

NBH8LE Residual Current Circuit Breaker (ELE)

1. General

1.1 Function

Personnel and fire protection

Cable and line protection against overload and short-circuits.

1.2 Selection

IΔn = 30mA: additional protection in the case of direct contact.

C curve (5-10 In) protection and control of the circuits against overloads and short-circuits; protection for resistive and inductive loads with low inrush current.

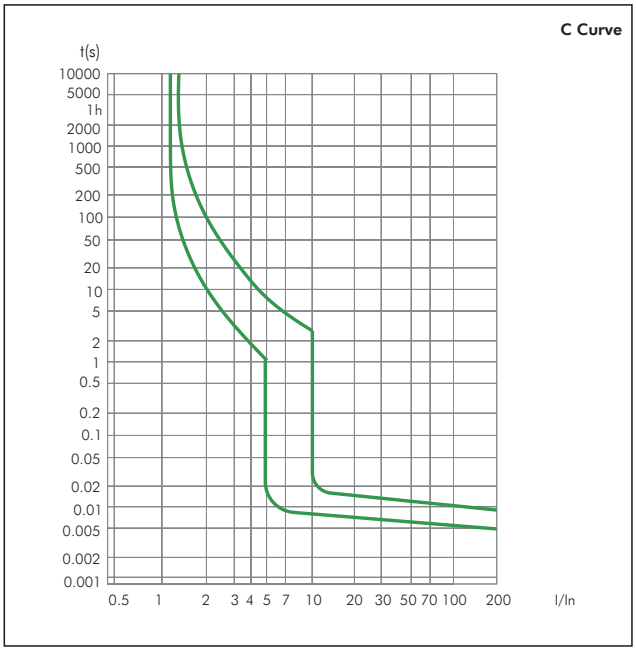
AC class – Tripping is ensured for sinusoidal, alternating currents, whether they be quickly applied or slowly increase.

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 In	A	1, 2, 3, 4, 6, 10, 16, 20, 25, 32, 40
	Poles		1P+N
	Rated voltage Ue	V	230/240
	Rated sensitivity I △ n	A	0.01, 0.03
	Rated residual making and breaking capacity I △ m	A	500
	Rated short-circuit capacity Icn	A	4500/6000
	Break time under I △ n	S	≤0.1
	Rated frequency	Hz	50/60
	Rated impulse withstand voltage (1.2/50)Uimp	V	4,000
	Dielectric TEST voltage at ind. Freq. for 1min	kV	2
	Insulation voltage Ui	V	500
	Pollution degree		2
Mechanical features	Electrical life		4,000
	Mechanical life		20,000
	Contact position indicator		Yes
	Protection degree		IP20
	Ambient temperature (with daily average≤35℃)	℃	-25...+70
	Storage temperature	℃	-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
	Weight	kg	0.17

2.3 Temperature derating

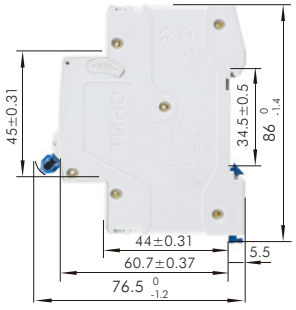
The maximum permissible current in a circuit breaker depends on the ambient temperature where the circuit breaker is placed. Ambient temperature is the temperature inside the enclosure or switchboard in which the circuit breakers are installed.

The reference temperature is 30℃

In/Rated current (A)	Current correction value under different ambient temperature										
	-25℃	-20℃	-10℃	0℃	10℃	20℃	30℃	40℃	50℃	60℃	70℃
1	1.28	12.5	1.19	1.13	1.08	1.03	1	0.97	0.91	0.86	0.8
2	2.56	2.5	2.38	2.26	2.16	2.06	2	1.94	1.82	1.72	1.6
3	3.84	3.75	3.57	3.39	3.24	3.09	3	2.97	2.73	2.58	2.4
4	5.12	5	4.76	4.52	4.32	4.12	4	3.88	3.64	3.44	3.2
6	7.68	7.5	7.14	6.78	6.48	6.18	6	5.82	5.46	5.16	4.8
10	12.8	12.5	11.9	11.3	10.8	10.3	10	9.7	9.1	8.6	8
16	20.5	20	19.0	18.1	17.3	16.5	16	15.5	14.6	13.8	12.8
20	25.6	25	23.8	22.6	21.6	20.6	20	19.4	18.2	17.2	16
25	32	31.3	29.8	28.3	27	25.8	25	24.3	22.8	21.5	20
32	39.1	38.3	36.8	35.3	34	32.8	32	31.3	30	28.7	27.2
40	47.8	46.8	45.2	43.6	42.2	40.8	40	39.3	38	36.7	35.2

3. Overall and mounting dimensions (mm)





NBH8LE-40		1PN	C	16	0.03A	4.5kA
Frame	Breaking capacity code	Poles	Curve	Current(In)	Rated sensitivity (IΔn)	Breaking capacity
NBH8LE-40	Blank: 4.5kA H: 6kA	1P+N	C	1A~40A	0.01A 0.03A	4.5kA 6kA

