### **DATASHEET - FBHMV-80/4/03**



Residual-current circuit breaker trip block for AZ, 80A, 4p, 300mA, type  $\Delta C$ 



Part no. FBHMV-80/4/03 Catalog No. 170251 Alternate Catalog FBHMV-80/4/03 No.

Similar to illustration

Delivery program			
Basic function			Add-on residual current protection unit
Number of poles			4 pole
Application			Switchgear for industrial and advanced commercial applications
Rated current	In	Α	80
Rated short-circuit strength	I <sub>cn</sub>	kA	same as connected AZ
Rated fault current	$I_{\Delta N}$	Α	0.3
Туре			Type AC
Tripping		s	non-delayed
Product range			FBHmV
Sensitivity			AC current sensitive
Impulse withstand current			Partly surge-proof 250 A
Contact sequence			1' 3' 5' 7'/N 13 1 2' 4' 6' 8'/N 14

#### Technical data Electrical

Types conform to			IEC/EN 60947-2
Rated frequency	f	Hz	50
Sensitivity			AC current sensitive
Rated current	In	Α	80
Rated impulse withstand voltage	U <sub>imp</sub>	kV	4
lifespan			
Electrical	Operations		≧ 1500
Mechanical	Operations		≧ 10000
Mechanical			

Mechanical		
Standard front dimension	mm	45
Device height	mm	90
Built-in width	mm	95 (5.5TE)
Mounting		screwed onto AZ 2-, 3-, 4-pole; Z-BHASA
Degree of Protection		IP20, IP40 with suitable enclosure
Terminals top and bottom		Lift terminals
Terminal protection		DGUV VS3, EN 50274
Permissible storage and transport temperatures	°C	-35 - +60
Climatic proofing		25-55°C/90-95% relative humidity according to IEC 60068-2

# **Design verification as per IEC/EN 61439**

Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	80
Heat dissipation per pole, current-dependent	$P_{\text{vid}}$	W	0
Equipment heat dissipation, current-dependent	$P_{\text{vid}}$	W	7
Static heat dissipation, non-current-dependent	$P_{vs}$	W	0
Heat dissipation capacity	P <sub>diss</sub>	W	0

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
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)

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])

