## DATASHEET - FRBMM-C20/3/01-A



## RCD/MCB combination, 20 A, 100 mA, MCB trip characteristic: C, 3p, RCD trip characteristic: A

Part no. FRBMM-C20/3/01-A 170746

Similar to illustration

General specifications	
Product name	Eaton Moeller series xEffect - FRBm6/M RCBO - residual-current circuit breake with overcurrent protection
Part no.	FRBMM-C20/3/01-A
EAN	4015081673124
Product Length/Depth	80 millimetre
Product height	75.5 millimetre
Product width	70 millimetre
Product weight	0.39 kilogram
Compliances	CE Marked RoHS conform
Certifications	EN45545-2 CE IEC 61373
Product Tradename	xEffect - FRBm6/M
Product Type	RCBO - Residual-current circuit breaker with overcurrent protection
Product Sub Type	None
Delivery 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
Amperage Rating	20 A
Rated current	20 A
Fault current rating	0.1 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
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
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)	15 kA

Problishing degree  Technical Data - Mechanical  With a number of modular spacings  Buil-in depth  Degree of protection  Connectable conductor cross section floodic-core) - min  Connectable conductor cross section floodic-core - min  Rabet operations crume to segerified the ad dissipation (In)  Heat dissipation current-dependent  Design verification as per IEC/FN 61439  10.2 Correctable conductor cross section floodic fl	Disconnection characteristic	Undelayed
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10.2.3.8 Resist. of insul. mat. to abnormal heat/fire by internal elect. effects  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.  10.9.2 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  10.11 Short-circuit rating  Is the panel builder is responsibility. The specifications for the switchgear must b observed.  10.12 Electromagnetic compatibility  10.13 Mechanical function  The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.	10.2.2 Corrosion resistance	Meets the product standard's requirements.
10.24 Resistance to ultra-violet (UV) radiation  Meets the product standard's requirements.  10.25 Lifting  Does not apply, since the entire switchgear needs to be evaluated.  10.26 Mechanical impact  Does not apply, since the entire switchgear needs to be evaluated.  10.27 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.  10.9.2 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's responsibility. The specifications for the switchgear must be observed.  10.12 Electromagnetic compatibility  10.13 Mechanical function  Meets the product standard's requirements.  Does not apply, since the entire switchgear needs to be evaluated.  Does not apply, since the entire switchgear needs to be evaluated.  Does not apply, since the entire switchgear needs to be evaluated.  Does not apply, since the entire switchgear needs to be evaluated.  Is the panel builder's responsibility.  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.	10.2.3.1 Verification of thermal stability of enclosures	Meets the product standard's requirements.
10.2.5 Liffing  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.  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's responsibility.  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.	10.2.3.3 Resist. of insul. mat. to abnormal heat/fire by internal elect. effects	Meets the product standard's requirements.
10.2.6 Mechanical impact  10.2.7 Inscriptions  Meets the product standard's requirements.  10.3 Degree of protection of assemblies  10.4 Clearances and creepage distances  Meets the product standard's requirements.  10.6 Incorporation of switching devices and components  10.7 Internal electrical circuits and connections  10.8 Connections for external conductors  10.9.2 Power-frequency electric strength  10.9.3 Impulse withstand voltage  10.9.4 Testing of enclosures made of insulating material  10.10 Temperature rise  10.11 Short-circuit rating  10.12 Electromagnetic compatibility  10.13 Mechanical function  Does not apply, since the entire switchgear needs to be evaluated.  Meets the product standard's requirements.  Does not apply, since the entire switchgear needs to be evaluated.  Is the panel builder's responsibility.  Is the panel builder's responsibility.  Is the panel builder is responsibility.  The specifications for the switchgear must be observed.  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.	10.2.4 Resistance to ultra-violet (UV) radiation	Meets the product standard's requirements.
10.27 Inscriptions  10.3 Degree of protection of assemblies  10.4 Clearances and creepage distances  10.6 Incorporation of switching devices and components  10.7 Internal electrical circuits and connections  10.8 Connections for external conductors  10.9.2 Power-frequency electric strength  10.9.3 Impulse withstand voltage  10.10 Temperature rise  10.10 Temperature rise  10.11 Short-circuit rating  10.12 Electromagnetic compatibility  10.13 Mechanical function  Meets the product standard's requirements.  Does not apply, since the entire switchgear needs to be evaluated.  Is the panel builder's responsibility.  In panel builder's responsibility. The specifications for the switchgear must be observed.  In the panel builder's responsibility. The specifications for the switchgear must be observed.	10.2.5 Lifting	Does not apply, since the entire switchgear needs to be evaluated.
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.  10.10 Temperature rise Is the panel builder's responsibility.  10.10 Temperature rise In the panel builder's responsibility.  10.11 Short-circuit rating Is the panel builder's responsibility. The specifications for the switchgear must be observed.  10.12 Electromagnetic compatibility  The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.	10.2.6 Mechanical impact	Does not apply, since the entire switchgear needs to be evaluated.
