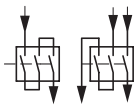
NZMH4, NZM(H)6(B), NZM(H)9, NZM12
Technical Data

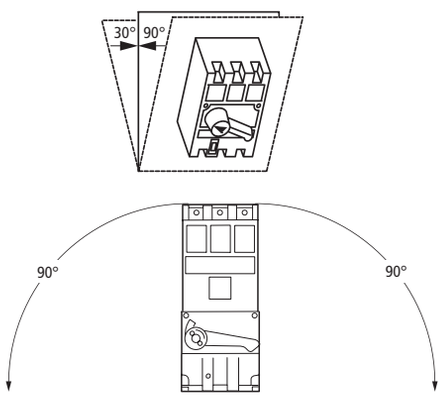
Molded case circuit breakers		3 pole	NZMH 4-...-CNA [1]	NZM6B.../ZM6A...-NA	NZMH6-.../ZM6A...-NA
Frame size		A	80	125	125
IEC 60 947-2 Electrical Ratings					
Rated impulse withstand voltage U_{imp}		V	8000	8000	8000
Rated operational voltage U_e 50/60 Hz		V	500	690	690
Rated short-circuit making capacity I_{cm}		kA	220	275	275
Short-circuit interrupting rating I_{cn}					
I_{cu} IEC/EN 60 947 test cycle O-t-CO I_{cs} IEC/EN 60 947 test cycle O-t-CO-t-CO					
220–240 V 50/60 Hz	I_{cu}	kA	100	125	125
		cos φ	0,2	0,2	0,2
	I_{cs}	kA	75	95	95
		cos φ	0,2	0,2	0,2
380–400/415 V 50/60 Hz	I_{cu}	kA	100/65	100/90	100/90
		cos φ	0,2	0,2	0,2
	I_{cs}	kA	50/33	50/45	50/45
		cos φ	0,25	0,25	0,25
500 V 50/60 Hz	I_{cu}	kA	20	35	35
		cos φ	0,3	0,25	0,25
	I_{cs}	kA	10	18	18
		cos φ	0,5	0,3	0,3
660/690 V 50/60 Hz	I_{cu}	kA	–	20	20
		cos φ	–	0,3	0,3
	I_{cs}	kA	–	5	5
		cos φ	–	0,7	0,7
DC voltage T ≤ 15 ms			–	–	–
110 V DC		kA	30	30	30
250 V DC		kA	20	20	20
440 V DC		kA	12	12	12

NZMH4, NZM(H)6(B), NZM(H)9, NZM12
Technical Data

NZM9-.../ZM9A-...-NA	NZMH9-.../ZM9A-...-NA	NZM12-.../ZM(A)-...-NA[2]
250	250	1000
8000	8000	–
690	690	–
73	220	–
35	100	–
0,25	0,2	–
18	75	–
0,3	0,2	–
35	100/90	–
0,25	0,2	–
18	75/68	–
0,3	0,2	–
25	65	–
0,25	0,2	–
13	33	–
0,3	0,25	–
10	28	–
0,5	0,25	–
10	14	–
0,5	0,3	–
–	–	–
25	35	–
20	30	–
15	25	–

General technical data

Standards and specifications	UL 489, CSA 22.2 No. 5.1 IEC/EN 60 947-2, VDE 0660	
Climatic proofing	Damp heat, constant to IEC 60 068-2–3 Damp heat, cyclical to IEC 60 068-2–30	
Ambient temperature, min./max. °C		
open	–25/+55	(lower temperatures on request)
enclosed	–25/+40	
Shock resistance	25 g (shock duration 20 ms)	
Dimension	→ page 09/109	
Weights	→ page 14/020	
Mounting position		



Notes

[1] Type NZMH4-...-CNA thermal magnetic devices (16 - 80 A) are rated as circuit breakers per IEC/EN 60 947-2 only. See page 09/... for more information

[2] Type NZM12-...-NA circuit breakers are UL/CSA only. Consult Moeller Electric for IEC/EN rated versions.

