



Marine & Offshore
Division

Certificate number: 48510/A0 BV

File number: AP 4730

Product code: 3820H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

Detector Oy

Turku - FINLAND

for the type of product

GAS DETECTION AND ALARM SYSTEMS

SCAN200E / DGTt2

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships

EC Code: 41C / 43

This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 24 Mar 2022

For BUREAU VERITAS,

At BV HELSINKI, on 24 Mar 2017,

Tommy Andersson



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with BUREAU VERITAS. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine & Offshore Division available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

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BV Mod. Ad.E 530 October 2014

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

- Product model or type designation :

SCAN200E Series - Gas Detection Controller
DGTt2 Series - Digital Gas Detector

- Product description:

The SCAN200E Controller consists of a cabinet with a CPU unit, 1-8 input modules a' 8 inputs, 1-16 output modules a' 8 relay outputs and a display

The SCAN200E Series Controller receives an industry standard current 4 - 20 mA signal from the connected DGTt2 Series Digital Gas Detector.

The Controller changes the current signal into gas concentration and displays it as bar graph, trend or number according to preferences.

The Controller gives for all inputs separately alarm for three pre-set gas concentration alarm levels and trends in three selective time ranges. The Controller collects common history for the last 64 events.

The alarms can be transferred via RS485 Detector Oy protocol or ModBus RTU to another (main) control centre (IAS, MAS).

The DGTt2 Series Digital Gas Detector consists of an enclosure with inbuilt electronic on printed circuit board and a sensor element. The DGTt2rw Digital Gas Detector is additionally equipped with an inbuilt relay (potential free relay contact, 24V IA), buzzer, a LED alarming light and an acknowledgement button.

The DGTt2 Detector senses leakages of refrigerants, hydrocarbons and solvents. The Detector provides an industry standard current 4-20 mA analog output, which corresponds to the gas concentration in the air and sends it to the SCAN200E Controller or another suitable control system.

The DGTt2rw Digital Gas Detector can stand alone. The alarm level and the delay time are adjusted with trimmers.

1.1 - SCAN200EA Digital Gas Detection Controller:

Control Logics	: Programmable embedded control logic designed for gas detection
Display	: Graphical backlit LCD display, indicators for alarm classes A, B ja C and fault alarm
Input Unit	: 1-2 pcs of 8 input units, current signals ((0)4...20 mA)
Relay Unit	: 1-2 pcs of 8 relay units, relay contacts, 230 V AC 1,0 A for resistive load
Alarms	: Addressable alarm data for high and/or low concentrations from each channe
Operating Voltage	: 230VAC/24VDC
Ingress Protection	: IP 54

Note:

Calibration: The detectors are delivered factory calibrated to the measuring range.

After installation it is recommended to calibrate the detector at least once per year.

It is also recommended to do functional tests to the detector 4-6 times a year.

1.2 - DGTt2, DGTt2-ex Digital Gas Detectors:

Sensor Type	: semi-conductor (R-OH, NH3, HC/CO, R22..., R134a..., Methane, H2)
Output: signal	: 4-20mA linear response + a signal light indicating the measuring/sensor fault/gas
Operating Voltage	: 24VDC
Ingress Protection	: IP 54
Ex-Marking	: II 3G Ex nA IIC T4 GcX

2. DOCUMENTS AND DRAWINGS:

Detector Oy:

- Data Sheet DGTt2, DGTt2-ex Digital Gas Detectors No. 20715882 rev. 2.0, dated Oct 2013
- Data Sheet SCAN200EA Digital Gas Detection Controller No. 20715322 rev. 1.0, dated Sep 2016.
- Installation and Use of Gas Detection Equipment No. 2071 1062 Rev. 5.4, dated 2015

3. TEST REPORTS:**Nemko:**

- EMC Test Report SCAN200 No. 112096, dated Oct 6, 2008

VTT:

- Environmental Test Report SCAN200 No.VTT-S-07384-08, dated Oct 16, 2008

4. APPLICATION / LIMITATION:

4.1 - BUREAU VERITAS Rules for the Classification of Steel Ships.

4.2 - Approval also valid for ships to be granted with the notations: **AUT-UMS, AUT-CCS, AUT-PORT** and **AUT-IMS**.

4.3 - BUREAU VERITAS Environmental Category: **EC Code: 41C** (SCAN200E) / **EC Code: 43** (DGTt2)

4.4 - The equipment fulfils the EMC requirements for installation in General Power Distribution Zones.

4.6 - Only Hardware and Software successfully tested together in compliance with the regulations as referred to in page one, according to the declaration of the manufacturer are covered by this certificate.

4.7 - The equipment, once installed on board ship, is to be tested in accordance with the above referred Regulations under the supervision of a Society's Surveyor.

4.8 - The Gas Detection Controller shall not be installed in refrigerated store rooms, refrigerant compressor rooms ashore and on board ships.

4.9 - Ex-certification is not covered by this certificate, Applications in hazardous areas are to be approved in each case according to the Rules and Conditions for Safe Use specified in a valid Ex-Certificate issued by a Notified or Recognised Certification Body.

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The above products are to be supplied by **Detector Oy** in compliance with the type described in this certificate.

5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.

5.3 - **Detector Oy** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products .

5.4 - **Detector Oy** has declared to Bureau Veritas the following production site(s):

**Detector Oy
Telekatu 8
20360 Turku
FINLAND**

6. MARKING OF PRODUCT:

- Maker's name or trade mark,

- Serial number of the units,

- Equipment type number or model identification under which it was type-tested,

- Ex-Marking, as relevant.

7. OTHERS:

It is **Detector Oy - FINLAND** responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

*** END OF CERTIFICATE ***