

Sizing of De-Icer Control Box and Wiring

Precautions:

CAUTION

It is YOUR responsibility to ensure that your installation meets all applicable codes.

We recommend that the installation be reviewed by a qualified electrician before you apply power.

Voltage requirement:

The de-icer system requires 220 VAC, 50 - 60 Hz., single-phase.

Wire sizing:

The size (gauge) of the electric wires required will depend on the current draw of your de-icer system. **Table 1** shows approximate heater leg resistances and **Table 2** shows approximate de-icer current draws for various models and sizes of Shively antennas.

NOTE

The resistance readings in **Table 1** are for the Shively-supplied portion of the systems only, and do not take into account any long run of cable to the tower and up to the antenna.

Consult your electrician to determine the wire sizes required by the electric code applicable in your area.

Control box sizing

Shively Labs Model 94068 control boxes (**Figure 1**) come in three current capacities. If you are purchasing the Shively control box, refer to **Table 2**. Use the 10-amp box for up to 8 amps (using the 20% safety factor recommended by NFPA 70), the 20-amp box for up to 16 amps, and the 30-amp box for up to 24 amps.

NOTE

De-icers for antenna arrays drawing over 24 amps will require two separate circuits, each with its own control box serving half the bays.



Box dimensions are 305 mm (12 in) wide x 356 mm (14 in) high x 152 mm (6 in) deep.

Figure 1. Model 94068 De-Icer Control Box

Table 1. Heater Leg Resistances (ohms)

Antenna Size	6602B	6600 Hi-Band	6600 Lo-Band	6810 Hi-Band	6810 Lo-Band
1-Bay	203	tbd	tbd	53	47
2-Bay	101			27	24
3-Bay	68			18	16
4-Bay	51			13	12
5-Bay	41			11	9
6-Bay	34			9	8
7-Bay	29			8	7
8-Bay	25			7	6
10-Bay, single circuit	20			n/a	n/a
12-Bay, single circuit	17			n/a	n/a
14-Bay, single circuit	14			n/a	n/a
16-Bay, single circuit	13			n/a	n/a
10-Bay, each of 2 circuits	n/a			11	9
12-Bay, each of 2 circuits	n/a			9	8
14-Bay, each of 2 circuits	n/a			8	7
16-Bay, each of 2 circuits	n/a			7	6

Antenna Size	6812B	6814 Hi-Band	6814 Lo-Band	6813 Hi-Band	6813 Lo-Band
1-Bay	203	55	46	85	75
2-Bay	101	27	23	42	38
3-Bay	68	18	15	28	25
4-Bay	51	14	11	21	19
5-Bay	41	11	9	17	15
6-Bay	34	9	8	14	13
7-Bay	29	8	7	12	11
8-Bay	25	7	6	11	9
10-Bay, single circuit	20	n/a	n/a	8	8
12-Bay, single circuit	17	n/a	n/a	7	6
14-Bay, single circuit	14	n/a	n/a	n/a	n/a
16-Bay, single circuit	13	n/a	n/a	n/a	n/a
10-Bay, each of 2 circuits	n/a	11	9	n/a	n/a
12-Bay, each of 2 circuits	n/a	9	8	n/a	n/a
14-Bay, each of 2 circuits	n/a	8	7	12	11
16-Bay, each of 2 circuits	n/a	7	6	11	9

Table 2. Heater Leg Current Draw (amperes) and Recommended Control Box Models

Antenna Size	6602B	6600 Hi-Band	6600 Lo-Band	6810 Hi-Band	6810 Lo-Band	Shively Control Box
1-Bay	0.5 A	tbd	tbd	2.1 A	2.3 A	Model 94068 10-amp, single circuit
2-Bay	1.1			4.1	4.6	
3-Bay	1.6			6.2	7.0	
4-Bay	2.2			8.3	9.3	Model 94068 20-amp, single circuit
5-Bay	2.7			10.4	11.6	
6-Bay	3.3			12.4	13.9	
7-Bay	3.8			14.5	16.2	Model 94068 30-amp, single circuit
8-Bay	4.3			16.6	18.6	
10-Bay	5.4			10.4	11.6	Model 94068 20-amp, each of 2 circuits
12-Bay	6.5			12.4	13.9	
14-Bay	7.6			14.5	16.2	Model 94068 30-amp, each of 2 circuits
16-Bay	8.7			16.6	18.6	

Antenna Size	6812B	6813 Hi-Band	6813 Lo-Band	6814 Hi-Band	6814 Lo-Band	Shively Control Box
1-Bay	0.5 A	1.3 A	1.5 A	2.0 A	2.4 A	Model 94068 10-amp, single circuit
2-Bay	1.1	2.6	2.9	4.0	4.8	
3-Bay	1.6	3.9	4.4	6.0	7.2	
4-Bay	2.2	5.2	5.8	8.0	9.7	Model 94068 20-amp, single circuit
5-Bay	2.7	6.5	7.3	10.0	12.1	
6-Bay	3.3	7.8	8.8	12.0	14.5	
7-Bay	3.8	9.1	10.2	14.0	16.9	Model 94068 30-amp, single circuit
8-Bay	4.3	10.4	11.7	16.0	19.3	
10-Bay	5.4	13.0	14.6	10.0	12.1	Model 94068 20-amp, each of 2 circuits
12-Bay	6.5	15.6	17.5	12.0	14.5	
14-Bay	7.6	9.1	10.2	14.0	16.9	Model 94068 30-amp, each of 2 circuits
16-Bay	8.7	10.4	11.7	16.0	19.3	