



# NIPPON KAIJI KYOKAI

## TYPE APPROVAL CERTIFICATE FOR AUTOMATIC DEVICES AND EQUIPMENT

Certificate No. TA18527M

**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**  
**9410 Power control unit**

Approval No.: **18A027**  
Valid until: **21 November 2023**

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

Issued at Tokyo on 22 November 2018.



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: 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
		9106B2B	[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
9410	Power Control Unit	9410	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. TA18527M

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)

9410 Acceptance Test Report (Version Revision: V2R0)

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

**- 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		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.