

# TYPE APPROVAL CERTIFICATE

**This is to certify:**

**That the Position Switch**

with type designation(s)

**IR12.P04S-11158406, IR12.P04S-11158411, IR18.P10S-11158437, IR18.P10S-11174188**

Issued to

**Baumer Electric AG**  
**Frauenfeld TG, Switzerland**

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
<b>IR12.P04S-11158406</b>	<b>D</b>	<b>B</b>	<b>A, B &amp; C</b>	<b>B</b>	<b>C</b>
<b>IR12.P04S-11158411</b>	<b>D</b>	<b>B</b>	<b>A, B &amp; C</b>	<b>B</b>	<b>C</b>
<b>IR18.P10S-11158437</b>	<b>D</b>	<b>B</b>	<b>A, B &amp; C</b>	<b>B</b>	<b>C</b>
<b>IR18.P10S-11174188</b>	<b>D</b>	<b>B</b>	<b>A, B &amp; C</b>	<b>B</b>	<b>C</b>

Issued at **Hamburg** on **2017-08-29**

for **DNV GL**

This Certificate is valid until **2022-08-24**.

DNV GL local station: **Augsburg**

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.



Job Id: **262.1-023327-1**  
Certificate No: **TAA00001AU**  
Revision No: **1**

## Product description

Inductive proximity sensor in M12 stainless steel housing with 4mm sensing distance and M12 connector:

- **IR12.P04S-11158406** (Output: PNP, normally open)
- **IR12.P04S-11158411** (Output: PNP, normally closed)

Inductive proximity sensor in M18 housing with 10mm sensing distance:

- **IR18.P10S-11158437** (Output: PNP, normally open)
- **IR18.P10S-11174188** (Output: PNP, normally open, dedicated diagnose input)

## Application/Limitation

The Type Approval covers hardware listed under Product description.

When the hardware is used in applications to be classed by DNV GL, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV GL Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

M12 and M18 proximity sensors valid for all locations except

- Installation on the exhausted gas pipes of diesel engines
- Submerged application and bilges

## Tests carried out

Applicable tests according to Class Guidance DNVGL-CG-0339, November 2016.

Vibration tests exceeding the DNVGL requirements:

- Sweeping vibration test: Frequency range: 10Hz...2000Hz; displacement/acceleration:  $\pm 1.5\text{mm}/10\text{g}$ ; duration: 150min per axis; Sweep rate 1 octave/minute
- Random vibration test: 10Hz...2kHz; displacement: 6mm peak-to-peak; duration: 5 hours
- Shock test

## Marking of product

The products to be marked with:

- manufacturer name or manufacturer logo
- product name and part no.

## 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 at least every second year and at renewal of this certificate.

END OF CERTIFICATE