



Marine & Offshore
Division

Certificate number: 42686/A1 BV

File number: AP 4637

Product code: 3793H

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

MINE SAFETY APPLIANCES COMPANY, LLC

Cranberry Township - UNITED STATES OF AMERICA

for the type of product

FIXED FLAMMABLE GAS DETECTORS

PrimaX® IR

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships
EN 60079-29-1 (2007), EN 50271 (2010).

EC Code: 41S

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: 18 Dec 2020

For BUREAU VERITAS,

At BV PORT EVERGLADES CENTRE, on 31 Aug 2016,

Flavio Rosas



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.

The electronic version is available at: <http://www.veristarp.com/veristarnb/jsp/viewPublicPdfTypepec.jsp?id=guc4r4nlyi>

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:

- **PrimaX® IR**

Product designation:

- Hydrocarbon Gases & Vapors Detector/Transmitter (0 - 100% LEL)

1.1 - Specifications:

Type	PRIMAX IR
Detector type:	Infrared absorption
Measuring range:	0 to 100% LEL
For 0 to 100% LEL	acetone, cyclopentane, ethane, ethyl acetate, n-butane, n-hexane, n-pentane, propylene, propylene oxide, methane, propane
For 0 to 70% LEL	i-butane
For 0 - 50% LEL	toluene
Analog Output	4-20 mA 3-wire current source with HART protocol

1.2 - Ex Marking:

II 2G Ex d IIC T4 Gb

II 2D Ex tb IIIC T130°C Db IP67

-50°C ≤ Ta ≤ +80°C

2. DOCUMENTS AND DRAWINGS:

MSA, The safety company:

- Technical Short Description SK3098-1236 Rev 2

- Drawings No.SK3098-1228 Sheet 1 to 13 Rev. 6, dated Mar 04, 2014

- PrimaX IR Gas Transmitter Datasheet Ref ID 07-715.2 GB/02, dated 11.2011.

DEKRA:

- Examination Certificate No. BVS 10 ATEX E 157 X and Supplement 3, dated Jan 27, 2014

IECEX:

- Examination Certificate No. IECEX BVS 10.0101X Issue No.:1, dated 2012-10-29.

3. TEST REPORTS:

DEKRA:

- Measuring function of a gas detection apparatus Test Report No. PFG-no. 41300213P NI, dated 27/01/2014

- Measuring function of a gas detection apparatus Test Report No. PFG-no. 41300213P, dated 15/07/2013

Curtis-Straus LLC:

- Performance Test Report No.: EP2154-1, dated Oct 27, 2015.

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 41S.**

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

4.5 - 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.

4.6 - 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 **Mine Safety Appliances Company, LLC** 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 - **Mine Safety Appliances Company, LLC** 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 - **Mine Safety Appliances Company, LLC** has declared to Bureau Veritas the following production site(s):

Mine Safety Appliances Company, LLC
1000 Cranberry Woods Drive, PA 16066
USA

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
- EN 60079-29-1.

7. OTHERS:

7.1 - It is **Mine Safety Appliances Company, LLC - USA**'s 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.

7.2 - This certificate supersedes the Type Approval Certificate No. 42686/A0 BV issued on 18 Dec 2015 by the Society.

*** END OF CERTIFICATE ***