



EBC EB EBG Miniature Circuit Breaker

1. General

1.1 Function

protection of circuits against short-circuit currents,
protection of circuits against overload currents,
switch,
isolation.

1.2 Selection

Technical data of the network at the point considered:
the earthing systems (TNS, TNC),
short-circuit current at the circuit-breaker installation point,
which must always be less than the breaking capacity of
this device,

Network normal voltage.

Tripping curves:

B curve (3-5In)

protection for people and big length cables in TN and IT
systems.

C curve (5-10In)

protection for resistive and inductive loads with low inrush
current.

D curve(10-20In)

protection for circuits which supply loads with high inrush
current at the circuit closing

(LV/LV transformers, breakdown lamps).

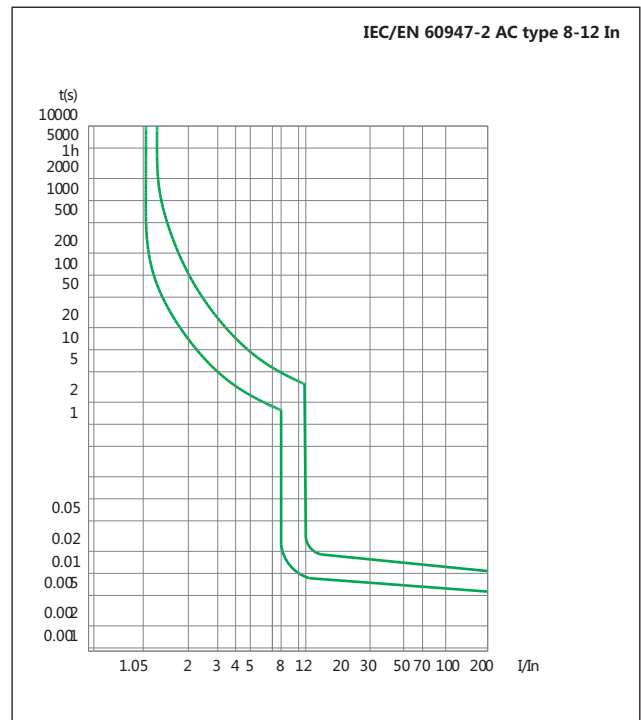
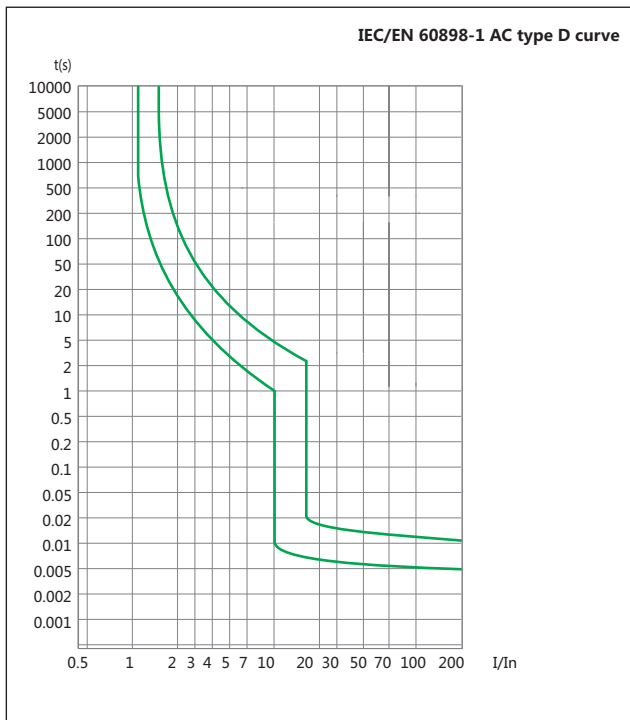
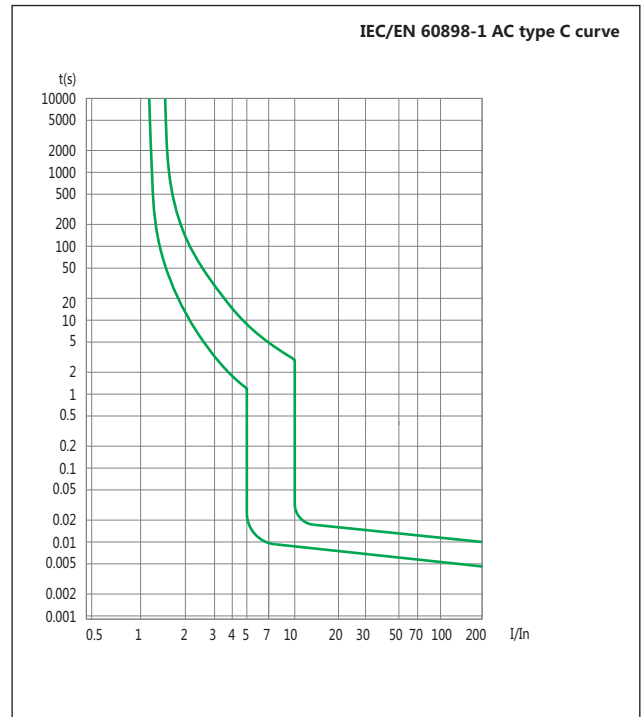
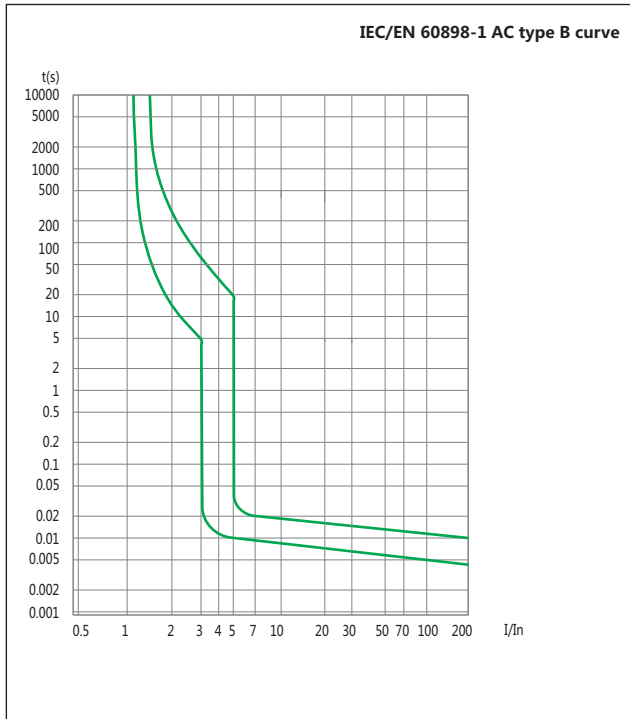
1.3 Approvals and certificates

