1 EC-TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective systems intended for use in Potentially Explosive Atmospheres - Directive 94/9/EC**

3 **EC-Type Examination Certificate No:** **FM06ATEX0011X**

4 **Equipment or protective system: (Type Reference and Name)** **Model THZ^2 And TDZ^2 Temperature Transmitters**

5 **Name of Applicant:** **Moore Industries International**

6 **Address of Applicant:** **16650 Schoenborn Street North Hills, CA 91343 USA**

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 Ltd, notified body number 1725 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, 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:

3024597EC dated 29th June 2007

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 60079-0:2006 and EN 60079-11:2007

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

11 This EC-Type Examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 94/9/EC. 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:

TDZ^2 Transmitter
II 1 G Ex ia IIC T4 Ta = -40˚C to +85˚C;

THZ^2 Transmitter
II 1 G Ex ia IIC T5 Ta = -40˚C to +85˚C; T6 Ta = -40˚C to +60˚C

Mick Gower
Certification Manager, FM Approvals Ltd.

Issue date: 14th January 2014

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SCHEDULE

to EC-Type Examination Certificate No. FM06ATEX0011X

13 **Description of Equipment or Protective System:**

The Model TDZ^2 and THZ^2 are 2-wire, loop powered, user-configurable HART® based temperature transmitters. The transmitters use either RTD, *T/C,* Ohms, mV or potentiometer input sensors. The transmitters can be configured in a non-hazardous area using either a PC's RS-232 serial port or by a HART communicator.

The Model TDZ^2 and THZ^2 Temperature Transmitters operate on a 4-20mA loop. Intrinsically Safe installations require associated apparatus which limits the input supply to 30V and 110mA. The transmitters operate in a maximum ambient of 85˚C.

The Model THZ^2 Temperature Transmitter's circuitry is enclosed by a polymeric hockey puck style housing approximately 2" in diameter. The top of the housing contains exposed terminals for configuration programming, power terminals and the sensor terminals. The back of the housing contains a metallic plate for mounting. The housing is intended to be installed in a final assembly enclosure.

The Model TDZ^2 Temperature Transmitter's circuitry is enclosed by an oval style housing approximately 3” by 2.45”. The housing is metallic except for the top display portion which is polymeric. The top of the housing also contains exposed terminals for configuration programming, power, and the sensors. The housing is intended to be installed in a final assembly enclosure.

THZ^2/a/4-20mA/12-30DC/-b [c]. Temperature Transmitter.

Energy Limitation Parameters:
Ui = 30V, Ii = 110mA, Pi = 825mW, Ci = 5.83nF, Li = 0mH.

Field Sensor Energy Limitation Parameters:
Uo = 6.51V, Io = 35.39mA, Po = 57.6mW, Co = 20µF, Lo = 25mH (Groups IIC).
Uo = 6.51V, Io = 35.39mA, Po = 57.6mW, Co = 498µF, Lo = 100mH (Groups IIB).
Uo = 6.51V, Io = 35.39mA, Po = 57.6mW, Co = 998µF, Lo = 200mH (Groups IIA).

a = Input: TPRG, HLRPG, 2TPRG, C, B, E, J, K, N, R, S, T, MV, R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, RO or POT.
b = Options: VTB, VTD, FMEDA.
c = Housing options: HPP, HPPD, HPPDN or CH6.

TDZ2/a/4-20mA/12-30DC/-b [e}. Temperature Transmitter.

Energy Limitation Parameters:
Ui = 30V, Ii = 110, Pi = 825 mW, Ci = 5.83nF, Li = 0mH

Field Sensor Energy Limitation Parameters:
Uo = 6.51V, Io = 35.39mA, Po = 57.6mW, Co = 20µF, Lo= 25mH (Groups IIC).
Uo = 6.51V, Io = 35.39mA, Po = 57.6mW, Co = 498µF, Lo= 100mH (Groups IIB).
Uo = 6.51V, Io = 35.39mA, Po = 57.6mW, Co = 998µF, Lo= 200mH (Groups IIA).

a = Input: TPRG, HLRPG, 2TPRG, C, B, E, J, K, N, R, S, T, MV, R1 , R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, RO or POT.
b = Options: TROP, HS, VTB, VTD, FMEDA.
c = Housing Options: FL, FLD, HP, HPDY, TW or VDN.

SCHEDULE

to EC-Type Examination Certificate No. FM06ATEX0011X

14 **Special Conditions for Safe Use:**

1. The Model THZ^2 Temperature Transmitter shall be installed in an enclosure which maintains an ingress protection rating of IP20.
2. For EPL Ga, the final enclosure shall not contain, by mass, more than 10 % in total of aluminium, magnesium, titanium and zirconium and 7,5 % in total of magnesium, titanium and zirconium; For EPL Gb, the final enclosure shall not contain, by mass, 7.5% in total of 7,5 % magnesium and titanium.
3. Using the box provided on the nameplate, the User shall permanently mark the protection type chosen for the specific installation. Once the type of protection has been marked it shall not be changed.
4. The COM port shall not be used in the hazardous area.

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 EC-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 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 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:

Date	Description
29th June 2007	Original Issue.
11th March 2010	Supplement 1: Report Reference: – 797 dated 8th February 2010 Description of the Change: 1) To correct and improve HART communication performance 2) To prevent the output from 'latching up' 3) Addition of a Dual Thermocouple option 4) General documentation updates
02nd August 2013	Supplement 2: Report Reference: –3024597rev130701 dated 23rd July 2013 Description of the Change: Component updated, that does not affect safety, and associated drawing updated.

SCHEDULE

to EC-Type Examination Certificate No. FM06ATEX0011X

14th January 2014	Supplement 3: Report Reference: 3024597rev131207 dated 13th January 2014 Description of the Change: Minor electrical and clerical updates not affecting compliance.