Comtech 5.0m Half Coverage Heater System
User's Manual

DEICE-500COM-050-208/3_REV002

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1. PARTS LIST

Part Number	Description	Quantity
85541	Heater Pad for 5.0m Half Coverage 208 Volt	4
85542	Heater Pad for 5.0m Half Coverage 208 Volt	2
85543	Heater Pad for 5.0m Half Coverage 208 Volt	2
85544	Heater Pad for 5.0m Half Coverage 208 Volt	1
85545	Heater Pad for 5.0m Half Coverage 208 Volt	1
85546	Heater Pad for 5.0m Half Coverage 208 Volt	1
85547	Heater Pad for 5.0m Half Coverage 208 Volt	1
85548	Heater Pad for 5.0m Half Coverage 208 Volt	4
85549	Heater Pad for 5.0m Half Coverage 208 Volt	1
85550	Heater Pad for 5.0m Half Coverage 208 Volt	1
85551	Heater Pad for 5.0m Half Coverage 208 Volt	1
85552	Heater Pad for 5.0m Half Coverage 208 Volt	1
85553	Heater Pad for 5.0m Half Coverage 208 Volt	1
85554	Heater Pad for 5.0m Half Coverage 208 Volt	1
85536	Control for 5.0m Half Coverage 208 Volt 3 ph with Mounting Feet and Feedhorn Heater	1
	Cable Tie 36 in. for Controller to Mast Attachment	2
	Grommet	1
	Roll of Adhesive Foil Tape for Lead Wire Attachment	1
	Instruction Manual for Comtech 5.0m 208 Volt 3 ph Half Coverage L240	1

Tools and Supplies Needed

- Standard Slotted Screwdriver (Medium)
- Drill
- 1/4 in. Drill Bit
- Adjustable Wrench
- Clean Rags
- Windex Glass Cleaner
- Cable Tie Straps
- Light Sanding Block or Sandpaper
- Cable Supplying Power to the Control and Heater System

Read these instructions carefully and follow all of the procedures for installing this system. All electrical wiring must be performed in accordance with all applicable electrical codes.

2. ASSEMBLY

Control and Harness

2.1 Apply the Heater Pads to the Reflector Panels

1. Properly support the reflector panel so that no distortion results from heater pad attachment.

2. The surface temperature of the panel should be above 50° F (10° C) for proper adhesion of the heater pads.

3. Lightly sand the rear surface of the fiberglass reflector with a mild sanding block or piece of sandpaper to knock down the high spots present from molding.

4. Thoroughly clean the rear of the reflector panels with Windex and dry thoroughly. The surface that the heater pads adhere to must be smooth, dry, and clean. The presence of dust or surface irregularities will compromise the heater pad adhesive.

5. Test fit the pads by laying all of them on the back of the reflector and orienting them for the best alignment. See the Heater Pad Placement and Connections drawing on Page 9 for the proper locations. Heater pads located at the bottom center of the reflector can be moved to the edge of the reflector to inhibit the formation of icicles.

6. Remove the backing paper from the heater pads one at a time and carefully apply to the cleaned reflector. Smooth each pad as it is placed on the reflector. The adhesive is pressure sensitive so be sure to apply pressure and rub the heater pad as it is smoothed so that it can adhere properly.

2.2 Connect the Heater Pad Leads

1. Plug the heater pad connectors together as illustrated on the Heater Pad Placement and Connections drawing on Page 9. The connectors must be snapped into place to ensure that they are sealed properly. Each of the three heater circuits are indicated by yellow, white, or gray on the drawing.

2. Use the supplied foil tape to anchor the connected leads.

Right side heater pads connected = 28.0 - 34.2 Ω resistance.
Left side heater pads connected = 28.0 - 34.2 Ω resistance.
Center heater pads connected = 27.5 - 33.6 Ω resistance.