Detailed information, please refer to Certificates Table
on the last page.

2. Technical data

2.1 Curves

øBC øB øBG is of high current limiting performance to limit the destruction energy due to short circuit to the greatest extent.



2.2

	Standard		IEC/EN 60898-1	IEC/EN 60947-2
Electrical features	Rated current In	A	1, 2, 3, 4, 5, 6, 10, 15, 16, 20, 25, 32, 40, 50, 60, 63	
	Poles		1P, 2P, 3P, 4P	
	Rated voltage Ue	V	230/400~240/415	
	Insulation voltage Ui	V	500	
	Rated frequency	Hz	50/60	
	Rated breaking capacity	kA	3 (1~63A) eBC 4.5 (1~63A) eB 6 (B, C 1~40A) eBG	
	Rated impulse withstand voltage(1.2/50) Uimp	V	4000	
	Dielectric test voltage at ind. Freq. for 1 min	kV	2	
	Pollution degree		2	
	Thermo-magnetic release characteristic		B, C, D	8-12In
Mechanical features	Electrical life		4,000	
	Mechanical life		10,000	
	Protection degree		IP20	
	Reference temperature for setting of thermal element	°C	30	
	Ambient temperature (with daily average ≤35°C)	°C	-5...+40	
	Storage temperature	°C	-25...+70	
Installation	Terminal connection type		Cable/Pin-type busbar	
	Terminal size top/bottom for cable	mm ²	1~25	
		AWG	17~3	
	Terminal size top/bottom for busbar	mm ²	1~10	
		AWG	17~7	
	Tightening torque	N·m	2	
		In·lbs.	18	
Mounting		On DIN rail EN 60715 (35mm) by means of fast clip device		
Connection		From top and bottom		

