[1] # TYPE EXAMINATION CERTIFICATE

[2] **Equipment or Protective System intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU**

[3] Type Examination Certificate Number: **DEMKO 15 ATEX 1483 Rev. 9**

[4] Product: **One Series Electronic Pressure and Temperature Switches**

[5] Manufacturer: **United Electric Controls**

[6] Address: **180 Dexter Ave., Watertown, MA 02471 USA**

[7] This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] UL International Demko A/S certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014.

The examination and test results are recorded in confidential report no. **US/UL/ExTR08.0022/12.**

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018 **EN 60079-15:2010**

Where additional criteria beyond those given here have been used, they are listed at item 18 in the Schedule.

[10] If the sign "**X**" is placed after the certificate number, it indicates that the product is subject to the “Specific Conditions of Use” listed under item 17 of this certificate.

[11] This Type examination certificate relates only to the design of the specified product, and not to specific items of product subsequently manufactured.

[12] The marking of the product shall include the following (marking is provided in the Schedule as a part of item 15, if applicable):

Series 1XSWLL:

II 3 G Ex nA IIC T4 Gc

Series 1XTX:

II 3 G Ex nA IIC T4 Gc

Series 1XSWHH, 1XSWHL:

II 3 G Ex nA IIC T4 Gc

Certification Manager
Thomas Wilson

This is to certify that the sample(s) of the Product described herein (“Certified Product”) has been investigated and found in compliance with the Standard(s) indicated on this Certificate, in accordance with the ATEX Product Certification Program Requirements. This certificate and test results obtained apply only to the product sample(s) submitted by the Manufacturer. UL did not select the sample(s) or determine whether the sample(s) provided were representative of other manufactured product. UL has not established Follow-Up Service or other surveillance of the product. The Manufacturer is solely and fully responsible for conformity of all product to all applicable Standards, specifications, requirements or Directives. The test results may not be used, in whole or in part, in any other document without UL’s prior written approval.

Date of issue: 2015-06-23

Re-issued: 2024-01-30

Certification Body

UL International Demko A/S, Borupvang 5A, 2750 Ballerup, Denmark
Tel. +45 44 85 65 65, info.dk@ul.com, www.ul.com

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Schedule
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[15] Description of Product:

The devices are pressure and temperature operated switches, with a solid-state switch mechanism, an LCD (Liquid Crystal Display), an enclosure and may contain solid-state analog outputs. The metal enclosure consists of a body and a cover with a glass window, as well as two conduit entries and a sensor port. The cover is secured to the body by a threaded joint. The window is cemented into the cover and additionally secured by a retaining ring that threads into the cover. The sensors engage the body of the enclosure by a threaded joint. The devices are provided with terminal blocks for field installation.

For the 1X series:

1X	SW	L	L	P	10	M124
I	II	III	IV	V	VI	VII

I – Series Designation
- 1X – 2-wire switch

II – Type
- SW – Switch only

III – Input Voltage (Range)
- L – Low Voltage, 7.8 – 50 Vdc

IV – Input Current
- L – Low Current, @ .1 A

V – Sensor Type
- P – Pressure Sensor
- T – Temperature Sensor
- K – Differential Pressure Sensor

VI – Sensor Model

Pressure Sensors:
- 06 – 14.7 to 30 psi
- 08 – 14.7 to 100 psi
- 10 – 0 to 5 psi
- 11 – 0 to 15 psi
- 12 – 0 to 30 psi
- 13 – 0 to 50 psi
- 14 – 0 to 100 psi
- 15 – 0 to 300 psi
- 16 – 0 to 500 psi
- 17 – 0 to 1000 psi
- 18 – 0 to 3000 psi
- 19 – 0 to 4500 psi
- 20 – 0 to 6000 psi

Temperature Sensors:
- L1 – 4 in. Length Local Mount
- L2 – 6 in. Length Local Mount
- L3 – 10 in. Length Local Mount
- R1 – 6 ft. Remote Probe Low Temp
- RC – Custom Length Remote Probe Low Temp
- H1 – 6 ft. Remote Probe High Temp
- HC – Custom Length Remote Probe High Temp
- C1 – 6 ft. Remote Probe Low Temp
- CC – Custom Length Remote Probe Low Temp

Differential Pressure Sensors:
- 10 – 0 to 5 psid
- 11 – 0 to 50 psid
- 12 – 0 to 100 psid
- 13 – 0 to 200 psid

VII – Options
- M-041 Dual Seal Adapter or Four character alphanumeric code not affecting electrical or mechanical ratings of the device

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Schedule

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For the 1XTX series:

1X	TX	00	P	10	M124
I	II	III	IV	V	VI

I – Series Designation
1X – 2-wire switch

II – Communication
TX – 4-20 mA Transmitter

III – Output
SW – 2-wire, Switch Outputs
00 – No Switch Outputs

IV – Sensor Type
P – Pressure Sensor
T – Temperature Sensor
K – Differential Pressure Sensor

