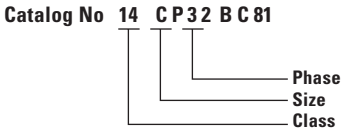
To Select Heater Catalog Number Use

- Product Class
- Controller Size
- Motor Amp
- Phase



1. Find heater table number below, using the Product Class, Controller Size and Phase. Heater table number is found in the column under the type of overload and phase.

2. Refer to the specified table and use the controller size and motor amps to select the heater catalog number.

a. If motor amps are not known, an approximate value may be found on the previous page. These values should be used with caution and only when motor amps are not available.

Heaters shown on the following pages provide a maximum trip rating of 125% of minimum motor amperes for 40˚C motors (service factor 1.15). For other motors (service factor 1.0), select the next lower listed heater catalog number within the designated table which provides a maximum trip rating of approximately 115%.

Overload relays do not provide protection against short circuits. To ensure proper coordination with short circuit protective device, select heaters from the information packaged with the control device.

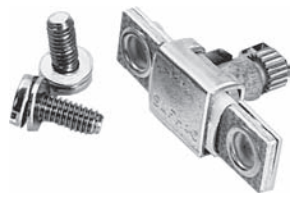
Class	Description	Size or Amperage	Controller Size Letter	Heater Table Number			
				Bimetal Standard Trip (Class 20)		Bimetal Quick Trip (Class 10)	
				Compensated E Heaters Green Reset		Compensated K Heaters Green Reset	
				1Ph	3Ph	1Ph	3Ph
SMF	Manual	All	—	See Page 9/122			
	Magnetic						
14, 22	Non-reversing, Reversing	00-4	**B–J**	213	233	313	332
17, 18 25, 26 30, 32① 83, 84 87, 89	Combination Reversing Combination Multi Speed Pump Controllers Motor Control Centers	0-4	**C-J**	—	233	—	332
48	Panel Mounted Overload Relay	25-180A	**D–J**	216	238	316	335

ESP200 starters do not require heater elements.

① **Overload Relay Selection Multi-Speed**
Each speed requires a separate set of overloads. The adjustment range must be selected on the basis of the full-load current for each particular speed.

Heater Elements, Class SMF

General



Heater Elements Class SMF

Ordering Information

1. Determine number of heater elements required from Table A.
2. Determine motor full load current and service factor.
   NOTE: If motor amps are unknown, an approximate value may be found on page 9/120. These values should be used with caution and only when motor amps are not available.
3. If the motor and controller are in the same ambient temperature:
   a. For 1.15 to 1.25 service factor motors use 100% of motor full load current for heater element selection.
   b. For 1.0 service factor motors use 90% of motor full load current for heater element selection.
   c. Heater elements are class 20.
4. If the motor and controller are in different ambient temperatures multiply motor full load current by the multiplier in Table B. Use the resultant full load current for heater element selection.
5. Select proper heater element from table below.
6. All tables are based on the operation of the motor and controller in the same ambient temperature, 40°C (104°F) or less. Always be certain the correct heater element is installed in the starter before operating the motor.

Heater Catalog Number	Motor Full-Load Current (Amps)	List Price $
SMFH01	0.157–0.173	
SMFH02	0.174–0.192	
SMFH03	0.193–0.212	
SMFH04	0.213–0.235	
SMFH05	0.236–0.261	
SMFH06	0.262–0.289	
SMFH07	0.290–0.321	
SMFH08	0.322–0.355	
SMFH09	0.356–0.399	
SMFH10	0.41–0.44	
SMFH11	0.45–0.49	
SMFH12	0.50–0.53	
SMFH13	0.54–0.58	
SMFH14	0.59–0.65	
SMFH15	0.66–0.71	
SMFH16	0.72–0.78	
SMFH17	0.79–0.85	
SMFH18	0.86–0.96	
SMFH19	0.97–1.04	
SMFH20	1.05–1.16	
SMFH21	1.17–1.25	
SMFH22	1.30–1.39	
SMFH23	1.38–1.54	
SMFH24	1.48–1.63	
SMFH25	1.57–1.75	
SMFH26	1.66–1.86	

Heater Catalog Number	Motor Full-Load Current (Amps)	List Price $
SMFH27	1.80–1.99	
SMFH28	1.96–2.15	
SMFH29	2.16–2.38	
SMFH30	2.39–2.75	
SMFH31	2.76–2.84	
SMFH32	2.85–3.06	
SMFH33	3.07–3.45	
SMFH34	3.46–3.70	
SMFH35	3.71–4.07	
SMFH36	4.08–4.32	
SMFH37	4.33–4.90	
SMFH38	4.91–5.35	
SMFH39	5.36–5.85	
SMFH40	5.86–6.41	
SMFH41	6.42–6.79	
SMFH42	6.80–7.57	
SMFH43	7.58–8.15	
SMFH44	8.16–8.98	
SMFH45	8.99–9.67	
SMFH46	9.68–9.95	
SMFH47	9.96–10.8	
SMFH48	10.9–12.1	
SMFH49	12.2–13.1	
SMFH50	13.2–13.9	
SMFH51	14.0–15.0	
SMFH52	15.1–16.0	

Table A
Number of Heater Elements

Device	Number of Heater Elements	Notes
SMFF*1 SMFF*2 SMFF*3 SMFF*4 SMFF*5 SMFF*6	1	All single pole and two pole SMF starters require only 1 Heater Element.
SMFF*22 SMFF*44	2	Duplex Unit. One Heater Element per starter.
SMFF*11 SMFF*22	2	Two Speed Starter. One Heater Element per speed.

Table B—Special Applications
Heater Element Selection

Continuous Duty Motor Service Factor	Ambient Temperature of Motor		
	Same as Controller Ambient	Constant 10°C (18°F) Higher Than Controller Ambient	Constant 10°C (18°F) Lower Than Controller Ambient
	Full Load Current Multiplier		
1.15 to 1.25	1.0	0.9	1.05
1.0	0.9	0.8	0.95

Table 213 for Class 14, 22 (1-Phase)

Full Load Amps			Heater Catalog No	List Price $
Size 00, 0, 1	Size 1P	Size 2, 2½		
0.37–0.40	—	—	**E3**	
0.41–0.44	0.41–0.44	—	**E4**	
0.45–0.47	0.45–0.47	—	**E5**	
0.48–0.52	0.48–0.52	—	**E6**	
0.53–0.57	0.53–0.57	—	**E7**	
0.58–0.62	0.58–0.62	—	**E8**	
0.63–0.69	0.63–0.69	—	**E9**	
0.70–0.74	0.70–0.74	—	**E11**	
0.75–0.81	0.75–0.81	—	**E12**	
0.82–0.85	0.82–0.85	—	**E13**	
0.86–0.93	0.86–0.93	—	**E14**	
0.94–1.03	0.94–1.03	—	**E16**	
1.04–1.11	1.04–1.11	—	**E17**	
1.12–1.22	1.12–1.22	—	**E18**	
1.23–1.34	1.23–1.34	—	**E23**	
1.35–1.53	1.35–1.53	—	**E24**	
1.54–1.71	1.54–1.71	—	**E26**	
1.72–1.92	1.72–1.92	—	**E27**	
1.93–2.12	1.93–2.12	—	**E28**	
2.13–2.24	2.13–2.24	—	**E29**	
2.25–2.43	2.25–2.43	—	**E31**	
2.44–2.57	2.44–2.57	—	**E32**	
2.58–2.86	2.58–2.86	—	**E33**	
2.87–3.16	2.87–3.16	—	**E34**	
3.17–3.35	3.17–3.35	—	**E36**	
3.36–3.58	3.36–3.58	—	**E37**	
3.59–3.90	3.59–3.90	—	**E38**	
3.91–4.25	3.91–4.25	—	**E39**	
4.26–4.77	4.26–4.77	—	**E41**	
4.78–5.35	4.78–5.35	—	**E42**	
5.36–5.76	5.36–5.76	—	**E44**	
5.77–6.33	5.77–6.33	—	**E46**	
6.34–6.98	6.34–6.98	—	**E47**	
6.99–7.37	6.99–7.37	—	**E48**	
7.38–7.71	7.38–7.71	—	**E49**	
7.72–8.51	7.72–8.51	—	**E50**	
8.52–9.31	8.52–9.31	—	**E51**	
9.32–10.1	9.32–10.1	—	**E52**	
10.2–10.9	10.2–10.9	—	**E53**	
11.0–12.2	11.0–12.2	—	**E54**	
12.3–13.5	12.3–13.5	—	**E55**	
13.6–15.7	13.6–15.7	—	**E56**	
15.8–17.3	15.8–17.3	19.4–22.0	**E57**	
17.4–19.9	17.4–19.9	22.1–23.5	**E60**	
20.0–21.7	20.0–21.7	23.6–25.0	**E61**	
21.8–23.4	21.8–23.4	25.1–27.0	**E62**	
23.5–24.0	23.5–23.7	27.1–28.9	**E65**	
—	23.8–25.1	29.0–31.0	**E66**	
—	25.2–27.9	31.1–34.8	**E67**	
—	28.0–32.2	34.9–36.9	**E69**	
—	32.3–34.0	37.0–43.9	**E70**	
—	—	44.0–46.0	**E72**	
—	—	46.1–48.3	**E73**	
—	—	48.4–55.0	**E74**	
—	—	55.1–60.0	**E76**	

Table 216 for Class 48

Full Load Amps			Heater Catalog No	List Price $
48DA, 48GA	48HA	48JA		
0.34–0.36	—	—	**E3**	
0.37–0.40	—	—	**E4**	
0.41–0.43	—	—	**E5**	
0.44–0.47	—	—	**E6**	
0.48–0.51	—	—	**E7**	
0.52–0.56	—	—	**E8**	
0.57–0.62	—	—	**E9**	
0.63–0.67	—	—	**E11**	
0.68–0.73	—	—	**E12**	
0.74–0.77	—	—	**E13**	
0.78–0.84	—	—	**E14**	
0.85–0.93	—	—	**E16**	
0.94–1.00	—	—	**E17**	
1.01–1.10	—	—	**E18**	
—	—	—	**E19**	
1.11–1.21	—	—	**E23**	
1.22–1.38	—	—	**E24**	
1.39–1.54	—	—	**E26**	
1.55–1.73	—	—	**E27**	
1.74–1.91	—	—	**E28**	
1.92–2.02	—	—	**E29**	
2.03–2.19	—	—	**E31**	
2.20–2.32	—	—	**E32**	
2.33–2.58	—	—	**E33**	
2.59–2.85	—	—	**E34**	
2.86–3.02	—	—	**E36**	
3.03–3.23	—	—	**E37**	
3.24–3.52	—	—	**E38**	
3.53–3.83	—	—	**E39**	
3.84–4.30	—	—	**E41**	
4.31–4.82	—	—	**E42**	
4.83–5.19	—	—	**E44**	
5.20–5.71	—	—	**E46**	
5.72–6.29	—	—	**E47**	
6.30–6.64	—	—	**E48**	
6.65–6.95	—	—	**E49**	
6.96–7.67	—	—	**E50**	
7.68–8.39	—	—	**E51**	
8.40–9.19	—	—	**E52**	
9.20–9.94	—	—	**E53**	
9.95–10.9	—	—	**E54**	
11.0–12.2	—	—	**E55**	
12.3–14.2	—	—	**E56**	
14.3–15.6	—	—	**E57**	
—	—	—	**E59**	
15.7–17.9	—	—	**E60**	
18.0–19.6	—	—	**E61**	
19.7–22.3	—	—	**E62**	
22.4–24.0	—	—	**E65**	
24.1–25.9	—	—	**E66**	
26.0–29.5	27.1–30.0	—	**E67**	
29.6–32.5	30.1–33.2	—	**E69**	
32.6–33.5	33.3–35.7	—	**E70**	
33.6–36.9	35.8–39.4	—	**E71**	
37.0–39.2	39.5–43.4	—	**E72**	
39.3–43.1	43.5–46.9	—	**E73**	
43.2–47.4	47.0–51.5	—	**E74**	
47.5–50.0	51.6–57.0	—	**E76**	
50.1–55.2	57.1–62.8	—	**E77**	
55.3–60.0	62.9–69.1	—	**E78**	
—	69.2–75.0	—	**E79**	
—	75.1–83.3	—	**E80**	
—	—	50.0–55.9	**E88**	
—	—	56.0–60.9	**E89**	
—	—	61.0–65.9	**E91**	
—	—	66.0–69.9	**E92**	
—	—	70.0–75.9	**E93**	
—	—	76.0–81.9	**E94**	
—	83.4–86.9	82.0–86.9	**E96**	
—	87.0–92.9	87.0–92.9	**E97**	
—	93.0–100.0	93.0–97.9	**E98**	
—	—	98.0–107.9	**E99**	
—	—	108.0–113.9	**E101**	
—	—	114.0–125.0	**E102**	
—	—	126.0–138.0	**E103**	
—	—	139.0–153.0	**E104**	
—	—	154.0–163.0	**E106**	
—	—	164.0–180.0	**E107**	

