## DATASHEET - FRCMM-25/4/003-A-NA



Residual current circuit breaker (RCCB), 25A, 4p, 30mA, type A

Part no. Catalog No. FRCMM-25/4/003-A-NA 167125



Similar to illustration

### **Delivery program**

Basic function			Residual current circuit-breakers
Number of poles			4 pole
Application			Switchgear for export to North America (UL-listed)
Rated current	I <sub>n</sub>	А	25
Rated short-circuit strength	l <sub>cn</sub>	kA	10 with back-up fuse
Rated fault current	$I_{\Delta N}$	А	0.03
Туре			Туре А
Tripping		s	non-delayed
Product range			FRCmM-NA
Sensitivity			Pulse-current sensitive
Impulse withstand current			Partly surge-proof 250 A
Contact sequence			

#### **Technical data**

Electrical			
Types conform to			IEC/EN 61008
Current test marks			As per inscription
Tripping		s	non-delayed
Rated voltage according to IEC/EN 60947-2	Un	V AC	240/415
Rated frequency	f	Hz	50/60
Limit values of the operating voltage			
Test circuit		V AC	184 - 440
Rated fault current	$I_{\Delta n}$	mA	30
Sensitivity			Pulse-current sensitive
Rated insulation voltage	Ui	V	440
Rated impulse withstand voltage	U <sub>imp</sub>	kV	4 (1.2/50µs)
Rated short-circuit strength	I <sub>cn</sub>	kA	10 with back-up fuse
Impulse withstand current			250 A (8/20 μs) surge-proof
Max. admissible back-up fuse			
Short-circuit	gG/gL	А	63
Overload	gG/gL	А	25
Rated making and breaking capacity / Rated residual making and breaking capacity	$I_m / I_{\Delta m}$	A	500
lifespan			
Electrical	Operations		≧ 4000
Mechanical	Operations		≧ 10000
Electrical			
Types conform to			UL1053
Current test marks			As per inscription
Tripping			non-delayed
Rated voltage according to UL	Un	V AC	480Y/277 V, 60 Hz
Limit values of the operating voltage			

