



TYPE APPROVAL CERTIFICATE

Certificate No:
TAE0000117
Revision No:
1

This is to certify:

That the RCD - Residual Current Device

with type designation(s)
FRCdM

Issued to

Eaton Industries (Austria) GmbH
Schrems, Niederösterreich, Austria

is found to comply with

DNV rules for classification – Ships, offshore units, and high speed and light craft

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Issued at **Hamburg** on **2021-09-10**

for **DNV**

This Certificate is valid until **2026-09-09**.

DNV local station: **Augsburg**

Approval Engineer: **Harald Amberger**

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Arne Schaarmann
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Form code: TA 251

Revision: 2021-03

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Product description

Residual Current Devices FRCdM Type A, U and R, Digital

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|---|--|
| Operating characteristics | Type A, AC acc. to IEC 61008 Type G, G/A acc. to ÖVE E 8601 Type R, X-ray application Type S/A, sensitive to residual pulsating DC Type U, for speed-controlled drives |
| Tripping characteristics | Instantaneous |
| Type G, R | 10 ms delay |
| Type S | 40 ms delay - with selective disconnecting function |
| Type U (only 30mA) | 10 ms delay |
| Type U (except 30mA) | 40 ms delay - with selective disconnecting function |
| Ratings (40°C) | |
| Rated voltage (U_n) | 240/415V AC, 50Hz; 4poles |
| Rated impulse withstand voltage (U_{imp}) | 4kV |
| Rated insulation voltage (U_i) | 440V |
| Rated current (I_n) | 25, 40, 63, 80A |
| Rated tripping current ($I_{\Delta n}$) | 30, 300mA |
| Sensitivity | AC and pulsating DC |
| Rated short circuit capacity (I_{CN}) | 10kA with back-up fuse |
| Max. back-up fuse: $I_n = 25-63A$ | 63A gG/gL |
| Max. back-up fuse: $I_n = 80A$ | 80A gG/gL |

Further technical ratings and type spectrum acc. manufacturer documentation.

Residual Current Devices FRCdM Type B, Bfq and B+, Digital

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|---|--|
| Operating characteristics | Type B, Bfq acc. to IEC 61008, IEC 62423 Type B+ acc. to VDE 0664-400 Type G, G/A acc. to ÖVE E 8601 Type G/B, G/Bfq, G/B+ additional acc. to ÖVE E 8601 Type S/B, S/Bfq, S/B+, Selective + surge current-proof 5 kA |
| Tripping characteristics | Instantaneous |
| Type G | 10 ms delay |
| Type S | 40 ms delay - with selective disconnecting function |
| Ratings (40°C) | |
| Rated voltage (U_n) | 240/415V AC, 50Hz; 4poles |
| Rated impulse withstand voltage (U_{imp}) | 4kV |
| Rated insulation voltage (U_i) | 440V |
| Rated current (I_n) | 25, 40, 63A |
| Rated tripping current ($I_{\Delta n}$) | 30, 300mA |
| Sensitivity | All types of current |
| Rated short circuit capacity (I_{CN}) | 10kA with back-up fuse |
| Max. back-up fuse: $I_n = 25-63A$ | 63A gG/gL |

Further technical ratings and type spectrum acc. manufacturer documentation.

Application/Limitation

Type Approval documentation

IEC CB SCHEME AT2220, AT2931, AT3059, AT 3910, AT 3910/M1, AT 3995/M1, AT 4194, AT 4194/M1/M2
CTI-CA 970-1, 2.03.02990.1.0-EATON_DNV_RCCB_N
EMV-E 03/13, EMV-E 26/14, M/EMV-09-161, M/EMV-09-160, M/EMV-09-159, EMV-E 92/19, INE-AT/EMV-18/235
INE-AT/EMV-18/236

Tests carried out

IEC 62423(ed.2), 61008-1(ed.3);am1, 61008-2-1(ed.1), 61008-2-2(ed.1)
DIN VDE 0664-400:2012-05 (Type B+), ÖVE/ÖNORM E 8601:2001-02-01 (Type G)
Temperature Class C, Humidity Class A, Vibration Class B, EMC Class A, acc. DNV-CG-0339

Marking of product

Eaton – type designation - voltage – frequency – current – tripping current – operating characteristic

Name and place of manufacturer

Eaton Electrotechnika s.r.o.
Havlickova 89,
37806 Suchdol nad Luznici, Czech Republic

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval are complied with and that no alterations are made to the product design or choice of materials.

The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routine Tests (RT) checked (if not available tests according to RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE