IECEx Certificate
of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Ex COMPONENT CERTIFICATE

Certificate No.:	IECEx QPS 19.0023U	Issue No: 0	
Status:	**Current**	Page 1 of 4	
Date of Issue:	**2019-07-19**		

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

Ex Component: **Base TC or RTD Probe**

This component is NOT intended to be used alone and requires additional consideration when incorporated into other equipment or systems for use in explosive atmospheres (refer to IEC 60079-0).

Type of Protection: **Flameproof "db", or Increase Safety "eb"**

Marking:

Ex db IIC Gb, or Ex eb IIC Gb   IP66

U_{max} = 30 V DC

*Approved for issue on behalf of the IECEx
Certification Body:*

D. Adams, P. Eng.

Position:

Manager, Hazardous Locations Department

Signature:
(for printed version)

Date:

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 the Official IECEx Website.

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Date of Issue: **2019-07-19**

Manufacturer: **Daily Thermetrics Corp.**
5700 Hartsdale Drive
Houston, TX 77036
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Additional Manufacturing location(s):

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 Component 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 Ex Component 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 : 2011
Edition:6.0

Explosive atmospheres - Part 0: General requirements

IEC 60079-1 : 2014-06
Edition:7.0

Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"

IEC 60079-7 : 2015
Edition:5.0

Explosive atmospheres – Part 7: Equipment protection by increased safety "e"

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the*

Standards listed above.

TEST & ASSESSMENT REPORTS:
A sample(s) of the Ex Component listed has successfully met the examination and test requirements as recorded in

Test Report:

CA/QPS/ExTR19.0023/00

Quality Assessment Report:

US/UL/QAR11.0003/05

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Schedule

Ex Component(s) covered by this certificate is described below:

The base probe models

- Model 210HZ: TC or RTD probe - Ex db or Ex eb component,

- Model 220HZ: TC or RTD probe with extension wire and optional conduit protection - Ex eb component, and

- Model CT221HZ: TC probe with mineral insulated (MI) cable, extension wire and optional conduit protection - Ex eb component

serves for the measurement of process fluid temperatures using TC's (Thermocouples) or RTD's (Resistance Temperature Detectors) encased in a metal sheath that is packed with MgO or MI insulation. The thermocouple or RTD wires pass through the MgO or MI insulation and, either exit out at an epoxy plug located at the end of the stainless steel tubular sheath where they are brazed to the extension/lead wires and insulated with a teflon insulation, or are brazed with the extension/lead wires inside a so called transition housing which is then potted with the epoxy. A flexible metal conduit is optional but when it is provided it is potted with the transition housing.

All models are designed to be able to have direct contact with pressures greater than atmospheric.

Thermocouples and RTD's are pasive sensors that do not generate heat by themselves, but can transfer heating or cooling from the process they are sensing.

Service temperatures for the two non-metallic materials: I) epoxy seal, and II) extension/lead wire insulation, and their COT values are as follow:

•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

•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

SCHEDULE OF LIMITATIONS:

•The Epoxy plug should be periodically examined for degradation. If any degradation is observed, the base probe shall be replaced.

•Metal sheath containing thermocouple and/or RTD wires and flexible metal conduit containing extension/lead wires must be protected against impact in final assembly.

•Epoxy plug as well as the extension/lead wires shall be away from the process fluid per manufacturer's instructions. Care must be given to insure that heat and/or cooling transfer does not interfere with the temperature rating of the epoxy seal and/or extension/lead wire insulation.

•When sensors are installed in direct contact with process fluid at pressure greater than atmospheric, the maximum allowable pressure shall be calculated on a case by case basis per manufacturer's instructions.

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•Grounded junctions are not isolated, so special considerations shall be given during installation.