Miniature circuit breaker (MCB), 16 A, 1p, characteristic: C



Part no. HL-C16/1 Catalog No. 194731

livery		

Basic function			Miniature circuit-breakers
Number of poles			1 pole
Tripping characteristic			C
Application			Switchgear for residential and commercial applications
Rated current	In	Α	16
Rated switching capacity according to IEC/EN 60898-1	I _{cn}	kA	4.5
Product range			HL

Technical data

Electrical

kA 4.5

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	16
Heat dissipation per pole, current-dependent	P _{vid}	W	0
Equipment heat dissipation, current-dependent	P _{vid}	W	2.2
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) (pc)(0xs10.01-171-14-19-01 [AAR905014])

Release characteristic C Number of poles (total) 1 Number of protected poles 1 Rated current A 16 Rated voltage V 230 Rated insulation voltage Ui 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 400 V kA 0 Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V kA 0 Requency kA 0 Current limiting class 3 3 Russ de short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V kA 0 Current limiting class 3 8 Push-mounted installation kB 0 No Concurrently switching neutral conductor kB No	(ecl@ss10.0.1-27-14-19-01 [AAB905014])			
Number of poles (total) 4 1 Number of protected poles 1 Rated current A 16 Rated voltage V 230 Rated insulation voltage Uim V 440 Rated insulation voltage Uimp kV 4 Rated short-circuit breaking capacity Icn according to EN 60898 at 230 V kA 5 Voltage type AC AC Rated short-circuit breaking capacity Icn according to EN 60898 at 400 V kA 4 5 Rated short-circuit breaking capacity Icu according to EN 60894-72 at 230 V kA 4 5 Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V kA 0 6 Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V kA 0 6 Frequency kA 0 6 6 Current limiting class N 3 3 Flush-mounted installation N N N Concurrently switching neutral conductor N N N Very voltage category N	Built-in depth	1	mm	44
Number of protected poles Rated current Rated current Rated voltage Rated insulation voltage Ui 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 Icn according to EN 60898 at 400 V Rated short-circuit breaking capacity Icu according to EN 60898 at 400 V Rated short-circuit breaking capacity Icu according to EN 60898 at 400 V Rated short-circuit breaking capacity Icu according to EN 60898 at 400 V Rated short-circuit breaking capacity Icu according to EN 60898 at 400 V Rated short-circuit breaking capacity Icu according to EN 60898 at 400 V Rated short-circuit breaking capacity Icu according to EN 60897-2 at 230 V Rated short-circuit breaking capacity Icu according to EN 60897-2 at 230 V Rated short-circuit breaking capacity Icu according to EN 60898 at 400 V Rated short-circuit breaking capacity Icu according to EN 60898 at 400 V Rated short-circuit breaking capacity Icu according to EN 60898 at 400 V Rated short-circuit breaking capacity Icu according to EN 60898 at 400 V Rated short-circuit breaking capacity Icu according to EN 60898 at 400 V Rated short-circuit breaking capacity Icu according to EN 60898 at 400 V Rated short-circuit breaking capacity Icu according to EN 60898 at 400 V Rated short-circuit breaking capacity Icu according to EN 60898 at 400 V Rated short-circuit breaking capacity Icu according to EN 60898 at 400 V Rated short-circuit breaking capacity Icu according to EN 60898 at 400 V Rated short-circuit breaking capacity Icu according to EN 60898 at 400 V Rated short-circuit breaking capacity Icu according to EN 60898 at 400 V Rated short-circuit breaking capacity Icu according to EN 60898 at 400 V Rated short-circuit breaking capacity Icu accordin	Release characteristic			C
Rated current A 16 Rated voltage V 230 Rated insulation voltage Ui V 440 Rated impulse withstand voltage Uimp kV 4.5 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 2400 V kA 0 Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 2400 V kA 0 Frequency Hz 50 - 60 Current limiting class Yes Yes Flush-mounted installation No No Concurrently switching neutral conductor No No Over voltage category 3 3 Pollution degree Yes 3 Additional equipment possible Yes Yes Width in number of modular spacings Image: Properties of protection (IP) Pi20 Ambient temper	Number of poles (total)			1
Rated voltage Rated insulation voltage Ui Rated insulation voltage Uim Rated impulse withstand voltage Uim 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 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 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 cap	Number of protected poles			1
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Rated impulse withstand voltage Ulinp 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 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 break	Rated voltage	,	V	230
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 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 200 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 6094	Rated insulation voltage Ui	,	V	440
