DEMKO CERTIFICATE

Certificate No.	D-10250
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Date of Issue	2023-12-04
Certificate Holder	COSEL CO LTD 1-6-43 KAMIAKAE-MACHI TOYAMA-SHI, Toyama, 930-0816 JAPAN
Production site	COSEL CO LTD 1-6-43 KAMIAKAE-MACHI TOYAMA-SHI, TOYAMA, 930-0816 JAPAN See Page 2 for additional information
Certified Product	DC-DC Converter
Model	MHFx3yz See page 2 for additional Information
Trademark	COSEL
Ratings	<Input rating> Model MHFS3123R3: 4.5 – 18 Vdc (12 Vdc typical), maximum 0.79 A (0.30 A at 12 Vdc input) IPX0 See page 2 for additional ratings
Tested according to	EN 60601-1:2006, EN 60601-1:2006/A1:2013, EN 60601-1:2006/A12:2014, EN 60601-1:2006/A2:2021
Test Report No.	E161890-D1067-1/A0/C0-CB issued on 2023-11-28
Additional	For Building In The risk management requirements of the standard were not addressed.
Expire date	2033-12-03

Certification Manager
Thomas Wilson

This is to certify that representative sample(s) of the Product described herein ("Certified Product") have been investigated and found in compliance with the Standard(s) indicated on this Certificate, in accordance with the D-Mark Requirements. As specified in the respective appendix below the Designated Certificate holder is entitled to use the D-Mark, or its alternative for cables, for the Certified Product manufactured at the production site(s) identified above, in accordance with the D-Mark Service Agreement, including without limitation the D-Mark Testing and Certification Services Service Terms. Only those Products bearing the D-Mark should be considered as being covered by UL's D-Mark Service. This Certificate shall remain valid through the expiration date, unless terminated earlier in accordance with the Service Agreement including without limitation if the Standard identified on this Certificate is amended or withdrawn prior the expiration date.

Certification Body

UL International Demko A/S, Borupvang 5A, DK-2750 Ballerup, Denmark, Tel. +45 44 85 65 65,
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UL Solutions

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Factories:
COSEL CO LTD
TATEYAMA FACTORY, 78 DOGENJI TATEYAMAMACHI NAKANIIKAWA-GUN, TOYAMA, 930-0241
JAPAN

Additional Model(s):
Series: MHFx3yz, (x = S, W or B, y = 12, 24 or 48 (for “S” or “W” in suffix x), y = 12 or 24 (for “B” in suffix x), z = 3R3, 05, 09, 12 or 15 (for “S” in suffix x), z = 12 or 15 (for “W” in suffix x), z = 1509 or 2005 (for “B” 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.

Ratings:
<Input rating>
Model MHFS31205: 4.5 – 18 Vdc (12 Vdc typical), maximum 0.87 A (0.33 A at 12 Vdc input)
Model MHFS31209: 4.5 – 18 Vdc (12 Vdc typical), maximum 0.86 A (0.33 A at 12 Vdc input)
Model MHFS31212: 4.5 – 18 Vdc (12 Vdc typical), maximum 0.83 A (0.31 A at 12 Vdc input)
Model MHFS31215: 4.5 – 18 Vdc (12 Vdc typical), maximum 0.83 A (0.31 A at 12 Vdc input)

Model MHFS3243R3: 9 – 36 Vdc (24 Vdc typical), maximum 0.40 A (0.15 A at 24 Vdc input)
Model MHFS32405: 9 – 36 Vdc (24 Vdc typical), maximum 0.44 A (0.17 A at 24 Vdc input)
Model MHFS32409: 9 – 36 Vdc (24 Vdc typical), maximum 0.43 A (0.17 A at 24 Vdc input)
Model MHFS32412: 9 – 36 Vdc (24 Vdc typical), maximum 0.42 A (0.16 A at 24 Vdc input)
Model MHFS32415: 9 – 36 Vdc (24 Vdc typical), maximum 0.42 A (0.16 A at 24 Vdc input)

Model MHFS3483R3: 18 – 76 Vdc (48 Vdc typical), maximum 0.20 A (0.08 A at 48 Vdc input)
Model MHFS34805: 18 – 76 Vdc (48 Vdc typical), maximum 0.22 A (0.09 A at 48 Vdc input)
Model MHFS34809: 18 – 76 Vdc (48 Vdc typical), maximum 0.22 A (0.09 A at 48 Vdc input) Model MHFS34812: 18 – 76 Vdc (48 Vdc typical), maximum 0.21 A (0.08 A at 48 Vdc input)
Model MHFS34815: 18 – 76 Vdc (48 Vdc typical), maximum 0.21 A (0.08 A at 48 Vdc input)

