



CERTIFICATE NUMBER	20-1981686-PDA
EFFECTIVE DATE	08-May-2020
EXPIRY DATE	07-May-2025
ABS TECHNICAL OFFICE	Genoa Engineering Department

CERTIFICATE OF Product Design Assessment

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

SCHNEIDER ELECTRIC INDUSTRIES SAS

located at

**31 RUE PIERRE MENDES FRANCE, EYBENS, GRENOBLE CEDEX
9, France, 38050**

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 Circuit Breaker

Model Masterpact MTZ1, MTZ2 and MTZ3

This Product Design Assessment (PDA) Certificate remains valid until 07/May/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

Giorgio Barbini, 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)

SCHNEIDER ELECTRIC INDUSTRIES SAS

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Tier: 2 - PDA Issued

Product: Circuit Breaker

Model: Masterpact MTZ1, MTZ2 and MTZ3

Intended Service:

Marine & Offshore Application

Description:

Low Voltage Air Circuit Breaker and Switch-disconnector with suffix N1, N2, H1, H1b, H2, H2V, H3 or L1 (for Circuit-Breaker) and with suffix NA, HA, HF, HH (for Switch-disconnector), and with suffix HA, HF, HH (for Unprotected Circuit-Breaker), fixed or withdrawable type, 3 and 4 poles, suitable for isolation.

Masterpact MTZ circuit-breakers are equipped with Micrologic X control units 2.0X – 5.0X – 6.0X

MTZ 2 32 H1

I II III IV

I - Indicates the product line

II - Indicates the frame size

III - Indicates the current rating (x100)

IV - Indicates the performance levels as follows:

N1, N2: indicates Normal type for Circuit Breaker

H1, H1b, H2, H3: indicates Heavy duty types for Circuit Breaker

L1: indicates current Limiting type for Circuit Breaker

NA: indicates Normal type for Switch-disconnector

HA, HF, HH: indicates Heavy duty types for Switch-disconnector and Unprotected Circuit-Breaker

Rating:

MTZ1 630 to 1600A @ 690V

MTZ2 800 to 4000A @ 690V

MTZ3 4000 to 6300A @ 690V

See attachment for details

Service Restriction:

- Unit Certification is not required for this product.

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

- The scope of Type Approval is to comply with MSC.1/Circ.1221 dated 11 December 2006.

Comments:

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

Notes/Drawing/Documentation:

Drawing No. LVPED216026EN Catalogue MTZ 2020

Description File No.GDE5514200 for MTZ2-SW dated 22-11-2019

Description File No.QGH4603200 for MTZ1-2-3 Rev4 dated 28-11-2019

Description File No.QGH7277800 for MTZ2-3 Rev2 dated 26-11-2019

IECEE CB Test Certificate No. FR_697053-A3 for MTZ1-HA dated 2017-02-27 at Fontenay aux Roses (France)

IECEE CB Test Report No.160119940018-00 through -03 for MTZ1-HA dated 2016-11-22 at Fontenay aux Roses (France)

IECEE CB Test Certificate No. FR_700907 for MTZ1-H1-H2 dated 2017-06-15 at Fontenay aux Roses (France)

IECEE CB Test Report No. 145009-694006 for MTZ1-H1-H2 dated 2017-06-12 at Fontenay aux Roses (France)

IECEE CB Test Certificate No. FR_701040-A1 for MTZ1-H3 dated 2017-07-10 at Fontenay aux Roses (France)

IECEE CB Test Report No. 147408-700313 for MTZ1-H3 dated 2017-07-04 at Fontenay aux Roses (France)

IECEE CB Test Certificate No. FR_700915 for MTZ1-L1 dated 2017-06-15 at Fontenay aux Roses (France)

IECEE CB Test Report No. 147408-700317 for MTZ1-L1 dated 2017-06-13 at Fontenay aux Roses (France)

LCIE IACS E10 Test Report No. 145188-694373-C for MTZ1 dated 02 January 2017 at Moirans (France)

