TYPE APPROVAL CERTIFICATE

Certificate No:
TAE000011B
Revision No:
2

This is to certify:

That the RCD - Residual Current Device

with type designation(s)
Combined RCD/MCB Devices FRBdM, FRBmM, FRBm4, FRBm6, NmRBM, NmRB4, NmRB6

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 **2021-09-14**

This Certificate is valid until **2026-09-13**.
DNV local station: **Augsburg**

Approval Engineer: **Harald Amberger**

for **DNV**
Digitally Signed By: Schaarmann, Arne
Location: DNV GL SE Hamburg, Germany
Signing Date: 2021-09-14

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.

Product description

Combined RCD/MCB Devices FRBdM, 1+N-pole, 2-pole, Type A Digital

Operating characteristics	Type A acc. to IEC 61009 Type F Sensitive to residual pulsating DC Type G acc. to ÖVE E 8601 Type G/A sensitive to residual pulsating DC, Type G/A (ÖVE E 8601)
Tripping line voltage-independent	Dependent on the line voltage
Type G, F	10 ms delay 3 kA (8/20 µs), surge current-proof
Ratings (40 °C)	
Rated voltage (U_n)	240 V AC; 50 Hz
Rated impulse withstand voltage (U_{imp})	4 kV
Rated insulation voltage (U_i)	440 V
Rated current (I_n)	6 – 25 A
Rated tripping current ($I_{\Delta n}$)	10, 30, 100 mA
Characteristic	B, C, D
Sensitivity	AC and pulsating DC
Rated breaking capacity (I_{cn})	10 kA
Maximum back-up fuse (short circuit)	100 A gL (>10 kA)

Combined RCD/MCB Devices FRBmM, 1+N-pole

Operating characteristics	Type A, AC acc. to IEC 61009 Type F Sensitive to residual pulsating DC Type G acc. to ÖVE E 8601 Type G/A sensitive to residual pulsating DC, Type G/A (ÖVE E 8601)
Tripping line voltage-independent	instantaneous 250 A (8/20 µs), surge current-proof
Type G, F	10 ms delay 3 kA (8/20 µs), surge current-proof
Ratings (40 °C)	
Rated voltage (U_n)	240 V AC; 50 Hz
Rated impulse withstand voltage (U_{imp})	4 kV
Rated insulation voltage (U_i)	440 V
Rated current (I_n)	2 – 40 A
Rated tripping current ($I_{\Delta n}$)	10, 30, 100, 300 mA
Characteristic	B, C, D
Sensitivity	AC and pulsating DC
Rated breaking capacity (I_{cn})	10 kA
Maximum back-up fuse (short circuit)	100 A gL (>10 kA)

Combined RCD/MCB Devices FRBmM, FRBm6, 2-pole, Type AC, A and
Combined RCD/MCB Devices NmRBM, NmRB6, 2-pole, Type A

	FRBmM	**FRBm6**	**NmRBM**	**NmRB6**
Operating characteristics	Type A, AC acc. to IEC 61009 Type A 120V sensitive to residual pulsating DC, only FRBmM Type F Sensitive to residual pulsating DC Type G acc. to ÖVE E 8601 Type G/A sensitive to residual pulsating DC, Type G/A (ÖVE E 8601) Type Super A (LiA) Sensitive to residual pulsating DC			
Tripping line voltage-independent	instantaneous 250 A (8/20 µs), surge current-proof			
Type Super A	10 ms delay, surge current-proof			
Ratings (40 °C)				
Rated voltage (U_n)	240 V AC; 50Hz		230 V AC; 50 Hz	
Rated impulse withstand voltage (U_{imp})	4 kV			
Rated insulation voltage (U_i)	440 V			
Rated current (I_n)	6 – 40 A			
Rated tripping current ($I_{\Delta n}$)	30, 100, 300 mA		30, 100 mA	
Characteristic	B, C			
Sensitivity	AC and pulsating DC			
Rated breaking capacity (I_{cn})	10 kA	6 kA	10 kA	6 kA
Maximum back-up fuse (short circuit)	100 A gL (>10 kA)			

Combined RCD/MCB Devices FRBmM, NmRBM, 3-pole, Type A

	FRBmM	**NmRBM**
Operating characteristics	Type A acc. to IEC 61009 Type G acc. to ÖVE E 8601	
Tripping line voltage-independent	instantaneous 250 A (8/20 µs), surge current-proof	
Type G	10 ms delay, surge current-proof	
Ratings (40 °C)		
Rated voltage (U_n)	240/415 V AC; 50 Hz	230/400 V AC; 50 Hz
Rated impulse withstand voltage (U_{imp})	4 kV	
Rated insulation voltage (U_i)	440 V	
Rated current (I_n)	6 – 32 A	10 – 32 A
Rated tripping current ($I_{\Delta n}$)	30, 100 mA	
Characteristic	B, C, D	B, C
Sensitivity	AC and pulsating DC	
Rated breaking capacity (I_{cn})	10 kA	
Maximum back-up fuse (short circuit)	100 A gL (>10 kA)	

Combined RCD/MCB Devices FRBm6, FRBm4, 3+N-pole, Type AC, A and
Combined RCD/MCB Devices NmRB6, NmRB4, 3+N-pole, Type A

	FRBm6	**FRBm4**	**NmRB6**	**NmRB4**
Operating characteristics	Type A, AC acc. to IEC 61009			
Tripping line voltage-independent	instantaneous 250 A (8/20 µs), surge current-proof N protected			
Ratings (40 °C)				
Rated voltage (U_n)	240/415 V AC; 50 Hz		230/400 V AC; 50 Hz	
Rated impulse withstand voltage (U_{imp})	4 kV			
Rated insulation voltage (U_i)	440 V			
Rated current (I_n)	6 – 32 A			
Rated tripping current ($I_{\Delta n}$)	30, 100, 300 mA			
Characteristic	B, C, D			
Sensitivity	AC and pulsating DC			
Rated breaking capacity (I_{cn})	6 kA	4,5 kA	6 kA	4,5 kA
Maximum back-up fuse (short circuit)	100 A gL (>10 kA)		100 A gL/gG	

Further technical ratings and type spectrum acc. manufacturer documentation.

Application/Limitation

Type Approval documentation

IEC CB SCHEME AT2927, AT2659, AT2872, AT2720, AT2436, AT2209, AT2484/B1/B3, AT2565, AT 3661, AT 3740, AT3740/M1, AT 3774, AT 3805/M1/M2/M3, AT 4469
CTI-CA 938-1, CTI-CA 980-1, CTI-CA 982-1, CTI-PA 3217-1 to CTI-PA 3217-34

M/EMV-12/162, 2.03.02990.1.0-EATON_DNV_RCBO_N, INE-AT/EMV-17/132, INE-AT/EMV-19/151, M/EMV-10/142, M/EMV-11/104, M/EMV-10/194, M/EMV-14/151, M/EMV-14/151A

Tests carried out

IEC/EN 61009-1:2004+A11:2008+A12:2009:+A13:2009+A14:2012
IEC/EN 61009-2-1:1994+A11:1998, OVE/ONORM E 8601:2001-02-01 (type G)

Temperature Class C, Humitity 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 Industries (Austria) GmbH
Eugenia 1,
3943 Schrems, Austria

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

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