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| CERTIFICATE NUMBER | 20-2002388-PDA |
| EFFECTIVE DATE | 11-Sep-2020 |
| EXPIRY DATE | 10-Sep-2025 |
| ABS TECHNICAL OFFICE | London Engineering Department |

CERTIFICATE OF Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

APOLLO FIRE DETECTORS LIMITED

located at

**36 BROOKSIDE ROAD, HAVANT, HAMPSHIRE, United Kingdom,
PO9 1JR**

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product Fire Detection Equipment

Model 55000-773 MAR

This Product Design Assessment (PDA) Certificate remains valid until 10/Sep/2025 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau Of Shipping

Steve A.A.P Brincat, Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

APOLLO FIRE DETECTORS LIMITED

36 BROOKSIDE ROAD

HAVANT

HAMPSHIRE ENGLAND

United Kingdom PO9 1JR

Telephone: 44-2392-442875

Fax: N/A

Email: enquiries@apollo-fire.co.uk

Web: www.apollo-fire.co.uk

Tier: 3 - Type Approved, unit certification not required

Product: Fire Detection Equipment

Model: 55000-773 MAR

Intended Service:

For use on ABS Classed Vessels and Offshore Facilities in accordance with the listed ABS Rules and International Standards

Description:

55000-773MAR DIN Rail Zone Monitor with Isolator

Rating:

Nominal voltage: 17 to 28V DC

Operating temperature: -20C to 70C

Quiescent current: 40 mA plus detector load

Alarm: 11 mA

Short Circuit: 11 mA

Ingress Protection: IP 20

Service Restriction:

Unit Certification is not required for this product.

If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

Comments:

1. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
2. This unit needs to be installed in a suitable enclosure as per 2020 Marine Vessel Rules 4-8-3/Table 2.
3. This unit is used in safe area and indoor.

Notes/Drawing/Documentation:

Drawing No. 104402659LHD001, EMC Testing, Intertek Testing & Certification Ltd, UK, Date: 13.08.2020, Revision: 1, Pages: 21

Drawing No. 104310669LHD-001, EMC Testing, Intertek Testing & Certification Ltd, UK, Date: 20.04.2020, Revision: 1, Pages: 22

Drawing No. TL18049C_TL18073, Marine Type Approval Testing, MS Testing Ltd, UK, Date: 04.09.2008, Revision: 1, Pages: 102

Drawing No. P100480-1001, BRE Test Report, BRE Global Ltd, UK, Date: 04.03.2019, Revision: 1, Pages: 15

Drawing No. 42000-002, Circuit Diagram, Revision: 1, Pages: 1

Drawing No. 43782-132, PCB Assembly, Revision: 1, Pages: 1 & Certification Ltd, UK

Drawing No. 43785-383, General Assembly, Revision: 1, Pages: 1

Drawing No. Justification Similarity between 55000-812 and 550000-773MAR, Revision: 1, Pages: 2

Drawing No. PP5016, Marine DIN-Rail Zone Monitor Datasheet, Revision: 1, Pages: 2

Drawing No. Risk Assessment, MED Risk Assessment, Date: 19.08.2020, Revision: 1b, Pages: 2

Terms of Validity:

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STANDARDS

ABS Rules:

- Marine Vessels Rules (2020): 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-9-9/3, 4-9-9/7, 4-9-8/Table 1 and Table 2;
- Facilities on Offshore Installations (2020): 1-1-4/9.7, 1-1-A2, 1-1-A3;
- Mobile Offshore Units (2020): 1-1-4/9.7, 1-1-A3, 1-1-A4, 6-1-1/9, 6-1-1/13; 4-3-1/9, 4-3-1/11, 4-3-1/17;
- Steel Vessels for Service on Rivers and Intracoastal Waterways (2020): 1-1-4/7.7, 1-1-A3, 1-1-A4; 4-5-1/9, 4-5-1/13, 4-5-1/19;
- High Speed Crafts (2020): 1-1-4/11.9, 1-1-A2, 1-1-A3, 4-6-1/9, 4-6-1/11, 4-6-1/17, 4-7-9/Table 9 and Table 10;
- Steel Barge Rules (2020): 1-1-4/7.9, 1-1-A3, 1-1-A4;

National:

EN 54-17:2005 including AC (2007)

EN 54-18:2005 including AC (2007)

International:

IMO FSS Code 2015, Chapter 9/2.3.1.2

IEC 60092-504 Ed 4.0 b:2016

IEC 60533 Ed 3.0:2015

Government:

NA

EUMED:

NA

OTHERS:

NA