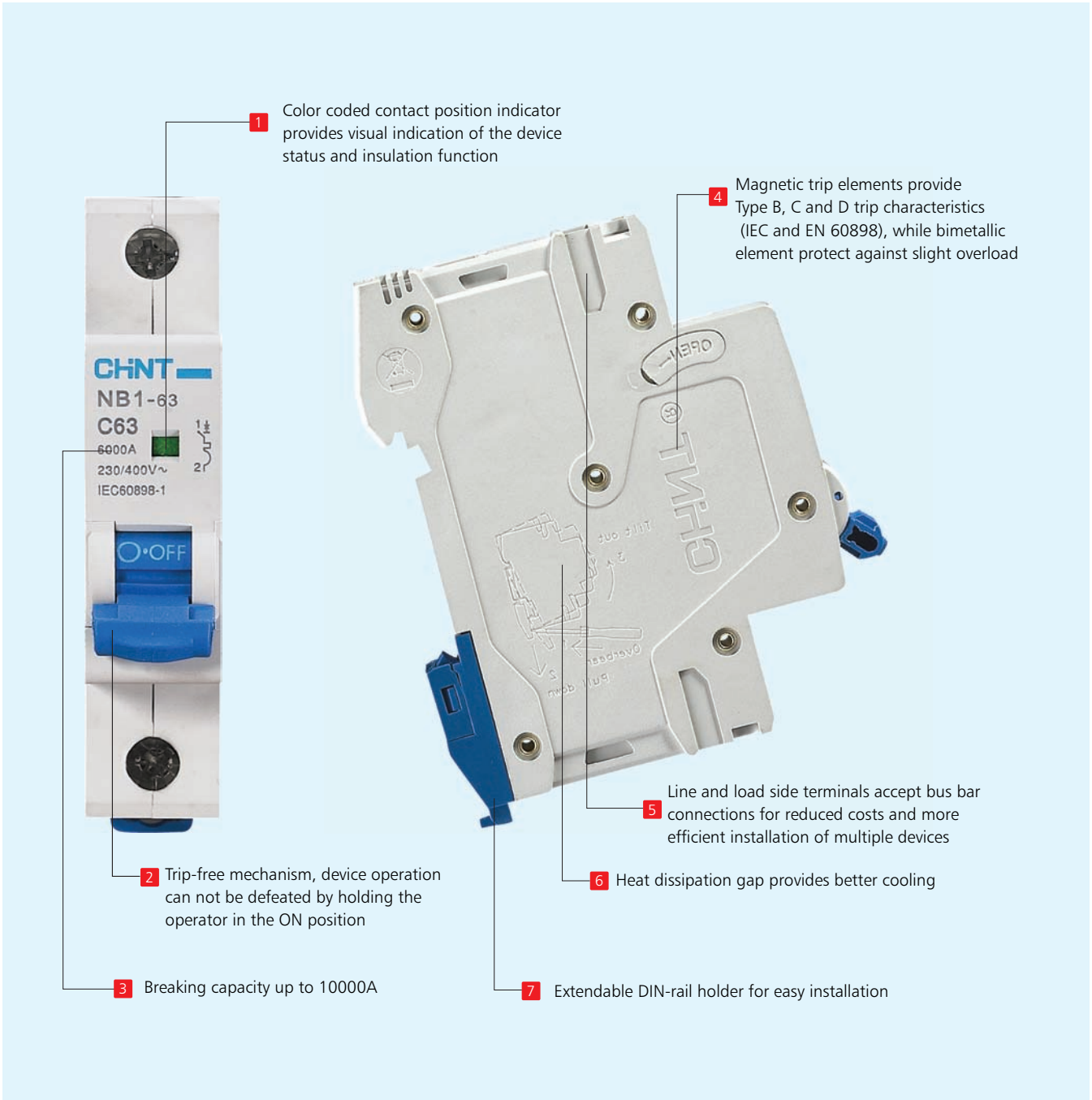


CE	VDE	S	F	CS	SNI	ISIRI	UKR	PG	RCC	UL US LISTED	CSA
EU	Germany	Sweden	Finland	Czech	Indonesia	Israel	Ukraine	Russia	South Africa	USA	Canada

NB1 Miniature Circuit Breaker



1. General

1.1 Application:

For protecting cables and equipment against overload and short circuit.

1.3 General rules for choosing MCB.

a. 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.

b. There are 3 curve characteristics for magnetic operation:

B curve (3-5 I_n) protection and control of the circuits against overloads and short-circuits; protection for people and big length cables in TN and IT systems.

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.

D curve (10-14 I_n) protection and control of the circuits against overloads and short-circuits; protection for circuits which supply loads with high inrush current at the circuit closing (LV/LV transformers, breakdown lamps).