Pick-p currentmAR220Sincle mides worksame vorksame	Test circuit		V AC	196 - 305	
Developse testedSolSolSolReted inputse withstand voltageVangVangVangVangReted inputse withstand voltageVangVangVangVangShart-circuitSolVangVangVangVangOverlaadVangVangVangVangVangReter was pathersking capacity / Rated residual unking and breakingVangVangVangVangReter was pathersking capacity / Rated residual unking and breakingVangVangVangVangReter was pathersking capacity / Rated residual unking and breakingVangVangVangVangReter was pathersking capacity / Rated residual unking and breakingVangVangVangVangReter was pathersking capacity / Rated residual unking and breakingVangVangVangVangVangReter was pathersking capacity / Rated residual unking and breakingVang<	Pick-up current		mA	22	
Retaring use withstand voltage     Nume     Num     Nume     Nume	Sensitivity			Pulse-current sensitive	
Ret with returning with solution states with solution solution states with solution solution states with solution solution solution states with solution s	Overvoltage-tested		V	530	
Ax admissible back-up fuse     Image: Admi	Rated impulse withstand voltage	U <sub>imp</sub>	kV	4 (1.2/50µs)	
Short-ircuit     An a sub	Rated short-circuit strength	I <sub>cn</sub>	kA	5 as per CSA	
OverlaadImage: state of a persitional current must not exceed the residual current circuit-breaker's rated operational current breaker's	Max. admissible back-up fuse				
Reted making and breaking capacity/ Rated residual making and breaking capacity     Image: Marked residual making and breaking capacity     <	Short-circuit			70 A class J fuse	
capacity	Overload				
Electrical     Operations     #00       Mechanical     Operations     #000       Mechanical     #000     Mechanical       Mechanical     Image: Standard front dimension     \$1000       Device height     \$1000     \$1000       Bult-in width     \$10     \$1000       Bult-in width     \$1000     \$10000       Bult-in width     \$1000     \$1000       Bult-in width     \$1000     \$10000       Terminal protectrion     \$10000     \$1000000       Stranded     \$1000000000000000000000000000000000000		$I_m / I_{\Delta m}$	A	500	
Mechanical     Operations     1000       Mechanical     Standard front dimension     4       Standard front dimension     Mechanical     Standard front dimension       Device height     Mechanical     Mechanical       Built-in width     0     Standard front with 2 latch positions for DIN-rail EEC/EN 60715       Degree of Protection     Uick attachment with 2 latch positions for DIN-rail EEC/EN 60715       Terminal stop and bottom     Lift terminals       Terminal cross-section     Lift terminals       Stranded     mm²     Strandard to BSV A3, OVE-EN 6       Terminal cross-section     Lift terminals       Stranded     mm²     Strandard to BSV A3, OVE-EN 6       Terminal cross-section     mm²     Strandard to BSV A3, OVE-EN 6       Stranded     mm²     Strandard to BSV A3, OVE-EN 6       Terminal cross-section     mm²     Strandard to BSV A3, OVE-EN 6       Admissible ambient temperature range     mm²     Strandard to BSV A3, OVE-EN 6       Fundition comperature range     Strandard to BSV A3, OVE-EN 6     Strandard to BSV A3, OVE-EN 6       Fundition comperature range     Strandard to BSV A3, OVE-EN 6     Stranda	lifespan				
Mechanical       Standard front dimension     mm     45       Device height     mm     80       Buit-in width     mm     70 (4TE)       Mounting     mm     70 (4TE)       Device height     mm     70 (4TE)       Degree of Protection     mm     70 (4TE)       Terminals top and bottom     mm     10 (vick attachment with 2 latch positions for DIN-rail IEC/EN 60715       Terminal protection     mm     80 (vick attachment with 2 latch positions for DIN-rail IEC/EN 60715       Terminal protection     mm     10 (vick attachment with 2 latch positions for DIN-rail IEC/EN 60715       Terminal cross-section     mm     10 (vick attachment with 2 latch positions for DIN-rail IEC/EN 60715       Stranded     mm     15 - 35       Terminal cross-section     mm     15 - 35       Stranded     mm     15 - 35       Admissible ambient temperature range     mm     16 (vick tross-recessed screw as defined in EN ISO 4757-22, Pozidriv PZ2)       Admissible ambient temperature ange     mm     25 - 540 (vick moistracter and the mount of th	Electrical	Operations		≧ 4000	
Standard front dimension   Imm   §     Device height   Imm   0     Buil-in width   Imm   7(4F)     Mounting   Variable databased from twith 2 latch positions for DIN-rail IE/E/N 60715   140, 1954 (with moisture-proof enclosure)     Degree of Protection   Variable databased from twith 2 latch positions for DIN-rail IE/E/N 60715   140, 1954 (with moisture-proof enclosure)     Terminal protection   Variable databased from twith 2 latch positions for DIN-rail IE/E/N 60715   140, 1954 (with moisture-proof enclosure)     Solid   Terminal protection   Variable databased from twith 2 latch positions for DIN-rail IE/E/N 60715     Solid   Terminal protection   Variable databased from twith 2 latch positions for DIN-rail IE/E/N 60715     Solid   Terminal cross-section   Variable databased from twith 2 latch position for DIN-rail IE/E/N 60715     Solid   Terminal cross-section   Terminal cross-section   Variable databased from twith 2 latch position for DIN-rail IE/E/N 60715     Admissible ambient temperature range   Terminal cross-section   Solid   Solid     Reminiter proofing   Terminal cross-section   Solid   Solid     Reminiter proofing   Terminiter cross-section twith 2 latch position for DIN-rail IE/E 60068-2   Solid     Huridity	Mechanical	Operations		≧ 10000	
