

90°C

**90 Degree Cable - Single Phase**

This table lists the maximum feet of copper cable from service entrance to motor for single phase Franklin Electric submersible motors. Refer to Note 1 and Note 2 for restrictions and added length allowable under specific conditions.

**2- or 3-Wire Cable, 60 Hz (Service Entrance to Motor - Maximum Length In Feet)**

| Motor Rating |       |     | 90 C Insulation - AWG Copper Wire Size |     |            |            |      |      |      |      |      |      |      |      |      |
|--------------|-------|-----|--|-----|------------|------------|------|------|------|------|------|------|------|------|------|
| Volts        | HP    | KW  | 14                                     | 12  | 10         | 8          | 6    | 4    | 3    | 2    | 1    | 0    | 00   | 000  | 0000 |
| 115          | 1/3   | .25 | 130                                    | 210 | 340        | 540        | 840  | 1300 | 1610 | 1960 | 2390 | 2910 | 3450 | 4210 | 5060 |
|              | 1/2   | .37 | 100                                    | 160 | 250        | 390        | 620  | 960  | 1190 | 1460 | 1780 | 2160 | 2630 | 3140 | 3770 |
| 230          | 1/3   | .25 | 550                                    | 880 | 1390       | 2190       | 3400 | 5250 | 6520 | 7960 | 9690 |      |      |      |      |
|              | 1/2   | .37 | 400                                    | 650 | 1020       | 1610       | 2510 | 3880 | 4810 | 5880 | 7170 | 8720 |      |      |      |
|              | 3/4   | .55 | 300                                    | 480 | 760        | 1200       | 1870 | 2890 | 3580 | 4370 | 5330 | 6470 | 7870 | 9380 |      |
|              | 1     | .75 | 250                                    | 400 | 630        | 990        | 1540 | 2380 | 2960 | 3610 | 4410 | 5360 | 6520 | 7780 | 9350 |
|              | 1 1/2 | 1.1 | 190                                    | 310 | 480        | 770        | 1200 | 1870 | 2320 | 2850 | 3500 | 4280 | 5240 | 6300 | 7620 |
|              | 2     | 1.5 | 150                                    | 250 | 390        | 620        | 970  | 1530 | 1910 | 2360 | 2930 | 3620 | 4480 | 5470 | 6700 |
|              | 3     | 2.2 | 120                                    | 190 | 300        | 470        | 750  | 1190 | 1490 | 1850 | 2320 | 2890 | 3610 | 4470 | 5550 |
|              | 5     | 3.7 | 0                                      | 110 | 180        | 280        | 450  | 710  | 890  | 1110 | 1390 | 1740 | 2170 | 2680 | 3330 |
|              | 7 1/2 | 5.5 | 0                                      | 0   | <b>120</b> | 200        | 310  | 490  | 610  | 750  | 930  | 1140 | 1410 | 1720 | 2100 |
|              | 10    | 7.5 | 0                                      | 0   | <b>90</b>  | 160        | 250  | 390  | 490  | 600  | 750  | 930  | 1160 | 1430 | 1760 |
| 15           | 11    | 0   | 0                                      | 0   | <b>100</b> | <b>170</b> | 270  | 340  | 430  | 530  | 660  | 820  | 1020 | 1260 |      |

**Note 1:** Lengths in **bold print** meet the U.S. National Electrical Code ampacity only for **individual** conductor 90 C cable in free air or water. Lengths not in bold print meet the code for jacketed, buried or conduit enclosed 90 C cable. Local code requirements may vary.

**Note 2:** Cable lengths allow for a 5% voltage drop running a maximum nameplate amperes. If 3% voltage drop is desired, multiply lengths by .6 to get maximum cable length.



