DATASHEET - FRCDM-25/4/003-G/B



Digital residual current circuit-breaker, 25A, 4p, 30mA, type G/B

Powering Business Worldwide

FRCDM-25/4/003-G/B Part no. 167892

Catalog No.

Alternate Catalog FRCDM-25/4/003-G/B

EL-Nummer 0001664163

(Norway)

Similar to illustration

Delivery program			
Basic function			Residual current circuit-breakers , digital
Number of poles			4 pole
Application			Switchgear for industrial and advanced commercial applications
Rated current	In	Α	25
Rated short-circuit strength	I _{cn}	kA	10
Rated fault current	$I_{\Delta N}$	Α	0.03
Туре			Type G/B (ÖVE E 8601)
Tripping		s	Short time-delayed
Product range			FRCdM
Sensitivity			All current sensitive
Impulse withstand current			Surge-proof, 3 kA
Contact sequence			1 3 5 N 1 3 5 N 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

Technical data Electrical

Liberious			
Types conform to			IEC/EN 61008 IEC/EN 62423 ÖVE E 8601
Current test marks			As per inscription
Tripping		s	10 ms delayed
Rated voltage according to IEC/EN 60947-2	U_{n}	V AC	240/415
Rated frequency	f	Hz	50
Limit values of the operating voltage			
electronic		V AC	50 - 456
Test circuit		V AC	184 - 440
Rated fault current	$I_{\Delta n}$	mA	30
Sensitivity			All current sensitive
Rated insulation voltage	Ui	V	440
Rated impulse withstand voltage	U _{imp}	kV	4
Rated short-circuit strength	I _{cn}	kA	10
Impulse withstand current			3 kA (8/20 μs) surge-proof
Max. admissible back-up fuse			
Short-circuit	gG/gL	Α	63
Overload	gG/gL	Α	63
Rated making and breaking capacity / Rated residual making and breaking capacity	$I_m/I_{\Delta m}$	Α	500
lifespan			
Electrical	Operations		≧ 4000
Mechanical	Operations		≧ 20000
Dry auxiliary contact			

Rated switching capacity

240 VAC (resistive load)	Α	0.25
Max. switching duty (resistive load)	W	60
Max. switching voltage AC	V	240
Max. switching voltage DC	V	220
Maximum switching current	Α	2
Min. switching capacity (reference value)		10 μA, 10 mV DC
lifespan		
Electrical (at 20 switching operations per minute) 2 A 30 VDC resistive load	Operation	§10 ⁵
Electrical (at 20 switching operations per minute) 1 A 30 VDC resistive load	Operation	\$5 x 10 ⁵
Terminal capacity	mm²	0.25 - 1.5
Mechanical		
Standard front dimension	mm	45
Device height	mm	80
Built-in width	mm	70 (4TE)
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		finger and hand touch safe, DGUV VS3, EN 50274
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 - +60
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

30 VDC (resistive load)

Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	25
Heat dissipation per pole, current-dependent	P _{vid}	W	0
Equipment heat dissipation, current-dependent	P _{vid}	W	4.6
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	60
			Maximum operating temperature is 60 $^{\circ}\text{C}$ in accordance with the de-rating table
EC/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.

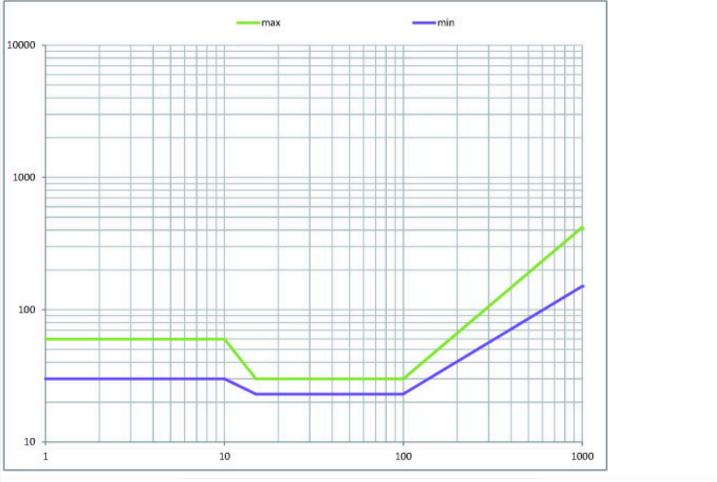
Technical data ETIM 7.0

Circuit breakers and fuses (EG000020) / Residual current circuit breaker (RCCB) (EC000003)	
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Electric engineering, automation, process control engineering / Electrical installation, device / Residual current protection system / Residual current circuit breaker (RCCB) (ecl@ss10.01-27-14-29-01 [AAR906014])