Device heightnm0Buil-in widthnm0 (4TE)Mounting0 (dick attachment with 2 latch positions for DIN-rail EC/EN 60715Degree of ProtectionPalo, P54 (with moisture-protenclosure)Terminal top and bottomPalo, P54 (with moisture-protenclosure)Terminal protectionPaloSolidnmSolidnmStrandednmStrandednmAdmissible ambient temperature rangePaloPermissible storage and transport temperaturesCClimatic proofingCHuirdityPaloPollution degreeSolidAduntag positionSolidContage positionSo	Mechanical				
Built-in width     Mounting     Mounting     Mounting     Mounding	Standard front dimension		mm	45	
Mounting	Device height		mm	80	
Degree of Protection     Image: Protection     Protection     Protection     Protection     Protection     Protection     Protection     Protection     Busbar tag shroud to BGV A3, ÖVE-EN 6       Terminal cross-section     Image: Protection     Protectio	Built-in width		mm	70 (4TE)	
Terminals top and bottom   Image: section   Image: section <th <th="" co<="" cor="" corr="" td=""><td>Mounting</td><td></td><td></td><td>Quick attachment with 2 latch positions for DIN-rail IEC/EN 60715</td></th>	<td>Mounting</td> <td></td> <td></td> <td>Quick attachment with 2 latch positions for DIN-rail IEC/EN 60715</td>	Mounting			Quick attachment with 2 latch positions for DIN-rail IEC/EN 60715
Terminal protection   March as a section     Terminal cross-section   mm <sup>2</sup> 1-35     Solid   mm <sup>2</sup> 2×16     Terminal cross-section   mm <sup>2</sup> 1-30     Terminal cross-section   mm <sup>2</sup> 2×16     Terminal cross-section   mm <sup>2</sup> 5-340     Admissible ambient temperature range   C   25-440     Permissible storage and transport temperatures   C   25-540     Clinatic proofing   M   Solid     Pulution degree   %   5-95     Nounting position   M   Solid     Contact position indicator   %   Solid	Degree of Protection			IP40, IP54 (with moisture-proof enclosure)	
Terminal cross-section   Imme   Imme   Imme     Solid   mm <sup>2</sup> 1.5 - 35     Stranded   mm <sup>2</sup> 2 × 16     Terminal cross-section   mm <sup>2</sup> 2 × 16     Admissible ambient temperature range   °C   -25 + 40     Permissible storage and transport temperatures   °C   -25 + 60     Climatic proofing   °C   -25 + 60     Hunidity   5 - 95   -25 + 50°/-09 - 55% relative humidity according to IEC 60068-2     Pollution degree   %   5 - 95     Mounting position   %   5 - 95     Contact position indicator   %   6     Mounting position indicator   %   6	Terminals top and bottom			Lift terminals	
Solid   mm <sup>2</sup> 15-35     Stranded   mm <sup>2</sup> 2 x 16     Terminal cross-section   Mm <sup>2</sup> Mixit cross-recessed screw as defined in EN ISO 4757-22, Pozidriv PZ2)     Admissible ambient temperature range   °C   40     Permissible storage and transport temperatures   °C   -55 + 40     Climatic proofing   °C   -55 * 600     Hunidity   Solid   -55 * 050-95% relative humidity according to IEC 60068-2     Pollution degree   %   5 - 95     Mounting position   K   -50 × 600     Contact position indicator   K   -50 × 600	Terminal protection			Busbar tag shroud to BGV A3, ÖVE-EN 6	
Strandedmm²2 x 16Ferminal cross-sectionKM (with cross-recessed screw as defined in EN ISO 4757-22, Pozidriv PZ2)Admissible ambient temperature range°C-5 + 40Permissible storage and transport temperatures°C-55 + 60Climatic proofing°C-55 °C /90 - 95 wirelative humidity according to IEC 60068-2HumidityS-5 - 50Pollution degreeS-5 - 50Mounting positionS-50Concer position indicatorS-50Mounting position-50-50Concer position indicator-50-50Concer position indicator-50-50C	Terminal cross-section				
Terminal cross-section   Mode with cross-recessed screw as defined in EN ISO 4757-22, Pozidriv PZ2)     Admissible ambient temperature range   °C   25 - 40     Permissible storage and transport temperatures   °C   35 - 60     Climatic proofing   °S   25 50°(90-95% relative humidity according to IEC 60068-2     Humidity   S   95     Pollution degree   2   2     Mounting position   S   8     Contact position indicator   S   9	Solid		mm <sup>2</sup>	1.5 - 35	
Admissible ambient temperature range   Permissible storage and transport temperatures   Sister and temperatures   Sister a	Stranded		mm <sup>2</sup>	2 x 16	
Permissible storage and transport temperatures °C 35 + 60   Climatic proofing 255°C/90-95% relative humidity according to IEC 60068-2   Humidity 6 %   Pollution degree % 2   Mounting position 6 %   Contact position indicator % 4	Terminal cross-section			M5 (with cross-recessed screw as defined in EN ISO 4757-Z2, Pozidriv PZ2)	
Climatic proofingClimatic proofingSolutionHumidity55Pollution degree66Mounting position66Contact position indicator66Image: Solution degree66Image: Solution degree66<	Admissible ambient temperature range		°C	-25 - +40	
Humidity % 5 - 95   Pollution degree 2   Mounting position G As required   Contact position indicator G ed / green	Permissible storage and transport temperatures		°C	-35 - +60	
Pollution degree 2   Mounting position As required   Contact position indicator Image: Contact position indicator	Climatic proofing			25-55°C/90-95% relative humidity according to IEC 60068-2	
Mounting position As required   Contact position indicator Model	Humidity		%	5 - 95	
Contact position indicator red / green	Pollution degree			2	
	Mounting position			As required	
Trip indication white / blue	Contact position indicator			red / green	
	Trip indication			white / blue	

# Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	In	А	25
Heat dissipation per pole, current-dependent	P <sub>vid</sub>	W	0.775
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	3.1
Static heat dissipation, non-current-dependent	P <sub>vs</sub>	W	0
Heat dissipation capacity	P <sub>diss</sub>	W	0
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	55
			Starting at 40 °C, the max. permissible continuous current decreases by 3% for every 1 °C
IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
10.2.2 Corrosion resistance			Meets the product standard's requirements.
10.2.3.1 Verification of thermal stability of enclosures			Meets the product standard's requirements.
10.2.3.2 Verification of resistance of insulating materials to normal heat			Meets the product standard's requirements.
10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects			Meets the product standard's requirements.
10.2.4 Resistance to ultra-violet (UV) radiation			Meets the product standard's requirements.
10.2.5 Lifting			Does not apply, since the entire switchgear needs to be evaluated.

10.2.6 Mechanical impact	Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 Inscriptions	Meets the product standard's requirements.
10.3 Degree of protection of ASSEMBLIES	Does not apply, since the entire switchgear needs to be evaluated.
10.4 Clearances and creepage distances	Meets the product standard's requirements.
10.5 Protection against electric shock	Does not apply, since the entire switchgear needs to be evaluated.
10.6 Incorporation of switching devices and components	Does not apply, since the entire switchgear needs to be evaluated.
10.7 Internal electrical circuits and connections	Is the panel builder's responsibility.
10.8 Connections for external conductors	Is the panel builder's responsibility.
10.9 Insulation properties	
10.9.2 Power-frequency electric strength	Is the panel builder's responsibility.
10.9.3 Impulse withstand voltage	Is the panel builder's responsibility.
10.9.4 Testing of enclosures made of insulating material	Is the panel builder's responsibility.
10.10 Temperature rise	The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
10.11 Short-circuit rating	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.12 Electromagnetic compatibility	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.13 Mechanical function	The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

#### **Technical data ETIM 7.0**

Circuit breakers and fuses (EG000020) / Residual current circuit breaker (RCCB) (EC000003)

Electric engineering, automation, process control engineering / Electrical installation, device / Residual current protection system / Residual current circuit breaker (RCCB) (ecl@ss10.0.1-27-14-22-01 [AAB906014])		
Number of poles		4
Rated voltage	V	480
Rated current	А	25
Rated fault current	mA	30
Rated insulation voltage Ui	V	440
Rated impulse withstand voltage Uimp	kV	4
Mounting method		DIN rail
Leakage current type		A
Selective protection		No
Short-time delayed tripping		No
Short-circuit breaking capacity (Icw)	kA	10
Surge current capacity	kA	0.25
Frequency		50/60 Hz
Additional equipment possible		Yes
With interlocking device		Yes
Degree of protection (IP)		IP20
Width in number of modular spacings		4
Built-in depth	mm	70.5
Ambient temperature during operating	°C	-25 - 40
Pollution degree		2
Connectable conductor cross section multi-wired	mm²	1.5 - 16
Connectable conductor cross section solid-core	mm²	1.5 - 35

