



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 14.0075X** Page 1 of 4 Certificate history:
Status: **Current** Issue No: 3 [Issue 2 \(2018-07-18\)](#)
[Issue 1 \(2016-06-14\)](#)
[Issue 0 \(2014-07-31\)](#)
Date of Issue: 2021-07-30
Applicant: **United Electric Controls**
180 Dexter Avenue
Watertown, MA 02471
United States of America
Equipment: **Intrinsically Safe Pressure or Temperature Switches, Series J6*****
J21K***** , *100***** , *117***** , *12***** , *400*******
Optional accessory:
Type of Protection: **Intrinsic Safety "ia"**
Marking: Ex ia IIC T6 Ga
-50°C ≤ Tamb ≤ +60°C

Approved for issue on behalf of the IECEx
Certification Body:

Katy A. Holdredge

Position:

Senior Staff Engineer

Signature:
(for printed version)

Date:

2021-07-30

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.
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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 Avenue
Watertown, MA 02471
United States of America

Additional
manufacturing
locations:

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 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

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/ExTR14.0105/00](#)
[US/UL/ExTR14.0105/03](#)

[US/UL/ExTR14.0105/01](#)

[US/UL/ExTR14.0105/02](#)

Quality Assessment Report:

[US/UL/QAR07.0002/12](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

6 Series, 10 Series, 12 Series, 21K Series, 100 Series, 117 Series, 120 Series and 400 Series pressure and temperature operated switches which consist of a stainless steel or aluminium housing containing a single or dual micro switch which can be operated by an operating rod ensuring an internal joint with the enclosure. The electrical wires are permanently mounted by the manufacturer and cannot be replaced.

Please see Annex for additional information.

SPECIFIC CONDITIONS OF USE: YES as shown below:

Warning: Enclosure contains aluminium. Care must be taken to avoid ignition hazard due to impact or friction.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Issue 1: Minor construction update, not affecting safety.

Issue 2: Removed reference to IEC 60079-26.

Issue 3: Updates IEC 60079-0 to the latest edition.

Annex:

[Annex to IECEx UL 14.0075X Issue 3.pdf](#)



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TYPE DESIGNATION

Nomenclature:

6 Series

<u>J</u> I	<u>6D</u> II	<u>12345</u> III	<u>2200</u> IV	<u>M123</u> V
---------------	-----------------	---------------------	-------------------	------------------

- I. Type Designation
J Uncalibrated
- II. Series and Model Designation
6 Non-adjustable differential pressure sensor switch
6D Adjustable differential pressure sensor switch
- III. Model Designation
May be three to five digit numerical or alphabetical suffix indicating pressure range and sensing element not to exceed 6000 psi, not affecting electrical ratings of the device; equivalent to a customer specification number
- IV. Internal Switch Designation
May be a four digit number indicating switch designation
- V. Option Designation
May be a four digit numerical or alphabetical suffix not affecting electrical ratings or pressure ratings of the device

10 Series

<u>10</u> I	<u>A</u> II	<u>10</u> III	<u>12345</u> IV	<u>1100</u> V	<u>M123</u> VI
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- I. Series Designation
10 Cylindrical pressure sensor switch
- II. Electrical Connection Designation
A 0.11 in push-on terminals
B 0.25 in push-on terminals
C ½ NPTM, 18 in. leads
D 18 in. leads
E ½ NPTF, 5 ft. cord
F DIN male connector
G 5 ft. cord
- III. Pressure Range Designation
Diaphragm 10 - 4 - 50 psi
11 - 10 - 150 psi
12 - 30 - 600 psi
Piston 13 - 100 - 1500 psi
14 - 180 - 3000 psi
15 - 400 - 4700 psi
16 - 4000 - 7500 psi



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- IV. Model Designation
May be a three to five digit numerical or alphabetical suffix indicating pressure range and sensing element not to exceed 7500 psi, not affecting electrical ratings of the device; equivalent to a customer specification number
- V. Internal Switch Designation
May be a four digit number indicating switch designation
- VI. Option Designation
May be a four digit numerical or alphabetical suffix not affecting electrical ratings or pressure ratings of the device

12 Series

<u>12</u> I	<u>SH</u> II	<u>DM</u> III	<u>IA</u> IV	<u>12345</u> V	<u>M123</u> VI
----------------	-----------------	------------------	-----------------	-------------------	-------------------

- I. Series Designation
12 Pressure sensor switch
- II. Sensor Type and Switch Rating Designation
SH Stainless Steel housing material
SL Stainless Steel housing material
- III. Switch Type and Electrical Connection Designation
DM DPDT (double-pole, double throw) M20 metric thread electrical connection
DN DPDT (double-pole, double throw) ½ NPT electrical connection
SM SPDT (single-pole, double throw) M20 metric thread electrical connection
SN SPDT (single-pole, double throw) ½ NPT electrical connection
- IV. Model Designation
May be a two digit numerical or alphabetical suffix indicating pressure range and sensing element not to exceed 6000 psi, not affecting electrical ratings of the device; equivalent to a customer specification number
- V. Customer Specification Number Designation
May be a five digit number not affecting electrical ratings or pressure ratings of the device
- VI. Option Designation
May be a four digit numerical or alphabetical suffix not affecting electrical ratings or pressure ratings of the device

<u>12</u> I	<u>SH</u> II	<u>DM</u> III	<u>IA</u> IV	<u>12345</u> V	<u>M123</u> VI
----------------	-----------------	------------------	-----------------	-------------------	-------------------

- I. Series Designation
12 Temperature sensor switch
- II. Sensor Type and Switch Rating Designation
SH Stainless Steel housing material
SL Stainless Steel housing material



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- III. **Switch Type and Electrical Connection Designation**
 DM DPDT (double-pole, double throw) M20 metric thread electrical connection
 DN DPDT (double-pole, double throw) ½ NPT electrical connection
 SM SPDT (single-pole, double throw) M20 metric thread electrical connection
 SN SPDT (single-pole, double throw) ½ NPT electrical connection
- IV. **Model Designation**
 May be a two digit numerical or alphabetical suffix indicating temperature range and sensing element not to exceed 343°C (650°F), not affecting electrical ratings of the device.
- V. **Customer Specification Number Designation**
 May be a five digit number not affecting electrical ratings or temperature ratings of the device
- VI. **Option Designation**
 May be a four digit numerical or alphabetical suffix not affecting electrical ratings or temperature ratings of the device

21K Series

<u>J</u> I	<u>21K</u> II	<u>12345</u> III	<u>2200</u> IV	<u>M123</u> V
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- I. **Type Designation**
 J Uncalibrated
- II. **Series and Model Designation**
 21K Adjustable differential pressure sensor switch
- III. **Model Designation**
 May be three to five digit numerical or alphabetical suffix indicating pressure range and sensing element not to exceed 300 psi, not affecting electrical ratings of the device; equivalent to a customer specification number
- IV. **Internal Switch Designation**
 May be a four digit number indicating switch designation
- V. **Option Designation**
 May be a four digit numerical or alphabetical suffix not affecting electrical ratings or pressure ratings of the device

100 Series

<u>B</u> I	<u>100</u> II	<u>12345</u> III	<u>3000</u> IV	<u>M123</u> V
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- I. **Sensor Type and Adjustment Designation**
 B Local temperature sensor, internal knob adjustment
 C Local temperature sensor, internal plunger adjustment
 E Remote temperature sensor, internal knob adjustment
 F Remote temperature sensor, internal plunger adjustment
- II. **Series Designation**
 100 Temperature sensor switch



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- III. Model Designation
May be three to five digit numerical or alphabetical suffix indicating temperature range and sensing element not to exceed 538°C (1000°F), not affecting electrical ratings of the device; equivalent to a customer specification number
- IV. Internal Switch Designation
May be a four digit number indicating switch designation
- V. Option Designation
May be a four digit numerical or alphabetical suffix not affecting electrical ratings or temperature ratings of the device

<u>H</u>	<u>100K</u>	<u>12345</u>	<u>3000</u>	<u>M123</u>
I	II	III	IV	V

- I. Type Designation
H Uncalibrated
- II. Series and Model Designation
100 Pressure sensor switch
100K Differential pressure sensor switch
- III. Model Designation
May be three to five digit numerical or alphabetical suffix indicating pressure range and sensing element not to exceed 5000 psi, not affecting electrical ratings of the device; equivalent to a customer specification number
- IV. Internal Switch Designation
May be a four digit number indicating switch designation
- V. Option Designation
May be a four digit numerical or alphabetical suffix not affecting electrical ratings or pressure ratings of the device

117 Series

<u>H</u>	<u>117K</u>	<u>12345</u>	<u>1100</u>	<u>M123</u>
I	II	III	IV	V

- I. Type Designation
H Pressure-operated, uncalibrated
- II. Series and Model Designation
117 Pressure sensor switch with one snap switch provided
117K Differential pressure sensor switch with one snap switch provided
- III. Model Designation
May be a three to five digit numerical or alphabetical suffix indicating pressure range and sensing element not to exceed 3500 psi, not affecting electrical ratings of the device; equivalent to a customer specification number
- IV. Internal Switch Designation



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May be a four digit number indicating switch designation

- V. Option Designation
May be a four digit numerical or alphabetical suffix not affecting electrical ratings or pressure ratings of the device

