

# 1 EU-TYPE EXAMINATION CERTIFICATE



2 **Equipment or Protective systems intended for use in Potentially Explosive Atmospheres - Directive 2014/34/EU**

3 **EU-Type Examination Certificate No:** FM13ATEX0098X

4 **Equipment or protective system:** Model THZ3, STZ and TDZ3 Temperature Transmitter  
(Type Reference and Name)

5 **Name of Applicant:** Moore Industries-International, Inc.

6 **Address of Applicant:** 16650 Schoenborn Street  
North Hills, CA, 91343  
United States of America

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

8 FM Approvals Europe Ltd, notified body number 2809 in accordance with Article 17 of Directive 2014/34/EU of 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report number:

3047170 dated 5<sup>th</sup> November 2014

9 Compliance with the Essential Health and Safety Requirements, with the exception of those identified in item 15 of the schedule to this certificate, has been assessed by compliance with the following documents:

EN 60079-0:2012+A11:2013 and EN 60079-11:2012

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.

11 This EU-Type Examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include:

TDZ3 / STZ



II 1 G Ex ia IIC T4 Ga Tamb = -40°C to +85°C

THZ3 / STZ

II 1 G Ex ia IIC T5...T4 Ga Tamb = -40°C to +85°C

II 1 G Ex ia IIC T6 Ga Tamb = -40°C to +60°C



**Richard Zammitt**  
Certification Manager, FM Approvals Europe Ltd.

Issue date: 02<sup>nd</sup> April 2020

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FM Approvals Europe Ltd. One Georges Quay Plaza, Dublin. Ireland. D02 E440  
T: +353 (0) 1761 4200 E-mail: [atex@fmapprovals.com](mailto:atex@fmapprovals.com) [www.fmapprovals.com](http://www.fmapprovals.com)

# SCHEDULE



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## 13 Description of Equipment or Protective System:

The electronics of the Model THZ3 Temperature Transmitter and the Model TDZ3 Temperature Transmitter are almost identical and differ mainly on their appearance and housing. The TDZ3 model is equipped with a display screen which is not available on the THZ3 model. The electronics are located on two circuit boards consisting of a main board and a display board. For Intrinsic Safety the maximum input is 30V, 110mA and 825mW which is delivered from an Intrinsically Safe barrier. The Temperature Transmitters have sensor terminals that receive input signals from simple apparatus.

Both the Model THZ3 Temperature Transmitter and the Model TDZ3 Temperature Transmitter have a communication port for programming by the end user. The programming port is not for use in hazardous locations. The programming port is required to be used in accordance with control drawings 100-100-80 and 100-100-81.

The electronics for the Model TDZ3 Temperature Transmitter is located inside of an oval aluminum housing approximately 3" in diameter with an approximate height of 1.75". Different housing options available include hockey puck housing & spring clips [HP], snap-in mounting for DIN rail [DN], mounting flanges for screw mounting [FL], and mounting flanges for 3-1/2" relay track [FLD]. The housing has exposed power and sensor terminals as well as a window display. The housing is required to be mounted inside of a final enclosure.

The electronics for Model THZ3 Temperature Transmitter are located inside of a circular plastic housing approximately 2" in diameter with an approximate height of 1". Different housing options available include encapsulated hockey puck [HPP], HPP adapter for 2HS housing [HPPD], HPP adapter for HAT and G DIN rail mounting [HPPDN] and plastic connector head [CH6]. The housing is completely encapsulated with potting compound allowing the THZ3 to include T5 and T6 temperature codes as shown on control drawing 100-100-81. The housing has exposed power and sensor terminals. The housing is required to be mounted inside of a final enclosure.

The STZ model has the same electronics as the TDZ3 and THZ3 Temperature Transmitter and is offered with the same housing options. The STZ Temperature Transmitter is a "Safety Transmitter with HART" and includes a third party assessment to the IEC 61508 standard. Software related to SIL levels and FMEDA differentiate the STZ model from the TDZ3 and THZ3 model as well as the coloring of the label; yellow instead of grey. A different manual will be provided with the STZ model identifying its compliance with the IEC 61508 standard.