Number of poles Rated voltage Rated voltage Rated current Rated fault current Rated fault current Rated insulation voltage Uimp Rated insulation voltage Uimp Rated insulation voltage Uimp Routing method Routing method Routing method Routing method Routing protection Routing protection Short-time delayed tripping Short-circuit breaking capacity (Icw) Routing method Routing method Routing protection Routing Routi	(ecl@ss10.0.1-27-14-22-01 [AAB906014])		
Rated current A 25 Rated fault current mA 30 Rated insulation voltage Uin V 44 Rated impulse withstand voltage Uimp IV 4 Mounting method IV IV Leakage current type IV B Selective protection IV Ye Short-time delayed tripping IV Ye Short-circuit breaking capacity (Icw) IV IV Surge current capacity IV Ye Frequency IV Ye Additional equipment possible IV Ye With interlocking device IV Ye Pugere of protection (IP) IV Ye With in number of modular spacings IV Ye Built-in depth IV Ye Ambient temperature during operating IV Ye Pollution degree IV Ye Connectable conductor cross section multi-wired IV Ye	Number of poles		4
Rated fault current Rated insulation voltage Ui Rated insulation voltage Uimp Rated insulation voltage Uimp Rounting method Leakage current type Leakage current type Selective protection Short-time delayed tripping Short-circuit breaking capacity (lcw) Surge current capacity Frequency Additional equipment possible With interlocking device Degree of protection (IP) With interlocking device Degree of protection (IP) With in number of modular spacings Built-in depth Built-in depth Built-in depth Ambient temperature during operating Short-circuit breaking capacity (lcw) Rounting Built-in degree Chemeckall of the state of the	Rated voltage	V	415
Rated insulation voltage Uin Rated impulse withstand voltage Uimp Mounting method Leakage current type Selective protection Short-time delayed tripping Short-circuit breaking capacity (lcw) Surge current capacity Frequency Additional equipment possible With interlocking device Degree of protection (IP) Width in number of modular spacings Built-in depth Ambient temperature during operating Minimal Parison Minima	Rated current	А	25
Rated impulse with stand voltage Uimp Mounting method Leakage current type Selective protection Short-time delayed tripping Short-circuit breaking capacity (Icw) Surge current capacity Frequency Additional equipment possible With interlocking device Degree of protection (IP) Width in number of modular spacings Built-in depth Ambient temperature during operating Ambient temperature during operating Connectable conductor cross section multi-wired Width Wi	Rated fault current	mA	30
Mounting method Leakage current type Selective protection Short-time delayed tripping Short-circuit breaking capacity (Icw) Surge current capacity Frequency Additional equipment possible With interlocking device Degree of protection (IP) Width in number of modular spacings Built-in depth Ambient temperature during operating Miller of degree Pollution degree Connectable conductor cross section multi-wired Din rail Built-in depth No	Rated insulation voltage Ui	V	440
Leakage current type Selective protection Short-time delayed tripping Short-circuit breaking capacity (Icw) Surge current capacity Frequency Additional equipment possible With interlocking device Degree of protection (IP) Width in number of modular spacings Built-in depth Ambient temperature during operating Pollution degree Connectable conductor cross section multi-wired Be B No No No Yes 10 10 10 10 10 10 10 10 10 1	Rated impulse withstand voltage Uimp	kV	4
Selective protection Short-time delayed tripping Short-circuit breaking capacity (lcw) Surge current capacity Frequency Additional equipment possible With interlocking device Degree of protection (IP) Width in number of modular spacings Built-in depth Ambient temperature during operating Pollution degree Connectable conductor cross section multi-wired No Yes No Yes Yes Yes Pollution degree Connectable conductor cross section multi-wired No No Yes Yes Yes Yes Pollution degree Connectable conductor cross section multi-wired No No No Yes Yes Yes Yes Yes Yes Ababient temperature during operating No No No No No No No No No N	Mounting method		DIN rail