Full Load Motor Amps, 3-Phase, Trip Class 20 – Tables 233, 238

Selection

Table 233 for Class 14, 17, 18, 22, 25, 26, 30, 32, 83, 84, 87 (3-Phase)

Full Load Amps					Heater Catalog No	List Price $
Size 00, 0, 1	Size 1¾	Size 2, 2½	Size 3, 3½	Size 4		
0.38–0.40	—	—	—	—	**E6**	
0.41–0.43	—	—	—	—	**E7**	
0.44–0.48	—	—	—	—	**E8**	
0.49–0.53	—	—	—	—	**E9**	
0.54–0.57	—	—	—	—	**E11**	
0.58–0.62	—	—	—	—	**E12**	
0.63–0.66	—	—	—	—	**E13**	
0.67–0.72	—	—	—	—	**E14**	
0.73–0.80	—	—	—	—	**E16**	
0.81–0.85	—	—	—	—	**E17**	
0.86–0.92	—	—	—	—	**E18**	
0.93–0.99	—	—	—	—	**E19**	
1.00–1.08	—	—	—	—	**E23**	
1.09–1.23	—	—	—	—	**E24**	
1.24–1.37	—	—	—	—	**E26**	
1.38–1.54	—	—	—	—	**E27**	
1.55–1.69	—	—	—	—	**E28**	
1.70–1.80	—	—	—	—	**E29**	
1.81–1.94	—	—	—	—	**E31**	
1.95–2.07	—	—	—	—	**E32**	
2.08–2.26	—	—	—	—	**E33**	
2.27–2.54	2.27–2.54	—	—	—	**E34**	
2.55–2.69	2.55–2.69	—	—	—	**E36**	
2.70–2.88	2.70–2.88	—	—	—	**E37**	
2.89–3.14	2.89–3.14	—	—	—	**E38**	
3.15–3.40	3.15–3.40	—	—	—	**E39**	
3.41–3.81	3.41–3.81	—	—	—	**E41**	
3.82–4.26	3.82–4.25	—	—	—	**E42**	
4.27–4.62	4.26–4.62	—	—	—	**E44**	
4.63–5.09	4.63–5.09	—	—	—	**E46**	
5.10–5.61	5.10–5.61	—	—	—	**E47**	
5.62–5.91	5.62–5.91	—	—	—	**E48**	
5.92–6.15	5.92–6.15	—	—	—	**E49**	
6.16–6.70	6.16–6.70	—	—	—	**E50**	
6.71–7.54	6.71–7.54	—	—	—	**E51**	
7.55–8.29	7.55–8.29	—	—	—	**E52**	
8.30–8.99	8.30–8.99	—	—	—	**E53**	
9.00–9.85	9.00–9.85	—	—	—	**E54**	
9.86–10.4	9.86–10.4	—	—	—	**E55**	
10.5–12.0	10.5–12.0	10.5–12.0	—	—	**E56**	
12.1–13.6	12.1–13.6	12.1–13.6	—	—	**E57**	
13.7–15.6	13.7–15.6	13.7–15.6	—	—	**E60**	
15.7–17.0	15.7–17.0	15.7–17.1	—	—	**E61**	
17.1–18.4	17.1–19.4	17.2–19.4	—	—	**E62**	
18.5–19.4	19.5–20.9	19.5–20.9	—	—	**E65**	
19.5–21.3	21.0–22.2	21.0–22.2	—	—	**E66**	
21.4–24.4	22.3–25.3	22.3–25.3	—	—	**E67**	
24.5–25.9	25.4–26.9	25.4–26.9	30.0–33.5	—	**E69**	
26.0–27.0	27.0–30.2	27.0–30.2	33.6–36.4	—	**E70**	
—	—	—	36.5–39.6	—	**E71**	
—	30.3–33.3	30.3–33.3	—	—	**E72**	
—	33.4–36.0	33.4–35.3	39.7–43.6	—	**E73**	
—	—	—	43.7–46.5	—	**E73A**	
—	—	35.4–41.5	46.6–51.6	—	**E74**	
—	—	41.6–45.0	51.7–54.4	—	**E76**	
—	—	45.1–52.3	54.5–58.0	—	**E77**	
—	—	52.4–55.7	58.1–63.0	—	**E78**	
—	—	55.8–60.0	63.1–67.7	—	**E79**	
—	—	—	67.8–72.4	—	**E80**	
—	—	—	—	—	**E88**	
—	—	—	—	56.9–60.9	**E89**	
—	—	—	—	61.0–63.9	**E91**	
—	—	—	—	64.0–67.7	**E92**	
—	—	—	—	67.8–72.4	**E93**	
—	—	—	72.5–80.0	72.5–77.7	**E94**	
—	—	—	80.1–88.1	77.8–85.9	**E96**	
—	—	—	88.2–91.5	86.0–91.9	**E97**	
—	—	—	91.6–96.8	92.0–96.7	**E98**	
—	—	—	96.9–99.0	96.8–105	**E99**	
—	—	—	99.1–108.0	—	**E101**	
—	—	—	—	—	**E102**	
—	—	—	—	106–115	**E103**	
—	—	—	—	116–130	**E104**	

