CERTIFICATE NUMBER	26-0525407-PDA
EFFECTIVE DATE	19-Mar-2026
EXPIRY DATE	18-Mar-2031
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 WORKS, 1-8 MIDORI-MACHI, , FUKUYAMA CITY, Japan, 720-8647

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**
Endorsements:	
Tier:	**2 - PDA Issued**

This Product Design Assessment (PDA) Certificate remains valid until 18/Mar/2031 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

Motohiro Tamura,Engineer/Consultant

MITSUBISHI ELECTRIC CORP.
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Tier: 2 - PDA Issued

Product: **Low Voltage Circuit Breaker**
Model: **AE-SW & SWA Series**
Endorsements:

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:
This PDA has been issued based on the following documents:

(1) Drawing No.RBD0022: Low Voltage Circuit Breaker AE-SW & AE-SWA Specifications and Construction Rev:0.
(2) Drawing No.LEN046085: Electromagnetic Compatibility Test Report Rev: 0, dated 5 Nov. 2004, issued by MITSUBISHI ELECTRIC CORPORATION.
(3) Drawing No.KGA100044: Additional Type Test Data for ABS Rev.0, dated 14 Mar. 2007, issued by MITSUBISHI ELECTRIC CORPORATION.
(4) Drawing No. ETR-21-171-03: EMC Report, Rev: 0, dated 25 Mar. 2021, issued by MITSUBISHI ELECTRIC CORPORATION.
(5) Drawing No. ETR-25-001-01: EMC Report IEC 60947-2 (2024), Rev: 0, dated 15 Jan. 2026, issued by MITSUBISHI ELECTRIC CORPORATION.
(6) Drawing No. ETR-25-001-02: EMC Report IEC 60947-2 (2024), Rev: 0, dated 15 Jan. 2026, issued by MITSUBISHI ELECTRIC CORPORATION.
(7) Drawing No. ETR-25-001-03: EMC Report IACS UR E10 Rev.10, Rev: 0, dated 15 Jan. 2026, issued by MITSUBISHI ELECTRIC CORPORATION.
(8) Drawing No. ETR-25-001-04: EMC Report IACS UR E10 Rev.10, Rev: 0, dated 15 Jan. 2026, issued by MITSUBISHI ELECTRIC CORPORATION.
(9) Drawing No. KGA070322-F: Type Test Data for IEC 60947-2 (2019), Rev.0, dated 26 Sep. 2007, issued by MITSUBISHI ELECTRIC CORPORATION.

Terms of Validity:
This Product Design Assessment (PDA) Certificate remains valid until 18/Mar/2031 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).

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Tier: 2 - PDA Issued

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:
2026 Marine Vessels Rules 1A-1-4/7.7, 1A-1-A3, 1A-1-A4, 4-8-2/9.3, 4-8-3/5.3.3,
2026 Offshore Rules 1B-1-4/9.7, 1B-1-A2, 1B-1-A3, 4-3-2/9.1.2,
2026 High-Speed Crafts Rules 1C-1-4/11.9, 1C-1-A2, 1C-1-A3, 4-6-2/9.1.2, 4-6-4/11.1

National:
NA

International:
IEC 60947-2 (Ed.6.0 2024)

Government:
NA

EUMED:
NA

OTHERS:
NA

Product Design Assessment (PDA) Certificate Attachment for Component Details

PDA Certificate No:	26-0525407-PDA
Entry Date:	19 March 2026
Expire Date:	18 March 2031
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