## DATASHEET - FRCMM-125/4/03-A

Part no. Catalog No.

**EL-Nummer** 

(Norway)

No.



Residual current circuit breaker (RCCB), 125A, 4p, 300mA, type A

FRCMM-125/4/03-A 171176 Alternate Catalog FRCMM-125/4/03-A 1666597



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	In	А	125
Rated short-circuit strength	I <sub>cn</sub>	kA	10 with back-up fuse
Rated fault current	$I_{\Delta N}$	А	0.3
Туре			Туре А
Tripping		s	non-delayed
Product range			FRCmM-125
Sensitivity			Pulse-current sensitive
Impulse withstand current			Partly surge-proof 250 A
Contact sequence			

#### **Technical data** trical

Auron test marksAspen inscriptionAuron test marksNoAspen inscriptionAuron test marksNoNoNoAtted voltage according to IEC/EN 60947-2VnVACS0Auto frequencyfHzS0imit values of the operating voltageImitVACS0Test circuitImitVACS0Auto frequencyImitVACS0Auto frequencyImitImitS0Auto frequen	Electrical			
hipping on delayed on	Types conform to			IEC/EN 61008
Name       VAC       VAC         Anded voltage according to IEC/EN 60947-2       In       VAC       4/4         Anded frequency       In       VAC       50         Init values of the operating voltage       VAC       184 - 440         Init values of the operating voltage       VAC       184 - 440         Sensitivit       VAC       184 - 440         Sensitivity       VAC       184 - 440         Sensitivity       VAC       40         Rated insulation voltage       Un       VAC       40         Rated insulation voltage       Un       VAC       40         Rated short-circuit strength       Un       VAC       40         Max. admissible back-up fuse       In       Son (3/2) us) surge-proof         Max. admissible back-up fuse       In       Son (3/2) us) surge-proof         Max. admissible back-up fuse       In       Son (3/2) us) surge-proof         Max. admissible back-up fuse       In       Son (3/2) us) surge-proof         Max. admissible back-up fuse       In       Son (3/2) us) surge-proof         Max. admissible back-up fuse       In       Son (3/2) us) surge-proof         Max. admissible back-up fuse       In       Son (3/2) us) surge-proof         Max. admi	Current test marks			As per inscription
And faquency of the operating voltage init values of the operating voltage init values of the operating voltage is strictice is stricti	Tripping		s	non-delayed
Initial values of the operating voltage         Initial values of the values	Rated voltage according to IEC/EN 60947-2	Un	V AC	240/415
Test circuit       VAC       844 440         Rated fault current       IAn       MA       300         Sensitivity       Imp       VM       Pulse-current sensitive         Rated insulation voltage       Uin       VM       400         Rated insulation voltage       Uinp       VM       41250µs)         Rated insulation voltage       Uinp       VM       41250µs)         Rated short-circuit strength       Uinp       VM       41250µs)         Rated short-circuit strength       Gender       MA       500 (8/20 µs) surge-proof         Short-circuit       Gender       Gender       500 (8/20 µs) surge-proof         Short-circuit       Gender       Gender       500 (8/20 µs) surge-proof         Short-circuit       Gender       Gender       500 (Sender         Short-circuit       Gender       Sender       Sender	Rated frequency	f	Hz	50
Aadd fault current         An	Limit values of the operating voltage			
Sensitivity and local and	Test circuit		V AC	184 - 440
Rated insulation voltage     Ui     V     440       Rated insulation voltage     Uimp     KV     4(1.2/50µs)       Rated short-circuit strength     Iom     KA     10 with back-up fuse       mpulse withstand current     Iom     KA     10 with back-up fuse       Max. admissible back-up fuse     Iom     Iom     So A (8/20 µs) surge-proof       Short-circuit     G/GL     A     10 with back-up fuse       Overload     G/gL     A     10 with back-up fuse       Ifespan     Inv Iom     Iom     20 A (8/20 µs) surge-proof       Max.admissible back-up fuse     Iom     10 with back-up fuse       Ifespan     Inv Iom     A     10 with back-up fuse       Ifespan     Inv Iom     Iom     Iom       Mechanical     Operations     Iom     Iom	Rated fault current	$I_{\Delta n}$	mA	300
Areade impulse withstand voltage     Ump     KV     41.2/50µs)       Rated impulse withstand outrent     Ion     KA     10 with back-up fuse       mulse withstand current     Ion     KA     250 A (8/20 µs) surge-proof       Max. admissible back-up fuse     G/G/L     A     10       Short-circuit     G/G/L     A     10       Overload     G/G/L     A     0       Rated making and breaking capacity / Rated residual making and breaking     Mr Iam     A       Ifespan     Implant     Implant     Implant       Implant     Implant     Implant     Implant       Mechanical     Operations     Implant     Implant	Sensitivity			Pulse-current sensitive
And a down of the second strength is the seco	Rated insulation voltage	Ui	V	440
mulse withstand current       A       A       So A (8/20 μs) surge-proof         Max. admissible back-up fuse       g/g/L       A       I25         Short-circuit       g/g/L       A       80         Overload       g/g/L       A       125         Rated making and breaking capacity / Rated residual making and breaking $μ_n / l_{Δm}$ A       80         Ifespan       C       C       C       C         Itectrical       Operations       4000       4000         Mechanical       Operations       10000       10000	Rated impulse withstand voltage	U <sub>imp</sub>	kV	4 (1.2/50µs)
Max. admissible back-up fuse     Gold Constraints       Short-circuit     gG/gL     A     125       Overload     gG/gL     A     80       Rated making and breaking capacity / Rated residual making and breaking capacity     Im/ Idm     A     1250       Ifespan     Im/ Idm     A     1250       Itectrical     Operations     Im/ Idm     A       Mechanical     Operations     Im/ Idm     Im/ Idm	Rated short-circuit strength	I <sub>cn</sub>	kA	10 with back-up fuse
Short-circuit     g/g/L     A     125       Overload     g/g/L     A     80       Stated making and breaking capacity / Rated residual making and breaking apacity     Im/l Am     A     125       Ifespan     Im/l Am     A     125       Electrical     Operations     A     120       Mechanical     Operations     Im/l Am     A	Impulse withstand current			250 A (8/20 μs) surge-proof
Overload     gG/gL     A     80       Rated making and breaking capacity / Rated residual making and breaking capacity     Im / I∆m     A     1250       ifespan	Max. admissible back-up fuse			
Rated making and breaking capacity / Rated residual making and breaking capacity     Im     Im     A     1250       ifespan     Im     Im     Im     Im     Im     Im       ifespan     Im     Im     Im     Im     Im <td>Short-circuit</td> <td>gG/gL</td> <td>А</td> <td>125</td>	Short-circuit	gG/gL	А	125
capacity     In the set of t	Overload	gG/gL	А	80
Electrical     Operations     ≥ 4000       Mechanical     Operations     ≥ 10000	Rated making and breaking capacity / Rated residual making and breaking capacity	$I_m / I_{\Delta m}$	A	1250
Mechanical     Operations     ≥ 10000	lifespan			
Aechanical	Electrical	Operations		≧ 4000
	Mechanical	Operations		≧ 10000
Standard front dimension mm 45	Mechanical			
	Standard front dimension		mm	45

