



## TYPE APPROVAL CERTIFICATE

**Certificate No.** : RTD14802-AE002                      **Initial Approval** : 17th December, 2018  
**Product** : Pressure & Level Transmitter  
**Manufacturer** : Klay Instruments B.V.  
Nijverheidsweg 5, 7991 CZ, Dwingeloo, The Netherlands

**Product Description** : Type  
- Series 8000 (8000, 8000-SAN, GER-8000, 8000-Cable, 8000-SAN-Cable)  
- Series Hydrobar-Cable (Hydrobar-Cable, Hydrobar-Cable-EXTD, Hydrobar-Cable-FR)

" See Appendix 1 "

**Approval Condition** : " See Appendix 1 & 2 "

**THIS IS TO CERTIFY** that the above-mentioned product has been approved in accordance with the relevant requirement of this Society's Rules and / or of the recognized standards as follows and entered in the "List of Approved Manufacturers and Type Approved Equipment".

Pt. 6, Ch. 2, Art. 301 of the Rules for Classification, Steel Ships.

This Certificate is valid until 16th December, 2023

Issued at Busan, Korea on 17th December, 2018



**KOREAN REGISTER OF SHIPPING**

*General Manager of  
Marine & Ocean Equipment Team*

- Note : 1. This certificate will be valid subject to complying with the approval conditions described on the certificate and/or on the Rules of this Society.  
2. This certificate will be invalid from the expiry date aforementioned unless the extension or renewal has been granted to the applicant or the manufacturer.  
3. Any significant modifications or changes in design or construction to the above product without approval from this Society will render this certificate invalid.  
4. Should the specified rules, regulations or standards be amended during the validity of this certificate, the product is to be re-approved by this Society in accordance with the requirements as amended.*

## Appendix 1

# Product Description and/or Approval Condition

Certificate No : RTD14802-AE002

Date of Issue : 17 December, 2018

## A. Product Description

### 1. Product Specification

Pressure and Level Transmitters

- Series 8000 (8000, 8000-SAN, CER-8000, 8000-Cable, 8000-SAN-Cable)
- Series Hydrobar-Cable (Hydrobar-Cable, Hydrobar-Cable-EXTD, Hydrobar-Cable-FR)

- 1) Power Supply : 24V DC
- 2) Output Signal : 4~20 mA, 2 wires
- 3) Protection Grade : IP66/68
- 4) Ex-proof Grade : Ex-ia IIC T4 Ga for 8000, 8000-SAN, CER-8000, 8000-Cable, 8000-SAN-Cable, Hydrobar-EXTD, Hydrobar-Cable, Hydrobar-Cable-FR

### 2. Approved Drawings and documents

- 1) Brochure No. D/E/8000-overview/01-17/01, D/Hydrobar-Marine/E/11-17/00
- 2) Drawing No. 8000-202, 8000-01, 8000-126, 8000-83-G54-G16, 8000-71-G7-G21, 8000-35, 8000-25, 8000-15, 8000-13, 8000-12, 8000-11-G31, 8000-11, 8000-10, 8000-225, 8000-215, 8000-211

### 3. Test Reports, etc.

- 1) Test Reports
  - Bolborn EMC Solutions, Series 8000-SAN
  - Bolborn EMC Solutions, Series CER-8000-D-N
  - Bolborn EMC Solutions, Series Hydrobar-cable-VM
  - KEMA Test Report No. 211828100
  - Klay Dry Heat Test dated 1999-07-29
  - Klay Humidity Test dated 1999-08-05
  - Klay Low Temp. Test dated 1999-07-30
  - Klay Performance Test dated 1999-08-05
  - Klay Power Supply Failure Test dated 1999-07-28
  - Klay Power Variation Test dated 1999-07-28
  - TNO Test Report No. 1999-CMC-R030 dated 1999-06-22
  - TNO Salt Mist Test Report No. BU4.00/036506-1/AA dated 2000-04-25
  - TNO Salt Mist Test Report No. TQS-RAP-08-4722/gge dated 2008-07-18
- 2) Ex-proof Certificate No. KEMA 03ATEX1219 X Issue No. 5

## B. Approval Condition

### 1. Application & Limitation

- 1) This approval is granted on the basis of the test reports and the approved documentation.
- 2) The manufacturer should inform this Society of all kinds of revisions of the equipment. If the changes are recognized to affect functionality of the approved equipment, type test to confirm the reliability of the revised equipment may be performed in the presence of our surveyor.
- 3) Explosion-proof certification by a notified/recognized Certification Body is not covered by this certificate. Ratings and Special Condition for Safe Use in hazardous areas are to be obtained from the relevant valid Ex-Certificate.

### 2. Individual Product Cert. and Drawing Approval Requirement

- 1) Individual Product Certification is not required.

### 3. Marking

- 1) The product or packing is to be marked with the manufacturer's name and type designation on a suitable position.

### 4. Others

- to be continued -

**Appendix 2**

**Product Description and/or Approval Condition**

**Certificate No :** RTD14802-AE002

**Date of Issue :** 17 December, 2018

1) Test Condition

Test	Condition	Remark
EMC	All locations including the bridge and deck zone	-
Temperature	-25 ~ +70°C	-
Vibration	Acceleration $\pm 0.7g$	-
Degree of protection	IP66/68	-
Salt mist	Applied	-

< The End >