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Tier: 2 - PDA Issued

Volta Labs IACS E10 Test Report No. 201605195_011 for MTZ1 dated 25 April 2017 at Grenoble (France)
Volta Labs IACS E10 Test Report No. 201605195_013 for MTZ1 dated 21 February 2017 at Grenoble (France)
Volta Labs IACS E10 Test Report No. 201605195_017 for MTZ1 dated 03 March 2017 at Grenoble (France)
Volta Labs IACS E10 Test Report No. 201605195_051 for MTZ1 dated 07 February 2017 at Grenoble (France)
IECEE CB Test Certificate No. FR_700345 for MTZ2-L1 dated 2017-03-10 at Fontenay aux Roses (France)
IECEE CB Test Report No.140491-697917 for MTZ2-L1 dated 2017-03-08 at Fontenay aux Roses (France)
IECEE CB Test Certificate No.FR_700383 for MTZ2-H3 dated 2017-03-16 at Fontenay aux Roses (France)
IECEE CB Test Report No.140491-692768 for MTZ2-H3 dated 2017-03-13 at Fontenay aux Roses (France)
IECEE CB Test Certificate No.FR_700391 for MTZ3-H1-H2 dated 2017-03-16 at Fontenay aux Roses (France)
IECEE CB Test Report No.140491-697927 for MTZ3-H1-H2 dated 2017-03-15 at Fontenay aux Roses (France)
IECEE CB Test Certificate No.FR_700480 for MTZ2-H1b-H2 dated 2017-03-30 at Fontenay aux Roses (France)
IECEE CB Test Report No.140491-692763 for MTZ2-H1b-H2 dated 2017-03-28 at Fontenay aux Roses (France)
IECEE CB Test Certificate No.FR_700483 for MTZ2-N1-N2-H1 dated 2017-03-30 at Fontenay aux Roses (France)
IECEE CB Test Report No.140491-692757 for MTZ2-N1-N2-H1 dated 2017-03-29 at Fontenay aux Roses (France)
IECEE CB Test Certificate No.FR_700253 for MTZ3-HA dated 2017-02-21 at Fontenay aux Roses (France)
IECEE CB Test Report No.160119940024-00 through -02 for MTZ3-HA dated 2016-11-22 at Fontenay aux Roses (France)
IECEE CB Test Certificate No.FR_697055-A3 for MTZ2-NA-HA dated 2017-02-27 at Fontenay aux Roses (France)
IECEE CB Test Report No.160119940021-00 through -07 for MTZ2-NA-HA dated 2016-11-23 at Fontenay aux Roses (France)
LCIE IACS E10 Test Report No.141610-685260-C Version 02 for MTZ1-MTZ2-MTZ3 dated 17 February 2017 at Moirans (France)
LCIE IACS E10 Test Report No.143619-690528-A Version 02 for MTZ3 dated 03 February 2017 at Moirans (France)
LCIE IACS E10 Test Report No.143620-690532-A Version 02 for MTZ2 dated 03 February 2017 at Moirans (France)
Volta Labs IACS E10 Test Report No.201504917_082 for MTZ2 dated 25 January 2017 at Grenoble (France)
Volta Labs IACS E10 Test Report No.201504917_084 for MTZ3 dated 25 January 2017 at Grenoble (France)
Volta Labs IACS E10 Test Report No.201504917_099_v2 for MTZ3 dated 12 January 2017 at Grenoble (France)
Volta Labs IACS E10 Test Report No.201504917_105_v1 for MTZ2 dated 12 January 2017 at Grenoble (France)
Volta Labs IACS E10 Test Report No.201504917_108_v1 for MTZ2 dated 12 January 2017 at Grenoble (France)
Volta Labs IACS E10 Test Report No.201504917_110_v1 for MTZ3 dated 12 January 2017 at Grenoble (France)
ENVIRONNE'TECH IACS E10 Test Report No.RENV-ENN-16-400870-3A (02) for MTZ2 dated 08 December 2016 at Bourgoin-Jallieu (France)
ENVIRONNE'TECH IACS E10 Test Report No.RENV-ENN-16-400870-4A (02) for MTZ3 dated 08 December 2016 at Bourgoin-Jallieu (France)
LCIE Test Report No.1911990010 for MTZ2_HH_SEA+HYD dated 25-09-2019 at Jiaxing City (China)
CB Test Certificate No.FR_706955 for MTZ2_HH_SEA+HYD dated 30-10-2019 at Fontenay aux Roses (France)
LCIE Test Report No.1911990016 for MTZ2_HF_SEA+HYD dated 27-12-2019 at Jiaxing City (China)
CB Test Certificate No.FR_707730_A1 for MTZ2_HF_SEA+HYD dated 25-02-2020 at Fontenay aux Roses (France)
LCIE Test Report No.1911990017 for MTZ2_HF_SEA+HYD dated 16-12-2019 at Jiaxing City (China)
CB Test Certificate No.FR_707770 for MTZ2_HF_SEA+HYD dated 16-01-2020 at Fontenay aux Roses (France)
LCIE Test Report No.161635-737436-A for MTZ2-H2V_SEA+HYD dated 13-12-2019 at Jiaxing City (China)
CB Test Certificate No.FR_707849 for MTZ2_H2V_SEA+HYD dated 31-01-2020 at Fontenay aux Roses (France)
LCIE Test Report No.1911990001 for MTZ2-HA_SEA-HYD-SSPA dated 29-07-2019 at Jiaxing City (China)
CB Test Certificate No.FR_706948 for MTZ2-HA_SEA-HYD-SSPA dated 30-09-2019 at Fontenay aux Roses (France)
LCIE Test Report No.1911990002 for MTZ3-HA_SEA-HYD-SSPA dated 29-07-2019 at Jiaxing City (China)
CB Test Certificate No.FR_706952 for MTZ3-HA_SEA-HYD-SSPA dated 30-09-2019 at Fontenay aux Roses (France)
ZHEJIANG FANGYUAN TR No.1911990018 MTZ2 HF-HH_EMCC-CLIM-MECH dated 09-01-2020 at Jiaxing City (China)
ZHEJIANG FANGYUAN TR No.1911990019 for MTZ EMC dated 17-01-2020 at Jiaxing City (China)
ZHEJIANG FANGYUAN TR No.1911990024 for MN-MX-XF_EMCC dated 17-01-2020 at Jiaxing City (China)

