DATASHEET - FRBMM-C20/3/003-A



RCD/MCB combination, 20 A, 30 mA, MCB trip characteristic: C, 3p, RCD trip characteristic: A

Part no. FRBMM-C20/3/003-A 170741

Similar to illustration

eneral specifications	
Product name	Eaton Moeller series xEffect - FRBm6/M RCBO - residual-current circuit breake with overcurrent protection
Part no.	FRBMM-C20/3/003-A
EAN	4015081673070
Product Length/Depth	80 millimetre
Product height	75.5 millimetre
Product width	70 millimetre
Product weight	0.39 kilogram
Compliances	RoHS conform CE Marked
Certifications	CE EN45545-2 IEC 61373
Product Tradename	xEffect - FRBm6/M
Product Type	RCBO - Residual-current circuit breaker with overcurrent protection
Product Sub Type	None
elivery program	
Application	Switchgear for industrial and advanced commercial applications
Product range	FRBmM
Basic function	Combined RCD/MCB devices
Number of poles	Three-pole
Number of poles (protected)	3
Number of poles (total)	3
Tripping characteristic	С
Release characteristic	С
Rated current	20 A
Fault current rating	0.03 A
Sensitivity type	Pulse-current sensitive
Туре	RCBO
echnical Data - Electrical	
	AC
Voltage type	415 V - 415 V
Voltage rating Rated operational voltage (Ue) - max	415 V - 415 V
Rated insulation voltage (Ui)	500 V
Rated impulse withstand voltage (Uimp)	4 kV
Rated fault currents of product range	10, 30, 100, 300 MilliAmpere
Impulse withstand current	Partly surge-proof, 250 A
Frequency rating	50 Hz
Leakage current type	A 10 kA
Rated switching capacity	10 kA
Rated switching capacity (IEC/EN 61009)	10 kA
Rated short-circuit breaking capacity (EN 60947-2)	15 kA
Rated short-circuit breaking capacity (EN 61009)	10 kA
Rated short-circuit breaking capacity (EN 61009-1)	10 kA
Rated short-circuit breaking capacity (IEC 60947-2) Surge current capacity	15 kA 0.25 kA

Disconnection characteristic	Undelayed
Tripping	Non-delayed
Pollution degree	2
Technical Data - Mechanical	
Width in number of modular spacings	4
Built-in depth	75.5 mm
Degree of protection	IP20
Connectable conductor cross section (solid-core) - min	1 mm²
Connectable conductor cross section (solid-core) - max	25 mm ²
Connectable conductor cross section (multi-wired) - min	1 mm²
Connectable conductor cross section (multi-wired) - max	25 mm²
Design verification as per IEC/EN 61439 - technical data	
•	20. A
Rated operational current for specified heat dissipation (In)	20 A
Heat dissipation per pole, current-dependent	0 W 9.2 W
Equipment heat dissipation, current-dependent	0 W
Static heat dissipation, non-current-dependent	0 W
Heat dissipation capacity	40 °C
Ambient operating temperature - max	
Ambient operating temperature - min	-25 °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.
10.2.3.3 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.
10.6 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	
Current limiting class	3

Technical data ETIM 9.0

Circuit breakers and fuses (EG000020) / Earth leakage circuit breaker (EC000905) Electric engineering, automation, process control engineering / Electrical installation, device / Residual current protection system / MCB/RCCB combination (ecl@ss13-27-14-22-07 [AFZ810020]) 3 Number of poles (total) Number of protected poles 3 Rated voltage ٧ 415 Rated insulation voltage Ui ٧ 500 kV 4 Rated impulse withstand voltage Uimp Α 20 Rated current 0.03 Rated fault current