<u>B</u> I	<u>117</u> II	<u>12345</u> III	<u>1100</u> IV	<u>M123</u> V
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- I. Type Designation
 B Local temperature sensor, calibrated
 E Remote temperature sensor, calibrated

- II. Series and Model Designation
 117 Temperature sensor switch with one snap switch provided

- III. Model Designation
 May be three to five digit numerical or alphabetical suffix indicating temperature range and sensing element not to exceed 566°C (1050°F), not affecting electrical ratings of the device; equivalent to a customer specification number

- IV. Internal Switch Designation
 May be a four digit number indicating switch designation

- V. Option Designation
 May be a four digit numerical or alphabetical suffix not affecting electrical ratings or temperature ratings of the device

120 Series

<u>H</u> I	<u>120</u> II	<u>K</u> III	<u>12345</u> IV	<u>3000</u> V	<u>M123</u> VI
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- I. Type Designation
 H Pressure-operated, calibrated
 J Pressure-operated, uncalibrated
 QH Pressure-operated, calibrated, equipped with a cover lock, external bonding terminal, enclosure vent holes and a nameplate and may also have a second conduit connection
 QJ Pressure-operated, uncalibrated, equipped with a cover lock, external bonding terminal, enclosure vent holes and a nameplate and may also have a second conduit connection

- II. Series and Model Designation
 120 Pressure sensor switch with one snap switch provided
 121 Pressure sensor switch with one snap switch provided
 122 Pressure sensor switch with two snap switches provided

- III. Type of Switch and Designation
 K Differential pressure sensing provided
 P Common adjustment provided
 None Individual adjustment provided



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- IV. Model Designation
May be three to five digit numerical or alphabetical suffix indicating pressure range and sensing element not to exceed 6000 psi, not affecting electrical ratings of the device; equivalent to a customer specification number
- V. Internal Switch Designation
May be a four digit number indicating switch designation
- VI. Option Designation
May be a four digit numerical or alphabetical suffix not affecting electrical ratings or pressure ratings of the device

<u>B</u>	<u>120</u>	<u>P</u>	<u>12345</u>	<u>3000</u>	<u>M123</u>
I	II	III	IV	V	VI

- I. Type Designation
 - B Local temperature sensor, calibrated
 - C Local temperature sensor, uncalibrated
 - E Remote temperature sensor, calibrated
 - F Remote temperature sensor, uncalibrated
 - QB Local temperature sensor, calibrated, equipped with a cover lock, external bonding terminal, enclosure vent holes and a nameplate and may also have a second conduit connection
 - QC Local temperature sensor, uncalibrated, equipped with a cover lock, external bonding terminal, enclosure vent holes and a nameplate and may also have a second conduit connection
 - QE Remote temperature sensor, calibrated, equipped with a cover lock, external bonding terminal, enclosure vent holes and a nameplate and may also have a second conduit connection
 - QF Remote temperature sensor, uncalibrated, equipped with a cover lock, external bonding terminal, enclosure vent holes and a nameplate and may also have a second conduit connection
 - 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
- II. Series and Model Designation
 - 120 Temperature sensor switch with one snap switch provided
 - 121 Temperature sensor switch with one snap switch provided
 - 122 Temperature sensor switch with two snap switches provided
- III. Type of Switch Designation
 - P Common adjustment provided
 - None Individual adjustment provided
- IV. Model Designation
May be three to five digit numerical or alphabetical suffix indicating temperature range and sensing element not to exceed 538°C (1000°F), not affecting electrical ratings of the device; equivalent to a customer specification number
- V. Internal Switch Designation
May be a four digit number indicating switch designation



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VI. Option Designation
May be a four digit numerical or alphabetical suffix not affecting electrical ratings or temperature ratings of the device

400 Series

<u>B</u>	<u>400</u>	<u>P</u>	<u>12345</u>	<u>2200</u>	<u>M123</u>
I	II	III	IV	V	VI

I. Sensor Type and Adjustment Designation
 B Calibrated dial, immersion stem, internal adjustment with reference dial
 C Uncalibrated dial, immersion stem, internal adjustment without reference dial
 E Calibrated dial, bulb and capillary, internal adjustment with reference dial
 F Uncalibrated dial, bulb and capillary, internal adjustment without reference dial

II. Series and Model Designation
 400 Temperature sensor switch with one snap switch provided
 402 Temperature sensor switch with two snap switches provided
 403 Temperature sensor switch with three snap switches provided

III. Internal Switch Adjustment Designation
 P Common adjustment provided (does not apply to single switch devices)
 None Individual adjustment provided

IV. Model Designation
 May be three to five digit numerical or alphabetical suffix indicating temperature range and sensing element not to exceed 343°C (650°F), not affecting electrical ratings of the device; equivalent to a customer specification number

