



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 QPS 19.0033X	Page 1 of 6	<u>Certificate history:</u>
Status:	Current	Issue No: 2	Issue 1 (2020-09-10) Issue 0 (2020-01-20)
Date of Issue:	2023-03-24		
Applicant:	Daily Thermetrics Corp. 5700 Hartsdale Drive Houston, TX 77036 United States of America		
Equipment:	310HZ, 310FHZ and 310BHZ Industrial Sensors		
Optional accessory:			
Type of Protection:	Flameproof "d"		
Marking:	IECEX QPS 19.0033X Ex db IIC T6 ... T4 Gb T _{amb} = -40 °C to +80 °C		

Approved for issue on behalf of the IECEx
Certification Body:

D, Adams P.Eng.

Position:

Manager, Hazardous Locations Department [Ex Equipment]

Signature:
(for printed version)

Date:
(for printed version)

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Certificate issued by:

QPS
Evaluation Services Inc.
81 Kelfield St
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Toronto, Ontario M9W 5A3
Canada





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Manufacturer: **Daily Thermetrics Corp.**
5700 Hartsdale Drive
Houston, TX 77036
United States of America

Manufacturing
locations:

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 60079-1:2014-06](#) 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 Reports:

[CA/QPS/ExTR19.0029/00](#)

[CA/QPS/ExTR19.0029/01](#)

[CA/QPS/ExTR19.0029/02](#)

Quality Assessment Report:

[US/UL/QAR11.0003/07](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

Industrial Sensor Assembly 310HZ, 310FHZ and 310BHZ

Industrial Sensor Assembly 310HZ, 310FHZ and 310BHZ Series consists of parts and components as follow:

The model nomenclature for the Industrial Sensor Assembly 310HZ, 310FHZ and 310BHZ Series are defined by drawing no. MODELS 310HZ & 310FHZ SCHEDULE DRAWING, and is given on the following pages: page 3 of 20, page 4 of 20, page 5 of 20, page 8 of 20 and page 20 of 20.

Industrial Sensor Assembly of 310HZ, 310FHZ and 310BHZ Series must be either connected to a SELV or PELV system, or directly connected to an apparatus compliant with IEC 60950 series, IEC 610101-1, or equivalent.

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. Grounded junctions within models 310HZ, 310FHZ and 310BHZ are not capable of withstanding the 500 V rms between the measurement circuit and ground. This must be taken into account during installation.
2. Models 310HZ, 310FHZ and 310BHZ must be either connected to a SELV or PELV system, or directly connected to an apparatus compliant with IEC 60950 series, IEC 610101-1, or equivalent.
3. The maximum pressure and temperature limits are given in the IOM. These values shall not be exceeded. Specifically, during normal operation, the maximum operating temperatures of any component of the sensor assembly must not exceed the designed temperature indicated in the IOM. The probe must not be exposed to a pressure higher than indicated in the IOM.
4. The cable glands must be properly selected to suit the final application of the assembly and/or to maintain the protection method marked thereon.
5. For an ambient conditions over 70 °C and up to 80 °C, a cable with thermostability of its insulation of minimum 80 °C / 90 °C shall be used. Special attention shall be given to the source of heating the equipment is intended to be attached to, because it can contribute such to elevate the local ambient temperature for the cable. The end user shall read and follow the User Manual where this concern is given them to attention.
6. In the case when a generic enclosure model is used (different from the listed connection enclosure models), the equipment must be assembled with a certified 'Ex db IIC' enclosure, approved to the edition(s) of standard(s) that are, at the time of placing the assembly on the market, currently in use. The enclosure shall be of simple geometry and with a volume < 500 cm³.
7. Product rating is given on the marking plate of each individual assembly as well as in the IOM and shall be respected.



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Equipment (continued):

- Terminal block, if used, is of ordinary location type constructed from ceramic, porcelain, or Bakelite.
- Fitting/Nipple of various models (Hex nipple type w/ lagging and w/ spring loading, Hex nipple type with compression fitting, Hex nipple welded, Compression fitting), which forms a threaded joint with the connection enclosure and a cylindrical joint with the base probe;
- An optional thermowell.

Sensor and surface temperature product lines covered in this certification process:

