### DATASHEET - FBHMV-80/4/1



Residual-current circuit breaker trip block for AZ, 80A, 4p, 1000mA, type AC



Part no.FBHMV-80/4/1Catalog No.170255Alternate CatalogFBHMV-80/4/1No.

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	I <sub>n</sub>	А	80
Rated short-circuit strength	I <sub>cn</sub>	kA	same as connected AZ
Rated fault current	$I_{\Delta N}$	А	1
Туре			Туре АС
Tripping		s	non-delayed
Product range			FBHmV
Sensitivity			AC current sensitive
Impulse withstand current			Partly surge-proof 250 A
Contact sequence			

# **Technical data**

Electrical			
Rated frequency	f	Hz	50
Sensitivity			AC current sensitive
Rated current	In	А	80
Rated impulse withstand voltage	U <sub>imp</sub>	kV	4
lifespan			
Electrical	Operations		≧ 1500
Mechanical	Operations		≧ 10000
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			IP40, IP54 (with moisture-proof 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

Fechnical data for design verification			
Rated operational current for specified heat dissipation	I <sub>n</sub>	А	80
Heat dissipation per pole, current-dependent	P <sub>vid</sub>	W	0
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	7
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	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 observed.
10.12 Electromagnetic compatibility		Is the panel builder's responsibility. The specifications for the switchgear must 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   4     Rated voltage   V   45     Rated current   A   80     Rated fault current   MA   1000     Rated insulation voltage Uimp   V   440     Rated insulation voltage Uimp   V   40     Mounting method   V   40     Leakage current type   DN rail   DN rail     Selective protection   No   No     Short-circuit breaking capacity (Icw)   KA   0     Yet interlocking device   V   Selective protection     Surge current capacity (Icw)   KA   0     Yet interlocking device   V   Selective protection (IP)     Vich innumber of moduler spacings   Yet   Yet     Surge current capacity (Icw)   Yet   Yet     Kut in number of moduler spacings   Yet   Yet     Surge current capacity (Icw)   Yet   Yet     Kut in number of moduler spacings   Yet   Yet     Surge current capacity (Icw)   Yet   Yet     Kut in number of moduler spacings   Yet   Yet     Surge current capacity (Icw)   Yet			
Ared current     A     Bated fault current     B       Rated fault current     MA     000       Rated inpulse withstand voltage Uim     V     40       Rated inpulse withstand voltage Uimp     V     40       Mounting method     V     40       Leakage current type     No     No       Selective protection     V     No       Short-incuic breaking capacity (low)     KK     No       Surge current capacity     KK     No       Y     No     No       Start-incuic breaking capacity (low)     KK     No       Start-incuic breaking capacity (low)     KK     No       Y     No     Sold     Sold       Start-incuic breaking capacity (low)     KK     No       Y     No     Sold     Sold       Starte capacity     Y     No     Sold       Additional equipment possible     Y     Sold     Sold       Vich interdocking device     Y     Sold     Sold       Sold Sold     Y     Sold     Sold	Number of poles		4
Raded fault current     mA     000       Rated insulation voltage Uin     V     40       Rated insulation voltage Uinp     KV     40       Mounting method     KV     40       Leakage current type     DIN rail     DIN rail       Selective protection     KV     40       Short-time delayed tripping     KA     KA       Short-time delayed tripping     KA     0       Short-time delayed tripping     KA     0       Surge current capacity     KA     0       Surge current capacity     KA     0       You hinterlocking device     KA     0       Vich interlocking device     Yein     Yein       Vich in number of modular spacings     Yein     Yein       Buit-in depth     Tom     70       Addition degree     C     25:40	Rated voltage	V	415
Rated insulation voltage Ui   V   40     Rated inpulse withstand voltage Uimp   KV   4     Mounting method   IN rail   IN rail     Leakage current type   No   In rail     Selective protection   M   No     Short-time delayed tripping   M   No     Storge current type   MA   In rail     Surge current capacity (Icw)   KA   In rail     Katditional equipment possible   MA   In rail     Vith interlocking device   M   In rail     With in number of modular spacings   M   In rail     Built-in depth   M   In rail     Anbient tumered uring operating   M   In rail     Pollution degree   M   In rail	Rated current	А	80
