

32A Overload—C306DN3B

2



### Relays—Thermal Overload

#### Product Description

C306 Overload Relays are designed for use with CE or CN non-reversing and reversing contactors. Four sizes are available for overload protection up to 144A.

#### Features

- Selectable manual or automatic reset operation
- Interchangeable heater packs adjustable  $\pm 24\%$  to match motor FLA and calibrated for use with 1.0 and 1.15 service factor motors. Heater packs for 32A overload relay will mount in 75A overload relay—useful in derating applications such as jogging
- Class 10 or 20 heater packs
- Load lugs built into relay base
- Bimetallic, ambient compensated operated. Trip free mechanism
- Electrically isolated NO-NC contacts (pull RESET button to test). (Electrical ratings see table on **Page V5-T2-46**)
- Overload trip indication
- Shrouded or fingerproof terminals to reduce possibility of electrical shock

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#### Standards and Certifications

- Meets UL 508 single-phasing requirements
- UL listed, CSA certified and NEMA compliance



Product Selection

C306 Thermal Overload Relays

C306DN3B



Contactor

NEMA Size	Maximum Ampere Rating	Number of Poles	Open Type Catalog Number	NEMA 1 Enclosed Catalog Number
00, 0	32 <sup>②</sup>	3	C306DN3B	C306DG3B
1, 2	75 <sup>②</sup>	3	C306GN3B	C306GG3B
3	105 <sup>③</sup>	3	C306KN3	—
4	144 <sup>③</sup>	3	C306NN3	—
5-8 <sup>①</sup>	—	—	—	—

C306GN3B



C306DT3B



Standalone Applications

NEMA Size	Maximum Ampere Rating	Number of Poles	Open Type Catalog Number
00, 0, 1 <sup>④</sup>	32	3	C306DT3B
1 <sup>④</sup>	75	3	C306GT3B
3 <sup>⑤</sup>	105	3	C306KN3
4 <sup>⑤</sup>	144	3	C306NN3
5-8 <sup>⑥</sup>	—	—	—

C306GT3B



Notes

- 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 V5-T2-44**.
- ③ These relays can be panel mounted only.
- 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.

# 2.1

## NEMA Contactors and Starters

### Freedom Series

2

#### 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.

#### Starters with Series B Overload Relays ①

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

Heater Pack  
H2001B–H2017B



#### Standard Trip—Class 20 Heater

Overload Relay Size	Motor Full Load Ampere Rating				Catalog Number ②
	Dial Position				
	A	B	C	D	
<b>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</b>					
32A or 75A	0.254	0.306	0.359	0.411	H2001B-3
	0.375	0.452	0.530	0.607	H2002B-3
	0.560	0.676	0.791	0.907	H2003B-3
	0.814	0.983	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	
<b>For Use with NEMA Size 2, IEC Sizes G-K Only, Series B</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

#### Notes

- ① The series of a starter is the last digit of the listed catalog number. Example: AN16DN0AB.
- ② Heater packs are shipped three to a carton. catalog numbers are for three heater packs.

**Heater Pack  
H2018–H2024**



### Standard Trip—Class 20 Heater, continued

Overload Relay Size	Motor Full Load Ampere Rating Dial Position				Catalog Number <sup>①</sup>
	A	B	C	D	
<b>For Use with NEMA Sizes 3–4, IEC Sizes L–N Only—Series A</b>					
105A or 144A	8.0	9.2	10.3	11.5	<b>H2025-3</b>
	11.4	12.8	14.3	15.7	<b>H2026-3</b>
	14.3	15.7	17.4	19.0	<b>H2027-3</b>
	18.0	20.2	22.3	24.5	<b>H2018-3</b>
	24.6	27.6	30.5	33.4	<b>H2019-3</b>
	33.5	37.5	41.5	45.6	<b>H2020-3</b>
	45.7	51.2	56.7	62.1	<b>H2021-3</b>
	62.2	69.7	77.1	84.6	<b>H2022-3</b>
	84.7	95.0	105.0	115.0	<b>H2023-3</b>
	106.0	118.0	131.0	144.0	<b>H2024-3</b>
<b>For Use with Size 5 Starters—Series B and IEC P, R and S with 300/5 CT</b>					
32A <sup>②</sup>	49	59	69	79	<b>H2004B-3</b>
	72	87	103	118	<b>H2005B-3</b>
	107	130	152	174	<b>H2006B-3</b>
	129	156	182	209	<b>H2007B-3</b>
	194	234	274	—	<b>H2008B-3</b>
<b>For Use with Size 6 Starters Only—Series B and IEC T–V with 600/5 CT</b>					
32A <sup>②</sup>	144	174	205	235	<b>H2005B-3</b>
	215	259	304	348	<b>H2006B-3</b>
	258	312	365	419	<b>H2007B-3</b>
	388	468	547	627	<b>H2008B-3</b>
<b>For Use with Size 7 Starters Only—Series B and IEC W–X with 1000/5 CT</b>					
32A <sup>②</sup>	163	197	230	264	<b>H2004B-3</b>
	240	290	342	392	<b>H2005B-3</b>
	358	432	506	580	<b>H2006B-3</b>
	430	520	608	698	<b>H2007B-3</b>
	646	780	912	—	<b>H2008B-3</b>
<b>For Use Size 8 Starters Only—Series B and IEC Z with 1500/5 CT</b>					
32A <sup>②</sup>	244	295	345	396	<b>H2004B-3</b>
	360	435	513	588	<b>H2005B-3</b>
	537	648	759	870	<b>H2006B-3</b>
	645	780	912	1047	<b>H2007B-3</b>
	969	1170	1368	—	<b>H2008B-3</b>

