

NG-Frame (1200 Ampere)



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NG-Frame (320–1200 Amperes)

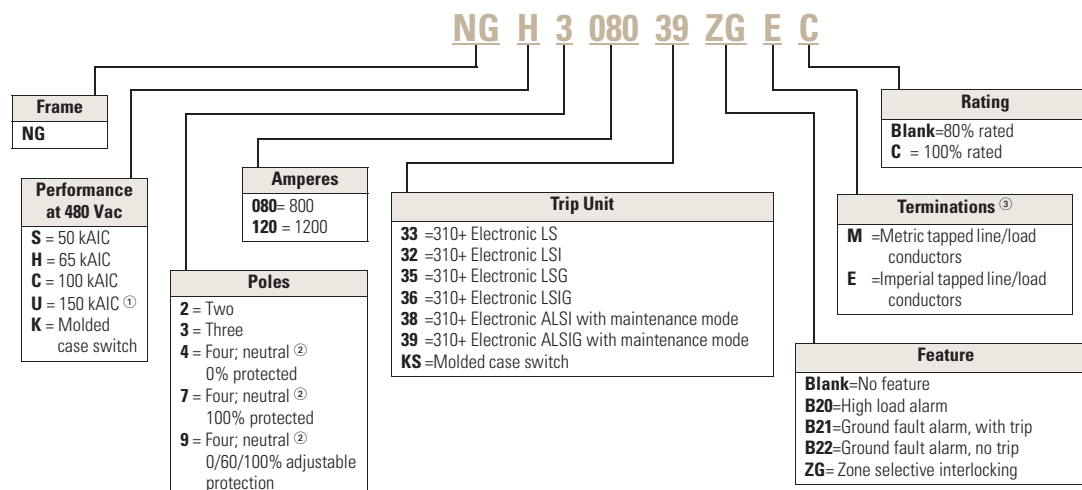
Product Description

- All Eaton NG-Frame circuit breakers are suitable for reverse feed use
- All NG-Frame circuit breakers are HACR rated

Catalog Number Selection

This information is presented only as an aid to understanding catalog numbers.
It is not to be used to build catalog numbers for circuit breakers or trip units.

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NG Circuit Breaker with 310+ Electronic Trip Unit**Notes**

① 800 A only.

② Neutral inn left pole on GN; right pole on NG.

③ Breakers do not ship with lugs.

Trip units are factory installable only.

Product Selection Guide and Ordering Information

Type NGS Standard Interrupting Capacity— U_e Max. 690 Vac, 50 kA I_{cu} at 480 Vac or 415 VacSee 310+ adjustability specifications on **Page V4-T2-176**.

Circuit Breaker Frame Including Digitrip Electronic Trip Unit with Imperial Tapped Conductors								
Maximum Continuous Ampere Rating at 40 °C ^{①②}	Number of Poles	LS	LSI	LSG	LSIG	ALSI	ALSIG	Neutral CT for LSG and LSIG ^③
800	2	NGS208033E	NGS208032E	NGS208035E	NGS208036E	—	—	—
	3	NGS308033E	NGS308032E	NGS308035E	NGS308036E	NGS308038E	NGS308039E	NGFCT120
	4	NGS408033E	NGS408032E	NGS408035E ^④	NGS408036E ^④	NGS408038E	NGS408039E ^④	—
	4 ^⑤	NGS708033E	NGS708032E	—	—	NGS708038E	—	—
	4 ^⑥	NGS908033E	NGS908032E	—	—	NGS908038E	—	—
1200 ^⑥	2	NGS212033E	NGS212032E	NGS212035E	NGS212036E	—	—	—
	3	NGS312033E	NGS312032E	NGS312035E	NGS312036E	NGS312038E	NGS312039E	NGFCT120
	4	NGS412033E	NGS412032E	NGS412035E ^④	NGS412036E ^④	—	NGS412039E ^④	—
	4 ^⑤	NGS712033E	NGS712032E	—	—	NGS712038E	—	—
	4 ^⑥	NGS912033E	NGS912032E	—	—	NGS912038E	—	—

Molded Case Switches ^{⑦⑧⑨⑩} U_e Maximum 690 Vac

Ampere Rating	Three-Pole	Catalog Number	Four-Pole	Catalog Number
800	MCS with Imperial line and load terminals	NGK3080KSE	MCS with Imperial line and load terminals	NGK4080KSE
1200	MCS with Imperial line and load terminals	NGK3120KSE	MCS with Imperial line and load terminals	NGK4120KSE
1250	MCS with Imperial line and load terminals	NGK3125KSE	MCS with Imperial line and load terminals	NGK43125KSE

Notes

- ① For AC use only.
- ② NG MCCBs are suitable for 40 °C or 50 °C applications. Order suffix V3 to eliminate standard 40 °C labeling.
- ③ Required for four-wire systems if neutral protection is desired. Sold separately.
- ④ Neutral 0% protected. NG, neutral in right pole; GN, neutral in left pole.
- ⑤ Neutral 100% protected (denoted by 7 in digit four); no neutral protection available with LSG or LSIG trip units.
- ⑥ Neutral 0%/60%/100% adjustable protection (denoted by 9 in digit four).
- ⑦ Non-UL listed NG 1250 with 1250 ampere trip unit is also available.
- ⑧ For AC use only. Molded case switch will trip above 14,000 amperes.
- ⑨ For two-pole applications, use outer poles of three-pole molded case switch.
- ⑩ Add "M" to above catalog numbers for metric tapped line/load conductors.

Type NGH High Interrupting Capacity— U_e Max. 690 Vac, 65 kA I_{cu} at 480 Vac or 415 VacSee 310+ adjustability specifications on **Page V4-T2-176**.

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Circuit Breaker Frame Including Digitrip Electronic Trip Unit								
Maximum Continuous Ampere Rating at 40 °C ^{①②}	Number of Poles	LS	LSI	LSG	LSIG	ALSI	ALSIG	Neutral CT for LSG and LSIG ^③
800	2	NGH208033E	NGH208032E	NGH208035E	NGH208036E	—	—	—
	3	NGH308033E	NGH308032E	NGH308035E	NGH308036E	NGH308038E	NGH308039E	NGFCT120
	4	NGH408033E	NGH408032E	NGH408035E ^④	NGH408036E ^④	NGH408038E	NGH408039E ^④	—
	4 ^⑤	NGH708033E	NGH708032E	—	—	NGH708038E	—	—
	4 ^⑥	NGH908033E	NGH908032E	—	—	NGH908038E	—	—
1200	2	NGH212033E	NGH212032E	NGH212035E	NGH212036E	—	—	—
	3	NGH312033E	NGH312032E	NGH312035E	NGH312036E	NGH312038E	NGH312039E	NGFCT120
	4	NGH412033E	NGH412032E	NGH412035E ^④	NGH412036E ^④	—	NGH412039E ^④	—
	4 ^⑤	NGH712033E	NGH712032E	—	—	NGH712038E	—	—
	4 ^⑥	NGH912033E	NGH912032E	—	—	NGH912038E	—	—

Type NGC Very High Capacity— U_e Max. 690 Vac, 100 kA I_{cu} at 480 Vac or 415 VacSee 310+ adjustability specifications on **Page V4-T2-176**.

Circuit Breaker Frame Including Digitrip Electronic Trip Unit								
Maximum Continuous Ampere Rating at 40 °C ^{①②}	Number of Poles	LS	LSI	LSG	LSIG	ALSI	ALSIG	Neutral CT for LSG and LSIG ^③
800	2	NGC208033E	NGC208032E	NGC208035E	NGC208036E	—	—	—
	3	NGC308033E	NGC308032E	NGC308035E	NGC308036E	NGC308038E	NGC308039E	NGFCT120
	4	NGC408033E	NGC408032E	NGC408035E ^④	NGC408036E ^④	NGC408038E	NGC408039E ^④	—
	4 ^⑤	NGC708033E	NGC708032E	—	—	NGC708038E	—	—
	4 ^⑥	NGC908033E	NGC908032E	—	—	NGC908038E	—	—
1200	2	NGC212033E	NGC212032E	NGC212035E	NGC212036E	—	—	—
	3	NGC312033E	NGC312032E	NGC312035E	NGC312036E	NGC312038E	NGC312039E	NGFCT120
	4	NGC412033E	NGC412032E	NGC412035E ^④	NGC412036E ^④	—	NGC412039E ^④	—
	4 ^⑤	NGC712033E	NGC712032E	—	—	NGC712038E	—	—
	4 ^⑥	NGC912033E	NGC912032E	—	—	NGC912038E	—	—

Type NGU Ultra High Capacity— U_e Max. 600 Vac, 150 kA at 480 VacSee 310+ adjustability specifications on **Page V4-T2-176**.

Circuit Breaker Frame Including Digitrip Electronic Trip Unit								
Maximum Continuous Ampere Rating at 40 °C ^{①②}	Number of Poles	LS	LSI	LSG	LSIG	ALSI	ALSIG	Neutral CT for LSG and LSIG ^③
800	3	NGU308033E	NGU308032E	NGU308035E	NGU308036E	NGU308038E	NGU308039E	NGFCT120

Notes

- ^① For AC use only.
- ^② NG MCCBs are suitable for 40 °C or 50 °C applications. Order suffix V3 to eliminate standard 40 °C labeling.
- ^③ Required for four-wire systems if neutral protection is desired. Sold separately.
- ^④ Neutral 0% protected. NG, neutral in right pole; GN, neutral in left pole.
- ^⑤ Neutral 100% protected (denoted by 7 in digit four); no neutral protection available with LSG or LSIG trip units.
- ^⑥ Neutral 0%/60%/100% adjustable protection (denoted by 9 in digit four).

Accessories Selection Guide and Ordering Information

Line and Load Terminals

N-Frame circuit breakers do not include terminals as standard. When copper or Cu/Al terminals are required, order by catalog number.

Line and Load Terminals

Maximum Breaker Amperes	Terminal Body Material	Wire Type	AWG Wire (Number of Conductors)	AWG Wire Catalog Number ^①	Metric Wire Range mm ²	Metric Catalog Number ^①
Standard Cu/Al Pressure Terminals						
700	Aluminum	Cu/Al	1–500 (2)	TA700NB1	50–240	TA700NB1M
1000	Aluminum	Cu/Al	3/0–400 (3)	TA1000NB1	95–185	TA1000NB1M
1200	Aluminum	Cu/Al	4/0–500 (4)	TA1200NB1	120–240	TA1200NB1M
1200	Aluminum	Cu/Al	500–750 (3)	TA1201NB1	300–400	TA1201NB1M
Optional Copper and Cu/Al Pressure Type Terminals						
700	Copper	Cu	2/0–500 (2)	T700NB1	70–240	T700NB1M
1000	Copper	Cu	3/0–500 (3)	T1000NB1	95–240	T1000NB1M
1200	Copper	Cu	3/0–400 (4)	T1200NB3	95–185	T1200NB3M

310+ Electronic Trip Unit Accessories

Description	Catalog Number
Electronic portable test kit	MTST230V
Trip unit tamper protection wire seal	5108A03H01
External neutral sensor (1200 A) ^②	NGFCT120
External neutral sensor (800 A) ^②	NGFCT120
Breaker-mount cause-of-trip indication	TRIP-LED
Breaker-mount ammeter module	DIGIVIEW
Remote-mount ammeter module	DIGIVIEWR06

Base Mounting Hardware

Base mounting hardware is included with a circuit breaker or molded case switch.

Base Mounting Hardware ^③

Number of Poles	Description	Catalog Number
Three- and four-pole	Imperial hardware: 0.3125–18 x 1.25 pan-head steel screws and lock washers	BMH5
Three- and four-pole	Metric hardware: M8 pan-head steel screws and lock washers	BMH5M

Terminal Shield

Terminal Shield

Description	Catalog Number
Three-pole terminal shield	NTS3K

Conductor Extension Kit

Conductor Extension Kit ^④

Description	Catalog Number
Three-pole both ends Metric	5104A24G04
Three-pole both ends English	5104A24G02

Keeper Nut

Not required on NG-Frame. Terminals are threaded.

Handle Extension

Included with breaker. Additional handle extensions are available.

Handle Extension

Description	Catalog Number
Single handle extension	HEX5

Interphase Barriers

The interphase barriers provide additional electrical clearance between circuit breaker poles for special termination applications. Barriers are high dielectric insulating plates that are installed in the molded slots between the terminals. (Field installation only.)

Interphase Barriers

Description	Catalog Number
Interphase barriers ^④	IPB5

Notes

- ^① Single terminals individually packed.
- ^② Required for four-wire systems if neutral protection is desired. Sold separately.
- ^③ Metric hardware included with breaker.
- ^④ Included as standard on 100% rated 1200 A breakers only.

