



Marine & Offshore

Certificate number: 40403/B1 BV

File number: AP 4580

Product code: 3003H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

Axiomatic Technologies Corporation

Mississauga, ON - CANADA

for the type of product

PERIPHERAL EQUIPMENT

Protocol Converter - AX140x0x

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships.

EC Code: 43

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 24 May 2026

For Bureau Veritas Marine & Offshore,

At BV PORT EVERGLADES CENTRE, on 27 Mar 2024,

Flavio Rosas

This certificate was created electronically and is valid without signature



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

The electronic version is available at: <http://www.veristarm.com/veristarnb/jsp/viewPublicPdfTypepec.jsp?id=mbtyy5vymj>

BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

- Product model or type designation:

AX140X0X

(AX14010X, AX14020X, AX140202, AX14040X, AX14010X-XX, 545-6553, 517-0738)

- Product description:

Acts as a gateway or interface between CAN buses with different baud rates and protocols (SAE J1939-SAE J1939 or SAE J1939-CANopen®) as well as Modbus RTU or J1587. Isolation is provided for each port. It includes a rugged enclosure and connector for harsh environment applications. It accepts 24Vdc power input.

The models are as follows:

AX140202-01 : SAE J1939/CANopen Converter
 AX140202-02 : SAE J1939/CANopen Converter with BOV and WG
 AX140202-03 : SAE J1939/CANopen Converter with CBV and WG
 AX140100 : Protocol Converter, 2 SAE J1939, Modbus RTU
 AX140200 : Protocol Converter, SAE J1939, CANopen®, Modbus RTU
 AX140400 : Protocol Converter, SAE J1939, SAE J1939, J1587
 AM171201 : (1100357) J1587/J1939 Converter
 AX140100-03 : 545-6553, Protocol Converter
 AX140100-04 : 517-0738, Protocol Converter

2. DOCUMENTS AND DRAWINGS:

Axiomatic:

- PCB-12005-01-R2_Layout
- PCB-12005-01-R2_Schematics (sheets 1 to 7), dated 2013-09-10
- Protocol converter drawing No. AX140X0-MD-A Rev.D4, dated 2021-09-23.
- User Manual AX140X00 Rev.P, dated 2020-07-15.

3. TEST REPORTS:

Ultratech Group of Labs:

- EMC Test Report No.:ATC-014_60533-R1, dated Jun 25, 2015.
- EMC Test Report No.:21ATC051_60945, dated Jun 10, 2021.

I2PS:

- Environmental Test Report No.:2015-0240901, dated Sep 23, 2015.

4. APPLICATION / LIMITATION:

- 4.1 - BUREAU VERITAS Rules and Regulations for the Classification of Steel Ships.
- 4.2 - Approval also valid for ships to be granted with the notations: **AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS.**
- 4.3 - BUREAU VERITAS Environmental Category, **EC Code: 43**
- 4.4 - The equipment fulfils the EMC requirements for installation in General Power Distribution Zones.
- 4.5 - Only Hardware and Firmware / Software successfully tested together in compliance with the regulations as referred to in page one, according to the declaration of the manufacturer are covered by this certificate.
- 4.6 - Any modification of the hardware, firmware or software having an impact on the product performance or functionality has to be validated with type testing.
- 4.7 - Equipment covered by this Type Approval certificate has been tested according to requirements of IACS UR E10 rev7

5. PRODUCTION SURVEY REQUIREMENTS:

- 5.1 - The above products are to be supplied by **Axiomatic Technologies Corporation** in compliance with the type described in this certificate.
- 5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.
- 5.3 - **Axiomatic Technologies Corporation** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.
- 5.4 - For information, **Axiomatic Technologies Corporation** has declared to Bureau Veritas the following production site(s):

Axiomatic Technologies Corporation
1445 Courtneypark Drive E,
Mississauga, ON L5T 2E3
CANADA

6. MARKING OF PRODUCT:

- Trade name.
- Date of manufacture and serial number.
- Equipment type or model identification under which it was type-tested.

7. OTHERS:

7.1 - It is **Axiomatic Technologies Corporation**'s responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate No. 40403/B0 BV issued on 12 Feb 2022 by the Society.

*** END OF CERTIFICATE ***