NZMH4, NZM(H)6(B), NZM(H)9, NZM12
Technical Data

Molded case circuit breakers			NZMH4-...-CNA [1]	NZM6B-.../ZM6A-...-NA	NZMH6-.../ZM6A-...-NA	NZM9-.../ZM9A-...-NA	NZMH9-.../ZM9A-...-NA	NZM12-.../ZM(A)-...-NA [2]
Frame size		A	80	125	125	250	250	1000
Overload trips								
Bimetal type (directly heated)		A	4 - 80	15 - 125	15 - 125	63 - 250	63 - 250	–
Solid state type		A	–	–	–	–	–	300 - 1000
Temperature compensation, residual error in the range –25/+55 °C (reference 20 °C)		%/K	0.3	0.7	0.7	0.3	0.3	–
Undervoltage trips								
Pull-in voltage range		% U_s	85–110	85–110	85–110	85–110	85–110	85–110
Dropout voltage range		% U_s	70–35	70–35	70–35	70–35	70–35	70–35
Minimum command time		ms	10–15	10–15	10–15	10–15	10–15	10–15
Inrush rating AC		VA	6.5	6.5	6.5	40	40	100
Sealing AC		VA	3.5	3.5	3.5	7	7	12
Inrush rating DC		W	2.8	2.8	2.8	1.9	1.9	160
Sealing DC		W	2.8	2.8	2.8	1.9	1.9	3.6
Shunt trips								
Pull-in voltage range		% U_s	70–110	70–110	70–110	70–110	70–110	70–110
Minimum command time		ms	10–15	10–15	10–15	10–15	10–15	10–15
Inrush rating AC (50 Hz)		VA	50	50	50	150	150	350
Sealing AC		VA	–	–	–	15	15	20
Inrush rating DC (intermittent duty operation)		W	40	40	40	120	120	200
Switching times								
Tripping in the event of a short-circuit								
Minimum command time		ms	2	3	3	4	4	6
Opening delay		ms	0.3	0.3	0.3	6	0.3	12
Total opening delay		ms	5	6	6	20	6	25
Opening delay with:								
Shunt trips (100 % of rated coil voltage)		ms	10–20	10–20	10–20	10–20	10–20	15–25
Undervoltage trips		ms	15–20	15–20	15–20	15–20	15–20	20–25
NHI, VHI, AHI, RHI auxiliary contacts [3]								
IEC/EN 60 947 ratings								
Rated operational current I_e								
AC-15	115 V 50 Hz	A	6	6 (1)	6 (1)	6 (1)	6 (1)	6
	230 V 50 Hz	A	6	6 (1)	6 (1)	6 (1)	6 (1)	6
	400 V 50 Hz	A	4	4 (1)	4 (1)	4 (1)	4 (1)	4
DC-13 (L/R ≤ 200 ms)	24 V DC	A	1	1 (1)	1 (1)	1 (1)	1 (1)	1
	60 V DC	A	0.8	0.8 (0.4)	0.8 (0.4)	0.8 (0.4)	0.8 (0.4)	0.8
	110 V DC	A	0.7	0.7 (0.2)	0.7 (0.2)	0.7 (0.2)	0.7 (0.2)	0.7
	220 V DC	A	0.3	0.3 (0.1)	0.3 (0.1)	0.3 (0.1)	0.3 (0.1)	0.3
Lifespan, electrical								
to AC-15		ops.	20000	20000	20000	20000	20000	20000
to DC-13		ops.	5000	5000	5000	7500	7500	2500
Short-circuit rating without welding (contacts closed)								
Fuseless			PKZM0-2.5	PKZM0-2.5	PKZM0-2.5	PKZM0-2.5	PKZM0-2.5	PKZM0-2.5
Fuses		A gL	10	10	10	10	10	10
UL/CSA Pilot Duty Ratings								
Type NHI		Pilot Duty	A600/P600	A600/P600	A600/P600	A600/P600	A600/P600	A600
Type VHI, AHI, RHI			C300	C300		C300	C300	A600

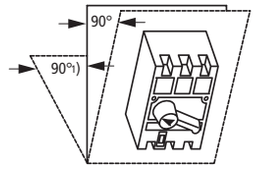
Notes:
[1] Type NZMH4-...-CNA thermal-magnetic devices (16 - 80A) are rated as circuit breaker per IEC/EN 60 947-2 only. See page 09/053 for further information
[2] Type NZM12-...-NA circuit breakers are UL/CSA only. Consult Moeller Electric for IEC/EN rated version.
[3] For IEC/EN 60 947 ratings, values which appear in brackets apply to VHI, AHI, and RHI contacts. Otherwise values apply to all contacts.

