1 **EC TYPE-EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

3 Certificate Number: **Sira 03ATEX5500** Issue: **2**

4 Equipment: **Trunkguard TG300 Series**

5 Applicant: **Moore Industries Incorporated**

6 Address: 16650 Schoenborn Street
Sepulveda
CA 91343-6196
USA

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

8 Sira Certification Service, notified body number 0518 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 the confidential reports listed in Section 14.2.

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

EN 50014:1997 (A1 and A2) EN 50019:2000 EN 50028:1987
EN 50281-1-1:1998

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 and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:

II 2 G D
EEx me II T5
Ta –40°C to +70°C

Project Number 52A18379
C. Index 12

D R Stubbings BA MIET
Certification Manager

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SCHEDULE

EC TYPE-EXAMINATION CERTIFICATE **Sira 03ATEX5500**
Issue 2

13 **DESCRIPTION OF EQUIPMENT**

The TG300 Series Device Coupler is designed to facilitate the connection of multiple process measurement & control devices using fieldbus technology into fieldbus segments. The unit has designation TG3XX where XX may be 04 to 32, and the unit is rated at 9 to 32V DC.

The TG300 unit comprises a printed circuit board populated with components and increased safety terminal blocks, which is then fitted between end brackets and a top cover. The unit is filled with encapsulant such that the terminal blocks and light emitting diodes protrude through the encapsulant above the level of the top cover. The end brackets may have integral mouldings for mounting on DIN rail or flat brackets for surface mounting. The unit is provided with shrouds (covers) for all terminal blocks and fillers for terminal block entries achieving a minimum of IP30 protection, such that accidental contact with live parts is prevented.

Each TG300 unit has a segment input (Trunk In), and provides multiple device connection points (Spurs) together with onward segment transmission (Trunk Out). The TG300 unit is intended to be installed inside an external enclosure which is a certified increased safety enclosure for Zone 1 use.

Installation of the terminal covers and fillers permits the external enclosure to be opened in the hazardous area whilst the TG300 unit is energised.

Individual Spur connections have provision for individual de-energisation by use of a special key in a dedicated slot. This key operates a duplicated safety circuit within the encapsulated circuit board and the disconnection of the supply to that Spur is recorded by illumination of a specific LED. The key has a locking device to prevent accidental removal. If a Spur is de-energised by the use of this key, the terminal shroud/entry filler on that Spur may be removed and wiring access to that terminal block for connection or disconnection is permitted without de-energising the rest of the unit. The terminal block shall be shrouded and the entry filled before the key is removed.

Wiring access to the Trunk In and Trunk Out connections is only permitted when the TG300 unit is de-energised.

Variation 1 - This variation introduced the following changes:

i. To permit the confirmation that the TG300 Printed Circuit Board may contain up to 32 spur short-circuit protection units (SSCPU) and one autoteminator section. The numbers of SSCPUs that may be fitted on to a printed circuit are normally specified in multiples of two, starting with four units and are designated as TG304, TG306, TG308 up to TG332. The drawings indicate a TG304 as an example.
ii. To permit the removal of end plate caps on the TG300.
iii. To permit changes to the circuit of the TG300 including name designation, component values and PCB layout. These changes do not affect the original assessment. The changes include the addition of R9, ZD1 and ZD2 for operational reasons. Resistors R20 (was R9) and R5 are no longer considered safety critical components.
iv. To permit changes to drawing format to allow the use of Moore Industries drawing paper.
v. To permit changes to the certification label format to include Moore-Hawke LLC, Moore Industries-International Inc, CA 91343, USA

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SCHEDULE

EC TYPE-EXAMINATION CERTIFICATE **Sira 03ATEX5500**
Issue 2

Variation 2 - This variation introduced the following changes:

i. To permit the optional use of a metal inner enclosure material instead of plastic.
ii. To permit circuit changes to include RF protection components and interfacing with a terminator board module.
iii. To permit the addition of an optional terminator board module.

14 **DESCRIPTIVE DOCUMENTS**

14.1 **Drawings**

Refer to Certificate Annexe.

14.2 **Associated Sira Reports and Certificate History**

Issue	Date	Report No.	Comment
0	03 December 2003	R53A10202A	The release of THE prime certificate.
1	14 February 2006 7 March 2006	R52A13931A	The introduction of Variation 1. Variation re-issued 7 March 2006 to correct certificate number
2	16 June 2008	R52A18379A	This Issue covers the following changes: • All previously issued certification was rationalised into a single certificate, Issue 2, Issues 0 to 1 referenced above are only intended to reflect the history of the previous certification and have not been issued as documents in this format. • The introduction of Variation 2, including the change of the Applicant's name, first recognised 19 August 2005, was re-confirmed.

15 **SPECIAL CONDITIONS FOR SAFE USE** (denoted by X after the certificate number)

None

16 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II** (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

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SCHEDULE

EC TYPE-EXAMINATION CERTIFICATE

Sira 03ATEX5500
Issue 2

17 CONDITIONS OF CERTIFICATION

17.1 The use of this certificate is subject to the Regulations Applicable to Holders of Sira Certificates.

17.2 Holders of EC type-examination certificates are required to comply with the production control requirements defined in Article 8 of directive 94/9/EC.

17.3 The Trunkguard TG300 Series covered by this certificate incorporate previously certified devices, it is therefore the responsibility of the manufacturer to continually monitor the status of the certification associated with these devices, and the manufacturer shall inform Sira of any modifications of the devices that may impinge upon the explosion safety design of the Trunkguard TG300 Series.

