

Basic Electrical Wiring

Closely follow the wiring schematic and written identifications of the wiring connections which are included in this manual. In planning your wiring remember:

1. Use only 100% tinned stranded copper wire of the recommended AWG size.
2. Always use the recommended size circuit breaker on the main power line.
3. Butt splices should be soldered and sealed with heat shrink tubing.

Wire Size

It is important to use the correct wire size. Refer to the following tables for a reference when selecting a wire size as a function of length and current. AWG is used in the United States while Metric diameter is used in the rest of the world. For convenience, an AWG - Metric conversion table is also provided.

REQUIRED WIRE SIZE BY RUN LENGTH & CURRENT (AWG)

AMPS	WIRE LENGTH - SOURCE TO LOAD AND RETURN FEET (METERS)						
	10 (3.0)	20 (6.1)	30 (9.1)	40 (12.2)	50 (15.2)	60 (18.3)	70 (21.3)
5	18	14	12	10	10	10	8
10	14	10	10	8	6	6	6
15	12	10	8	6	4	4	2
20	10	8	6	6	4	4	2
30	10	6	4	4	2	2	1
40	8	6	4	2	2	1	1/0
50	6	4	2	2	1	1/0	2/0
60	6	4	2	1	1/0	2/0	3/0
70	6	2	1	1/0	2/0	3/0	3/0
80	6	2	1	1/0	3/0	3/0	4/0

AWG TO METRIC WIRE SIZES

AWG Ga.	METRIC (MM ²)	AWG Ga.	METRIC (MM ²)
0000 (4/0)	11.7	8	3.3
000 (3/0)	10.4	10	2.6
00 (2/0)	9.2	12	2.1
0 (1/0)	8.3	14	1.6
2	6.5	16	1.4
4	5.2	18	1.0
6	4.1		

