NEC® Article 430 and Tables Explanation

Column 9

Copper wire sizes are based upon 125% (430.22) of values shown in Column 2 and ampacities listed in Table 310.16 for 75°C terminals. Although the NEC® allows 60°C terminations for equipment rated 100 amp or less, most equipment terminations have been rated for 75°C conductors. If equipment terminations are rated for 60°C conductors only, the 60°C ampacities must be utilized and therefore larger conductor sizes may be required than those shown in this column. See 110.14(C)(1)(a).

Column 10

These rigid metallic conduit sizes are based upon copper conductors with THWN or THHN insulation, Table C8 of Annex C, and 75°C equipment terminals.

Conduit sizes are for three conductors per circuit for three phase motors and two conductors per circuit for single phase and DC motors. Conduit sizes may need to be increased if equipment grounding conductors or neutrals are also installed in the conduit.

If equipment terminations are rated for 60°C conductors only, the 60°C ampacities must be utilized and therefore larger conductor sizes and conduit sizes may be required.

Conductors operated in a high ambient temperature may need to be derated. (See correction factor table at the bottom of Table 310.16.)

200Vac Three-Phase Motors & Circuits

1	2	3		4	5	6	7	8	9	10
Motor Size Table 430.250 HP	Motor FLA Table 430.250 AMPS	Fuse Type	Fuse Class	Optimal Branch Ckt Protection AMPS[1]	NEC® Max for Gen. Applic 430.52(C)(1) Exc. No. 1 AMPS[1]	NEC® Max for Heavy Start 430.52(C)(1) Exc. No. 2 AMPS[1]	Minimum Switch Size 430.110 AMPS	Minimum NEMA Starter NEMA ICS 2-2000 Size	Minimum Copper Wire THWN or THHN AWG or KCMIL Table 310.16 Size	Minimum Rigid Metallic Conduit Annex C Table C8 Inches
½	2.5	LPJ_SP TCF LP-CC LPN-RK_SP FRN-R	J J[f] CC RK1 RK5	4 6 5 3 ½ 3 ⅘₁₀	6 6 10 6 6	6 6 10 6 6	30	00	14	½
¾	3.7	LPJ_SP TCF LP-CC LPN-RK_SP FRN-R	J J[f] CC RK1 RK5	5 ⅘₁₀ 6 7 ½ 5 5	10 10 15 10 10	10 10 15 10 10	30	00	14	½
1	4.8	LPJ_SP TCF LP-CC LPN-RK_SP FRN-R	J J[f] CC RK1 RK5	8 10 10 6 ¼ 6	10 10 15 10 10	10 10 15 10 10	30	00	14	½
1 ½	6.9	LPJ_SP TCF LP-CC LPN-RK_SP FRN-R	J J[f] CC RK1 RK5	12 15 15 9 9	15 15 25 15 15	15 15 25 15 15	30	00	14	½
2	7.8	LPJ_SP TCF LP-CC LPN-RK_SP FRN-R	J J[f] CC RK1 RK5	12 15 25 12 10	15 15 25 15 15	17 ½ 17 ½ 30 17 ½ 17 ½	30	0	14	½
3	11	LPJ_SP TCF LP-CC LPN-RK_SP FRN-R	J J[f] CC RK1 RK5	17 ½ 17 ½ 25 15 15	20 20 – 20 20	20 20 – 20 20	30	0	14	½
5	17.5	LPJ_SP TCF LPN-RK_SP FRN-R	J J[f] RK1 RK5	30 30 25 25	35 35 35 35	35 35 35 35	30*	1	12	½
7 ½	25.3	LPJ_SP TCF LPN-RK_SP FRN-R	J J[f] RK1 RK5	40 40 35 35	45 45 45 45	50 50 50 50	60	1	10**	½**
10	32.2	LPJ_SP TCF LPN-RK_SP FRN-R	J J[f] RK1 RK5	50 50 45 45	60 60 60 60	70 – 70 70	60*	2	8**	½**
15	48.3	LPJ_SP TCF LPN-RK_SP FRN-R	J J[f] RK1 RK5	80 80 70 70	90 90 90 90	100 100 100 100	100	3	6**	¾**
20	62.1	LPJ_SP TCF LPN-RK_SP FRN-R	J J[f] RK1 RK5	100 100 90 80	110 – 110 110	125 – 125 125	100*	3	4**	1

* Switch size must be increased if the amp rating of the fuse exceeds the amp rating of the switch.

1 Per 430.52(C)(2), if the motor controller manufacturer's overload relay tables state a maximum branch circuit protective device of a lower rating, that lower rating must be used in lieu of the sizes shown in Columns 4, 5, or 6.

** If equipment terminations are rated for 60°C conductors only, the 60°C conductor ampacities must be utilized and therefore larger conductor sizes or conduit sizes may be required.

f Class J performance, special finger-safe dimensions.

COOPER Bussmann

200Vac Three-Phase Motors & Circuits continued

1	2	3		4	5	6	7	8	9	10
Motor Size Table 430.250 HP	Motor FLA Table 430.250 AMPS	Fuse Type	Class	Optimal Branch Ckt Protection AMPS [1]	NEC® Max for Gen. Applic 430.52(C)(1) Exc. No. 1 AMPS [1]	NEC® Max for Heavy Start 430.52(C)(1) Exc. No. 2 AMPS [1]	Minimum Switch Size 430.110 AMPS	Minimum NEMA Starter NEMA ICS 2-2000 Size	Minimum Copper Wire THWN or THHN AWG or KCMIL Table 310.16 Size	Minimum Rigid Metallic Conduit Annex C Table C8 Inches
		LPJ_SP	J	125	150	175				
25	78.2	LPN-RK_SP	RK1	110	150	175	100*	3	3**	1**
		FRN-R	RK5	100	150	175				
		LPJ_SP	J	150	175	200				
30	92	LPN-RK_SP	RK1	125	175	200	200	4	2**	1**
		FRN-R	RK5	125	175	200				
		LPJ_SP	J	200	225	250				
40	120	LPN-RK_SP	RK1	175	225	250	200*	4	1/0	1 ¼
		FRN-R	RK5	150	225	250				
		LPJ_SP	J	225	300	300				
50	150	LPN-RK_SP	RK1	200	300	300	200*	5	3/0	1 ½
		FRN-R	RK5	200	300	300				
		LPJ_SP	J	300	350	350				
60	177	LPN-RK_SP	RK1	250	350	350	400	5	4/0	2
		FRN-R	RK5	225	350	350				
		LPJ_SP	J	350	400	450				
75	221	LPN-RK_SP	RK1	300	400	450	400*	5	300	2
		FRN-R	RK5	300	400	450				
		KRP-C_SP	L	–	–	650				
		LPJ_SP	J	450	500	600				
100	285	LPN-RK_SP	RK1	400	500	600	400*	6	500	3
		FRN-R	RK5	400	500	600				
		KRP-C_SP	L	–	–	800				
		LPJ_SP	J	600	–	–				
125	359	LPN-RK_SP	RK1	500	–	–	600*	6	4/0 2/PHASE	(2)2
		FRN-R	RK5	450	–	–				
		KRP-C_SP	L	–	700	1000				
		LPN-RK_SP	RK1	600	–	–				
150	414	FRN-R	RK5	600	–	–	600*	6	300 2/PHASE	(2)2
		KRP-C_SP	L	–	800	1200				
200	552	KRP-C_SP	L	–	1000	1600	1200	72	500 2/PHASE	(2)3

* Switch size must be increased if the amp rating of the fuse exceeds the amp rating of the switch.

1 Per 430.52(C)(2), if the motor controller manufacturer's overload relay tables state a maximum branch circuit protective device of a lower rating, that lower rating must be used in lieu of the sizes shown in Columns 4, 5, or 6.

** If equipment terminations are rated for 60°C conductors only, the 60°C conductor ampacities must be utilized and therefore larger conductor sizes or conduit sizes may be required.