### Input Ratings:

Ui= 30V, Ii = 110mA, Pi = 825mW, Ci = 5.17nF, Li = 0mH. This option is not applicable to DIN housing.

### Output Ratings:

Uo	Io	Po	Co	Lo	Group
6.51V	61.7mA	100mW	21.9µF	9.35mH	IIC
			499.9µF	37.38mH	IIB
			999.9µF	74.77mH	IIA

### Housing Options:

The electronics are installed with different housing options:

- 1) DN- Snap-in mounting for HP case on TS- 32 DIN-rail
- 2) FL- Mounting flanges on HP for relay track or screw mounting
- 3) FLD- Mounting flanges on HP for 3½" relay track mounting
- 4) HP- Hockey puck housing and spring clips
- 5) BH- Aluminum Flameproof and Dust Ignition Protection Enclosure

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- 6) SB- Stainless Steel Flameproof and Dust Ignition Protection Enclosure
- 7) D- Low base, clear cover, IP66 enclosure
- 8) HPP- Hockey-puck housing for mounting in standard connection heads
- 9) LH- Aluminum Flameproof and Dust Ignition Protection Enclosure

The housing is required to be mounted inside of a final enclosure.

## **TDZ3/a/4-20mA/12-30DC/-b [c]. Temperature Transmitter.**

T4 Ta = -40°C to 85°C

Entity Parameters:

Power Terminals (+PS, -PS):

Ui = 30V, Ii = 110mA, Pi = 825mW, Ci = 5.17nF, Li = 0mH.

Sensor Terminals: (1, 2, 3, 4, 5)

Uo	Io	Po	Co	Lo	Group
6.51V	61.7mA	100mW	21.9µF	9.35mH	IIC
			499.9µF	37.38mH	IIB
			999.9µF	74.77mH	IIA

a = Input: PRG, J, K, E, T, R, S, N, B, C, MV, R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, RO, or POT.

b = Options: TROP, VTB, VTD, FMEDA and/or blank.

c = Housing: DN, FL, FLD, HP, BH, SB or D.

## **STZ/a/4-20mA/12-30DC/-b [c]. Temperature Transmitter.**

T4 Ta = -40°C to 85°C

Entity Parameters:

Power Terminals (+PS, -PS):

Ui = 30V, Ii = 110mA, Pi = 825mW, Ci = 5.17nF, Li = 0mH.

Sensor Terminals: (1, 2, 3, 4, 5)

Uo	Io	Po	Co	Lo	Group
6.51V	61.7mA	100mW	21.9µF	9.35mH	IIC
			499.9µF	37.38mH	IIB
			999.9µF	74.77mH	IIA

a = Input: PRG, J, K, E, T, R, S, N, B, C, MV, R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, RO, or POT.

b = Options: TROP, VTB, VTD, FMEDA, EMP and/or blank.

c = Housing: DN, FL, FLD, HP or BH.

## **THZ3/a/4-20mA/12-30DC/-b [c]. Temperature Transmitter.**

T5...T4 Ta = -40°C to 85°C; T6 Ta = -40°C to +60°C

Entity Parameters:

Power Terminals (+PS, -PS):

Ui = 30V, Ii = 110mA, Pi = 825mW, Ci = 5.17nF, Li = 0mH.

Sensor Terminals: (1, 2, 3, 4)

Uo	Io	Po	Co	Lo	Group
6.51V	61.7mA	100mW	21.9µF	9.35mH	IIC
			499.9µF	37.38mH	IIB
			999.9µF	74.77mH	IIA

a = Input: PRG, J, K, E, T, R, S, N, B, C, MV, R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, RO, or POT

b = Options: VTB, VTD, FMEDA and/or blank

c = Housing: HPP, HPPDN or LH

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## **STZ/a/4-20mA/12-30DC/-b [c]. Temperature Transmitter.**

T5...T4 Ta = -40°C to 85°C; T6 Ta = -40°C to +60°C

Entity Parameters:

Power Terminals (+PS, -PS):

Ui = 30V, Ii = 110mA, Pi = 825mW, Ci = 5.17nF, Li = 0mH.

