## Miniature circuit breaker (MCB), 20 A, 3p, characteristic: B



Part no. HN-B20/3 Catalog No. 194882

	gram

Basic function			Miniature circuit-breakers
Number of poles			3 pole
Tripping characteristic			В
Application			Switchgear for residential and commercial applications
Rated current	In	Α	20
Rated switching capacity according to IEC/EN 60898-1	I <sub>cn</sub>	kA	6
Product range			HN

## **Technical data**

**Electrical** 

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## Design verification as per IEC/EN 61439

Design verification as per IEC/EN 61439			
Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	20
Heat dissipation per pole, current-dependent	P <sub>vid</sub>	W	0
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	9.8
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	75
			linear, per +1 °C, results in a 0.5% reduction of current carrying capacity
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 b 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) / Miniature circuit breaker (MCB) (EC000042)

Electric engineering, automation, process control engineering / Electrical installation, device / Miniature circuit breaker system (MCB) / Miniature circuit breaker (MCB) / Min

Built-in depth Release characteristic Release characteristic Rumber of poles (total) Rumber of protected poles Rated current Rated current Rated wortage Rated wortage Rated insulation voltage Ui Rated insulation voltage Ui Rated short-circuit breaking capacity len according to EN 60898 at 230 V Voltage type Rated short-circuit breaking capacity len according to EN 60898 at 400 V Rated short-circuit breaking capacity len according to EN 60898 at 400 V Rated short-circuit breaking capacity len according to EN 60898 at 400 V Rated short-circuit breaking capacity len according to EN 60898 at 400 V Rated short-circuit breaking capacity len according to IEC 60947-2 at 230 V Rated short-circuit breaking capacity len according to IEC 60947-2 at 230 V Rated short-circuit breaking capacity len according to IEC 60947-2 at 230 V Rated short-circuit breaking capacity len according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity len according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity len according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity len according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity len according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity len according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity len according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity len according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity len according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity len according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity len according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity len according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity len according to IEC 60947-2 at 230 V Rated short-circuit breaking capacity len according to IEC 60947-2 at 230 V Rated short-circuit breaking capacity len according to IEC 60947-2 at 230 V Rated short-circuit breaking capacity len according to IEC 60947-2 at 230 V R	(ecl@ss10.0.1-27-14-19-01 [AAB905014])		
Number of protected poles  Number of protected poles  Rated current  Rated voltage  Rated voltage  Rated woltage  Rated insulation voltage Ui  Rated insulation voltage Ui  Rated insulation voltage Ui  Rated short-circuit breaking capacity Icn according to EN 60898 at 230 V  Voltage type  Rated short-circuit breaking capacity Icn according to EN 60898 at 400 V  Rated short-circuit breaking capacity Icn according to EN 60898 at 400 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 200 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 200 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 200 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 200 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 200 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 200 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 200 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 200 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 200 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 200 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at	Built-in depth	mm	44
Number of protected poles Rated current Rated voltage V 230 Rated insulation voltage Ui Rated insulation voltage Uimp Rated short-circuit breaking capacity Icn according to EN 60898 at 230 V Voltage type Rated short-circuit breaking capacity Icn according to EN 60898 at 400 V Rated short-circuit breaking capacity Icn according to EN 60898 at 400 V Rated short-circuit breaking capacity Icn according to EN 60898 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V RA 0 Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V RA 0 Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V RA 0 Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V RA 0 Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V RA 0 Roter limiting class Studing capacity Icu according to IEC 60947-2 at 400 V RA 0 Current limiting class Ves Concurrently switching neutral conductor No Over voltage category Pollution degree Additional equipment possible Ves	Release characteristic		В
Rated current Rated voltage Rated voltage V 230 Rated insulation voltage Ui Rated impulse withstand voltage Uimp Rated short-circuit breaking capacity Icn according to EN 60898 at 230 V Voltage type Rated short-circuit breaking capacity Icn according to EN 60898 at 400 V Rated short-circuit breaking capacity Icn according to EN 60898 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking	Number of poles (total)		3
Rated voltage Rated insulation voltage Ui Rated insulation voltage Uimp Rated short-circuit breaking capacity Icn according to EN 60898 at 230 V Voltage type Rated short-circuit breaking capacity Icn according to EN 60898 at 400 V Rated short-circuit breaking capacity Icn according to EN 60898 at 400 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at	Number of protected poles		3
Rated insulation voltage Ui Rated impulse withstand voltage Uimp Rated short-circuit breaking capacity Icn according to EN 60898 at 230 V  Voltage type Rated short-circuit breaking capacity Icn according to EN 60898 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V  Rated short-circuit breaking capacity Icu accordin	Rated current	Α	20
Rated impulse withstand voltage Uimp  Rated short-circuit breaking capacity Icn according to EN 60898 at 230 V  Voltage type  Rated short-circuit breaking capacity Icn according to EN 60898 at 400 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V  Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V	Rated voltage	V	230
Rated short-circuit breaking capacity Icn according to EN 60898 at 230 V Voltage type AC Rated short-circuit breaking capacity Icn according to EN 60898 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to EN 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to EN 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to EN 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to EN 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to EN 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to EN 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to EN 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to EN 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to EN 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to EN 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to EN 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to EN 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to EN 60947-2 at 230	Rated insulation voltage Ui	V	440
Voltage type Rated short-circuit breaking capacity Icn according to EN 60898 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Requency Hz 50 - 60 Current limiting class Flush-mounted installation Concurrently switching neutral conductor No Over voltage category Pollution degree AC AC AC AA A A A A A A A A A A A A A	Rated impulse withstand voltage Uimp	kV	4
Rated short-circuit breaking capacity Icn according to EN 60898 at 400 V	Rated short-circuit breaking capacity Icn according to EN 60898 at 230 V	kA	6
Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V	Voltage type		AC
Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V	Rated short-circuit breaking capacity Icn according to EN 60898 at 400 V	kA	6
Frequency Current limiting class 3 Flush-mounted installation Yes Concurrently switching neutral conductor No Over voltage category 3 Pollution degree 3 Additional equipment possible Yzes  Ves	Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V	kA	0
Current limiting class  Gurrent limiting class  Flush-mounted installation  Concurrently switching neutral conductor  Over voltage category  Pollution degree  Additional equipment possible  Sample State of Stat	Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V	kA	0
Flush-mounted installation Yes Concurrently switching neutral conductor No Over voltage category 3 Pollution degree 3 Additional equipment possible Yes	Frequency	Hz	50 - 60
Concurrently switching neutral conductor  Over voltage category  3  Pollution degree  3  Additional equipment possible  Yes	Current limiting class		3
Over voltage category 3 Pollution degree 3 Additional equipment possible Yes	Flush-mounted installation		Yes
Pollution degree 3 Additional equipment possible Yes	Concurrently switching neutral conductor		No
Additional equipment possible  Yes	Over voltage category		3
	Pollution degree		3
With in combant modules are income	Additional equipment possible		Yes
width in number of modular spacings	Width in number of modular spacings		3
Degree of protection (IP)	Degree of protection (IP)		IP20
Ambient temperature during operating °C -25 - 75	Ambient temperature during operating	°C	-25 - 75
Connectable conductor cross section multi-wired mm <sup>2</sup> 1 - 25	Connectable conductor cross section multi-wired	mm²	1 - 25
Connectable conductor cross section solid-core mm <sup>2</sup> 1 - 25	Connectable conductor cross section solid-core	mm²	1 - 25
Explosion-proof No	Explosion-proof		No