2 These sizes are typical. They are not shown in NEMA ICS 2-2000.

208Vac Three-Phase Motors & Circuits

1	2	3		4	5	6	7	8	9	10
Motor Size Table 430.250 HP	Motor FLA Table 430.250 AMPS	Fuse Type	Class	Optimal Branch Ckt Protection AMPS[1]	NEC® Max for Gen. Applic 430.52(C)(1) Exc. No. 1 AMPS[1]	NEC® Max for Heavy Start 430.52(C)(1) Exc. No. 2 AMPS[1]	Minimum Switch Size 430.110 AMPS	Minimum NEMA Starter NEMA ICS 2-2000 Size2	Minimum Copper Wire THWN or THHN AWG or KCMIL Table 310.16 Size	Minimum Rigid Metallic Conduit Annex C Table C8 Inches
		LPJ_SP	J	4	6	6				
		TCF	Jf	6	6	6				
½	2.4	LP-CC	CC	5	10	10	30	00	14	½
		LPN-RK_SP	RK1	3 ½	6	6				
		FRN-R	RK5	3	6	6				
		LPJ_SP	J	5 ⁹⁄₁₀	10	10				
		TCF	Jf	6	10	10				
¾	3.5	LP-CC	CC	7	15	15	30	00	14	½
		LPN-RK_SP	RK1	5	10	10				
		FRN-R	RK5	4 ½	10	10				
		LPJ_SP	J	7	10	10				
		TCF	Jf	10	10	10				
1	4.6	LP-CC	CC	10	15	15	30	00	14	½
		LPN-RK_SP	RK1	6	10	10				
		FRN-R	RK5	6	10	10				
		LPJ_SP	J	10	15	15				
		TCF	Jf	10	15	15				
1 ½	6.6	LP-CC	CC	15	20	25	30	00	14	½
		LPN-RK_SP	RK1	9	15	15				
		FRN-R	RK5	9	15	15				

*Switch size must be increased if the amp rating of the fuse exceeds the amp rating of the switch.

1 Per 430.52(C)(2), if the motor controller manufacturer's overload relay tables state a maximum branch circuit protective device of a lower rating, that lower rating must be used in lieu of the sizes shown in Columns 4, 5, or 6.

**If equipment terminations are rated for 60°C conductors only, the 60°C conductor ampacities must be utilized and therefore larger conductor sizes or conduit sizes may be required.

2 These sizes are typical. They are not shown in NEMA ICS 2-2000.

f Class J performance, special finger-safe dimensions.

208Vac Three-Phase Motors & Circuits continued

1	2	3		4	5	6	7	8	9	10
Motor Size Table 430.250 HP	Motor FLA Table 430.250 AMPS	Fuse Type	Class	Optimal Branch Ckt Protection AMPS[1]	NEC® Max for Gen. Applic 430.52(C)(1) Exc. No. 1 AMPS[1]	NEC® Max for Heavy Start 430.52(C)(1) Exc. No. 2 AMPS[1]	Minimum Switch Size 430.110 AMPS	Minimum NEMA Starter NEMA ICS 2-2000 Size[2]	Minimum Copper Wire THWN or THHN AWG or KCMIL Table 310.16 Size	Minimum Rigid Metallic Conduit Annex C Table C8 Inches
		LPJ_SP	J	12	15	15				
		TCF	J/	15	15	15				
2	7.5	LP-CC	CC	15	25	30	30	0	14	½
		LPN-RK_SP	RK1	10	15	15				
		FRN-R	RK5	10	15	15				
		LPJ_SP	J	17 ½	20	20				
3	10.6	TCF	J/	17 ½	20	20	30	0	14	½
		LPN-RK_SP	RK1	15	20	20				
		FRN-R	RK5	15	20	20				
		LPJ_SP	J	30	30	35				
5	16.7	TCF	J/	25	30	35	30*	1	12	½
		LPN-RK_SP	RK1	25	30	35				
		FRN-R	RK5	25	30	35				
		LPJ_SP	J	40	45	50				
7 ½	24.2	TCF	J/	40	45	50	60	1	10**	½
		LPN-RK_SP	RK1	35	45	50				
		FRN-R	RK5	35	45	50				
		LPJ_SP	J	50	60	60				
10	30.8	TCF	J/	50	60	60	60	2	8	½**
		LPN-RK_SP	RK1	45	60	60				
		FRN-R	RK5	40	60	60				
		LPJ_SP	J	70	90	100				
15	46.2	TCF	J/	70	90	100	60*	3	6**	¾**
		LPN-RK_SP	RK1	70	90	100				
		FRN-R	RK5	60	90	100				
		LPJ_SP	J	90	110	125				
20	59.4	TCF	J/	90	–	–	100*	3	4**	1
		LPN-RK_SP	RK1	80	110	125				
		FRN-R	RK5	80	110	125				
		LPJ_SP	J	125	150	150				
25	74.8	LPN-RK_SP	RK1	100	150	150	100*	3	3**	1**
		FRN-R	RK5	100	150	150				
		LPJ_SP	J	150	175	175				
30	88	LPN-RK_SP	RK1	125	175	175	200	4	2**	1**
		FRN-R	RK5	110	175	175				
		LPJ_SP	J	175	200	250				
40	114	LPN-RK_SP	RK1	150	200	250	200*	4	1/0	1 ¼
		FRN-R	RK5	150	200	250				
		LPJ_SP	J	225	300	300				
50	143	LPN-RK_SP	RK1	200	300	300	200*	5	3/0	1 ½
		FRN-R	RK5	200	300	300				
		LPJ_SP	J	300	300	350				
60	169	LPN-RK_SP	RK1	225	300	350	400	5	4/0	2
		FRN-R	RK5	225	300	350				
		LPJ_SP	J	350	400	450				
75	211	LPN-RK_SP	RK1	300	400	450	400*	5	300	2
		FRN-R	RK5	300	400	450				
		KRP-C_SP	L	–	–	601				
		LPJ_SP	J	450	500	600				
100	273	LPN-RK_SP	RK1	400	500	600	400*	6	500	3
		FRN-R	RK5	350	500	600				
		KRP-C_SP	L	–	–	800				
		LPJ_SP	J	600	–	–				
125	343	LPN-RK_SP	RK1	450	–	–	600*	6	4/0 2/PHASE	(2)2
		FRN-R	RK5	450	–	–				
		KRP-C_SP	L	–	601	1000				
		LPJ_SP	J	600	–	–				
150	396	LPN-RK_SP	RK1	600	–	–	600*	6	250 2/PHASE	(2)2
		FRN-R	RK5	500	–	–				
		KRP-C_SP	L	–	700	1100				
200	528	KRP-C_SP	L	–	1000	1500	1200*	7	400 2/PHASE	(2)2-2 ½

*Switch size must be increased if the amp rating of the fuse exceeds the amp rating of the switch.

1 Per 430.52(C)(2), if the motor controller manufacturer's overload relay tables state a maximum branch circuit protective device of a lower rating, that lower rating must be used in lieu of the sizes shown in Columns 4, 5, or 6.

**If equipment terminations are rated for 60°C conductors only, the 60°C conductor ampacities must be utilized and therefore larger conductor sizes or conduit sizes may be required.

2 These sizes are typical. They are not shown in NEMA ICS 2-2000.

/ Class J performance, special finger-safe dimensions.

