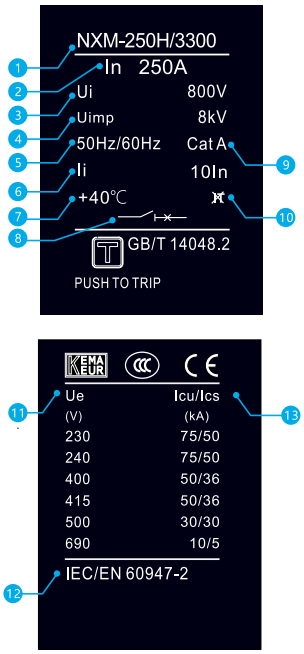
NXM series moulded case circuit breaker

NXM-250S/4300A

NXMS-250H/3300



NXM Nameplate of thermomagnetic stationary molded case circuit breaker

Breaker

The moulded case circuit breaker will provide protection for the circuit and equipment in case of overload, short circuit and under voltage condition occurred in the power distribution circuit. Besides, it can also provide protection of overload, short circuit and under voltage for the non-frequent start of motor

- Frame size:
  NXM series moulded case circuit breaker: 63A, 125A, 160A(W125), 250A, 400A, 630A, 800A(W630), 1000A(W800), 1250A, 1600A
  NXM series moulded case circuit breaker
- Rated operational voltage: Ue : 220V/230V/240V, 380V/400V/415V, 500V , 690V
- Breaking capacity code: E, S, F, H
- Number of poles: 2P, 3P, 4P
- Release type:thermal magnetic fixed type; magnetic fixed type; electronic type.
- Installation method: Fixed type; plug-in type

Nameplate interpretation

1. Product type: Frame size; breaking capacity; poles number
2. In: Rated operational current
3. Ui: Rated insulation voltage
4. Uimp: Rated impulsive withstand voltage
5. Frequency of A.C.
6. Ii: 10In Multiple of current of transient behavior
7. +40℃ : Ambient temperature
8. Electrical symbol for circuit breaker with isolating function
9. Cat A: Utilization category of breaker
10. Not for IT systems
11. Ue: Rated operational voltage
12. The product is in conformity with standard IEC/EN 60947-2
13. Icu/Ics: Ultimate short circuit breaking capacity/Service short circuit breaking capacity

NXM series moulded case circuit breaker

Model definition and description

NXM	160	S	P	4	300	
Product code	Frame size code	Breaking capacity code[2]	Operation way code	Number of poles code	Code of release type and inner accessories[3]	
NXM: moulded case circuit breaker	63A 125A 160A(W125A) 250A 400A 630A 800A(W630A) 1000A(W800A) 1250A 1600A	E: 15kA S: 25kA F: 36kA H: 50kA E: 20kA S: 36kA F: 36kA H: 50kA E: 36kA S: 50kA F: 50kA H: 70kA S: 50kA F: 50kA H: 70kA S: 50kA H: 70kA	No code: direct handle operation P: motor operation Z:rotary handle operation	2: 2 poles 3: 3 poles 4: 4 poles	First number represents the release type 2: only magnetic type 3: thermal magnetic type The second number and the third number are codes of inner accessories	

Model selection examples:
NXM-160SP/4300 2 A 100 R: To order one moulded case circuit breaker with 160A frame size, 35kA breaking capacity, thermal adjustable and magnetic fixed release, with motor-driven mechanism, 4 poles, with no inner accessories, motor protection, the category of four poles is A. The rated current is 100A and rear connection.

Note: [1] The rated current of each frame can be seen in table 1.
[2] The corresponding poles number and breaking capacity related to frame size can be seen in table 2.
[3] For tripping method and inner accessories, see page 17-20.

Comparison table of frame sizes and rated current

Rated current (A)		10	16	20	25	32	40	50	63	80	100	125	140	150	160	180	200
Frame size (A)	63	■	■	■	■	■	■	■	■								
	125	■	■	■	■	■	■	■	■	■	■	■					
	W125				■	■	■	■	■	■	■	■					
	160				■	■	■	■	■	■	■	■	■	■	■		
	250											■	■	■	■	■	■
	400																
	630																
	W630																
	800																
	W800																
	1000																
	1250																
	1600																

Comparison table of frame sizes, number of poles and breaking capacity

Frame size (A)		63			125			160(W125)			250		
Number of poles		2P	3P	4P	2P	3P	4P	2P	3P	4P	2P	3P	4P
Frame size (A)	E	■	■	■	■	■	■	■	■	■	■	■	■
	S	■	■	■	■	■	■	■	■	■	■	■	■
	F	-	■	■	-	■	■	-	■	■	-	■	■
	H	-	■	■	-	■	■	-	■	■	-	■	■

