DATASHEET - FRCMM-25/2/003-110-GV



Residual current circuit breaker (RCCB), 25A 2P 30mA Type AC 110V

Part no. Catalog No. FRCmM-25/2/003-110-GV 304060



Delivery program

Basic function			Residual current circuit-breakers
Number of poles			2 pole
Application			Switchgear for industrial and advanced commercial applications
Rated current	In	А	25
Rated short-circuit strength	I _{cn}	kA	10 with back-up fuse
Rated fault current	$I_{\Delta N}$	А	0.03
Туре			Туре АС
Tripping		s	non-delayed
Product range			FRCmM
Sensitivity			AC current sensitive
Impulse withstand current			Partly surge-proof 250 A

Technical data Electrical

SundradisInclusionInclusionInclusionInclusionSundradisNameNameNameNameNameNameTrippingNameV.ANameNameNameRated voltage according to IEC/EN 60947-2V.nV.ANameNameRated frequencyIV.ANameNameNameTest circuitNameNameNameNameNameRated frequencyINameNameNameNameRated frequencyINameNameNameNameRated frequencyINameNameNameNameRated frequencyINameNameNameNameRated frequencyINameNameNameNameRated frequencyINameNameNameNameRated insultation voltageINameNameNameNameRated insultation voltageINameNameNameNameRated insultation voltageINameNameNameNameRated insultation voltageINameNameNameNameRated insultation voltageIINameNameNameRated insultation voltageIINameNameNameRated insultation voltageIIINameNameName and insultation voltageIIINameNameName and insultation voltageI	Electrical			
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Tripingno-delayedRated voltage according to IEC/EN 6694-2UnVAC10Rated frequencyIHz50Test circuitVACVAC9Test circuitIVAC9Rated fault currentIVAC9Rated fault currentIVAC40Rated fault currentIVAC40Short-circuit strengthIVAC40Rated fault currentIVAC40Short-circuit strengthIVAC40Rated fault currentIVAC40Short-circuit strengthII40Rated fault currentIIIImplex currentIIIRated fault currentIIIImplex current fault strengthIIIRated fault current fault strengthIIIRated fault current fault strengthIIIRated fault current strengthIIIRated fault current strengthIIIRated fault current strengthIIIRated fault current strengthII <td>Standards</td> <td></td> <td></td> <td>IEC/EN 61008</td>	Standards			IEC/EN 61008
Rated voltage according to EC/EN 60947-2 Un VAC Indexted requency Indexted requency <th< td=""><td>Current test marks</td><td></td><td></td><td>As per inscription</td></th<>	Current test marks			As per inscription
Rate drequency Hz Bated frequency Hz Bated frequency Hz Bated frequency VAC Frequency VAC Test circuit Van VAC 4121 VAC	Tripping		s	non-delayed
Link values of the operating voltageImageVMCsecond second	Rated voltage according to IEC/EN 60947-2	Un	V AC	110
Tast circuit YAC 941 Rated fault current Man 30 Sensitivity Ka Ac current sensitive Rated insulation voltage U1 V 40 Rated insulation voltage Ump KV 41250µs) Rated insulation voltage Ump KV 41250µs) Rated short-circuit strength Imp KA 10 with back-up fuse Max. admissible back-up fuse Imp KA 10 with back-up fuse Short-circuit Imp KA 30 Overlaad G/G/L A 30 Rated making capacity / Rated residual making and breaking April and Mandal Reservert Source 2000 Source Rated fund timension Mark Source Source Built-in width Mark Source Source Built-in width Mark Source Source Bui	Rated frequency	f	Hz	50
Rel di di ur endNaNaNaSeritiviCurant sensitiveRed inslation voltageUV40Ret di mislation voltageUmV1250s/Ret di mislati contate endNaNa100 sin back-up fuseInsue di mislation contageNaNa100 sin back-up fuseMartin di mislation contage </td <td>Limit values of the operating voltage</td> <td></td> <td></td> <td></td>	Limit values of the operating voltage			
Serie Serie <th< td=""><td>Test circuit</td><td></td><td>V AC</td><td>94 - 121</td></th<>	Test circuit		V AC	94 - 121
Relation voltage Vi Vi 40 Reted inpulse withstand voltage Vin 1(250µS) Reted short-circuit strength Inpulse Vin 100 Hock-up fuse Impulse withstand current Impulse 204 (820 µs) surge-proof Max_admissible back-up fuse Impulse 204 (820 µs) surge-proof Max_admissible back-up fuse Impulse 204 (820 µs) surge-proof Max_admissible back-up fuse Impulse 30 Overload Impulse A Sort-circuit Overload Impulse A Sort-circuit Reted making and breaking capacity / Rated residual making and breaking May A Sort-circuit Mechanical Max A Sort-circuit Sort-C	Rated fault current	$I_{\Delta n}$	mA	30
Retei inpulse withstand voltage Impulse withstand voltage Impulse withstand current	Sensitivity			AC current sensitive
Red short-circuit strength Ren Ren </td <td>Rated insulation voltage</td> <td>Ui</td> <td>V</td> <td>440</td>	Rated insulation voltage	Ui	V	440
Implies withstand current SDA (k/20 µs) surge-proof Max. admissible back-up fuse g/g/L A 30 Short-circuit g/g/L A 30 Overload g/g/L A 30 Bated making and breaking capacity/ Rated residual making and breaking y ^{II} ham A 300 Rated making and breaking capacity/ Rated residual making and breaking y ^{II} ham A 300 Iterspan Poerations 2 4000 </td <td>Rated impulse withstand voltage</td> <td>U_{imp}</td> <td>kV</td> <td>4 (1.2/50μs)</td>	Rated impulse withstand voltage	U _{imp}	kV	4 (1.2/50μs)