Model MHFW31212: 4.5 – 18 Vdc (12 Vdc typical), maximum 0.86 A (0.33 A at 12 Vdc input)
Model MHFW31215: 4.5 – 18 Vdc (12 Vdc typical), maximum 0.83 A (0.31 A at 12 Vdc input)

Model MHFW32412: 9 – 36 Vdc (24 Vdc typical), maximum 0.43 A (0.17 A at 24 Vdc input)
Model MHFW32415: 9 – 36 Vdc (24 Vdc typical), maximum 0.42 A (0.16 A at 24 Vdc input)

Model MHFW34812: 18 – 76 Vdc (48 Vdc typical), maximum 0.22 A (0.09 A at 48 Vdc input)
Model MHFW34815: 18 – 76 Vdc (48 Vdc typical), maximum 0.21 A (0.08 A at 48 Vdc input)

Model MHFB3121509: 4.5 – 18 Vdc (12 Vdc typical), maximum 0.70 A (0.26 A at 12 Vdc input)
Model MHFB3122005: 4.5 – 18 Vdc (12 Vdc typical), maximum 0.73 A (0.28 A at 12 Vdc input)

Model MHFB3241509: 9 – 36 Vdc (24 Vdc typical), maximum 0.35 A (0.13 A at 24 Vdc input)
Model MHFB3242005: 9 – 36 Vdc (24 Vdc typical), maximum 0.37 A (0.14 A at 24 Vdc input)

<Output rating>
See test report for details.

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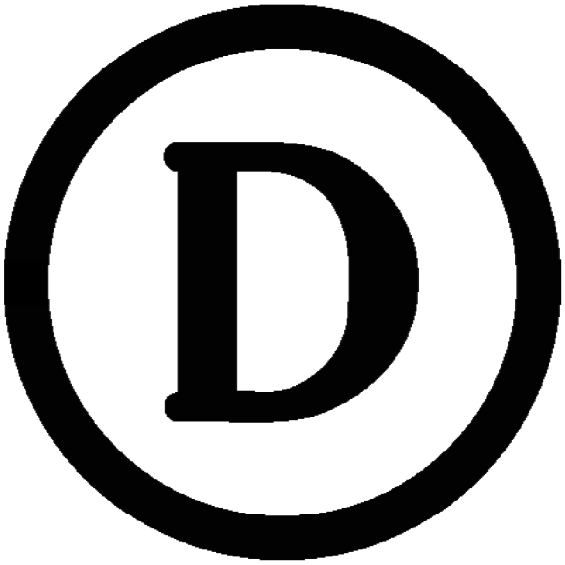
Certification Mark D-Mark

The D-Mark, as displayed below, shall appear on certified products only. Except as specified below the Mark shall be legible and no Minimum size is specified.



The size of the Mark may be reduced or enlarged on the condition that it remains readable and that the proportions of width and height are kept. The use of dark text for the D-Mark on light backgrounds and light text on dark backgrounds is permitted.

The D-Mark may appear on a label, nameplate, or may be cast, stamped or molded into the product. When appearing on a label or nameplate, the Manufacturer's name or trademark along with a model number are also required on that same label or nameplate. If cast, stamped or molded, the Certificate Manufacturer's name or trademark and model number shall also appear elsewhere on the product

When putting the product on the EU market, the manufacturer's name, trademark or mark of origin must be affixed in a clearly visible location and position on the product, on the package and in the user manual. It can be affixed by label, be directly imprinted, or cast or molded into the product.

Where the size of the product does not allow the Mark, the manufacturer's name, trademark, mark of origin and model number to be legible, and appearance on a label is not desired, it is allowed to cast, stamp or mold the Mark into the product, in a size which is not visible to the naked eye, provided the legible Mark, the manufacturer's name, trademark or mark of origin and model number appears on the package and in the user manual

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Alternate certification Mark for cables

As an alternative to the D-Mark specified above the alternate D-Mark, displayed below, can appear on certified cables only. Minimum size is not specified, as long as the mark is legible.

◅DEMKO▻

The alternate D-Mark may be cast, stamped or molded into the cable and continue throughout the length of the cable as specified in the applicable cable standard.

All content shall be in accordance with the details provided on this D-Mark Certificate.