



TECH TIP #52

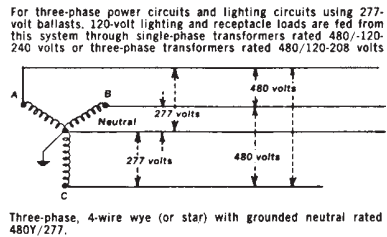
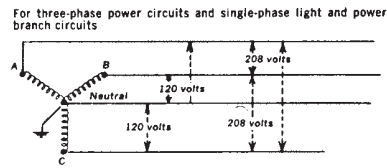
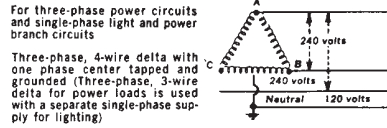
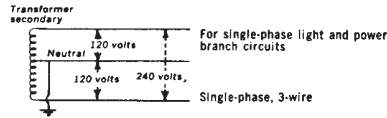
ELECTRIC MOTOR DATA

AMPERE RATINGS, RESISTANCE LOADS				
KW	Single Phase			
	120V.	208V.	240V.	277V.
.50	4.2	2.5	2.1	1.9
.75	6.3	3.7	3.2	2.8
1	8.4	4.9	4.2	3.7
2	16.7	9.7	8.4	7.3
3	25.0	14.5	12.5	10.9
4	33.4	19.3	16.7	14.5
5	41.7	24.1	21.0	18.1
6	50.0	28.9	25.2	21.7
7½	62.5	36.1	31.3	27.1
10	83.4	48.1	41.7	36.2
12	100.0	57.7	50.0	43.4
15	125.0	72.2	62.5	54.2
20	166.7	96.2	83.4	72.3
25	208.4	120.2	104.2	90.3
30	250.0	144.3	125.0	108.4
50	416.7	240.4	208.4	180.6
75	625.0	360.6	312.5	270.8
100	833.4	480.8	416.7	361.1

For kw ratings not listed, combine total of ratings.
For example, for 24kw, 240 volts, single phase:
4kw = 16.7 amps; 20kw = 83.4 amp. Total,
24kw = 100.1 amp.

AMPERE RATINGS, RESISTANCE LOADS			
KW	Three Phase		
	208V.	240V.	480V.
1	2.8	2.5	1.3
2	5.6	4.9	2.5
3	8.4	7.3	3.7
4	11.2	9.7	4.9
5	13.9	12.1	6.1
6	16.8	14.5	7.3
8	22.4	19.4	9.8
10	27.8	24.1	12.1
12	33.4	29.0	14.5
15	41.7	36.2	18.1
20	55.6	48.2	24.1
25	69.5	60.3	30.2
30	83.4	72.3	36.2
50	139.0	120.5	60.3
75	208.5	180.7	90.4
100	278.0	240.9	120.5

For kw ratings not listed, combine total of ratings.
For example, for 9kw, 240 volts, three phase:
4kw = 9.7 amp; 5kw = 12.1 amp. Total 9kw = 21.8 amp.



MOTOR WIRING

HP	230 Volts				460 Volts							
	Approx. Full-load Amp		Copper Wire Size, Min AWG		Conduit Size, Inches		Branch-circuit† Fuse, Amperes					
	R, T	RH	R, T	RH	R, T	RH	R, T	RH				
1	3.6	14	14	½	½	15	1.8	14	14	½	½	15
1½	5.2	14	14	½	½	15	2.6	14	14	½	½	15
2	6.8	14	14	½	½	20	3.4	14	14	½	½	15
3	9.6	14	14	½	½	30	4.8	14	14	½	½	15
5	15.2	12	12	½	½	45	7.6	14	14	½	½	25
7½	22	10	10	¾	¾	70	11	14	14	½	½	35
10	28	8	8	¾	¾	80	14	12	12	½	½	45
15	42	6	6	1	1	125	21	10	10	¾	¾	60
20	54	4	4	1¼	1¼	175	27	8	8	¾	¾	80
25	68	3	3	1½	1½	200	34	8	8	¾	¾	100
30	80	1	1	1¾	1¾	250	40	6	6	1	1	125
40	104	00	1	2	2	350	52	4	4	1¼	1¼	175
50	130	000	00	2	2	400	65	3	3	1½	1½	200
60	154	40	000	2½	2½	450	77	2	2	1¾	1¾	225

* The values given are for not more than three conductors in a raceway or cable, and having 60 C insulations, Types R, RW, RU, RUW, T and TW; or 75 C insulation: Types RH and RHW. For other conditions and insulations see the National Electrical Code.

† Conduit size for 3-phase squirrel-cage induction motors refers to three conductors in one conduit. Conduit size for single-phase and direct-current motors refers to two conductors in one conduit.

‡ The values given are for branch-circuit protection using fuses and full-voltage starting. For circuit breaker ratings, reduced-voltage starting, and motor overload protection, see National Electrical Code.

MOTOR WIRING

HP	115 Volts				230 Volts							
	Approx. Full-load Amp		Copper Wire Size, Min AWG		Conduit Size, Inches		Branch-circuit† Fuse, Amperes					
	R, T	RH	R, T	RH	R, T	RH	R, T	RH				
½	9.8	14	14	½	½	30	4.9	14	14	½	½	15
¾	13.8	12	12	½	½	45	6.9	14	14	½	½	20
1	16	12	12	½	½	50	8	14	14	½	½	25
1½	20	10	10	¾	¾	60	10	14	14	½	½	30
2	24	10	10	¾	¾	80	12	14	14	½	½	40
3	34	6	6	1	1	110	17	10	10	¾	¾	60
5	56	—	—	—	—	—	28	8	8	¾	¾	90

HP	115 Volts				230 Volts							
	Approx. Full-load Amp		Copper Wire Size, Min AWG		Conduit Size, Inches		Branch-circuit† Fuse, Amperes					
	R, T	RH	R, T	RH	R, T	RH	R, T	RH				
1	9.6	14	14	½	½	15	4.8	14	14	½	½	15
1½	13.2	12	12	½	½	20	6.6	14	14	½	½	15
2	17	10	10	¾	¾	30	8.5	14	14	½	½	15
3	25	8	8	¾	¾	40	12.5	12	12	½	½	20
5	40	6	6	1	1	60	20	10	10	¾	¾	30
7½	58	3	3	1¼	1¼	90	29	8	8	¾	¾	45
10	76	2	2	1½	1½	125	38	6	6	1	1	60
15	112	00	0	2	2	175	56	4	4	1¼	1¼	90
20	148	4/0	000	2	2	225	74	2	2	1¾	1¾	125

* See note preceding page.

† Conduit size for 3-phase squirrel-cage induction motors refers to three conductors in one conduit. Conduit size for single-phase and direct-current motors refers to two conductors in one conduit.

‡ The values given are for branch-circuit protection using fuses and full-voltage starting. For circuit breaker ratings, reduced-voltage starting, and motor overload protection, see National Electrical Code.