

# AHT Roof and Gutter Snow and Ice Prevention System Installation Guide





Dear AHT Customer,

Thank you for choosing the AHT Roof and Gutter Snow and Ice Prevention System. It is designed to be simple to install, and cost-efficient to operate.

This guide provides the information you need for a successful installation. Please follow all instructions carefully for the best possible installation results and for the long-term effectiveness of the product.

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## About the AHT Roof and Gutter Snow and Ice Prevention System

Roofs and gutters should be kept free of snow and ice since snow and ice buildup can lead to injuries and liability. The AHT Amorphous Metal heating technology makes it practical and affordable to install and operate a gutter snow and ice prevention system.

The AHT Roof and Gutter Snow and Ice Prevention System is comprised of a cable that consists of an Amorphous Metal heating ribbon coated with two layers of LDPE to meet Class 2 Requirements of IEC 60335-2-96. The heating ribbon is wrapped with aluminum foil and has a cold lead for grounding purposes. This cable is assembled and placed in gutters and leaders to prevent ice and snow accumulation. The insulation is designed to conduct the heat from the ribbon while ensuring that the ribbon and power cords remain dry.

The AHT Roof and Gutter Snow and Ice Prevention System is easy to install. Nevertheless, it is essential to follow the installation instructions in this manual in order to guarantee the best possible results.

A system inspection is recommended before each winter season. All observations and measured values as appropriate should be recorded on a log sheet. The checklist consists of the following:

- a) Junction boxes should be inspected for water or evidence of previous water ingress. If moisture is present, the box should be restored to dry condition and the cause of ingress should be eliminated.
- b) Gutters and/or downspouts shall be cleared of any debris.
- c) Control and monitoring devices should be checked for functionality as per the manufacturer's specifications.
- d) Functionality of overcurrent protection devices should be checked.
- e) The insulation resistance of each heater circuit should be measured and recorded. Major changes in insulation resistance should be resolved.

**Note:** All electrical connections and assembly of the AHT cables must be performed by a fully qualified and AHT-authorized electrician. For more information, contact AHT.

## Model Sizes and Length Requirements

The AHT Roof and Gutter Snow and Ice Prevention System cables are available in the following models, based on the width of the Amorphous Metal heating ribbon:

- AHT03O2500
- AHT03O1200
- AHT03O0707
- AHT03O0700



The model number appears on the LDPE insulation of the cable.



Due to electrical restrictions, the length of each cable is limited (see Table 1). Therefore, you may need to connect sections of cable to create the length you need. However, you may not connect more than three sections of cable in an assembled cable. Multiple assembled cables are usually required to provide full roof and gutter snow and ice prevention for your home. A single assembled cable can be placed in a gutter and down through the leader.

An assembled cable consists of:

- 1, 2, or 3 sections of cable
- A termination point at one end
- A power cord at the other end
- A section point at each connection

The following table provides a list of the various models of AHT cables and the minimum and maximum length and wattage for each cable model.

**Table 1: Minimum and Maximum Cable Length and Wattage**

Model	Ribbon Width	Minimum Length (Power)*	Maximum Length (Power)*	Minimum Wattage (Power)*	Maximum Wattage (Power)*
AHT03O0707	Two parallel 7 mm ribbons per cable	8.6 m (40 w/m)	12.2 m (20 w/m)	244 (40 w/m)	344 (20 w/m)
AHT03O0700	One serial 7 mm ribbon	12.2 m (40 w/m)	17.2m (20 w/m)	345 (40 w/m)	487 (20 w/m)
AHT03O1200	12 mm ribbon	15.9 m (40 w/m)	22.5 m (20 w/m)	450 (40 w/m)	636 (20 w/m)
AHT03O2500	25 mm ribbon	22.5 m (40 w/m)	32.5 m (20 w/m)	650 (40 w/m)	940 (20 w/m)

\*w/m – watts per meter

## Planning the Installation

When planning the installation of the AHT cables for your gutters and leaders, determine how many assembled cables are required, and the number and lengths of cable sections required to form each assembled cable. Note that:

- All cable sections should be as long as possible to ensure as few section connections as possible.
- If possible, plan for all cable sections that make up an assembled cable to be the same length.
- Plan for **no more** than three cable sections per connection box.

### Important:

Ensure that the building can support the power requirements of the required installation!

### Note:

To include a control box with a humidity and temperature sensor in your installation, consult with an AHT representative.

## Step 1: Measuring the Gutters and Leaders

Before installation, draw an installation plan showing the placement of gutters, leaders, and connection boxes. From this plan, you can determine the number and length of each assembled cable and power cord that will be required for the installation.