COOPER Bussmann

230Vac Three-Phase Motors & Circuits (220-240Vac Systems)

1	2	3		4	5	6	7	8	9	10
Motor Size Table 430.250 HP	Motor FLA Table 430.250 AMPS	Fuse Type	Fuse Class	Optimal Branch Ckt Protection AMPS[1]	NEC® Max for Gen. Applic 430.52(C)(1) Exc. No. 1 AMPS[1]	NEC® Max for Heavy Start 430.52(C)(1) Exc. No. 2 AMPS[1]	Minimum Switch Size 430.110 AMPS	Minimum NEMA Starter NEMA ICS 2-2000 Size[2]	Minimum Copper Wire THWN or THHN AWG or KCMIL Table 310.16 Size	Minimum Rigid Metallic Conduit Annex C Table C8 Inches
½	2.2	LPJ_SP TCF LP-CC LPN-RK_SP FRN-R	J Jf CC RK1 RK5	3 ½ 6 4 ½ 3 2 8/10	6 6 10 6 6	6 6 10 6 6	30	00	14	½
¾	3.2	LPJ_SP TCF LP-CC LPN-RK_SP FRN-R	J Jf CC RK1 RK5	5 6 7 4 ½ 4	6 6 10 6 6	7 6 12 7 7	30	00	14	½
1	4.2	LPJ_SP TCF LP-CC LPN-RK_SP FRN-R	J Jf CC RK1 RK5	7 10 9 5 9/10 5 9/10	10 10 15 10 10	10 10 15 10 10	30	00	14	½
1 ½	6	LPJ_SP TCF LP-CC LPN-RK_SP FRN-R	J Jf CC RK1 RK5	9 10 12 8 7 ½	15 15 20 15 15	15 15 20 15 15	30	00	14	½
2	6.8	LPJ_SP TCF LP-CC LPN-RK_SP FRN-R	J Jf CC RK1 RK5	12 15 15 9 9	15 15 25 15 15	15 15 25 15 15	30	0	14	½
3	9.6	LPJ_SP TCF LP-CC LPN-RK_SP FRN-R	J Jf CC RK1 RK5	15 15 30 15 12	20 20 30 20 20	20 20 30 20 20	30	0	14	½
5	15.2	LPJ_SP TCF LPN-RK_SP FRN-R	J Jf RK1 RK5	25 25 20 20	30 30 30 30	30 30 30 30	30	1	14	½
7 ½	22	LPJ_SP TCF LPN-RK_SP FRN-R	J Jf RK1 RK5	35 35 30 30	40 40 40 40	45 45 45 45	30*	1	10	½
10	28	LPJ_SP TCF LPN-RK_SP FRN-R	J Jf RK1 RK5	45 45 40 35	50 50 50 50	60 60 60 60	60	2	10**	½
15	42	LPJ_SP TCF LPN-RK_SP FRN-R	J Jf RK1 RK5	70 70 60 60	80 80 80 80	90 90 90 90	60*	2	6	¾
20	54	LPJ_SP TCF LPN-RK_SP FRN-R	J Jf RK1 RK5	90 90 80 70	100 100 100 100	110 – 110 110	100*	3	4	1
25	68	LPJ_SP LPN-RK_SP FRN-R	J RK1 RK5	110 90 90	125 125 125	150 150 150	100*	3	4**	1
30	80	LPJ_SP LPN-RK_SP FRN-R	J RK1 RK5	125 110 100	150 150 150	175 175 175	100*	3	3**	1**
40	104	LPJ_SP LPN-RK_SP FRN-R	J RK1 RK5	175 150 150	200 200 200	225 225 225	200*	4	1**	1 ¼**
50	130	LPJ_SP LPN-RK_SP FRN-R	J RK1 RK5	200 175 175	250 250 250	250 250 250	200*	4	2/0	1 ½
60	154	LPJ_SP LPN-RK_SP FRN-R	J RK1 RK5	250 225 200	300 300 300	300 300 300	200*	5	3/0	1 ½

*Switch size must be increased if the amp rating of the fuse exceeds the amp rating of the switch.

1 Per 430.52(C)(2), if the motor controller manufacturer's overload relay tables state a maximum branch circuit protective device of a lower rating, that lower rating must be used in lieu of the sizes shown in Columns 4, 5, or 6.

**If equipment terminations are rated for 60°C conductors only, the 60°C conductor ampacities must be utilized and therefore larger conductor sizes or conduit sizes may be required.

2 These sizes are typical. They are not shown in NEMA ICS 2-2000.

f Class J performance, special finger-safe dimensions.

4 Limited by 600 amp being the largest amp rating for FRN-R and LPN-RK_SP.

230Vac Three-Phase Motors & Circuits (220-240Vac Systems) continued

1	2	3		4	5	6	7	8	9	10
Motor Size Table 430.250 HP	Motor FLA Table 430.250 AMPS	Fuse Type	Fuse Class	Optimal Branch Ckt Protection AMPS[1]	NEC® Max for Gen. Applic 430.52(C)(1) Exc. No. 1 AMPS[1]	NEC® Max for Heavy Start 430.52(C)(1) Exc. No. 2 AMPS[1]	Minimum Switch Size 430.110 AMPS	Minimum NEMA Starter NEMA ICS 2-2000 Size[2]	Minimum Copper Wire THWN or THHN AWG or KCMIL Table 310.16 Size	Minimum Rigid Metallic Conduit Annex C Table C8 Inches
		LPJ_SP	J	300	350	400				
75	192	LPN-RK_SP	RK1	250	350	400	400	5	250	2
		FRN-R	RK5	250	350	400				
		LPJ_SP	J	400	450	500				
100	248	LPN-RK_SP	RK1	350	450	500	400*	5	350	2 ½
		FRN-R	RK5	350	450	500				
		KRP-C_SP	L	–	–	700				
		LPJ_SP	J	500	600	–				
125	312	LPN-RK_SP	RK1	450	600	–	400*	6	3/0 2/PHASE	(2) 1 ½
		FRN-R	RK5	400	600	–				
		KRP-C_SP	L	–	—	900				
		LPJ_SP	J	600	–	–				
150	360	LPN-RK_SP	RK1	500	6004	–	600*	6	4/0 2/PHASE	(2) 2
		FRN-R	RK5	450	6004	–				
		KRP-C_SP	L	–	700	1000				
200	480	FRN-R	RK5	600	–	–	600*	6	350 2/PHASE	(2) 2-2 ½
		KRP-C_SP	L	–	1000	1400				

*Switch size must be increased if the amp rating of the fuse exceeds the amp rating of the switch.

1 Per 430.52(C)(2), if the motor controller manufacturer's overload relay tables state a maximum branch circuit protective device of a lower rating, that lower rating must be used in lieu of the sizes shown in Columns 4, 5, or 6.

**If equipment terminations are rated for 60°C conductors only, the 60°C conductor ampacities must be utilized and therefore larger conductor sizes or conduit sizes may be required.

2 These sizes are typical. They are not shown in NEMA ICS 2-2000.

4 Limited by 600 amp being the largest amp rating for FRN-R and LPN-RK_SP.

460Vac Three-Phase Motors & Circuits (440-480Vac Systems)

1	2	3		4	5	6	7	8	9	10
Motor Size Table 430.250 HP	Motor FLA Table 430.250 AMPS	Fuse Type	Fuse Class	Optimal Branch Ckt Protection AMPS[1]	NEC® Max for Gen. Applic 430.52(C)(1) Exc. No. 1 AMPS[1]	NEC® Max for Heavy Start 430.52(C)(1) Exc. No. 2 AMPS[1]	Minimum Switch Size 430.110 AMPS	Minimum NEMA Starter NEMA ICS 2-2000 Size[2]	Minimum Copper Wire THWN or THHN AWG or KCMIL Table 310.16 Size	Minimum Rigid Metallic Conduit Annex C Table C8 Inches
		LPJ_SP	J	1 8/10	3	3				
		TCF	J[f]	3	3	3				
½	1.1	LP-CC	CC	2 ¼	6	6	30	00	14	½
		LPS-RK_SP	RK1	1 1½	3	3				
		FRS-R	RK5	1 8/10	3	3				
		LPJ_SP	J	2 ½	3	3 ½				
		TCF	J[f]	3	3	3				
¾	1.6	LP-CC	CC	3 3/10	6	6 ¼	30	00	14	½
		LPS-RK_SP	RK1	2 ¼	3	3 ½				
		FRS-R	RK5	2	3	3 ½				
		LPJ_SP	J	3 3/10	6	6				
		TCF	J[f]	6	6	6				
1	2.1	LP-CC	CC	4 ½	10	10	30	00	14	½
		LPS-RK_SP	RK1	2 8/10	6	6				
		FRS-R	RK5	2 8/10	6	6				
		LPJ_SP	J	4 ½	6	6				
		TCF	J[f]	6	6	6				
1 ½	3	LP-CC	CC	6	10	12	30	00	14	½
		LPS-RK_SP	RK1	4	6	6 ¼				
		FRS-R	RK5	4	6	6 ¼				
		LPJ_SP	J	5 8/10	6	7				
		TCF	J[f]	6	6	6				
2	3.4	LP-CC	CC	7	15	15	30	00	14	½
		LPS-RK_SP	RK1	4 ½	6	7				
		FRS-R	RK5	4 ½	6	7 ½				
		LPJ_SP	J	8	10	10				
		TCF	J[f]	10	10	10				
3	4.8	LP-CC	CC	10	15	15	30	0	14	½
		LPS-RK_SP	RK1	6 ¼	10	10				
		FRS-R	RK5	6	10	10				
		LPJ_SP	J	12	15	15				
		TCF	J[f]	15	15	15				
5	7.6	LP-CC	CC	25	25	30	30	0	14	½
		LPS-RK_SP	RK1	10	15	15				
		FRS-R	RK5	10	15	15				

* Switch size must be increased if the amp rating of the fuse exceeds the amp rating of the switch.

