



TYPE APPROVAL CERTIFICATE

Certificate No:
TAE0000119
Revision No:
1

This is to certify:

That the RCD - Residual Current Device

with type designation(s)

FRCmM, FRCmM-NA, FRCmM-NA-110

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

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Product description

Residual Current Devices FRCmM Type AC, A, U, R and F

Operating characteristics	Type A, AC acc. to IEC 61008 Type G, G/A acc. to ÖVE E 8601 Type S, selective + surge current-proof 5 kA Type S/A, sensitive to residual pulsating DC Type G/F, sensitive to residual pulsating DC, Type G/F (ÖVE E 8601) Type S/F, sensitive to residual pulsating DC
Tripping class	Instantaneous
Type G, R	10ms delay
Type S	40ms delay - with selective disconnecting function
Type U (only 30mA)	10ms delay
Type U (except 30mA)	40ms delay - with selective disconnecting function
Ratings (40°C)	
Rated voltage (U_n)	240/415V AC, 50Hz
Rated impulse withstand voltage (U_{imp})	4kV
Rated insulation voltage (U_i)	440V
Number of poles	two / four pole
Rated current (I_n)	16, 25, 40, 63, 80, 100A
Rated tripping current ($I_{\Delta n}$)	30, 100, 300, 500mA
Sensitivity	AC and pulsating DC
Rated short circuit capacity (I_{CN})	10kA with back-up fuse
	Short circuit- / overload protection
Max. back-up fuse: $I_n = 25A$	25A gG/gL 25A gG/gL
Max. back-up fuse: $I_n = 40A$	40A gG/gL 40A gG/gL
Max. back-up fuse: $I_n = 63A$	63A gG/gL 63A gG/gL
Max. back-up fuse: $I_n = 80A$	80A gG/gL 80A gG/gL
Max. back-up fuse: $I_n = 100A$	100A gG/gL 80A gG/gL

Further technical ratings and type spectrum acc. manufacturer documentation.

Residual Current Devices FRCmM-NA Type A

Operating characteristics	Type A acc. to IEC 61008 Type G, G/A acc. to ÖVE E 8601
Tripping class	Instantaneous
Type G	10ms delay at 50Hz
Ratings (40°C)	
Rated voltage (U_n)	240/415V AC, 50/60Hz
Rated impulse withstand voltage (U_{imp})	4kV
Rated insulation voltage (U_i)	440V
Number of poles	two / four pole
Rated current (I_n)	25, 40, 63A
Rated tripping current ($I_{\Delta n}$)	30, 300mA
Sensitivity	AC and pulsating DC
Rated short circuit capacity (I_{CN})	10kA with back-up fuse
	Short circuit- / overload protection
Max. back-up fuse: $I_n = 25A$	63A gG/gL 25A gG/gL
Max. back-up fuse: $I_n = 40A$	63A gG/gL 40A gG/gL
Max. back-up fuse: $I_n = 63A$	63A gG/gL 40A gG/gL

Further technical ratings and type spectrum acc. manufacturer documentation.

Residual Current Devices FRCmM-NA-110 Type A

Operating characteristics	Type A acc. to IEC 61008
Tripping class	Type G, G/A acc. to ÖVE E 8601
Type G	Instantaneous
Ratings (40°C)	10ms delay at 50HZ
Rated voltage (U_n)	110/190V AC, 50/60Hz
Rated impulse withstand voltage (U_{imp})	4kV
Rated insulation voltage (U_i)	440V
Number of poles	two / four pole
Rated current (I_n)	25, 40, 63A
Rated tripping current ($I_{\Delta n}$)	30, 300mA
Sensitivity	AC and pulsating DC
Rated short circuit capacity (I_{CN})	10kA with back-up fuse
	Short circuit- / overload protection
Max. back-up fuse: $I_n = 25A$	63A gG/gL 25A gG/gL
Max. back-up fuse: $I_n = 40A$	63A gG/gL 40A gG/gL
Max. back-up fuse: $I_n = 63A$	63A gG/gL 40A gG/gL

Further technical ratings and type spectrum acc. manufacturer documentation.

Application/Limitation

Type Approval documentation

IEC CB SCHEME AT2551, AT2552, AT2637 AT2637/M1, AT 3676, AT 3676/A1, AT3677, AT 3677/A1, AT 3678, AT 3776, AT 3777, AT 4530, M/EMV-16/107

Tests carried out

IEC 61008-1(ed.3);am1, 61008-2-1(ed.1), 61008-2-2(ed.1), ÖVE/ÖNORM E 8601:2001-02-01 (type G)
 Temperature Class C, Humidity Class A, Vibration Class B, acc. DNV-CG-0339

Marking of product

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

Name and place of manufacturer

Eaton Electro Productie s.r.l.
 Str. Independentei Nr. 8,
 Sarbi 437155, Maramures, Romania

Eaton Electric doo
 Branch Sremska Mitrovica, Rumski drum 13,
 22000 Sremska Mitrovica, Serbia, Republic of

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