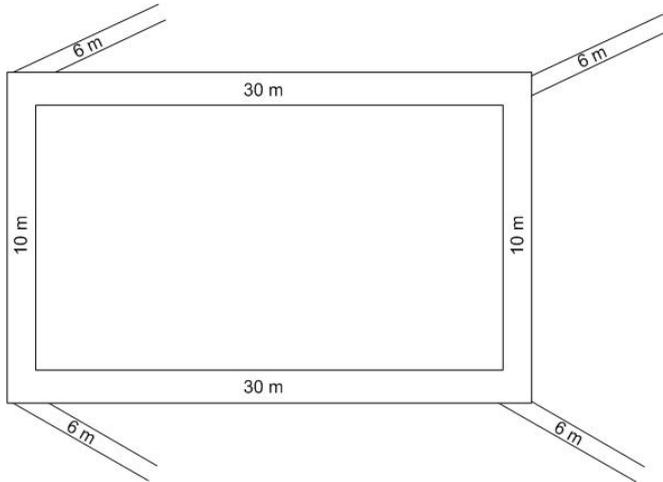


Figure 1: Sample Installation Site

## Step 2: Determining the Required Assembled Cables

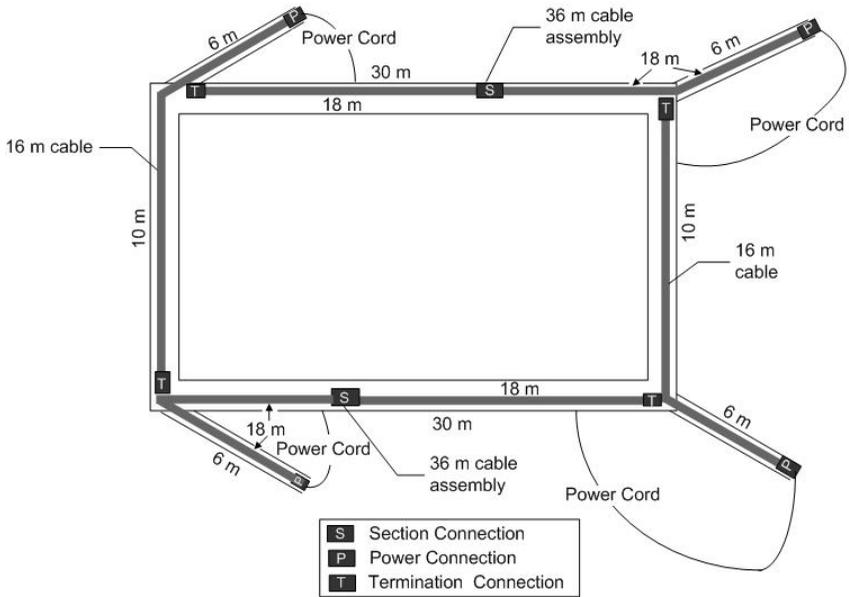
Based on the installation plan designed in Step 1, determine the number and length of each cable section and assembled cable required for the installation.

The following example shows a sample installation site in which the dimensions of the gutters are 10 m by 30 m, with a 6 m gutter in each corner.

The optimal cable placement for this sample installation would be as follows:

- Two cable assemblies consisting of two cable sections, each with a ribbon width of 12 mm and a length of 18 m, to be placed in a 30 m gutter and adjoining leader.
- Two cable assemblies consisting of two 12 mm cable sections, each with a ribbon width of 12 mm and a length of 16 m, to be placed in a 10 m gutter and adjoining leader.

The following figure illustrates the cable placement for the sample installation.



**Figure 2: Sample Cable Placement**

### Step 3: Determining the Power Requirements

Before performing the installation, make sure that the electrical capacity of the building can support the power requirements of the installation.

Use the following formula to calculate the amps required for each assembled cable:

$$I = \frac{V}{R} = \frac{V}{L * \rho}$$

where:

I = current in amps

R = resistance

L = length

V = volts

$\rho$  = resistance per meter

The following table provides the resistance per meter for each cable model.

Model	Resistance per Meter
AHT03O0707	17.8Ω
AHT03O0700	8.9Ω
AHT03O1200	5.2Ω
AHT03O2500	2.5Ω

#### Step 4: Determining the Number of Connection Kits Required

You must purchase connection kits for each type of connection required in your installation. There are three types of connection kits. Table 2 describes and illustrates each type of connection kit.

**Table 2: Connection Kit Types**

Connection Type	Kit Type	Illustration of Kit
Connections between a cable and a power cord.	Power Connection Kit	
Sealing of a cable end that does not connect to either a power cord or another cable.	Termination Connection Kit	

Connection Type	Kit Type	Illustration of Kit
Connections between two cable sections in an assembled cable.	Section Connection Kit	

Each cable model has its own set of connection kits. Tables 3 through 6 provide a list of the connection kits available for each cable model, along with the contents of each kit.

**Table 3: Connection Kits for Cable Model AHT 0300707**

Type of Kit	Connection Kit #	Contents
Power Connection Kit	AHT01OckP0707	<ul style="list-style-type: none"> <li>• 2 – 10 mm crimp connectors with 5 cm electrical wire</li> <li>• 3 – copper crimp sleeves, tin plated 2.5 Q</li> <li>• 2 – 12/3 shrink tubes (4 cm)</li> <li>• 2 – 8/2 shrink tubes (3.5 cm)</li> <li>• 25/8 shrink tube (16 cm)</li> </ul>
Section Connection Kit	AHT01OckS0707	<ul style="list-style-type: none"> <li>• 4 – 10 mm crimp connectors with 5 cm electrical wire</li> <li>• 3 – copper crimp sleeves, tin plated 2.5 Q</li> <li>• 4 – 12/3 shrink tubes (4 cm)</li> <li>• 4 – 8/2 shrink tubes (3.5 cm)</li> <li>• 25/8 shrink tube (17 cm)</li> </ul>
Termination Connection Kit	AHT01OckT0707	<ul style="list-style-type: none"> <li>• 20 mm crimp connector</li> <li>• 18/6 shrink tube (7 cm)</li> <li>• 12/3 shrink tube (6 cm)</li> <li>• 8/2 shrink tube (2 cm)</li> <li>• 25/8 shrink tube (10 cm)</li> </ul>
Repair Kit	AHT01OckR0707	<ul style="list-style-type: none"> <li>• 4 – 10 mm crimp connector with 5 cm electrical wire</li> <li>• 5 copper crimp sleeves, tin plated 2.5 Q</li> <li>• 4 – 12/3 shrink tubes (5 cm)</li> <li>• 4 – 8/2 shrink tubes (3.5 cm)</li> <li>• 25/8 shrink tube (16 cm)</li> </ul>

