

# TYPE APPROVAL CERTIFICATE

**This is to certify:****That the Level Switches**

with type designation(s)  
**CLS01/02**

Issued to

**SHANGHAI LINGYUAN EQUIPMENT AND ENGINEERING CO.,  
LTD**  
**Shanghai, China**

is found to comply with

**DNV GL rules for classification – Ships, offshore units, and high speed and light craft**

**Application :**

**Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**

| Type | Temperature | Humidity | Vibration | EMC | Enclosure <sup>1)</sup> |
|------|-------------|----------|-----------|-----|-------------------------|
| CLS  | B           | B        | B         | A   |                         |

<sup>1)</sup> Required protection according to DNV GL Rules shall be provided upon installation on board

Issued at **Hamburg** on **2017-08-21**

This Certificate is valid until **2022-08-20**.

DNV GL local station: **Shanghai CMC**

for **DNV GL**

Approval Engineer: **Didier Girardin**

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**Joannis Papanuskas**  
**Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



## Product description

### CLS Capacitive Level Switch sensor

(CLS 02 including temperature element: Pt100  $\Omega/0^{\circ}\text{C}$ )

CLS 0X<sup>1)</sup> 0X<sup>2)</sup> 0X<sup>3)</sup> X<sup>4)</sup>

- 1) X=1 Level switch, X=2 Level switch and temp. sensor
- 2) X=0 Less than 80°C for oil, X=1 Less than 160°C for oil, X=2 Less than 100°C for water
- 3) X=0 Insertion Length L1=110mm, X=1 Insertion Length L1=160mm
- 4) X=A G 3/4, X=B G 1/2, X=C G1

Power supply: 24VDC / 0.6W MAX.

Relay alarm output: 2 potential free contacts 125 VAC/0.3 A or 30 VDC/1 A

## Application/Limitation

Ingress Protection (IP) shall be in compliance with DNVGL Pt.4 Ch.9 Sec.5 in accordance with its installation location.

## Tests carried out

Applicable tests according to Class Guideline DNVGL-CG-0339, Nov 2016

## Marking of product

The products to be marked with:

- manufacturer name
- model name
- serial number
- power supply ratings

## Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials. The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE