

Catalog Number Selection

Table 33-91. Freedom Catalog Numbering System

A N 1 4 A N 0 A 3 E 0 0 5									
Device Type		Standard		Device Assembly Configuration		OLR Type		Contactor Frame Size ①	
A = Starter C = Contactor		E = IEC N = NEMA		70 = Multi-Speed 1 = Non-reversing 5 = Reversing		4 = Starter w/C396 Electronic Overload 5 = Contactor only — no overload relay 6 = Starter w/C306 Bi-Metal OLR 7 = Starter w/C316 Bi-Metal OLR 8 = Starter w/IT. SSOLR		NEMA SizeContinuous Amp Rating	
								A = 009 B = 018 D = 127 G = 245 K = 390 N = 4135 S = 5270 T = 6540 U = 7810 V = 81215	
								NEMA Enclosure	
								N = Open	
								For Starters	
								Starter Mounting Option	
								0 = Horizontal V = Vertical	
								For Contactors Only	
								2 = 2-pole 3 = 3-pole 4 = 4-pole 5 = 5-pole	
				</					

① For Contactor Only orders, add **B** to end of Catalog Number if NEMA Size 00 – 2, 6.

② 3E, 4E feature set only.

③ Uses CT with C396 45 mm OLR, 3E, 4E feature set only.

④ Not required.

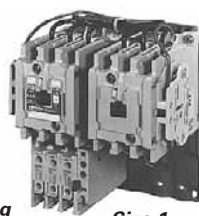
⑤ NEMA Sizes 00 and 0 only.

⑥ NEMA Sizes 00 and 0 only. Sizes 1 – 8 are 24/60 only.

Product Selection

When Ordering Supply

- Catalog Number
- Heater pack number (see selection table, **Pages 33-117 – 33-118**) or full load current.

Size 0
Non-reversing
StarterSize 1
Reversing
StarterSize 3
Vertical
Reversing
Starter

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Table 33-101. Type AN16/AN56 NEMA — Manual or Automatic Reset Overload Relay — Non-reversing and Reversing

NEMA Size	Continuous Ampere Rating	Service-Limit Current Rating ③ (Amperes)	Maximum UL Horsepower ②						3-Pole Non-reversing ①		3-Pole Reversing ①	Vertical Reversing ①	Price U.S. \$
			1-Phase		3-Phase				Catalog Number	Price U.S. \$	Catalog Number	Catalog Number	
			115V	230V	208V	240V	480V	600V					
00	9	11	1/3	1	1-1/2	1-1/2	2	2	AN16AN0_C		AN56AN0_C	—	
0	18	21	1	2	3	3	5	5	AN16BN0_C		AN56BN0_C	AN56BNV0_	
1	27	32	2	3	7-1/2	7-1/2	10	10	AN16DN0_B		AN56DN0_B	AN56DNV0_	
2	45	52	3	7-1/2	10	15	25	25	AN16GN0_B		AN56GN0_B	AN56GNV0_	
3	90	104	—	—	25	30	50	50	AN16KN0_		AN56KN0_	AN56KNV0_	
4	135	156	—	—	40	50	100	100	AN16NN0_		AN56NN0_	AN56NNV0_	
5	270	311	—	—	75	100	200	200	AN16SN0_B		AN56SN0_B	—	
6	540	621	—	—	150	200	400	400	AN16TN0_C		AN56TN0_C	—	
7	810	932	—	—	200	300	600	600	AN16UN0_B		AN56UN0_B	—	
8 ④	1215	1400	—	—	400	450	900	900	AN16VN0_B		AN56VN0_B	—	

Note: Starter Catalog Numbers do not include heater packs. Select one carton of three heater packs. Heater pack selection, **Pages 33-117 – 33-118**.

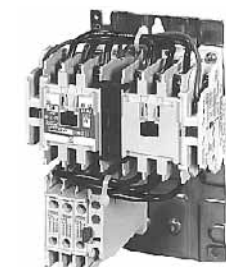
① Underscore (_) indicates coil suffix required, see **Table 33-102**.

