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 UL 03.0001X**

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Status: **Current**

Issue No: 11

Date of Issue: 2023-09-29

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

Certificate history:

Issue 10 (2023-06-30)
Issue 9 (2021-03-12)
Issue 8 (2020-05-22)
Issue 7 (2017-05-31)
Issue 6 (2015-07-23)
Issue 5 (2012-01-20)
Issue 4 (2009-09-01)
Issue 3 (2009-04-23)
Issue 2 (2007-06-22)
Issue 1 (2005-03-30)

Approved for issue on behalf of the IECEx Certification Body: **Susan K. Lee**

Position: **Staff Engineer**

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:

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

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Certificate No.: **IECEx UL 03.0001X**

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

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

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 60079-1:2014 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 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:

US/UL/ExTR15.0049/00 US/UL/ExTR15.0049/01 US/UL/ExTR15.0049/02
US/UL/ExTR15.0049/03 US/UL/ExTR15.0049/04 US/UL/ExTR15.0049/05

Quality Assessment Report:

US/UL/QAR07.0002/13

IECEx ATR: **File reference:**

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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.

Please see Annex for additional information.

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 pluger 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 alos 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.

Issue 8: Minor updates to drawings.

Issue 9: Minor update to marking label drawings. Update to latest version of standards.

Issue 10: Minor technical dimensions were revised and changes to the schedule drawings.

Issue 11: Addition of an alternate construction, customer specific model.

Annex:

Annex to IECEx UL 03.0001X Issue 11.pdf

TYPE DESIGNATION

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 Aluminum pressure connection
M920 – 1/2 in. NPT Aluminum pressure connection
XC001 – Aluminum pressure connection with Viton diaphragm and Viton o-ring
XC002 – Aluminum pressure connection with Kapton diaphragm and Buna-N o-ring
XC003 – Aluminum 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.

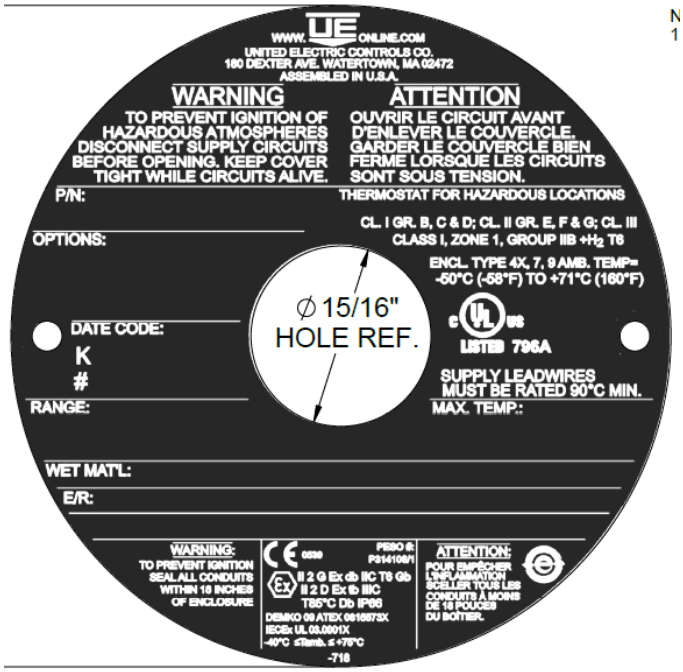
VIII. **Customer Specification Number**
Five character/digit alphanumeric code indicating temperature range and miscellaneous options; equivalent to a customer specification code

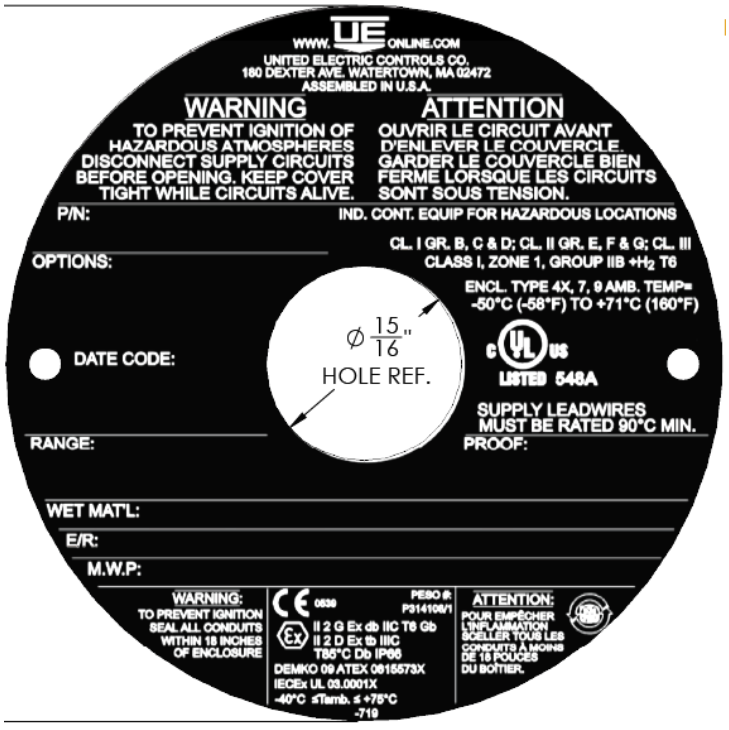
PARAMETERS RELATING TO THE SAFETY

480 Vac, 30 A max

MARKING

Marking has to be readable and indelible; it has to include the following indications:






WWW.UECONLINE.COM
UNITED ELECTRIC CONTROLS CO.
180 DEXTER AVE. WATERTOWN, MA 02472
ASSEMBLED IN U.S.A.
WARNING
TO PREVENT IGNITION OF HAZARDOUS ATMOSPHERES DISCONNECT SUPPLY CIRCUITS BEFORE OPENING. KEEP COVER TIGHT WHILE CIRCUITS ALIVE.
ATTENTION
OUVRIR LE CIRCUIT AVANT D'ENLEVER LE COUVERCLE. GARDER LE COUVERCLE BIEN FERME LORSQUE LES CIRCUITS SONT SOUS TENSION.
IND. CONT. EQUIP FOR HAZARDOUS LOCATIONS
CL. I GR. B, C & D; CL. II GR. E, F, & G; CL. III
CLASS I, ZONE 1, GROUP IIB+H2 T6
ENCL. TYPE 4X, 7, 9 AMB. TEMP = -50°C (-58°F) TO +71°C (160°F)
0539
II 2 G Ex db IIC T6 Gb
II 2 D Ex tb IIIC T85°C Db IP66
DEMKO 09 ATEX 0815573X
IECEx UL 03.0001X
-40°C ≤ Tamb ≤ +75°C
UL 21 UKEX 2237X
0843
LISTED 548A
SUPPLY LEADWIRES MUST BE RATED 90°C MIN.
WARNING:
TO PREVENT IGNITION SEAL ALL CONDUITS WITHIN 18 INCHES OF ENCLOSURE.
ATTENTION:
POUR EMPÊCHER L'INFLAMMATION SCELLER TOUS LES CONDUITS À MOINS DE 18 POUCES DU BOÎTIER.
DATE CODE:
K
#
PRESSURE OPERATED SWITCH
TO RESET, PUSH STEM TO THE SET POSITION
10A 250VAC, 15A 125VAC
3PDT
NEMA4
SET POINT: 30-60 PSI