

**TYPE APPROVAL CERTIFICATE****This is to certify:****That the Change over and blending system for liquid fuel**with type designation(s)  
**DIESEL SWITCH**

Issued to

**Aquametro Oil & Marine AG**  
**Therwil, BL, Switzerland**

is found to comply with

**DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems**  
**DNV GL class guideline DNVGL-CG-0339 – Environmental test specification for electrical, electronic and programmable equipment and systems****Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.****Max. working pressure: 16 bar****Max. working temperature: 150°C**Issued at **Hamburg** on **2019-01-07**This Certificate is valid until **2024-01-06**.DNV GL local station: **Augsburg**for **DNV GL**Approval Engineer: **Olaf Drews**

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**Olaf Drews**  
**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: **262.1-028543-2**  
Certificate No: **TAP00001BK**  
Revision No: **3**

## Product description

The Diesel Switch system consists of the following main components:

1. Electric control cabinet with touch panel;
2. Valve unit consist of:
  - a. Control valve;
  - b. Electric actuator;
  - c. Sensor flanges;
  - d. Check valves;
  - e. Pressure transmitter;
  - f. Temperature transmitter;
3. Pneumatic operated ball valves with local and remote position indicators.

The system parameters are as follows:

Parameter	Value
M.A.W.P.	16 bar
M.A.W.T.	150°C
Air supply pressure	6 bar
Power supply	230V AC or 230V AC and 24V DC
Software Project Version (Hardware, Software)	001.00x.00y

## Location classes

Temperature	B
Humidity	B
Vibration	A
EMC	A
Enclose	B

## Application/Limitation

The DIESEL SWITCH is type approved for remote fuel change procedure from HFO to DO vice versa and for mixing of fuels for the purpose of sulphur reduction.

The preferred installation of the DIESEL SWITCH is between fuel service tank and fuel booster unit of diesel engines.

The DIESEL SWITCH system provides further parameter monitoring for several components arranged in a fuel system, e.g. external fuel cooler, trace heating and pre-heater including monitoring of injection viscosity.

Prior to blending of different fuel types and qualities a compatibility test as specified in the operational manual is to be carried out.


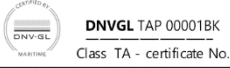


## Tests carried out

### Type Approval documentation

## Marking of product

For traceability to this type approval the products are to be marked with:

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 <b>DIESEL SWITCH</b>	
Part No.: xxxxx SN: 1234567 Type: DSxx_WML_	Voltage: 230VAC 50/60Hz Power: 16A / 100W DN: xx PN oil: 16bar PN air: 4-10bar CDA SW: 001.001.001 Engine: _M/E_G/E_ Year: ___ / ____
	
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 <b>SN: 1234567</b>	 <b>SN: 1234567</b>

### Periodical assessment

A condition for retention of the TA certificate in its validity period is that periodical assessments are successfully carried out. The objective of the periodical assessment is to verify that the conditions for the TA have not been altered. Periodical assessments for type approval is required after two years (+/- 90 days) and after 3.5 years (+/- 90 days). Refer to DNVGL Class Programme CP-0338 for the scope of the periodical assessment.