



Ref. Certif. No.

**US-43088-M1-UL**

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

## CB TEST CERTIFICATE

Product

DC-DC Converter

Name and address of the applicant

COSEL CO LTD  
1-6-43 KAMIAKAE-MACHI TOYAMA-SHI 930-0816  
Japan

Name and address of the manufacturer

COSEL CO LTD  
1-6-43 KAMIAKAE-MACHI TOYAMA-SHI 930-0816  
Japan

Name and address of the factory

COSEL CO LTD  
1-6-43 KAMIAKAE-MACHI TOYAMA-SHI 930-0816  
Japan

Note: When more than one factory, please report on page 2

Ratings and principal characteristics

Input: 4.5-18 Vdc (12 Vdc typical model), 9-36 Vdc (24 Vdc typical model),  
18-76 Vdc (48 Vdc typical model)  
Output: 3.3, 5, 9, 12, 15 Vdc (Single output model),  $\pm 12$ ,  $\pm 15$  V (Dual output  
model)

[Additional Information on page 2](#)

Trademark / Brand (if any)



Customer's Testing Facility (CTF) Stage used

CTF Stage 2

Model / Type Ref.

MHFS6123R3, MHFS61205, MHFS61209, MHFS61212, MHFS61215

[Additional Information on page 2](#)

Additional information (if necessary may also be reported on page 2)

The report was revised to include technical modifications.  
The risk management requirements of the standard were not addressed  
National Differences: EU Group Differences, CA, US

[Additional Information on page 2](#)

A sample of the product was tested and found to be in conformity with

IEC 60601-1:2005, IEC 60601-1:2005/AMD1:2012,  
IEC 60601-1:2005/AMD2:2020

As shown in the Test Report Ref. No. which forms part of this Certificate

E161890-D1068-1/A1/C0-CB issued on 2024-05-15

This CB Test Certificate is issued by the National Certification Body



☒ UL Solutions (US), 333 Pfingsten Rd IL 60062, Northbrook, USA  
☐ UL Solutions (Denko), Borupvang 5A DK-2750 Ballerup, DENMARK  
☐ UL Solutions (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN  
☐ UL Solutions (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA

For full legal entity names see [www.ul.com/ncbnames](http://www.ul.com/ncbnames)

Date: 2024-05-21

Original Issue Date: 2023-12-04

Signature:

Mauricio Avila



Ref. Certif. No.

**US-43088-M1-UL****Factory(ies):**

COSEL CO LTD

TATEYAMA FACTORY, 78 DOGENJI TATEYAMAMACHI NAKANIIKAWA-GUN 930-0241

Japan

**Additional Model Detail(s):**

MHFS6123R3, MHFS61205, MHFS61209, MHFS61212, MHFS61215, MHFS6243R3, MHFS62405, MHFS62409, MHFS62412, MHFS62415, MHFS6483R3, MHFS64805, MHFS64809, MHFS64812, MHFS64815, MHFW61212, MHFW61215, MHFW62412, MHFW62415, MHFW64812, MHFW64815, May be followed by suffix "-#" which can be any number 0 to 9 or any letter A to Z or blank, single number, letter or in the combination of two or more.

**Additional Ratings:**

## &lt;Input rating&gt;

Model MHFS6123R3: 4.5 – 18 Vdc (12 Vdc typical), maximum 1.53 A (0.58 A at 12 Vdc input)

Model MHFS61205: 4.5 – 18 Vdc (12 Vdc typical), maximum 1.63 A (0.61 A at 12 Vdc input)

Model MHFS61209: 4.5 – 18 Vdc (12 Vdc typical), maximum 1.60 A (0.60 A at 12 Vdc input)

Model MHFS61212: 4.5 – 18 Vdc (12 Vdc typical), maximum 1.59 A (0.60 A at 12 Vdc input)

Model MHFS61215: 4.5 – 18 Vdc (12 Vdc typical), maximum 1.59 A (0.60 A at 12 Vdc input)

Model MHFS6243R3: 9 – 36 Vdc (24 Vdc typical), maximum 0.77 A (0.29 A at 24 Vdc input)

Model MHFS62405: 9 – 36 Vdc (24 Vdc typical), maximum 0.82 A (0.31 A at 24 Vdc input)

Model MHFS62409: 9 – 36 Vdc (24 Vdc typical), maximum 0.80 A (0.30 A at 24 Vdc input)

Model MHFS62412: 9 – 36 Vdc (24 Vdc typical), maximum 0.80 A (0.30 A at 24 Vdc input)

Model MHFS62415: 9 – 36 Vdc (24 Vdc typical), maximum 0.80 A (0.30 A at 24 Vdc input)

Model MHFS6483R3: 18 – 76 Vdc (48 Vdc typical), maximum 0.39 A (0.143 A at 48 Vdc input)