1 Per 430.52(C)(2), if the motor controller manufacturer's overload relay tables state a maximum branch circuit protective device of a lower rating, that lower rating must be used in lieu of the sizes shown in Columns 4, 5, or 6.

** If equipment terminations are rated for 60°C conductors only, the 60°C conductor ampacities must be utilized and therefore larger conductor sizes or conduit sizes may be required.

f Class J performance, special finger-safe dimensions.

COOPER Bussmann

460Vac Three-Phase Motors & Circuits (440-480Vac Systems) continued

1	2	3		4	5	6	7	8	9	10
Motor Size Table 430.250 HP	Motor FLA Table 430.250 AMPS	Fuse Type	Fuse Class	Optimal Branch Ckt Protection AMPS[1]	NEC® Max for Gen. Applic 430.52(C)(1) Exc. No. 1 AMPS[1]	NEC® Max for Heavy Start 430.52(C)(1) Exc. No. 2 AMPS[1]	Minimum Switch Size 430.110 AMPS	Minimum NEMA Starter NEMA ICS 2-2000 Size[2]	Minimum Copper Wire THWN or THHN AWG or KCMIL Table 310.16 Size	Minimum Rigid Metallic Conduit Annex C Table C8 Inches
		LPJ_SP	J	17 ½	20	20				
7 ½	11	TCF	Jf	17 ½	20	20	30	1	14	½
		LPS-RK_SP	RK1	15	20	20				
		FRS-R	RK5	15	20	20				
		LPJ_SP	J	25	25	30				
10	14	TCF	Jf	25	25	30	30	1	14	½
		LPS-RK_SP	RK1	20	25	30				
		FRS-R	RK5	17 ½	25	30				
		LPJ_SP	J	35	40	45				
15	21	TCF	Jf	35	40	45	30*	2	10	½
		LPS-RK_SP	RK1	30	40	45				
		FRS-R	RK5	30	40	45				
		LPJ_SP	J	45	50	60				
20	27	TCF	Jf	40	50	60	60	2	10**	½
		LPS-RK_SP	RK1	40	50	60				
		FRS-R	RK5	35	50	60				
		LPJ_SP	J	60	60	70				
25	34	TCF	Jf	60	60	70	60*	2	8**	½**
		LPS-RK_SP	RK1	45	60	70				
		FRS-R	RK5	45	60	70				
		LPJ_SP	J	60	70	90				
30	40	TCF	Jf	60	70	90	60*	3	8**	½**
		LPS-RK_SP	RK1	60	70	90				
		FRS-R	RK5	50	70	90				
		LPJ_SP	J	80	100	110				
40	52	TCF	Jf	80	100	–	100*	3	6**	¾**
		LPS-RK_SP	RK1	70	100	110				
		FRS-R	RK5	70	100	110				
		LPJ_SP	J	100	125	125				
50	65	TCF	Jf	100	–	–	100*	3	4**	1
		LPS-RK_SP	RK1	90	125	125				
		FRS-R	RK5	90	125	125				
		LPJ_SP	J	125	150	150				
60	77	LPS-RK_SP	RK1	110	150	150	100*	4	3**	1**
		FRS-R	RK5	100	150	150				
		LPJ_SP	J	150	175	200				
75	96	LPS-RK_SP	RK1	125	175	200	200	4	1**	1 ¼**
		FRS-R	RK5	125	175	200				
		LPJ_SP	J	200	225	250				
100	124	LPS-RK_SP	RK1	175	225	250	200*	4	2/0	1 ½
		FRS-R	RK5	175	225	250				
		LPJ_SP	J	250	300	350				
125	156	LPS-RK_SP	RK1	225	300	350	200*	5	3/0	1 ½
		FRS-R	RK5	200	300	350				
		LPJ_SP	J	300	350	400				
150	180	LPS-RK_SP	RK1	250	350	400	400	5	4/0	2
		FRS-R	RK5	225	350	400				
		LPJ_SP	J	400	450	500				
200	240	LPS-RK_SP	RK1	350	450	500	400*	5	350	2 ½
		FRS-R	RK5	300	450	500				
		KRP-C_SP	L	–	–	700				
		LPJ_SP	J	500	600	–				
250	302	LPS-RK_SP	RK1	400	600	–	400*	6	3/0 2/PHASE	(2) 1 ½
		FRS-R	RK5	400	600	–				
		KRP-C_SP	L	–	–	900				
		LPJ_SP	J	600	–	–				
300	361	LPS-RK_SP	RK1	500	6004	–	600*	6	4/0 2/PHASE	(2) 2
		FRS-R	RK5	500	6004	–				
		KRP-C_SP	L	–	700	1000				
		LPS-RK_SP	RK1	600	–	–				
350	414	FRS-R	RK5	600	–	–	600*	6	300 2/PHASE	(2) 2
		KRP-C_SP	L	–	800	1200				
400	477	KRP-C_SP	L	–	1000	1400	600*	6	350 2/PHASE	(2)2 ½
		FRS-R	RK5	600	–	–				
450	515	KRP-C_SP	L	–	1000	1500	1200*	7	400 2/PHASE	(2) 2 ½
500	590	KRP-C_SP	L	–	1200	1600	1200*	7	500 2/PHASE	(2) 3

* Switch size must be increased if the amp rating of the fuse exceeds the amp rating of the switch.

1 Per 430.52(C)(2), if the motor controller manufacturer's overload relay tables state a maximum branch circuit protective device of a lower rating, that lower rating must be used in lieu of the sizes shown in Columns 4, 5, or 6.

** If equipment terminations are rated for 60°C conductors only, the 60°C conductor ampacities must be utilized and therefore larger conductor sizes or conduit sizes may be required.

4 Limited by 600 amp being the largest amp rating for FRS-R and LPS-RK_SP.

f Class J performance, special finger-safe dimensions.

575Vac Three-Phase Motors & Circuits (550-600Vac Systems)