Current limiting class Power loss Rated short-circuit breaking capacity according to EN 61009 Rated short-circuit breaking capacity according to IEC 60947-2 Rated short-circuit breaking capacity according to EN 61009-1 Rated short-circuit breaking capacity lon according to EN 61009-1 Rated short-circuit breaking capacity lon according to EN 61009-1 Rated short-circuit breaking capacity lon according to EN 61009-1 Rated short-circuit breaking capacity lon according to EN 61009-1 Rated short-circuit breaking capacity lon according to EN 61009-1 Rated short-circuit breaking capacity lon according to EN 61009-1 Rated short-circuit breaking capacity lon according to EN 61009-1 Rated short-circuit breaking capacity lon according to EN 61009-1 Rated short-circuit breaking capacity lon according to EN 61009-1 Rated short-circuit breaking capacity lon according to EN 61009-1 Rated short-circuit breaking capacity lon according to EN 61009-1 Rated short-circuit breaking capacity lon according to EN 61009-1 Rated short-circuit breaking capacity lon according to EN 61009-1 Rated short-circuit breaking capacity lon according to EN 61009-1 Rated short-circuit breaking capacity lon according to EN 61009-1 Rated short-circuit breaking capacity lon according to EN 61009-1 Rated short-circuit breaking capacity lon according to EN 61009-1 Rated short-circuit breaking capacity lon according to EN 61009-1 Rated short-circuit breaking capacity lon according to EN 61009-1 Rated short-circuit breaking capacity lon according to EN 61009-1 Rated short-circuit breaking capacity lon according to EN 61009-1 Rated short-circuit breaking capacity lon according to EN 61009-1 Rated short-circuit breaking capacity lon according to EN 61009-1 Rated short-circuit breaking capacity lon according to EN 61009-1 Rated short-circuit breaking capacity lon according to EN 61009-1 Rated short-circuit breaking capacity lon according to EN 61009-1 Rated short-circuit breaking capacity lon according to EN 61009-1 Rated short-circuit breaking capacity lon acc			
Power loss W Rated short-circuit breaking capacity according to EN 61009 kA 10 Rated short-circuit breaking capacity according to IEC 60947-2 kA 15 Rated short-circuit breaking capacity Icn according to EN 61009-1 kA 10 Disconnection characteristic Undelayed Surge current capacity kA 0.25 Voltage type AC 50 Hz Release characteristic C C Concurrently switching neutral conductor No No With interlocking device No No Over voltage category 3 3 Pollution degree 2 -25 - 40 Ambient temperature during operating *C -25 - 40 Width in number of modular spacings M No Built-in depth mm 7.5.5 Flush-mounted installation No No Anti-nuisance tripping version No No Degree of protection (IP) IP20 IP20 Connectable conductor cross section solid-core mm² 1 - 25	Leakage current type		A
Rated short-circuit breaking capacity according to EN 61009 KA 10 Rated short-circuit breaking capacity according to EN 61009-1 KA 15 Rated short-circuit breaking capacity Icn according to EN 61009-1 KA 10 Disconnection characteristic KA 10 Surge current capacity KA 0.25 Voltage type AC AC Frequency 50 Hz C Release characteristic C No Concurrently switching neutral conductor No No With interlocking device No 3 Over voltage category 2 25 - 40 Pollution degree 4 4 Ambient temperature during operating °C 25 - 40 Width in number of modular spacings M 75.5 Built-in depth M No Flush-mounted installation No No Anti-nuisance tripping version No No Degree of protection (IP) P IC No Connectable conductor cross section solid-core	Current limiting class		3
Rated short-circuit breaking capacity according to EC 60947-2 Rated short-circuit breaking capacity Icn according to EN 61009-1 Rated short-circuit breaking capacity Icn according to EN 61009-1 Rated short-circuit breaking capacity Icn according to EN 61009-1 Rated short-circuit breaking capacity Icn according to EN 61009-1 Rated short-circuit breaking capacity Icn according to EN 61009-1 Rated short-circuit breaking capacity Icn according to EN 61009-1 Rated short-circuit breaking capacity Icn according to EN 61009-1 Rated short-circuit breaking capacity Icn according to EN 61009-1 Rated short-circuit breaking capacity Icn according to EN 61009-1 Rated short-circuit breaking capacity Icn according to EN 61009-1 Rated short-circuit breaking capacity Icn according to EN 61009-1 Rated short-circuit breaking capacity Icn according to EN 61009-1 Rated short-circuit breaking capacity Icn according to EN 61009-1 Rated short-circuit breaking capacity Icn according to EN 61009-1 Rated short-circuit breaking capacity Icn according to EN 61009-1 Rated short-circuit breaking capacity Icn according to EN 61009-1 Rated short-circuit breaking capacity Icn according to EN 61009-1 Rated short-circuit breaking capacity Icn according to EN 61009-1 Rated short-circuit breaking capacity Icn according to EN 61009-1 Rated short-circuit breaking capacity Icn according to EN 61009-1 Rated short-circuit breaking capacity Icn according to EN 61009-1 Rated short-circuit breaking capacity Icn according to EN 61009-1 Rated short-circuit breaking capacity Icn according to EN 61009-1 Rated short-circuit breaking capacity Icn according to EN 61009-1 Rated short-circuit breaking capacity Icn according to Icn a	Power loss	W	
Rated short-circuit breaking capacity Icn according to EN 61009-1 AB 10 Disconnection characteristic Surge current capacity Voltage type Frequency Release characteristic Concurrently switching neutral conductor With interlocking device Over voltage category Pollution degree Ambient temperature during operating With in number of modular spacings Built-in depth Flush-mounted installation Anti-nuisance tripping version Concurcetable conductor corss section solid-core May 10 Lindelayed Lindelayeta Lindelayeta Lindelayeta Lindelayeta Lindelayeta Lindelayeta Lindelayeta Lindelaye	Rated short-circuit breaking capacity according to EN 61009	kA	10