	2	A	160	Other
	Usage code	Product with N pole the code is selectable	Rated current[1)]	Code of installation or secondary voltage
	No code: distribution protection 2: motor protection	A: there is no over current release installed at pole N and the N pole will always connect, which will not operate with the other three poles. B: there is no over current release installed at pole N and the N pole will operate with the other three poles; C: there is over current release installed at N pole, and the N pole will operate with the other three poles; D: there is over current release installed at N pole, and the N pole will always connects, which will operate with the other three poles	10A~1600A	No code: front connection R: rear connection DR: plug-in type rear connection

Table 1

225	250	280	315	320	400	500	600	630	700	800	900	1000	1250	1600
■	■													
	■	■	■	■	■									
					■	■	■	■						
								■	■	■				
								■	■	■				
										■	■	■		
										■	■	■		
												■	■	
												■	■	■

Table 2

400			630			800(W630)			1000(W800)			1250			1600		
2P	3P	4P	2P	3P	4P	2P	3P	4P	2P	3P	4P	2P	3P	4P	2P	3P	4P
-	■	■	-	■	■	-	-	-	-	-	-	-	-	-	-	-	-
-	■	■	-	■	■	-	■	■	-	■	■	-	■	■	-	■	■
-	■	■	-	■	■	-	■	■	-	-	-	-	-	-	-	-	-
-	■	■	-	■	■	-	■	■	-	■	■	-	■	■	-	■	■

Technical Parameters

NXM series moulded case circuit breaker

Frame Size, rated current Inm (A)			63				125				160 (W125)					250			
Rated current In (A), 40℃ , 55℃			10,16,20,25,30, 32,40,50,60,63				10,16,20,25,30,32, 40,50,60,63,70,75, 80,100,125				32,40,50,60,63,70,75,80, 100,125,140,150,160					160,170,180,200,225,250			
Rated insulation voltage Ui(V)			800				800				800					800			
Rated impulse withstand voltage Uimp(kV)			8				8				8					8			
Rated operational voltage Ue(V), AC50/60Hz			220/230/240, 380/400/415/500				220/230/240, 380/400/415/500				220/230/240, 380/400/415, 500/690					220/230/240, 380/400/415, 500/690			
Breaking capacity code			E	S	F	H	E	S	F	H	E	S	F	H	R	E	S	F	H
Number of poles		2P	■	■	-	-	■	■	-	-	■	■	-	-	-	■	■	-	-
		3P	■	■	■	■	■	■	■	■	■	■	■	■	-	■	■	■	■
		4P	■	■	■	■	■	■	■	■	■	■	■	■	-	■	■	■	■
Rated ultimate short circuit breaking capacity Icu (kA)		AC220/230/240V	18	36	50	75	18	36	50	75	40	50	50	75	-	40	50	50	75
		AC380/400/415V	15	25	36	50	15	25	36	50	20	36	36	50	40	20	36	36	50
		AC500V	-	-	15	25	-	-	15	25	-	-	30	30	40	-	-	-	-
		AC660/690V	4	5	5	6	4	5	5	6	8	8	10	10	10	-	8	-	-
Rated service short circuit breaking capacity Ics (kA)		AC220/230/240V	18	18	50	50	18	18	50	50	30	30	50	50	-	30	30	50	50
		AC380/400/415V	15	15	36	36	15	15	36	36	20	20	36	36	-	20	20	36	36
		AC500V	-	-	15	15	-	-	15	15	-	-	30	30	40	-	-	-	-
		AC660/690V	4	4	5	5	4	4	5	5	4	4	5	5	5	-	5	-	-
In conformity with standards			IEC/EN 60947-2																
Utilization category			A				A				A					A			
Isolation function			■				■				■					■			
Ambient temperature			-35℃ ~+70℃																
Arcing distance			≤50				≤50				≤50					≤50			
Mechanical life (times)		Without maintenance	20000				20000				20000					20000			
		With maintenance	40000				40000				40000					40000			
Electricallife (times)		AC415V, In	10000				10000				10000					10000			
Release type and protection type	Magnetic release	Distribution protection	■		■		■		■		■		■			■		■	
		Motor protection	■		■		■		■		■		■			■		■	
	Thermal magnetic release	Distribution protection	■		■		■		■		■		■			■		■	
		Motor protection	■		■		■		■		■		■			■		■	
Accessories	Auxiliary contact		■		■		■		■		■		■			■		■	
	Alarm contact		■		■		■		■		■		■			■		■	
	Auxiliary contact, alarm contact		■		■		■		■		■		■			■		■	
	Shunt release		■		■		■		■		■		■			■		■	
	Under voltage release		■		■		■		■		■		■			■		■	
	Manual operational mechanism		■		■		■		■		■		■			■		■	
	Motor-driven mechanism		■		■		■		■		■		■			■		■	
	Rear connection		■		■		■		■		■		■			■		■	
	Plug-in type		■		■		■		■		■		■			■		■	
	Extending terminal bonding bar		■		■		■		■		■		■			■		■	
Derivative product	For special use of prepaid ammeter		■		-		■		-		■		-			■		-	
	Overload alarm non-trip		-		-		-		-		■		■			■		■	
Dimension and size(mm) Width (w) X height (H)X depth(D)		Width (2P/3P/4P)	56/78/103				56/78/103				63/90/120					78/105/140			
		Height	135				135				155					165			
		Depth (E/S/F/H type)	71/71/81/81				71/71/81/81				75.5/75.5/91/91					77/77/102/102			

