



NIPPON KAIJI KYOKAI

TYPE APPROVAL CERTIFICATE FOR AUTOMATIC DEVICES AND EQUIPMENT

Certificate No. TA19421M

This is to certify that the undernoted product(s) has/have been approved in accordance with the requirements specified in Chapter 1, Part 7 of “Guidance for the Approval and Type Approval of Materials and Equipment for Marine Use” and the relevant Society's Rules.

This certificate is issued to

Applicant: **Danfoss A/S**
Place of Applicant: **DK-6430, Nordborg, Denmark**
Manufacturer: **Danfoss Sp. z o. o.**
Place of Manufacturing: **U1. Chrzanowska 5 05-825 Grodzisk, Mazowiecki, Poland**
Product description: **Thermostats**
Model: **CAS178, CAS180, CAS181, CAS1080**

Approval No.: **84A158**
Valid until: **8 July 2024**

This certificate is subject to the conditions specified in the attached sheet(s).

Issued at Tokyo on 9 July 2019.



T. Shimada
General Manager
Machinery Department

Note: The manufacturer, if desired, is requested to apply to the Society for renewal prior to the expiration date.

Specification & documents:

1. Particulars:

Temperature Range: 20 - 150 °C
Contact Load: AC 250V 0.1A
DC 125V 12W

2. Components and reference drawings:

Component	Model	Drawings
Thermostat	CAS178, CAS180, CAS181, CAS1080	060R0251, 060R0253, 060R0034, 060R0035, 060R0037, 060R0254, 027M0024-1/2, 2/2

3. Documentation and Test Reports:

Type approval tests report (1) (Danfoss, TR 60-763, 1984-3-23)
Type approval tests report (2) (Danfoss, CG-LF/OJN/hh, 1994-4-19)

- To be continued -

Test items & approval conditions:

1. Test items:

(Applied testing items are marked with X.)

ENVIRONMENTAL TESTS		Mark
External examination		X
Operation test and performance test		X
Electric power supply failure test		--
Power supply fluctuation test	Electric	--
	Pneumatic and Hydraulic	--
Insulation resistance test		X
High voltage test		X
Pressure test (Pneumatic and Hydraulic)		X
Dry heat test (Temperature 70°C × 48 hours)		X
Damp heat test (Temperature 55°C, Humidity 90% × 16 hours × 4 cycles)		X
Vibration test (Acceleration ±4.0g × 2 hours)		X
Inclination test		X
Cold test (Temperature -25°C × 19 hours, -50°C × 2 hours)		X
Salt mist test		X
Electrostatic discharge immunity test		--
Radiated radio frequency immunity test		--
Conducted low frequency immunity test		--
Conducted high frequency immunity test		--
Burst / Fast transient immunity test		--
Surge immunity test		--
Radiated emission test		--
Conducted emission test		--
Flame retardant test		--

