Miniature circuit breaker (MCB), 13 A, 3p, characteristic: C



Part no. HL-C13/3 Catalog No. 194790

	gram

Basic function			Miniature circuit-breakers
Number of poles			3 pole
Tripping characteristic			C
Application			Switchgear for residential and commercial applications
Rated current	In	Α	13
Rated switching capacity according to IEC/EN 60898-1	I _{cn}	kA	4.5
Product range			HL

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	13
Heat dissipation per pole, current-dependent	P _{vid}	W	0
Equipment heat dissipation, current-dependent	P _{vid}	W	7.8
Static heat dissipation, non-current-dependent	P _{vs}	W	0
Heat dissipation capacity	P _{diss}	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 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) / Miniature circuit breaker (MCB) (EC000042)

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

Release characteristic Number of poles (total) Number of protected poles Rated current Rated current Rated whorts of protected poles Rated insulation voltage Ui Rated insulation voltage Uimp Rated short-circuit breaking capacity Icn according to EN 60898 at 230 V Rated short-circuit breaking capacity Icn according to EN 60898 at 430 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 Icn according to IEC 60947-2 at 230 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icn a	(ecl@ss10.0.1-27-14-19-01 [AAB905014])			
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Number of protected poles 3 Rated current A 13 Rated voltage V 200 Rated insulation voltage Uin V 440 Rated impulse withstand voltage Uimp kV 4 Rated short-circuit breaking capacity Icn according to EN 60898 at 230 V kA 4.5 Rated short-circuit breaking capacity Icn according to EN 60898 at 400 V kA 4.5 Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V kA 0 Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V kA 0 Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V kA 0 Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V kA 0 Current limiting class Frequency kA 0 Current limiting class Yes 0 Concurrently switching neutral conductor Yes 0 Concurrently switching neutral conductor Yes 2 Additional equipment possible Yes 4 Width in number of modular spacings Yes 2 <td>Release characteristic</td> <td></td> <td></td> <td>C</td>	Release characteristic			C
Rated current Rated voltage Rated insulation voltage Ui Rated insulation voltage Uinp 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 Icn according to EE 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 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 6	Number of poles (total)			3
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Nated insulation voltage Uin	Rated current		А	13
Rated impulse withstand voltage Ulimp Rated short-circuit breaking capacity Icn according to EN 60898 at 230 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 Icn according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 400 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 200 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 200 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 200 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 200 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 200 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 200 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 200 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 200 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 200 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 200 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 200 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 200 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 200 V Rated short-circuit breaking capacity Icn according to IEC 60947-2 at 200 V Rated short-circuit breaking capacity	Rated voltage	,	V	230
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AC 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 RA Degree of pacetallation Concurrently switching neutral conductor Over voltage category Rollution degree Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V RA Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V RA Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V RA Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V RA Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V RA Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V RA Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V RA 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 230 V RA 0 0 0 0 0 0 0 0 0 0 0 0 0	Rated impulse withstand voltage Uimp		kV	4
Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V kA 0 Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V kA 0 Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V kA 0 Frequency Hz 50 - 60 Current limiting class 3 Flush-mounted installation Yes Concurrently switching neutral conductor No Over voltage category 3 Pollution degree 3 Additional equipment possible Yes Width in number of modular spacings Degree of protection (IP) IP20 Ambient temperature during operating Connectable conductor cross section multi-wired mm² 1-25 Connectable conductor cross section solid-core mm² 1-25 Connectable conductor cross section solid-core 1-20 V kA 0 A 5 A 5 A 5 A 5 A 5 A 5 A 5	Rated short-circuit breaking capacity Icn according to EN 60898 at 230 V	ı	kA	4.5
Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V kA 0 Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V kA 0 Frequency Hz 50-60 Current limiting class Flush-mounted installation Yes Concurrently switching neutral conductor No Dover voltage category 3 Pollution degree 3 Additional equipment possible Yes Width in number of modular spacings 3 Degree of protection (IP) IP20 Ambient temperature during operating Connectable conductor cross section multi-wired mm² 1-25 Connectable conductor cross section solid-core mm² 1-25	Voltage type			AC
Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V Frequency Hz 50 - 60 Current limiting class Flush-mounted installation Concurrently switching neutral conductor Over voltage category Pollution degree Additional equipment possible Width in number of modular spacings Degree of protection (IP) Ambient temperature during operating Connectable conductor cross section multi-wired Connectable conductor cross section solid-core Material Su - 60 BA - 60 Ves No No No No 1 - 25 Connectable conductor cross section solid-core Material Su - 60 BA - 60 Ves No	Rated short-circuit breaking capacity Icn according to EN 60898 at 400 V $$		kA	4.5
Frequency Current limiting class 3 Flush-mounted installation Concurrently switching neutral conductor Over voltage category Pollution degree Additional equipment possible Width in number of modular spacings Degree of protection (IP) Ambient temperature during operating Connectable conductor cross section multi-wired Connectable conductor cross section solid-core Hz 50 - 60 3 Connectable conductor cross section solid-core No No Yes 3 4 4 50 - 60 No	Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V $$	ı	kA	0
Current limiting class Current limiting class Flush-mounted installation Concurrently switching neutral conductor No Over voltage category 3 Additional equipment possible Width in number of modular spacings Width in number of modular spacings Degree of protection (IP) Ambient temperature during operating Connectable conductor cross section multi-wired Connectable conductor cross section solid-core mm² 1 - 25 Connectable conductor cross section solid-core mm² 1 - 25	Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V	ı	kA	0
Flush-mounted installation Concurrently switching neutral conductor Over voltage category Pollution degree Additional equipment possible Width in number of modular spacings Degree of protection (IP) Ambient temperature during operating Connectable conductor cross section multi-wired Connectable conductor cross section solid-core Yes Yes 1 - 25 Connectable conductor cross section solid-core The section (IP) T	Frequency	ı	Hz	50 - 60
Concurrently switching neutral conductor Over voltage category Pollution degree Additional equipment possible Width in number of modular spacings Degree of protection (IP) Ambient temperature during operating Connectable conductor cross section solid-core No No 3 Polyment Pes Yes 1 P20 Ambient temperature during operating Connectable conductor cross section solid-core mm² 1 - 25 Connectable conductor cross section solid-core mm² 1 - 25	Current limiting class			3
Over voltage category Over voltage category 3 Addition degree Additional equipment possible Width in number of modular spacings Ougree of protection (IP) Ambient temperature during operating Connectable conductor cross section multi-wired Connectable conductor cross section solid-core 3 P20 Connectable conductor cross section solid-core 3 Connectable conductor cross section solid-core	Flush-mounted installation			Yes
Pollution degree 3 3 Additional equipment possible Yes Width in number of modular spacings 3 3 Degree of protection (IP) IP20 Ambient temperature during operating °C -25 - 75 Connectable conductor cross section multi-wired mm² 1 - 25 Connectable conductor cross section solid-core mm² 1 - 25	Concurrently switching neutral conductor			No
Additional equipment possible Width in number of modular spacings Degree of protection (IP) Ambient temperature during operating Connectable conductor cross section multi-wired Connectable conductor cross section solid-core Type Yes 1 P20 1 - 25 - 75 1 - 25 1 - 25	Over voltage category			3
Width in number of modular spacings Degree of protection (IP) Ambient temperature during operating °C -25 - 75 Connectable conductor cross section multi-wired mm² 1 - 25 Connectable conductor cross section solid-core mm² 1 - 25	Pollution degree			3
Degree of protection (IP) Ambient temperature during operating °C -25 - 75 Connectable conductor cross section multi-wired mm² 1 - 25 Connectable conductor cross section solid-core mm² 1 - 25	Additional equipment possible			Yes
Ambient temperature during operating °C -25 - 75 Connectable conductor cross section multi-wired mm² 1 - 25 Connectable conductor cross section solid-core mm² 1 - 25	Width in number of modular spacings			3
Connectable conductor cross section multi-wired mm² 1 - 25 Connectable conductor cross section solid-core mm² 1 - 25	Degree of protection (IP)			IP20
Connectable conductor cross section solid-core mm² 1 - 25	Ambient temperature during operating	6	°C	-25 - 75
	Connectable conductor cross section multi-wired	1	mm²	1 - 25
Explosion-proof No	Connectable conductor cross section solid-core		mm²	1 - 25
	Explosion-proof			No