**Table 4: Connection Kits for Cable Model AHT 0300700**

<b>Type of Kit</b>	<b>Connection Kit #</b>	<b>Contents</b>
Power Connection Kit	AHT01OckP0700	<ul style="list-style-type: none"><li>• 10 mm crimp connectors with 5 cm electrical wire</li><li>• 3 – copper crimp sleeves, tin plated 2.5 Q</li><li>• 12/3 shrink tubes (4 cm)</li><li>• 2 – 8/2 shrink tubes (3.5 cm)</li><li>• 25/8 shrink tube (16 cm)</li></ul>
Section Connection Kit	AHT01OckS0700	<ul style="list-style-type: none"><li>• 2 – 10 mm crimp connectors with 5 cm electrical wire</li><li>• 3 – copper crimp sleeves, tin plated 2.5 Q</li><li>• 3 – 12/3 shrink tubes (4 cm)</li><li>• 2 – 8/2 shrink tubes (3.5 cm)</li><li>• 25/8 shrink tube (17 cm)</li></ul>
Termination Connection Kit	AHT01OckT0700	<ul style="list-style-type: none"><li>• 10 mm crimp connector</li><li>• 12/3 shrink tube (6 cm)</li><li>• 8/2 shrink tube (2 cm)</li><li>• 25/8 shrink tube (10 cm)</li></ul>
Repair Kit	AHT01OckR0700	<ul style="list-style-type: none"><li>• 4 – 10 mm crimp connector with 5 cm electrical wire</li><li>• 5 copper crimp sleeves, tin plated 2.5 Q</li><li>• 4 – 12/3 shrink tubes (5 cm)</li><li>• 4 – 8/2 shrink tubes (3.5 cm)</li><li>• 25/8 shrink tube (16 cm)</li></ul>

**Table 5: Connection Kits for Cable Model AHT 0301200**

<b>Type of Kit</b>	<b>Connection Kit #</b>	<b>Contents</b>
Power Connection Kit	AHT01OckP1200	<ul style="list-style-type: none"><li>• 10 mm crimp connector with 5 cm electrical wire</li><li>• 3 copper crimp sleeves, tin plated 2.5 Q</li><li>• 12/3 shrink tube (4 cm)</li><li>• 2 – 8/2 shrink tubes (3.5 cm)</li><li>• 25/8 shrink tube (16 cm)</li></ul>
Section Connection Kit	AHT01OckS1200	<ul style="list-style-type: none"><li>• 2 – 10 mm crimp connectors with 5 cm electrical wire</li><li>• 3 copper crimp sleeves, tin plated 2.5 Q</li><li>• 2 – 12/3 shrink tubes (4 cm)</li><li>• 2 – 8/2 shrink tubes (3.5 cm)</li><li>• 25/8 shrink tube (17 cm)</li></ul>
Termination Connection Kit	AHT01OckT1200	<ul style="list-style-type: none"><li>• 10 mm crimp connector</li><li>• 12/3 shrink tube (6 cm)</li><li>• 8/2 shrink tube (2 cm)</li><li>• 25/8 shrink tube (10 cm)</li></ul>
Repair Kit	AHT01OckR1200	<ul style="list-style-type: none"><li>• 2 – 10 mm crimp connector with 5 cm electrical wire</li><li>• 4 copper crimp sleeves, tin plated 2.5 Q</li><li>• 2 – 12/3 shrink tube (5 cm)</li><li>• 3 – 8/2 shrink tubes (3.5 cm)</li><li>• 25/8 shrink tube (16 cm)</li></ul>

**Table 6: Connection Kits for Cable Model AHT 0302500**

Type of Kit	Connection Kit #	Contents
Power Connection Kit	AHT01OckP2500	<ul style="list-style-type: none"><li>• 20 mm crimp connector with 6 cm electrical wire</li><li>• 3 copper crimp sleeves, tin plated 2.5 Q</li><li>• 18/6 shrink tube (5 cm)</li><li>• 2 – 8/2 shrink tubes (3.5 cm)</li><li>• 25/8 shrink tube (16 cm)</li></ul>
Section Connection Kit	AHT01OckS2500	<ul style="list-style-type: none"><li>• 2 20 mm crimp connectors with 6 cm electrical wire</li><li>• 3 copper crimp sleeves, tin plated 2.5 Q</li><li>• 2 – 18/6 shrink tubes (5 cm)</li><li>• 2 – 8/2 shrink tubes (3.5 cm)</li><li>• 25/8 shrink tube (17 cm)</li></ul>
Termination Connection Kit	AHT01OckT2500	<ul style="list-style-type: none"><li>• 20 mm crimp connector</li><li>• 18/6 shrink tube (7 cm)</li><li>• 8/2 shrink tube (2 cm)</li><li>• 25/8 shrink tube (10 cm)</li></ul>
Repair Kit	AHT01OckR2500	<ul style="list-style-type: none"><li>• 2 – 20 mm crimp connector with 6 cm electrical wire</li><li>• 4 copper crimp sleeves, tin plated 2.5 Q</li><li>• 2 – 18/6 shrink tube (5 cm)</li><li>• 3 – 8/2 shrink tubes (3.5 cm)</li><li>• 25/8 shrink tube (16 cm)</li></ul>

The example shown in Figure 2 would require the following connection kits using cable model AHT 0301200:

- 2 Section Connection Kits for the 36 m cable assemblies (AHT01OckS1200).
- 4 Power Connection Kits (AHT01OckP1200).
- 4 Termination Connection Kits (AHT01OckT1200).