② Maximum horsepower rating of starters for 380V 50 Hz applications:

NEMA Size	00	0	1	2	3	4	5	6	7	8
Horsepower	1-1/2	5	10	25	50	75	150	300	600	900

③ The service-limit current ratings represent the maximum rms current, in amperes, which the controller shall be permitted to carry for protracted periods in normal service. At service-limit current ratings, temperature rises shall be permitted to exceed those obtained by testing the controller at its continuous current rating. The current rating of overload relays or trip current of other motor protective devices used shall not exceed the service-limit current rating of the controller.

④ Common control. For separate 120V control, insert letter **D** in 7th position of listed Catalog Number. EXAMPLE: AN56VND0CB.

NEMA Size 0
Cat. No. AN56BN0AC

Magnet Coils — AC or DC

Starter coils listed in this section also have a 50 Hz rating as shown in the adjacent table. Select required starter by Catalog Number and replace the magnet coil alpha designation in the Catalog Number () with the proper Code Suffix from the adjacent table.

For Sizes 00 – 2 and 5 – 8, the magnet coil alpha designation will be the next to last digit of the listed Catalog Number. EXAMPLE: For a 380V, 50 Hz coil, change AN16BN0_C to AN16BN0LC. For all other sizes, the magnet coil alpha designation will be the last digit of the listed Catalog Number.

For **DC Magnet Coils**, see Accessories, **Pages 33-98 – 33-99**.

Table 33-102. AC Suffix Code

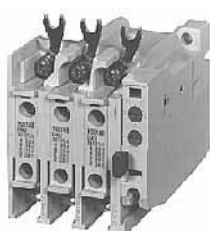
Coil Volts and Hertz	Code Suffix
120/60 or 110/50	A
240/60 or 220/50	B
480/60 or 440/50	C
600/60 or 550/50	D
208/60	E
277/60	H
208 – 240/60 ^⑤	J
240/50	K
380 – 415/50	L
550/50	N
24/60, 24/50 ^⑥	T
24/50	U
32/50	V
48/60	W
48/50	Y

⑤ NEMA Sizes 00 and 0 only.

⑥ NEMA Sizes 00 and 0 only. Sizes 1 – 8 are 24/60 only.

Technical Data.....	Pages 33-89 – 33-91
Overload Relay	Page 33-113
Dimensions	Pages 33-106 – 33-108
Special Modifications ...	Page 33-100
Accessories	Pages 33-92 – 33-100
Heater Packs	Pages 33-117 – 33-118
Discount Symbol	1CD1

Product Selection



75A Overload
Cat. No. C306GN3B



75A Overload
Cat. No. C306GT3B



32A Overload
Cat. No. C306DT3B



32A Overload
Cat. No. C306DN3B

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Table 33-168. C306 Thermal Overload Relays

For Use with Freedom Series Contactors	Maximum Ampere Rating	Number of Poles	Open Type		NEMA 1 Enclosed	
			Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$
00, 0	32 ②	3	C306DN3B		C306DG3B	
1, 2	75 ②	3	C306GN3B		C306GG3B	
3	105 ③	3	C306KN3		—	
4	144 ③	3	C306NN3			
5 – 8 ①	—	—	—			

① NEMA Sizes 5 – 8 use the 32A overload in conjunction with CTs.

② Series B overload relays have load lugs built into relay base and will only accept Series B heater packs. These relays can be directly attached to contactor or they can be DIN rail or panel mounted using adapter on **Page 33-115**.

③ These relays can be panel mounted only.

Table 33-169. C306 Thermal Overload Relays

For Stand-Alone Applications	Maximum Ampere Rating	Number of Poles	Open Type	
			Catalog Number	Price U.S. \$
00, 0, 1 ④	32	3	C306DT3B	
1 ④	75	3	C306GT3B	
3 ⑤	105	3	C306KN3	
4 ⑤	144	3	C306NN3	
5 – 8 ⑥	—	—	—	

④ Overload relay assembled with mounting adapter for DIN rail or panel mount.

