




EU Type Examination Certificate

Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

| | |
|---|--|
| Manufacturer | Daily Thermetrics Corporation |
| Address | 5700 Hartsdale Drive Houston, Texas 77036 USA |
| Equipment | 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 |
| Markings |  Ex db IIC T6 ... T4 Gb, IP66 Ta= -40 °C to +80 °C Umax = 42.5 V dc SELV or PELV |
| Description | The complete model nomenclature and description are given in ANNEX below |
| Conditions of manufacture | The following conditions are required of the manufacturing process for compliance with the certification. 1. Where the product incorporates certified parts or safety critical components the manufacturer shall ensure that any changes to those parts or components do not affect the compliance of the certified product that is the subject of this certificate. |
| Special Conditions for Safe Use (Conditions of Certification) | 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 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.
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.

Certificate Issue # 00

Certificate History Initial release

Associated Report ATX35603-5

The equipment is specified in the description of this certificate and the documents to which it refers.

QPS Europe BV, Berg en Dalseweg 122, 6522BW Nijmegen, Notified Body Number 2876, The Netherlands,, 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 equipment 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.

If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to conditions of safe use

This EU Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 2014/34/EU Article 13 apply to the manufacturer of the equipment or component and are separately certified.

Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

| Standard | Edition |
|----------------|---------|
| EN IEC 60079-0 | 2018 |
| EN 60079-1 | 2014 |

The following documents describe the equipment or component defined in this certificate:
Issue 00



Certificate Number
QPS 20ATEX1002X

| Drawing No | Sheets | Rev | Date | Title |
|----------------------|--------|-----|-----------------|--|
| DTC-310HZ | 16 | 1 | 7/19/2019 | MODELS 310HZ & 310FHZ SCHEDULE DRAWINGS |
| DTC-IOM-310HZ-HAZLOC | 31 | B | August 10, 2020 | Installation and Operating Manual in Accordance with Hazardous Area Sensor and Surface Temperature Measurement Product Lines Models: 310HZ, 310FHZ |

Issued By: Rob Kohuch

Signature: *Rob Kohuch* Date: January 29, 2021



ANNEX

Industrial Sensor Assembly 310HZ and 310FHZ Series is an assembly of some already approved components and parts and some parts that are specific 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 suitable for such application.

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

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

Table 1 - Sensor and Surface Temperature Product Lines HAZLOC Matrix

Model nomenclature for the Industrial Sensor Assembly 310HZ Series is as follows:



A - **B C D E** - **F** - **G H I** - **J K L M N**

The meaning of individual labels is as follow:

A – Model; B – extension type; C – enclosure head; D – conduit entry; E – instrument connection size; F – “M” dimension; G – calibration type; H – sensor type; I – upgrade to premium line; J – measuring junction; K – accuracy; L – sensor sheath diameter; M – sensor sheath material; N – calibration option

The full model nomenclature for the Industrial Sensor Assembly 310HZ Series is defined by drawing no. DTC-310HZ, MODELS 310HZ & 310FHZ SCHEDULE DRAWING, and is given on the following pages: page 3 of 16, page 4 of 16, page 5 of 16 and page 8 of 16.

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.

| 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 -273°F<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 [76.2mm] | 10.0 inch [254.0mm] |
| EP1340 by RESINLAB | -40°C to +150°C | -40°C to +130°C | 3.0 inch [76.2mm] | 10.0 inch [254.0mm] |
| EP1330 by RESINLAB | -40°C to +150°C | -40°C to +130°C | 3.0 inch [76.2mm] | 10.0 inch [254.0mm] |
| Duralco 4703 by CONTRONICS Corp. | -40°C to +343°C | -40°C to +130°C | 3.0 inch [76.2mm] | 10.0 inch [254.0mm] |

Table 4 - Temperature ratings for Epoxy End Seals



| Extension/Lead Wire | | | | |
|---------------------|----------------------|---------------------|------------------|---------------------------|
| Size | Insulation Thickness | Insulation Material | COT | Service Temperature Range |
| 16-24 AWG | .20 mm | Teflon | -200°C to +200°C | -40°C to 130°C |

Table 5 - Temperature ratings for Non-Metallic Components