DNV·GL

Certificate No:
TAA000022D

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Gas Detector

with type designation(s)
Dräger Pulsar 7x00 Series (OTR 00)**

Issued to
Dräger Safety AG & Co. KGaA
Lübeck, Germany

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	**D**
Humidity	**B**
Vibration	**A, C**
EMC	**B**
Enclosure	**D (IP66, IP67)**

Issued at **Hamburg** on **2019-02-12**
This Certificate is valid until **2024-02-11**.
DNV GL local station: **Hamburg**

Approval Engineer: **Dariusz Lesniewski**

for **DNV GL**

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

The Dräger Pulsar 7x00 series is an ex-protected stationary gas detection system with an open measuring path to monitor hydrocarbons in gas and vapour.

The system measures the concentration of flammable hydrocarbons at distances of up to 200m.

A gas detection system is customized for a specific application by selection of the appropriate components and accessories.

System components, type designation Dräger Pulsar 7x00 (OTR 00**):
Pulsar 7x00:
Transmitter: OTR 00*0, Receiver: OTR 00*1
Pulsar 7000:
Transmitter: OTR 001*: S(hort) Range 4 to 60m, OTR 002*: L(ong) Range 30 to 200m
Pulsar 7700 factory calibrated on methane and propane:
Receiver: OTR 005*: S(hort) Range 4 to 120m, OTR 007*: L(ong) Range 100 to 200m
Pulsar 7900 factory calibrated on ethylene:
Receiver: OTR 006*: S(hort) Range 4 to 120m
Mounting plate for Pulsar 7x00 horizontal or vertical. Junction box polyethylene or stainless steel.
Accessories: stainless steel weather guard and mounting plate, cardan mounting bracket

Power supply: 24 V DC (nominal)
Signal output: 4 to 20 mA (measuring), 3.5 mA (pre-warning), 3 mA (maintenance), 2 mA (beam block warning), <1 mA (fault)
Degree of protection: IP 66/67

Software/Firmware Version: 1.1.x

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.

Place of manufacture

Dräger Safety UK Ltd.
Drakes Court, Eagle Road
Plymouth, Devon PL7 5JY
United Kingdom

Application/Limitation

Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to DNV GL Rules and Ex-Certification / Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

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:
- 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