10.4 Clearances and creepage distances  10.6 Incorporation of switching devices and components  10.7 Internal electrical circuits and connections  10.8 Connections for external conductors  10.9.2 Power-frequency electric strength  10.9.3 Impulse withstand voltage  10.9.4 Testing of enclosures made of insulating material  10.10 Temperature rise  10.11 Short-circuit rating  10.12 Electromagnetic compatibility  10.13 Mechanical function  Meets the product standard's requirements.  Does not apply, since the entire switchgear needs to be evaluated.  Is the panel builder's responsibility.  Is the panel builder's responsibility.  Is the panel builder's responsibility.  The panel builder is responsibility.  Is the panel builder is responsibility.  Is the panel builder's responsibility. The specifications for the switchgear must be observed.  In the panel builder's responsibility. The specifications for the switchgear must be observed.  The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.	10.2.7 Inscriptions	Meets the product standard's requirements.
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 responsibility.  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.	10.3 Degree of protection of assemblies	Does not apply, since the entire switchgear needs to be evaluated.
10.7 Internal electrical circuits and connections  1s the panel builder's responsibility.  10.8 Connections for external conductors  1s the panel builder's responsibility.  10.9.2 Power-frequency electric strength  1s the panel builder's responsibility.  10.9.3 Impulse withstand voltage  1s the panel builder's responsibility.  1o.9.4 Testing of enclosures made of insulating material  1s the panel builder's responsibility.  1o.10 Temperature rise  The panel builder is responsibility for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.  1o.11 Short-circuit rating  Is the panel builder's responsibility. The specifications for the switchgear must be observed.  1o.12 Electromagnetic compatibility  Is the panel builder's responsibility. The specifications for the switchgear must be observed.  1o.13 Mechanical function  The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.	10.4 Clearances and creepage distances	Meets the product standard's requirements.
10.8 Connections for external conductors  10.9.2 Power-frequency electric strength  10.9.3 Impulse withstand voltage  10.9.4 Testing of enclosures made of insulating material  10.10 Temperature rise  10.11 Short-circuit rating  10.12 Electromagnetic compatibility  10.13 Mechanical function  10.13 Mechanical function  10.14 Strength builder's responsibility.  15 the panel builder's responsibility.  16 the panel builder's responsibility.  17 The panel builder's responsibility.  18 the panel builder's responsibility.  19 The panel builder's responsibility. The specifications for the switchgear must be observed.  10.12 Electromagnetic compatibility  10.13 Mechanical function  10.14 Strength builder's responsibility. The specifications for the switchgear must be observed.  10.15 Strength builder's responsibility. The specifications for the switchgear must be observed.  10.15 Strength builder's responsibility. The specifications for the switchgear must be observed.  10.16 Strength builder's responsibility. The specifications for the switchgear must be observed.	10.6 Incorporation of switching devices and components	Does not apply, since the entire switchgear needs to be evaluated.
10.9.2 Power-frequency electric strength  10.9.3 Impulse withstand voltage  10.9.4 Testing of enclosures made of insulating material  10.10 Temperature rise  10.11 Short-circuit rating  10.12 Electromagnetic compatibility  10.13 Mechanical function  10.13 Mechanical function  Is the panel builder's responsibility.  Is the panel builder is responsibility.  The panel builder is responsibility. The specifications for the switchgear must be observed.  Is the panel builder's responsibility. The specifications for the switchgear must be observed.  The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.	10.7 Internal electrical circuits and connections	Is the panel builder's responsibility.
10.9.3 Impulse withstand voltage  10.9.4 Testing of enclosures made of insulating material  10.10 Temperature rise  10.11 Short-circuit rating  10.12 Electromagnetic compatibility  10.13 Mechanical function  Is the panel builder's responsibility.  The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.  Is the panel builder's responsibility. The specifications for the switchgear must be observed.  Is the panel builder's responsibility. The specifications for the switchgear must be observed.  The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.	10.8 Connections for external conductors	Is the panel builder's responsibility.
10.9.4 Testing of enclosures made of insulating material  10.10 Temperature rise  10.11 Short-circuit rating  10.12 Electromagnetic compatibility  10.13 Mechanical function  10.13 Mechanical function  10.14 Esting of enclosures made of insulating material  15 the panel builder's responsibility.  16 the panel builder's responsibility. The specifications for the switchgear must be observed.  17 the panel builder's responsibility. The specifications for the switchgear must be observed.  18 the panel builder's responsibility. The specifications for the switchgear must be observed.  19 the panel builder's responsibility. The specifications for the switchgear must be observed.  10 the panel builder's responsibility. The specifications for the switchgear must be observed.	10.9.2 Power-frequency electric strength	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.	10.9.3 Impulse withstand voltage	
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observed.  10.12 Electromagnetic compatibility  Is the panel builder's responsibility. The specifications for the switchgear must b observed.  10.13 Mechanical function  The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.	10.10 Temperature rise	
observed.  10.13 Mechanical function  The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.	10.11 Short-circuit rating	
leaflet (IL) is observed.	10.12 Electromagnetic compatibility	
Additional information		
	Additional information	

## **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@ss13-2/-14-22-0/ [AFZ810020])				
Number of poles (total)		3		
Number of protected poles		3		
Rated voltage	V	415		
Rated insulation voltage Ui	V	500		
Rated impulse withstand voltage Uimp	kV	4		
Rated current	Α	20		

Α	0.1
	A
	3
W	
kA	10
kA	15
kA	10
	Undelayed
kA	0.25
	AC
	50 Hz
	С
	No
	No
	3
	2
°C	-25 - 40
	4
mm	75.5
	No
	No
	IP20
mm²	1 - 25
mm²	1 - 25
	W kA kA kA  kA  mm