

Certificate of Conformity

Ex EQUIPMENT

Certificate No.: **ANZEx 07.3027**

Current Issue: 2

Date of Issue: 2019-04-18

Applicant: **Moore Industries International**
16650 Schoenborn Street
North Hills CA 91343
U.S.A

Equipment: Flameproof Transmitter Enclosure Models LH2XSA and BHabcA

Type of Explosion Protection: Flameproof 'd'

Explosion Protection Marking: Models LH2XSA and SB2abc
Ex d IIC T6 -20 °C ≤ T_a ≤ +60 °C IP66

Model BHabcA
Ex d IIC T6 -20 °C ≤ T_a ≤ +60 °C

*This certificate is granted subject to the conditions as set out in
Standards Australia/Standards New Zealand Miscellaneous Publication **MP87.1***

Signed for and on behalf of issuing body



Name & Position

Ujen Singh – Quality & Certification Manager

This certificate is not transferable and remains the property of the issuing body.

The status of this certificate can be confirmed through the database located at www.anzex.com.au

Certificate issued by:

TestSafe Australia
919 Londonderry Road, Londonderry NSW 2753 Australia

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Manufacturer : **Moore Industries International**
16650 Schoenborn Street
North Hills CA 91343
U.S.A.

**Additional
Manufacturing
Location(s):** 'None'

STANDARDS:

The equipment 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 safety and performance requirements other than those expressly included in the Standards listed above.

This ANZEx certificate was issued on the basis of an existing Certificate of Conformity AUSEx 03.3918 in accordance with Clause 3.3 of MP87.1:2008. Certificate AUSEx 03.3918 was first issued on 2003-11-18.

TEST & ASSESSMENT REPORTS:

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

Test Report Nos. & Issuing Bodies associated with all issues of the certificate: 23990, 24788A, 25710, 29588 TestSafe Australia, and Project ID: 3016812 FM Approvals

Quality Assessment Report No. & Issuing Body: GB/FME/QAR18.0009/00 FM Approvals

File Reference: 2006/030423, 2018/020108

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Schedule

Equipment Description:

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:	MXV
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

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.

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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:

<i>1st and 2nd Digit</i>	<i>3rd Digit</i>	<i>4th Digit</i>
2N = Two ½" NPT side entry ports.	G = Glass window in cover S = Solid cover.	A = Fixed code denoting Australian certified flameproof enclosure
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.		

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.

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

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

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

Variations Permitted by this Issue:

1. Change of QAR issuer to FM Approvals GB/FME/QAR18.0009/00.
2. Marking label drawings changed to show ambient temperature range instead of the maximum ambient temperature.

Specific Conditions of Use:

None.

Additional Information:

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.

Manufacturer's Documents associated with this Issue:

Document Number	Pages / Sheets	Document Title	Revision	Date
200-251-2090	1	Name plate, Model No., MII-HPP 2-Wire in LH2 Enclosure	F1	2019-05
200-251-2091	1	Name plate, MII-HP 2-Wire Transmitters in BH Enclosure TestSafe-ANZEx: EEx d IIC	G1	2019-05
200-251-2334	1	Name plate, Model No. MII-HP/HPP 2-Wire Transmitters in [SB] housing ANZEx Flame-proof &IP66 (apparatus certification)	D1	2019-05

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History of Issues and Variations

Issue 0 dated 2007-09-21

Manufacturer's Documents associated with this Issue 0:

Document Number	Pages / Sheets	Document Title	Revision	Date
200-251-2090	1	TAG, MODEL NO., MII-HPP 2-Wire Temp. X-mitters. mounted in the 'LH2 Housing' TestSafe-SAA Flame-Proof, IP66 [LH2xxA] Apparatus Certification	B	2007-08
201-236-01	1	ALUMINUM SPECIFICATIONS	E	1999-11
234-205-00	1	'LH2' Housing Assy. (with all MII-HPP units)	C	2003-11
240-208-12	1	EXTRUSION, COVER, LH HOUSING	A	1997-02
240-208-13	1	COVER, LH2 HOUSING (Explosion Proof)	C	2000-07
240-208-14	1	BASE, EXPLOSIONPROOF LH2 HOUSING, NPT THREADS	C	2000-07
240-208-17	1	BASE, EXPLOSIONPROOF, LH2 HOUSING, M-20X1.5 CONDUIT THREADS	D	2000-07
240-222/223-00	1	LH2 HOUSING (EXPLOSIONPROOF)	D	2000-07
163-201-146	1	Extrusion, Housing BH Housing	A	1999-06
163-201-147	1	Extrusion, Cover BH Housing	A	1999-06
200-251-2091	1	Tag, Model No., MII-HP 2-Wire Transmitters mounted in the BH Housing. Flame-Proof Apparatus [BHxxxA] TestSafe-ANZEx: EEx d IIC	C	2007-08
205-231-05	1	Base Plate, Plain BH Housing	B	2000-05
205-231-06	1	Cover Plug, Glass BH Housing	D	2004-12
205-231-07	1	Cover Plug, Solid BH Housing	B	2000-05
205-231-09	1	Bracket, Mounting BH Housing	A	1999-04
205-231-11	1	Base Plate, 1/2"NPT BH Housing	D	2001-03
205-231-15/17	1	Post, Hex, BH Housing	C	2000-08
205-231/233-02	1	BH Housing, Plain Base, Sub-Assy	A	1999-04
205-231/233-03	1	Housing, BH Machined	C	2000-05
205-231/242-00	1	BH Housing Top Assembly	C	2000-05
205-232-01	1	Cover Assy, Solid BH Housing	C	2000-09
205-234/236-02	1	BH Housing, NPT Base, Sub-assy	A	1999-04
205-247-07	1	Retaining Ring, DH Housing	A	2000-08
205-247-08	1	Cover, Painted DH Housing	A	2000-10
205-247-09	1	Cover Assembly, Glass, THZ-DH	B	2005-03
205-247-10	1	Cover Assembly, Solid, THZ-DH	A	2000-08

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205-247-11	1	Plug, Cover, Painted, THZ-DH	A	2000-10
205-247-12	1	Cover, Solid BH, DH & IPX2 Housing	A	2002-08
205-251/262-00	1	Final Assembly, BH Housing Units	E	2001-10
100-100-67 Sheets 1 to 3	3	LH2 Housing, Flame-proof Sensor Assy, (Spring loaded & Fixed Mount)/SAA	C	2007-06
100-100-68 Sheets 1 to 3	3	BH Housing, Flame-proof Sensor Assy, (Spring loaded & Fixed Mount)/SAA	C	2007-06
100-100-69	1	Nipple, Flame-proof 6mm Sensor TestSafe/SAA	B	2004-12
700-770-00A	1	Supplement to the BH User's Manual, Sensor Assemblies: Fixed /Spring-Loaded In Field-Mount Enclosures	Original	2004-12

Issue 1 dated 2008-05-26**Variations Permitted by Issue 1:**

1. Addition of Series SB2abc Instrument Housing to the range of Flameproof Transmitter Enclosure Models LH2XSA and BhabcA Series.
2. 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.

Manufacturer's Documents associated with the Issue 1:

Document Number	Pages / Sheets	Document Title	Revision	Date
205-231-18	1	Housing S.S., SB	A	2002-09-12
205-231-19	1	Cover, Solid, SB Housing	B	2003-02-12
205-231-20	1	Cover, Glass, SB Housing	B	2003-02-12
205-231-21	1	Glass Cover Machined, S.S. SB	A	2003-01-28
205-231-22	1	SB Housing, Machined ½ NPT	B	2003-02-28
205-231-24	1	Glass Cover Assy., S.S. SB	A	2003-01
205-231-25	1	SB Housing, Machined S.S ¾ NPT	B	2003-02-28
205-231-27	1	Solid Cover, S.S Machined SB	A	2003-01
205-231-29	1	Glass Cover Machined, S.S., Unpainted, SB	A	2003-01
205-231-30	1	Solid Cover, S.S Machined Unpainted, SB	A	2003-01
205-231-31	1	Glass Cover Assy., S.S. Unpainted, SB	A	2003-01
207-225-00	1	SB Top Assy. Glass, ½ NPT	B	2003-03

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207-226-00	1	SB Top Assy. Solid, ½ NPT	B	2003-03
207-226-01	1	Screw Ground, Painted #10-32 X 3/8 SB	A	2003-01
207-227-00	1	SB Top Assy. Glass, ¾ NPT	B	2003-03
207-228-00	1	SB Top Assy. Solid, ¾ NPT	B	2003-03