



Residual current circuit breaker (RCCB), 40A, 2p, 30mA, type AC, 110V

Part no. FRCMM-40/2/003-110
Catalog No. 180587

Similar to illustration

Delivery program

Basic function			Residual current circuit-breakers
Number of poles			2 pole
Application			Switchgear for industrial and advanced commercial applications
Rated current	I_n	A	40
Rated short-circuit strength	I_{cn}	kA	10 with back-up fuse
Rated fault current	$I_{\Delta N}$	A	0.03
Type			Type AC
Tripping		s...	non-delayed
Product range			FRCmM
Sensitivity			AC current sensitive
Impulse withstand current			Partly surge-proof 250 A

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	U_n	V AC	110
Rated frequency	f	Hz	50
Limit values of the operating voltage			
Test circuit		V AC	94 - 121
Rated fault current	$I_{\Delta n}$	mA	30
Sensitivity			AC current sensitive
Rated insulation voltage	U_i	V	440
Rated impulse withstand voltage	U_{imp}	kV	4 (1.2/50 μ s)
Rated short-circuit strength	I_{cn}	kA	10 with back-up fuse
Impulse withstand current			250 A (8/20 μ s) surge-proof
Max. admissible back-up fuse			
Short-circuit	gG/gL	A	63
Overload	gG/gL	A	40
Rated making and breaking capacity / Rated residual making and breaking capacity	$I_m / I_{\Delta m}$	A	500
lifespan			
Electrical	Operations		≥ 4000
Mechanical	Operations		≥ 20000

Mechanical

Standard front dimension		mm	45
Device height		mm	80
Built-in width		mm	35 (2TE)
Mounting			Quick attachment with 2 latch positions for DIN-rail IEC/EN 60715
Degree of Protection			IP40, IP54 (with moisture-proof enclosure)
Terminals top and bottom			Twin-purpose terminals
Terminal protection			Busbar tag shroud to BGV A3, ÖVE-EN 6
Terminal cross-section			

Solid	mm ²	1.5 - 35
Stranded	mm ²	2 x 16
Terminal cross-section		M5 (with cross-recessed screw as defined in EN ISO 4757-Z2, Pozidriv PZ2)
Tightening torque of fixing screws	N/m	2 - 2.4
Thickness of busbar material	mm	0.8 - 2
Admissible ambient temperature range	°C	-25 - +40
Permissible storage and transport temperatures	°C	-35 - +60
Climatic proofing		25-55°C/90-95% relative humidity according to IEC 60068-2
Mounting position		As required
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	I _n	A		40
Heat dissipation per pole, current-dependent	P _{vid}	W		3.9
Equipment heat dissipation, current-dependent	P _{vid}	W		7.8
Static heat dissipation, non-current-dependent	P _{vs}	W		0
Heat dissipation capacity	P _{diss}	W		0
Operating ambient temperature min.		°C		-25
Operating ambient temperature max.		°C		75
				Starting at 40 °C, the max. permissible continuous current decreases by 2.5% 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)
(ec1@ss10.0.1-27-14-22-01 [AAB906014])

Number of poles		2
Rated voltage	V	110
Rated current	A	40
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		AC
Selective protection		No
Short-time delayed tripping		No
Short-circuit breaking capacity (Icw)	kA	10
Surge current capacity	kA	0.25
Frequency		50 Hz
Additional equipment possible		Yes
With interlocking device		Yes
Degree of protection (IP)		IP20
Width in number of modular spacings		2
Built-in depth	mm	70.5
Ambient temperature during operating	°C	-25 - 40
Pollution degree		2
Connectable conductor cross section multi-wired	mm ²	1.5 - 16
Connectable conductor cross section solid-core	mm ²	1.5 - 35