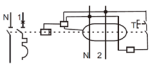
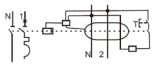
Diagram	Curve	Poles	In(A)	Icu(kA)	Ue(V)	IΔn(A)	Leakage type	Description	Code
	C	1P+N	1	4.5	AC230/240	0.01	AC	NBH8LE-40 1PN C1 0.01A 4.5kA	206104
	C	1P+N	2	4.5	AC230/240	0.01	AC	NBH8LE-40 1PN C2 0.01A 4.5kA	206105
	C	1P+N	2	4.5	AC230/240	0.03	AC	NBH8LE-40 1PN C2 0.03A 4.5kA	206057
	C	1P+N	3	4.5	AC230/240	0.01	AC	NBH8LE-40 1PN C3 0.01A 4.5kA	206106
	C	1P+N	4	4.5	AC230/240	0.01	AC	NBH8LE-40 1PN C4 0.01A 4.5kA	206107
	C	1P+N	4	4.5	AC230/240	0.03	AC	NBH8LE-40 1PN C4 0.03A 4.5kA	206059
	C	1P+N	6	4.5	AC230/240	0.01	AC	NBH8LE-40 1PN C6 0.01A 4.5kA	206108
	C	1P+N	6	4.5	AC230/240	0.03	AC	NBH8LE-40 1PN C6 0.03A 4.5kA	206060
	C	1P+N	10	4.5	AC230/240	0.01	AC	NBH8LE-40 1PN C10 0.01A 4.5kA	206109
	C	1P+N	10	4.5	AC230/240	0.03	AC	NBH8LE-40 1PN C10 0.03A 4.5kA	206061
	C	1P+N	16	4.5	AC230/240	0.01	AC	NBH8LE-40 1PN C16 0.01A 4.5kA	206110
	C	1P+N	16	4.5	AC230/240	0.03	AC	NBH8LE-40 1PN C16 0.03A 4.5kA	206062
	C	1P+N	20	4.5	AC230/240	0.01	AC	NBH8LE-40 1PN C20 0.01A 4.5kA	206111
	C	1P+N	20	4.5	AC230/240	0.03	AC	NBH8LE-40 1PN C20 0.03A 4.5kA	206063
	C	1P+N	25	4.5	AC230/240	0.01	AC	NBH8LE-40 1PN C25 0.01A 4.5kA	206112
	C	1P+N	25	4.5	AC230/240	0.03	AC	NBH8LE-40 1PN C25 0.03A 4.5kA	206064
	C	1P+N	32	4.5	AC230/240	0.01	AC	NBH8LE-40 1PN C32 0.01A 4.5kA	206113
	C	1P+N	32	4.5	AC230/240	0.03	AC	NBH8LE-40 1PN C32 0.03A 4.5kA	206065
	C	1P+N	40	4.5	AC230/240	0.01	AC	NBH8LE-40 1PN C40 0.01A 4.5kA	206114
	C	1P+N	40	4.5	AC230/240	0.03	AC	NBH8LE-40 1PN C40 0.03A 4.5kA	206066
	C	1P+N	1	6	AC230/240	0.01	AC	NBH8LE-40H 1PN C1 0.01A 6kA	206115
	C	1P+N	1	6	AC230/240	0.03	AC	NBH8LE-40H 1P+N C1 0.03A 6kA	279307
	C	1P+N	2	6	AC230/240	0.01	AC	NBH8LE-40H 1PN C2 0.01A 6kA	206116
	C	1P+N	2	6	AC230/240	0.03	AC	NBH8LE-40H 1P+N C2 0.03A 6kA	279308
	C	1P+N	3	6	AC230/240	0.01	AC	NBH8LE-40H 1PN C3 0.01A 6kA	206117
	C	1P+N	3	6	AC230/240	0.03	AC	NBH8LE-40H 1P+N C3 0.03A 6kA	279309
	C	1P+N	4	6	AC230/240	0.01	AC	NBH8LE-40H 1PN C4 0.01A 6kA	206118
	C	1P+N	4	6	AC230/240	0.03	AC	NBH8LE-40H 1P+N C4 0.03A 6kA	279310
	C	1P+N	6	6	AC230/240	0.01	AC	NBH8LE-40H 1PN C6 0.01A 6kA	206119
	C	1P+N	6	6	AC230/240	0.03	AC	NBH8LE-40H 1P+N C6 0.03A 6kA	279311
	C	1P+N	10	6	AC230/240	0.01	AC	NBH8LE-40H 1PN C10 0.01A 6kA	206120
	C	1P+N	10	6	AC230/240	0.03	AC	NBH8LE-40H 1P+N C10 0.03A 6kA	279312
	C	1P+N	16	6	AC230/240	0.01	AC	NBH8LE-40H 1PN C16 0.01A 6kA	206121
	C	1P+N	16	6	AC230/240	0.03	AC	NBH8LE-40H 1P+N C16 0.03A 6kA	279313
	C	1P+N	20	6	AC230/240	0.01	AC	NBH8LE-40H 1PN C20 0.01A 6kA	206122

Diagram	Curve	Poles	In(A)	Icu(kA)	Ue(V)	IΔn(A)	Leakage type	Description	Code
	C	1P+N	20	6	AC230/240	0.03	AC	NBH8LE-40H 1P+N C20 0.03A 6kA	279314
	C	1P+N	25	6	AC230/240	0.01	AC	NBH8LE-40H 1PN C25 0.01A 6kA	206123
	C	1P+N	25	6	AC230/240	0.03	AC	NBH8LE-40H 1P+N C25 0.03A 6kA	279315
	C	1P+N	32	6	AC230/240	0.01	AC	NBH8LE-40H 1PN C32 0.01A 6kA	206124
	C	1P+N	32	6	AC230/240	0.03	AC	NBH8LE-40H 1P+N C32 0.03A 6kA	279316
	C	1P+N	40	6	AC230/240	0.01	AC	NBH8LE-40H 1PN C40 0.01A 6kA	206125
	C	1P+N	40	6	AC230/240	0.03	AC	NBH8LE-40H 1P+N C40 0.03A 6kA	279317