

Series C® N-Frame



Typical Series C N-Frame Circuit Breaker

- All N-frame circuit breakers are suitable for reverse feed use.

Interrupting Capacity Ratings

UL489 Interrupting Capacity Ratings^①

Circuit Breaker Type	Number of Poles	Interrupting Capacity (Symmetrical Amperes) (kA)					Page Number
		Volts Ac (50/60 Hz)					
		240	277	480	600	125	
ND	2, 3, 4	65	—	50	25	—	77, 83
CND ^②	2, 3, 4	65	—	50	25	—	80, 84
HND	2, 3, 4	100	—	65	35	—	78, 83
CHND ^②	2, 3, 4	100	—	65	35	—	81, 84
NDC	2, 3, 4	200	—	100	50	—	79, 83
CNDC ^②	2, 3, 4	200	—	100	50	—	82, 84



IEC 947-2 Interrupting Capacity Ratings^①

Circuit Breaker Type	Number of Poles	Interrupting Capacity (Symmetrical Amperes) (kA)			Page Number
		Volts Ac (50/60 Hz)			
		240	415	690	
ND	2, 3, 4	85	50	20	77, 83
		85	50	10	
CND ^②	2, 3, 4	85	50	20	80, 84
		85	50	10	
HND	2, 3, 4	100	70	25	78, 83
		100	50	13	
CHND ^②	2, 3, 4	100	70	25	81, 84
		100	50	13	
NDC	2, 3, 4	200	100	35	79, 83
		100	50	18	
CNDC ^②	2, 3, 4	200	100	35	82, 84
		100	50	18	

① Utilization Category A circuit breakers.

② 100% rated breakers.

Series C® N-Frame

N-Frame Digitrip Selection Guide

Trip Unit Type	Digitrip RMS 310		Digitrip OPTIM 550	Digitrip OPTIM 750	Digitrip OPTIM 1050
RMS Sensing	Yes		Yes	Yes	Yes
Breaker Type					
Frame	N		N	N	N
Ampere Range	400A-1200A		400A-1200A	400A-1200A	400A-1200A
Interrupting Rating @ 480V	50, 65, 100 (kA)		50, 65, 100 (kA)	50, 65, 100 (kA)	50, 65, 100 (kA)
Protection					
Ordering Options	LS, LSG	LSI, LSIG	LSI, LSIG, LSI(A)	LSI(A), LSIG	LSI(A), LISG
Fixed Rated Plug (I _n)	Yes	Yes	Yes	Yes	Yes
Overtemperature Trip	Yes	Yes	Yes	Yes	Yes
Long Delay Protection (L)					
Adjustable Rating Plug (I _n)	Yes	Yes	No	No	No
Long Delay Pickup	0.5-1.0 (I _n) ^①	0.5-1.0 (I _n) ^①	0.4-1.0 x (I _n)	0.4-1.0 x (I _n)	0.4-1.0 x (I _n)
Long Delay Time I ² T	12 Seconds	12 Seconds	2-24 Seconds	2-24 Seconds	2-24 Seconds
Long Delay Time I ⁴ T	No	No	1-5 Seconds	1-5 Seconds	1-5 Seconds
Long Delay Thermal Memory	Yes	Yes	Yes	Yes	Yes
High Load Alarm	No	No	No	0.5-1.0 x I _r	0.5-1.0 x I _r
Short Delay Protection (S)					
Short Delay Pickup	200-800% x (I _n)	200-800% x (I _n)	150-800% x (I _r)	150-800% x (I _r)	150-800% x (I _r)
Short Delay Time I ² T	100 ms	No	100-500 ms	100-500 ms	100-500 ms
Short Delay Time Flat	No	Inst-300 ms	100-500 ms	100-500 ms	100-500 ms
Short Delay Time Zone Selective Interlocking	No	No	Yes	Yes	Yes
Instantaneous Protection (I)					
Instantaneous Pickup	No	200-800% x (I _n)	200-800% x (I _n)	200-800% x (I _n)	200-800% x (I _n)
Discriminator	No	No	Yes	Yes	Yes
Instantaneous Override	Yes	Yes	Yes	Yes	Yes
Ground Fault Protection (G)					
Ground Fault Alarm	No	No	20-100% x (I _s)	20-100% x (I _s)	20-100% x (I _s)
Ground Fault Pickup	Varies by Frame ^②	Varies by Frame ^②	20-100% x (I _s)	20-100% x (I _s)	20-100% x (I _s)
Ground Fault Delay I ² T	No	No	100-500 ms	100-500 ms	100-500 ms
Ground Fault Delay Flat	Inst-500 ms	Inst-500 ms	100-500 ms	100-500 ms	100-500 ms
Ground Fault Zone Selective Interlocking	No	No	No	Yes	Yes
Ground Fault Thermal Memory	Yes	Yes	Yes	Yes	Yes
System Diagnostics					
Status LEDs	Yes	Yes	Yes	Yes	Yes
Cause of Trip LEDs	No	No	Yes	Yes	Yes
Magnitude of Trip Information	No	No	Yes	Yes	Yes
Remote Signal Contact – Ground Alarm	Yes	Yes	No	Yes	Yes
Local Auxiliary and Bell Alarm Contact	Optional	Optional	Optional	Included	Included
System Monitoring					
Digital Display	No	No	Yes ^②	Yes ^②	Yes ^②
Current	No	No	Yes	Yes	Yes
Power and Energy	No	No	No	No	Yes
Power Quality-Harmonics	No	No	No	No	Yes
Power Factor	No	No	No	No	Yes
Communications					
Cutler-Hammer PowerNet	No	No	No ^③	Yes	Yes
Testing					
Testing Method	Test Set		OPTIMizer, BIM, Cutler-Hammer PowerNet	OPTIMizer, BIM, Cutler-Hammer PowerNet	OPTIMizer, BIM, Cutler-Hammer PowerNet

① Adjust by rating plug.