## SUBMERSIBLE MOTORS

90°C

### THREE PHASE THREE WIRE 90°C CABLE, 60 HZ, 460 VOLTS

This table lists the maximum *feet* of copper cable from service entrance to motor for *three phase* Franklin Electric submersible motors. Refer to Note 1 and Note 2 for restrictions and added length allowable under specific conditions. Cables #14 to #0000 are AWG sizes, and 250 to 500 are MCM sizes.

| 460 VOLT - 60 HZ - THREE PHASE - THREE WIRE CABLE |      |      |      |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |
|---|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|
| HP  | #14  | #12  | #10  | #8   | #6   | #4   | #3   | #2   | #1   | #0   | #00  | #000 | #0000 | 250  | 300  | 350  | 400  | 500  |
| 0.5   | 3770 | 6020 | 9460 |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |
| 0.75  | 2730 | 4350 | 6850 |      |      |      |      |      |      |      |      |      |       |      |      |      |      |      |
| 1   | 2300 | 3670 | 5770 | 9070 |      |      |      |      |      |      |      |      |       |      |      |      |      |      |
| 1.5   | 1700 | 2710 | 4270 | 6730 |      |      |      |      |      |      |      |      |       |      |      |      |      |      |
| 2   | 1300 | 2070 | 3270 | 5150 | 8050 |      |      |      |      |      |      |      |       |      |      |      |      |      |
| 3   | 1000 | 1600 | 2520 | 3970 | 6200 | 9620 |      |      |      |      |      |      |       |      |      |      |      |      |
| 5   | 590  | 950  | 1500 | 2360 | 3700 | 5750 | 7160 | 8790 |      |      |      |      |       |      |      |      |      |      |
| 7.5   | 420  | 680  | 1070 | 1690 | 2640 | 4100 | 5100 | 6260 | 7680 | 9380 |      |      |       |      |      |      |      |      |
| 10  | 310  | 500  | 790  | 1250 | 1960 | 3050 | 3800 | 4680 | 5750 | 7050 | 8650 |      |       |      |      |      |      |      |
| 15  | 0    | *340 | 540  | 850  | 1340 | 2090 | 2600 | 3200 | 3930 | 4810 | 5900 | 7110 | 8610  | 9760 |      |      |      |      |
| 20  | 0    | 0    | 410  | 650  | 1030 | 1610 | 2000 | 2470 | 3040 | 3730 | 4580 | 5530 | 6720  | 7640 | 8720 | 9800 |      |      |
| 25  | 0    | 0    | *330 | 530  | 830  | 1300 | 1620 | 1990 | 2450 | 3010 | 3700 | 4470 | 5430  | 6170 | 7050 | 7920 | 8660 |      |
| 30  | 0    | 0    | *270 | 430  | 680  | 1070 | 1330 | 1640 | 2030 | 2490 | 3060 | 3700 | 4500  | 5130 | 5860 | 6600 | 7220 | 8430 |
| 40  | 0    | 0    | 0    | *320 | 500  | 790  | 980  | 1210 | 1490 | 1830 | 2250 | 2710 | 3290  | 3730 | 4250 | 4770 | 5210 | 6060 |
| 50  | 0    | 0    | 0    | 0    | *410 | 640  | 800  | 980  | 1210 | 1480 | 1810 | 2190 | 2650  | 3010 | 3420 | 3830 | 4180 | 4850 |
| 60  | 0    | 0    | 0    | 0    | *340 | *540 | 670  | 830  | 1020 | 1250 | 1540 | 1850 | 2240  | 2540 | 2890 | 3240 | 3540 | 4100 |
| 75  | 0    | 0    | 0    | 0    | 0    | *440 | *550 | 680  | 840  | 1030 | 1260 | 1520 | 1850  | 2100 | 2400 | 2700 | 2950 | 3440 |
| 100   | 0    | 0    | 0    | 0    | 0    | 0    | *420 | *500 | *620 | 760  | 940  | 1130 | 1380  | 1560 | 1790 | 2010 | 2190 | 2550 |
| 125   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | *480 | *600 | *740 | 890  | 1080  | 1220 | 1390 | 1560 | 1700 | 1960 |
| 150   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | *510 | *630 | *760 | 920   | 1050 | 1190 | 1340 | 1460 | 1690 |
| 175   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | *550 | *670 | *810  | 930  | 1060 | 1190 | 1300 | 1510 |
| 200   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | *590 | *710  | *810 | 920  | 1030 | 1130 | 1310 |

**NOTE 1:** Lengths marked \* meet the U.S. National Electrical Code ampacity only for *individual* conductor 90°C cable. Only the lengths *without* \* meet the code for *jacketed* 90°C cable. Local code requirements may vary.

**NOTE 2:** Maximum lengths shown maintain motor voltage at 95% of service entrance voltage, running at maximum nameplate amperes. If service entrance voltage will be at least motor nameplate voltage under all normal load conditions, 50% additional length is permissible for all sizes.