



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 CSA 09.0010X Issue No: 4 Certificate history:
Status: **Current** Page 1 of 4 Issue No. 4 (2014-12-29)
Date of Issue: **2014-12-29** Issue No. 3 (2012-11-08)
Applicant: **Watlow Missouri Inc - dba Watlow Hannibal** Issue No. 2 (2010-10-27)
6 Industrial Loop Road Issue No. 1 (2010-07-14)
Hannibal, MO Issue No. 0 (2010-02-23)
USA
63401
United States of America

Electrical Apparatus: **Flange Immersion Heaters, Series F***
Optional accessory:

Type of Protection: **Ex d**

Marking:
Ex d IIC T1-T6 Gb
-60 C < Tamb < + 80 C

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

Dorin Stochitoiu

Position:

Technical Advisor

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

Certificate issued by:

CSA International
178 Rexdale Boulevard
Toronto, Ontario M9W 1R3
Canada
and
1707 - 94th Street
Edmonton, AB T6N 1E6
Canada





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Manufacturer: **Watlow Missouri - dba Watlow Hannibal**
6 Industrial Loop Road
Hannibal, MO
USA
63401
United States of America

Additional Manufacturing
location(s):

Watlow Electric Manufacturing (Shanghai) Co. Ltd
Building 5 , No 358 Shenxia Road Forward High Tech Zone,
Jia Ding Dist,
Shanghai
201818
China

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 electrical 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 : 2007-04 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:6

*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:

[CA/CSA/ExTR09.0016/00](#) [CA/CSA/ExTR09.0016/01](#) [CA/CSA/ExTR09.0016/02](#)
[CA/CSA/ExTR09.0016/03](#) [CA/CSA/ExTR09.0016/04](#)

Quality Assessment Report:

[DE/TUR/QAR10.0001/01](#) [DE/TUR/QAR14.0003/00](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

Flange Immersion Heaters Series F. Rated 690 Vac max, 1 or 3 phase, 120 W/sq. in max tubular. Ambient temperature range: - 60 deg C to + 80 deg C.

CONDITIONS OF CERTIFICATION: YES as shown below:

The settings of the temperature control devices of the heater bundle shall be such that the surface temperature does not exceed its stated temperature class.

The gap between the body and the cover shall not exceed 0.038 mm.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Variation 1

a) Addition of three nominal heating element diameter options : 4.480" (12.19 mm), 0.685" (17.40 mm) and 0.935"(23.75mm). b) Increased maximum heater sheath watt density to 120watts/square inch. c) Updates to Manufacturer's Documents to include additional element diameter options and watt density, as well as minor paperwork changes. Special conditions of safe use appear on the certificate.

Variation 2

a) Increased maximum upper ambient temperature to 60 deg C (from 40 degC). b) Updates to Manufacturer's Documents to include ambient temperature range up to 60 deg C.

Variation 3

a) Increased maximum upper ambient temperature to 80 deg C (from 60 deg C). b) Expanded gas group to Group IIC (from Group IIB + H2). c) Expanded rated voltage to 690 Vac (from 600 Vac). d) Changed Series designation to Series F (from Series FX). e) Updates to Manufacturer's Documents to include changes.

Variation 4

a) Decreased lower ambient temperature to -60 degC(from -40 deg C). b) Updated Manufacturer's Documents to include temperature and minor paperwork changes. c) Add alternate manufacturing location.