

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Misc. detector**

with type designation(s)

Oil Level Alarm OLA4xx comprising control box and sensor unit

Issued to

Daniamant Electronics A/S
Slangerup, Denmark

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.****Location classes:****Temperature B****Humidity B****Vibration A****EMC A****Enclosure B / IP44**Issued at **Høvik** on **2017-04-03**This Certificate is valid until **2022-04-02**.DNV GL local station: **Copenhagen**for **DNV GL**Approval Engineer: **Ståle Sneen**

Odd Magne Nesvåg
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

The Oil Level Alarm OLA4xx can, when installed in a boiler system's hot well, measure the occurrence of oil. If oil is detected a visual alarm indication will be shown on the control box and further relays are available to output the alarm to any central alarm system.

The OLA4xx is equipped with a large red LED display for alarm indication. As well as two green LEDs indicating "Power on" and "Sensor OK".

The OLA400 comprises the following items:

Item No. 400:	Oil level alarm control box OLA400
Item No. 401:	$\frac{3}{4}$ " sensor unit for OLA400 supplied with fittings (item No. 407)
Item No. 407:	Fittings compression ring and nut for 22 mm sensor unit

OEM versions will use the OLA4xx naming convention, where xx is a two-digit numeral.

Technical specifications

Sensing principle:	Capacitive sensing (capacitive coupling to measure the dielectric of the medium)
Mains supply:	85-265 VAC, 50-60 Hz, and 24 VDC (+12/-6 VDC) (marine tested and approved for connection to 115/230 VAC, 50/60 Hz, and 24 VDC nominal supply voltages)
Power consumption:	Max. 2.5 W
Build in test-function:	Self-test on start up
Response time:	App. 20 seconds
Alarm level:	ON/OFF
Sensor disconnected:	Alarm indicating an incorrect connection to the sensor or defective sensor unit
Cable connections:	Terminal 1 - 5: Sensor unit Terminal 6 - 8: c/o relay contacts for ALARM RELAY 1 Terminal 9 - 11: c/o relay contacts for ALARM RELAY 2 Terminal 12 - 13: 24 VDC supply Terminal 14 - 15: 115/230 VAC mains supply Relay contacts: 8 A / 230 VAC. Relays must be protected by external fuses.
Ambient temperature:	0 - 55°C (oil level alarm control box) 0 - 95°C (sensor unit)
Pressure:	10 bar max. pressure
Sensor installation:	$\frac{3}{4}$ " BSPT thread
Control box dimensions:	222 x 125 x 60 mm

Approval conditions

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 classification of ships Pt.4 Ch.9 Control and monitoring systems.

Application/Limitation

Proper function was verified during the environmental tests, but no recognised performance test standards have been applied for this type approval.

To maintain the performance of the equipment, regular maintenance and replacement of sensor to be performed according to maker's instructions. See section 9 of the manual for OLA400.

The 5-wire cable between control box and sensor unit must be of shielded type.

Mains supply must be secured against overcurrent externally:

- Max. fuse size 100 mA for 115/230 VAC mains supply
- Max. fuse size 250 mA for 24 VDC supply

Type Approval documentation

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2016.

Marking of product

The products to be marked with:

	Control box	Sensor unit
manufacturer name:	Daniamant	Daniamant
model name:	OLA4xx (e.g. OLA400)	OLA4xx (e.g. OLA401)
version:	0	1A
serial number:	Unique	Unique
power supply ratings:	80-265VAC 50-60Hz, 24VDC	-

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