★ 1P



★ 2P



★ 3P



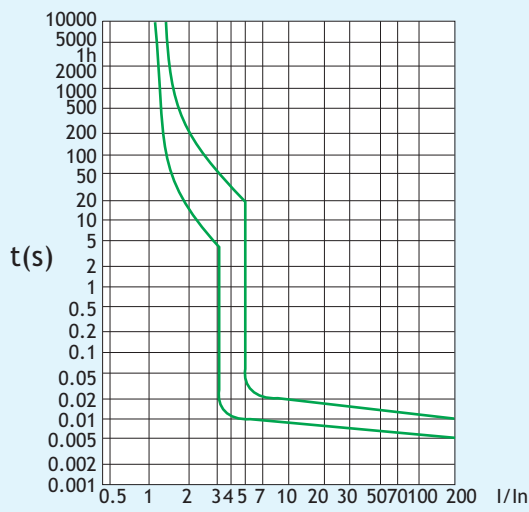
★ 4P



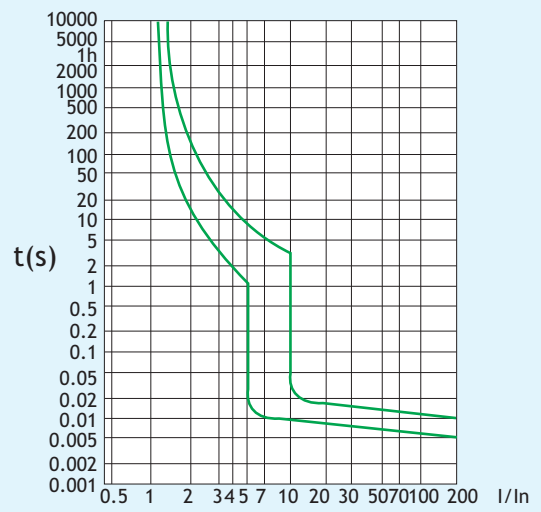
3. Technical features

3.1 curve

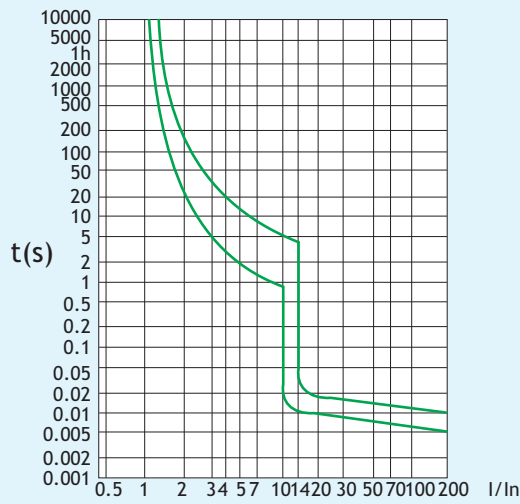
AC operation B curve



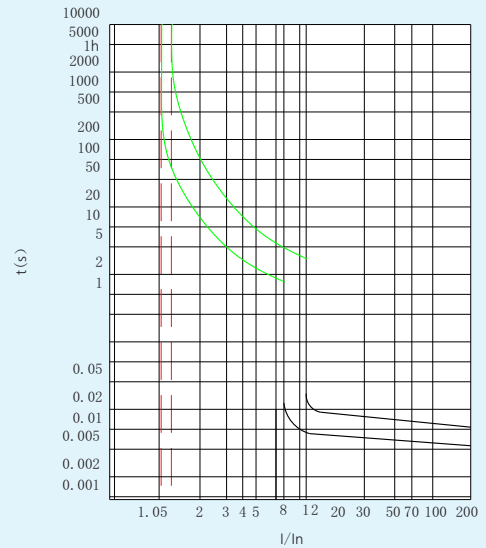
AC operation C curve



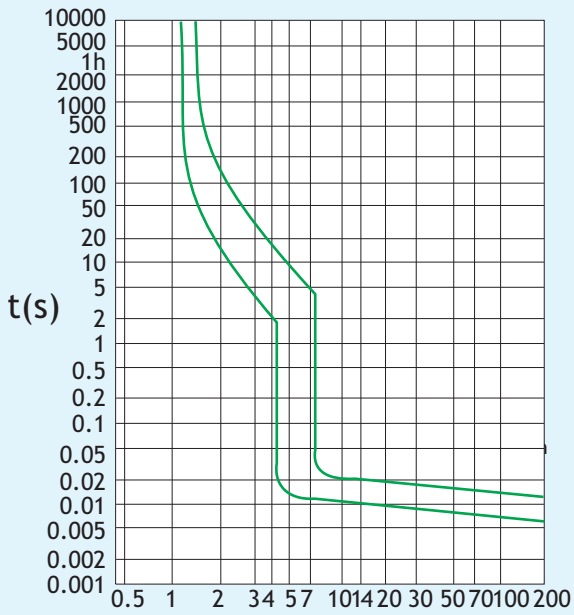
AC operation D curve



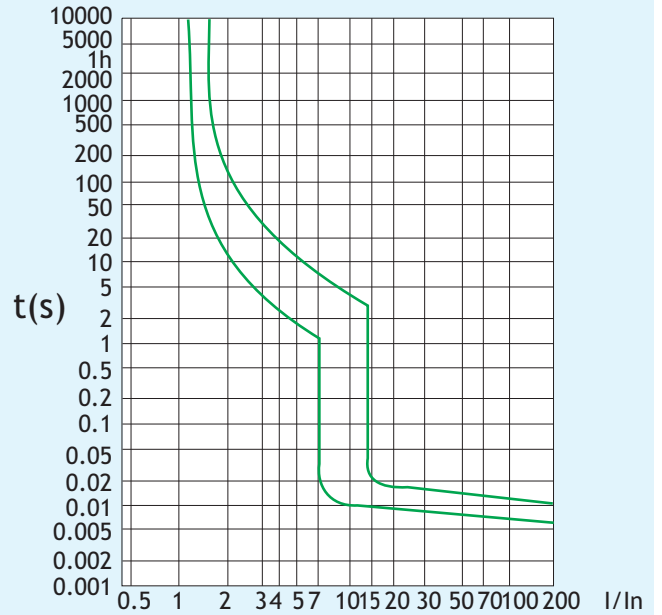
IEC/EN 60947-2



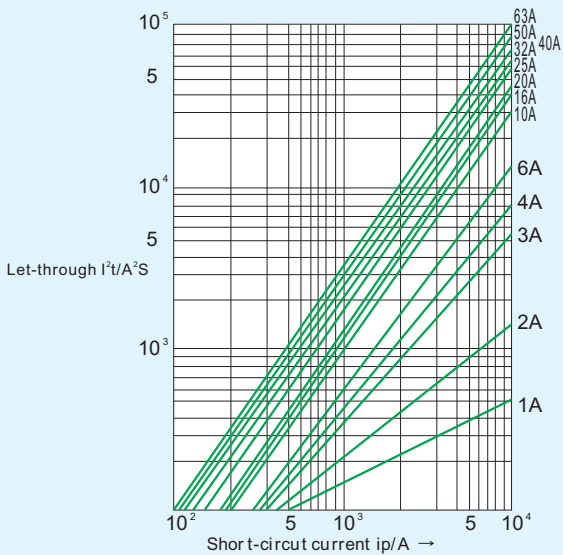
DC operation B curve



DC operation C curve



I^2t



3.2

Standard		IEC/EN 60898-1	IEC/EN 60947-2	UL1077	UL1077	
Electrical features	Rated current in	A	1, 2, 3, 4, 6, 10, 13, 16, 20, 25, 32, 40, 50, 63			
	Poles		1P, 2P, 3P, 4P	1P, 2P, 3P, 4P	1P, 2P, 3P, 4P	1P, 2P
	Rated voltage Ue	V	230/400	240/415	277/480	110/125
	Insulation voltage Ui	V	500			
	Rated frequency		50/60Hz			
	Rated breaking capacity	A	6000/10000	6k	5k	10k
	Energy limiting class		3			
	Rated impulse withstand voltage(1.2/50) Uimp	V	6000			
	Dielectric test voltage at ind. Freq. for 1 min	kV	2			
	Pollution degree		2			
	Power loss per pole		Rated current (A)		Max power loss per pole (W)	
			1, 2, 3, 4, 5, 6, 10		2	
			13, 16, 20, 25, 32		3.5	
		40, 50, 63		5		
Thermo-magnetic release characteristic		B, C, D	8-12In	B, C, D	4-7In, 7-14In	
Mechanical features	Electrical life		4, 000			