Rated voltage         V         415           Rated current         A         80           Rated fault current         mA         300           Rated insulation voltage Ui         V         440           Rated impulse withstand voltage Uimp         kV         4           Mounting method         Leakage current type         AC         AC           Selective protection         No         No           Short-circuit breaking capacity (Icw)         KA         0           Surge current capacity         KA         0.25           Frequency         KA         0.25           Additional equipment possible         Yes         Yes           With interlocking device         Yes         Percentage of protection (IP)         Yes           Width in number of modular spacings         Frequency         Frequency         Percentage of protection (IP)         Yes           With this number of modular spacings         Frequency         Frequency         Yes           Built-in depth         mm         70           Additional equipment possible         The proof of the	(ecl@ss10.0.1-27-14-22-01 [AAB906014])		
Rated current         A         80           Rated fault current         mA         300           Rated insulation voltage Ui         V         440           Rated impulse withstand voltage Uimp         kV         4           Mounting method         DIN rail         AC           Leakage current type         AC         No           Selective protection         No         No           Short-circuit breaking capacity (lcw)         kA         0           Surge current capacity         kA         0.25           Frequency         50 Hz         Yes           Additional equipment possible         Yes         Yes           With interlocking device         Po         Yes           Degree of protection (IP)         IP20         Po           Width in number of modular spacings         5.5         5.5           Built-in depth         mm         70	Number of poles		4
Rated fault current Rated insulation voltage Ui Rated insulation voltage Uimp Rated impulse withstand voltage Uimp Mounting method Leakage current type Selective protection Short-circuit breaking capacity (lcw) 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	Rated voltage	V	415
Rated insulation voltage Uimp  Rated impulse withstand voltage Uimp  Mounting method Leakage current type Selective protection Short-circuit breaking capacity (Icw) 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  V 440  440  440  40  DIN rail AC  No  No  No  No  Surge Current volume voltage Uimp No  No  10  10  10  10  10  10  10  10  10  1	Rated current	Α	80
Rated impulse withstand 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  kV  4  C  DIN rail AC  AC  No  No  No  Surge Current capacity (Icw) No  C  E  V  V  V  V  V  V  V  V  V  V  V  V	Rated fault current	mA	300
Mounting method Leakage current type Selective protection Short-time delayed tripping No 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  DIN rail AC  AC  AC  No  No  No  No  Surge current capacity (Icw) NA  NA  D  Surge current capacity (Icw) NA  NA  D  Surge current capacity (Icw) NA  NA  NA  D  Surge current capacity (Icw) NA	Rated insulation voltage Ui	V	440
Leakage current type  Selective protection  Solution Edayed 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  AC  No  No  No  Surge  No  No  Surge  No  No  No  No  No  No  No  No  No  N	Rated impulse withstand voltage Uimp	kV	4
Selective protection Short-time delayed tripping No 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  No	Mounting method		DIN rail
Short-time delayed tripping Short-circuit breaking capacity (Icw) Surge current capacity KA 0.25 Frequency Additional equipment possible With interlocking device Degree of protection (IP) Width in number of modular spacings Built-in depth Ambient temperature during operating  No	Leakage current type		AC
Short-circuit breaking capacity (Icw)  Surge current capacity  kA  0.25  Frequency  Additional equipment possible  With interlocking device  Degree of protection (IP)  Width in number of modular spacings  Built-in depth  Ambient temperature during operating  kA  0  0.25  Frequency  Yes  Ves  Yes  IP20  5.5  8.1  Andient temperature during operating  c C -25 - 40	Selective protection		No
Surge current capacity  kA  0.25  Frequency  50 Hz  Additional equipment possible  With interlocking device  Degree of protection (IP)  Width in number of modular spacings  Built-in depth  Ambient temperature during operating  kA  0.25  Yes  Yes  Yes  1P20  5.5  8.10  TO  TO  TO  TO  TO  TO  TO  TO  TO  T	Short-time delayed tripping		No
Frequency Additional equipment possible With interlocking device Degree of protection (IP) Width in number of modular spacings Built-in depth Ambient temperature during operating  50 Hz  Yes  Yes  Peg  1P20  5.5  5.5  25 - 40	Short-circuit breaking capacity (Icw)	kA	0
Additional equipment possible With interlocking device Ves Degree of protection (IP) Width in number of modular spacings Built-in depth Ambient temperature during operating Yes 1P20 5.5  8.0  7.0  7.0  7.0  7.0  7.0  7.0  7.0	Surge current capacity	kA	0.25
With interlocking device Pegree of protection (IP) Width in number of modular spacings Width in number of modular spacings Pegree of protection (IP) Width in number of modular spacings Pegree of protection (IP)  The pro	Frequency		50 Hz
Degree of protection (IP)  Width in number of modular spacings  Built-in depth  Ambient temperature during operating  IP20  5.5  mm  70  -25 - 40	Additional equipment possible		Yes
Width in number of modular spacings 5.5  Built-in depth mm 70  Ambient temperature during operating °C -25 - 40	With interlocking device		Yes
Built-in depth mm 70 Ambient temperature during operating °C -25 - 40	Degree of protection (IP)		IP20
Ambient temperature during operating °C -25 - 40	Width in number of modular spacings		5.5
	Built-in depth	mm	70
Pollution degree 2	Ambient temperature during operating	°C	-25 - 40
	Pollution degree		2

Connectable conductor cross section multi-wired	mm <sup>2</sup>	2.5 - 50
Connectable conductor cross section solid-core	mm <sup>2</sup>	2.5 - 50

# **Dimensions**

