. SC 3 (SIL 3 Capability):
   The product has met the manufacturer design process requirements of safety integrity level (SIL) 3. These are intended to achieve sufficient integrity against systematic errors of design by the manufacturer.

2. A Safety Instrumented Function (SIF) designed with this product must not be used at a SIL level higher than stated.

3. Random Capability:
   The SIL imposed by the Architectural Constraints must be met for each element.

4. IEC 61508 Failure Rates in FIT*

Device	λ_{SD}	λ_{SU}	λ_{DD}	λ_{DU}	SFF
GD	0	39	801	53	94.0%
CHR	0	34	757	48	94.3%

*FIT = 1 failure/10^9 hours

5. The Safety Integrity Level (SIL) of an entire Safety Instrumented Function (SIF) must be verified via a calculation of PFD_{AVG} considering redundant architectures, proof test interval, proof test effectiveness, any automatic diagnostics, average repair time and the specific failure rates of all products included in the SIF. Each subsystem must be checked to assure compliance with minimum hardware fault tolerance (HFT) requirements.

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