Certificate Number: 16-LD1472775-PDA
10/JAN/2017

Confirmation of Product Type Approval

Please refer to the "Service Restrictions" shown below to determine if Unit Certification is required for this product.

This certificate reflects the information on the product in the ABS Records as of the date and time the certificate is printed.

Pursuant to the Rules of the American Bureau of Shipping (ABS), the manufacturer of the below listed product held a valid Manufacturing Assessment (MA) with expiration date of 02/OCT/2020. The continued validity of the Manufacturing Assessment is dependent on completion of satisfactory audits as required by the ABS Rules.

And; a Product Design Assessment (PDA) valid until 07/FEB/2021 subject to continued compliance with the Rules or standards used in the evaluation of the product.

The above entitle the product to be called Product Type Approved.

The Product Design Assessment is valid for products intended for use on ABS classed vessels, MODUs or facilities which are in existence or under contract for construction on the date of the ABS Rules used to evaluate the Product.

ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

Product Name: Fire Alarm System
Model Name(s): AUTROSAFE IFG

Presented to:
AUTRONICA FIRE & SECURITY AS
HAAKON VII'S GT 4
Norway

Intended Service:	For use on ABS Classed Vessels and Offshore Facilities in accordance with the listed ABS Rules and International Standards.
Description:	The Autrosafe IFG unit is use to interface with fire detection loops and comprises the following main components: EAU-341 Autrofieldbus Driver. BSD-321 Autrofieldbus Protcol Converter with SW version 1.0.6.0. BSD 340/1 and BSD 340/2 Power Loop Driver. BN 342/1 and BN 342/2 Power Loop 4-20 mA Input Unit. BN 342/Ex Power Loop 4-20 mA Input Unit EEx em IIC T4. Both the power loop drivers and the power loop 4-20 mA input units are designed for either 19" rack or Din-rail mounting versions. The power loop 4- 20 mA input unit is mainly used to interface with third party detectors, typically the Autroflame X33AF PL infrared flame detector. The BSD 321 Autrofieldbus protocol converter is used to interfaces with various type of flame and gas detectors. The EAU-341 Autrofieldbus Driver is a communication protocol converter between Autrosafe IFG panel and various drivers, input units and converters. The EAU-341 provides a redundant field bus system based on a ring loop topology.
Ratings:	Power supply: 18 to 32 V DC Temperature range: -10 to 60 degree C Enclosure: IP 20 or IP 66 for Ex versions Power loop Input: 4 to 20 mA
Service Restrictions:	Unit certification is not required for this product. Product Design Assessment certificate is for hardware only.
Comments:	The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product. Each particular application and installation is to be

specifically approved. The Autrosafe IFG unit and , fieldbus converter, protocol converter, loop driver and input units, are not control panels and they are not a part of the Fire Detection System, therefore these units are not tested according to EN 54.

Notes / Documentation: Drawing No. 03ATEX222, EC TYPE EXAMINATION CERTIFICATE, Revision: 0, Pages: 1 Drawing No. 900776, Nemko NS-EN ISO 9001:2008 Certificate, Revision: -, Pages: 1 Drawing No. bn3421_ce, POWERLOOP DRIVER BN3421, Revision: 0, Pages: 1 Drawing No. bn3422_ce, POWERLOOP DRIVER4-20 MA INPUT UNIT BN3422, Revision: 0, Pages: 1 Drawing No. bn342ex_ce, POWERLOOP DRIVER4-20 MA INPUT UNIT BN342, Revision: 0, Pages: 1 Drawing No. bsd321_ce, AUTROFIELDBUS PROTOCOL CONVERTER BSD-321, Revision: -, Pages: 1 Drawing No. bsd3401_ce, POWERLOOP DRIVER BSD3401, Revision: B, Pages: 1 Drawing No. bsd3402_ce, POWERLOOP DRIVER BSD3402, Revision: 0, Pages: 1 Drawing No. bsd340ex_ce, POWERLOOP DRIVER EEx de BSD-340/EX, Revision: A, Pages: 1 Drawing No. eau341_ce, AUTRIFIELDBUS DRIVER EAU-341, Revision: 0, Pages: 1 Drawing No. DNV TEST REPORT NO. 2003-3169 BSD-340, BN-342, BN-342/EX AND X33/1 Revision: 2, Pages: 1 Drawing No. DNV TEST REPORT NO. 2004-3541 BSD-321, Revision: 01, Pages: 1

Term of Validity: This Product Design Assessment (PDA) Certificate 16-LD1472775-PDA, dated 08/Feb/2016 remains valid until 07/Feb/2021 or until the Rules or specifications used in the assessment are revised (whichever occurs first). This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product. Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA. Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

ABS Rules: - Steel Vessels rules (2016): 1-1-4/7.7, 1-1-A3&A4; 4-7-3/11, 4-8-3/13.3.3, 4-9-8 Table 1 - Steel Vessels Under 90 Meters (295 Feet) in Length (2016): 1-1-4/7.7, 1-1-A3&A4; 4-6-3/11.1.1 (a), 4-7-2 Table 1 - Mobile Offshore Drilling Units (2016): 1-1-4/9.7, 1-1-A2&A3, 6-1-1/9, 6-1-1/13; 4-3-3/9.12 - Offshore Support Vessels (2016): 1-1-4/7.7, 1-1-A3&A4; 4-7-3/11, 4-8-3/13.3.3, 4-9-8 Table 1 - Facilities on Offshore Installations (2016): 1-1-4/9.7, 1-1-A2&A3 - Steel Vessels for Service on Rivers and Intracoastal Waterways (2016): 1-1-4/7.7, 1-1-A3&A4; 4-4-1/25.1.4, 4-5-3/11.1.1 (a) - High-Speed Craft (2016): 1-1-4/11.9, 1-1-A2&A3; 4-6-3/9.1.1, 4-7-9 Table 9 - Steel Barge Rules (2016): 1-1-4/7.9, 1-1-A3&A4

National Standards: EN 50014:1997+A1:1999+A2:1999, EN 50028:1987

International Standards: IEC 60092-504 Ed 3.0:2001, IEC 60533 Ed 2.0:1999, IEC 60079-0:1998 Ed. 3.0, IEC 60079-7:2001 Ed. 3.0, IEC 60079-18:1992 Ed. 1.0, IACS UR E10 Rev5:2006

Government Authority:
EUMED:
Others:

Model Certificate	Model Certificate No	Issue Date	Expiry Date
PDA	16-LD1472775-PDA	08/FEB/2016	07/FEB/2021

ABS Programs

ABS has used due diligence in the preparation of this certificate and it represents the information on the product in the ABS Records as of the date and time the certificate was printed. Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. Limited circumstances may allow only Prototype Testing to satisfy Type Approval. The approvals of Drawings and Products remain valid as long as the ABS Rule, to which they were assessed, remains valid. ABS cautions manufacturers to review and maintain compliance with all other specifications to which the product may have been assessed. Further, unless it is specifically indicated in the description of the product; Type Approval does not necessarily waive witnessed inspection or survey procedures (where otherwise required) for products to be used in a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS. Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.