② By OPTIMizer/BIM.

③ Cutler-Hammer PowerNet kit for field upgrade.

BIM = Breaker Interface Module

(A) = GF Alarm

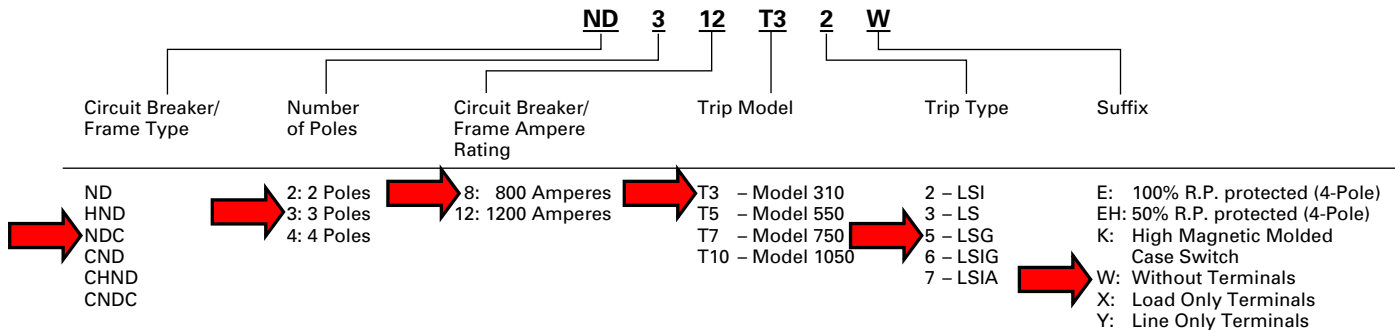
I_s = Sensor RatingI_n = Rating PlugI_r = Long Delay Pickup Setting

Series C® N-Frame

Catalog Numbering System

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.

Circuit Breaker/Frame Catalog Number



Dimensions/Weights

Dimensions, Inches (mm)

Number of Poles	Width	Height	Depth
2, 3	8.25 (210)	16 (407)	5.5 (140)
4	11.125 (283)	16 (407)	5.5 (140)

Approximate Shipping Weight, Lbs. (kg)

Breaker Type	Complete Breaker		
	Number of Poles		
	2	3	4
ND, HND, NDC	37 (16.783)	45 (20.412)	58 (26.308)

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.

	Reference Page	3-Pole			4-Pole			
		Left	Center	Right	Left	Center	Right	Neu.
Internal Accessories (Only One Internal Accessory Per Pole)①								
Alarm Lockout (Make/Break)	141	■		■	■		■	
Alarm Lockout (2Make/2Break)	141	■		■	■		■	
Auxiliary Switch (1A, 1B)	144	■		■	■		■	
Auxiliary Switch (2A, 2B)	144	■		■	■		■	
Auxiliary Switch (3A, 3B)	144	■		■	■		■	
Auxiliary Switch (1A 1B) and Alarm Switch Combination	146	■		■	■		■	
Auxiliary Switch (2A 2B) and Alarm Switch Combination	146	■		■	■		■	
Shunt Trip – Standard	150	■			■			
Shunt Trip – Low Energy	152	■			■			
Undervoltage Release Mechanism	158	■			■			
Cutler-Hammer PowerNet Communications Kit (OPTIM 550)	160			■				

External Accessories

Base Mounting Hardware	163		●				●	
Interphase Barriers	166		●				●	
Non-Padlockable Handle Block	168		■				■	
Padlockable Handle Lock Hasp	169	□		□	□		□	
Key Interlock Kit	170	□		□	□		□	
Sliding Bar Interlock – Requires Two Breakers	171		●				●	
Walking Beam Interlock – Requires Two Breakers	171		●				●	
Electrical (Motor) Operator	173		●				●	
Plug-in Adapters	174		●				●	
Rear Connecting Studs	176		●				●	
Panelboard Connecting Straps	177		●				●	
Handle Mechanisms	178		●				●	
Handle Extension	182		●				●	
Solid-State (Electronic) Portable Test Kit	184		●				●	

OPTIM System Components 3-Poles

Ground Fault Alarm Unit	184							
Potential Transformer Module	184							
Breaker Interface Module (BIM)	185							
Digitrip OPTIMizer	185							
Auxiliary Power Module	185							
Cutler-Hammer PowerNet Software	185							

Modifications (Refer to Cutler-Hammer)

Special Calibration	186		●				●	
Moisture Fungus Treatment	186		●				●	
Freeze-Tested Circuit Breakers	186		●				●	
Marine Application	186		●				●	

■ Applicable in indicated pole position

□ May be mounted on left or right pole – not both

● Accessory available/Modification available

① OPTIM 750 and 1050 are factory sealed and do not have the right pole available for accessories.