DATASHEET - FRCMM-16/4/05-A

No.



Residual current circuit breaker (RCCB), 16A, 4p, 500mA, type A

FRCMM-16/4/05-A Part no. Catalog No. 170346 Alternate Catalog FRCMM-16/4/05-A **EL-Nummer** 1666314 (Norway)



Similar to illustration

Delivery program

Basic function			Residual current circuit-breakers
Number of poles			4 pole
Application			Switchgear for industrial and advanced commercial applications
Rated current	I _n	А	16
Rated short-circuit strength	I _{cn}	kA	10 with back-up fuse
Rated fault current	$I_{\Delta N}$	А	0.5
Туре			Туре А
Tripping		s	non-delayed
Product range			FRCmM
Sensitivity			Pulse-current sensitive
Impulse withstand current			Partly surge-proof 250 A
Contact sequence			

Technical data Electrical

Electrical			
Types conform to			IEC/EN 61008
Current test marks			As per inscription
Tripping		s	non-delayed
Rated voltage according to IEC/EN 60947-2	Un	V AC	240/415
Rated frequency	f	Hz	50
Limit values of the operating voltage			
Test circuit		V AC	184 - 440
Rated fault current	$I_{\Delta n}$	mA	500
Sensitivity			Pulse-current sensitive
Rated insulation voltage	Ui	V	440
Rated impulse withstand voltage	U _{imp}	kV	4 (1.2/50µs)
Rated short-circuit strength	I _{cn}	kA	10 with back-up fuse
Impulse withstand current			250 A (8/20 μs) surge-proof
Max. admissible back-up fuse			
Short-circuit	gG/gL	А	63
Overload	gG/gL	А	16
Rated making and breaking capacity / Rated residual making and breaking capacity	I _m / I _{Δm}	A	500
lifespan			
Electrical	Operations		≧ 4000
Mechanical	Operations		≧ 20000
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		Busbar tag shroud to BGV A3, ÖVE-EN 6
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 - +40
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

Technical data for design verification			
Rated operational current for specified heat dissipation	In	А	16
Heat dissipation per pole, current-dependent	P _{vid}	W	0.725
Equipment heat dissipation, current-dependent	P _{vid}	W	2.9
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	40
			Starting at 40 °C, the max. permissible continuous current decreases by 3% for every 1 °C
IEC/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)

Electric engineering, automation, process control engineering / Electrical installation, device / Residual current protection system / Residual current circuit breaker (RCCB) (ecl@ss10.0.1-27-14-22-01 [AAB906014])

