CERTIFICATE NUMBER	25-0446591-PDA-DUP
EFFECTIVE DATE	03-Feb-2026
EXPIRY DATE	02-Feb-2031
ABS TECHNICAL OFFICE	Houston ESD

CERTIFICATE OF

Product Design Assessment

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

BASLER ELECTRIC COMPANY

located at

204 HIGHLAND DR ., TAYLOR, TX, United States, 76574

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:	**Controllers**
Model:	**DECS-150, DECS-250 and DECS-250N**
Endorsements:	
Tier:	**2 - PDA Issued**

This Product Design Assessment (PDA) Certificate remains valid until 02/Feb/2031 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

Soheni Haque

Soheni Haque, Sr. Managing Principal Engineer

BASLER ELECTRIC COMPANY
204 HIGHLAND DR .
TAYLOR TX
United States 76574
Telephone: 618 654 2341
Fax: 618 654 2351
Email: info@basler.com
Web:

Tier: 2 - PDA Issued

Product: **Controllers**
Model: **DECS-150, DECS-250 and DECS-250N**
Endorsements:

Intended Service:
Marine and Offshore Applications: Digital Excitation Control System for voltage control of AC Generators on Ships and Offshore Facilities.

Description:
Digital Excitation Control System for controlling the output of rotary excited synchronous generators.
The DECS-150 is a microprocessor based digital excitation control system to control the output of brushless excited AC synchronous generators, provides voltage, VAR and Power Factor regulation
The DECS-250 is a digital excitation control system to control the output of brushless excited AC synchronous generators, provides voltage, VAR and Power Factor regulation along with generator protection with optional power system stabilizer.
The DECS-250N is a digital excitation control system with negative forcing to control the output of brushless excited AC synchronous generators, provides voltage, VAR and Power Factor regulation along with generator protection with optional power system stabilizer. A rectifier bridge fitted into DECS-250N provides high positive and negative field forcing for improving system response characteristics.

Rating:
DECS-150:
Nominal Input Voltage: 120Vac, 125Vdc; Full Load Continuous Voltage: 63Vdc
Nominal Input Voltage: 240Vac, 250Vdc; Full Load Continuous Voltage: 125Vdc
Environmental: Operating Temperature: -40°C to 55°C (-40°F to 131°F), Shock: 30 G in 3 perpendicular planes, Vibration: 5 G for 3 hours from 18 to 2,000 Hz
IP54 rating when rear-mounted USB option is selected
Software: Application version 3.xx.xx, Security version 1.xx

DECS-250
Control Power: 24/48 Vdc, 120Vac/125Vdc (50/60Hz);
Operating power: 56-70 Vac/32 Vdc, 100-139 Vac/125Vdc, 190-277Vac/250Vdc (50-500Hz); Generator and Bus Voltage Sensing: 1 or 3 phase;
Voltage Range: 120Vac, 240Vac, 480Vac, 600Vac, (50/60Hz);
Excitation Power Voltage: 32Vdc, 63Vdc, 125Vdc.
Environmental: Operating Temperature: -40°C to 70°C (-40°F to 158°F), Shock: 15 G in 3 perpendicular planes, Vibration: 5 G for 3 perpendicular planes from 18 to 2,000 Hz
Software: Application version 2.xx.xx, Security version (Not applicable)

DECS-250N:
Control Power: 24/48 Vdc, 120Vac/125Vdc (50/60Hz);
Operating power: 100-139 Vac, 190-277Vac, 380-528Vac (50/60 or 61-420Hz); Generator and Bus Voltage Sensing: 1 or 3 phase;
Voltage Range: 120Vac, 240Vac, 480Vac, 600Vac, (50/60Hz);
Excitation Power Voltage: 32Vdc, 63Vdc, 125Vdc, 250Vdc.
Environmental: Operating Temperature: -40°C to 60°C (-40°F to 140°F), Shock: 15 G in 3 perpendicular planes, Vibration: 5 G for 3 perpendicular planes from 3 to 2,000 Hz
Software: Application version 2.xx.xx, Security version (Not applicable)

Service Restriction:
a) Unit Certification is not required for the product or products covered in this certificate.
b) The system integrator must select and enable the appropriate cyber security features available on the respective AVR models in order to the meet the system and vessel security needs.

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(See documents: IM 9492600990 (DECS-150), IM 9440300990 (DECS-250), and IM 9440500990 (DECS-250N) referenced below)
c) Cyber security conformance requires product connection to trusted automation networks only.

Comments:
Duplicated PDA resides with Basler Electric Co. - TAYLOR.

1) The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
2) Specific project functional and operational arrangements are to be specifically approved in connection with the design approval of particular generator type.
3) Testing of the automatic voltage regulator within the vessel's power plant is to be verified against requirements defined in 4-8-3/3.13.2 and Table 3 of the ABS Marine Vessels Rules for AC generators of >= 100kW.
4) In electric propulsion generator applications, the AVR system design must accommodate excitation failures according to 4-8-5/5.5.1(d) of the ABS Marine Vessels Rules.
5) This approval is limited to the hardware only.

Notes/Drawing/Documentation:
Document #, Revision, Description

IEC 61000-4-2 Gap Analysis, -, Gap Analysis for IEC 61000-4-2
ABS Declaration, -, ABS Declaration

94403, 2020-12-20, Damp Heat Test
14072023, -, Gap Analysis
14072023, M-N, Gap Analysis, Appendix A
26323791, -, CoFC
9492600996, 02/25, Cyber Security in Deployment Guidelines (Instructions)
9440300400, C, DECS-250 Final Assembly Drawing
9440300401, E, DECS-250 Final Assembly Drawing
9440300788, 2020-12-03, IACS E10 Immunity Report of DECS-250
9440300789, 2020-11-3/4, IACS E10 Emission Report of DECS-250
9440500400, C, DECS-250N, Final Assy. Drawing
9492600094, A, IACS E10 Maritime Test Report for Tests 1, 2, 5, 6, 7, 9, 11
9492600095, A, IACS E10 Maritime Test Report for Tests 1, 2, 3, 4a, 9, 10
9492600400, -, Assembly Drawing
9492600780, 2011-12-11, Radiated Immunity Test Report of DECS-150, IEC 61000-4-3
9492600782, 2015-01-14/16, IACS E10 Emissions Report of DECS-150, IEC 60533
9492600783, 2015-06-15, IACS E10 Immunity Report of DECS-150
9492600999, -, UR E27, Rev. 1 Assessment
9492601910, E, DECS 150 Schematic
-, -, Damp Heat Tests
A-13788, -, DNV Certificate Report
DGC-2020HD, 2013-05-10, CoC
DV22039, A, Preliminary Outline Dwg
K60P144M120SF3, -, NXP Semiconductor Datasheet
R01DS0358J0120, -, RA6M3 Group Datasheet
SNQ2, 2014-03, Specification bulletin
SZT-1 (8-15), -, DECS-150 Digital Excitation Control System Specification sheet

Terms of Validity:
This Product Design Assessment (PDA) Certificate remains valid until 02/Feb/2031 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.

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STANDARDS

ABS Rules:
2026, Rules for Conditions of Classification, Part 1A, 1A-1-4/7.7, 1A-1-A3, 1A-1-A4, which covers the following:
2026, Rules for Building and Classing Marine Vessels: 4-8-3/1.9, 1.11, 1.17.1, Table 2; 4-9-9/15.7 Table 1, 4-9-14/15.1 (Component specific features available)

2026, Rules for Conditions of Classification, - Offshore Units, Part 1B, 1B-1-4/9.7, 1B-1-A2, 1B-1-A3, which covers the following:
2026, Rules for Building and Classing Offshore Units: 4-3-1/11, 17.1, 4-3-4/6

National:
NA

International:
IEC 60533 Ed. 3.0 en:2015;
IEC 61000-4-2 Ed. 3.0 b:2025;
IEC 61000-4-4 Ed. 3.0 b:2012;
IEC 61000-4-5 Ed. 3.1 b:2017;
IEC 61000 -4-6 Ed. 4.0 b:2013;
IEC 61000-4-11 Ed. 3.0 b:2020;
IEC 61000-4-16 Ed. 2.0 b: 2015;
IACS UR E10 Test Specification for type approval – Rev 10 Aug 2024
IACS UR E27 Cyber resilience of on-board systems and equipment – Rev.1 Sep 2023

Government:
NA

EUMED:
NA

OTHERS:
NA