

**Australian/New Zealand
Certification Scheme for
EXPLOSION-PROTECTED ELECTRICAL EQUIPMENT
ANZEx Scheme**

Certificate of Conformity

Certificate No.: ANZEx 07.3027	Issue No.: 1	Date of Issue: 26/05/2008
	Issue No.: 0	Date of Issue: 21/09/2007

Certificate Holder: Moore Industries - International Inc.
16650 Schoenborn Street
North Hills CA 91343-6196
U.S.A.

Electrical Apparatus: Flameproof Transmitter Enclosure Models LH2XSA and BHabcA

Type of Protection: Ex d IIC

Marking Code: Models LH2XSA and SB2abc
Ex d IIC T6 (T_{amb} 60 °C) IP66
ANZEx 07.3027

Model BHabcA
Ex d IIC T6 (T_{amb} 60 °C)
ANZEx 07.3027

Manufacturing Location(s): Moore Industries - International Inc.
16650 Schoenborn Street
North Hills CA 91343-6196
U.S.A.

The EPEE certification database located at <http://www.anzex.com.au> shows the validity of this Certificate.

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 ABN 94 084 639 032	Certificate issued by: TestSafe Australia 919 Londonderry Road, Londonderry NSW 2753 Australia Phone: +61 2 4724 4900 Fax: +61 2 4724 4999 http://www.testsafe.com.au	 www.jas-anz.com.au/register
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This certificate is granted subject to the conditions as set out in Standards Australia/Standards New Zealand Miscellaneous Publication MP87:2004.

STANDARDS:

The electrical apparatus 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:

- AS/NZS 60079.0:2000** Electrical apparatus for explosive gas atmospheres Part 0: General requirements
- AS/NZS 60079.1:2002** Electrical apparatus for explosive gas atmospheres Part 1: Flameproof enclosures 'd'
- AS 1939-1990** Degrees of protection provided by enclosures of electrical equipment (IP Code)

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

ASSESSMENT & TEST REPORTS:

The equipment listed has successfully met the assessment and test requirements as recorded in:

- Test Report No. and Issuing Body: **23990, 24788A, 25710, 29588 TestSafe Australia, and Project ID: 3016812 FM Approvals**
- Quality Assessment Report No. and Issuing Body: **QAR 07.016 TestSafe Australia**
- File Reference: **2006/030423**



26/05/2008

Signed for and on behalf of issuing body

Date of Issue

Quality & Certification Manager

Position

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This certificate is not transferable and remains the property of the issuing body and must be returned in the event of it being revoked or not renewed.

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Schedule

EQUIPMENT:

The LH2 housing consist of a tubular body fitted with a threaded plain cover. Locking of the cover to the housing body is facilitated by means of a cover locking screw. The housing body and cover are manufactured from extruded aluminium alloy grade 6063-T5, which has magnesium content of not greater than 6%. The housing body is fitted with a threaded entry for the connection of a cable gland or conduit, and a threaded entry, for the connection of the process. The enclosure may be fitted with any one of the following transmitters:

P2X, TRX, TRY, TRZ, THZ, THZ2, T2X or SIY. The transmitters have a power dissipation not exceeding 3 W.

The LH2 enclosure may additionally be fitted with a 2, 3, 4, 6 or 8 way terminal block. In addition, the LH2 may be fitted with Moore Industries or other devices provided these limits are not exceeded; V(max) = 42Vdc, I(max) = 110mA and P(max) = 3 watts power (ratings) constraints.

The following options apply:

Model LH2XSA

- X = N = Two entry ports: both ½-inch NPT
- M = Two entry ports: M20 for cable entry and ½-inch NPT for the process connection.
- C = Two entry ports: M20 for cable entry and G½ (BSP) for the process connection.
- S = Standard black painted aluminium cover. (This is the only option available for LH2)
- A = Standards Australia Certified Unit

The type BH enclosures may be fitted with any one of the following units. The display may be added to any of the units:

Current Transmitter:	ACX
Current Alarm:	ALX
Digital Indicator:	DSX, DVX
Freq./DC Transmitter:	EPFDX/FDX/FDY
Integrating Totaliser:	ITX
Millivolt Transmitter:	MVX
Loop Display:	PSD
Potentiometer Transmitter:	PTX, P2X
RTD Transmitters:	RBX, RIX and RIY
Signal Isolaters:	SCX, SDY, SIY
Temperature Transmitters:	TDY, TDZ, TIY, LRX, TDZ2, TFZ, TPZ, THZ-DIS, THZ, THZ2, T2X, TRX, TRY and TRZ

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EQUIPMENT (continued):

The BH enclosure may additionally be fitted with a 2, 3, 4, 6 or 8 way terminal block. In addition, it may be fitted with Moore Industries or other devices provided these limits are not exceeded; V(max) = 42Vdc, I(max) = 110mA and P(max) = 3 watts power (ratings) constraints.