Short-time delayed tripping Short-circuit breaking capacity (Icw) Surge current capacity Frequency Additional equipment possible With interlocking device Degree of protection (IP) Width in number of modular spacings Built-in depth Ambient temperature during operating Pollution degree Connectable conductor cross section multi-wired Yes Yes Yes Yes Yes Yes Yes Y	Leakage current type		В
Short-circuit breaking capacity (Icw) Surge current capacity kA 3 Frequency Additional equipment possible With interlocking device Degree of protection (IP) Width in number of modular spacings Built-in depth Ambient temperature during operating Pollution degree Connectable conductor cross section multi-wired kA 10 10 12 14 15 16 10 10 10 10 10 10 10 10 10	Selective protection		No
Surge current capacity Frequency Additional equipment possible With interlocking device Degree of protection (IP) Width in number of modular spacings Built-in depth Ambient temperature during operating Pollution degree Connectable conductor cross section multi-wired KA 3 50 Hz Frequency Yes Yes Pollution degree Pollution degree Connectable conductor cross section multi-wired A 3 6 7 7 8 9 9 9 9 1 1 1 1 1 1 1 1 1	Short-time delayed tripping		Yes
Frequency Additional equipment possible With interlocking device Degree of protection (IP) Width in number of modular spacings Built-in depth Ambient temperature during operating Pollution degree Connectable conductor cross section multi-wired 50 Hz Yes Yes Yes Ves Ves Ves Ves Ves Ves Ves Ves Ves V	Short-circuit breaking capacity (Icw)	kA	10
Additional equipment possible With interlocking device Degree of protection (IP) Width in number of modular spacings Built-in depth Ambient temperature during operating Pollution degree Connectable conductor cross section multi-wired Yes Yes Yes Pes Pol Pol Pol Pol Pol Pol Pol Po	Surge current capacity	kA	3
With interlocking device Degree of protection (IP) Width in number of modular spacings Width in number of modular spacings Width in number of modular spacings Milt-in depth Milt-in depth Milt-in depth Consectable conductor cross section multi-wired Milt-in depth Mil	Frequency		50 Hz
Degree of protection (IP) Width in number of modular spacings Built-in depth Ambient temperature during operating Pollution degree Connectable conductor cross section multi-wired IP20 4 Consectable conductor cross section multi-wired IP20 Amma 70.5 -25 - 60 -25 - 60 -21 - 16	Additional equipment possible		Yes
Width in number of modular spacings Built-in depth mm 70.5 Ambient temperature during operating °C -25 - 60 Pollution degree Connectable conductor cross section multi-wired mm² 1.5 - 16	With interlocking device		Yes
Built-in depth mm 70.5 Ambient temperature during operating °C -25 - 60 Pollution degree 2 Connectable conductor cross section multi-wired mm² 1.5 - 16	Degree of protection (IP)		IP20
Ambient temperature during operating °C -25 - 60 Pollution degree Connectable conductor cross section multi-wired mm² 1.5 - 16	Width in number of modular spacings		4
Pollution degree 2 Connectable conductor cross section multi-wired mm² 1.5 - 16	Built-in depth	mm	70.5
Connectable conductor cross section multi-wired mm ² 1.5 - 16	Ambient temperature during operating	°C	-25 - 60
	Pollution degree		2
Connectable conductor cross section solid-core mm ² 1.5 - 35	Connectable conductor cross section multi-wired	mm²	1.5 - 16
	Connectable conductor cross section solid-core	mm²	1.5 - 35

Characteristics



Influence of the ambient temperature to the maximum continuous current (A)

Range	FRCdM type B, Bfq, B+			
	Amperage			
	RCCB	RCCB	RCCB	
Ambient	rating	rating	rating	
temperature	25A	40A	63A	
40°	25	40	63	
45°	25	40	56	
50°	25	40	50	
55°	25	35	45	
60°	25	30	40	

Derating - table FRCdM_B

Dimensions