Table 238 for Class 48

Full Load Amps				Heater Catalog No	List Price $
48DC	48GC	48HA	48JA		
0.30–0.32	—	—	—	**E3**	
0.33–0.35	—	—	—	**E4**	
0.36–0.38	—	—	—	**E5**	
0.39–0.41	—	—	—	**E6**	
0.42–0.44	—	—	—	**E7**	
0.45–0.49	—	—	—	**E8**	
0.50–0.54	—	—	—	**E9**	
0.55–0.58	—	—	—	**E11**	
0.59–0.63	—	—	—	**E12**	
0.64–0.67	—	—	—	**E13**	
0.68–0.73	—	—	—	**E14**	
0.74–0.81	—	—	—	**E16**	
0.82–0.87	—	—	—	**E17**	
0.88–0.94	—	—	—	**E18**	
0.95–1.00	—	—	—	**E19**	
1.01–1.10	—	—	—	**E23**	
1.11–1.26	—	—	—	**E24**	
1.27–1.40	—	—	—	**E26**	
1.41–1.58	—	—	—	**E27**	
1.59–1.74	—	—	—	**E28**	
1.75–1.85	—	—	—	**E29**	
1.86–1.99	—	—	—	**E31**	
2.00–2.11	—	—	—	**E32**	
2.12–2.31	—	—	—	**E33**	
2.32–2.59	—	—	—	**E34**	
2.60–2.75	—	—	—	**E36**	
2.76–2.95	—	—	—	**E37**	
2.96–3.21	—	—	—	**E38**	
3.22–3.48	—	—	—	**E39**	
3.49–3.89	—	—	—	**E41**	
3.90–4.35	—	—	—	**E42**	
4.36–4.73	—	—	—	**E44**	
4.74–5.21	—	—	—	**E46**	
5.22–5.74	—	—	—	**E47**	
5.75–6.05	—	—	—	**E48**	
6.06–6.46	—	—	—	**E49**	
6.47–6.95	—	—	—	**E50**	
6.96–8.09	—	—	—	**E51**	
8.10–9.29	—	—	—	**E52**	
9.30–10.4	—	—	—	**E53**	
—	—	—	—	**E54**	
10.5–10.9	—	—	—	**E55**	
11.0–12.0	—	—	—	**E56**	
12.1–14.5	—	—	—	**E57**	
14.6–16.8	—	—	—	**E60**	
16.9–18.4	16.9–18.4	—	—	**E61**	
18.5–20.9	18.5–20.9	—	—	**E62**	
21.0–22.5	21.0–22.5	—	—	**E65**	
22.6–24.3	22.6–24.7	—	—	**E66**	
24.4–27.2	24.8–27.2	27.1–30.0	—	**E67**	
27.3–29.2	27.3–29.2	30.1–33.2	—	**E69**	
29.3–30.0	29.3–32.0	33.3–35.7	—	**E70**	
—	32.1–34.9	35.8–39.4	—	**E71**	
—	—	39.5–43.4	—	**E72**	
—	35.0–37.8	43.5–46.9	—	**E73**	
—	37.9–41.7	—	—	**E73A**	
—	41.8–45.9	47.0–51.5	—	**E74**	
—	46.0–49.0	51.6–57.0	—	**E76**	
—	49.1–54.2	57.1–62.8	—	**E77**	
—	54.3–60.0	62.9–69.1	—	**E78**	
—	—	69.2–75.0	—	**E79**	
—	—	75.1–83.3	—	**E80**	
—	—	—	50.0–55.9	**E88**	
—	—	—	56.0–60.9	**E89**	
—	—	—	61.0–65.9	**E91**	
—	—	—	66.0–69.9	**E92**	
—	—	—	70.0–75.9	**E93**	
—	—	—	76.0–81.9	**E94**	
—	—	83.4–86.9	82.0–86.9	**E96**	
—	—	87.0–92.9	87.0–92.9	**E97**	
—	—	93.0–100.0	93.0–97.9	**E98**	
—	—	—	98.0–107.9	**E99**	
—	—	—	108–113.9	**E101**	
—	—	—	114–125.9	**E102**	
—	—	—	126–138.9	**E103**	
—	—	—	139–153.9	**E104**	
—	—	—	154–163.9	**E106**	
—	—	—	164–180.9	**E107**	

