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 EXV 19.0078X**	Page 1 of 4	Certificate history:
Status:	**Current**	Issue No: 2	Issue 1 (2022-03-16) Issue 0 (2019-11-26)
Date of Issue:	2023-03-03		
Applicant:	**Daily Thermetrics Corp.** 5700 Hartsdale Dr Houston, TX 77036 **United States of America**		
Equipment:	**Daily Thermetrics Temperature Sensors**		
Optional accessory:	N/A		
Type of Protection:	**Equipment protection by intrinsic safety 'i'**		
Marking:	Ex ia IIC T6...T1 Ga T_{amb} -40°C to +55°C		

Approved for issue on behalf of the IECEx Certification Body: **Sean Clarke CEng MSc FIET**

Position: **Certification Manager**

Signature:
(for printed version)

Date:
(for printed version)

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.

Certificate issued by:

ExVeritas Limited
Units 16-18 Abenbury Way
Wrexham Ind. Est.
Wrexham LL 139UZ
United Kingdom

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Certificate No.: **IECEx EXV 19.0078X** Page 2 of 4

Date of issue: 2023-03-03 Issue No: 2

Manufacturer: **Daily Thermetrics Corp.**
5700 Hartsdale Dr
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 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

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:

GB/EXV/ExTR19.0082/00 GB/EXV/ExTR22.0018/00 GB/EXV/ExTR23.0022/00

Quality Assessment Report:

US/UL/QAR11.0003/07

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EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

The Daily Thermetrics temperature probes are multipoint temperature measuring probes and come in both a Thermocouple and RTD version. These probes are supplied in the following different models; CT221, 210-TC, 210-RTD, 220-TC, 220-RTD, Model 210HZ and Model 220HZ.

Continued in Annex.

SPECIFIC CONDITIONS OF USE: YES as shown below:
A recapitulation of the following is included in the Annex.

- Models 210-TC and 220-TC with ground referenced (grounded) devices are not capable of withstanding the 500 Vrms between the measurement circuit and ground. This must be considered during installation, according to IEC 60079-14.
- The installer must confirm (by calculation or measuring) that the process service temperatures do not cause a temperature rise on the equipment in the hazardous area exceeding the values revealed in the table below.

Temperature class	Process temp. (°C)
T6	≤ 80
T5	≤95
T4	≤130
T3	≤195
T2	≤290
T1	≤440

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
Update of routine test to include d.c. voltage option.

Update of drawings to include new sensor sheath size options

Annex:

Certificate Annex IECEx EXV 19.0078X Issue 2.pdf

Description Continued:

General product information:

The Daily Thermetrics temperature probes are multipoint temperature measuring probes and come in both a Thermocouple and RTD version. These probes are supplied in the following different models; CT221, 210-TC, 210-RTD, 220-TC, 220-RTD, Model 210HZ and Model 220HZ.

Each of the above variants provide a different maximum number of measuring points and come in both a Thermocouple and RTD type. The different models can be supplied in different thermocouple types based on the temperature application. All variants provide the same design characteristics which are relied upon for safety.

The Thermocouple / RTD wires are insulated inside a solid MgO insulation with the positive and negative leads either being welded together at the end to not touch the sheath, for the TC Type, or terminated into the platinum element for the RTD type. The insulated thermocouple wires are housed within a stainless-steel sheath which is welded closed at the end. The extension lead wires are insulated with an armoured cable sheath. Models 210HZ and 220HZ are not insulated from the sheath.

Each probe is to be supplied by a single linear intrinsically safe barrier with the entity parameters detailed in Table 1. Temperature classification is assigned based on the process temperatures in accordance with the Table 2.

Parameter	RTD Value	TC Value
Ui (V)	30	30
Ii (mA)	101	101
Pi (mW)	750	750
Ci (pF/m)	127.5	85.8
Li (µH/m)	1.75	4.05
NOTE: "Ci" and "Li" correspond to the capacitance and inductance per meter for each individual circuit.		

Table 1 – Entity parameters

Temperature class	Process temperature (°C)
T6	≤ 80
T5	≤ 95
T4	≤ 130
T3	≤ 195
T2	≤ 290
T1	≤ 440

Table 2 – Temperature classification

Routine Tests:

Only for device models CT221, 210-TC, 210-RTD, 220-TC, and 220-RTD

Each completed temperature probe must be subjected to the dielectric strength tests in accordance with IEC 60079-11: 2011 clause 6.3.13 with the test voltage of 500 Vac or 700Vdc (with ≤3% peak-to-peak ripple) applied between intrinsically safe circuits and the frame of the equipment and also between individual intrinsically safe circuits for a minimum of 60 s.

"Specific Conditions of Use" / "Schedule of Limitations"

- Models 210-TC and 220-TC with ground referenced (grounded) devices are not capable of withstanding the 500 Vrms between the measurement circuit and ground. This must be considered during installation, according to IEC 60079-14.
- The installer must confirm (by calculation or measuring) that the process service temperatures do not cause a temperature rise on the equipment in the hazardous area exceeding the values revealed in the adjacent table.

Temperature class	Process temperature (°C)
T6	≤ 80
T5	≤ 95
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Manufacturer's documents:			
Title:	Drawing No.:	Rev	Date:
*INSTALLATION, OPERATION AND MAINTENANCE MANUAL	SENSOR IOM-R4	4	February 21, 2023
*SENSORS SCHEDULE DRAWINGS	DTC-ATEX/IEC-SENSOR	3	02/17/2023

*Note: An * is included before the title of documents that are new or revised.*