V – Sensor Model
Pressure Sensors:
06 – 14.7 to 30 psi
08 – 14.7 to 100 psi
10 – 0 to 5 psi
11 – 0 to 15 psi
12 – 0 to 30 psi
13 – 0 to 50 psi
14 – 0 to 100 psi
15 – 0 to 300 psi
16 – 0 to 500 psi
17 – 0 to 1000 psi
18 – 0 to 3000 psi
19 – 0 to 4500 psi
20 – 0 to 6000 psi

Temperature Sensors:
L1 – 4 in. Length Local Mount
L2 – 6 in. Length Local Mount
L3 – 10 in. Length Local Mount
R1 – 6 ft. Remote Probe Low Temp
RC – Custom Length Remote Probe Low Temp
H1 – 6 ft. Remote Probe High Temp
HC – Custom Length Remote Probe High Temp
C1 – 6 ft. Remote Probe Low Temp
CC – Custom Length Remote Probe Low Temp

Differential Pressure Sensors:
10 – 0 to 5 psid
11 – 0 to 50 psid
12 – 0 to 100 psid
13 – 0 to 200 psid

VI – Options
M-041 Dual Seal Adapter or Four character alphanumeric code not affecting electrical or mechanical ratings of the device

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For Models 1XSWHL, 1XSWHH:

1X	SW	HL	P	10	M041
I	II	III	IV	V	VI

I – Series Designation
1X – 1X Series

II- Communication
SW – Switch output

III – Output
HL – 70 – 240 VAC/VDC 10A max. De-rate 1Ma per 1℃ › 25℃
HH – 24 – 280 VAC/VDC 10A max. De-rate 8% per 10℃ › 25℃

IV – Sensor Type
P – Pressure Sensor
T – Temperature Sensor
K – Differential Pressure Sensor

V – Sensor Model
Pressure Sensors:
06 – 14.7 to 30 psi
08 – 14.7 to 100 psi
10 – 0 to 5 psi
11 – 0 to 15 psi
12 – 0 to 30 psi
13 – 0 to 50 psi
14 – 0 to 100 psi
15 – 0 to 300 psi
16 – 0 to 500 psi
17 – 0 to 1000 psi
18 – 0 to 3000 psi
19 – 0 to 4500 psi
20 – 0 to 6000 psi

Temperature Sensors:
L1 – 4 in. Length Local Mount
L2 – 6 in. Length Local Mount
L3 – 10 in. Length Local Mount
R1 – 6 ft. Remote Probe Low Temp
RC – Custom Length Remote Probe Low Temp
H1 – 6 ft. Remote Probe High Temp
HC – Custom Length Remote Probe High Temp
C1 – 6 ft. Remote Probe Low Temp
CC – Custom Length Remote Probe Low Temp

Differential Pressure Sensors:
10 – 0 to 5 psid
11 – 0 to 50 psid
12 – 0 to 100 psid
13 – 0 to 200 psid

VI – Options
M-041 - Dual Seal Adapter

Four character alphanumeric code other than M-041 are single seal. These do not affect electrical or mechanical ratings of the device.

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Temperature range
1XSWLL:
The ambient temperature range is -40°C to +85°C. Device is classified as temperature code T4 (T135°C).
1XTXSW, 1XTX00:
The ambient temperature range is -40°C to +80°C. Device is classified as temperature code T4 (T135°C).
1XSWHH, 1XSWHL:
The ambient temperature range is -40°C to +80°C. Device is classified as temperature code T4 (T135°C).

Electrical data

Model	Input Voltage	Switch Output (+)	Analog Output
1XSWLL	7.8-50Vdc	7.8-50Vdc. 100mA	N/A
1XTX00	30 Vdc, 20mA	0-280 Vac, 300 mA	4-20 mA
1XTXSW	30 Vdc, 20mA	-	4-20 mA
1XSWHL	N/A (++)	70-240 Vac/Vdc, 100 mA	-
1XSWHH	70-240 V AC, 100 mA	24-280 Vac/Vdc, 10 A	-

+ - Switch current outputs are de-rated, based on ambient temperature, as shown in the “Switch Ratings Table” provided in the Installation Instructions

++ - The load from the switch also powers the electronic and does not need a separate power supply.

Routine tests
A routine Dielectric Strength Test shall be performed by the manufacturer with the test conditions as follows:
4-20mA circuit to case at 500V for 60 seconds
IAW circuit to case at 500V for 60 seconds
Switch outputs to case at 1560V for 60 seconds.

[16] Descriptive Documents
The scheduled drawings are listed in the report no. provided under item no. [8] on page 1 of this Type Examination Certificate.

[17] Special Conditions of Use:
None

[18] Essential Health and Safety Requirements
The Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9.

Additional information
The device has in addition passed the tests for Ingress Protection to IP 66 in accordance with EN60529:1991+A1:2000+A2:2013.