Disconnection characteristic Surge current capacity Voltage type Voltage type Frequency Release characteristic Concurrently switching neutral conductor With interlocking device Over voltage category Pollution degree Ambient temperature during operating V°C -25 - 40 Width in number of modular spacings Built-in depth Flush-mounted installation Anti-nuisance tripping version Degree of protection (IP) Connectable conductor cross section solid-core KA O.25 AC C C C C C C C C No No No N	Rated short-circuit breaking capacity according to IEC 60947-2	kA	15
Surge current capacity Voltage type Voltage type Frequency Release characteristic Concurrently switching neutral conductor With interlocking device Over voltage category Pollution degree Ambient temperature during operating V°C Abbient temperature during operating With in number of modular spacings Built-in depth Flush-mounted installation Anti-nuisance tripping version Degree of protection (IP) Connectable conductor cross section solid-core KA O.25 No C C C C No No No No No No	Rated short-circuit breaking capacity Icn according to EN 61009-1	kA	10
Voltage type Frequency Release characteristic Concurrently switching neutral conductor With interlocking device Over voltage category Pollution degree Ambient temperature during operating With in number of modular spacings Built-in depth Flush-mounted installation Anti-nuisance tripping version Degree of protection (IP) Connectable conductor cross section solid-core AC SO Hz C C C C C C C C C C C C C C C C C C C	Disconnection characteristic		Undelayed
Frequency Release characteristic Concurrently switching neutral conductor With interlocking device Over voltage category Pollution degree Ambient temperature during operating With in number of modular spacings Built-in depth Flush-mounted installation Anti-nuisance tripping version Degree of protection (IP) Connectable conductor cross section solid-core 50 Hz Connectable conductor cross section solid-core	Surge current capacity	kA	0.25
Release characteristic Concurrently switching neutral conductor With interlocking device Over voltage category Pollution degree Ambient temperature during operating Concurrently switching neutral conductor Concurrently switching neutral conductor No Vor Voltage category Society Soci	Voltage type		AC
Concurrently switching neutral conductor With interlocking device Over voltage category Pollution degree Ambient temperature during operating CC -25 - 40 Width in number of modular spacings Built-in depth mm 75.5 Flush-mounted installation Anti-nuisance tripping version Degree of protection (IP) Connectable conductor cross section solid-core No No No No No P20 P20 Connectable conductor cross section solid-core mm² 1 - 25	Frequency		50 Hz
With interlocking device Over voltage category Pollution degree 2 Ambient temperature during operating °C -25 - 40 Width in number of modular spacings Built-in depth Flush-mounted installation Anti-nuisance tripping version Degree of protection (IP) Connectable conductor cross section solid-core No No No Connectable conductor cross section solid-core No No No Connectable conductor cross section solid-core No	Release characteristic		С
Over voltage category Pollution degree 2 Ambient temperature during operating °C -25 - 40 Width in number of modular spacings Built-in depth mm 75.5 Flush-mounted installation Anti-nuisance tripping version Degree of protection (IP) Connectable conductor cross section solid-core 3 A C -25 - 40 A	Concurrently switching neutral conductor		No
Pollution degree 2 Ambient temperature during operating °C -25 - 40 Width in number of modular spacings 4 Built-in depth mm 75.5 Flush-mounted installation No Anti-nuisance tripping version No Degree of protection (IP) IP20 Connectable conductor cross section solid-core mm² 1 - 25	With interlocking device		No
Ambient temperature during operating °C -25 - 40 Width in number of modular spacings Built-in depth mm 75.5 Flush-mounted installation Anti-nuisance tripping version Degree of protection (IP) Connectable conductor cross section solid-core °C -25 - 40 4 No 75.5 No No 1-25	Over voltage category		3
Width in number of modular spacings Built-in depth mm 75.5 Flush-mounted installation Anti-nuisance tripping version Degree of protection (IP) Connectable conductor cross section solid-core ### 1 - 25	Pollution degree		2
Built-in depth mm 75.5 Flush-mounted installation No Anti-nuisance tripping version No Degree of protection (IP) IP20 Connectable conductor cross section solid-core mm² 1 - 25	Ambient temperature during operating	°C	-25 - 40
Flush-mounted installation Anti-nuisance tripping version Degree of protection (IP) Connectable conductor cross section solid-core mm² 1 - 25	Width in number of modular spacings		4
Anti-nuisance tripping version Degree of protection (IP) Connectable conductor cross section solid-core mm² 1 - 25	Built-in depth	mm	75.5
Degree of protection (IP) Connectable conductor cross section solid-core mm² 1 - 25	Flush-mounted installation		No
Connectable conductor cross section solid-core mm ² 1 - 25	Anti-nuisance tripping version		No
	Degree of protection (IP)		IP20
Connectable conductor cross section multi-wired mm ² 1 - 25	Connectable conductor cross section solid-core	mm²	1 - 25
	Connectable conductor cross section multi-wired	mm²	1 - 25