IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx ExTC 18.0029X

Issue No: 0

Certificate history:
Issue No. 0 (2018-12-19)

Status: **Current**

Date of Issue: **2018-12-19**

Applicant: **Oceania Engineering Services**
Unit 1 / 46 Mullingar Way
Landsdale, WA, 6065
Australia

Equipment: **Zonerite Range of Compressors**

Optional accessory:

Type of Protection: **Pressurisation "p" and Encapsulation "m"**

Marking:

When installed with two low pressure sensors :
Ex mb pxb IIC T4 Gb or
Ex mb pxb IIB+H2 T4 Gb (Untreated copper piping)
When installed with one low pressure sensor :
Ex mb pzc IIC T4 Gc or
Ex mb pzc IIB+H2 T4 Gc (Untreated copper piping)

$-40^{o}C \leq Tamb \leq +55^{o}C$.

Approved for issue on behalf of the IECEx Certification Body: Ajay Maira

Position: Certification Authority

Signature:
(for printed version)

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

Ex Testing and Certification Pty Ltd
1/30 Kennington Drive
Tomago NSW 2322
Australia

TESTING & CERTIFICATION

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Manufacturer:	**Oceania Engineering Services** Unit 1 / 46 Mullingar Way Landsdale, WA, 6065 **Australia**	

Additional Manufacturing location(s):

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This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The 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:

IEC 60079-0 : 2017 Edition:7.0	Explosive atmospheres - Part 0: Equipment - General requirements
IEC 60079-18 : 2014 Edition:4.0	Explosive atmospheres – Part 18: Equipment protection by encapsulation “m”
IEC 60079-2 : 2014-07 Edition:6	Explosive atmospheres - Part 2: Equipment protection by pressurized enclosure "p"

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

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

AU/EXTC/ExTR18.0041/00

Quality Assessment Report:

AU/EXTC/QAR18.0005/00

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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The Zonerite range of compressors are intended for Heating, Ventilation, Air Conditioning and Refrigeration (HVAC&R) applications in explosive gas atmospheres for onshore and offshore installations. Explosive dust atmospheres are not considered.

The Zonerite range of compressors shall only use refrigerant types as nominated by the OEM for their specific compressor selection, with the overriding note that the refrigerant shall be inert and non-flammable and therefore in itself not present an ignition risk.

Refer to the Annex for more details

SPECIFIC CONDITIONS OF USE: YES as shown below:

Refer to the Annex for details

Annex:

IECEx ExTC 18.0029X-0 Certificate Annex Final.pdf

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Annexe

Annexe for Certificate No.:	IECEx ExTC 18.0029X	Issue No.:	0

Description (continued from certificate):

Compressors

The Zonerite range of compressors are hermetic and semi-hermetic compressors for HVAC&R applications.

The compressor casing houses the motor, winding and all rotating / moving parts of the compressor.

The motor terminal box contains the electrical connections for the motor terminals. The compressors are delivered to the customer pre-terminated at the compressor end and fitted with a flying lead for field connection.

Due to the nature of the applied protection method, once delivered, it is not possible to open the terminal enclosure of the Zonerite range of compressors.

A compressor draws refrigerant vapour from the evaporator and delivers it to the condenser. The operating medium of the compressors is a closed loop mixture of refrigerant and refrigerant oil under pressure within the compressor casing. The driving motor is sealed inside the compressor housing, with the refrigerant acting to cool the motor windings.

Hermetically sealed compressors (“hermetic compressor”) are compressors which are manufactured in a one-piece welded steel casing that is never intended to be opened, ie non-field serviceable. Failure of any part within the compressor will require the entire compressor be replaced.

Semi-hermetically sealed compressors (“semi-hermetic compressor”) are compressors which can be opened for field service of some internal parts when de-energised and evacuated of refrigerant, however remain hermetically sealed during normal operation.

Hermetically and semi-hermetically sealed compressor casings are, by design, IP66 minimum. During normal operation and all expected malfunctions, the compressor casing will remain under pressure.

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Annexe

Annexe for Certificate No.:	IECEx ExTC 18.0029X	Issue No.:	0

Conditions of Certification pertaining to Issue 0 of this Certificate:

1) The externally installed protection devices shall not be easily defeated and shall be suitably protected using one or more methods as listed in clause 1 of IEC60079-0.
2) The thermal protection device of the discharge gas is to be set at maximum of 125ºC. The tolerance of the protection system is not to exceed ±4.4°K. If the discharge gas thermal protection device is fitted externally it is to be located along the straight or bended pipe a maximum of 120mm from the compressor shell.
3) Low pressure protective devices will be fitted and set to no less than 20kPa. A minimum of two low pressure sensors or switches shall be installed when protected by level of protection 'pxb' and one for the when the level of protection is 'pzc'. The devices shall be capable of being reset only by the use of a tool or a key.
4) An over pressure protective device shall be fitted to ensure that the system cannot achieve a pressure high enough to damage any part of the refrigeration circuit. Refer to the user manual for details regarding the required settings.
5) The cable is to be terminated outside of the hazardous zone or shall be terminated using a method of protection listed in clause 1 of IEC60079-0.
6) The compressor is to be installed in a manner that protects it from direct impact damage.
7) Functional tests of the protective devices are required prior to putting the equipment into use.
8) Over-current protection shall be provided for the compressor motor.
9) When installing the compressor in an enclosed space entries are to be fitted with warnings to the effect of "WARNING – THIS ENCLOSURE CONTAINS EQUIPMENT USING INERT GAS, AN ASPHYXIATION HAZARD MAY BE PRESENT."

Drawing list pertaining to Issue 0 of this Certificate:

Manufacturer's Documents

Title:	Drawing No.:	Pages	Rev. Level:	Date:
Type 1 – Curved Base Electrical Terminal Box General Arrangement Drawing	DWG-OES-EX-01	1	1	2018-11-26
Type 2 – Flat Base Electrical Terminal Box General Arrangement Drawing	DWG-OES-EX-02	1	1	2018-11-26
Compressor Nameplate Details General Arrangement Drawing	DWG-OES-EX-03	1	1	2018-11-26

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Annexe

Annexe for Certificate No.:	IECEx ExTC 18.0029X	Issue No.:	0

Title:	Drawing No.:	Pages	Rev. Level:	Date:
ZONERITE HAZARDOUS AREA COMPRESSOR TECHNICAL FILE	MNL-OES-EX-01	38	1	2018-12-07
ZONERITE HAZARDOUS AREA COMPRESSOR OPERATION & MAINTENANCE INSTRUCTIONS	MNL-OES-EX-02 (Pages 7-10 certified)	34	0	2018-11-27