Table 313 for Class 14, 22 (1-Phase)

Full Load Amps			Heater	
Size 00, 0, 1	Size 1P	Size 2, 2½	Catalog No	List Price $
1.85–2.05	1.85–2.05	—	**K21**	
2.06–2.35	2.06–2.35	—	**K22**	
2.36–2.64	2.36–2.64	—	**K24**	
2.65–2.96	2.65–2.96	—	**K27**	
2.97–3.31	2.97–3.31	—	**K28**	
3.32–3.51	3.32–3.51	—	**K29**	
3.52–3.87	3.52–3.87	—	**K31**	
3.88–4.31	3.88–4.31	—	**K32**	
4.32–4.79	4.32–4.79	—	**K33**	
4.80–5.21	4.80–5.21	—	**K34**	
5.22–5.75	5.22–5.75	—	**K36**	
5.76–6.11	5.76–6.11	—	**K37**	
6.12–6.95	6.12–6.95	—	**K39**	
6.96–7.73	6.96–7.73	—	**K41**	
7.74–8.47	7.74–8.47	—	**K42**	
8.48–9.52	8.48–9.52	—	**K43**	
9.53–10.4	9.53–10.4	—	**K49**	
10.5–11.1	10.5–11.1	—	**K50**	
11.2–12.4	11.2–12.4	—	**K52**	
12.5–13.5	12.5–13.5	—	**K53**	
13.6–15.1	13.6–15.1	—	**K54**	
15.2–16.6	15.2–16.6	—	**K55**	
16.7–17.6	16.7–17.6	—	**K57**	
17.7–18.8	17.7–18.8	18.7–19.7	**K58**	
18.9–21.6	18.9–21.6	19.8–21.3	**K60**	
21.7–22.7	21.7–22.7	21.4–22.8	**K61**	
22.8–25.3	22.8–25.3	22.9–24.2	**K62**	
—	25.4–26.6	24.3–26.5	**K63**	
—	26.7–30.1	26.6–29.3	**K64**	
—	30.2–33.0	29.4–32.0	**K67**	
—	33.1–34.1	32.1–35.6	**K68**	
—	—	35.7–37.9	**K69**	
—	—	38.0–40.3	**K70**	
—	—	40.4–44.3	**K72**	
—	—	44.4–49.5	**K73**	
—	—	49.6–52.1	**K74**	
—	—	52.2–53.7	**K75**	
—	—	53.8–60.0	**K76**	