1	2	3		4	5	6	7	8	9	10
Motor Size Table 430.250 HP	Motor FLA Table 430.250 AMPS	Fuse Type	Fuse Class	Optimal Branch Ckt Protection AMPS[1]	NEC® Max for Gen. Applic 430.52(C)(1) Exc. No. 1 AMPS[1]	NEC® Max for Heavy Start 430.52(C)(1) Exc. No. 2 AMPS[1]	Minimum Switch Size 430.110 AMPS	Minimum NEMA Starter NEMA ICS 2-2000 Size[2]	Minimum Copper Wire THWN or THHN AWG or KCMIL Table 310.16 Size	Minimum Rigid Metallic Conduit Annex C Table C8 Inches
		LPJ_SP	J	1 7/10	3	3				
		TCF	Jf	3	3	3				
½	0.9	LP-CC	CC	1 8/10	3	3 ½	30	0	14	½
		LPS-RK_SP	RK1	1 ¼	3	3				
		FRS-R	RK5	1 ⅛	3	3				
		LPJ_SP	J	2	3	3				
		TCF	Jf	3	3	3				
¾	1.3	LP-CC	CC	2 8/10	6	6	30	0	14	½
		LPS-RK_SP	RK1	1 8/10	3	3				
		FRS-R	RK5	1 8/10	3	3				
		LPJ_SP	J	2 8/10	3	3 ½				
		TCF	Jf	3	3	3				
1	1.7	LP-CC	CC	3 ½	6	6 ¼	30	0	14	½
		LPS-RK_SP	RK1	2 ¼	3	3 ½				
		FRS-R	RK5	2 ¼	3	3 ½				
		LPJ_SP	J	4	6	6				
		TCF	Jf	6	6	6				
1 ½	2.4	LP-CC	CC	5	10	10	30	0	14	½
		LPS-RK_SP	RK1	3 3/10	6	6				
		FRS-R	RK5	3	6	6				
		LPJ_SP	J	4 ½	6	6				
		TCF	Jf	6	6	6				
2	2.7	LP-CC	CC	5 8/10	10	10	30	0	14	½
		LPS-RK_SP	RK1	4	6	6				
		FRS-R	RK5	3 ½	6	6				
		LPJ_SP	J	6	10	10				
		TCF	Jf	6	10	10				
3	3.9	LP-CC	CC	8	15	15	30	0	14	½
		LPS-RK_SP	RK1	5 8/10	10	10				
		FRS-R	RK5	5	10	10				
		LPJ_SP	J	10	15	15				
		TCF	Jf	10	15	15				
5	6.1	LP-CC	CC	15	20	20	30	0	14	½
		LPS-RK_SP	RK1	8	15	15				
		FRS-R	RK5	8	15	15				
		LPJ_SP	J	15	20	20				
		TCF	Jf	15	20	20				
7 ½	9	LP-CC	CC	30	30	30	30	1	14	½
		LPS-RK_SP	RK1	12	20	20				
		FRS-R	RK5	12	20	20				
		LPJ_SP	J	17 ½	20	20				
10	11	TCF	Jf	17 ½	20	20	30	1	14	½
		LPS-RK_SP	RK1	15	20	20				
		FRS-R	RK5	15	20	20				
		LPJ_SP	J	30	30	35				
15	17	TCF	Jf	30	30	35	30*	2	12	½
		LPS-RK_SP	RK1	25	30	35				
		FRS-R	RK5	25	30	35				
		LPJ_SP	J	35	40	45				
20	22	TCF	Jf	35	40	45	30*	2	10	½
		LPS-RK_SP	RK1	30	40	45				
		FRS-R	RK5	30	40	45				
		LPJ_SP	J	45	50	60				
25	27	TCF	Jf	45	50	60	60	2	10**	½**
		LPS-RK_SP	RK1	40	50	60				
		FRS-R	RK5	35	50	60				
		LPJ_SP	J	50	60	70				
30	32	TCF	Jf	50	60	70	60*	3	8	½
		LPS-RK_SP	RK1	45	60	70				
		FRS-R	RK5	40	60	70				
		LPJ_SP	J	70	80	90				
40	41	TCF	Jf	70	80	90	60*	3	6	¾
		LPS-RK_SP	RK1	60	80	90				
		FRS-R	RK5	60	80	90				
		LPJ_SP	J	80	100	110				
50	52	TCF	Jf	80	100	–	100*	3	6**	¾**
		LPS-RK_SP	RK1	70	100	110				
		FRS-R	RK5	70	100	110				

*Switch size must be increased if the amp rating of the fuse exceeds the amp rating of the switch.

1 Per 430.52(C)(2), if the motor controller manufacturer's overload relay tables state a maximum branch circuit protective device of a lower rating, that lower rating must be used in lieu of the sizes shown in Columns 4, 5, or 6.

**If equipment terminations are rated for 60°C conductors only, the 60°C conductor ampacities must be utilized and therefore larger conductor sizes or conduit sizes may be required.

2 These sizes are typical. They are not shown in NEMA ICS 2-2000.

f Class J performance, special finger-safe dimensions.

COOPER Bussmann

575Vac Three-Phase Motors & Circuits (550-600Vac Systems) continued

1	2	3		4	5	6	7	8	9	10
Motor Size Table 430.250 HP	Motor FLA Table 430.250 AMPS	Fuse		Optimal Branch Ckt Protection	NEC® Max for Gen. Applic 430.52(C)(1) Exc. No. 1	NEC® Max for Heavy Start 430.52(C)(1) Exc. No. 2	Minimum Switch Size 430.110	Minimum NEMA Starter NEMA ICS 2-2000	Minimum Copper Wire THWN or THHN AWG or KCMIL Table 310.16	Minimum Rigid Metallic Conduit Annex C Table C8
		Type	Class	AMPS[1]	AMPS[1]	AMPS[1]	AMPS	Size[2]	Size	Inches
60	62	LPJ_SP LPS-RK_SP FRS-R	J RK1 RK5	100 90 80	110 110 110	125 125 125	100*	4	4**	1
75	77	LPJ_SP LPS-RK_SP FRS-R	J RK1 RK5	125 110 100	150 150 150	150 150 150	100*	4	3**	1**
100	99	LPJ_SP LPS-RK_SP FRS-R	J RK1 RK5	150 150 125	175 175 175	200 200 200	200	4	1**	1 ¼**
125	125	LPJ_SP LPS-RK_SP FRS-R	J RK1 RK5	200 175 175	225 225 225	250 250 250	200*	5	2/0	1 ½
150	144	LPJ_SP LPS-RK_SP FRS-R	J RK1 RK5	225 200 200	300 300 300	300 300 300	200*	5	3/0	1 ½
200	192	LPJ_SP LPS-RK_SP FRS-R	J RK1 RK5	300 250 250	350 350 350	400 400 400	400	5	250	2
250	242	LPJ_SP LPS-RK_SP FRS-R KRP-C_SP	J RK1 RK5 L	400 350 350 –	450 450 450 –	500 500 500 700	400*	6	350	2 ½
300	289	LPJ_SP LPS-RK_SP FRS-R KRP-C_SP	J RK1 RK5 L	450 400 400 –	600 600 600 –	600 600 600 800	400*	6	500	3
350	336	LPJ_SP LPS-RK_SP FRS-R KRP-C_SP	J RK1 RK5 L	600 450 450 –	600 600 600 601	– – – 1000	600*	6	4/0 2/PHASE	(2) 2
400	382	LPJ_SP LPS-RK_SP FRS-R KRP-C_SP	J RK1 RK5 L	600 500 500 –	– – – 700	– – – 1100	600*	6	250 2/PHASE	(2) 2
450	412	LPS-RK_SP FRS-R KRP-C_SP	RK1 RK5 L	600 600 –	– – 800	– – 1200	600*	7	300 2/PHASE	(2) 2
500	472	FRS-R KRP-C_SP	RK5 L	600 –	– 1000	– 1400	600*	7	350 2/PHASE	(2) 2 ½

* Switch size must be increased if the amp rating of the fuse exceeds the amp rating of the switch.

1 Per 430.52(C)(2), if the motor controller manufacturer's overload relay tables state a maximum branch circuit protective device of a lower rating, that lower rating must be used in lieu of the sizes shown in Columns 4, 5, or 6.

** If equipment terminations are rated for 60°C conductors only, the 60°C conductor ampacities must be utilized and therefore larger conductor sizes or conduit sizes may be required.

2 These sizes are typical. They are not shown in NEMA ICS 2-2000.

115Vac Single-Phase Motors & Circuits (110-120Vac Systems)