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CB Test Certificate No.FR_707955 for MTZ2_HH_SEA+HYD+SSPA dated 20-03-2020 at Fontenay aux Roses (France)

LCIE Test Report No.1911990009 for MTZ2_HH_SEA+HYD+SSPA dated 18-02-2020 at Jiaxing City (China)

Terms of Validity:

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STANDARDS

ABS Rules:

2020 Rules for Conditions of Classification, 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:

2020 Marine Vessels Rules 4-8-3/5.3.3 (a)

2020 Rules for Conditions of Classification – Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the following:

2020 Mobile Offshore Unit Rules, 6-1-7/13.1.1

2020 Facilities on Offshore Installations Rules 3-6/13.1.1

National:

NA

International:

IEC 60947-1 Edition 5.2 (2014-09)

IEC 60947-2 Edition 5.1 (2019-07)

IEC 60947-3 Edition 3.2 (2015-07)

Government:

NA

EUMED:

NA

OTHERS:

NA

CIRCUIT-BREAKER: IEC 60947-2 ELECTRICAL CHARACTERISTICS

Number of poles		3 - 4
Rated insulation voltage	Ui (V)	1000
Impulse withstand voltage	Uimp (kV)	12
Frequency	f (Hz)	50 - 60
Degree of pollution	IEC 60947-1	3
Suitability for isolation	IEC 60947-1	Yes