Table 316 for Class 48

Full Load Amps				Heater	
48DA	48GA	48HA	48JA	Catalog No	List Price $
1.69–1.88	—	—	—	**K21**	
1.89–2.05	—	—	—	**K22**	
2.06–2.21	—	—	—	**K23**	
2.22–2.44	—	—	—	**K24**	
2.45–2.70	—	—	—	**K26**	
2.71–2.92	—	—	—	**K27**	
2.93–3.27	—	—	—	**K28**	
3.28–3.56	—	—	—	**K29**	
3.57–3.83	—	—	—	**K31**	
3.84–4.23	—	—	—	**K32**	
4.24–4.57	—	—	—	**K33**	
4.58–4.97	—	—	—	**K34**	
4.98–5.67	—	—	—	**K36**	
5.68–6.11	—	—	—	**K37**	
6.12–6.91	—	—	—	**K39**	
6.92–7.65	—	—	—	**K41**	
7.66–8.4	—	—	—	**K42**	
8.5–8.9	—	—	—	**K43**	
9.0–10.1	9.12–9.6	—	—	**K49**	
10.2–11.2	9.7–10.4	—	—	**K50**	
11.3–12.3	10.5–11.4	—	—	**K52**	
12.4–13.3	11.5–12.1	—	—	**K53**	
13.4–14.1	12.2–12.9	—	—	**K54**	
14.2–15.0	13.0–13.7	—	—	**K55**	
15.1–16.2	13.8–14.8	—	—	**K56**	
16.3–17.5	14.9–16.4	—	—	**K57**	
17.6–18.6	16.5–18.2	—	—	**K58**	
18.7–19.9	18.3–19.5	—	—	**K60**	
20.0–21.3	19.6–20.9	—	—	**K61**	
21.4–22.8	21.0–22.8	23.2–25.1	—	**K62**	
22.9–25.1	22.9–24.7	25.2–27.3	—	**K63**	
25.2–27.6	24.8–27.6	27.4–30.4	—	**K64**	
27.7–30.0	27.7–30.5	30.5–33.3	—	**K67**	
—	30.6–33.9	33.4–36.5	—	**K68**	
—	34.0–37.3	36.6–39.3	—	**K69**	
—	37.4–40.2	39.4–43.5	—	**K70**	
—	40.3–41.9	43.6–46.6	43.0–46.5	**K72**	
—	42.0–45.9	46.7–51.1	46.6–50.9	**K73**	
—	46.0–50.9	51.2–56.3	51.0–55.9	**K74**	
—	51.0–52.9	56.4–61.1	56.0–59.1	**K75**	
—	53.0–57.7	61.2–64.9	59.2–68.7	**K76**	
—	57.8–60.0	65.0–71.9	—	**K77**	
—	—	72.0–80.7	68.8–80.7	**K78**	
—	—	80.8–92.7	80.8–92.7	**K85**	
—	—	92.8–100.0	92.8–103.9	**K86**	
—	—	—	104.0–113.5	**K87**	
—	—	—	113.6–127.9	**K89**	
—	—	—	128.0–143.9	**K92**	
—	—	—	144.0–163.9	**K94**	
—	—	—	164.0–180.0	**K96**	

Overload Relay Heater Tables

Full Load Motor Amps, 3-Phase, Trip Class 10 – Tables 332, 335

Selection

Table 332 for Class 14, 17, 18, 22, 25, 26, 30, 32, 83, 84, 87 (3-Phase)

Full Load Amps					Heater Catalog No	List Price $
Size 00, 0, 1	Size 1¾	Size 2, 2½	Size 3, 3½	Size 4		
1.52–1.65	1.52–1.65	—	—	—	**K21**	
1.66–1.79	1.66–1.79	—	—	—	**K22**	
1.80–1.94	1.80–1.94	—	—	—	**K23**	
1.95–2.15	1.95–2.15	—	—	—	**K24**	
2.16–2.37	2.16–2.37	—	—	—	**K26**	
2.38–2.56	2.38–2.56	—	—	—	**K27**	
2.57–2.87	2.57–2.87	—	—	—	**K28**	
2.88–3.13	2.88–3.13	—	—	—	**K29**	
3.14–3.37	3.14–3.37	—	—	—	**K31**	
3.38–3.72	3.38–3.72	—	—	—	**K32**	
3.73–4.00	3.73–4.00	—	—	—	**K33**	
4.01–4.35	4.01–4.35	—	—	—	**K34**	
4.36–4.99	4.36–4.99	—	—	—	**K36**	
5.00–5.38	5.00–5.38	—	—	—	**K37**	
5.39–5.79	5.39–5.79	—	—	—	**K39**	
5.80–6.43	5.80–6.43	—	—	—	**K41**	
6.44–6.83	6.44–6.83	—	—	—	**K42**	
6.84–7.83	6.84–7.83	—	—	—	**K43**	
7.84–8.23	7.84–8.23	—	—	—	**K49**	
8.24–9.59	8.24–9.59	—	—	—	**K50**	
9.60–9.90	9.60–9.90	—	—	—	**K52**	
10.0–10.7	10.0–10.7	—	—	—	**K53**	
10.8–11.6	10.8–11.6	12.1–12.7	—	—	**K54**	
11.7–12.3	11.7–12.3	12.8–13.5	—	—	**K55**	
12.4–13.4	12.4–13.4	13.6–14.6	—	—	**K56**	
13.5–14.2	13.5–14.2	14.7–15.9	—	—	**K57**	
14.3–15.1	14.3–15.1	16.0–16.9	—	—	**K58**	
15.2–17.5	15.2–17.5	17.0–18.2	—	—	**K60**	
17.6–18.7	17.6–18.7	18.3–19.5	—	—	**K61**	
18.8–20.0	18.8–20.0	19.6–20.9	—	—	**K62**	
20.1–21.5	20.1–21.5	21.0–23.1	—	—	**K63**	
21.6–23.9	21.6–23.9	23.2–25.4	—	—	**K64**	
24.0–25.8	24.0–25.8	25.5–27.9	—	—	**K67**	
—	25.9–29.5	—	—	—	**K68**	
—	—	28.0–30.5	—	—	**K69**	
—	29.6–32.7	30.6–33.5	36.8–40.0	—	**K70**	
—	32.8–36.0	33.6–37.2	40.1–42.4	—	**K72**	
—	—	37.3–40.7	42.5–46.3	—	**K73**	
—	—	40.8–43.0	46.4–49.6	—	**K74**	
—	—	43.1–47.9	49.7–52.3	49.7–52.3	**K75**	
—	—	48.0–52.7	52.4–57.5	52.4–57.5	**K76**	
—	—	52.8–58.3	57.6–63.9	57.6–63.0	**K77**	
—	—	58.4–60.0	64.0–67.9	63.1–68.1	**K78**	
—	—	—	68.0–74.3	68.2–74.3	**K83**	
—	—	—	74.4–77.9	74.4–79.9	**K85**	
—	—	—	78.0–83.1	80.0–87.4	**K86**	
—	—	—	83.2–91.4	87.5–90.0	**K87**	
—	—	—	91.5–99.9	90.1–100.0	**K88**	
—	—	—	100.0–108.0	100.1–108.0	**K89**	
—	—	—	—	108.1–119.0	**K90**	
—	—	—	—	119.1–130.0	**K92**	
—	—	—	—	—	**K94**	
—	—	—	—	—	**K96**	

