



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

Certificate No.: IECEx SIR 18.0012X

Issue No: 0

Certificate history:

Issue No. 0 (2018-10-15)

Status: **Current**

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Date of Issue: **2018-10-15**

Applicant: **Delta Controls Corporation**
585 Fortson St.
Shreveport
Louisiana 71107
United States of America

Equipment: **Claus Thermal Reaction Furnace Thermocouple model HTX series**

Optional accessory:

Type of Protection: **Flameproof**

Marking:

Ex db IIB+H2 T2 Gb
Ta = -20°C to +70°C

Approved for issue on behalf of the IECEx
Certification Body:

Chris Ellaby

Position:

Deputy Certification Manager

Signature:

(for printed version)

Date:

2018-10-15

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](http://www.iecex.com).

Certificate issued by:

SIRA Certification Service
CSA Group
Unit 6, Hawarden Industrial Park
Hawarden, Deeside, CH5 3US
United Kingdom

sira
CERTIFICATION





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Manufacturer: **Delta Controls Corporation**
585 Fortson St.
Shreveport
Louisiana 71107
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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 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 apparatus 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 Explosive atmospheres - Part 0: General requirements
Edition:6.0

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 electrical 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 Report:

[GB/SIR/ExTR18.0184/00](#)

Quality Assessment Report:

[GB/SIR/QAR17.0014/00](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

Claus Thermal Reaction Furnace Thermocouple model HTX is designed to measure temperature via thermocouple. The flameproof assembly is interconnection of housing to cover, upper gas chamber to transition/lower gas chamber and transition/lower gas chamber to process flange connection. Gas chambers are made of 1117 OR 1141 carbon steel or A351 stainless steel. The process flange is made of A516-70 carbon steel or A240 316L SS and terminal housing is made of A351 stainless steel or 356 aluminum. Thermal well and thermocouple support is 99.8% ALUMINA. Housing consist of maximum 6 terminal blocks.

Refer to the Annexe for additional information.

SPECIFIC CONDITIONS OF USE: YES as shown below:

Refer to the Annexe.

Annex:

[IECEx SIR 18.0012 Issue 0 Annexe.pdf](#)

Annexe to: IECEx SIR 18.0012X Issue 0
Applicant: Delta Controls Corporation
Apparatus: Claus Thermal Reaction Furnace Thermocouple model HTX series



Equipment:

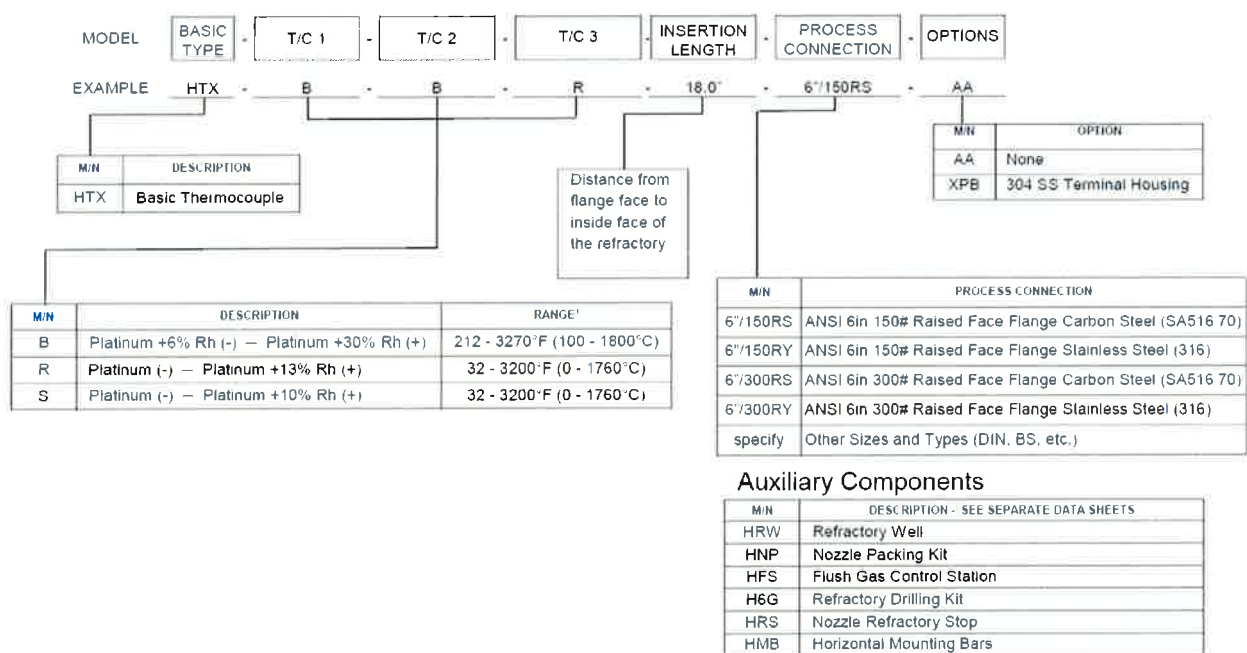
Claus Thermal Reaction Furnace Thermocouple model HTX is designed to measure temperature via thermocouple. The flameproof assembly is interconnection of housing to cover, upper gas chamber to transition/lower gas chamber and transition/lower gas chamber to process flange connection. Gas chambers are made of 1117 OR 1141 carbon steel or A351 stainless steel. The process flange is made of A516-70 carbon steel or A240 316L SS and terminal housing is made of A351 stainless steel or 356 aluminum. Thermal well and thermocouple support is 99.8% ALUMINA. Housing consist of maximum 6 terminal blocks.

