



NIPPON KAIJI KYOKAI

COPY

TYPE APPROVAL CERTIFICATE FOR AUTOMATIC DEVICES AND EQUIPMENT

Certificate No. TA24034M

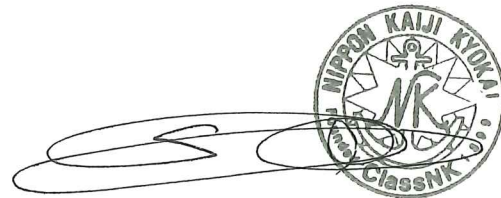
This is to certify that the undernoted product(s) has/have been approved in accordance with the requirements specified in Chapter 1, Part 7 of “Guidance for the Approval and Type Approval of Materials and Equipment for Marine Use” and the relevant Society's Rules.

This certificate is issued to

Manufacturer:	PRelectronics A/S
Place of Manufacturing:	Lerbakken 10, 8410 Roende Denmark
Product description:	Signal conditioning units and Power control unit
Model:	9106xxx, HART transparent Transmitter 9107xxx, HART transparent Driver 9113xx, Temperature / mA converter 9116xx, Universal converter 9202xx, Pulse isolator 9203xxx, Solenoid / alarm driver
Approval No.:	18A027
Valid until:	21 November 2028

The details are described in the attached sheet(s).

Issued at Tokyo on 12 January 2024.



S. Oishi
S. Oishi
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: Power supply: 19.2 – 31.2 VDC

2. Components and reference drawings:

model	component	type	Ex-type
9106	HART Transparent Repeater	9106A1A	non-ex (No description)
		9106A2A	
		9106A1B	
		9106A2B	
		9106B1A	[Ex ia Ga] II C/II B/II A Ex nA nC II C T4 Gc
		9106B2A	[Ex ia Ga] II C/II B/II A Ex nA nC II C T4 Gc
		9106B1B	[Ex ia Ga] II C/II B/II A Ex nA nC II C T4 Gc
9107	HART Transparent Driver	9107AA	non-ex (No description)
		9107AB	
		9107BA	[Ex ia Ga] II C/II B/II A Ex nAnC II C T4 Gc
		9107BB	[Ex ia Ga] II C/II B/II A Ex nA nC II C T4 Gc
9113	Temperature / mA converter	9113AA	Ex nAnC II C T4 Gc
		9113AB	Ex nAnC II C T4 Gc
		9113BA	[Ex ia Ga] II C/II B/II A Ex nAnC II C T4 Gc
		9113BB	[Ex ia Ga] II C/II B/II A Ex nAnC II C T4 Gc
9116	Universal converter	9116A1	Ex nAnC II C T4 Gc
		9116A2	Ex nAnC II C T4 Gc
		9116B1	[Ex ia Ga] II C/II B/II A Ex nA nC II C T4 Gc
		9116B2	[Ex ia Ga] II C/II B/II A Ex nA nC II C T4 Gc
9202	Pulse Isolator	9202AXX	Ex nA nC II C T4 Gc
		9202BXX	[Ex ia Ga] II C/II B/II A Ex nA nC II C T4 Gc
9203	Solenoid / Alarm Driver	9203AXXX	Ex nA nC II C T4 Gc
		9203BXXX	[Ex ia Ga] II C/II B/II A Ex nA nC II C T4 Gc

XXX = A, B, 1, 2, 3

A = Zone 2 approvals

B = Zone 0 approvals

1,2,3 = One or two channel and input variants

- To be continued -

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Attached sheet -2/3 to the Certificate No. TA24034M

3. Documentation and Test Reports:

9000 Marine Test Report (Version Revision:V1R0)

DELTA Test Report (Project no.: T200291)

9106 Acceptance Test Report (Version Revision: V4R0)

9107 Acceptance Test Report (Version Revision: V3R0)

9113 Acceptance Test Report (Version Revision: V11R0)

9116 Acceptance Test Report (Version Revision: V6R0)

9202 Acceptance Test Report (Version Revision: V9R0)

9203 Acceptance Test Report (Version Revision: V9R0)

TEST REPORT Marine dry heat testing of seven PR devices: 9106, 9107, 9113, 9116, 9202, 9203, and 9410 (Report no.: 118-32085-1)

TEST REPORT Test for marine type approval Supplementary EMC test on 8 PR Modules (Report no.: 121-27927-1 Rev.A)

TEST REPORT Test for marine type approval of PR module 4511 (Report no.: 121-30538-1)

Statement of compliance with IACS UR E10 Rev.8

- To be continued -

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Attached sheet -3/3 to the Certificate No. TA24034M

Test items & approval conditions:

1. Test items:

(Applied testing items are marked with X.)

ENVIRONMENTAL TESTS (IACS UR E10 Rev.8 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, Humidity 95%, 24 hours, 2 cycles)		X
Vibration test (Acceleration ±1.0g × 2.5 hours)		X
Inclination test		X
Cold test (Temperature -25°C × 2 hours)		X
Salt mist test		--
Electrostatic discharge immunity test		X
Radiated radio frequency immunity test		X
Conducted low frequency immunity test		X
Conducted high frequency immunity test		X
Burst / Fast transient immunity test		X
Surge immunity test		X
Radiated emission test		X
Conducted emission test		X
Flame retardant test		--

2. Approved condition:

The product is not allowed to be installed in the bridge and open deck.

- The End -