⑤ Panel mount only.

⑥ NEMA Sizes 5 – 8 use the 32A overload in conjunction with CTs.



Heater Pack
H2001B – H2017B



Heater Pack
H2101B – H2117B



Heater Pack
H2018 – H2024

Heater Pack Selection

Heater packs H2001B to H2017B and H2101B to H2117B are to be used only with Series B overload relays Catalog Numbers C306DN3B (Part No. 10-7016) and C306GN3B (Part No. 10-7020). The load lugs are built into the overload relay base to allow load wiring prior to heater pack installation. The previous heater design had integral load lugs. The Series B heater packs are electrically equivalent to the previous heater design. Heaters H2018-3 to H2024-3 have not changed.

Table 33-170. Starters with Series B Overload Relays

NEMA — AN Type		IEC — AE Type	
Size	Series	Size	Series
00 – 0	C	A – F	C
1 – 2	B	G – K	B
5	B		
6	C		
7 – 8	B		

Note: The series of a starter is the last digit of the listed Catalog Number. EXAMPLE: AN16DN0AB.

Technical Data **Page 33-114**
Dimensions **Page 33-116**
Replacement Parts **Pages 33-115 – 33-116**
Discount Symbol **1CD1C**

Relays — Thermal Overload

Table 33-171. Standard Trip — Class 20 Heater Selection

Overload Relay Size	Motor Full Load Ampere Rating				Catalog Number (Includes 3 Heater Packs) ①	Price U.S. \$
	Dial Position					
	A	B	C	D		

For Use with NEMA Sizes 00 – 0 Series C, NEMA Sizes 1 – 2 Series B; IEC Sizes A – F Series C, IEC Sizes G – K Series B

32A or 75A	.254	.306	.359	.411	H2001B-3	
	.375	.452	.530	.607	H2002B-3	
	.560	.676	.791	.907	H2003B-3	
	.814	.983	1.15	1.32	H2004B-3	
	1.20	1.45	1.71	1.96	H2005B-3	
	1.79	2.16	2.53	2.90	H2006B-3	
	2.15	2.60	3.04	3.49	H2007B-3	
	3.23	3.90	4.56	5.23	H2008B-3	
	4.55	5.50	6.45	7.40	H2009B-3	
	6.75	8.17	9.58	11.0	H2010B-3	
	9.14	10.8	12.4	14.0	H2011B-3	
	14.0	16.9	19.9	22.8	H2012B-3	
	18.7	22.7	26.7	30.7	H2013B-3	
	23.5	28.5	33.5	38.5	H2014B-3	

For Use with NEMA Size 2, IEC Sizes G – K Only — Series B

75A	29.0	34.0	39.1	44.1	H2015B-3	
	39.6	45.5	51.5	57.4	H2016B-3	
	53.9	60.9	67.9	74.9	H2017B-3	

For Use with NEMA Sizes 3 – 4, IEC Sizes L – N Only — Series A

105A or 144A	8.0	9.2	10.3	11.5	H2025-3	
	11.4	12.8	14.3	15.7	H2026-3	
	14.3	15.7	17.4	19.0	H2027-3	
	18.0	20.2	22.3	24.5	H2018-3	
	24.6	27.6	30.5	33.4	H2019-3	
	33.5	37.5	41.5	45.6	H2020-3	
	45.7	51.2	56.7	62.1	H2021-3	
	62.2	69.7	77.1	84.6	H2022-3	
	84.7	95.0	105.0	115.0	H2023-3	
	106.0	118.0	131.0	144.0	H2024-3	

For Use with Size 5 Starters — Series B and IEC P, R and S with 300/5 CT

32A ②	49	59	69	79	H2004B-3	
	72	87	103	118	H2005B-3	
	107	130	152	174	H2006B-3	
	129	156	182	209	H2007B-3	
	194	234	274	—	H2008B-3	

