

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)
ST650EX

Issued to

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

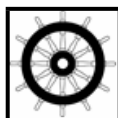
is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2017/306**,
item No. MED/3.54. SOLAS 74 as amended, Regulation II-2/4 & VI/3 and FSS Code 15

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

This Certificate is valid until **2023-05-28**.

Issued at **Høvik** on **2018-05-29**

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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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

The ST650EX is an all-round gas detector and suitable for the detection of flammable gases and vapors. The gas detector is available with different type of gas sensors, such as a catalytic bead sensor, Infrared absorption sensor (NDIR) and a Thermal Conductivity sensor (TCD). The ST650EX is available as a standard version or as a remote version, with Aluminum or SS enclosure (sensor enclosure is standard SS) and with or without a graphic display. The version with graphic display shows the measured value and various status notifications locally.

ST650EX-3 LCD & NON LCD (Standard)	Catalytic bead	Methane, 0-100 %LEL Propane, 0-100 %LEL
ST650EX-3 LCD & NON-LCD (remote)	Catalytic bead	Methane, 0-100 %LEL Propane, 0-100 %LEL
ST650EX-IR LCD & NON LCD (Standard)	NDIR	Methane, 0-100 %LEL Propane, 0-100 %LEL
ST650EX-IR LCD & NON LCD (remote)	NDIR	Methane, 0-100 %LEL Propane, 0-100 %LEL

Sensor type: Catalytic bead: Busens type 3 or 3N
NDIR: Busens D type IRs

Nominal voltage 24V DC.

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 paragraph, 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.
ST650EX	Ex d IIC T6 Gb (Ta -20°C to +60°C)	KIWA 16 ATEX0008 X
Remote F1 gas sensor	Ex d IIC T3 Gb (Ta -20°C to +120°C)	

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
Flammable Gas Detector ST650EX	TEM-A	VIB-A	EMC-B	IP66

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

- TEM-A Location (+5°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)

Job Id: **344.1-007905-1**
Certificate No: **MEDB00003U7**

Type Examination documentation

Tests carried out

IEC 60092-504: 2016
IEC 60533:2015
EN 60079-0:2012 incl. A11:2013
EN 60079-29-1:2007

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