Number of poles Image of the sector of the sec	(ecl@ss10.0.1-27-14-22-01 [AAB906014])		
Rated current A 6 Rated fault current mA 50 Rated fault current MA 50 Rated fault current MA 6 Rated fault current MA 6 Rated insultion voltage Uin MA 6 Monting method MA 6 Leakage current type MA 6 Selective protection MA 6 Short-circuit breaking capacity (lew) MA 6 Surg current capacity MA 6 Kattional equipment possible MA 6 Additional equipment possible MA 50 Vich in number of modular spacings MA 50 Built-in depth MA 50 Adminent merger und ing operating MA 50 Pollution degree MA 50 Fore policy MA 50 Additional equipment possible MA 50 Vich in number of modular spacings MA 50 Adminent emperature during operating </td <td>Number of poles</td> <td></td> <td>4</td>	Number of poles		4
Rated fault current max Max Max Rated insulation voltage Uimp V 40 Rated insulation voltage Uimp V 40 Mounting method V 40 Leakage current type DIN rail 100 Selective protection V 80 Short-circuit breaking capacity (low) V 80 Surge current capacity V 80 Y A 0 Start-circuit breaking capacity (low) Y 80 Y KA 0 100 Start-circuit breaking capacity (low) Y KA 0 Start-circuit breaking capacity (low) Y KA 0 100 Start-circuit breaking capacity (low) Y KA 0 100	Rated voltage	V	415
Rade insulation voltage Uin V 40 Rade insulation voltage Uinpo KV 40 Auding method KV 10 Leakage current type DIN rail 10 Selective protection Monting method Monting method Short-circuit breaking capacity (Icov) KA 0 Surge current capacity KA 0 Frequency KA 0 Additional equipment possible Monting method Selective (Monteo) Vinit interlocking device Monting Monteo Selective (Monteo) Refuency Monteo (Monteo) Selective (Monteo) Additional equipment possible Monteo (Monteo) Selective (Monteo) Buffer device Monteo) Selective (Monteo) Selective (Monteo) Buffer device Monteo) Monteo) Selective (Monteo) Selective (Monteo) Buffer device Monteo) Monteo) Selective (Monteo) Selective (Monteo) Buffer device Monteo) Monteo) Selective (Monteo) Selective (Monteo) Buffer device	Rated current	А	16
Rated impulse withstand voltage Uimp KV 4 Mounting method KV IN rail Leakage current type KV A Selective protection KV A Short-incruit breaking capacity (Icw) KV No Surge current capacity KA ID Frequency KA ID Additional equipment possible KA Selective protection (IP) With interdocking device KA Selective Distrim define derive protection (IP) KA Selective protection (IP) Muint number of modular spacings Mo Selective Antient emperature during operating Mo Selective Pollation degree Mo Selective Rute the protection multi-wired Mo Selective	Rated fault current	mA	500
Mounting method IN rail Leakage current type A Selective protection No Short-time delayed tripping No Short-time delayed tripping No Short-circuit breaking capacity (lcw) KA Surge current capacity KA Frequency Surge current capacity Additional equipment possible VI With interlocking device VI Degree of protection (IP) VI With in number of modular spacings Monterly Anbient temperature during operating Monterly Pollution degree C 25 40 Pollution degree C 25 40 Roment temperature during operating Monterly 25 40 Pollution degree C 25 40 Pollution degree So 50 25 40 Pollution degree	Rated insulation voltage Ui	V	440
Leakage current type A Selective protection No Short-time delayed tripping No Short-circuit breaking capacity (lcw) KA 10 Surge current capacity (lcw) KA 02 Streg current capacity (lcw) KA 04 Additional equipment possible Sole Sole Vith interlocking device Sole Sole Degree of protection (IP) Immeter 120 With in number of modular spacings Immeter 120 Built-in depth Ton 120 Anbient temperature during operating C Sole Pollution degree C Sole Connectable conductor cross section multi-wired Immeter Sole	Rated impulse withstand voltage Uimp	kV	4
Selective protection No Selective protection No Shot-time delayed tripping No Shot-circuit breaking capacity (lcw) KA Surge current capacity KA Frequency 0.25 Additional equipment possible Vers Vith interlocking device Vers Degree of protection (IP) Vers With in number of modular spacings Mo Built-in depth Mo Anbient temperature during operating Mo Pollution degree C Pollution degree Sc Connectable conductor cross section multi-wired Mo	Mounting method		DIN rail
Short-time delayed tripping Mo Short-circuit breaking capacity (low) KA 0 Surge current capacity KA 0.5 Frequency 50 J 50 J Additional equipment possible Mo 50 J With interlocking device Mo 50 J Degree of protection (IP) Mo 70 S With in number of modular spacings Mo 10 Built-in depth Mo 50 J Abient temperature during operating Mo 50 J Pollution degree Mo 50 J Polution degree Mo 50 J	Leakage current type		Α
Short-circuit breaking capacity (low) KA 10 Surge current capacity KA 0.25 Frequency 0.142 0.142 Additional equipment possible Yes Yes Vith interlocking device Yes Yes Degree of protection (IP) Yes Yes With in number of modular spacings Yes Yes Built-in depth Yes Yes Anbient temperature during operating Yes Yes Pollution degree Yes Yes Yes Yes Yes	Selective protection		No
Surge current capacityKAD25Frequency50 HzAdditional equipment possible50 HzWith interlocking device50 HzDegree of protection (IP)100Width in number of modular spacings600 HzBuilt-in depth70Ambient temperature during operating600 HzPollution degree52 40Connectable conductor cross section multi-wiredmm²State Section multi	Short-time delayed tripping		No
Frequency 50 Hz Additional equipment possible 50 Hz Vith interlocking device Yes Degree of protection (IP) IP20 With in number of modular spacings mm Built-in depth mm Abbient temperature during operating C Pollution degree C Source abbient temperature during operating Mm Source abbient temperature during operating Mm Pollution degree S Source abbient temperature during operating Mm Source abbient temperature during operating S Pollution degree Mm Source abbient temperature during operating S Pollution degree S Source abbient temperature during operating S Pollution degree S Source abbient temperature during operating S Pollution degree S Source abbient temperature during operating S Source a	Short-circuit breaking capacity (Icw)	kA	10
Additional equipment possibleMeditional equipment possibleYesWith interlocking deviceYesDegree of protection (IP)IP20With in number of modular spacingsImmBuilt-in depthImmAnbient temperature during operatingImmPollution degreeImmConnectable conductor cross section multi-wiredImm	Surge current capacity	kA	0.25
With interlocking device Yes Degree of protection (IP) IP20 With in number of modular spacings mm 7.5 Built-in depth C 25 40 Pollution degree Imm ² 15 16	Frequency		50 Hz
Degree of protection (IP)IP20Width in number of modular spacingsMmIP20Built-in depthMm7.5Ambient temperature during operatingMm25-40Pollution degreeMm ² 15-16	Additional equipment possible		Yes
Width in number of modular spacings mm 70.5 Built-in depth mm 25 - 40 Ambient temperature during operating mm 2 Pollution degree mm ² 1.5 - 16	With interlocking device		Yes
Built-in depth mm 70.5 Ambient temperature during operating °C 25 - 40 Pollution degree °C 2 Connectable conductor cross section multi-wired mm² 1.5 - 16	Degree of protection (IP)		IP20
Ambient temperature during operating Pollution degree -25 - 40 Pollution degree 2 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 mm ²	Built-in depth	mm	70.5
Connectable conductor cross section multi-wired mm ² 1.5 - 16	Ambient temperature during operating	°C	-25 - 40
	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

Dimensions