For Use with Size 6 Starters Only — Series B and IEC T – V with 600/5 CT

32A ②	144	174	205	235	H2005B-3	
	215	259	304	348	H2006B-3	
	258	312	365	419	H2007B-3	
	388	468	547	627	H2008B-3	

For Use with Size 7 Starters Only — Series B and IEC W – X with 1000/5 CT

32A ②	163	197	230	264	H2004B-3	
	240	290	342	392	H2005B-3	
	358	432	506	580	H2006B-3	
	430	520	608	698	H2007B-3	
	646	780	912	—	H2008B-3	

For Use with Size 8 Starters Only — Series B and IEC Z with 1500/5 CT

32A ②	244	295	345	396	H2004B-3	
	360	435	513	588	H2005B-3	
	537	648	759	870	H2006B-3	
	645	780	912	1047	H2007B-3	
	969	1170	1368	—	H2008B-3	

① Heater packs are shipped 3 to a carton. Catalog Numbers are for 3 heater packs.

② Sizes 5 – 8 and IEC P – Z use the 32A overload relay with current transformers.

Table 33-172. Fast Trip — Class 10 Heater Selection

Overload Relay Size	Motor Full Load Ampere Rating				Catalog Number (Includes 3 Heater Packs) ③	Price U.S. \$
	Dial Position					
	A	B	C	D		

For Use with NEMA Sizes 00 – 0 Series C, NEMA Sizes 1 – 2 Series B; IEC Sizes A – F Series C, IEC Sizes G – K Series B

32A or 75A	.260	.313	.367	.420	H2101B-3	
	.384	.464	.543	.623	H2102B-3	
	.570	.688	.806	.924	H2103B-3	
	.846	1.02	1.20	1.37	H2104B-3	
	1.28	1.55	1.83	2.10	H2105B-3	
	1.92	2.33	2.74	3.15	H2106B-3	
	2.30	2.79	3.28	3.77	H2107B-3	
	3.38	4.10	4.82	5.54	H2108B-3	
	4.96	6.03	7.09	8.16	H2109B-3	
	7.07	8.58	10.1	11.6	H2110B-3	
	9.60	11.2	12.8	14.4	H2111B-3	
	14.4	17.5	20.7	23.8	H2112B-3	
	18.7	21.8	25.0	28.1	H2113B-3	
	23.5	27.3	31.0	34.8	H2114B-3	

For Use with NEMA Size 2, IEC Sizes G – K Only — Series B

75A	28.3	32.6	37.0	41.3	H2115B-3	
	36.6	42.3	48.1	53.8	H2116B-3	
	53.8	60.8	67.9	74.9	H2117B-3	

For Use with Size 5 Starters Only — Series B and IEC P, R and S with 300/5 CT

32A ④	51	61	72	82	H2104B-3	
	77	93	110	126	H2105B-3	
	115	140	164	189	H2106B-3	
	138	167	197	226	H2107B-3	
	203	246	289	—	H2108B-3	

For Use with Size 6 Starters Only — Series B and IEC T – V with 600/5 CT

32A ④	154	186	220	252	H2105B-3	
	230	280	329	378	H2106B-3	
	276	335	394	452	H2107B-3	
	406	492	578	—	H2108B-3	

For Use with Size 7 Starters Only — Series B and IEC W – X with 1000/5 CT

32A ④	169	204	240	274	H2104B-3	
	256	310	366	420	H2105B-3	
	384	466	543	630	H2106B-3	
	460	558	656	754	H2107B-3	
	676	820	—	—	H2108B-3	

For Use with Size 8 Starters Only — Series B and IEC Z with 1500/5 CT

32A ④	254	306	360	411	H2104B-3	
	384	465	549	630	H2105B-3	
	576	699	822	945	H2106B-3	
	690	837	984	1131	H2107B-3	
	1014	1230	—	—	H2108B-3	

③ Heater packs are shipped 3 to a carton. Catalog Numbers are for 3 heater packs.

④ Sizes 5 – 8 and IEC P – Z use the 32A overload relay with current transformers.