1	2	3		4	5	6	7	8	9	10
Motor Size Table 430.248 HP	Motor FLA Table 430.248 AMPS	Fuse Type	Class	Optimal Branch Ckt Protection AMPS[1]	NEC® Max for Gen. Applic 430.52(C)(1) Exc. No. 1 AMPS[1]	NEC® Max for Heavy Start 430.52(C)(1) Exc. No. 2 AMPS[1]	Minimum Switch Size 430.110 AMPS	Minimum NEMA Starter NEMA ICS 2-2000 Size[2]	Minimum Copper Wire THWN or THHN AWG or KCMIL Table 310.16 Size	Minimum Rigid Metallic Conduit Annex C Table C8 Inches
		LPJ_SP	J	8	10	10				
		TCF	Jf	10	10	10				
⅛	4.4	LP-CC	CC	9	15	15	30	00	14	½
		LPN-RK_SP	RK1	6	10	10				
		FRN-R	RK5	5 6/10	10	10				
		LPJ_SP	J	9	15	15				
		TCF	Jf	10	15	15				
¼	5.8	LP-CC	CC	12	20	20	30	00	14	½
		LPN-RK_SP	RK1	8	15	15				
		FRN-R	RK5	7 ½	15	15				
		LPJ_SP	J	12	15	15				
		TCF	Jf	15	15	15				
⅓	7.2	LP-CC	CC	15	25	25	30	00	14	½
		LPN-RK_SP	RK1	10	15	15				
		FRN-R	RK5	9	15	15				
		LPJ_SP	J	15	20	20				
		TCF	Jf	15	20	20				
½	9.8	LP-CC	CC	30	30	30	30	0	14	½
		LPN-RK_SP	RK1	15	20	20				
		FRN-R	RK5	15	20	20				
		LPJ_SP	J	25	25	30				
¾	13.8	TCF	Jf	25	25	30	30	0	14	½
		LPN-RK_SP	RK1	20	25	30				
		FRN-R	RK5	17 ½	25	30				
		LPJ_SP	J	25	30	35				
1	16	TCF	Jf	25	30	35	30*	0	14	½
		LPN-RK_SP	RK1	25	30	35				
		FRN-R	RK5	20	30	35				
		LPJ_SP	J	30	35	45				
1 ½	20	TCF	Jf	30	35	45	30*	1	12	½
		LPN-RK_SP	RK1	30	35	45				
		FRN-R	RK5	25	35	45				
		LPJ_SP	J	40	45	50				
2	24	TCF	Jf	40	45	50	30*	1	10	½
		LPN-RK_SP	RK1	35	45	50				
		FRN-R	RK5	30	45	50				
		LPJ_SP	J	60	60	70				
3	34	TCF	Jf	50	60	70	60*	2	8**	½**
		LPN-RK_SP	RK1	45	60	70				
		FRN-R	RK5	45	60	70				
		LPJ_SP	J	90	100	125				
5	56	TCF	Jf	90	100	–	100*	3	4	¾**
		LPN-RK_SP	RK1	80	100	125				
		FRN-R	RK5	70	100	125				
		LPJ_SP	J	125	150	175				
7 ½	80	LPN-RK_SP	RK1	110	150	175	100*	3	3**	1**
		FRN-R	RK5	100	150	175				
		LPJ_SP	J	150	175	225				
10	100	LPN-RK_SP	RK1	150	175	225	200*	42	1	1 ¼
		FRN-R	RK5	125	175	225				

* Switch size must be increased if the amp rating of the fuse exceeds the amp rating of the switch.

1 Per 430.52(C)(2), if the motor controller manufacturer's overload relay tables state a maximum branch circuit protective device of a lower rating, that lower rating must be used in lieu of the sizes shown in Columns 4, 5, or 6.

** If equipment terminations are rated for 60°C conductors only, the 60°C conductor ampacities must be utilized and therefore larger conductor sizes or conduit sizes may be required.

2 These sizes are typical. They are not shown in NEMA ICS 2-2000.

f Class J performance, special finger-safe dimensions.

COOPER Bussmann

230Vac Single-Phase Motors & Circuits (220-240Vac Systems)

1	2	3		4	5	6	7	8	9	10
Motor Size Table 430.248 HP	Motor FLA Table 430.248 AMPS	Fuse		Optimal Branch Ckt Protection	NEC® Max for Gen. Applic 430.52(C)(1) Exc. No. 1	NEC® Max for Heavy Start 430.52(C)(1) Exc. No. 2	Minimum Switch Size 430.110	Minimum NEMA Starter NEMA ICS 2-2000	Minimum Copper Wire THWN or THHN AWG or KCMIL Table 310.16	Minimum Rigid Metallic Conduit Annex C Table C8
		Type	Class	AMPS[1]	AMPS[1]	AMPS[1]	AMPS	Size[2]	Size	Inches
		LPJ_SP	J	3 ½	6	6				
		TCF	Jf	6	6	6				
⅛	2.2	LP-CC	CC	4 ½	10	10	30	00	14	½
		LPN-RK_SP	RK1	3	6	6				
		FRN-R	RK5	2 ⁹/₁₀	6	6				
		LPJ_SP	J	4 ½	6	6				
		TCF	Jf	6	6	6				
¼	2.9	LP-CC	CC	6	10	10	30	00	14	½
		LPN-RK_SP	RK1	4	6	6 ¼				
		FRN-R	RK5	4	6	6 ¼				
		LPJ_SP	J	5 ⁹/₁₀	10	10				
		TCF	Jf	6	10	10				
⅓	3.6	LP-CC	CC	7	15	15	30	00	14	½
		LPN-RK_SP	RK1	5	10	10				
		FRN-R	RK5	4 ½	10	10				
		LPJ_SP	J	8	10	10				
		TCF	Jf	10	10	10				
½	4.9	LP-CC	CC	10	15	15	30	00	14	½
		LPN-RK_SP	RK1	8	10	10				
		FRN-R	RK5	6 ¼	10	10				
		LPJ_SP	J	12	15	15				
		TCF	Jf	15	15	15				
¾	6.9	LP-CC	CC	15	25	25	30	00	14	½
		LPN-RK_SP	RK1	9	15	15				
		FRN-R	RK5	9	15	15				
		LPJ_SP	J	12	15	17 ½				
		TCF	Jf	15	15	17 ½				
1	8	LP-CC	CC	25	25	30	30	00	14	½
		LPN-RK_SP	RK1	12	15	17 ½				
		FRN-R	RK5	10	15	17 ½				
		LPJ_SP	J	15	20	20				
		TCF	Jf	15	20	20				
1 ½	10	LP-CC	CC	30	30	30	30	0	14	½
		LPN-RK_SP	RK1	15	20	20				
		FRN-R	RK5	15	20	20				
		LPJ_SP	J	20	25	25				
		TCF	Jf	20	25	25				
2	12	LP-CC	CC	25	–	–	30	0	14	½
		LPN-RK_SP	RK1	17 ½	25	25				
		FRN-R	RK5	15	25	25				
		LPJ_SP	J	30	30	35				
3	17	TCF	Jf	30	30	35	30*	1	12	½
		LPN-RK_SP	RK1	25	30	35				
		FRN-R	RK5	25	30	35				
		LPJ_SP	J	45	50	60				
5	28	TCF	Jf	45	50	60	60	2	10**	½
		LPN-RK_SP	RK1	40	50	60				
		FRN-R	RK5	35	50	60				
		LPJ_SP	J	60	70	90				
7 ½	40	TCF	Jf	60	70	90	60*	2	8**	½**
		LPN-RK_SP	RK1	60	70	90				
		FRN-R	RK5	50	70	90				
		LPJ_SP	J	80	90	110				
10	50	TCF	Jf	80	90	–	100*	3	6**	½**
		LPN-RK_SP	RK1	70	90	110				
		FRN-R	RK5	70	90	110				

* Switch size must be increased if the amp rating of the fuse exceeds the amp rating of the switch.

1 Per 430.52(C)(2), if the motor controller manufacturer's overload relay tables state a maximum branch circuit protective device of a lower rating, that lower rating must be used in lieu of the sizes shown in Columns 4, 5, or 6.

** If equipment terminations are rated for 60°C conductors only, the 60°C conductor ampacities must be utilized and therefore larger conductor sizes or conduit sizes may be required.

f Class J performance, special finger-safe dimensions.

90Vdc[3] Motors & Circuits

1	2	3		4	5	6	7	8	9	10
Motor Size Table 430.257 HP	Motor FLA Table 430.257 AMPS	Fuse Type	Fuse Class	Optimal Branch Ckt Protection AMPS[1]	NEC® Max for Gen. Applic 430.52(C)(1) Exc. No. 1 AMPS[1]	NEC® Max for Heavy Start 430.52(C)(1) Exc. No. 2 AMPS[1]	Minimum Switch Size 430.110 AMPS	Minimum NEMA Starter NEMA ICS 2-2000 Size[2]	Minimum Copper Wire THWN or THHN AWG or KCMIL Table 310.16 Size	Minimum Rigid Metallic Conduit Annex C Table C8 Inches
¼	4.0	LPJ_SP TCF LPC_CC LPN-RK_SP FRN-R	J Jf CC RK1 RK5	6 6 6 6 5	6 6 6 6 6	6 6 15 9 9	30	1	14	½
⅓	5.2	LPJ_SP TCF LP-CC LPN-RK_SP FRN-R	J Jf CC RK1 RK5	8 10 10 8 7	10 10 10 10 10	10 10 20 10 10	30	1	14	½
½	6.8	LPJ_SP TCF LP-CC LPN-RK_SP FRN-R	J Jf CC RK1 RK5	12 15 15 9 9	15 15 15 15 15	15 15 25 15 15	30	1	14	½
¾	9.6	LPJ_SP TCF LP-CC LPN-RK_SP FRN-R	J Jf CC RK1 RK5	15 15 15 15 12	15 15 15 15 15	20 20 30 20 20	30	1	14	½

1 Per 430.52(C)(2), if the motor controller manufacturer's overload relay tables state a maximum branch circuit protective device of a lower rating, that lower rating must be used in lieu of the sizes shown in Columns 4, 5, or 6.