Voltage type Rated short-circuit breaking capacity Icu 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 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 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 F Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 200 F Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 200 F Rated short-circuit breaking capa	Rated impulse withstand voltage Uimp	I	kV	4
Rated short-circuit breaking capacity Icu according to EN 60898 at 400 V	Rated short-circuit breaking capacity Icn according to EN 60898 at 230 V $$		kA	4.5
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 Frequency Current limiting class Flush-mounted installation Concurrently switching neutral conductor Over voltage category Pollution degree Additional equipment possible Width in number of modular spacings Width in number of modular spacings Admient temperature during operating Connectable conductor cross section multi-wired Connectable conductor cross section solid-core Rated Short-circuit breaking capacity (Pt 20 - 25 - 75 Connectable conductor cross section solid-core Rate Short-2 at 400 V Res Connectable conductor cross section solid-core Rate Short-2 at 400 V Res Connectable conductor cross section solid-core Rate Short-2 at 400 V Res Connectable conductor cross section multi-wired Rate Short-2 at 400 V Res Connectable conductor cross section solid-core Rate Short-2 at 400 V Res Connectable conductor cross section solid-core Rate Short-2 at 400 V Res Connectable conductor cross section solid-core Rate Short-2 at 400 V Res Connectable conductor cross section solid-core Rate Short-2 at 400 V Res Connectable conductor cross section solid-core Rate Short-2 at 400 V Res Connectable conductor cross section solid-core Rate Short-2 at 400 V Res Connectable conductor cross section solid-core Rate Short-2 at 400 V Res Connectable conductor cross section solid-core Rate Short-2 at 400 V Res Connectable conductor cross section solid-core Rate Short-2 at 400 V Res Connectable conductor cross section solid-core Rate Short-2 at 400 V Res Connectable conductor cross section solid-core Rate Short-2 at 400 V Res Connectable conductor cross section solid-core Rate Short-2 at 400 V Res Connectable conductor cross section solid-core Rate Short-2 at 400 V Res Connectable conductor cross section solid-core Rate Short-2 at 400 V Res Connectable conductor cross section solid-core Rate Short-2 at 400 V Res Connectable conductor cross section solid-core Rate Short-2 at 400 V Res Connectable conductor cross	Rated short-circuit breaking capacity Icn according to EN 60898 at 400 V $$	1	kA	4.5
Frequency Current limiting class Current limiting class Flush-mounted installation Concurrently switching neutral conductor Over voltage category Over voltage category Fluition degree Additional equipment possible Width in number of modular spacings Flush-mounted installation Fluition degree Ambient temperature during operating Connectable conductor cross section multi-wired Frequency Frequency Frequency Frequency Fluition	Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 230 V $$	1	kA	0
Current limiting class Flush-mounted installation Concurrently switching neutral conductor Over voltage category Over voltage category Slution degree Additional equipment possible Width in number of modular spacings Width in number of modular spacings Flush-mounted installation Segree of protection (IP) Ambient temperature during operating Connectable conductor cross section multi-wired Flush-mounted installation Slution Sluti	Rated short-circuit breaking capacity Icu according to IEC 60947-2 at 400 V $$	I	kA	0
Flush-mounted installation Concurrently switching neutral conductor Over voltage category Pollution degree Additional equipment possible Width in number of modular spacings Width in number of protection (IP) Ambient temperature during operating Connectable conductor cross section multi-wired Connectable conductor cross section solid-core Pess Yes 1 1 1 1 1 1 1 1 1 1 1 1 1	Frequency		Hz	50 - 60
Concurrently switching neutral conductor Over voltage category Pollution degree Additional equipment possible Width in number of modular spacings Width in number of protection (IP) Ambient temperature during operating Connectable conductor cross section multi-wired Connectable conductor cross section solid-core No 3 Additional equipment possible Yes 1 1 1 1 1 1 1 1 1 1 1 1 1	Current limiting class			3
Over voltage category Over voltage category Pollution degree 3 Additional equipment possible Width in number of modular spacings Ves Width in number of protection (IP) Pegree of protection (IP) Pegree of protection (IP) Pegree of protection conductor cross section multi-wired Pegree of mm² 1 - 25 Connectable conductor cross section solid-core Pegree of mm² 1 - 25	Flush-mounted installation			Yes
Pollution degree 3 3 Additional equipment possible Yes Width in number of modular spacings 1 1 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 Yes 1 1 P20 -25 - 75 -25 - 75 -25 -25 -25 -25 -25 -25 -25 -	Over voltage category			3
Width in number of modular spacings 1 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			1
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		°C	-25 - 75
	Connectable conductor cross section multi-wired	1	mm²	1 - 25
Explosion-proof No	Connectable conductor cross section solid-core	1	mm²	1 - 25
	Explosion-proof			No