## Step 5: Determining the Amount of Resinex Sealant Required

In order to form a tight seal in each assembled cable, use Resinex sealant. Each Resinex set contains enough sealant for six to eight connections. Purchase enough Resinex for the number of connections you will have.

For instructions on using Resinex, see *Instructions for Using Resinex Sealant* on page 23.



## Required Tools

The following tools are required for all installations:

- Industrial Fan (for sealing shrink tubes) (1)
- Wire stripper (2)
- Pliers (3)
- Wire cutter (4)
- Connection crimper (5)
- Industrial-strength scissors (6)
- Crimper (7)
- Utility knife (Not shown)
- AVO meter (Not shown)
- Megger tester (Not shown)
- Black plastic cable ties (Not shown)
- Metal fixing bands (Not shown)
- Power cord (Not shown)



## Performing the Installation

### **Important!**

- When possible, all power connection boxes should be located in a protected area (such as under eaves) and entry should be at the bottom of the box. In all cases, a drip loop should be provided.
- Construction of an ice/snow fence above the system is desirable to prevent damage from ice or snow slides.
- All penetrations made on the surface of any style of roof should be moisture proofed by using a suitable sealant or sealing type fasteners. The installation of any heating system should not affect the overall integrity of the roof or gutter.
- The mounting surface shall be inspected for sharp edges where the heating cable will be located (and removed as necessary).
- A weatherproof power connection should be located and mounted in a sheltered area.
- When heating cable installation is complete, an insulation resistance test should be conducted with a test voltage of at least 500 V dc. However, for polymer insulated heating cables, 2500 V dc is recommended. The measured value should not be less than 20 M.

All installations must be performed by an electrician who is both:

- Authorized by AHT to install the AHT Roof and Gutter Snow and Ice Prevention System.
- Certified as an electrician in the country in which the installation is to be performed.

## Step 1: Obtaining the Cables

AHT Roof and Gutter Snow and Ice Prevention System cables are sold from a roll of cable.

**Note:** When you cut the cable, it is recommended to add 10% to the required length for wastage.

The cable has meter markings on the LDPE insulation. The remaining length of the cable is marked at each meter, indicating how much cable remains on the roll. You can use these markings to measure the cable length.



## Step 2: Connecting the Cables

**Note:** Cable sections must be connected on a dry, flat surface. Do not attempt to connect cables on the roof.

To prepare cables for connections and terminations, perform the following steps:

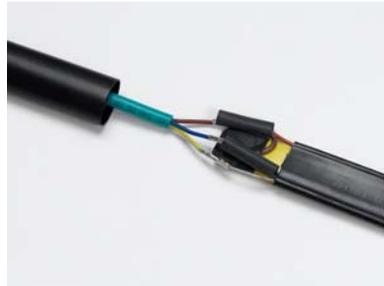
1. Use the utility knife to strip  $3\frac{1}{2}$  to 4 cm of insulation from each end of each cable. Carefully cut all the way around the cable and pull off the insulation, including the aluminum layer. Do not cut the ribbon or the cable wires.
2. Open the appropriate connection kit and perform the required connection. Refer to the appropriate section for the type of connection that is required:
  - If you are connecting a power cord to the cable, refer to Step 3: Connecting the Power Cord.
  - If you are connecting cable sections, refer to Step 4: Connecting Cable Sections.
  - If you are terminating the cable, refer to Step 5: Terminating the Cable.

## Step 3: Connecting the Power Cord

Use the Power Connection Kit (see Tables 3 through 6) to connect the power cord to the cable.

To connect the power cord to the cable:

1. Open the Power Connection Kit.
2. Strip approximately 4 cm of insulation from the end of the power cord.
3. Strip approximately 4 cm from all the wires.
4. Crimp the crimp connector onto the ribbon.
5. Fold the flap onto the crimp connector.
6. Place the 12/3 (or 18/6 if you are using 25 mm cable) shrink tube over the end of the ribbon, and use the fan to seal the tube.



7. Place the 25/8 shrink tube over the cable. Leave all the wires exposed.
8. Twist the crimp wire and the brown wire from the cable together and insert the twisted portion of the wires into one of the copper crimp sleeves.
9. Place an 8/2 shrink tube over the brown cable and crimp wires.
10. Insert the brown wire from the power cord into the other end of the copper crimp sleeve covering the brown wire from the cable and the crimp wire and crimp the sleeve closed.
11. Slide the 8/2 shrink tube over the sleeve, and use the fan to seal the tube.
12. Insert the blue wire from the cable into another copper crimp sleeve.
13. Place an 8/2 shrink tube over the blue cable wire.
14. Insert the blue wire from the power cord into the other end of the copper crimp sleeve.
15. Slide the 8/2 shrink tube over the sleeve, and use the fan to seal the tube.
16. Insert the ground wire from the cable and the yellow wire from the power cord into the ends of the third copper crimp sleeve. It is not necessary to cover these wires with a shrink tube.
17. Slide the 25/8 shrink tube over the entire connection area, and use the fan to seal the power cord end of the tube.
18. Use Resinex to seal the other end of the 25/8 shrink tube. For instructions on using Resinex, see *Instructions for Using Resinex Sealant* on page 23.