Accessories

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Allowable Accessory Combinations

Different combinations of accessories can be supplied, depending on the types of accessories and the number of poles in the circuit breaker.

NG-Frame Accessories

Description	Reference Page	Three-Pole			Four-Pole			Neu.
		Left	Center	Right	Left	Center	Right	
Internal Accessories (Only One Internal Accessory Per Pole)								
Alarm lockout (Make/Break)	V4-T2-213	●		■	●		■	
Auxiliary switch (1A, 1B)	V4-T2-213	●		■	●		■	
Auxiliary switch (2A, 2B)	V4-T2-213	●		■	●		■	
Auxiliary switch and alarm switch combination	V4-T2-213	●		■	●		■	
Shunt trip—standard	V4-T2-213	■			■			
Undervoltage release mechanism	V4-T2-214	■			■			
External Accessories								
Base mounting hardware	V4-T2-173	●	●	●	●	●	●	●
Interphase barriers	V4-T2-173	●	●	●	●	●	●	●
Non-padlockable handle block	V4-T2-211		■			■		
Padlockable handle lock hasp	V4-T2-211	□		□	□		□	
Key interlock kit	V4-T2-211	□		□	□		□	
Sliding bar interlock—requires two breakers	V4-T2-211	●	●	●				
Electrical operator	V4-T2-211	●	●	●	●	●	●	●
Plug-in adapters	V4-T2-218	●	●	●	●	●	●	●
Rear connecting studs	V4-T2-211	●	●	●	●	●	●	●
Handle mechanisms	V4-T2-496	●	●	●	●	●	●	●
Drawout cassette	V4-T2-219	●	●	●	●	●	●	●
Handle extension	V4-T2-173	●	●	●	●	●	●	●
Ammeter/cause of trip display	V4-T2-210	●	●	●	●	●	●	●
Cause of trip LED module	V4-T2-210	●	●	●	●	●	●	●
Digitrip 310+ test kit	V4-T2-210	●	●	●	●	●	●	●
Modifications (Refer to Eaton)								
Moisture fungus treatment	V4-T2-209	●	●	●	●	●	●	●
Freeze-tested circuit breakers	—	●	●	●	●	●	●	●
Marine/Naval application, UL 489 Supplement SA and SB	①	●	●	●	●	●	●	●

Legend

- Applicable in indicated pole position
- May be mounted on left or right pole—not both
- Accessory available/modification available

Note

① Contact Eaton.

Technical Data and Specifications

Interrupting Capacity Ratings

UL 489/IEC 60947-2 Interrupting Capacity Ratings ^①

Circuit Breaker Type	Number of Poles	Interrupting Capacity (kA Symmetrical Amperes)								
		Volts AC (50/60 Hz)								
		240 (UL)	220–240		380–415		480	600	690	
			I _{cu}	I _{cs}	I _{cu}	I _{cs}			I _{cu}	I _{cs}
NGS ①	2, 3, 4	65	85	85	50	50	50	25	20	10
NGH	2, 3, 4	100	100	100	70	50	65	35	25	13
NGC	2, 3, 4	200	200	100	100	50	100	65	35	18
NGU	3, 4	200	—	—	—	—	150	65	—	—

NG-Frame Digitrip Specifications

NG 310+ Specifications

Description	Specification
Trip Unit Type	Digitrip RMS 310+
Breaker Type	
Frame designation	NG
Frames available	800 A, 1200 A
Continuous current range (A)	320–1200A
Ground fault pickup (A)	160–1200A
Interrupting capacities at 480 Vac (kAIC)	35, 65, 100, 150
100% rated	Yes
Protection	
Ordering options	LS, LSI, LSG, LSIG, ALSI, ALSIG
Arcflash reduction maintenance system (or maintenance mode)	Yes
Interchangeable trip unit	No
High load alarm (suffix B20) ^②	Yes
Ground fault alarm with trip (suffix B21) ^②	Yes
Ground fault alarm, no trip (suffix B22) ^②	Yes
Zone selective interlocking (suffix ZG)	LSI, LSIG, ALSI, ALSIG
Cause of trip indication	Yes
Thru-cover accessories	No

Notes

^① 1600 amperes is not a UL or CSA listed rating. 1200 amperes is the maximum UL and CSA rating for NG.

^② B2x suffixes cannot be combined with B2x suffixes.