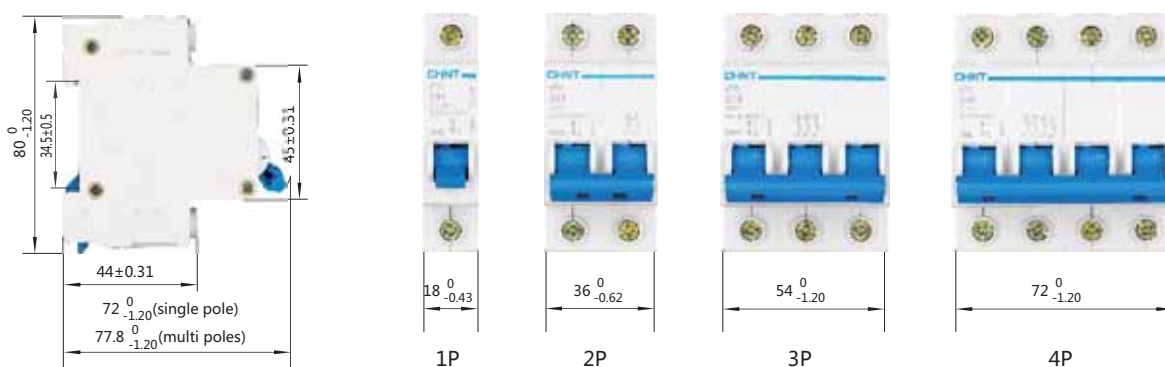
2.3 Temperature derating

The maximum permissible current in a circuit breaker depends on the ambient temperature where the circuit breaker is placed. Ambient temperature is the temperature inside the enclosure or switchboard in which the circuit breakers are installed.

The reference temperature is 30°C

Rated current In (A)	Temperature compensation coefficient under various operational temperature								
	-10°C	0°C	10°C	20°C	30°C	40°C	50°C	55°C	60°C
1~6	1.20	1.14	1.09	1.05	1.00	0.96	0.80	0.75	0.70
10~32	1.18	1.12	1.08	1.04	1.00	0.96	0.92	0.88	0.84
40~60	1.16	1.12	1.07	1.03	1.00	0.97	0.87	0.83	0.80

3. Overall and mounting dimensions (mm)





NBH8 Miniature Circuit Breaker

1. General

1.1 Function

protection of circuits against short-circuit currents,
protection of circuits against overload currents,
switch,
isolation.

1.2 Selection

Technical data of the network at the point considered:
the earthing systems (TNS, TNC),
short-circuit current at the circuit-breaker installation point,
which must always be less than the breaking capacity of
this device,

Network normal voltage.

Tripping curves:

B curve (3-5I_n)

protection for people and big length cables in TN and IT
systems.

C curve (5-10I_n)

protection for resistive and inductive loads with low inrush
current.

1.3 Approvals and certificates

Detailed information, please refer to Certificates Table
on the last page.