#### **Step 4: Connecting Cable Sections**

Use the Section Connection Kit (see Tables 3 through 6) to make the connection between two cable sections in an assembled cable.

To perform a section connection:

1. Open the Section Connection Kit.
2. Strip approximately 4 cm from all the wires.
3. On each cable, cut a small amount from the ribbon, so that the ribbon is shorter than the wires.



4. Crimp a crimp connector onto each ribbon and fold the flap onto each crimp connector.
5. Place the 12/3 (or 18/6 if you are using 25 mm cable) shrink tube over the end of each ribbon, and use the fan to seal the tube.
6. Slide the 25/8 shrink tube onto one of the cables, leaving the ribbon and wires exposed.
7. The procedure for connecting the wires between the two cables differs according to (i) whether there are two or three cables in the assembled cable, and (ii) in assembled cables that consist of three cables, which two cables you are connecting. Table 7 provides wire connection instructions for the various types of section connections. Make sure you perform the correct connections for the sections you are connecting.

**Table 7: Section Wire Connections**

<p><b>Type A Connection</b></p>	<p><b>Type B Connection</b></p>
<div data-bbox="162 699 549 991" data-label="Image"> </div> <p data-bbox="162 1007 549 1102"> <b>Two Cables in Assembled Cable</b>  <b>Three Cables in Assembled Cable —</b>  <b>Connection Adjacent to Termination</b> </p>	<div data-bbox="602 699 990 991" data-label="Image"> </div> <p data-bbox="602 1007 990 1062"> <b>Three Cables in Assembled cable —</b>  <b>Connection Adjacent to Power Cord</b> </p>
<p>a. Insert the blue wire from one cable into a copper crimp sleeve.</p>	<p>a. Twist the crimp wire and the brown wire from one cable together and insert the twisted portion of the wires into a copper crimp sleeve.</p>
<p>b. Place one of the 8/2 shrink tubes over the blue cable wire.</p>	<p>b. Place one of the 8/2 shrink tubes over the twisted wire pair.</p>

<p>c. Insert the blue wire from the other cable into the other end of the copper crimp sleeve.</p>	<p>c. Twist the crimp wire and the brown wire from the other cable together and insert the twisted portion of the wires into the other end of the copper crimp sleeve.</p>
<p>d. Slide the 8/2 shrink tube over the sleeve, and use the fan to seal the tube.</p>	<p>d. Slide the 8/2 shrink tube over the sleeve, and use the fan to seal the tube.</p>
<p>e. Repeat this procedure for the brown cable wires and the crimp wires.</p>	<p>e. Insert the blue wire from one cable into a copper crimp sleeve.</p>
<p>f. Repeat this procedure for the ground wires. <b>Note:</b> You do not need to place a shrink tube over the ground wires.</p>	<p>f. Place one of the 8/2 shrink tubes over the blue cable wire.</p>
	<p>g. Insert the blue wire from the other cable into the other end of the copper crimp sleeve.</p>
	<p>h. Slide the 8/2 shrink tube over the sleeve, and use the fan to seal the tube.</p>
	<p>i. Repeat this procedure for the ground wires. <b>Note:</b> You do not need to place a shrink tube over the ground wires.</p>

8. Slide the 25/8 shrink tube over the entire connection area, and use the fan to seal one end of the tube.
9. Use Resinex to seal the other end of the 25/8 shrink tube. For instructions on using Resinex, see *Instructions for Using Resinex Sealant* on page 23.

## Step 5: Terminating the Cable

Use the Termination Connection Kit (see Tables 3 through 6) to seal each cable end that does not attach to either another cable section in an assembled cable or a power cord.

To terminate the cable:

1. Open the Termination Connection Kit.



2. Take out the crimp connector and place it on the ribbon.
3. Strip the blue wire that protrudes from the cable.



4. Crimp the blue wire inside the crimp connector, and fold over the connector to secure the wire.
5. Place the 12/3 (or 18/6 if you are using 25 mm cable) shrink tube over the end of the ribbon, and use the fan to seal the tube. (If you are using cable model AHT 0300707, place the 12/3 shrink tube over one ribbon, and then place the 18/6 shrink tube over the entire cable.)
6. Cut the brown wire that protrudes from the cable short enough to fit inside the 8/2 shrink tube.

7. Place the shrink tube over the brown wire, and use the fan to seal the tube.



8. Cut off the silver ground wire that protrudes from the cable so that it is flush with the end of the insulation.
9. Place the 25/8 shrink tube over the end of the cable, covering all the wires, and use the fan to seal the end of the 25/8 shrink tube opposite the cable.
10. Use Resinex to seal the end of the shrink tube that is flush with the cable. For instructions on using Resinex, see *Instructions for Using Resinex Sealant* on page 23.

## Step 6: Checking Connectivity

Once you have performed all the necessary connections, check the connectivity of each cable assembly.

Perform the following tests to check cable assembly connectivity:

1. Use a Megger Tester to make sure that leakage is within the range allowed under applicable law. At one end of the cable, touch the Megger Tester probe to the ground, and at the other end of the cable, touch the Megger Tester probe to the lead.
2. Use the AVO meter to test the total power.

## Step 7: Laying Out the Assembled Cables

To lay out the assembled cables in the gutters and leaders:

1. Clean all debris from the gutters and leaders.
2. Place the cables flat in the gutters, and allow the cables to hang down freely in the leaders.
3. In the gutters, place a fixing band under the cable every one to two meters. Bend the back of the fixing band over the edge of the gutter to secure the fixing band.
4. Use black plastic cable ties to secure the cable to the fixing bands.
5. Plug in the cables. After a few minutes, touch each cable to make sure it is hot.