**Notes**

- ① Heater packs are shipped three to a carton, catalog numbers are for three heater packs.
- ② Sizes 5–8 and IEC P–Z use the 32A overload relay with current transformers.

Heater Pack  
H2101B–H2117B

## Fast Trip—Class 10 Heater

Overload Relay Size	Motor Full Load Ampere Rating Dial Position				Catalog Number <sup>①</sup>
	A	B	C	D	
<b>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</b>					
32A or 75A	0.260	0.313	0.367	0.420	H2101B-3
	0.384	0.464	0.543	0.623	H2102B-3
	0.570	0.688	0.806	0.924	H2103B-3
	0.846	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	
<b>For Use with Size 2, IEC Sizes G–K Only—Series B</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
<b>For Use with Size 5 Starters Only—Series B and IEC P, R and S with 300/5 CT</b>					
32A <sup>②</sup>	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
<b>For Use with Size 6 Starters Only—Series B and IEC T–V with 600/5 CT</b>					
32A <sup>②</sup>	154	186	220	252	H2105B-3
	230	280	329	378	H2106B-3
	276	335	394	452	H2107B-3
	406	492	578	—	H2108B-3
<b>For Use with Size 7 Starters Only—Series B and IEC W–X with 1000/5 CT</b>					
32A <sup>②</sup>	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
<b>For Use with Size 8 Starters Only—Series B and IEC Z with 1500/5 CT</b>					
32A <sup>②</sup>	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

**Notes**

- ① Heater packs are shipped three to a carton. catalog numbers are for three heater packs.  
 ② Sizes 5–8 and IEC P–Z use the 32A overload relay with current transformers.

**Accessories**

**DIN Rail and Panel Mounting Adapter**

These adapters are required when component overload relays are to be separately mounted. The terminal base adapter includes line terminals and connects with the overload relays on **Page V5-T2-39**.

**C306TB1**



**DIN Rail and Panel Mounting Adapter**

Description	Catalog Number
For 32A overload relay	<b>C306TB1</b>
For 75A overload relay	<b>C306TB2B</b> ①

**Locking Cover for Overload Relay—C306 Only**

Snap-on transparent or opaque plastic panel for covering access port to the overload relay trip setting dial—helps prevent accidental or unauthorized changes to trip and reset setting.

**Overload Relay Cover**



**Locking Cover for Overload Relay—C306 Only**

Description	Min. Order Qty. (Std. Pkg.)	Catalog Number
Clear cover, no accessibility	50	<b>C320PC3</b>
Gray cover, no accessibility with auto only nib	50	<b>C320PC4</b>
Gray cover, no accessibility with manual only nib	50	<b>C320PC5</b>
Gray cover with FLA dial accessibility, A, B, C, D positions and auto only nib	50	<b>C320PC6</b>
Gray cover with FLA dial accessibility, A, B, C, D positions and manual only nib	50	<b>C320PC7</b>

**Note**

① This Series B adapter will accept Series A or B overload relays (C306GN3 or C306GN3B), C306TB2 can only be used with C306GN3.

**Modifications**

**C306 Thermal Overload Relays with Mounting Adapter**

Consists of a thermal overload relay mounted to a terminal base adapter—permits fast and easy installation.

**C306 Thermal Overload Relays with Mounting Adapter**

Description	Catalog Number
C306DN3B + C306TB1	<b>C306DT3B</b>
C306GN3B + C306TB2B	<b>C306GT3B</b>