DEICERS

Antenna element heaters are provided in the JSCP antenna system to prevent a rise in VSWR caused by ice formation on the radiating arms and to eliminate wind loading due to ice buildup on the elements. The deicing system does not degrade antenna system VSWR as long as the interbay SO cord is properly secured to the support structure.

The deicing elements are built into the bays during shop fabrication. A complete deicing kit consists of the specially equipped antenna elements (one heater in each arm, plus one heater in the boom), aluminum junction boxes with a short section of flexible conduit at each bay, interbay 12-2 neoprene jacketed SO cord, wire twist locks and the hardware to install the deicing equipment. A thermostatic switch to control power to the deicers is included if ordered, and should be mounted on the support structure, preferably at the antenna level. Each heating unit operates at 100 watts with 240 volts A.C. applied for a total of 500 watts per bay. The deicing system may optionally be operated at 120 volts A.C. for light icing conditions; each bay will then be heated by 125 watts instead of 500 watts. A center fed antenna system (eight or more bays) should also be center fed for the A.C. supply to the deicing system in order to reduce heating losses in the interbay A.C. cable.

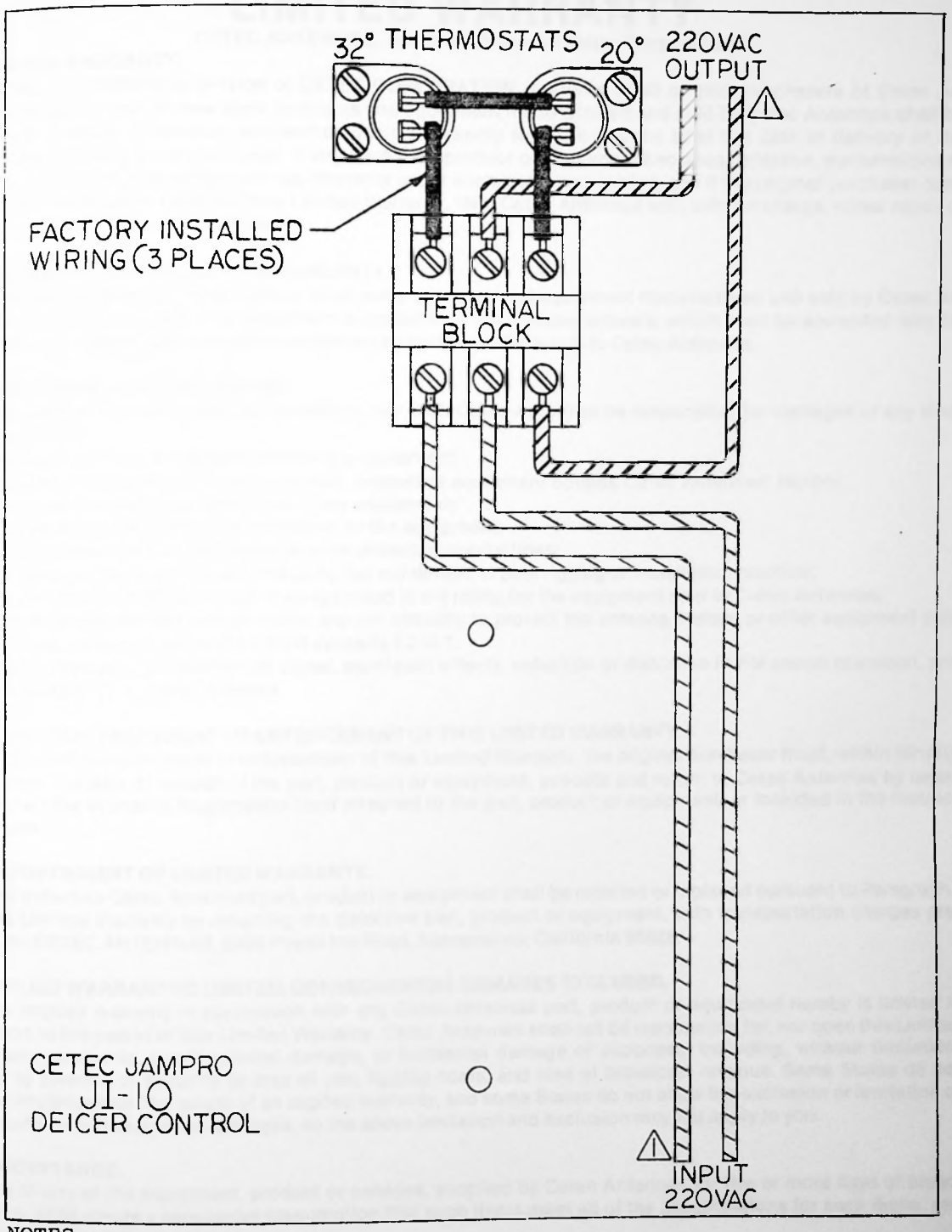
A.C. cabling to the antenna system should be chosen to keep voltage losses to a minimum (no more than 15 volts total feed line loss) and to comply with local and national electric codes. Conduit for the A.C. system, which is not included as part of the deicer package, may be required in some localities.

The JI-10 and JI-25 thermostats are designed to turn the deicing system on when the temperature drops through about 32°F (0°C) and off again as the temperature drops through about 20°F (-7°C). Thus, power is applied only in the temperature range during which icing normally occurs. Thermostat wiring details are shown on the page following the deicer junction box hookup drawing (if a thermostat was ordered).

TWO CONDUCTOR COPPER LINE LOSSES FOR DEICERS, ONE 500 WATT BAY @ 240 V.A.C.

WIRE SIZE	OHMS/ 100'	VOLTAGE DROP FOR GIVEN LENGTH/WIRE SIZE										MAX. # BAYS
		100'	200'	300'	400'	500'	600'	700'	800'	900'	1000'	
#4	.052	.11	.22	.32	.43	.54	.65	.76	.863	.971	1.08	25
#6	.082	.17	.34	.51	.68	.85	1.03	1.20	1.37	1.54	1.71	19
#8	.128	.27	.53	.80	1.07	1.33	1.60	1.87	2.14	2.40	2.67	14
#10	.204	.42	.85	1.27	1.70	2.12	2.55	2.97	3.39	3.82	4.24	10
#12	.324	.68	1.35	2.03	2.70	3.38	4.05	4.73	5.40	6.08	6.75	7
#14	.514	1.07	2.14	3.21	4.28	5.35	6.43	7.50	8.57	9.64	10.71	5

1. Voltage losses shown are for 240 V.A.C., two wire, per bay.
2. For two or more bays, multiply loss above by number of bays.
3. If total loss exceeds 15 volts, use the next larger size wire.
4. Last column (Max. # Bays) lists the current carrying ampacities (regardless of length) of the various sizes of type TW wires. See National Electric Code for further details, other wire types. Heating use taken into account.



NOTES:

1. ⚠ ▨ INDICATES 220/240 V.A.C.
2. THERMOSTATS SET TO TURN SYSTEM ON AT 32°F AND OFF AT 20°F (TEMPERATURE FALLING).
3. IF ICING OCCURS BELOW 20°F, IT MAY BE NECESSARY TO BYPASS 20° THERMOSTAT WITH A JUMPER.