**Note:** It is recommended to install a switch with a light indicator for each cable or cable assembly to enable you to easily turn the power on or off.

## Instructions for Using Resinex Sealant

All connections and terminations must be sealed with Resinex sealant. Once you mix the Resinex, you must use the Resinex within 10 minutes. Each Resinex kit is sufficient for six to eight connections. To make sure that you can use the entire Resinex kit, make sure to prepare enough connections and terminations for a Resinex kit before mixing the Resinex, then seal all the connections and terminations within 10 minutes after you mix the Resinex.

**Important:** Always wear plastic gloves when using Resinex.

To seal the shrink tubes using Resinex:

1. Put on the plastic gloves that come with the Resinex kit.
2. Empty the contents of the bottle (1) into the can (2).
3. Mix well with the mixing stick.
4. Pour an amount of Resinex into the shrink tube so that when you seal the tube, the inside of the tube will be full of Resinex with no excess.
5. Wait 20 minutes, and then squeeze the shrink tube closed. Make sure there is sealant all around the inside of the shrink tube, with no air inside.
6. Allow the Resinex to dry. It takes from one to four hours for the Resinex to dry completely.



## Appendix: Connection Cable Diagrams

The following are connection cable diagrams for:

- A one section cable
- A two section cable
- A three section cable
- A one section double 7 mm ribbon cable
- A two section double 7 mm ribbon cable
- A three section double 7 mm ribbon cable