Device height	mm	80
Built-in width	mm	70 (4TE)
Mounting		Quick attachment for DIN-rail EN 50022
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 <sup>2</sup>	1.5 - 50 2 x (1.5 - 16)
Stranded	mm <sup>2</sup>	1.5 - 50 2 x (1.5 - 16)
Thickness of busbar material	mm	0.8 - 2
Admissible ambient temperature range	°C	-25 - +40
Permissible storage and transport temperatures	°C	-25 - +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		toggle-center postition

# Design verification as per IEC/EN 61439

Design vernication as per 126/214 01455			
Technical data for design verification			
Rated operational current for specified heat dissipation	In	А	125
Heat dissipation per pole, current-dependent	P <sub>vid</sub>	W	0
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	22.5
Static heat dissipation, non-current-dependent	P <sub>vs</sub>	W	0
Heat dissipation capacity	P <sub>diss</sub>	W	0
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	60
			Starting at 40 °C, the max. permissible continuous current decreases by 2.2% 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.

The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.  $\label{eq:leaflet}$ 

## **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		4
Rated voltage	V	415
Rated current	А	125
Rated fault current	mA	300
Rated insulation voltage Ui	V	440
Rated impulse withstand voltage Uimp	kV	4
Mounting method		DIN rail
Leakage current type		Α
Selective protection		No
Short-time delayed tripping		No
Short-circuit breaking capacity (Icw)	kA	10
Surge current capacity	kA	0.25
Frequency		50 Hz
Additional equipment possible		Yes
With interlocking device		Yes
Degree of protection (IP)		IP20
Width in number of modular spacings		4
Built-in depth	mm	70.5
Ambient temperature during operating	°C	-25 - 40
Pollution degree		2
Connectable conductor cross section multi-wired	mm²	1.5 - 16
Connectable conductor cross section solid-core	mm²	1.5 - 50

## **Dimensions**