Power loss table

Product model	Making current(A)	Single pole resistance (mΩ)	3/4pole total power loss		
			Front connection	Rear connection	Plug-in rear connection
NXM-63	63	1.8	21	25	28
NXM-125	125	0.6	36	44	51
NXM-W125	125	0.42	23	30	48
NXM-160	160	0.42	38	45	53
NXM-250	250	0.35	47	55	65
NXM-400	400	0.13	88	95	145
NXM-630	630	0.09	180	190	200
NXM-W630	630	0.07	178	140(520A)	152(520A)
NXM-800	800	0.07	200	230	290
NXM-W800	800	0.058	160	212	234
NXM-1000	1000	0.058	250	280	300
NXM-1250	1250	0.042	265	-	-
NXM-1600	1600	0.027	280	-	-
NXMS-160	160	0.38	35	42	50
NXMS-250	250	0.3	44	52	62
NXMS-400	400	0.13	82	90	140
NXMS-630	630	0.07	140	130(520A)	150(520A)
NXMS-1000	1000	0.05	230	250(920A)	270(920A)
NXMS-1250	1250	0.04	265	-	-
NXMS-1600	1600	0.027	280	-	-
NXMLE-125	125	0.65	40	48	54
NXMLE-160(W125)	160	0.5	48	56	68
NXMLE-250	250	0.4	55	64	74
NXMLE-400	400	0.15	103	112	162
NXMLE-630	630	0.11	170	160(520A)	180(520A)
NXMLE-800	800	0.09	220	180(720A)	200(720A)
NXHM-63	63	1.8	21	25	28
NXHM-125	125	0.6	36	44	51
NXHM-160	160	0.42	38	45	53
NXHM-250	250	0.35	47	55	65
NXHM-400	400	0.13	88	95	145
NXHM-630	630	0.09	178	140(520A)	152(520A)
NXHM-800	800	0.07	200	160(720A)	180(720A)
NXHM-1000	1000	0.058	250	280(920A)	310(920A)

Parameter table of connecting cable/copper bar

The reference section of connecting cable/copper bar with different rated current is as follows.

Rated current (A)	Section of wire (mm^2)
10	1.5
16, 20	2.5
25	4.0
32	6.0
40, 50	10
63	16
80	25
100	35
125, 140	50
160	70
180, 200, 225	95
250	120
280, 315, 320, 350	185
400	240

Rated current (A)	Cable		Copper bar	
	Section (mm^2)	Quantity	Width × thickness (mm)	Quantity
500	150	2	30×5	2
630	185	2	40×5	2
700, 800	240	2	50×5	2
			50×10	1
900, 1000	-	-	50×5	3
			63×10	1
1250	-	-	50×5	3
			40×10	2
1600	-	-	60×5	4
			60×10	2

The above reference section is the reference value under 40 degrees operating environmental temperature.
The recommended value of tightening torque of different housing current connecting cable/copper bar is as follows:

Rated current (A)	63A/125A	160A(W125)	250A/320A	400A/630A	800A(W630)	1000A(W800)	1250A/1600A
Torque (N m)[1]	3/6[4]	10	12	30	40	40	30
Torque (N m)[2]	3/6[4]	10	12	30	40	40	30
Torque (N m)[3]	3/6[4]	10	12	30	40	40	30

[1] Tighten the torque of busbar (or extension busbar/connection lug) in case of connecting with the body directly.
[2] Tighten the torque of connecting terminal behind the stationary breaker/tighten the torque of connecting terminal of plug in breaker.
[3] Tighten the torque of extension busbar of terminal on the plug-in pedestal.
[4] Value of torque is 3 for 10A~63A of frame current 63 and 125A breaker, value of torque is 6 for 70A~125A for frame current 125A breaker.