BH enclosures fitted with a display have a glass window in the cover.

Body options are indicated by four digits following the model number (i.e. MODEL BHabcA). The following key applies:

1 st and 2 nd Digit	3 rd Digit	4 th Digit
2N = Two ½” NPT side entry ports. 2T = Two ¾” NPT side entry ports. 2M = Two M20 x 1.5 side entry ports. 3N = Two ½” NPT side entry ports with one ½” NPT bottom entry port. 3T = Two ¾” NPT side entry ports with one ½” NPT bottom entry port. 3M = Two M20 x 1.5 side entry ports with one ½” NPT bottom entry port.	G = Glass window in cover S = Solid cover.	A = Fixed code denoting Australian certified flameproof enclosure

Also included is a Flameproof Sensor Assembly, which consists of either a Model LH2XSA or BHabcA transmitter enclosure, fitted with a sensor probe. There are three different types of sensor probe designs that are available. These are: fixed mount nipple; fixed mount plug; and spring-loaded. The sensor probes are of welded construction and consist of either a thermocouple or resistance thermometer encased in a metal tube, which is filled with alumina or magnesium oxide powder. The spring-loaded sensor probes are intended for mounting into a thermowell fitted to process equipment. The fixed mount nipple sensor probes may be mounted directly into process equipment or may be used in conjunction with a thermowell. The fixed mount plug sensor probe with a suitable compression type fitting may be mounted with or without a thermowell directly into process equipment. The sensor probe tube can be provided in 3 mm, 6 mm or 8 mm diameters. Probe tube lengths of up to 15 m are available for each probe type.

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EQUIPMENT (continued):

The probe tube for the fixed mount sensor, both nipple and plug types, is fusion welded to the nipple using continuous gas tungsten arc welding (GTAW), with the exception of the 3mm sensor which is silver soldered. In the case of the spring-loaded probe, a stainless steel crimp is welded using GTAW to a circular stainless steel plate, fitted with two screws and springs, which is then crimped onto the probe tube. The probe tube is then fitted with a nipple, which has a hole drilled through it. The nipple forms a flameproof joint with the probe tube and allows the probe tube to slide through the nipple. In all probe types, the sensor end of the probe tube is sealed closed using GTAW and filler wire of the same material as the probe tube. Epoxy sealing compound is used to seal the sensor leads where they enter the nipple, plug or circular plate end of the sensor, to prevent moisture ingress and to retain the insulating powder filling.

The Model LH2XSA transmitter enclosure may be fitted with any of the following sensor probe types:

- Fixed mount nipple
- Fixed mount plug
- Spring-loaded

The Model BHabcA transmitter enclosure may be fitted with any of the following sensor probe types:

- Fixed mount nipple
- Spring-loaded

Details of the allowable sensor types and configurations are shown in the table below:

Sensor Dia (mm)	Sensor Type	Configuration	Accuracy
3 6 8	THERMOCOUPLE T, K, J, E, R, B, S OR N	SINGLE / DUPLEX SINGLE / DUPLEX / TRIPLEX SINGLE / DUPLEX	IEC 584.2 CLASS 1, 2 OR 3 AS SPECIFIED
3 6 8	RESISTANCE THERMOMETER	PT 100 Ω SINGLE 2, 3 OR 4 WIRE DUPLEX 2 OR 5 WIRE TRIPLEX 3 X 2 WIRE PT 500 Ω 2 WIRE 2 WIRE SINGLE	IEC 751 CLASS A OR CLASS B OTHER SPECIAL TOLERANCES MAY BE SPECIFIED

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CONDITIONS OF CERTIFICATION:

1. It is a condition of manufacture that routine overpressure testing shall be carried out on each sensor probe tube assembly at a minimum pressure of 2000 kPa, in accordance with Clause 16.1 of AS/NZS 60079.1:2002.
2. It is a condition of manufacture that the installation instructions for each Flameproof Sensor Assembly fitted with a spring-loaded sensor probe or fixed mount plug sensor probe shall be provided with the Flameproof Sensor Assembly.