17.4 The following routine tests are to be performed on each product manufactured:

i The encapsulated parts of the apparatus shall be subjected to a visual inspection. No visible damage of the compound shall be evident, such as cracks, exposure of the encapsulated parts, flaking, impermissible shrinkage, discoloration, swelling decomposition or softening, as required by EN 50028:1987 clause 7.1.

ii An electric strength test of 2U +1000 V (where U is the supply voltage) with a minimum of 1500 V ac, shall be applied between circuit and the casing covered in metal foil for at least 1 minute as required by EN 50028:1987 clause 7.2. No breakdown shall occur.

iii The electrical data shall be checked by measurement of voltage, current and active power as required by clause 7.3 of EN 50028:1987.

17.5 The Trunkguard units may be fitted to any suitably certified enclosure. If the enclosure is manufactured from plastic material the warning: 'Clean only with a damp cloth' shall be included in the marking details

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Certificate Annexe

Certificate Number: **Sira 03ATEX5500**

Equipment: **Trunkguard TG300 Series**

Applicant: **Moore Industries Incorporated**

sira CERTIFICATION

Issue 0

Drawing No.	Sheet	Rev.	Date	Title
FTG300-001	1 of 1	1	03 Dec 03	TG300 Series Assembly
FTG300-002	1 of 1	1	15 Oct 03	TG300 cross section
FTG300-003	1 of 1	1	29 Jul 03	Disconn key, 300 Series
FTG300-004	1 of 1	1	Jul 03	TG300 terminal insulator
FTG300-005	1 of 1	1	Jul 03	TG300 terminal shroud
FTG300-006	1 of 1	1	17 Nov 03	Trunkguard 300 series Certification label
FTG300-007	1 of 1	1	01 Dec 03	Trunkguard enclosure certification label
FTG300-009	1 of 1	1	Aug 03	TG300 Series schematic diagram
FTG300-010	1 of 1	1	Jul 03	Trunkguard TG300 device coupler internal label
FTG300-011	1 of 1	1	9 Sept 03	Trunkguard TG300 Device Coupler
FTG304-001	1 to 3	1	16 Oct 03	TG304 pcb
FTG304-003	1 of 1	1	Jul 03	TG304-DIN Top label
FTG304-004	1 of 1	1	Oct 03	TG304 Electronic B.O.M
FTG308-001	1 to 3	1	16 Oct 03	TG308 pcb
FTG308-001	1 of 1	1	Jul 03	TG308-DIN Top label

Issue 1

Number	Sheet	Rev	Date (Sira stamp)	Description
FTG300-001	1 of 1	A	01 Nov 05	TG300 Assembly
FTG300-002	1 of 1	A	21 Dec 05	TG300 Cross Sectional Side View
FTG300-003	1 of 1	A	01 Nov 05	TG300 Disconn Key
FTG300-004	1 of 1	A	01 Nov 05	TG300 Terminal Insulator
FTG300-005	1 of 1	A	01 Nov 05	TG300 Terminal Shroud
FTG300-006	1 of 1	A	01 Nov 05	TG300 Certification Label - Sira
FTG300-007	1 of 1	A	01 Nov 05	TG300 Certification Label - Sira
FTG300-009	1 of 1	A	21 Dec 05	TG300 Schematic Diagram
FTG300-010	1 of 1	A	01 Nov 05	TG300 Device Coupler Internal Label
FTG300-011	1 of 1	B	21 Dec 05	TG300 Device Coupler
FTG300-015	1 of 1	A	21 Dec 05	TG300 Electronic BOM
FTG304-001	1 of 2	1	21 Dec 05	TG304-DIN Printed Circuit Board
FTG304-001	2 of 2	1	21 Dec 05	TG304-DIN Printed Circuit Board
FTG304-003	1 of 2	A	01 Nov 05	TG304-DIN Top Label
FTG304-003	2 of 2	A	01 Nov 05	TG304-DIN Top Label

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Certificate Annexe

Certificate Number: Sira 03ATEX5500

Equipment: Trunkguard TG300 Series

Applicant: Moore Industries Incorporated

sira CERTIFICATION

Issue 2

Drawing No.	Sheet	Rev	Date (Sira stamp)	Description
FTG300-002	1 of 1	A	21 Dec 05	TG300 Cross Sectional Side View
FTG300-003	1 of 1	A	01 Nov 05	TG300 Disconn Key
FTG300-004	1 of 1	A	01 Nov 05	TG300 Terminal Insulator
FTG300-005	1 of 1	A	01 Nov 05	TG300 Terminal Shroud
FTG300-006	1 of 1	B	02 Jun 08	TG300 Certification Label - Sira
FTG300-007	1 of 1	B	02 Jun 08	TG300 Certification Label - Sira
FTG300-009	1 to 2	B1	02 Jun 08	TG300 Schematic Diagram
FTG300-010	1 of 1	A	01 Nov 05	TG300 Device Coupler Internal Label
FTG300-011	1 of 1	B	21 Dec 05	TG300 Device Coupler
FTG300-015	1 to 2	B1	02 Jun 08	TG300 Electronic BOM
FTG304-003	1 of 2	A	01 Nov 05	TG304-DIN Top Label
FTG304-003	2 of 2	A	01 Nov 05	TG304-DIN Top Label
TG300-DIN1	1 of 1	A	02 Jun 08	TG300 General Assembly
TRK-TERM	1 of 1	C	02 Jun 08	Trunk terminator
FTG304-001	1 to 2	B	02 Jun 08	TG304-DIN PCB layout

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