Model MHFS64805: 18 – 76 Vdc (48 Vdc typical), maximum 0.41 A (0.153 A at 48 Vdc input)

Model MHFS64809: 18 – 76 Vdc (48 Vdc typical), maximum 0.40 A (0.150 A at 48 Vdc input)

Model MHFS64812: 18 – 76 Vdc (48 Vdc typical), maximum 0.40 A (0.149 A at 48 Vdc input)

Model MHFS64815: 18 – 76 Vdc (48 Vdc typical), maximum 0.40 A (0.149 A at 48 Vdc input)

Model MHFW61212: 4.5 – 18 Vdc (12 Vdc typical), maximum 1.59 A (0.60 A at 12 Vdc input)

Model MHFW61215: 4.5 – 18 Vdc (12 Vdc typical), maximum 1.59 A (0.60 A at 12 Vdc input)

Model MHFW62412: 9 – 36 Vdc (24 Vdc typical), maximum 0.80 A (0.30 A at 24 Vdc input)

Model MHFW62415: 9 – 36 Vdc (24 Vdc typical), maximum 0.80 A (0.30 A at 24 Vdc input)

Model MHFW64812: 18 – 76 Vdc (48 Vdc typical), maximum 0.40 A (0.149 A at 48 Vdc input)

Model MHFW64815: 18 – 76 Vdc (48 Vdc typical), maximum 0.40 A (0.149 A at 48 Vdc input)

## &lt;Output rating&gt;

See test report for details.

**Additional information (if necessary)**

☒ UL Solutions (US), 333 Pfingsten Rd IL 60062, Northbrook, USA  
☐ UL Solutions (Demko), Borupvang 5A DK-2750 Ballerup, DENMARK  
☐ UL Solutions (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN  
☐ UL Solutions (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA

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Date: 2024-05-21

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Signature:

Mauricio Avila



Ref. Certif. No.

**US-43088-M1-UL**

**Additionally evaluated to:**

EN 60601-1:2006, EN 60601-1:2006/A1:2013, EN 60601-1:2006/A2:2021, EN 60601-1:2006/A12:2014

**Summary of Modifications:**

- Update the List of Critical Components table to correct the "Manufacturer" and "Mark(s) of Conformity" of Alternate Potting Compound, Type TIA208R; from "MOMENTIVE PERFORMANCE MATERIALS JAPAN L L C" and "UL (E56745)" to "MOMENTIVE PERFORMANCE MATERIALS (NAN TONG) CO LTD" and "UL (E320603)".

- Changed altitude from "4000m" to "3000m".

- Updated model number to include optional model suffixes.

See CB Test Report for details.

**Additional information (if necessary)**



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**US-43088-UL**

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Product

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Ratings and principal characteristics

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model)☒ Additional Information on page 2

Trademark / Brand (if any)



Customer's Testing Facility (CTF) Stage used

CTF Stage 2

Model / Type Ref.

MHFW64812, MHFW64815, MHFS61205, MHFS61209, MHFS61212,  
MHFS61215, MHFS6123R3, MHFS62405, MHFS62409, MHFS62412,  
MHFS62415, MHFS6243R3, MHFS64805, MHFS64809, MHFS64812,  
MHFS64815, MHFS6483R3, MHFW61212, MHFW61215, MHFW62412,  
MHFW62415☒ Additional Information on page 2Additional information (if necessary may also be  
reported on page 2)**Additionally evaluated to:** EN 60601-1:2006, EN 60601-1:2006/A1:2013,  
EN 60601-1:2006/A12:2014, EN 60601-1:2006/A2:2021The risk management requirements of the standard were not addressed  
National Differences: EU Group Differences, CA, US☐ Additional Information on page 2A sample of the product was tested and found  
to be in conformity withIEC 60601-1:2005, IEC 60601-1:2005/AMD1:2012,  
IEC 60601-1:2005/AMD2:2020As shown in the Test Report Ref. No. which forms  
part of this Certificate

E161890-D1068-1/A0/C0-CB issued on 2023-11-28

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Date: 2023-12-04

Signature:

  
Jolanta M. Wroblewska



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**US-43088-UL**

**Factory(ies):**

COSEL CO LTD  
TATEYAMA FACTORY, 78 DOGENJI TATEYAMAMACHI NAKANIIKAWA-GUN, Toyama, 930-0241  
Japan

**Additional Model Detail(s):**

MHFx6yz (x = S, W, y = 12, 24 or 48 (for "S" or "W" in suffix x), z = 3R3, 05, 09, 12 or 15 (for "S" in suffix x), z = 12 or 15 (for "W" in suffix x), may be followed by suffix "-#" which can be any number 0 to 9 or any letter A to Z or blank, single number, letter or in the combination of two or more.

**Additional Ratings:**

<Input rating>

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<Output rating>

See test report for details.

**Additional information (if necessary)**



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