** If equipment terminations are rated for 60°C conductors only, the 60°C conductor ampacities must be utilized and therefore larger conductor sizes or conduit sizes may be required.

2 These sizes are typical. They are not shown in NEMA ICS 2-2000.

3 All equipment manufacturers should be consulted about DC voltage ratings of their equipment.

f Class J performance, special finger-safe dimensions.

COOPER Bussmann

120Vdc[3] Motors & Circuits

1	2	3		4	5	6	7	8	9	10
Motor Size Table 430.257 HP	Motor FLA Table 430.257 AMPS	Fuse		Optimal Branch Ckt Protection	NEC® Max for Gen. Applic 430.52(C)(1) Exc. No. 1	NEC® Max for Heavy Start 430.52(C)(1) Exc. No. 2	Minimum Switch Size 430.110	Minimum NEMA Starter NEMA ICS 2-2000	Minimum Copper Wire THWN or THHN AWG or KCMIL Table 310.16	Minimum Rigid Metallic Conduit Annex C Table C8
		Type	Class	AMPS[1]	AMPS[1]	AMPS[1]	AMPS	Size[2]	Size	Inches
		LPJ_SP	J	5	6	6				
		TCF	J[f]	6	6	6				
¼	3.1	LP-CC	CC	6	6	12	30	1	14	½
		LPN-RK_SP	RK1	4 ½	6	6 ¼				
		FRN-R	RK5	4	6	6 ¼				
		LPJ_SP	J	7	10	10				
		TCF	J[f]	10	10	10				
⅓	4.1	LP-CC	CC	9	10	15	30	1	14	½
		LPN-RK_SP	RK1	5 ⁹⁄₁₀	10	10				
		FRN-R	RK5	5 ⁹⁄₁₀	10	10				
		LPJ_SP	J	9	10	12				
		TCF	J[f]	10	10	10				
½	5.4	LP-CC	CC	10	10	20	30	1	14	½
		LPN-RK_SP	RK1	7 ½	10	12				
		FRN-R	RK5	7	10	12				
		LPJ_SP	J	12	15	15				
		TCF	J[f]	15	15	15				
¾	7.6	LP-CC	CC	15	15	30	30	1	14	½
		LPN-RK_SP	RK1	10	15	15				
		FRN-R	RK5	10	15	15				
		LPJ_SP	J	15	15	20				
		TCF	J[f]	15	15	20				
1	9.5	LP-CC	CC	15	15	30[5]	30	1	14	½
		LPN-RK_SP	RK1	15	15	20				
		FRN-R	RK5	12	15	20				
		LPJ_SP	J	20	20	25				
		TCF	J[f]	20	20	25				
1 ½	13.2	LP-CC	CC	20	20	30[5]	30	1	14	½
		LPN-RK_SP	RK1	17 ½	20	25				
		FRN-R	RK5	17 ½	20	25				
		LPJ_SP	J	30	30	35				
		TCF	J[f]	30	30	35				
2	17	LP-CC	CC	30	30	30[5]	30*	1	12	½
		LPN-RK_SP	RK1	25	30	35				
		FRN-R	RK5	25	30	35				
		LPJ_SP	J	40	40	50				
3	25	TCF	J[f]	40	40	50	60	1	10**	½
		LPN-RK_SP	RK1	35	40	50				
		FRN-R	RK5	35	40	35				
		LPJ_SP	J	60	60	90				
5	40	TCF	J[f]	60	60	60	60*	2	8**	½**
		LPN-RK_SP	RK1	60	60	90				
		FRN-R	RK5	50	60	90				
		LPJ_SP	J	90	90	125				
7 ½	58	TCF	J[f]	90	90	–	100*	3	4**	¾**
		LPN-RK_SP	RK1	80	90	125				
		FRN-R	RK5	80	90	125				
		LPJ_SP	J	125	125	150				
10	76	LPN-RK_SP	RK1	100	125	150	100*	3	3**	1
		FRN-R	RK5	100	125	150				

* Switch size must be increased if the amp rating of the fuse exceeds the amp rating of the switch.

1 Per 430.52(C)(2), if the motor controller manufacturer's overload relay tables state a maximum branch circuit protective device of a lower rating, that lower rating must be used in lieu of the sizes shown in Columns 4, 5, or 6.

** If equipment terminations are rated for 60°C conductors only, the 60°C conductor ampacities must be utilized and therefore larger conductor sizes or conduit sizes may be required.

2 Reduced voltage magnetic controller ratings

3 All equipment manufacturers should be consulted about DC voltage ratings of their equipment.

5 Largest LP-CC Fuse 30 amp. With other type fuse, could use larger amp rating in this application.

f Class J performance, special finger-safe dimensions.

180Vdc[3] Motors & Circuits

1	2	3		4	5	6	7	8	9	10
Motor Size	Motor FLA	Fuse		Optimal Branch Ckt Protection	NEC® Max for Gen. Applic 430.52(C)(1) Exc. No. 1	NEC® Max for Heavy Start 430.52(C)(1) Exc. No. 2	Minimum Switch Size 430.110	Minimum NEMA Starter NEMA ICS 2-2000	Minimum Copper Wire THWN or THHN AWG or KCMIL Table 310.16	Minimum Rigid Metallic Conduit Annex C Table C8
Table 430.257 HP	Table 430.257 AMPS	Type	Class	AMPS[1]	AMPS[1]	AMPS[1]	AMPS	Size[2]	Size	Inches
¼	2.0	LPJ_SP	J	3	3	4 ½	30	1	14	½
		TCF	J[f]	3	3	3				
		LPS-RK_SP	RK1	2 ⅘	3	4 ½				
		FRS-R	RK5	2 ½	3	4 ½				
⅓	2.6	LPJ_SP	J	4	6	6	30	1	14	½
		TCF	J[f]	6	6	6				
		LPS-RK_SP	RK1	3 ½	6	6				
		FRS-R	RK5	3 ½	6	6				
½	3.4	LPJ_SP	J	5 ⅘	6	6	30	1	14	½
		TCF	J[f]	6	6	6				
		LPS-RK_SP	RK1	4 ½	6	6 ¼				
		FRS-R	RK5	4 ½	6	7 ½				
¾	4.8	LPJ_SP	J	8	10	10	30	1	14	½
		TCF	J[f]	10	10	10				
		LPS-RK_SP	RK1	6 ¼	10	10				
		FRS-R	RK5	6	10	10				
1	6.1	LPJ_SP	J	10	10	12	30	1	14	½
		TCF	J[f]	10	10	10				
		LPS-RK_SP	RK1	8	10	12				
		FRS-R	RK5	8	10	12				
1 ½	8.3	LPJ_SP	J	15	15	17 ½	30	1	14	½
		TCF	J[f]	15	15	15				
		LP-CC	CC	–	–	30				
		LPS-RK_SP	RK1	12	15	17 ½				
		FRS-R	RK5	12	15	17 ½				
2	10.8	LPJ_SP	J	15	20	20	30	1	14	½
		TCF	J[f]	15	20	20				
		LP-CC	CC	20	20	30				
		LPS-RK_SP	RK1	15	20	20				
		FRS-R	RK5	15	20	20				
3	16	LPJ_SP	J	25	25	35	30*	1	14	½
		TCF	J[f]	25	25	35				
		LP-CC	CC	25	25	30				
		LPS-RK_SP	RK1	20	25	35				
		FRS-R	RK5	20	25	35				
5	27	LPJ_SP	J	40	45	60	60	2	10**	½
		TCF	J[f]	40	45	60				
		LPS-RK_SP	RK1	40	45	60				
		FRS-R	RK5	35	45	60				

* Switch size must be increased if the amp rating of the fuse exceeds the amp rating of the switch.

