

Digital residual current circuit-breaker, all-current sensitive, 40 A, 2p, 30 mA, type G/B



**Part no. FRCdM-40/2/003-G/B
300639**

General specifications		
Product name		Eaton Moeller series xEffect - FRCdM Type B, B+, Bfq RCCB
Part no.		FRCdM-40/2/003-G/B
EAN		9010238122819
Product Length/Depth		80 millimetre
Product height		71 millimetre
Product width		70 millimetre
Product weight		0.32 kilogram
Compliances		RoHS conform
Certifications		IEC/EN 62423 ÖVE E 8601 IEC/EN 61008 EN45545-2 IEC 61373
Product Tradename		xEffect - FRCdM Type B, B+, Bfq
Product Type		RCCB
Product Sub Type		None
Delivery program		
Application		Switchgear for industrial and advanced commercial applications xEffect - Switchgear for industrial and advanced commercial applications
Number of poles		Two-pole
Tripping time		Short time-delayed 10 ms delayed
Amperage Rating		40 A
Rated short-circuit strength		10 kA with back-up fuse
Fault current rating		30 mA
Sensitivity type		All current sensitive
Impulse withstand current		3 kA (8/20 µs) surge-proof
Type		> 500000 operations Current test marks as per inscription Dry auxiliary contact: > 100,000 electrical switching operations per minute at 2 A 30 VDC resistive load Maximum operating temperature is 60 °C in accordance with the de-rating table
Technical Data - Electrical		
Voltage rating (IEC/EN 60947-2)		240 V AC
Voltage rating - min		50 V AC
Voltage rating - max		456 V AC
Rated operational voltage (Ue) - max		240 V
Rated insulation voltage (Ui)		440 V
Rated impulse withstand voltage (Uimp)		4 kV
Rated fault current - min		0.03 A
Rated fault current - max		0.03 A
Frequency rating		50 Hz
Short-circuit rating		63 A (max. admissible back-up fuse)
Leakage current type		B
Rated residual making and breaking capacity		500 A
Admissible back-up fuse		63 A gG/gL
Admissible back-up fuse overload - max		40 A gG/gL
Rated short-time withstand current (Icw)		10 kA
Surge current capacity		3 kA
Test circuit range		196 V AC - 264 V AC
Pollution degree		2

Lifespan, electrical		4000 operations
Technical Data - Electrical - Dry Auxiliary Contact		
Rated switching capacity (resistive load) of auxiliary contact at 30 V DC		2 A
Rated switching capacity (resistive load) of auxiliary contact at 240 V AC		0.25 A
Switching duty with resistive load of auxiliary contact - max		60 W
Switching voltage at AC of auxiliary contact - max		240 V
Switching voltage at DC of auxiliary contact - max		220 V
Switching current of auxiliary contact - max		2 A
Switching capacity of auxiliary contact - min		10 µA, 10 mV DC
Terminal capacity of auxiliary contact		0.25 mm² - 1.5 mm²
Technical Data - Mechanical		
Frame		45 mm
Width in number of modular spacings		4
Built-in width (number of units)		70 mm (4 SU)
Built-in depth		70.5 mm
Mounting Method		DIN rail Quick attachment with 2 latch positions for DIN-rail IEC/EN 60715
Mounting position		As required
Degree of protection		IP20 switches IP40 enclosed IP20
Status indication		White / blue
Terminals (top and bottom)		Twin-purpose terminals
Terminal capacity (solid wire)		1.5 mm² - 35 mm²
Connectable conductor cross section (solid-core) - min		1.5 mm²
Connectable conductor cross section (solid-core) - max		35 mm²
Terminal capacity (stranded cable)		16 mm² (2x)
Connectable conductor cross section (multi-wired) - min		1.5 mm²
Connectable conductor cross section (multi-wired) - max		16 mm²
Terminal capacity (cable)		M5 (with cross-recessed screw as defined in EN ISO 4757-Z2, PZ2)
Terminal protection		Finger and hand touch safe, DGUV VS3, EN 50274
Contact position indicator color		Red / green
Tightening torque		2 Nm - 2.4 Nm
Busbar material thickness		0.8 mm - 2 mm
Lifespan, mechanical		20000 operations
Permitted storage and transport temperature - min		-35 °C
Permitted storage and transport temperature - max		60 °C
Climatic proofing		25-55 °C / 90-95% relative humidity according to IEC 60068-2
Design verification as per IEC/EN 61439 - technical data		
Rated operational current for specified heat dissipation (In)		40 A
Heat dissipation per pole, current-dependent		0 W
Equipment heat dissipation, current-dependent		4.1 W
Static heat dissipation, non-current-dependent		0 W
Heat dissipation capacity		4.1 W
Ambient operating temperature - min		-25 °C
Ambient operating temperature - max		60 °C
Design verification as per IEC/EN 61439		
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 Resist. of insul. mat. to abnormal heat/fire by internal elect. 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.
10.9.2 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.
Additional information		
Features		Additional equipment possible Residual current circuit-breakers, digital
Fitted with:		Interlocking device
Functions		Short-time delayed tripping
Special features		FRCdM Residual current circuit-breakers, digital Type G/B (ÖVE E 8601)
Used with		Type G/B (#VE E 8601) FRCdM Residual current circuit-breakers, digital

Technical data ETIM 8.0

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) (ecI@ss10.0.1-27-14-22-01 [AAB906014])			
Number of poles			2
Rated voltage		V	240
Rated current		A	40
Rated fault current		A	0.03
Rated insulation voltage Ui		V	440
Rated impulse withstand voltage Uimp		kV	4
Mounting method			DIN rail
Leakage current type			B
Selective protection			No
Short-time delayed tripping			Yes
Short-circuit breaking capacity (Icw)		kA	10
Surge current capacity		kA	3
Voltage type			AC
With interlocking device			Yes
Frequency			50 Hz
Additional equipment possible			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 - 60
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
Explosion-proof			No