

- [1] **TYPE EXAMINATION CERTIFICATE**
- [2] **Directive 2014/34/EU**
Equipment and protective systems intended for use in potentially
potentially explosive atmospheres.
- [3] Type Examination Certificate Number ACE24ATEX013X Rev00
- [4] Product Negative Temperature Coefficient (NTC) sensor with related Zener barrier
- [5] Manufacturer Qingdao Haier Biomedical Co., Ltd.
- [6] Address No.280 Fengyuan Road, High-tech Zone, 266111 Qingdao, Shandong, P.R. China
- [7] This equipment or protective system and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.
- [8] Advanced Consulting and Engineering Iberia SL (A.C.&E. Iberia S.L.), certifies based on a voluntary assessment that this equipment 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 of the Directive 2014/34/EU.
The examination and test results are recorded in the confidential Report nº. EX_EXI003_24_24-1466
- [9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 60079-0 2018: Explosive atmospheres — Part 0: Equipment — General requirements
EN 60079-11: 2013 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
- [10] If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Special Conditions for Use specified in the point 17 of 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.
- [12] The marking of the equipment or protective system shall include the following:



II 3G Ex ic IIC T6 Gc

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Date: 28/10/2024



**Advanced Consulting and Engineering
Iberia SL**

Matteo Marconi, CEO

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[13]

SCHEDULE

[14]

TYPE EXAMINATION CERTIFICATE No: ACE24ATEX013X Rev00

[15]

Description of equipment

The Negative Temperature Coefficient (NTC) sensor is defined as simple apparatus and is supplied by the intrinsically safe barrier which is produced by the manufacturer, and has intrinsically safe outputs. The I.S. barrier circuits is mounted in the safe area.

The storage area inside the freezer has a non-metallic lining.

The NTC sensor is mounted completely in the Zone 2 area, only the cables connected to this part pass between the Zone 2 and non-hazardous areas. The cables are sealed at the boundary of the Zone 2 area to ensure segregation from the non-hazardous area.

The NTC and related Zener barrier are mounted on a laboratory freezer.
The inner temperature range inside the storage area of the freezers is -10°C to -25°C .

Negative Temperature Coefficient (NTC) sensor's model DW-30L298FL

SIMPLE APPARATUS

Parameters:

$R_{25}=10\text{K}\Omega\pm 1\%$;

Temperature range -50°C ; $+85^{\circ}\text{C}$;

Umidity: $<100\%$;

Cable lenght $L = 1,8 \text{ m}$.

Tension: 5V.

Current: less than 0,2 A.

Zener Barrier 4-0274000056-2

Um of I.S. barrier is 5V

Resistors: R1, R2 $10\text{ohm}, \pm 5\%$, 1W

Fuses:

Diodes: ZD1, ZD2 -

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[13] **SCHEDULE**

[14] TYPE EXAMINATION CERTIFICATE No: ACE24ATEX013X Rev00

[16] Test documents are listed in the test report nº
EX_EXI003_24_24-1466

[17] Special conditions for safe use
1.The distance between barrier connection wires for NTCs and connector and the barrier input wires and connector shall be at least 50mm. This shall be ensured by the manufacturer.
2.The electrical clearance between the barrier connection wires for NTCs and connector, and all other conductive parts except earthing parts shall be at least 0.4mm for ic. This shall be ensured by the manufacturer.

[18] Essential Health and Safety Requirements
Met by compliance with the standards mentioned in [9]

[19] Documents and technical datasheets:

Title	Object	Revision	Date
Schematics&BOM for Safety Barrier	4-027400056-1	B	2017/08/14
PCB Drawing for Safety Barrier	4-027400056-2	B	2017/08/14
0270800240GF	DW-30L298FL	B	2023/03/28

The documents above-mentioned are strictly confidential and they are of only use of authorities.
A copy of the documents are saved by A.C.&E. Iberia S.L.

[20] Certificate History

Number of certificate	Rev.	Comments	Date
ACE24ATEX013X	00	First issue	28/10/2024

Date: 28/10/2024



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