

Certificate No:  
**MED-B-9906**  
Item No:  
**A.1/3.54**  
Job Id:  
**344.1-001922-4**

**EC-TYPE EXAMINATION  
CERTIFICATE**

Application of: Council Directive 96/98/EC of 20 December 1996 on Marine Equipment as amended by directive 2013/52/EU, issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Directorate. This Certificate is issued by DNV GL AS under the authority of the Government of the Kingdom of Norway.

**This is to certify:**

**That the Fixed oxygen analysis and gas detection equipment**

with type designation(s)

**PIRECL/AutoPoint HC200 and HC300PL - IR Hydrocarbon Gas Detector and  
PIRTB - Terminal Box**

Issued to

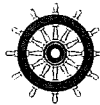
**DET-TRONICS Detector Electronics Corp.  
MINNEAPOLIS, MN, United States**

is found to comply with the requirements in the following Regulations/Standards:

**Annex A.1, item No. A.1/3.54 and Annex B, Module B in the Directive. 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.

**Høvik, 2015-05-28  
for DNV GL AS**



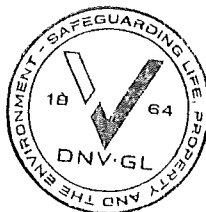
This Certificate is valid until  
**2020-05-27**

*M. Strand Valderhaug*  
**Marianne Strand Valderhaug  
Head of Department**

Notified Body No.: **0575**

DNV GL local office:  
**New York**

*A. Gdaniec*  
**Andrzej Gdaniec  
Surveyor**  
*Sw*



The Certificate is subject to terms and conditions overleaf. Any significant changes in design or construction of the product, or amendments to the Directive or Standards referenced above may render this Certificate invalid. The product liability rests with the manufacturer or his representative in accordance with Council Directive 96/98/EC, as amended. The Mark of Conformity may only be affixed to the product and a Declaration of Conformity may only be issued when the production/product assessment module referred to in the council directive, is fully complied with.

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**Product description**

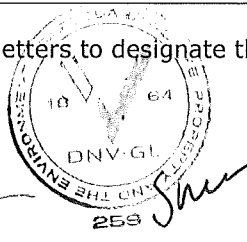
The PointWatch Eclipse® Hydrocarbon Infrared Gas Detector model PIRECL/HC200/HC300PL AutoPoint is an infrared hydrocarbon gas detector which provides continuous monitoring of combustible gas concentrations in the range of 100% LEL.

The enclosure is constructed of stainless steel and utilising sapphire optics and is suited for use in harsh environments. The detector provides an isolated 4-20mA signal output supporting HART communication protocol, an optional intrinsic safety port for hand-held HART communications, and an RS-485 output supporting MODBUS protocol. In addition optional relay contact alarm outputs can be installed in the terminal compartment in type of explosion protection flameproof enclosure 'd'.

The type approval covers the following variants: Detector PIRECL/HC200/HC300PL a b c d e f and Termination Box PIRTB a b c d e

<b>Detector</b>		
<b>Key to type number designations</b>		
HC200/HC300		= Autronica Fire and Security AS
PIRECL		= Detector Electronics Corp.
a	A	= 3/4 NPT
	B	= M25
	C	= 1/2 - 14 NPT
	D	= M20
b	1	= 4-20mA w/Hart Protocol & RS-485: 0-100% LFL Full Scale Range
	3	= 4-20mA w/Hart Protocol & RS-485: CO2 detection only, 0-2% FS
	4	Eagle Quantum Premier (EQP) Compatible, 0-100% LFL Full Scale Range
	7	= Power Loop
c	A	= HART Communication Port
	B	= HART Communication Port and Relay Board (Not compatible with EQP), Ex d only
	C	Third Party Addressable Module, Ex d only
	D	No Optional Outputs
	E	Relay Board (Not compatible with EQP), Ex d only
d	1	= Weather shield with hydrophobic filter
	2	= Weather shield without hydrophobic filter
	3	= 1/16" NPT Thread with hydrophobic filter
	4	= 1/16" NPT Thread without hydrophobic filter
	5	= No weather protection installed
e	B	= INMETRO (Brazil)
	E	= ATEX/IECEX
	T	= SIL/FM/CSA/ATEX/ IECEX
	W	= FM/CSA/ATEX
f	1	= Division / Zone Ex d e
	2	= Division / Zone Ex d

Note: Type 'Approvals' can use one or more letters to designate the Approvals of the product.



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Termination Box		
PIRTB	Key to type number designations	
a	A	= Aluminium
	S	= Stainless Steel
b	2M	= 2 Port, Metric M20/25
	2N	= 2 Port, 3/4" NPT
	3M	= 3 Port, Metric M20/25
	3N	= 3 Port, 3/4" NPT
	5L	= 5 Port, Metric M25
	5N	= 5 Port, 3/4" NPT
c	E	= ATEX/CE
	W	= FM/CSA/ATEX/CE
d	1	= Short without window
	3	= Tall with window
e	L, I, T, V	= Cable entries orientation

### Application/Limitation

Ex-certification is not covered by this certificate. Application in hazardous area 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.