1 Per 430.52(C)(2), if the motor controller manufacturer's overload relay tables state a maximum branch circuit protective device of a lower rating, that lower rating must be used in lieu of the sizes shown in Columns 4, 5, or 6.

** If equipment terminations are rated for 60°C conductors only, the 60°C conductor ampacities must be utilized and therefore larger conductor sizes or conduit sizes may be required.

2 These sizes are typical. They are not shown in NEMA ICS 2-2000.

3 All equipment manufacturers should be consulted about DC voltage ratings of their equipment.

f Class J performance, special finger-safe dimensions.

240Vdc[3] Motors & Circuits

1	2	3		4	5	6	7	8	9	10
Motor Size	Motor FLA	Fuse		Optimal Branch Ckt Protection	NEC® Max for Gen. Applic 430.52(C)(1) Exc. No. 1	NEC® Max for Heavy Start 430.52(C)(1) Exc. No. 2	Minimum Switch Size 430.110	Minimum NEMA Starter NEMA ICS 2-2000	Minimum Copper Wire THWN or THHN AWG or KCMIL Table 310.16	Minimum Rigid Metallic Conduit Annex C Table C8
Table 430.257 HP	Table 430.257 AMPS	Type	Class	AMPS[1]	AMPS[1]	AMPS[1]	AMPS	Size[2]	Size	Inches
¼	1.6	LPJ_SP	J	2 ½	3	3 ½	30	1	14	½
		TCF	J[f]	3	3	3				
		LPN-RK_SP	RK1	2 ¼	3	3 ½				
		FRS-R	RK5	2	3	3 ½				
⅓	2.0	LPJ_SP	J	3	3	4 ½	30	1	14	½
		TCF	J[f]	3	3	3				
		LPS-RK_SP	RK1	2 ⅘	3	4 ½				
		FRS-R	RK5	2 ½	3	4 ½				

* Switch size must be increased if the amp rating of the fuse exceeds the amp rating of the switch.

1 Per 430.52(C)(2), if the motor controller manufacturer's overload relay tables state a maximum branch circuit protective device of a lower rating, that lower rating must be used in lieu of the sizes shown in Columns 4, 5, or 6.

** If equipment terminations are rated for 60°C conductors only, the 60°C conductor ampacities must be utilized and therefore larger conductor sizes or conduit sizes may be required.

2 Reduced voltage magnetic DC controller ratings.

3 All equipment manufacturers should be consulted about DC voltage ratings of their equipment.

f Class J performance, special finger-safe dimensions.

COOPER Bussmann

240Vdc[3] Motors & Circuits continued

1	2	3		4	5	6	7	8	9	10
Motor Size Table 430.257 HP	Motor FLA Table 430.257 AMPS	Fuse Type	Fuse Class	Optimal Branch Ckt Protection AMPS[1]	NEC® Max for Gen. Applic 430.52(C)(1) Exc. No. 1 AMPS[1]	NEC® Max for Heavy Start 430.52(C)(1) Exc. No. 2 AMPS[1]	Minimum Switch Size 430.110 AMPS	Minimum NEMA Starter NEMA ICS 2-2000 Size[2]	Minimum Copper Wire THWN or THHN AWG or KCMIL Table 310.16 Size	Minimum Rigid Metallic Conduit Annex C Table C8 Inches
		LPJ_SP	J	4 ½	6	6				
½	2.7	TCF	Jf	6	6	6	30	1	14	½
		LPS-RK_SP	RK1	4	6	6				
		FRS-R	RK5	3 ½	6	6				
		LPJ_SP	J	6	6	8				
		TCF	Jf	6	6	6				
¾	3.8	LP-CC	CC	—	—	15	30	1	14	½
		LPS-RK_SP	RK1	5	6	8				
		FRS-R	RK5	5	6	8				
		LPJ_SP	J	8	10	10				
1	4.7	TCF	Jf	10	10	10	30	1	14	½
		LPS-RK_SP	RK1	6 ¼	10	10				
		FRS-R	RK5	6	10	10				
		LPJ_SP	J	10	10	12				
1 ½	6.6	TCF	Jf	10	10	10	30	1	14	½
		LPS-RK_SP	RK1	9	10	12				
		FRS-R	RK5	9	10	12				
		LPJ_SP	J	15	15	17 ½				
2	8.5	TCF	Jf	15	15	15	30	1	14	½
		LPS-RK_SP	RK1	12	15	17 ½				
		FRS-R	RK5	12	15	17 ½				
		LPJ_SP	J	20	20	25				
		TCF	Jf	20	20	25				
3	12.2	LP-CC	CC	20	20	30	30	1	14	½
		LPS-RK_SP	RK1	17 ½	20	25				
		FRS-R	RK5	17 ½	20	25				
		LPJ_SP	J	30	30	45				
		TCF	Jf	30	30	45				
5	20	LP-CC	CC	30	30	30	30*	1	12	½
		LPS-RK_SP	RK1	30	30	45				
		FRS-R	RK5	25	30	45				
		LPJ_SP	J	45	45	60				
7 ½	29	TCF	Jf	45	45	60	60	2	8	½
		LPS-RK_SP	RK1	40	45	60				
		FRS-R	RK5	40	45	60				
		LPJ_SP	J	60	60	80				
10	38	TCF	Jf	60	60	60	60*	2	8**	½**
		LPS-RK_SP	RK1	50	60	80				
		FRS-R	RK5	50	60	80				
		LPJ_SP	J	90	90	110				
15	55	TCF	Jf	90	90	–	100*	3	4	3/4**
		LPN-RK_SP	RK1	80	90	110				
		FRS-R	RK5	70	90	110				
		LPJ_SP	J	110	110	150				
20	72	LPN-RK_SP	RK1	100	110	150	100*	3	3**	1
		FRS-R	RK5	90	110	150				
		LPJ_SP	J	150	150	200				
25	89	LPN-RK_SP	RK1	125	150	200	200	3	2**	1**
		FRS-R	RK5	125	150	200				
		LPJ_SP	J	175	175	225				
30	106	LPN-RK_SP	RK1	150	175	225	200*	4	1/0**	1 ¼
		FRS-R	RK5	150	175	225				
		LPJ_SP	J	225	225	300				
40	140	LPN-RK_SP	RK1	200	225	300	200*	4	2/0**	1 ¼**
		FRS-R	RK5	175	225	300				
		LPJ_SP	J	300	300	350				
50	173	LPN-RK_SP	RK1	225	300	350	400	5	4/0**	1 ½**
		FRS-R	RK5	225	300	350				
		LPJ_SP	J	350	350	450				
60	206	LPN-RK_SP	RK1	300	350	450	400*	5	300**	2**
		FRS-R	RK5	300	350	450				
		LPJ_SP	J	400	400	500				
75	255	LPN-RK_SP	RK1	350	400	500	400*	5	400**	2**
		FRS-R	RK5	350	400	500				
		LPJ_SP	J	600	600	–				
100	341	LPN-RK_SP	RK1	450	600	–	600	6	4/0 2/PHASE	(2) 1 ½**
		FRS-R	RK5	450	600	–				

* Switch size must be increased if the amp rating of the fuse exceeds the amp rating of the switch.

1 Per 430.52(C)(2), if the motor controller manufacturer's overload relay tables state a maximum branch circuit protective device of a lower rating, that lower rating must be used in lieu of the sizes shown in Columns 4, 5, or 6.

** If equipment terminations are rated for 60°C conductors only, the 60°C conductor ampacities must be utilized and therefore larger conductor sizes or conduit sizes may be required.

2 Reduced voltage magnetic DC controller ratings.

3 All equipment manufacturers should be consulted about DC voltage ratings of their equipment.

f Class J performance, special finger-safe dimensions.