

EU TYPE EXAMINATION CERTIFICATE

- [1] Equipment and protective systems intended for use in potentially explosive atmospheres. Directive 2014/34/EU (Rozporządzenie Ministra Rozwoju z dnia 06.06.2016r. Dz.U. z dnia 09.06.2016r. Poz. 817)
- [2] EU type examination certificate (module B):
KDB 04ATEX133X **1st edition**
- [3] Equipment:
The measuring head type DEX
- [4] Manufacturer:
GAZEX-DRZEWICKI Sp. j.
- [5] Address:
ul. Baletowa 16, 02-867 Warszawa, POLAND
- [6] The equipment or protective system and any acceptable variations thereto are specified in the schedule to this certificate.
- [7] Główny Instytut Górnictwa, Notified Body no 1453 according to Directive 2014/34/EU of February 26, 2014, approves that the equipment or protective system specified in this certificate has been found to comply with the essential health and safety requirements for the design and construction of equipment and protective systems intended for use in potentially explosive atmosphere given in Annex II to Directive 2014/34 /EU (Załącznik nr 2 Rozporządzenia Ministra Rozwoju z dnia 06.06.2016r. Dz.U. z dnia 09.06.2016r. Poz. 817). The results of the assessment and examinations as well as the list of agreed documentation are recorded in the confidential Report **KDB No 08.146-1 [T-5206/1]**
- [8] The essential health and safety requirements have been met by compliance with the requirements of the following standards:
EN IEC 60079-0:2018; EN 60079-1:2014; EN 60079-31:2014
- [9] If sign "X" is placed after the certificate number, this means the special conditions of use set out in the schedule to this certificate.
- [10] This EU type examination certificate relates only to the construction, assessment and testing of the specified product in accordance with Directive 2014/34 /EU (Rozporządzenie Ministra Rozwoju z dnia 06.06.2016r. Dz.U. z dnia 09.06.2016r. Poz. 817). The certificate shall not cover the remaining requirements of the Directive regarding the manufacturing process and placing the equipment or protective system on the market.
- [11] The marking of the equipment is included in the descriptive part of the certificate.
- [12]



KDBEX

inż. Andrzej TRZĘBACZEWSKI

ATEX Certification
Expert



Główny Instytut Górnictwa
KIEROWNIK
Jednostka Oceny Zdolności
dr inż. Dariusz Stęfaniak

Date of issue: **31 May 2021**

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Jednostka Oceny Zdolności, 43-190 Mikołów, ul. Podleska 72, www.gigcert.com
Certification Body accredited by PCA [Polish Centre for Accreditation], No AC038.

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[14]

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[15] Description:

The measuring heads type DEX are designed to detect and measure concentrations of explosive, toxic gases, flammable liquid vapours and oxygen. The construction of the head is a flameproof enclosure, inside which electronic circuits and gasometric sensor are mounted. Catalytic, semiconductor, infrared and electrochemical sensors, among others, are used as measuring elements.

Letter-digit designations of individual versions of the DEX head have been created according to the following scheme:

Xn-YY-ZZZ

where:

X - a single letter defining the basic functionality of the DEX head and the type of electrical connection between the DEX head and the MD... power supply and control module. This letter does not apply to the explosion-proof properties of a given version of the DEX head. The symbols used are shown below:

F - threshold DEX head, 4-wire connection, open collector OC type interface,

A - threshold DEX head, 3-wire connection, 4-20 mA interface,

P - measuring DEX head, 3-wire connection, 4-20 mA interface,

D - threshold or/and measuring DEX head, number of wires appropriate to the interface used, digital interface.

n - single digit specifying the temperature class of the DEX head as a group II device:

4 - temperature class T4,

6 - temperature class T6.

