



CERTIFICATE NUMBER	24-2510075-PDA
EFFECTIVE DATE	29-Feb-2024
EXPIRY DATE	27-Feb-2029
ABS TECHNICAL OFFICE	Busan Engineering Services

CERTIFICATE OF Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

PHOENIX CONTACT GMBH & CO. KG

located at

FLACHSMARKTSTR. 8, , BLOMBERG, Germany, D-32825

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product: Programmable Controller, I/O Units, Operator & Communication...

Model: Axioline Smart Elements (AXL SE series)

Endorsements:

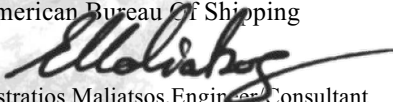
Tier: 2 - PDA Issued

This Product Design Assessment (PDA) Certificate remains valid until 27/Feb/2029 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau Of Shipping


Efstratios Maliatsos, Engineer Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

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Web: www.phoenixcontact.com

Tier: 2 - PDA Issued

Product: Programmable Controller, I/O Units, Operator & Communication Interfaces
Model: Axioline Smart Elements (AXL SE series)
Endorsements:

Intended Service:
ABS Classed Vessels and Offshore Installations

Description:
Axioline Smart Elements are compact, pluggable I/O elements. Axioline F backplanes (AXL F BP SE6-M or AXL F BP SE4-M) are available for integrating Axioline Smart Elements into an Axioline F station.

Rating:
1) 1079241 AXL SE PSDI8/3: Safe input module in the Axioline SE product range for use in a PROFIsafe system (Application firmware: Rev.1.00)
- Nominal voltage: 24VDC
- Degree of protection: IP20
- Ambient temperature (operation): -25 °C~60 °C
- Operating mode: PROFIsafe 2.4, PROFIsafe 2.6.1

2) 1079231 AXL SE PSDO4/2 2A: Safe output module in the Axioline SE product range for use in a PROFIsafe system (Application firmware: Rev.1.00)
- Nominal voltage: 24VDC
- Degree of protection: IP20
- Ambient temperature (operation): -25 °C~60 °C
- Operating mode: PROFIsafe 2.4, PROFIsafe 2.6.1

3) 1088062 AXL SE AI4 I 4-20: Analog input module, analog inputs: 4 mA-20 mA (Application firmware: Rev.1.11, Boot loader: Rev.1.13)
- Nominal voltage: 24VDC
- Degree of protection: IP20
- Ambient temperature (operation): -25 °C~60 °C
- Current input/output signal: 4 mA-20 mA

4) 1088123 AXL SE AO4 I 4-20: Analog output module, analog outputs: 4 mA-20 mA (Application firmware: Rev.1.10, Boot loader: Rev.1.13)
- Nominal voltage: 24VDC
- Degree of protection: IP20
- Ambient temperature (operation): -25 °C~60 °C
- Current input/output signal: 4 mA-20 mA

5) 1088127 AXL SE DI16/1: Digital input module, digital inputs: 24 VDC (Application firmware: Rev.1.10, Boot loader: Rev.1.13)
- Nominal voltage: 24VDC
- Degree of protection: IP20
- Ambient temperature (operation): -25 °C~60 °C
- Nominal input voltage: 24 VDC
- Nominal input current: 2.4 mA

6) 1088129 AXL SE DO16/1: Digital output module, digital outputs: 24 VDC, 500 mA (Application firmware: Rev.1.10, Boot loader: Rev.1.13)
- Nominal voltage: 24VDC
- Degree of protection: IP20
- Ambient temperature (operation): -25 °C~60 °C

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- Nominal output voltage: 24 VDC
- Output current per channel: max. 500 mA

7) 1088106 AXL SE RTD4 PT100: Temperature recording module, analog RTD inputs: PT 100 (Application firmware: Rev.1.12, Boot loader: Rev.1.14)

- Nominal voltage: 24VDC
- Degree of protection: IP20
- Ambient temperature (operation): -25 °C~60 °C
- Sensor types (RTD) that can be used: Pt 100 (IEC 60751/EN 60751)

8) 1088128 AXL SE RS485: Communication module, serial data transmission, interface: RS-485 (Application firmware: Rev.1.10, Boot loader: Rev.1.14)

- Nominal voltage: 24VDC
- Degree of protection: IP20
- Ambient temperature (operation): -25 °C~60 °C
- Interface: RS-485 (Termination resistor: 120)

9) 1088134 AXL SE SC-A: Slot cover

- Nominal voltage: 24VDC
- Degree of protection: IP20

10) 1588884 AXL F BP SE4-M & 1588887 AXL F BP SE6-M: Backplanes featuring four or six slots for Axioline Smart Elements

Service Restriction:

- 1) Unit Certification is not required for the product or products covered in this certificate. However, unit certification in accordance with MVR 4-9-3/Table 5, MVR 4-9-9/15.7 Table 2, MVR 4-9-14/19.1.6 is required for the system, where this equipment is part of Category II or III computer-based systems as described in MVR 4-9-3/7.1 Table 1 or part of systems that falls within the scope of MVR 4-9-13/5.
- 2) If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

Comments:

- 1) The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
- 2) This approval is limited to the hardware only. Each particular application/ installation and the used application software is to be specifically approved in conjunction with the relevant system in which the units are being used in accordance with MVR 4-9-3, 4-9-13 and 4-9-14 and other application specific requirements.
- 3) Dry heat test was conducted for 16 hrs at 70 °C.
- 4) Cold test was conducted for 16 hrs at -15 °C.
- 5) Radiated emission and conducted emission tests were carried out for the general power distribution zone according to MVR 4-9-9/Table 1.

Notes/Drawing/Documentation:

- 1) Manufacturer's Type Approval Documentation:
 - Circuit Diagrams
 - Layout Drawings (PCB)
 - Axioline Smart Elements User manual
 - Functional Description of Firmware
- 2) Test Reports:
 - PHOENIX TESTLAB : E231160E1 (issued on 27 Oct. 2023)
 - PHOENIX TESTLAB : U231160E1 (issued on 31 Oct. 2023)

Terms of Validity:

This Product Design Assessment (PDA) Certificate remains valid until 27/Feb/2029 or until the Rules and/or

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Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

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STANDARDS

ABS Rules:

2024 Marine Vessel Rules: 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-9-3/7, 4-9-3/8.3.4, 4-9-9/13 & Table 1

2024 Mobile Offshore Unit Rules: 1-1-4/9.7, 1-1-A2 & 1-1-A3

2024 Facilities on Offshore Installations: 1-1-4/9.7, 1-1-A2 & 1-1-A3

National:

NA

International:

IACS UR E10 (Rev.8)

Government:

NA

EUMED:

NA

OTHERS:

NA