Max. admissible back-up fuse Image: Sort-circuit gG/gL A 6 Short-circuit gG/gL A 6 Overload gG/gL A 5 Rated making and breaking capacity / Rated residual making and breaking capacity m/l Am A 5 Ifespan Image: Sort Americal Americal America Moreations F 5 Mechanical Operations Image: Sort America 20000 Mechanical Operations Image: Sort America Sort America Sort America Image: Sort America Sort America Sort America Muchanica Operations Image: Sort America Sort America Sort America Sort America Image: Sort America	Rated short-circuit strength	I _{cn}	kA	10 with back-up fuse
Shor-circuitG/g/LASOverladG/g/LA5Bade making and breaking capacity/Rated residual making cap	Impulse withstand current			250 A (8/20 μs) surge-proof
Overload Ge/gL A Scale Rated making and breaking capacity / Rated residual making and breaking capacity / Rated residual making and breaking capacity / Rated residual making and breaking In/ Imm A Soo Ifespan Imm A Soo Imm Imm Itestrical Operations Imm Soo Imm	Max. admissible back-up fuse			
Rated making and breaking capacity / Rated residual making and breaking الا المح A B BO Itespan Itesp	Short-circuit	gG/gL	А	63
capacity and	Overload	gG/gL	Α	25
Indechanical Operations Image: Automatical standard front dimension Operations Image: Automatical standard front dimension Standard front dimension Marchanical mm Image: Automatical standard front dimension Buit-in width Marchanical mm Image: Automatical standard front dimension Buit-in width Marchanical Mm Image: Automatical standard front dimension Buit-in width Marchanical Mm Image: Automatical standard front dimension standard front dimension Buit-in width Marchanical Mm Image: Automatical standard front dimension Image: Automatical standard front dimension standard front dimensi dimensi dimension standard front dimensi dimension sta		$I_m / I_{\Delta m}$	A	500
Mechanical Operations ≥ 2000 Mechanical E 2000 Mechanical Mechanical Standard front dimension Standard front dimension for DIN-rail IEC/EN 60715 Standard front dimensin for DIN-rail IEC/EN 60715 Standard	lifespan			
Mechanical mm 45 Standard front dimension mm 45 Device height mm 80 Built-in width mm 52 (2TE) Mounting Mechanical Mechanical Degree of Protection Mechanical Mechanical Terminal stop and bottom Mechanical Mechanical Terminal cross-section Mechanical Mechanical	Electrical	Operations		≧ 4000
Standard front dimension mm 45 Device height mm 80 Built-in width mm 35 (2TE) Mounting Mm S2 (2TE) Degree of Protection Mm S2 (2TE) Terminals top and bottom Mm S2 (2TE) Terminal protection Mm Mm	Mechanical	Operations		≧ 20000
Device height mm 80 Buit-in width mm 52 (2E) Mounting 0uck attachment with 2 latch positions for DIN-rail IEC/EN 60715 Degree of Protection P20, IP40 with suitable enclosure Terminals top and bottom P40 F Terminal protection F F Terminal cross-section F F	Mechanical			
Built-in width mm 35 (2TE) Mounting Cuick attachment with 2 latch positions for DIN-rail IEC/EN 60715 Degree of Protection IP20, IP40 with suitable enclosure Terminal stop and bottom Open mouthed/lift terminals Terminal protection Immediate Terminal cross-section Immediate	Standard front dimension		mm	45
Mounting Quick attachment with 2 latch positions for DIN-rail IEC/EN 60715 Degree of Protection IP20, IP40 with suitable enclosure Terminals top and bottom Open mouthed/lift terminals Terminal protection IP40 Terminal cross-section IP40	•		mm	
Degree of Protection IP20, IP40 with suitable enclosure Terminals top and bottom Open mouthed/lift terminals Terminal protection IP20, IP40 with suitable enclosure Terminal protection Open mouthed/lift terminals Terminal cross-section IP20, IP40 with suitable enclosure	Built-in width		mm	35 (2TE)
Terminals top and bottom Open mouthed/lift terminals Terminal protection Image: Section Terminal cross-section Image: Section	Mounting			Quick attachment with 2 latch positions for DIN-rail IEC/EN 60715
Terminal protection Image: Constraint of the second of t	Degree of Protection			IP20, IP40 with suitable enclosure
Terminal cross-section	Terminals top and bottom			Open mouthed/lift terminals
	Terminal protection			finger and hand touch safe, DGUV VS3, EN 50274
Solid mm ² 1.5 - 35	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 - +55
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

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Technical data for design verification			
Rated operational current for specified heat dissipation	I _n	А	25
Heat dissipation per pole, current-dependent	P _{vid}	W	1
Equipment heat dissipation, current-dependent	P _{vid}	W	2
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	55
			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 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) (ecl@ss10.0.1-27-14-22-01 [AAB906014])

Number of poles		2
Rated voltage	V	230
Rated current	А	25
Rated fault current	А	0.03

Rated insulation voltage Ui	V	440
Rated impulse withstand voltage Uimp	kV	4
Mounting method		DIN rail
Leakage current type		A
Selective protection		No
Short-time delayed tripping		No
Short-circuit breaking capacity (Icw)	kA	10
Surge current capacity	kA	0.25
Voltage type		AC
With interlocking device		No
Frequency		50 Hz
Additional equipment possible		Yes
Degree of protection (IP)		IP20
Width in number of modular spacings		2
Built-in depth	mm	70.5
Ambient temperature during operating	°C	-25 - 55
Pollution degree		2
Connectable conductor cross section multi-wired	mm²	1.5 - 35
Connectable conductor cross section solid-core	mm²	1.5 - 35
Explosion-proof		No