



NIPPON KAIJI KYOKAI

TYPE APPROVAL CERTIFICATE FOR AUTOMATIC DEVICES AND EQUIPMENT

Certificate No. TA20399M

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

Manufacturer: **DEIF A/S**
Place of Manufacturing: **Frisenborgvej 33, 7800 Skive, Denmark**
Product description: **Protection and Power Management System**
Model: **PPM-3, PPU-3, GPU-3**

Approval No.: **10A006**
Valid until: **2 March 2025**

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

Issued at Tokyo on 3 March 2020.



T. Shimada
General Manager
Machinery Department

Note: 1. The manufacturer, if desired, is requested to apply to the Society for renewal prior to the expiration date.

Specification & documents:

1. Particulars:

Power Supply	DC 12 / 24 V
Measuring Voltage	AC 100 – 690 V
Input Current	1A or 5A
Input Frequency	30 – 70 Hz

2. Components and reference drawings:

(1) Product Documentation:

4921240209S, 4921240337C, 4189340558B, 4189340557C, 4189340559B,
4189340561C, 4189340447C, 4189340560B, 4189340460A, 4189340149M,
4189340556F, 4189340573B, 4921240352B, 4921240354B, 4189340582C,
4189340584A, 4189340583A, 4189340579M, 4189340620A, 4189340621A
4921240352UK, 4921240337UK, 4921240354UK

(2) Description of options:

4189340438E, 4189340439E, 4189340442H, 4189340443D, 4189340474H,
4189340524D, 4189340449D, 4189340450C, 4189340451E, 4189340452E,
4189340454C, 4921240354G, 4921240354H

(3) Software Documentation

4910000011K, PPM module design Version 3.0 20080207,
AGC M4 SW Module specification 20090923, Version log-PPM-3,
Version log-M4 board, DEIF Software quality plan,
Design & development (No.4037300004B)
PPU3 V.3.1x.x Software Update

3. Documentation and Test Reports:

- (1) PPM-3 Performance test reports ver. 3.00.0 / 3.02.1 / 3.03.1
- (2) M4 Performance test report ver. 2.00.0 / 2.01.0 / 2.02.0
- (3) IPA0272-01
- (4) IPA0275-Test 13A
- (5) Witness type test reports EPC299
- (6) EPC0377
- (7) Witness test report EPC0458-03 FOR Paralleling and Protection Unit (PPU v3)
CAN share
- (8) PPU-3 FMEA (2011.12.01)
- (9) N141ZAT3 revision2 (Verification Statement by DNV-GL),
02B RF electromagnetic field immunity (4910217502M),
16A Radiated disturbance (4910216501M)

Test items & approval conditions:

1. Test items:

(Applied testing items are marked with X.)

ENVIRONMENTAL TESTS (IACS UR E10 Rev.7 basis)		Mark
External examination		X
Operation test and performance test		X
Electric power supply failure test		X
Power supply fluctuation test	Electric	X
	Pneumatic and Hydraulic	--
Insulation resistance test		X
High voltage test		X
Pressure test (Pneumatic and Hydraulic)		--
Dry heat test (Temperature 70°C × 16 hours)		X
Damp heat test (Temperature 55°C × 12 hours × 2cycles)		X
Vibration test (Acceleration ±0.7g × 1.5 hours)		X
Inclination test		X
Cold test (Temperature -25°C × 16 hours)		X
Salt mist test		--
Electrostatic discharge immunity test (Contact 6kV, Aerial 8kV)		X
Radiated radio frequency immunity test (80MHz – 6GHz)		X
Conducted low frequency immunity test (50Hz – 10kHz)		X
Conducted high frequency immunity test (10kHz – 80MHz)		X
Burst / Fast transient immunity test		X
Surge immunity test		X
Radiated emission test (150kHz – 6GHz)		X
Conducted emission test (10kHz – 30MHz)		X
Flame retardant test		X

2. Approval condition:

The product is not allowed to be installed in bridge and on open decks.