Housing is secured by threaded cover and it has 2 threaded entries. One is for cable entry located on side of housing. The second is provided at the base of housing for connection to upper gas chamber.

Transition/lower gas chamber is secured by flange joint to upper gas chamber, it includes plugs provided for gas inlet and gas outlet. Transition/lower gas chamber includes maximum 6 terminal blocks and T/C element supported by follower and grafoil seal.

Transition/lower gas chamber is secured by flange joint to Process flange, and is provided with 1 5/8-16UN-CI2B entry for shipping tube connection. Transition/lower gas chamber includes T/C element supported by follower and grafoil seal.

HTX Series Model Code options:



Annexe to: IECEx SIR 18.0012X Issue 0
Applicant: Delta Controls Corporation
Apparatus: Claus Thermal Reaction Furnace
Thermocouple model HTX series



Specific Conditions of Use:

1. Flamepath joints are not intended to be repaired.
2. Unit must only be disassembled or repaired by manufacturer.
3. Flange temperature shall not exceed 230 °C.
4. Use Fasteners with M6 x 1mm 6g, 25 mm long 18-8 stainless steel with tolerance strength of ≥ 70 KPSI bolts. Fasteners incorporated in both lower and upper flange joints
5. Assembly shall be used with at least minimum 124.24 mm [4.89"] high steel Nozzle with maximum wall thickness 11.252 mm[0.443"] and maximum nozzle diameter 174.625 mm [6.875"].
6. Minimum 131.940 mm [5.1945"] refractory below the nozzle shall be provided by the end user. Thermowell shall not extend more than 25.1 mm [1"] beyond the refractory hot face.
7. Temperature insulating material provided by manufacturer shall be installed inside the nozzle. Refractory well provided by manufacturer shall be installed in the refractory bore hole."
8. This equipment shall be installed so that the flanged joints are not within 40 mm of a solid object that is not part of the equipment.
9. Terminal housing threaded conduit entries = $\frac{3}{4}$ " NPT
10. Threaded adaptors size for Nitrogen connection = $\frac{1}{8}$ " NPT

Conditions of Manufacture:

1. Grafoil bushing of assembly shall be subjected to routine pressure test of 3000 kPa (30 bar) for at least 10 s, as required by clause C.2.1.4 of IEC 60079-1:2014. There shall be no evidence of permanent deformation of joints or damage to enclosure.
2. Tighten the follower on grafoil bushing at 130 ft-lb torque.