Model	Description	IEC Marking
310HZ-1	Industrial Sensor Assembly with Flameproof Nipple	Ex db IIC Gb T6...T4, IP66 Ta= -40 °C to +80 °C
310HZ-2	Industrial Sensor Assembly with Flameproof Spring-Loaded Nipple	Ex db IIC Gb T6...T4, IP66 Ta= -40 °C to +80 °C
310HZ-3	Industrial Sensor Assembly with Flameproof Nipple with Temperature Lagging	Ex db IIC Gb T6...T4, IP66 Ta= -40 °C to +80 °C
310HZ-4	Industrial Sensor Assembly with Flameproof Spring-Loading Nipple with Temperature Lagging	Ex db IIC Gb T6...T4, IP66 Ta= -40 °C to +80 °C
310HZ-5	Industrial Sensor Assembly with Flameproof Nipple and Compression Fitting Seal	Ex db IIC Gb T6...T4, IP66 Ta= -40 °C to +80 °C
310HZ-6	Industrial Sensor Assembly with Flameproof Nipple, Compression Seal and Union	Ex db IIC Gb T6...T4, IP66 Ta= -40 °C to +80 °C
310HZ-7	Industrial Sensor Assembly with Flameproof Nipple, Compression Seal, Union and Pipe Union	Ex db IIC Gb T6...T4, IP66 Ta= -40 °C to +80 °C
310HZ-8	Industrial Sensor Assembly with Flameproof Nipple Seal Welded	Ex db IIC Gb T6...T4, IP66 Ta= -40 °C to +80 °C
310HZ-9	Industrial Sensor Assembly with Flameproof Nipple Seal Welded and Union	Ex db IIC Gb T6...T4, IP66 Ta= -40 °C to +80 °C
310HZ-10	Industrial Sensor Assembly with Flameproof Nipple Seal Welded, Union and Pipe Nipple	Ex db IIC Gb T6...T4, IP66 Ta= -40 °C to +80 °C
310FHZ-1	Industrial Sensor Assembly with Flameproof Nipple Compression Fitting	Ex db IIC Gb T6...T4, IP66 Ta= -40 °C to +80 °C
310HZ-11	Industrial Sensor Assembly with Flameproof Nipple and Union	Ex db IIC Gb T6...T4, IP66 Ta= -40 °C to +80 °C
310HZ-12	Industrial Sensor Assembly with Flameproof Nipple Spring Loaded Nipple and Union	Ex db IIC Gb T6...T4, IP66 Ta= -40 °C to +80 °C
310BHZ	Industrial Sensor Assembly with Flameproof Bushing	Ex db IIC Gb T6...T4, IP66 Ta= -40 °C to +80 °C

Table 1 - Sensor and Surface Temperature Product Lines HAZLOC Matrix

The model nomenclature for the Industrial Sensor Assembly 310HZ, 310FHZ and 310BHZ Series are defined by drawing no. MODELS 310HZ & 310FHZ SCHEDULE DRAWING, and is given on the following pages: page 3 of 20, page 4 of 20, page 5 of 20, page 8 of 20 and page 20 of 20.

Industrial Sensor Assembly of 310HZ, 310FHZ and 310BHZ Series must be either connected to a SELV or PELV system, or directly connected to an apparatus compliant with IEC 60950 series, IEC 610101-1, or equivalent.

While thermocouples and RTDs are passive sensors that do not generate heat, they may transfer heat from process-wetted areas. Rated components such as the epoxy seal or insulation must remain below maximum allowable temperatures.



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Proper lagging extension is determined by using maximum operating conditions, shown in Table 4. The user may verify proper lagging extension via temperature measurement after installation, while no hazardous gas is present.

Epoxy End Seal Model and Manufacturer	Continuous Operating Temperature (COT)	Service Temperature Range	Minimum Distance from Process Temp (Tp) -40°F < Tp < 572°F -40°C < Tp < 300°C	Minimum Distance from Process Temp (Tp) -273°F < Tp < -40°F or 572°F < Tp < 2100°F, -169°C < Tp < -40°C or 300°C < Tp < 1149°C
2651-40FR with Catalyst 9 by STYCAST	-40 °C to +130 °C	-40 °C to +110 °C	3.0 inch [76.2 mm]	10.0 inch [254.0 mm]
EP1340 by RESINLAB	-40 °C to +150 °C	-40 °C to +130 °C	3.0 inch [76.2 mm]	10.0 inch [254.0 mm]
EP1330 by RESINLAB	-40 °C to +150 °C	-40 °C to +130 °C	3.0 inch [76.2 mm]	10.0 inch [254.0 mm]
Duralco 4703 by CONTRONICS Corp.	-40 °C to +343 °C	-40 °C to +130 °C	3.0 inch [76.2 mm]	10.0 inch [254.0 mm]
EP 13970LC by RESINLAB	-40 °C to +150 °C	-40 °C to +130 °C	3.0 inch [76.2 mm]	10.0 inch [254.0 mm]

Table 4 - Temperature Ratings for Epoxy End Seals

Extension / Lead Wire				
Size	Insulation Thickness	Insulation Material	COT	Service Temperature Range
16 - 24 AWG	0.20 mm	Teflon	-200 °C to +200 °C	-40 °C to +130 °C

Table 5 - Temperature Ratings for Non-Metallic Components



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

- Expansion of sensor (base probe) sheath options by adding one new size of 3.00 mm on ODprobe
- Adding an alternate epoxy (Resinlab EP13970LC)
- Adding 310HZ variant 310BHZ with bushing flame path