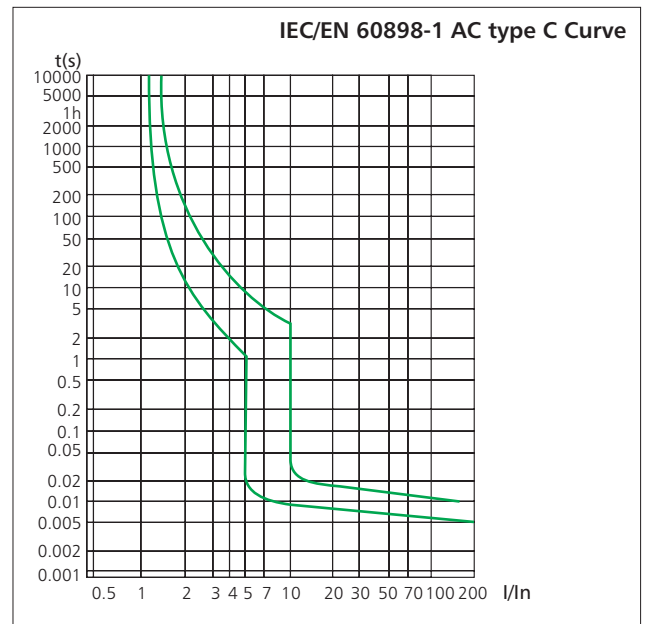
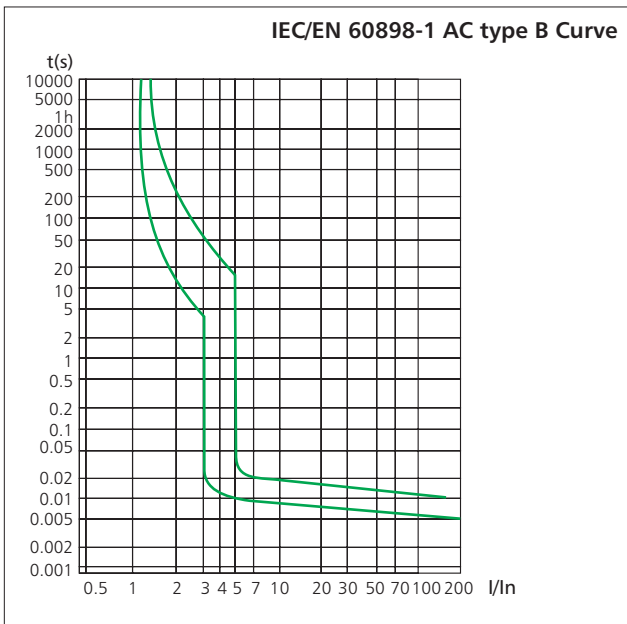


RCC

SAA

3. Technical data

3.1 Curves



3.2

	Standard		IEC/EN 60898-1	
Electrical features	Rated current In	A	1, 2, 3, 4, 6, 10, 16, 20, 25, 32, 40	
	Poles		1P+N	
	Rated voltage Ue	V	230/240	
	Insulation voltage Ui	V	500	
	Rated frequency	Hz	50/60	
	Rated breaking capacity	A	4500/6000	
	Rated impulse withstand voltage(1.2/50) Uimp	V	4000	
	Dielectric test voltage at ind. Freq. for 1 min	kV	2	
Mechanical features	Pollution degree		2	
	Energy limiting class		3	
	Electrical life		8, 000	
	Mechanical life		20, 000	
	Contact position indicator		Yes	
	Protection degree		IP20	
	Reference temperature for setting of thermal element	°C	30	
	Ambient temperature (with daily average ≤ 35°C)	°C	-5...+40(Special application please refer to P29 for temperature compensation correction)	
Installation	Storage temperature	°C	-25...+70	
	Terminal connection type		Cable/Pin-type busbar	
	Terminal size top/bottom for cable	mm ²		16
		AWG		18-5
	Terminal size top/bottom for busbar	mm ²		10
		AWG		18-8
	Tightening torque	N*m		2
		In-lbs.		18
Mounting			On DIN rail EN 60715 (35mm) by means of fast clip device	
Connection			From top and bottom	
Combination with accessories	Auxiliary contact		Yes	
	Shunt release		Yes	
	Under voltage release		Yes	
	Alarm contact		Yes	

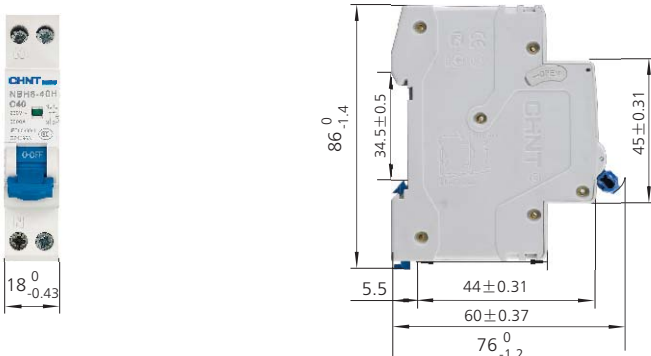
3.3 Temperature derating

The maximum permissible current in a circuit breaker depends on the ambient temperature where the circuit breaker is placed. Ambient temperature is the temperature inside the enclosure or switchboard in which the circuit breakers are installed.