	Mechanical life		10, 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 P13 for temperature compensation correction)			
	Storage temperature	°C	-25...+70			
Installation	Terminal connection type		Cable/U-type busbar/Pin-type busbar			
	Terminal size top/bottom for cable	mm ²	25			
		AWG	18-3			
	Terminal size top/bottom for busbar	mm ²	25			
		AWG	18-3			
	Tightening torque	N*m	2.5			
		In-lbs.	22			
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 Selectivity

	In (A)	Power supply side: RT36-00 (fuse)								
		20	25	36	50	63	80	100	125	160
		Is (kA)								
Load side: NB1-63, NB1-63H Curve B, C	≤2	1.2	4	>12	>12	>12	>12	>12	>12	>12
	3	0.7	1.2	3.8	5.3	6	6	6	6	6
	4	0.6	0.9	2.5	3.8	6	6	6	6	6
	6	0.5	0.8	1.9	2.5	4.5	5	6	6	6
	10		0.7	1.4	2.2	3.2	3.6	6	6	6
	16			1.2	1.8	2.6	3	5.6	6	6
	20				1.5	2.2	2.5	4.6	6	6
	25				1.3	2	2.2	4.1	5.5	6
	32					1.7	1.9	3.8	4.5	6
	40						1.7	3	4	5
	50						1.5	2.6	3.5	4.5
63							2.4	3.3	4.5	

3.4 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

When several simultaneously operating circuit breakers are mounted side by side in a small enclosure, the temperature rise inside the enclosure causes a reduction in current rating. You must then assign the rating (already derated if necessary according to ambient temperature) a downrating factor of 0.8.

4. Overall and Mounting Dimensions (mm)

Overall and Mounting Dimensions