### One Section Cable

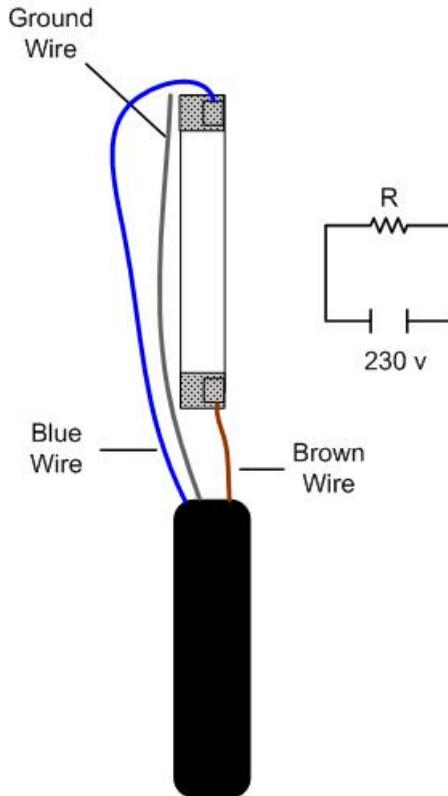


Figure 3: One Section Connection Diagram

## Two Section Cable

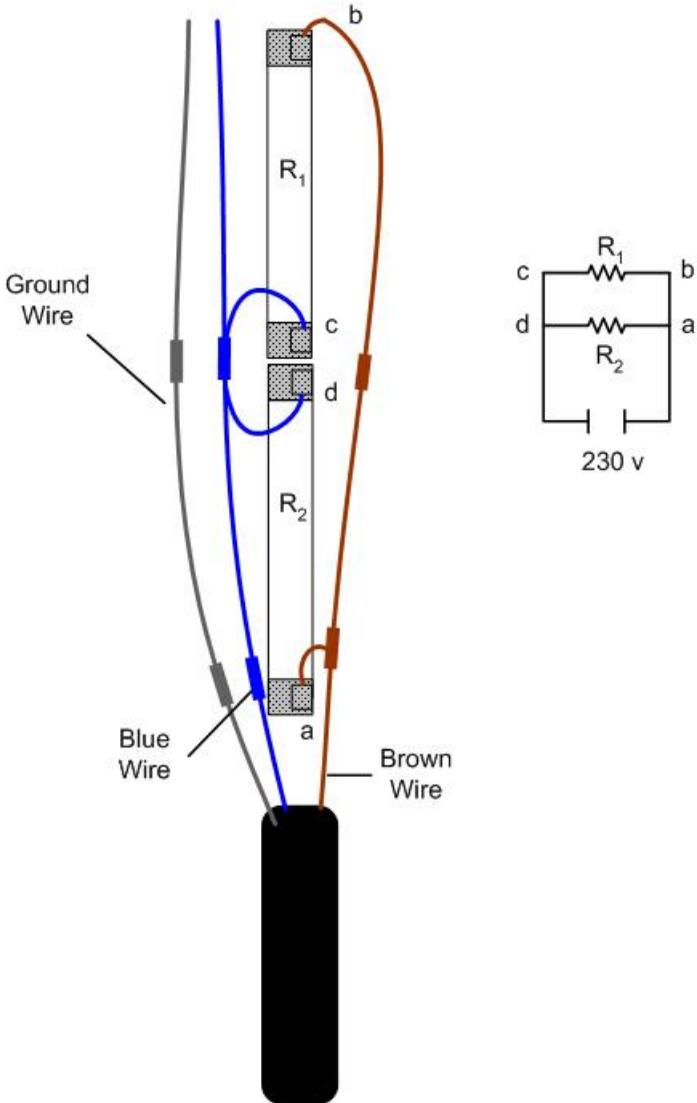


Figure 4: Two Section Connection Diagram

### Three Section Cable

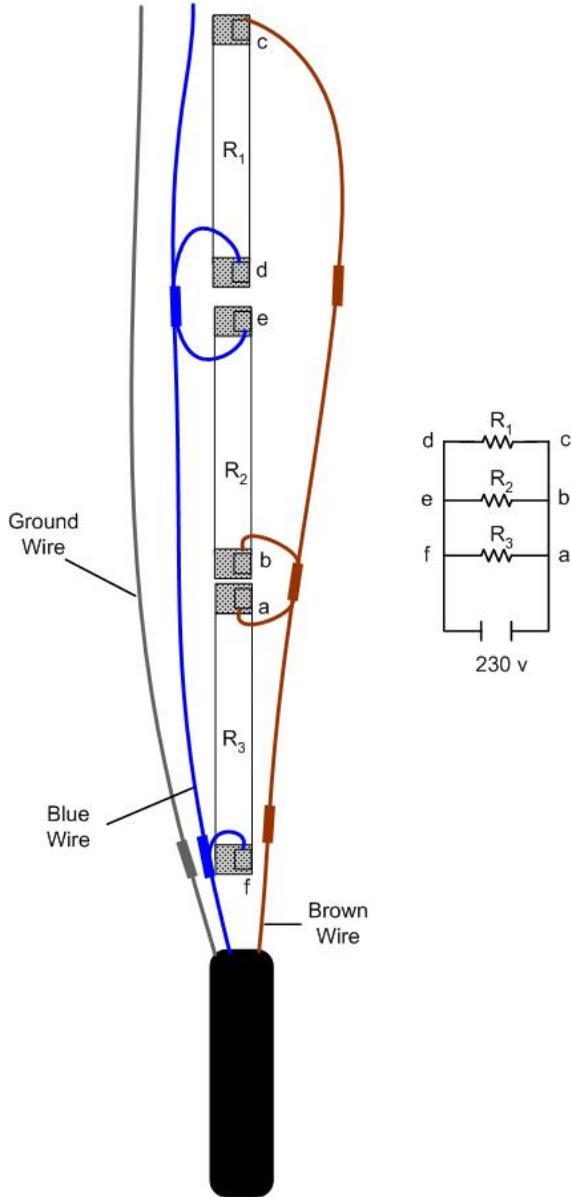


Figure 5: Three Section Connection Diagram

## One Section Double 7 mm Ribbon Cable

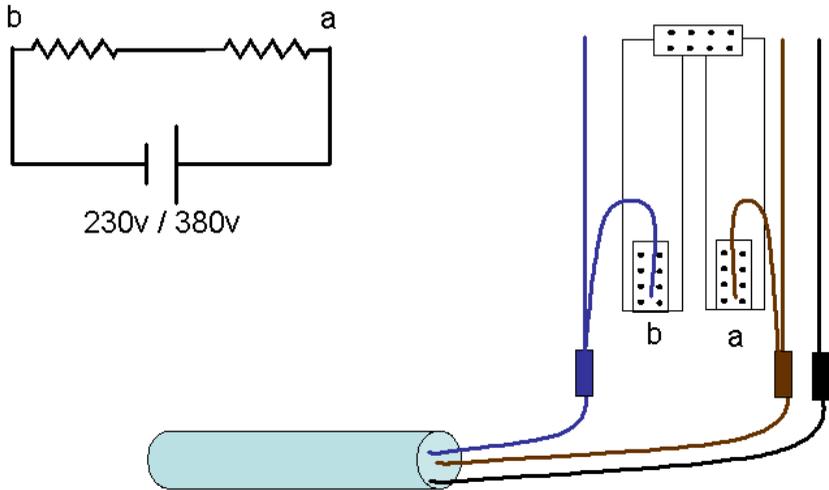


Figure 6: One Section Double 7 mm Ribbon Connection Diagram

## Two Section Double 7 mm Ribbon Cable

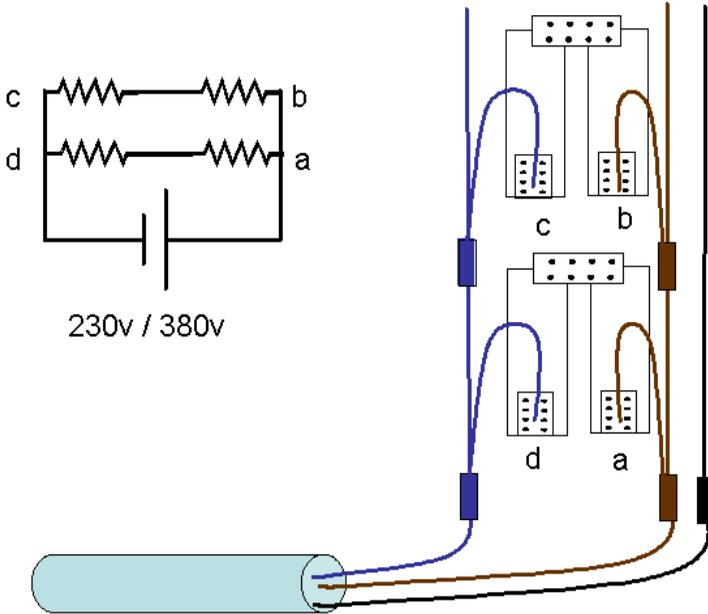


Figure 7: Two Section Double 7 mm Ribbon Connection Diagram

### Three Section Double 7 mm Ribbon Cable

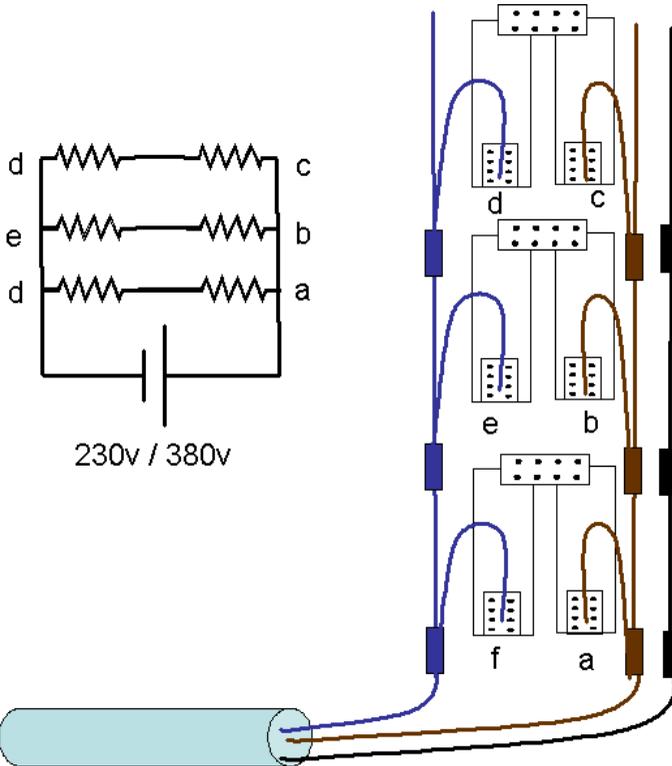


Figure 8: Three Section Double 7 mm Ribbon Connection Diagram

## Warranty Certificate

AHT guarantees that AHT Roof and Gutter Snow and Ice Prevention System (“the Product”) are free from defects in materials and workmanship for a period of 2 years from the date of manufacture.

This warranty will be in effect provided that the Product is installed in accordance with:

- The accompanying AHT Roof and Gutter Snow and Ice Prevention System Installation Guide.
- Any special written design or installation guidelines provided by AHT.
- All applicable local building and electrical codes.

This warranty is transferable to subsequent owners.

AHT assumes no responsibility under this warranty for any damage to the Product caused by workers, visitors on the job site, or post-installation work.

The staff at AHT is available to answer any questions regarding the proper installation or application of the Product. Please refer to our website for your local AHT office. If you have any questions regarding the installation procedure, or if the Product appears to be damaged, contact us before proceeding with the installation or proposed repair.

Under this Limited Warranty, AHT will provide one of the following:

- If AHT determines that the Product is defective in materials and workmanship, and has not been damaged as a result of abuse or misapplication, AHT will refund the cost for repair of the Product, as well as labor and materials required to repair the Product. AHT will not assume responsibility for the cost of gutter and leader materials, or the cost to remove and replace gutters and leaders.
- If AHT determines that the repair of the Product is not feasible, AHT will replace the Product or refund the original cost of the Product. After 2 years, the maximum liability of the company is limited to the cost of the original cables multiplied by the percentage of the warranty period remaining.

