



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

Certificate No.: IECEx UL 03.0001X

Issue No: 7

Certificate history:

Issue No. 7 (2017-05-31)  
Issue No. 6 (2015-07-23)  
Issue No. 5 (2012-01-20)  
Issue No. 4 (2009-09-01)  
Issue No. 3 (2009-04-23)  
Issue No. 2 (2007-06-22)  
Issue No. 1 (2005-03-30)

Status: **Current**

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Date of Issue: **2017-05-31**

Applicant: **United Electric Controls**  
180 Dexter Ave.  
Watertown, MA 02472  
**United States of America**

Equipment: **Pressure and Temperature Operated Switches, Types 120, 121, 122, 820 and 822**

*Optional accessory:*

Type of Protection: **Flameproof "db" and Dust Ignition Protection by Enclosure "tb"**

Marking:  
Ex db IIC T6 Gb, Ex tb IIIC T85°C Db IP66  
-40°C to +75°C

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

Paul T. Kelly

*Position:*

Principal Engineer - Global Hazardous Locations

*Signature:  
(for printed version)*

*Date:*

2017-05-31

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:

**UL LLC**  
333 Pfingsten Road  
Northbrook IL 60062-2096  
United States of America





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Manufacturer: **United Electric Controls**  
180 Dexter Ave.  
Watertown, MA 02472  
**United States of America**

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 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 : 2014-06** Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"  
Edition:7.0

**IEC 60079-31 : 2013** Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"  
Edition:2

*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*

IECEX ATR:  
US/UL/ExTR15.0049/01  
US/UL/QAR07.0002/09

File Reference:  
4787875541



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## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

The pressure and temperature-operated switches consist of a die-cast aluminium switch housing containing a single or dual snap switch, which is operated by an operating rod forming a joint with the enclosure. The electrical wires between the snap switch and the one or two sets of terminal blocks are permanently mounted by the manufacturer and can not be replaced.

See Annex for Nomenclature details.

### SPECIFIC CONDITIONS OF USE: YES as shown below:

Dimensions of flameproof joints are other than the relevant minimum or maximum specified in tables 1 through 2 of IEC 60079-1:2014. Pressure and temperature operated switches are to be marked with an "X" and manufacturer's installation instructions (Drawings Nos. IMT120 and IMP120) detail the dimensions of the flameproof joints.

For Group III equipment, manufacturer's installation instructions (Drawing Nos. IMT120 and IMP120) provide guidance for the user to minimize the risk from electrostatic discharge.



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

Issue 1: The upper ambient was revised to +75C.

Issue 2: The Drawing Number B-62174-21, Rev. D was revised to update DC rating on the switch codes 1180, 1190 and 1195. The switch rating was changed from 28 Vdc, 3A to 30Vdc, 5A.

Issue 3: Drawing number B-62174-21 was revised to revision level F. The revision was to add additional electrical ratings for the switch and was determined acceptable by engineering judgement. The new ratings were lower than the existing ratings.

Issue 4: Change current rating from 20A to 30A. Installation instructions have been updated to reflect that blanking elements from the factory have been tested for Flameproof "d" and Dust "tD" as an assembly and carry no markings.

Issue 5: Upgraded the editions of standards. There was also a modification made to the joint between the actuation plunger and plunger guide located in the base of the 121/122 Series enclosure. The casting was modified to replace the plunger guide and encompass it as part of the casting. The joint length was also being reduced and was evaluated accordingly with respect to flameproof and dust requirements.

Issue 6: Revision included updating certificate to the latest edition of the applicable standards. No constructional changes were made.

Issue 7: Upgrade to IEC 60079-1 Edition 7.

## **Annex:**

[Annex to IECEx UL 03.0001X Issue 7.pdf](#)

Nomenclature for Type 120, 121 and 122 Pressure Switches:

Example:

Q	J	120	P	S164B	3000	XC007	12345
I	II	III	IV	V	VI	VII	VIII

**I. End-User Destination**

None – International/Domestic  
Q – International/Domestic, Internal Reference Only

**II. Device Calibration**

H – Calibrated with External Adjustment  
J – Uncalibrated

**III. Type Designation**

120 – Single Snap Switch  
121 – Single Snap Switch with External Adjustment  
122 – Two Snap Switches with External Adjustment

**IV. Sensing Method**

None – Straight Vacuum or Gauge Pressure Sensing  
K – Differential Pressure Sensing  
P – Common Adjustment

**V. Pressure Sensor Designation**

Two to five character/digit alphanumeric code indicating one of the pressure sensor models shown in the relevant Certification Drawing.