DOCUMENTS:

Document Number	Document Title	Revision	Date
200-251-2090	TAG, MODEL NO., MII-HPP 2-Wire Temp. X-mitters. mounted in the 'LH2 Housing' TestSafe-SAA Flame-Proof, IP66 [LH2xxA] Apparatus Certification	B	08/2007
201-236-01	ALUMINUM SPECIFICATIONS	E	11/1999
234-205-00	'LH2' Housing Assy. (with all MII-HPP units)	C	11/2003
240-208-12	EXTRUSION, COVER, LH HOUSING	A	02/1997
240-208-13	COVER, LH2 HOUSING (Explosion Proof)	C	07/2000
240-208-14	BASE, EXPLOSIONPROOF LH2 HOUSING, NPT THREADS	C	07/2000
240-208-17	BASE, EXPLOSIONPROOF, LH2 HOUSING, M-20X1.5 CONDUIT THREADS	D	07/2000
240-222/223-00	LH2 HOUSING (EXPLOSIONPROOF)	D	07/2000
163-201-146	Extrusion, Housing BH Housing	A	06/1999
163-201-147	Extrusion, Cover BH Housing	A	06/1999
200-251-2091	Tag, Model No., MII-HP 2-Wire Transmitters mounted in the BH Housing. Flame-Proof Apparatus [BHxxxA] TestSafe-ANZEx: EEx d IIC	C	08/2007
205-231-05	Base Plate, Plain BH Housing	B	05/2000

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DOCUMENTS (continued):

Document Number	Document Title	Revision	Date
205-231-06	Cover Plug, Glass BH Housing	D	12/2004
205-231-07	Cover Plug, Solid BH Housing	B	05/2000
205-231-09	Bracket, Mounting BH Housing	A	04/1999
205-231-11	Base Plate, ½"NPT BH Housing	D	03/2001
205-231-15/17	Post, Hex, BH Housing	C	08/2000
205-231/233-02	BH Housing, Plain Base, Sub-Assy	A	04/1999
205-231/233-03	Housing, BH Machined	C	05/2000
205-231/242-00	BH Housing Top Assembly	C	05/2000
205-232-01	Cover Assy, Solid BH Housing	C	09/2000
205-234/236-02	BH Housing, NPT Base, Sub-assy	A	04/1999
205-247-07	Retaining Ring, DH Housing	A	08/2000
205-247-08	Cover, Painted DH Housing	A	10/2000
205-247-09	Cover Assembly, Glass, THZ-DH	B	03/2005
205-247-10	Cover Assembly, Solid, THZ-DH	A	08/2000
205-247-11	Plug, Cover, Painted, THZ-DH	A	10/2000
205-247-12	Cover, Solid BH, DH & IPX2 Housing	A	08/2002
205-251/262-00	Final Assembly, BH Housing Units	E	10/2001
100-100-67 Sheets 1 to 3	LH2 Housing, Flame-proof Sensor Assy, (Spring loaded & Fixed Mount)/SAA	C	06/2007
100-100-68 Sheets 1 to 3	BH Housing, Flame-proof Sensor Assy, (Spring loaded & Fixed Mount)/SAA	C	06/2007
100-100-69	Nipple, Flame-proof 6mm Sensor TestSafe/SAA	B	12/2004
700-770-00A	Supplement to the BH User's Manual, Sensor Assemblies: Fixed /Spring-Loaded In Field-Mount Enclosures	Original	12/2004

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Schedule of Variations

Variation permitted by Issue 1:

- Addition of Series SB2abc Instrument Housing to the range of Flameproof Transmitter Enclosure Models LH2XSA and BhabcA Series.
- Addition of drawings to cover Series SB2abc Instrument Housing.

The “SB” Instrument Housing construction maintains the identical dimensional specifications of the “BH” Instrument Housing previously certified, with the exception that the “SB” Instrument Housing is constructed of cast stainless steel in place of the extruded aluminium construction of the “BH” Instrument Housing.

Conditions of certification relating to Issue 1:

All previous conditions still apply.

Drawings relating to Issue 1:

Document Number	Document Title	Revision	Date
205-231-18	Housing S.S., SB	A	12/09/2002
205-231-19	Cover, Solid, SB Housing	B	12/02/2003
205-231-20	Cover, Glass, SB Housing	B	12/02/2003
205-231-21	Glass Cover Machined, S.S. SB	A	28/01/2003
205-231-22	SB Housing, Machined ½ NPT	B	28/02/2003
205-231-24	Glass Cover Assy., S.S. SB	A	01/2003
205-231-25	SB Housing, Machined S.S ¾ NPT	B	28/02/2003
205-231-27	Solid Cover, S.S Machined SB	A	01/2003
205-231-29	Glass Cover Machined, S.S., Unpainted, SB	A	01/2003
205-231-30	Solid Cover, S.S Machined Unpainted, SB	A	01/2003
205-231-31	Glass Cover Assy., S.S. Unpainted, SB	A	01/2003

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Drawings relating to Issue 1 (continued):

207-225-00	SB Top Assy. Glass, ½ NPT	B	03/2003
207-226-00	SB Top Assy. Solid, ½ NPT	B	03/2003
207-226-01	Screw Ground, Painted #10-32 X 3/8 SB	A	01/2003
207-227-00	SB Top Assy. Glass, ¾ NPT	B	03/2003
207-228-00	SB Top Assy. Solid, ¾ NPT	B	03/2003