



CERTIFICATE NUMBER 20-YO1969597-PDA

EFFECTIVE DATE 31-MAR-2020

EXPIRATION DATE 30-MAR-2025

ABS TECHNICAL OFFICE Yokohama Engineering Services

CERTIFICATE OF

Product Design Assessment

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

MITSUBISHI ELECTRIC CORP.

located at

FUKUYAMA CITY, Japan

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 Low Voltage Circuit Breaker

Model AE-SW & SWA Series

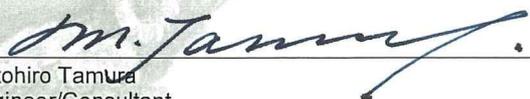
This Product Design Assessment (PDA) Certificate 20-YO1969597-PDA, dated 31/Mar/2020 remains valid until 30/Mar/2025 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

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.

AMERICAN BUREAU OF SHIPPING


Motohiro Tamura
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)

mitsubishi electric corp.

FUKUYAMA WORKS, 1-8 MIDORI-MACHI

FUKUYAMA CITY HIROSHIMA PREF.

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Web: www.mitsubishielectric.co.jp

Tier: 2 - PDA Issued

Product: Low Voltage Circuit Breaker

Model: AE-SW & SWA Series

Intended Service:

Protection against overload and short-circuit in electric circuits

Description:

Low Voltage Air Circuit Breakers

Rating:

Rated Voltage : Max. 690V, 50/60Hz.

Ambient Temperature: 0-45 degree C

More details, refer to attached list.

Service Restriction:

(a) The Product Unit Certification is not required.

(b) 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. Details of each particular application including wiring diagram, location/installation of sensors are to be specifically approved by ABS.

Comments:

(a) The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

(b) Unless specially directed by Administration, this approval is not to be construed as a substitute for flag Administration's approval.

Notes/Drawing/Documentation:

(a) Drawing No.RBD0022: Low Voltage Circuit Breaker AE-SW & AE-SWA Specifications and Construction Rev:0.

(b) Drawing No.LEN046085: Electromagnetic Compatibility Test Report Rev: 0, dated 5 Nov. 2004, issued by MITSUBISHI ELECTRIC CORPORATION.

(c) Drawing No.KGA100044: Additional Type Test Data for ABS Rev.0, dated 14 Mar. 2007, issued by MITSUBISHI ELECTRIC CORPORATION.

Terms of Validity:

This Product Design Assessment (PDA) Certificate remains valid until 30/Mar/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.

STANDARDS

ABS Rules:

2020 Marine Vessel Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-8-2/9.3, 4-8-3/5.3.3,

2020 High Speed Craft Rules 1-1-A3, 1-1-A4, 4-6-2/9.1.2, 4-6-4/11.1,

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2020 Mobile Offshore Units Rules 1-1-A3, 1-1-A4, 4-3-2/9.1.2;

National:

NA

International:

IEC 60947-2 Ed. 5.0 (2016)

Government:

NA

EUMED:

NA

OTHERS:

NA

Product Design Assessment (PDA) Certificate Attachment for Component Details

PDA Certificate No: 20-YO1969597-PDA
Entry Date: 31 March 2020
Expire Date: 30 March 2025
Company: Mitsubishi Electric Corporation
Factory or Works: Fukuyama Works
Product/Equipment: Low Voltage Air Circuit Breaker
Model: AE-SW & SWA Series

Component Rating List for Low Voltage Circuit Breaker, Model: AE Series

Model	Current Rating A.C. (A)	Rated Voltage A.C. (V)	Breaking Current rms-sym Ics (*2)/Icu (*3) (kA)	Making Current peak-asym Icm (kA)
AE630-SW (*1) (*4)	125 - 630	690	65/65	143.1
AE1000-SW (*1) (*4)	400 - 1000	690	65/65	143.1
AE1250-SW (*1) (*4)	625 - 1250	690	65/65	143.1
AE1600-SW (*1) (*4)	800 - 1600	690	65/65	143.1
AE2000-SWA (*1) (*4)	1000 - 2000	690	65/65	143.1
AE2000-SW (*1) (*4)	625 - 2000	500 690	85/85	195.7
AE2500-SW (*1) (*4)	1250 - 2500	500 690	85/85	195.7
AE3200-SW (*1) (*4)	1600 - 3200	500 690	85/85	195.7
AE4000-SWA (*1) (*4)	2000 - 4000	500 690	85/85	195.7
AE4000-SW (*1) (*4)	2000 - 4000	500 690	138/138 85/85	315.4 188.3
AE5000-SW (*1) (*4)	2500 - 5000	500 690	138/138 85/85	315.4 188.3
AE6300-SW (*1) (*4)	3150 - 6300	500 690	138/138 85/85	315.4 188.3

Remarks (*1) long-time delay trip, short-time delay trip & instantaneous trip
(*2) rated service short-circuit breaking current Ics (See IEC 60947-2)
(*3) rated ultimate short-circuit breaking current Icu(See IEC 60947-2)
(*4) digital electronic trip relay