YY - one or two letters specifying the specific properties of a given version. This part of the version designation may also be omitted. The symbols used are shown below:

S - elements of flameproof enclosure of the DEX head made of stainless steel,

HT - extended range of permissible ambient temperatures of the DEX head: $-30^{\circ}\text{C} \leq T_a \leq +80^{\circ}\text{C}$,

part of the designation was omitted - elements of the flameproof enclosure of the DEX head made of nickel-plated brass or aluminum alloy, the range of the permissible ambient temperature of the DEX head: $-30^{\circ}\text{C} \leq T_a \leq +50^{\circ}\text{C}$.

ZZZ - one, two or three letters. The first letter identifies a subgroup of Group II:

B - subgroup IIB,

C - subgroup IIC.



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Subsequent letters can form one of the following character strings:

no letters - DEX head of group II, cable gland with "db" explosion protection (group II) with an elastomer sealing ring,





M - DEX head of group II, cable gland with "db" explosion protection (group II), in which individual cores are sealed with hardening sealing compound,

G - DEX head of group II and III, cable gland with "db" (group II) and "tb" (group III) explosion protection with an elastomer sealing ring,

MG - DEX head of group I, II, and III, cable gland with "db" (group I and II) and "tb" (group III) explosion protection, in which individual cores are sealed with hardening sealing compound.

The list of DEX measuring head versions with their markings is presented in the table below:






Table 1.

| Version | Marking | Degree of protection |
|--|---|----------------------|
| F6-B A6-B P6-B D6-B F6-BM A6-BM P6-BM D6-BM |  II 2G Ex db IIB T6 Gb | IP65/IP6X |
| F6-BG A6-BG P6-BG D6-BG |  II 2G Ex db IIB T6 Gb II 2D Ex tb IIIC T70°C Db | IP65 |
| F6-BMG A6-BMG P6-BMG D6-BMG |  I M2 Ex db I Mb II 2G Ex db IIB T6 Gb II 2D Ex tb IIIC T70°C Db | IP65 |
| F6-C A6-C P6-C D6-C F6-CM A6-CM P6-CM D6-CM |  II 2G Ex db IIC T6 Gb | IP65/IP6X |



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| | | |
|--|--|-----------|
| F6-CG A6-CG P6-CG D6-CG |  II 2G Ex db IIC T6 Gb II 2D Ex tb IIIC T70°C Db | IP65 |
| F6-CMG A6-CMG P6-CMG D6-CMG |  I M2 Ex db I Mb II 2G Ex db IIC T6 Gb II 2D Ex tb IIIC T70°C Db | IP65 |
| F4-B A4-B P4-B D4-B F4-BM A4-BM P4-BM D4-BM F4-HT-B A4-HT-B P4-HT-B D4-HT-B F4-HT-BM A4-HT-BM P4-HT-BM D4-HT-BM |  II 2G Ex db IIB T4 Gb | IP65/IP6X |
| F4-BG A4-BG P4-BG D4-BG F4-HT-BG A4-HT-BG P4-HT-BG D4-HT-BG |  II 2G Ex db IIB T4 Gb II 2D Ex tb IIIC T120°C Db | IP65 |
| F4-BMG A4-BMG P4-BMG D4-BMG F4-HT-BMG A4-HT-BMG P4-HT-BMG D4-HT-BMG |  I M2 Ex db I Mb II 2G Ex db IIB T4 Gb II 2D Ex tb IIIC T120°C Db | IP65 |



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| | | |
|--|---|------------------|
| F4-C A4-C P4-C D4-C F4-CM A4-CM P4-CM D4-CM F4-S-C A4-S-C P4-S-C D4-S-C F4-S-CM A4-S-CM P4-S-CM D4-S-CM F4-HT-C A4-HT-C P4-HT-C D4-HT-C F4-HT-CM A4-HT-CM P4-HT-CM D4-HT-CM |  II 2G Ex db IIC T4 Gb | IP65/IP6X |
| F4-CG A4-CG P4-CG D4-CG F4-S-CG A4-S-CG P4-S-CG D4-S-CG F4-HT-CG A4-HT-CG P4-HT-CG D4-HT-CG |  II 2G Ex db IIC T4 Gb II 2D Ex tb IIIC T120°C Db | IP65 |



