

## Digital residual current circuit-breaker, 40A, 4p, 300mA, type S/A



**Part no.** FRCDM-40/4/03-S/A  
**168637**  
**EL Number** 1666190  
**(Norway)**

General specifications		
Product name		Eaton Moeller series xEffect - FRCDM Type AC, A, U, R RCCB
Part no.		FRCDM-40/4/03-S/A
EAN		4015081651252
Product Length/Depth		80 millimetre
Product height		71 millimetre
Product width		70 millimetre
Product weight		0.32 kilogram
Compliances		RoHS conform
Certifications		IEC/EN 61008 IEC 61373 EN45545-2
Product Tradename		xEffect - FRCDM Type AC, A, U, R
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		Four-pole
Tripping time		Selective switch off 40 ms delayed - selective switch off
Amperage Rating		40 A
Rated short-circuit strength		10 kA
Fault current rating		300 mA
Sensitivity type		Pulse-current sensitive
Impulse withstand current		5 kA (8/20 µs) surge-proof
Type		FRCDM Residual current circuit-breakers, digital Type S/A
Technical Data - Electrical		
Voltage rating (IEC/EN 60947-2)		240 V AC / 415 V AC
Voltage rating - min		50 V AC
Voltage rating - max		264 V AC
Rated operational voltage (Ue) - max		415 V
Rated insulation voltage (Ui)		440 V
Rated impulse withstand voltage (Uimp)		4 kV
Rated fault current - min		0.3 A
Rated fault current - max		0.3 A
Frequency rating		50 Hz
Short-circuit rating		63 A (max. admissible back-up fuse)
Leakage current type		A
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		5 kA
Test circuit range		196 V AC - 456 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 mm <sup>2</sup> - 1.5 mm <sup>2</sup>
<b>Technical Data - Mechanical</b>		
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		Quick attachment with 2 latch positions for DIN-rail IEC/EN 60715 DIN rail
Mounting position		As required
Degree of protection		IP20, IP40 with suitable enclosure IP20
Status indication		White / blue
Terminals (top and bottom)		Twin-purpose terminals
Terminal capacity (solid wire)		1.5 mm <sup>2</sup> - 35 mm <sup>2</sup>
Connectable conductor cross section (solid-core) - min		1.5 mm <sup>2</sup>
Connectable conductor cross section (solid-core) - max		35 mm <sup>2</sup>
Terminal capacity (stranded cable)		16 mm <sup>2</sup> (2x)
Connectable conductor cross section (multi-wired) - min		1.5 mm <sup>2</sup>
Connectable conductor cross section (multi-wired) - max		16 mm <sup>2</sup>
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
Internal resistance at room temperature and 50Hz		0.64 mΩ
<b>Design verification as per IEC/EN 61439 - technical data</b>		
Rated operational current for specified heat dissipation (In)		40 A
Heat dissipation per pole, current-dependent		0 W
Equipment heat dissipation, current-dependent		6.2 W
Static heat dissipation, non-current-dependent		0 W
Heat dissipation capacity		6.2 W
Ambient operating temperature - min		-25 °C
Ambient operating temperature - max		60 °C
<b>Design verification as per IEC/EN 61439</b>		
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.
<b>Additional information</b>		
Features		Additional equipment possible Residual current circuit-breakers, digital Selective protection
Fitted with:		Interlocking device
Special features		Current test marks as per inscription Dry auxiliary contact: > 100,000 electrical switching operations per minute at 2 A 30 VDC resistive load Dry auxiliary contact: > 5 x 100,000 electrical switching operations per minute at 1 A 30 VDC resistive load Maximum operating temperature is 60 °C: Starting at 40 °C, the max. permissible continuous current decreases by 2.5% for every 1 °C
Used with		FRCdM Residual current circuit-breakers, digital Type S/A

## 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			4
Rated voltage		V	415
Rated current		A	40
Rated fault current		A	0.3
Rated insulation voltage Ui		V	440
Rated impulse withstand voltage Uimp		kV	4
Mounting method			DIN rail
Leakage current type			A
Selective protection			Yes
Short-time delayed tripping			No
Short-circuit breaking capacity (Icw)		kA	10
Surge current capacity		kA	5
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 <sup>2</sup>	1.5 - 16
Connectable conductor cross section solid-core		mm <sup>2</sup>	1.5 - 35
Explosion-proof			No