DNV·GL

Certificate No:
TAA00000A9

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Pressure Sensor

with type designation(s)
deltaP 5.02

Issued to
Friedrichs Filtersysteme GmbH
Wassenberg, Germany

is found to comply with
DNV GL rules for classification – Ships

Application :

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

Location classes:

Temperature	**B**
Humidity	**B**
Vibration	**B**
EMC	**B**
Enclosure	**IP65**

This Certificate is valid until **2021-01-31**.

Issued at **Hamburg** on **2016-02-01**

DNV GL local station: **Essen**

for **DNV GL**

Approval Engineer: **Dariusz Lesniewski**

Duy Nam Le
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.

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Job Id: **262.1-021389-1**
Certificate No: **TAA00000A9**

Product description

Differential pressure indicator with electrical contacts (optional)
Application: monitoring of filter pollution
Medium: suitable for lube-/ fuel-/ hydraulic-oil, water
Measuring range: delta p = 0...0,3 up to 0....4,2 bar
Design pressure: PN100
Medium: 150°C maximum temperature
Casing: Gk-AlSi10Mg, hard-coated
Sealings: NBR (Perbunan), FKM (Viton), EPDM
Pressure conectors: G1/4", female thread
Electrical contacts: Rated voltage 250 V AC/DC - NO and/or NC and/or CO

Break-over points:	Breaking capacity:	Switching current:	Constant current:
f1 (NC/NO):	120 VA / 120 W	3 A	5 A
f2 (CO):	60 VA / 30 W	1 A	2 A

Abbreviations: NO=Normaly Open; NC=Normaly Closed; CO=Change Over

Application/Limitation

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV, 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 Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

Tests carried out

Applicable tests according to the Class Guideline DNVGL-CG-0339, November 2015.

Marking of product

deltaP 5.02

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