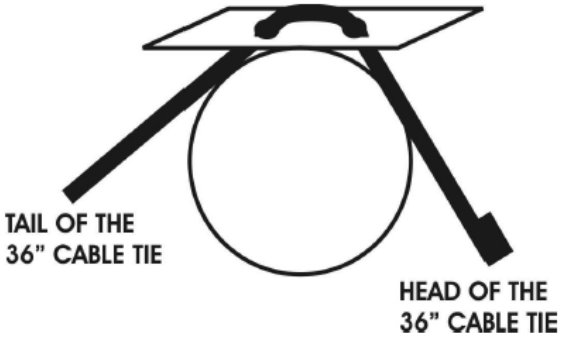
2.3 Attach the Control Enclosure to the Mast Pipe

1. Pass a 36 in. strap through the back of a hole drilled through the mounting bracket secured to the control enclosure.

2. Return the strap through the adjacent hole so that both ends of the strap are behind the control enclosure when finished.

3. Repeat Step 2 for the other mounting bracket with a second strap.

4. Place the control enclosure against the mast pipe and tighten the straps until secure. The cables exiting from the enclosure should exit in the downward direction. The final adjustment of the control enclosure must be done before the cable ties are fully tightened. The control enclosure must be mounted within six feet of the center of the reflector to ensure adequate heater pad cable length.



Enclosure to Mast Pipe Attachment

2.4 Route the Heater Pad Cables and Connect to the Heater Pads

1. Route the heater pad cables and connect to the heater pads as illustrated in the Heater Pad Placement and Connections drawing on Page 9. The Heater Pad Cables have 48 in. male and female leads that connect to each end of the group of connected heater pads.

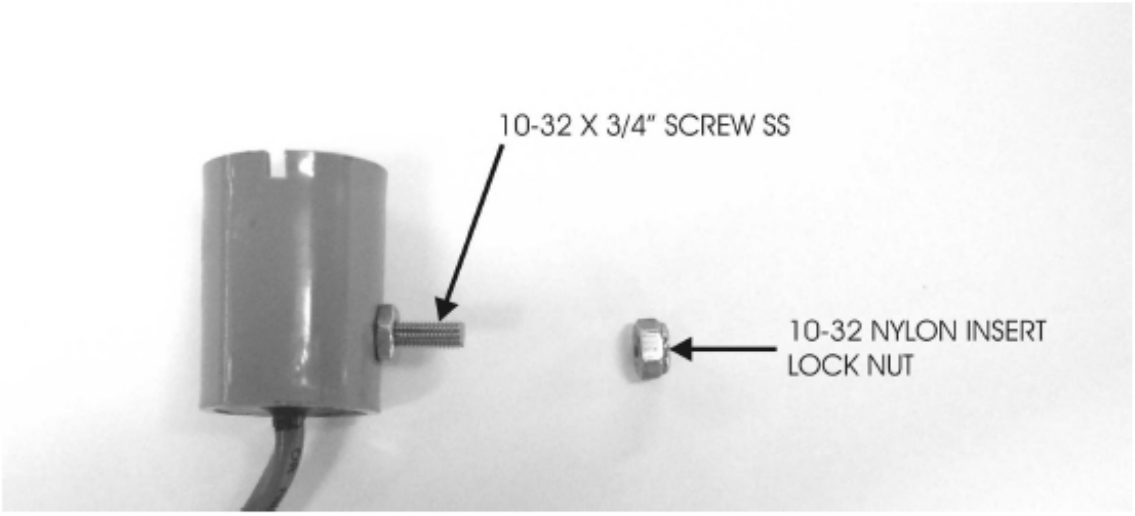
2. Use tie straps (not supplied) to anchor the heater pad cables at a point where the leads enter or exit the heater pads and at a point where they branch.

2.5 Mount the Moisture Sensor

1. Drill a 1/4 in. hole in the reflector and mount the moisture sensor with the nylon insert nut provided. The sensor should be mounted in an area where the moisture sensor grid is parallel with the horizon and it will receive a representative amount of falling and blowing precipitation. The side of the reflector allows the moisture sensor grid to be adjusted to parallel, regardless of the elevation.

2. Use one tie strap (not supplied) to anchor the sensor cable near the moisture sensor.

3. Use the foil tape to anchor the moisture sensor cable to the heater pads if no structure is present between the sensor mounting location and the reflector mount.



2.6 Attach the Feedhorn Heater to the Feedhorn

1. Route the feedhorn heater cable along the feedhorn support arm.

For inboard feedhorn support arms, drill a 7/16 in. hole through the reflector near a support arm mount and insert a grommet into the hole. Unplug the heater from the cable by pulling the connectors apart. Do not pull on the wires. The feedhorn heater cable should now pass through the hole and follow the support arm. Plug the heater and the cable back together.

2. Place the feedhorn heater around the feedhorn and loosely attach it by passing the tail of the strap through the head. Be sure that the heater wire in the feedhorn heater is against the feedhorn.

3. Position the heater with the head of the cable tie and the connectors toward the bottom of the feedhorn and tighten the strap fully. Do not cut the tail off of the feedhorn heater at this time. It will be done after the final test of the system is performed and the feedhorn heater is warmed.

4. Use one tie strap (not supplied) to anchor the Feedhorn Heater Cable near the feedhorn heater branch.

Feedhorn Heater Placement

2.7 Route Power to the Control Enclosure

1. Unscrew the cordgrip nut to allow the cables to move in and out of the enclosure. Sufficient cable slack should still be available to move the cables in and out.

2. Remove the four screws securing the cover on the control enclosure.

3. Remove the enclosure lid as the cables are fed through the cordgrip.

4. Wire 208 Volt 3 ph AC power to the L1, L2, and L3 positions on the contactor. An empty hole has been supplied in the side of the enclosure for wiring power in.

The entire system supplies 4250 watts of heat and draws approximately 11.8 amps.

5. Replace the enclosure cover as cable is pulled from the inside of the enclosure. Leave a minimum of 1 in. of the SJTW cable protruding from the inside of the cordgrips.

6. Tighten the cordgrip until all cables are secured. Over tightening can damage the cordgrip.

7. Replace the four cover screws. Secure the lid and tighten.

2.8 Secure All Cables with Tie Straps

Secure the entire lengths of the heater pad cables, feedhorn heater cable, and the moisture sensor cable with tie straps (not supplied).

3. TESTING

3.1 Test the Heater System

1. Apply 208 Volts AC 3 ph power to the system.

2. Allow the sensor to go through its start-up test

3. When the sensor enters the Automatic Enabled mode (steady green indicator), push the selector switch twice to place the sensor in the Manual On mode (steady amber indicator).

4. Wait a few minutes and feel the surface of the reflector for warmth. The feedhorn heater should also feel warm to the touch. Retighten the feedhorn heater strap while the heater is warm and cut off all but 1/2 in. of the excess strap material.

5. Return the system to the Automatic Enabled mode by pressing the selector switch one more time.

4. ADDITIONAL INFORMATION

4.1 De-Icing Control Specifications

The control operates electric heaters to prevent the build-up of snow and ice on the reflector when conditions are conducive to their formation. That is, during precipitation when the ambient temperature is below 40° F.

1. The controller will ensure a minimum On Time of approximately one hour. The system will continue to supply heat as long as conditions warrant it.

2. The controller provides AUTO, OFF, and ON functions. These modes are selectable by the user through a single push button switch which alternates through each mode.

- The normal power-up mode is AUTO. In this mode, the controller will turn on the heater contactor when conditions are conducive to the formation of snow and ice.
- When in the OFF mode, the heater contactor remains disengaged regardless of the weather conditions.
- When in the ON mode, the heater contactor is engaged until the controller mode is changed or the power is reset

3. The control provides two indicator lights. The green indicator displays when the control is in the AUTO mode. The yellow indicator displays when the heater contacts are closed and the heaters are on.

4. The moisture sensor is heated to melt snow and ice for detection as moisture.

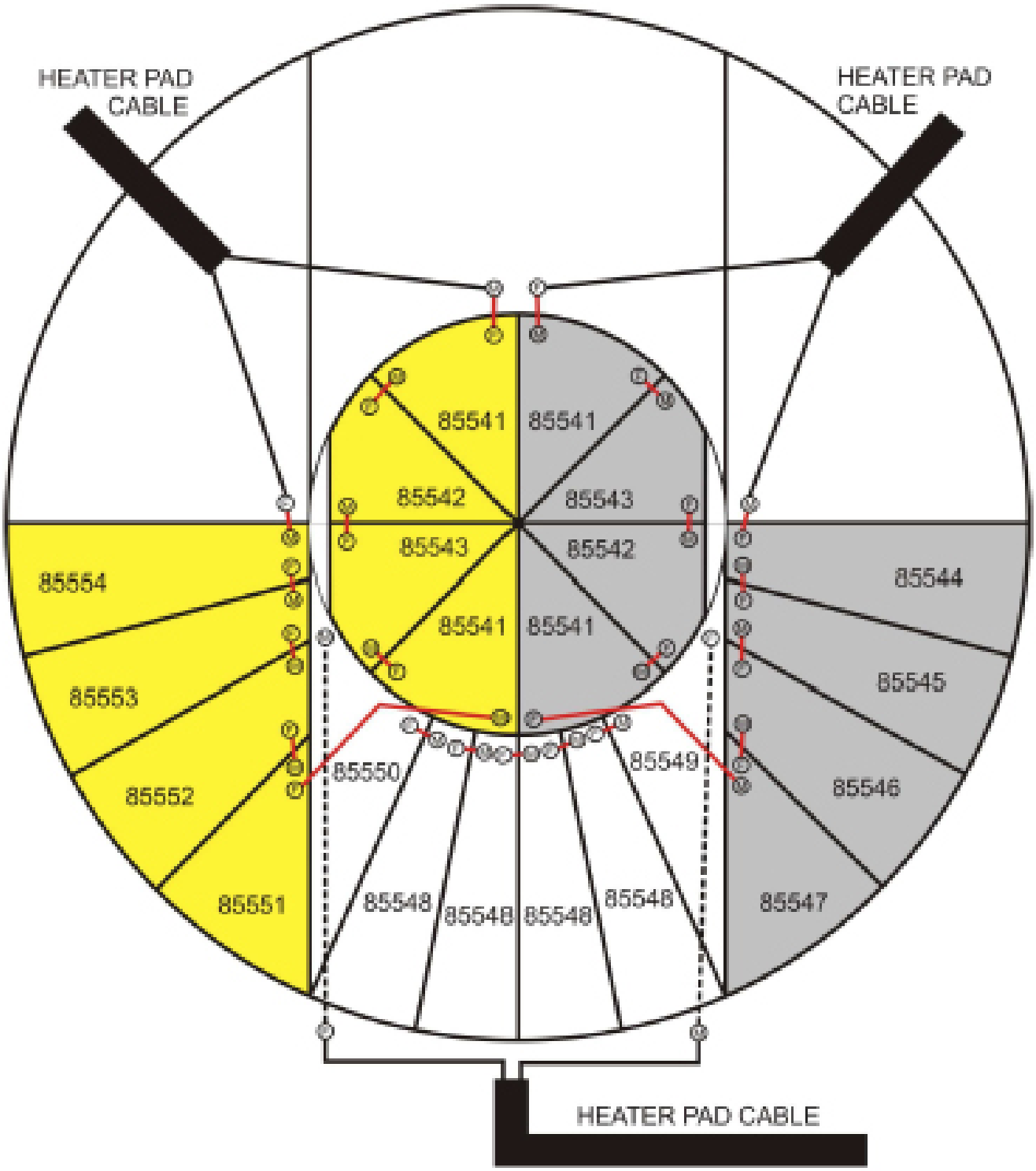
5. The controller has been factory preset to operate on 208 Volt 3 ph power.

6. The heater contactor provided is rated at 50 amps resistive. the heater system draws approximately 11.8 amps.

7. The control panel and heater contactor are housed in a UL and CSA rated weather resistant, gasketed enclosure.

REMOVE ALL POWER FROM THE SYSTEM DURING WARM MONTHS

REMOVE ALL POWER FROM THE SYSTEM BEFORE PERFORMING ANY MAINTENANCE



Heater Pad Placement and Connections