Table 335 for Class 48

Full Load Amps				Heater Catalog No	List Price $
48DC	48GC	48HA	48JA		
1.56–1.69	—	—	—	**K21**	
1.70–1.84	—	—	—	**K22**	
1.85–1.98	—	—	—	**K23**	
1.99–2.19	—	—	—	**K24**	
2.20–2.43	—	—	—	**K26**	
2.44–2.63	—	—	—	**K27**	
2.64–2.95	—	—	—	**K28**	
2.96–3.21	—	—	—	**K29**	
3.22–3.45	—	—	—	**K31**	
3.46–3.81	—	—	—	**K32**	
3.82–4.10	—	—	—	**K33**	
4.11–4.46	—	—	—	**K34**	
4.47–5.10	—	—	—	**K36**	
5.11–5.49	—	—	—	**K37**	
5.50–6.21	—	—	—	**K39**	
6.22–6.76	—	—	—	**K41**	
6.77–7.62	—	—	—	**K42**	
7.63–8.07	—	—	—	**K43**	
8.08–9.19	—	—	—	**K49**	
9.20–10.0	—	—	—	**K50**	
10.1–11.0	—	—	—	**K52**	
11.1–12.0	—	—	—	**K53**	
12.1–12.7	—	—	—	**K54**	
12.8–13.5	—	—	—	**K55**	
13.6–14.5	—	—	—	**K56**	
14.6–15.7	—	—	—	**K57**	
15.8–16.7	—	—	—	**K58**	
16.8–17.9	—	—	—	**K60**	
18.0–19.2	18.0–19.2	—	—	**K61**	
19.3–20.5	19.3–20.5	23.2–25.1	—	**K62**	
20.6–22.5	20.6–22.5	25.2–27.3	—	**K63**	
22.6–24.8	22.6–24.8	27.4–30.4	—	**K64**	
24.9–27.6	24.9–27.6	30.5–33.3	—	**K67**	
27.7–30.0	—	33.4–36.5	—	**K68**	
—	27.7–30.1	36.6–39.3	—	**K69**	
—	30.2–33.1	39.4–43.5	—	**K70**	
—	33.2–36.7	43.6–46.6	43.0–46.5	**K72**	
—	36.8–40.1	46.7–51.1	46.6–50.9	**K73**	
—	40.2–45.5	51.2–56.3	51.0–55.9	**K74**	
—	45.6–47.9	56.4–61.1	56.0–59.1	**K75**	
—	48.0–52.7	61.2–64.9	59.2–68.7	**K76**	
—	52.8–55.1	65.0–71.9	—	**K77**	
—	55.2–60.0	72.0–80.7	68.8–80.7	**K78**	
—	—	80.8–92.7	80.8–92.7	**K85**	
—	—	92.8–100.0	92.8–103.9	**K86**	
—	—	—	104.0–113.5	**K87**	
—	—	—	113.6–127.9	**K89**	
—	—	—	128.0–143.9	**K92**	
—	—	—	144.0–163.9	**K94**	
—	—	—	164.0–180.0	**K96**	