Sensor Terminals: (1, 2, 3, 4)

Uo	Io	Po	Co	Lo	Group
6.51V	61.7mA	100mW	21.9µF	9.35mH	IIC
			499.9µF	37.38mH	IIB
			999.9µF	74.77mH	IIA

a = Input: PRG, J, K, E, T, R, S, N, B, C, MV, R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, RO, or POT

b = Options: VTB, VTD, FMEDA, EMP and/or blank

c = Housing: HPP, HPPDN or LH

### 14 Specific Conditions of Use:

1. The Model TDZ3, THZ3 or STZ Temperature Transmitter shall be installed in an enclosure which maintains an ingress protection rating of at least IP20.
2. The communications port shall be programmed through certified associated intrinsically safe apparatus as described on control drawing 100-100-80, 100-100-81, 100-100-83 and 100-100-84.

### 15 Essential Health and Safety Requirements:

The relevant EHSRs that have not been addressed by the standards listed in this certificate have been identified and assessed in the confidential report identified in item 8.

### 16 Test and Assessment Procedure and Conditions:

This EU-Type Examination Certificate is the result of testing of a sample of the product submitted, in accordance with the provisions of the relevant specific standard(s), and assessment of supporting documentation. It does not imply an assessment of the whole production.

Whilst this certificate may be used in support of a manufacturer's claim for CE Marking, FM Approvals Europe Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

This Certificate has been issued in accordance with FM Approvals Europe Ltd's ATEX Certification Scheme.

### 17 Schedule Drawings

A list of the significant parts of the technical documentation is annexed to this certificate and a copy has been kept by the Notified Body.

### 18 Certificate History

Details of the supplements to this certificate are described below:

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Date	Description
10 <sup>th</sup> November 2014	Original Issue.
14 <sup>th</sup> December 2015	<u>Supplement 1:</u> Report Reference: – RR202952 dated 04 <sup>th</sup> December 2015 Description of the Change: <ol style="list-style-type: none"><li>1. Documentation changes</li><li>2. Minor circuitry changes</li><li>3. Minor option change</li></ol>
17 <sup>th</sup> August 2018	<u>Supplement 2:</u> Report Reference: – RR213577 dated 10 <sup>th</sup> August 2018 Description of the Change: <ol style="list-style-type: none"><li>1. Documentation changes</li><li>2. Minor circuitry changes</li><li>3. Update EN 60079-0:2012 to EN 60079-0:2012 + A11:2013</li><li>4. Remove EN 60079-26:2007</li></ol>
18 <sup>th</sup> February 2019	<u>Supplement 3:</u> Report Reference: – RR216572 dated 11 <sup>th</sup> February 2019 Description of the Change: <ol style="list-style-type: none"><li>1. Updated Documents</li><li>2. Updated Description</li><li>3. Added Stainless Steel Enclosure Housing option “SB”, changed Input option “TPRG” to “PRG” and removed Options “IS” and “D” from certain model codes that are no longer being used.</li></ol>
02 <sup>nd</sup> April 2020	<u>Supplement 4:</u> Report Reference: – RR223094 dated 27 <sup>th</sup> March 2020 Description of the Change: Certificate transferred from FM Approvals Ltd., notified body no. 1725, to FM Approvals Europe Ltd., notified body no. 2809. Update labels and manuals.

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FM Approvals Europe Ltd. One Georges Quay Plaza, Dublin. Ireland. D02 E440  
T: +353 (0) 1761 4200 E-mail: [atex@fmapprovals.com](mailto:atex@fmapprovals.com) [www.fmapprovals.com](http://www.fmapprovals.com)