NG 310+ Adjustability Specifications

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310+ Settings		NG Frame	
		800 A	1200 A
I_r = continuous current or long delay pickup (amperes) (All 310+)	I_r		
	A	320	500
	B	400	600
	C	450	630
	D	500	700
	E	600	800
	F	630	900
	G	700	1000
	H (= I_n)	800	1200
t_r = long delay time (seconds) (All 310+)	Position 1	2	2
	Position 2	4	4
	Position 3	6	7
	Position 4	8	10
	Position 5	10	12
	Position 6	12	15
	Position 7	14	20
	Position 8	14	24
I_{sd} (x I_r) = short delay pickup (All 310+)	Position 1	2x	2x
	Position 2	3x	3x
	Position 3	4x	4x
	Position 4	5x	5x
	Position 5	6x	6x
	Position 6	7x	7x
	Position 7	8x	8x
	Position 8	9x	9x
	Position 9	9x	9x
t_{sd} = short delay time I^2t (milliseconds) (LS, LSG)	Fixed	67 at 10x	67 at 10x
t_{sd} = short delay time flat (milliseconds) (LSI, LSIG, ALSI, ALSIG) ①	Position 1	Inst	Inst
	Position 2	120	120
	Position 3	300	300
I_g = ground fault pickup (amperes) (LSG, LSIG, ALSIG)	Position 1	160	240
	Position 2	240	360
	Position 3	320	480
	Position 4	480	720
	Position 5	640	960
	Position 6	800	1200
t_g = ground fault delay time (milliseconds) (LSG, LSIG, ALSIG)	Position 1	Inst	Inst
	Position 2	120	120
	Position 3	300	300
Independently Adjustable Instantaneous (I_i) setting (ALSI, ALSIG)	Yes	2.5x, 4x, 6x, 7x, 8x, 10x, 18x	2.5x, 4x, 6x, 7x, 8x, 10x, 12x
Maintenance Mode (remote) pickup ($2.5 \times I_n$) (ALSI, ALSIG) ②	Fixed	2.5x	2.5x

Notes

① 50 ms for ALSI and ALSIG trip units.

② Maintenance Mode is enabled remotely using a 24 Vdc circuit.

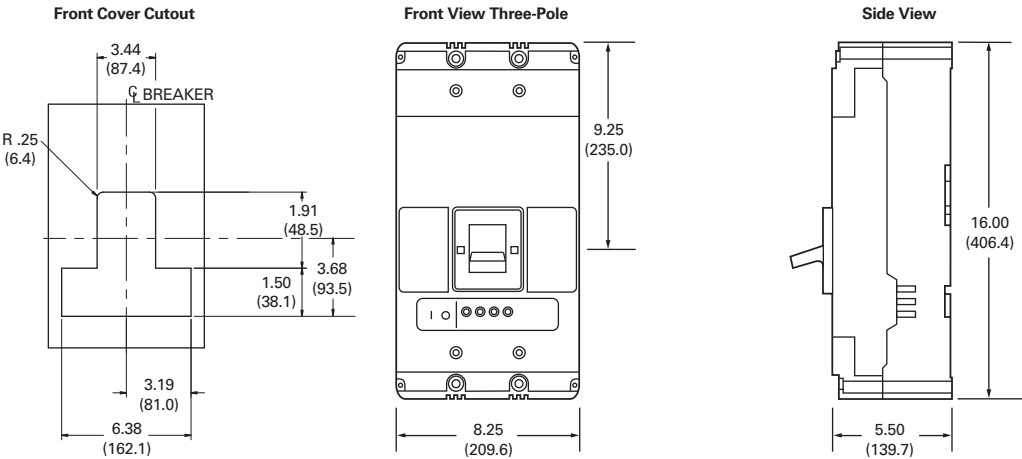
Dimensions and Weights

Approximate Dimensions in Inches (mm)

NG-Frame

Number of Poles	Width	Height	Depth
3	8.25 (209.6)	16.00 (406.4)	5.50 (139.7)
4	11.13 (282.6)	16.00 (406.4)	5.50 (139.7)

NG-Frame



Approximate Shipping Weight in Lbs (kg)

NG-Frame

Breaker Type	Complete Breaker	
	Three-Pole	Four-Pole
NGS, NGH, NGC	45 (20.4)	58 (26.3)