V. Internal Switch Designation
 May be a four digit number indicating switch designation

VI. Option Designation
 May be a four digit numerical or alphabetical suffix not affecting electrical ratings or temperature ratings of the device

<u>H</u>	<u>400</u>	<u>K</u>	<u>12345</u>	<u>3000</u>	<u>M123</u>
I	II	III	IV	V	VI

I. Sensor Type and Adjustment Designation
 H Calibrated dial, internal adjustment with reference dial
 J Uncalibrated dial, internal adjustment without reference dial

II. Series and Model Designation
 400 Pressure sensor switch with one snap switch provided
 402 Pressure sensor switch with two snap switches provided
 403 Pressure sensor switch with three snap switches provided

III. Internal Switch Adjustment Designation
 K Differential pressure control provided
 P Common adjustment provided (does not apply to single switch devices)
 None Individual adjustment provided



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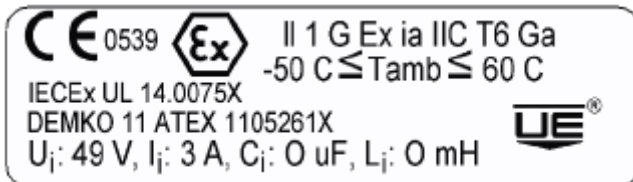
- IV. Model Designation
May be three to five digit numerical or alphabetical suffix indicating pressure range and sensing element not to exceed 6000 psi, not affecting electrical ratings of the device; equivalent to a customer specification number
- V. Internal Switch Designation
May be a four digit number indicating switch designation
- VI. Option Designation
May be a four digit numerical or alphabetical suffix not affecting electrical ratings or pressure ratings of the device

PARAMETERS RELATING TO THE SAFETY

$U_i = 49V$, $I_i = 3A$, $C_i = 0.0 \mu F$, $L_i = 0.0 mH$

MARKING

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



The manufacturer's address is marked on the overall end product device (see reference to Schedule Drawing Nos. 62174-11 and 62174-16 below).

Label used in conjunction with 12 and 120 Series pressure and temperature operated switches. See certificate IECEx UL 03.0001X and IECEx UL 14.0072X for Marking Plate information. Per client's email dated 2015-12-16, the Intrinsic Safety Marking Plate is included on the product enclosure with the company information Marking Plate. The following images from Schedule Drawing Nos. 62174-11 and 62174-16 show the requirements for including "d" markings on these devices:

62174-11

NOTES:

1. MARKING PLATE (DRAWING: B-13807) IS USED IN CONJUNCTION WITH IS LABEL (DRAWING: A-6333-65).



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2. MARKING PLATE (DRAWING: A-6211-718/719) IS USED IN CONJUNCTION WITH IS LABEL (DRAWING: A-6333-65).


Label used in conjunction with 6, 10, 21K, 100, 117 and 400 Series pressure and temperature operated switches. See below for proof of address:



P/N: J6
Date Code:
OPTIONS:
RANGE:
PROOF:

WETTED MAT'L:
E/R:


 

LISTED 549A

 United Electric Controls Company
180 Dexter Ave., Watertown, MA 02472
www.ueonline.com 1.817.928.1000 Made in USA



C. P/N   Turn slot left to increase setting

Part #	Operating Range	Proof
Wetted Parts	Electrical Rating	
	Wiring Colors	Common Norm open Norm closed


 United Electric Controls Company
180 Dexter Ave., Watertown, Ma.
www.ueonline.com 1.817.928.1000 Made in USA

P/N: 21K
Date Code:
OPTIONS:
RANGE:
PROOF:

WETTED MAT'L:
E/R:



 

LISTED 549A


 United Electric Controls Company
180 Dexter Ave., Watertown, MA 02472
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P/N: 100
Date Code:
OPTIONS:
RANGE:
PROOF:

WETTED MAT'L:
E/R:

LISTED 549A

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117 SERIES Div. 2

 CLASS I DIVISION 2, GROUPS A, B, C, D
CLASS I DIVISION 2, GROUPS E, F, G
IND. CONT. EQ. FOR HAZARDOUS LOCATIONS
ENCLOSURE TYPE 4X
CLASS I ZONE 2, GROUP I, B, T3 

P/N: _____ DATE CODE: _____
OPTIONS: _____
WET MATL: _____
RANGE: _____
PROOF: _____
E/R: _____

 UNITED ELECTRIC CONTROLS CO.
WATERTOWN, MA - MADE IN U.S.A.
1.617.926.1000 www.ueonline.com

P/N: 400
Date Code: _____
OPTIONS: _____
RANGE: _____
PROOF: _____
WETTED MATL: _____
E/R: _____

LISTED 540A

 United Electric Controls Company
180 Deder Ave., Watertown, MA 02472
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