	Type	In	selectivity categories	Ue	Icu	Ics	Icw
MTZ1	H1	630A - 1600A	cat. B	220/415/440V 525V 690V	42 kA	42 kA	42 kA-1s
	H2	630A - 1600A	cat. B	220/415/440V 525V 690V	50 kA 42 kA 42 kA	50 kA 42 kA 42 kA	42 kA-1s
	H3	630A - 1600A	cat. B	220/415/440V	66 kA	50 kA	50 kA-1s 30 kA-3s
	L1	630A - 1000A	cat. A	220/415V 440V 525V	150 kA 130 kA 100 kA	150 kA 130 kA 100 kA	N/A
MTZ2	N1	800A - 2000A	cat. B	220/415/440V 525V 690V	42 kA	42 kA	42 kA-1s
	N2	800A - 2500A	cat. B	220/415/440V 525V 690V	50 kA	50 kA	50 kA-1s
	H1	800A - 2000A	cat. B	220/415/440V 525V 690V	66 kA	66 kA	66 kA-1s
		2500 - 4000A		220/415/440V 525V 690V	66 kA	66 kA	66 kA-3s
	H1b	800A - 4000A	cat. B	220/415/440V 525V 690V	85 kA	85 kA	85 kA-1s
	H2	800A - 1600A	cat. B	220/415/440V 525V 690V	100 kA 85 kA 85 kA	100 kA 85 kA 85 kA	85 kA-1s
		2000 - 4000A		220/415/440V 525V 690V	100 kA 85 kA 85 kA	100 kA 85 kA 85 kA	85 kA-1s 75 kA-3s
	H2V	800A - 4000A	cat. B	220/415/440V	100 kA	100 kA	100 kA-1s 75 kA-3s
	H3	2000 - 4000A	cat. B	220/415/440V 525V 690V	150 kA 130 kA 100 kA	150 kA 130 kA 100 kA	65 kA-3s
	L1	800A - 2000A	cat. B	220/415/440V 525V 690V	150 kA 130 kA 100 kA	150 kA 130 kA 100 kA	30 kA-3s
MTZ3	H1	4000A - 6300A	cat. B	220/415/440V 525V 690V	100 kA	100 kA	100 kA-3s
	H2	4000A - 6300A	cat. B	220/415/440V 525V 690V	150 kA 130 kA 100 kA	150 kA 130 kA 100 kA	100 kA-3s

SWITCH-DISCONNECTOR: IEC 60947-3 ELECTRICAL CHARACTERISTICS

Number of poles		3 - 4
Rated insulation voltage	Ui (V)	1000
Impulse withstand voltage	Uimp (kV)	12
Frequency	f (Hz)	50 - 60
Degree of pollution	IEC 60947-1	3
Suitability for isolation	IEC 60947-1	Yes

	Type	Ie (AC23A)=Ith	Ue	Icm	Icw
MTZ1	HA	630A - 1600A	690V	75 kA	36 kA-1s
MTZ2	NA	630A - 1600A	690V	88 kA	42 kA-1s
	HA	800A - 4000A	690V	145 kA	66 kA-1s
	HF	800A - 4000A	690V	187 kA	85 kA-1s 75 kA-3s
	HH	2000 - 4000A	440V	220 kA	100 kA-1s 75 kA-3s
MTZ3	HA	4000A 5000A 6300A	690V	187 kA	85 kA-3s

UNPROTECTED CIRCUIT-BREAKER*: IEC 60947-2 ELECTRICAL CHARACTERISTICS

Number of poles		3 - 4
Rated insulation voltage	Ui (V)	1000
Impulse withstand voltage	Uimp (kV)	12
Frequency	f (Hz)	50 - 60
Degree of pollution	IEC 60947-1	3
Suitability for isolation	IEC 60947-1	Yes

*with external protection relay and shunt trip; maximum delay of short-circuit protection: 400ms

	Type	In	selectivity categories	Ue	Icu	Ics	Icw
MTZ2	HA	800A - 2000A	cat. B	220/415/440V 525V 690V	66 kA	66 kA	66 kA-1s
		2500 - 4000A		220/415/440V 525V 690V	66 kA	66 kA	66 kA-1s
	HF	800-4000A	cat. B	220/415/440V 525V 690V	85 kA	85 kA	85 kA-1s 75 kA-3s
	HH	2000-4000A	cat. B	220/415/440V	100 kA	100 kA	100 kA-1s 75 kA-3s
MTZ3	HA	4000A - 6300A	cat. B	220/415/440V 525V 690V	85 kA	85 kA	85 kA-3s