The reference temperature is 30°C

Temperature	-10°C	0°C	10°C	20°C	30°C	40°C	50°C	55°C	60°C
Temperature compensation coefficient	1.20	1.15	1.10	1.05	1.00	0.95	0.90	0.875	0.85

4. Overall and mounting dimensions (mm)





NBH8LE

Residual Current Operated Circuit Breaker with over-current protection (Electronic)

1. General

1.1 Function

Personnel and fire protection
Cable and line protection against overload
and short-circuits.

1.2 Selection

$I_{\Delta n} = 30 \text{ mA}$: additional protection
in the case of direct contact.

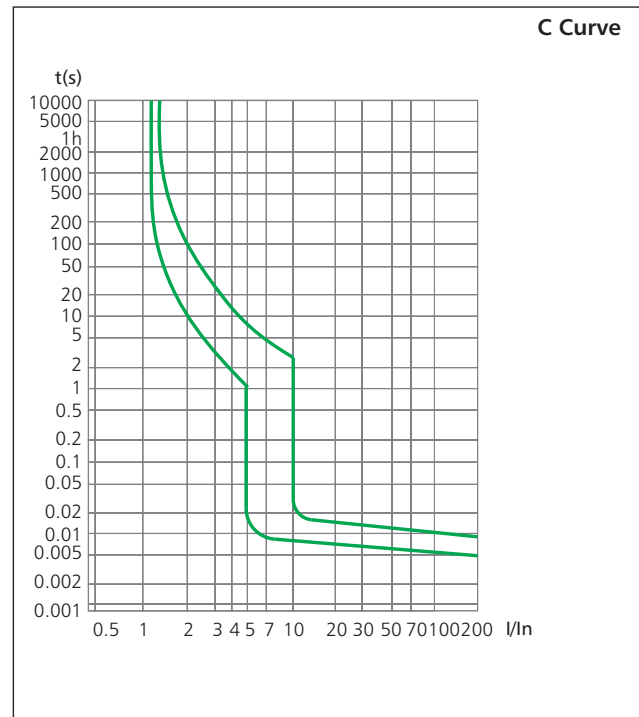
C curve (5-10 I_n) protection and control of the circuits
against overloads and short-circuits; protection for
resistive and inductive loads with low inrush current.
AC class – Tripping is ensured for sinusoidal,
alternating currents, whether they be quickly applied
or slowly increase.

1.3 Approvals and certificates

Detailed information, please refer to Certificates Table
on the last page.

2. Technical data

2.1 Curves



2.2

	Standard		IEC/EN 61009-1
Electrical features	Type (wave form of the earth leakage sensed)		AC
	Thermo-magnetic release characteristic		C
	Rated current I _n	A	1, 2, 3, 4, 6, 10, 16, 20, 25, 32, 40
	Poles		1P+N
	Rated voltage U _e	V	230
	Rated sensitivity I _{Δn}	A	0.03
	Rated residual making and breaking capacity I _{Δm}	A	500
	Rated short-circuit capacity I _{cn}	A	4,500
	Break time under I _{Δn}	s	≤0.1
	Rated frequency	Hz	50/60
	Rated impulse withstand voltage (1.2/50)U _{imp}	V	4,000
	Dielectric TEST voltage at ind. Freq. for 1 min	kV	2
	Insulation voltage U _i	V	300
	Pollution degree		2
	Mechanical features	Electrical life	
Mechanical life			20,000
Contact position indicator			Yes
Protection degree			IP20
Ambient temperature (with daily average ≤35°C)		°C	-5...+40
Storage temperature		°C	-25...+70
Installation	Terminal connection type		Cable/Pin-type busbar
	Terminal size top/bottom for cable	mm ²	16
		AWG	18-5
	Terminal size top/bottom for busbar	mm ²	10
		AWG	18-8
	Tightening torque	N·m	2
		In-lbs.	11
Mounting		On DIN rail EN 60715 (35mm) by means of fast clip device	
Connection		From top	

2.3 Temperature derating

The maximum permissible current in a circuit breaker depends on the ambient temperature where the circuit breaker is placed. Ambient temperature is the temperature inside the enclosure or switchboard in which the circuit breakers are installed.

The reference temperature is 30°C

Temperature	-10°C	0°C	10°C	20°C	30°C	40°C	50°C	60°C
Temperature compensation coefficient	1.20	1.15	1.10	1.05	1.00	0.95	0.90	0.85

3. Overall and mounting dimensions (mm)