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
PIRECL HC-200, HC-300 PL	TEM-D (*)	VIB-B	EMC-B	ENC-C IP66/67

(\*) Performance test carried out at -55°C to +75°C

Definition of the location classes with reference to relevant standards:

Temperature

TEM-D Location (-25°C ÷ +70°C) (ref. IEC 60092-504 (2001) table 1 item 6-7)

Vibration

VIB-B For eq. on reciprocating machines etc. (ref. IEC 60092-504 (2001) table 1 item 10)

EMC

EMC-B Bridge and open deck zone (ref. IEC 60092-504 (2001) table 1 item 19-20)

Enclosure

ENC-C Open deck (IP56) (ref. IEC 60092-201 table 5)



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**Type Examination documentation**

Documentation	Documentation Reference Number
Detector Design Reference Drwgs ECLIPSE (PIRECL) "DEMKO"	007263-001, Rev. T, dtd. 2009-03-13 (8 sheets) 007263-002, Rev. F, dtd. 2012-03-08 (8 sheets) 007263-002, Rev J, dtd. 2015-04-28
Schematic, Interface board	007117-002, Rev. M, dtd. 2012-03-15, 1 sheet 007117-002, Rev P, dtd. 2014-12-18, 1 sheet
Data sheet	PIRECL 90-1138-8.1
Termination Box Design Reference Drwgs.	007007-001, Rev. J, dtd. 2012-03-23, 2 sheets (DEMKO) 007007-001, Rev K, dtd. 2015-01-26, 2 sheets (DEMKO)
Instruction Manual	Infrared Hydrocarbon Gas Detector, PointWatch Eclipse Model PIRECL, No. 95-8526-16.1, issue 2/15 Infrared Carbon Dioxide Gas Detector, PointWatch Eclipse Model PIRECL, No. 95-8676-2.1, issue 9/12 Duct Mount Kit for Marine Applications Q900C1001, No. 95-8640-4.1, issue 10/12 AutroPoint: 116-P-HC200/AE No. 95-8593-14.2, 3/13 AutroPoint: 116-P-HC300 PL/DE (95-8587-1.1), 2010-08-03
Test reports	ITS No. J20040518.011, dtd. April 26, 2001
	ITS No. 3029121.011, dtd. Sept. 4, 2002
	ITS No. 3040086.011, dtd. May 9, 2003
	FM Id. 3009050, dtd. May 15, 2001
	FM Id. 3011384, dtd. October 18, 2001
	FM Id. 3014962, dtd. August 20, 2002
	FM Id. 3017714, dtd. June 27, 2003
	FM Id. 3018012, dtd. November 6, 2003
	FM Id. 3032248, dtd. December 4, 2008
	FM Id. 3054154, dtd. March 6, 2015
	Environ Lab. vibration test No41225-1 Rev.1, dtd. October 21, 2009
	Det-Tronics Internal Test Report, vibration test, October 15, 2009
	UL International Demko A/S No. 129485-13, dtd. 2005-06-08
	DNV No. 2004-3221, dtd. 2004-03-11
	DNV No. 2003-3221, dtd. 2004-03-11
DEMKO report 129485-20/9CA39156 dated 2009-11-26 Det-Tronics Gas Performance Additions: Methane, dtd April 12, 2011 Det-Tronics Gas Performance Additions: Propane, dtd May 3, 2011 Det-Tronics Gas Performance Additions: Ethylene, dtd May 4, 2011 Det-Tronics Gas Performance: Buthane, dtd August 25, 2011 DEMKO report 4786319694 dated 2014-06-10	

**Tests carried out**

- IEC 60092-504 (2001) including IEC 60092-504 Corrigendum 1 (2011)
- IEC 60533 (1999)
- IEC 60945 (2002)
- EN 61779-1 (2000)
- EN 61779-4 (2000)
- EN 60079-29-1 (2007): PIRECL and HC200 only  
PIRECL and HC200 tested with additional gases (Methane, Propane, Butane and Ethylene)
- EN 60079-0 (2009)
- EN 60079-1 (2007)
- EN 60079-7 (2007)
- EN 60079-11 (2012)



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### 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 (see below)

### Mark of Conformity

The manufacturer is allowed to affix the Mark of Conformity according to Article 11 in the Council Directive 96/98/EC on Marine Equipment and shall issue a Declaration of Conformity, only when the module D or E or F of Annex B in the same directive is fully complied with.

- Module D: The quality system for production and testing shall be approved by the Notified Body.
- Module E: The quality system for inspection and testing shall be approved by the Notified Body.
- Module F: Compliance of the products to type as described in this EC Type-Examination Certificate must be verified by the Notified Body who also shall issue a Certificate of Conformity.