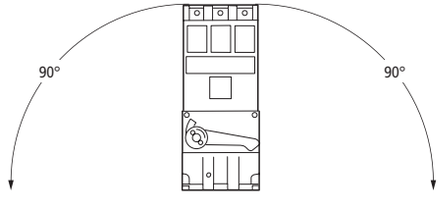
NZMH4, NZM(H)6(B), NZM(H)9, NZM12
Technical Data

UL/CSA Motor disconnect switches with adjustable thermal and magnetic trips IEC/EN Molded case circuit breakers		**3 pole**	**NZMH4-...-CNA**	**NZM(H)6(B)/ZM6-...-CNA**	**NZM(H)9/ZM9-...-CNA**
Frame size		A	80	125	250
Motor disconnect switches with adjustable thermal and magnetic trips					
General technical data			→ page 09/098	→ page 09/098	→ page 09/098
IEC/EN 60 947-2 circuit breaker ratings			→ page 09/098	→ page 09/098	→ page 09/098
UL 508 / CSA 22.2 No.14 motor disconnect switches					
Adjustable range of thermal overload trips		A	4 - 80	15 - 125	63 - 250
HP ratings		HP	→ page 09/053	→ page 09/062	→ page 09/072
Auxiliary contacts, voltage trips			→ page 09/100	→ page 09/100	→ page 09/100

UL/CSA Motor disconnect switches without adjustable thermal and magnetic trips IEC/EN switch-disconnectors		**3 pole**	**N6-...-CNA**	**N9-...-CNA**	**N12-...-CNA N12-...-NA**
Frame size		A	150	150	1200
Motor disconnect switches without adjustable thermal and magnetic trips					
General technical data			→ page 09/098	→ page 09/098	→ page 09/098
IEC/EN 60 947-3 switch disconnector ratings					
Rated impulse withstand voltage		V	8000	8000	8000
Rated short-time withstand current I_{cw} (1s current)		kA	3	7	20
Lifespan, mechanical		ops.	20000	30000	15000
Max. operating frequency		ops./h	60	60	60
Lifespan, electrical	AC-1	ops x 10^3	10	10	10
	AC-2, AC-3	ops x 10^3	5	5	5
	DC-2, DC-5	ops x 10^3	1	0.5	0.5
UL/508 / CSA 22.2 No. 14 motor disconnect switches					
HP ratings			→ page 09/053	→ page 09/062	→ page 09/072
Auxiliary contacts, voltage trips			→ page 09/100	→ page 09/100	→ page 09/100
UL 489 molded case switches			–	–	→ page 09/081

Mounting position





NZMH4, NZM(H)6(B), NZM(H)9, NZM12
Technical Data

Type			NZMH4-...-OBI-CNA	NZMH4-...-CNA	NZM(H)6(B)-.../ZM6(A)-...-(C)NA NZM(H)6(B)-.../ZM6-...-OBI-CNA	NZM(H)6(B)-160/ZM6(A)-125-(C)NA NZM(H)6(B)-160/ZM6-125-OBI-(C)NA
	Maximum continuous current	A	18	80	100	125
Field wiring terminals						
	Conductor cross section		1 conductor: AWG 14 ... 3 Cu only	1 conductor: AWG 14 ... 3 Cu only	1 conductor: AWG 14 ... 1/0, Cu only up to 90A, 60/75 °C cable 100A, 60 °C cable	1 conductor: AWG 4 ... 3/0, Cu only 125A, 60 °C cable
	Terminal torque rating	Nm	4	4	10	15

Type			NZM(H)9-.../ZM9(A)-...-(C)NA NZM(H)9-.../ZM9-...-OBI-CNA	NZM12-.../ZM12(V)(A)-...-NA	
	Maximum continuous current	A	250	800	1000
Field wiring terminals					
	Conductor cross section		1 conductor: AWG 8 ... Kcmil 300 Cu only	1 conductor: Kcmil 250 - 600 2 conductors: AWG 3/0 ... Kcmil 500 3 conductors: Kcmil 250 ... 400 Cu and Al	4 conductors: AWG 2 ... Kcmil 500 Cu and Al
	Terminal torque rating	Nm	40	50	50

Type			N6-...-CNA		N9-...-CNA	N12-...-CNA		
	Maximum continuous current	A	100	150	250	800	1000	1200
Field wiring terminals								
	Conductor cross section		1 conductor: AWG 14 ... 1/0 Cu only 75 °C cable	1 conductor: AWG 4 ... 3/0 Cu only 75 °C cable	1 conductor: AWG 8 ... Kcmil 300 Cu only	1 conductor: Kcmil 250 - 600 2 conductors: AWG 3/0 .... Kcmil 500 3 conductors: Kcmil 250 - 400 Cu and Al	4 conductors: AWG 2 ... Kcmil 500 Cu and Al	4 conductors: AWG 2 ... Kcmil 500 Cu and Al
	Terminal torque rating	Nm	10	15	40	50	50	50

Notes: All devices shown above except type NZM12-... are dual rated UL/CSA and IEC/EN.
Consult Moeller Electric for IEC/EN conductor cross section information.