**VI. Internal Snap Switch Designation**

Four-digit numeric code indicating one of the Internal Snap Switch models shown in the relevant Certification Drawing.

**VII. Miscellaneous Options**

Four to five character/digit alphanumeric code not affecting electrical ratings or pressure ratings:

None – No options(s) employed  
M210 – Mechanically operated pressure indicator  
M430 – Cover lock option  
M440 – Cover chain option  
M540 – Viton diaphragm construction  
M542 – AFLAS diaphragm construction  
M550 – Alternate fitting  
M913 – 1/4 in. NPT Stainless Steel pressure connection  
M914 – 1/2 in. NPT Stainless Steel pressure connection  
M915 – 1/4 in. NPT Monel pressure connection  
M916 – 1/2 in. NPT Monel pressure connection  
M917 – 1/4 in. NPT Hastelloy C pressure connection  
M918 – 1/2 in. NPT Hastelloy C pressure connection  
M919 – 1/4 in. NPT Aluminium pressure connection  
M920 – 1/2 in. NPT Aluminium pressure connection  
XC001 – Aluminium pressure connection with Viton diaphragm and Viton o-ring  
XC002 – Aluminium pressure connection with Kapton diaphragm and Buna-N o-ring  
XC003 – Aluminium pressure connection with Kapton diaphragm and Viton o-ring  
XC004 – 316L Stainless Steel pressure connection with 316L Stainless Steel diaphragm and Viton o-ring

XC005 – 316L Stainless Steel pressure connection with Viton diaphragm and Viton o-ring  
XC006 – 316L Stainless Steel pressure connection with Kapton diaphragm and Viton o-ring  
XC007 – 316L Stainless Steel pressure connection with Teflon diaphragm and Viton o-ring

**VIII. Customer Specification Number**

Five character/digit alphanumeric code indicating pressure range and miscellaneous options;  
equivalent to a customer specification code

Nomenclature for Type 120, 121, 122, 820 and 822 Temperature Switches:

Example:

Q	F	820	P	13611	3000	W10015	12345
I	II	III	IV	V	VI	VII	VIII

**I. End-User Destination**

None – International/Domestic  
Q – International/Domestic, Internal Reference Only

**II. Device Calibration**

None – Remote temperature sensor with temperature setting adjustment and temperature indication in a separate enclosure from the explosion-proof enclosure containing the snap-switch and associated wiring.  
B – Calibrated Local Temperature Sensor  
C – Uncalibrated Local Temperature Sensor  
E – Calibrated Remote Temperature Sensor  
F – Uncalibrated Remote Temperature Sensor

**III. Type Designation**

120 – Single Snap Switch with Internal Adjustment  
121 – Single Snap Switch with External Adjustment  
122 – Two Snap Switches with External Adjustment  
820 – Single Snap Switch with External Temperature Indicator  
822 – Two Snap Switches with External Temperature Indicator

**IV. Sensing Method**

None – Local or Remote Temperature Sensing  
E – External Temperature Indicator  
P – Common Adjustment

**V. Temperature Sensor Designation**

Two to five character/digit alphanumeric code indicating one of the temperature sensor models shown in the relevant Certification Drawing.

**VI. Internal Snap Switch Designation**

Four-digit numeric code indicating one of the Internal Snap Switch models shown in the relevant Certification Drawing.

**VII. Miscellaneous Options**

Four to six character/digit alphanumeric code not affecting electrical ratings or temperature ratings of the device

None – No option(s) employed  
M430 – Cover lock option  
M440 – Cover chain option  
W Series – Followed by 097, 098, 099 or 100, followed by a number 1 through 15. Denotes separable well option.

**VIII. Customer Specification Number**

Five character/digit alphanumeric code indicating temperature range and miscellaneous options; equivalent to a customer specification code