QPS Evaluation Services Inc

(1) EU-Type Examination Certificate

(2) **Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014**

(3) EU-Type Examination Certificate Number: **QPS 20ATEX1002X** Issue Number: 1

(4) Product: Industrial Sensor Assembly 310HZ and 310FHZ Series

Model reference: 310HZ-1, 310HZ-2, 310HZ-3, 310HZ-4, 310HZ-5, 310HZ-6, 310HZ 7, 310HZ-8, 310HZ-9, 310HZ-0, and 310FHZ, 310HZ-11, 310HZ-12,310BHZ

The complete model nomenclature and description are (19) Remarks and additional information below

(5) Manufacturer: Daily Thermetrics Corporation

(6) Address: 5700 Hartsdale Drive
Houston, TX
77036 USA

(7) This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) QPS Evaluation Services Inc. 81 Kelfield St., Units 7-9, Toronto, ON M9W 5A3, Canada, Notified Body Number 2900, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

(9) The examination and test results are recorded in confidential test report number ATX1427-1 (Ex d)
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 product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive 2014/34/EU article 13 apply to the manufacturing process and supply of this product. These are separately certified and not covered by this certificate.

Date of certification: 21 March 2023

Dave Adams
Certification Manager
QPS Evaluation Services Inc.

(13) # SCHEDULE

(14) **to EU-Type Examination Certificate QPS 20ATEX1002X** Issue No. **1**

(12) The marking of the product shall include the following:

II 2 G

Ex db IIC T6 … T4 Gb, IP66
Ta= -40 °C to +80 °C
Umax = 42.5 V dc SELV or PELV

(15) **Description and Electrical data**

Industrial Sensor Assembly 310HZ and 310FHZ Series is an assembly of some already approved components and parts. Some components are specifically produced for the application with this assembly only. It consists of one TC or RTD probe fitted together with one connection box by using a compression fitting or a range of nipples that are suitable for such application.

(16) **Report Number:** ATX1427-1 (Ex d)

(13) # SCHEDULE

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(17) **Specific conditions of use:**
The following conditions relate to safe installation and/or use of the equipment.

1. Grounded junctions within models 310HZ and 310FHZ 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 and 310FHZ 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 assembly is tagged with design pressure and temperature. 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 on the product. The probe must not be exposed to a pressure higher than indicated on the product.
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 thermostabilty 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.
8. If there is a risk of impact at the installation site, the assembly must be either additionally guarded or located so that it is out of reach of personnel and free-falling objects**.**

(18) **Essential Health and Safety Requirements**

Met by compliance with the requirements mentioned in item 9.

(13) # SCHEDULE

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(19) **Remarks and additional information:**

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

- Base TC or RTD Probe, manufactured by Daily Thermetrics Corp., Model 210HZ, ATEX: II 2G Ex db IIC Gb, Umax = 30 V dc, QPS 20ATEX0001U; IECEx: Ex db IIC Gb, Umax = 30 V dc, IECEx QPS 19.0023U;

- Connection Enclosure that can be:
either

a) Pushna International Inc. – USA, 1010, 1014, 1016 Series Housings,
ATEX: II 2G Ex d IIC Gb / II 2D Ex tD IP68 FM08ATEX0010U, EN 60079-0:2009 / EN 60079-1:2007 / EN 60079-31:2009;
IEC: Ex d IIC Gb / Ex tb IIIC Db; IECEx FMG 11.0029U, IEC 60079-0:2007 / IEC 60079-1:2007 / IEC 60079-31:2008,

or

b) Limatherm S.A. – Poland, Connection head type XD-A** series,
ATEX: II 2G Ex d IIC / II 2D Ex tD IP68, FTZU03ATEX0074U, EN 60079-0:2012 / EN 60079-1:2014 / EN 60079-31:2014;
IEC: Ex d IIC Gb / Ex tb IIIC Db, IECEx FTZU 14.0003U, IEC 60079-0:2011 / IEC 60079-1:2014 / IEC 60079-31:2013.

- Transmitter, if used, can be of make and model as follow:

a) Rosemount Inc., model 248; Baseefa03ATEX0030X, II 1G Ex ia IIC T5/T6 Ga, IECEx BAS 07.0086X, Ex ia IIC T5/T6 Ga;

b) Rosemount Inc., model 644; Baseefa12ATEX0101X, II 1G Ex ia IIC T6…T4 Ga, IECEx BAS 12.0069X, Ex ia IIC T6…T4 Ga;

c) PR Electronics A/S, model 5337; Kema03ATEX1537, II 1G Ex ia IIC T6…T4 Ga, IECEx KEM 10.0083X, Ex ia IIC T6…T4 Ga.

NOTE: Transmitters are here only functional elements, and not protective in terms of explosion protection.

- 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.

Assemblies covered in this certification process:

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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 and 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 full model nomenclature for the Industrial Sensor Assembly 310HZ Series is defined by drawing no. DTC-310HZ, MODELS 310HZ, 310FHZ, and 301BHZ SCHEDULE DRAWING.

(13) # SCHEDULE

(14) **to EU-Type Examination Certificate QPS 20ATEX1002X** Issue No. **1**

Industrial Sensor Assembly of 310HZ and 310FHZ 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.
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.

Extension/lead wires

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

Epoxy seal:

Model and Manufacturer	COT	Service temperature range
2651-40FR with Catalyst 9 by STYCAST	-40°C to +130°C	-40°C to +130°C
EP1340 by RESINLAB	-40°C to +150°C	-40°C to +130°C
EP1330 by RESINLAB	-40°C to +150°C	-40°C to +130°C
Duralco 4703 by COTRONICS Corp.	-40°C to +343°C	-40°C to +130°C
EP1390LC by RESINLAB	-40°C to +150°C	-40°C to +130°C

(20) **Certificate history**

Issue 0 - Initial certificate.
Issue 1 - Expand the sensor (base probe) sheath options by adding one new size of 3.00 mm on OD probe, Adding an alternate epoxy (Resinlab EP13970LC), Adding a variant 310BHZ with bushing flame path