

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV GL AS under the authority of the Government of Norway.

This is to certify:

That the Fixed oxygen analysis and gas detection equipment

with type designation(s)
ST450EC

Issued to

Buveco Gasdetection B.V.
Bleiswijk, Zuid-Holland, Netherlands

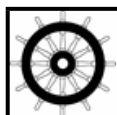
is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2018/773**,
item No. MED/3.54. SOLAS 74 as amended, Regulation II-2/4 & VI/3 and FSS Code 15

Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2023-08-21**.

Issued at **Høvik** on **2018-08-22**

DNV GL local station:
**Rotterdam, Product Certification
/Verification**



for **DNV GL AS**

Approval Engineer:
Nils Jarem

Notified Body
No.: **0575**

Roald Vårheim
Head of Notified Body



The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.

This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV GL AS of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.

Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.



Product description

Gas detector ST450EC

Gas type	Oxygen (O ₂)
Sensor type	Electrochemical sensor (2 or 3 electrodes)
Range	Oxygen (O ₂), 0-25 Vol.%
Display	Digital graphic display
Status LED display	Green: OK, Red: Alarm, Yellow: SF (System Failure), Blue: User menu active
Power supply	Nominal 24 Vdc (max. 25 mA)
Outputs	4-20 mA, RS485 Modbus RTU (half-duplex) 2 mA System Failure, >20 mA over range
Enclosure	Standard Aluminium, optional 316 SS (gas sensor standard 316 SS)

Application/Limitation

The units are to be installed connected to a power supply of approved type.

Ex installations to be approved in each case according to the Rules and Ex-Certification/ Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

Ex-certification is not covered by this certificate and the following table, which is for information only, is based on information received from the manufacturer, but not verified by DNV GL.

Information on Ex-Certification received from manufacturer – Not verified by DNV GL		
Equipment	Certified	Certificate No.
ST450EC	Ex d IIC T6 Gb (Ta -20°C to +60°C)	KIWA 16 ATEX0008 X

The equipment are found to comply with following location/application dependent requirements (for definition of each of the location classes, see below the table):

MODEL	TEMPERATURE	VIBRATION	EMC	ENCLOSURE
Gas detector ST450EC	TEM-C	VIB-A	EMC-B	IP66

The equipment are found to comply with following location/application dependent requirements:

- TEM-C Location (-25°C/+55°C) (ref. IEC 60092-504 (2016) table 1 item 6-7)
- VIB-A For general applications (ref. IEC 60092-504 (2016) table 1 item 10)
- EMC-B Bridge and open deck zone (ref. IEC 60092-504 (2016) table 1 item 13-20)
- Outdoor (IP66) (ref. IEC 60092-504 (2016) table 1 item 12)

Type Examination documentation

Tests carried out

IEC 60092-504:2016
IEC 60533:2015
EN 50104:2010.

Marking of product

For identification to this type examination certificate the products shall be marked with:

- Manufacturer's name or trade mark
- Type designation
- Mark of Conformity (wheel mark), followed by
 - identification number of the NoBo involved in production control (MED D)
 - the year the mark is affixed
 - Example: 0575/2018