



CERTIFICATE NUMBER	20-LD1960087-PDA
EFFECTIVE DATE	10-Mar-2020
EXPIRY DATE	09-Mar-2025
ABS TECHNICAL OFFICE	London Engineering Department

## CERTIFICATE OF Product Design Assessment

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

**DANFOSS A/S**

located at

**NORDBORGVej 81 - BUILDING E14 S4A, APPROVALS DEPT.,  
NORDBORG, Denmark, DK-6430**

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 Temperature Switch

**Model CAS 133/136/137/139  
CAS 143/145/147/155  
CAS 178/180/181/1080**

This Product Design Assessment (PDA) Certificate remains valid until 09/Mar/2025 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

Theodoros Chatzidakis, 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)

**DANFOSS A/S**

NORDBORGVEJ 81 - BUILDING E14 S4A

APPROVALS DEPT.

NORDBORG

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**Tier: 3 - Type Approved, unit certification not required** TC

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**Product:** Temperature Switch  
**Model:** CAS 133/136/137/139  
CAS 143/145/147/155  
CAS 178/180/181/1080

**Intended Service:**

ABS Classed Vessels and Offshore Facilities in accordance with the listed ABS Rules and International standards.

**Description:**

Temperature controlled switches for control and alarm functions; Medium: Water, Fuel Oil, Lube Oil, Gas, Refrigerants and Hydraulic fluids.

**Rating:**

CAS 133: Pressure Setting Range (bar): 0 to 3.5; Medium Temperature: -40C to +80C; IP67; Maximum Contact Load: 125V, 12W DC, 250V, 0.1.A AC  
CAS 136: Pressure Setting Range (bar): 0 to 10; Medium Temperature: -40C to +80C; IP67; Maximum Contact Load: 125V, 12W DC, 250V, 0.1.A AC  
CAS 137: Pressure Setting Range (bar): 6 to 18; Medium Temperature: -40C to +80C; IP67; Maximum Contact Load: 125V, 12W DC, 250V, 0.1.A AC  
CAS 139: Pressure Setting Range (bar): 10 to 35; Medium Temperature: -40C to +80C; IP67; Maximum Contact Load: 125V, 12W DC, 250V, 0.1.A AC  
CAS 143: Pressure Setting Range (bar): 1 to 10; Medium Temperature: -25C to +80C; IP67; Maximum Contact Load: 125V, 12W DC, 250V, 0.1.A AC  
CAS 145: Pressure Setting Range (bar): 4 to 40; Medium Temperature: -25C to +80C; IP67; Maximum Contact Load: 125V, 12W DC, 250V, 0.1.A AC  
CAS 147: Pressure Setting Range (bar): 6 to 60; Medium Temperature: -25C to +80C; IP67; Maximum Contact Load: 125V, 12W DC, 250V, 0.1.A AC  
CAS 155: Pressure Setting Range (bar): 0.2 to 2.5; Medium Temperature: -25C to +80C; IP67; Maximum Contact Load: 125V, 12W DC, 250V, 0.1.A AC  
CAS 178: Temperature Setting Range: +20C to +80C; IP67; Maximum Contact Load: 125V, 12W DC, 250V, 0.1.A AC  
CAS 180: Temperature Setting Range: +70C to +120C; IP67; Maximum Contact Load: 125V, 12W DC, 250V, 0.1.A AC  
CAS 181: Temperature Setting Range: +60C to +150C; IP67; Maximum Contact Load: 125V, 12W DC, 250V, 0.1.A AC  
CAS 1080: Temperature Setting Range: +70C to +120C; IP67; Maximum Contact Load: 125V, 12W DC, 250V, 0.1.A AC

**Service Restriction:**

Unit Certification is not required for this product. If the manufacturer or purchaser requests an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

**Comments:**

The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

**Notes/Drawing/Documentation:**

Drawing No. IC.PD.P10.G9.02\_520B7849, Pressure switch and Thermostat CAS, Revision: -, Pages: 16

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**Terms of Validity:**

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**STANDARDS**

**ABS Rules:**

- Marine Vessels Rules (2020): 1-1-4/7.7, 1-1-A3&A4, 4-8-3/1.7, 4-8-3/1.11;
- Mobile Offshore Units (2020): 1-1-4/9.7, 1-1-A3&A4, 4-3-1/11, 4-3-1/15; 6-1-1/9, 6-1-1/13;
- High Speed Crafts Rules (2020): 1-1-4/11.9, 1-1-A2&A3, 4-6-1/11, 4-6-1/15;
- Facilities on Offshore Installations Rules (2020): 1-1-4/9.7, 1-1-A2&A3;
- Steel Barge Rules (2020): 1-1-4/7.7, 1-1-A3&A4;
- Steel Vessels for Service on Rivers and Intracoastal Waterways Rules (2020): 1-1-4/7.7, 1-1-A3&A4, 4-5-1/13, 4-5-1/17;

**National:**

NA

**International:**

NA

**Government:**

NA

**EUMED:**

NA

**OTHERS:**

NA