Cascading (AC380/400/415V)

Upstream		NXM-63		NXM-125		NXM-160		NXM-250		NXM-400		NXM-630		NXM-800		NXM-1000	
	breaking capacity	S	H	S	H	S	H	S	H	S	H	S	H	S	H	S	H
	Icu (kA rms)	25	50	25	50	36	50	36	50	50	70	50	70	50	70	50	70
Downstream		Breaking capacityIcu(kA rms)															
NXB-40	4.5	10	10	10	10	10	10	-	-	-	-	-	-	-	-	-	-
NXB-63	6	10	10	10	10	10	10	10	10	-	-	-	-	-	-	-	-
NB1-63	6	10	10	10	10	10	10	10	10	-	-	-	-	-	-	-	-
NXB-125	10	15	15	15	15	15	15	15	15	-	-	-	-	-	-	-	-
NXM-63S	25		36		36	36	36	36	36	36	50	36	50	36	50		
NXM-63H	50						50		50		70		70		70		
NXM-125S	25				36	36	36	36	36	36	50	36	50	36	50		
NXM-125H	50						50		50	50	70	50	70	50	70		
NXM-160S	36						50		50	50	70	50	70	50	70		
NXM-160H	50										70		70		70		
NXM-250S	36								50	50	70	50	70	50	70	50	70
NXM-250H	50										70		70		70		70
NXM-400S	50										70		70		70		70
NXM-400H	70																
NXM-630S	50												70		70		70
NXM-630H	70																
NXM-800S	50														70		70
NXM-800H	70																
NXM-1000S	50																70
NXM-1000H	70																

Type	In	Icu	Ics	Pole NO.	description	code
	250A	36KA	36KA	3	NXM-250F/3300 250A	947470
	250A	36KA	36KA	4	NXM-250F/4300B 250A	947475
	250A	50KA	36KA	3	NXM-250H/3300 250A	844333
	250A	50KA	36KA	4	NXM-250H/4300B 250A	844338
	250A	36KA	20KA	2	NXM-250S/2300 250A	947674
	250A	36KA	20KA	3	NXM-250S/3300 250A	131369
	250A	36KA	20KA	4	NXM-250S/4300B 250A	844343
	250A	70KA	50KA	3	NXM-400H/3300 250A	409451
	250A	70KA	50KA	4	NXM-400H/4300B 250A	409449
	250A	50KA	36KA	3	NXM-400S/3300 250A	389619
	250A	50KA	36KA	4	NXM-400S/4300B 250A	406061
	280A	50KA	36KA	3	NXM-400S/3300 280A	517254
	300A	50KA	50KA	3	NXM-400F/3300 300A	309511
	300A	50KA	50KA	4	NXM-400F/4300B 300A	309512
	300A	70KA	50KA	3	NXM-400H/3300 300A	309513
	300A	70KA	50KA	4	NXM-400H/4300B 300A	309514
	300A	50KA	36KA	3	NXM-400S/3300 300A	205876
	315A	50KA	50KA	3	NXM-400F/3300 315A	947482
	315A	50KA	50KA	4	NXM-400F/4300B 315A	947486
	315A	70KA	50KA	3	NXM-400H/3300 315A	844355
Thermomagnetic	315A	70KA	50KA	4	NXM-400H/4300B 315A	844359
	315A	50KA	36KA	3	NXM-400S/3300 315A	131371
	315A	50KA	36KA	4	NXM-400S/4300B 315A	844364
	320A	50KA	50KA	3	NXM-400F/3300 320A	947483
	320A	50KA	50KA	4	NXM-400F/4300B 320A	947487
	320A	70KA	50KA	3	NXM-400H/3300 320A	844356
	320A	70KA	50KA	4	NXM-400H/4300B 320A	844360
	320A	50KA	36KA	3	NXM-400S/3300 320A	844363
	320A	50KA	36KA	4	NXM-400S/4300B 320A	844365
	350A	50KA	50KA	3	NXM-400F/3300 350A	947484
	350A	50KA	50KA	4	NXM-400F/4300B 350A	947488
	350A	70KA	50KA	3	NXM-400H/3300 350A	844357
	350A	70KA	50KA	4	NXM-400H/4300B 350A	844361
	350A	50KA	36KA	3	NXM-400S/3300 350A	131372
	350A	50KA	36KA	4	NXM-400S/4300B 350A	844366
	400A	36KA	36KA	3	NXM-400E/3300 400A	435352
	400A	50KA	50KA	3	NXM-400F/3300 400A	947485
	400A	50KA	50KA	4	NXM-400F/4300B 400A	947489
	400A	70KA	50KA	3	NXM-400H/3300 400A	844358
	400A	70KA	50KA	4	NXM-400H/4300B 400A	844362
	400A	50KA	36KA	3	NXM-400S/3300 400A	131373