This Limited Warranty is null and void if the owner, or designated representative, attempts to repair the Product without receiving prior authorization. Upon notification of a real or possible problem, AHT will issue an Authorization to Proceed under the terms of this Limited Warranty.

AHT DISCLAIMS ANY WARRANTY NOT PROVIDED HEREIN, INCLUDING ANY IMPLIED WARRANTY OF THE MERCHANTABILITY OR IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. AHT FURTHER DISCLAIMS ANY RESPONSIBILITY FOR SPECIAL, INDIRECT, SECONDARY, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING FROM OWNERSHIP OR USE OF THIS PRODUCT, INCLUDING INCONVENIENCE OR LOSS OF USE. THERE ARE NO

WARRANTIES, WHICH EXTEND BEYOND THE FACE OF THIS DOCUMENT. NO AGENT OR REPRESENTATIVE OF AHT HAS ANY AUTHORITY TO EXTEND OR MODIFY THIS WARRANTY UNLESS SUCH EXTENSION OR MODIFICATION IS MADE IN WRITING BY A CORPORATE OFFICER.

DUE TO DIFFERENCES IN BUILDINGS AND CLIMATE, AHT MAKES NO REPRESENTATION THAT THE GUTTER OR LEADER WILL ACHIEVE ANY PARTICULAR TEMPERATURE, OR TEMPERATURE RISE.

AHT does warrant that all cables will produce the rated watt output listed on the cable, when operated at the rated voltage.

If your country does not allow the exclusion or limitation of incidental or consequential damages, does not allow limitations on how long implied warranties may last, then the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights. You may have other rights, which vary from country to country.

### **Terms and Conditions**

**Shipping Discrepancies:** Incoming materials should be inventoried for completeness and for possible shipping damage. Any visible damages or shortages must be noted prior to accepting the material. Once the receiving personnel accept the material on their dock, they have relieved the freight company of any responsibility. Any discrepancy concerning the type or quantity of material shipped must be brought to the attention of AHT within 15 days of the shipping date entered on the packing slip for the order.

**Please note:**

AHT offers free repair to the heating cables that are damaged in the field. Ship the cables to AHT and we will repair it and ship it back at no charge. You must call and ask for a Returned Goods Authorization (RGA) number before shipping damaged cables back to us.  
Effective: 01-01-2010

This warranty applies to all products purchased after this date.

A

.H.T Advanced Heating Technologies Ltd  
Email: [aht-heating@cytanet.com.cy](mailto:aht-heating@cytanet.com.cy)  
Web: [www.aht-heating.com.cy](http://www.aht-heating.com.cy)