Rated impulse withstand voltage Uimp Impulse withstand voltage Uimp Impulse withstand voltage Uimp   Rated impulse withstand voltage Uimp Impulse withstand voltage Uimp Impulse with voltage Uimp   Leakage current type Impulse with voltage Uimp Impulse with voltage Uimp   Selective protection Impulse with voltage Uimp Impulse with voltage Uimp   Short-time delayed tripping Impulse with voltage Uimp Impulse with voltage Uimp   Surge current capacity (low) Impulse with voltage Uimp Impulse with voltage Uimp   Surge current capacity (low) Impulse with voltage Uimp Impulse With voltage Uimp   Additional equipment possible Impulse With voltage Uimp Impulse With voltage Uimp   Vith interlocking device Impulse With voltage Uimp Impulse With voltage Uimp   With in number of modular spacings Impulse With voltage Uimp Impulse With voltage Uimp   Buit-in depth Impulse Mith voltage Uimp Impulse With voltage Uimp   Ambient temperature during operating Impulse Mith voltage Uimp Impulse Uimp   Pollution degree Impulse Uimp Impulse Uimp	Rated fault current	mA	1000
Mounting method Image: Mounting method Image: Mounting method   Leakage current type AC   Selective protection Mounting method   Short-time delayed tripping Mounting method   Short-circuit breaking capacity (low) KA 0   Stort-circuit breaking capacity (low) KA 025   Frequency Mounting method Mounting method   Additional equipment possible Mounting method Yes   Vith interlocking device Mounting method Yes   Degree of protection (IP) Mounting method Yes   With in number of modular spacings Mounting method Soft   Built-in depth mm 70   Anbient temperature during operating Mounting method Soft 400   Pollution degree Mounting method Soft 400	Rated insulation voltage Ui	V	440
Leakage current typeImage: state st	Rated impulse withstand voltage Uimp	kV	4
Selective protection   Image: Construction     Short-time delayed tripping   No     Short-circuit breaking capacity (lcw)   KA   0     Surge current capacity   KA   0.25     Frequency   Mo   Sold     Additional equipment possible   Mo   Sold     With interlocking device   Mo   Sold     Degree of protection (IP)   Yes   Sold     With in number of modular spacings   Mo   Sold     Built-in depth   mm   70     Ambient temperature during operating   Sold   Sold     Pollution degree   Sold   Sold	Mounting method		DIN rail
Short-time delayed trippingNoShort-circuit breaking capacity (lcw)KA0Surge current capacityKA0.5Frequency50 Hz50 HzAdditional equipment possibleYesYesWith interlocking deviceYes100Degree of protection (IP)5.55.5Built-in depthmm70Ambient temperature during operatingC25 40Pollution degreeYes100Pollution degreeYesPollution degreeYesPollut	Leakage current type		AC
Short-circuit breaking capacity (lcw)kA0Surge current capacityKA0.25Frequency50 Hz50 HzAdditional equipment possibleYesYesWith interlocking deviceYesYesDegree of protection (IP)Yes5.5Width in number of modular spacingsYen5.5Built-in depthYen70Ambient temperature during operatingYen2.5 400Pollution degreeYen2.5 400	Selective protection		No
Surge current capacitykA0.25Frequency50 HzAdditional equipment possible60 K768With interlocking device60 K768Degree of protection (IP)100 K120Width in number of modular spacings60 M5.5Built-in depth7025 - 40Ambient temperature during operating60 M25 - 40	Short-time delayed tripping		No
Frequency50 HzAdditional equipment possibleYesWith interlocking deviceYesDegree of protection (IP)P20Width in number of modular spacingsMmmBuilt-in depthMmmAmbient temperature during operatingCPollution degree25 40	Short-circuit breaking capacity (Icw)	kA	0
Additional equipment possibleYesWith interlocking deviceYesDegree of protection (IP)IP20Width in number of modular spacings5.5Built-in depthmmAmbient temperature during operating°CPollution degree2	Surge current capacity	kA	0.25
With interlocking deviceYesDegree of protection (IP)IP20Width in number of modular spacingsISBuilt-in depthmmAmbient temperature during operatingIP20Pollution degreeIP20StateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateSStateS<	Frequency		50 Hz
Degree of protection (IP) IP20   Width in number of modular spacings 5.5   Built-in depth mm 70   Ambient temperature during operating C -25 - 40   Pollution degree 2 -26 - 40	Additional equipment possible		Yes
Width in number of modular spacingsImage: Solution degreeBuilt-in depthmmAmbient temperature during operating°CPollution degree22 - 40	With interlocking device		Yes
Built-in depthmm70Ambient temperature during operating°C-25 - 40Pollution degree22	Degree of protection (IP)		IP20
Ambient temperature during operating °C -25 - 40   Pollution degree 2	Width in number of modular spacings		5.5
Pollution degree 2	Built-in depth	mm	70
	Ambient temperature during operating	°C	-25 - 40
Connectable conductor even continuous $m^2$ 2.5.50	Pollution degree		2
Connectable conductor cross section multi-wred	Connectable conductor cross section multi-wired	mm²	2.5 - 50

#### **Dimensions**