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| | | |
|--|--|------|
| F4-CMG A4-CMG P4-CMG D4-CMG F4-S-CMG A4-S-CMG P4-S-CMG D4-S-CMG F4-HT-CMG A4-HT-CMG P4-HT-CMG D4-HT-CMG | I M2 Ex db I Mb II 2G Ex db IIC T4 Gb II 2D Ex tb IIIC T120°C Db | IP65 |
|--|--|------|

Technical parameters:

Rated supply voltage U_N : 9 V
 Supply voltage U_{max} : 15 V
 Nominal power consumption P_N : 2 W

Degree of protection: Depending on the version of the head
 - presented in table 1.



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Parameters selected depending on the version of the type DEX measuring head:
Table 2.

| Ambient temperature Ta | Maximum power Pmax | Version of the DEX head | | |
|------------------------|--------------------|--|--|--|
| -30°C ÷ +50°C | 2 W | F6-B A6-B P6-B D6-B F6-BG A6-BG P6-BG D6-BG F6-BM A6-BM P6-BM D6-BM | F6-BMG A6-BMG P6-BMG D6-BMG F6-C A6-C P6-C D6-C F6-CG A6-CG P6-CG D6-CG | F6-CM A6-CM P6-CM D6-CM F6-CMG A6-CMG P6-CMG D6-CMG |
| | 6W | F4-S-C A4-S-C P4-S-C D4-S-C F4-S-CG A4-S-CG P4-S-CG D4-S-CG | | F4-S-CM A4-S-CM P4-S-CM D4-S-CM F4-S-CMG A4-S-CMG P4-S-CMG D4-S-CMG |
| | 12W | F4-B A4-B P4-B D4-B F4-BG A4-BG P4-BG D4-BG F4-BM A4-BM P4-BM D4-BM | F4-BMG A4-BMG P4-BMG D4-BMG F4-C A4-C P4-C D4-C F4-CG A4-CG P4-CG D4-CG | F4-CM A4-CM P4-CM D4-CM F4-CMG A4-CMG P4-CMG D4-CMG |
| -30°C ÷ +80°C | 5,5 W | F4-HT-B A4-HT-B P4-HT-B D4-HT-B F4-HT-BG A4-HT-BG P4-HT-BG D4-HT-BG F4-HT-BM A4-HT-BM P4-HT-BM D4-HT-BM | F4-HT-BMG A4-HT-BMG P4-HT-BMG D4-HT-BMG F4-HT-C A4-HT-C P4-HT-C D4-HT-C F4-HT-CG A4-HT-CG P4-HT-CG D4-HT-CG | F4-HT-CM A4-HT-CM P4-HT-CM D4-HT-CM F4-HT-CMG A4-HT-CMG P4-HT-CMG D4-HT-CMG |





[16] Test Report:

"ATEX assessment report" KDB No 08.146-1

[17] Special conditions of use:

- For DEX heads designed for operation at a maximum ambient temperature of 80°C, a cable with a maximum service temperature of not less than 110°C should be selected.
- In case of DEX head located in zone 21 or 22, where the risk of combustible dust explosion exists, the external plastic parts should be cleaned with a damp cloth with addition of antistatic agents.

[18] Essential health and safety requirements:

Met by fulfilling the requirements of the following standards:

| | |
|---------------------|-----------------------------|
| EN IEC 60079-0:2018 | (PN-EN IEC 60079-0:2018-09) |
| EN 60079-1:2014 | (PN-EN 60079-1:2014-12) |
| EN 60079-31:2014 | (PN-EN 60079-31:2014-10) |

Document history:

- EC type examination certificate KDB 04ATEX133X edition 0 of September 21, 2004 with additions, initial certification.

- EU type examination certificate KDB 04ATEX133X edition 1st of May 31, 2021 replaces EC type examination certificate KDB 04ATEX133X edition 0 of September 21, 2004.

Changes have been made to the design of the device. The applicability has been extended.

