

# PipeFreeze PRO

## INSTALLATION MANUAL



### FOR DRY LOCATIONS ONLY

Please read and save these instructions. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage! Retain instructions for future reference. The guidelines detailed herein need to be followed to ensure warranty coverage.



Residential  
Pipe Heating Cable  
E523161  
Parallel - W

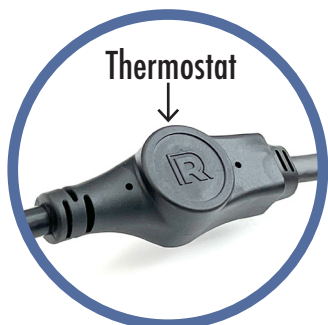


**QUESTIONS?**

CALL US: **1-877-387-4218**

OR VISIT: **radiantsolutionscompany.com**

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### **IMPORTANT:**

Heat cable **WILL NOT** turn on **OR** warm up unless the thermostat is in a cold environment. Perform Ice Pack Test before installation (Section 2.1)



(this is not the thermostat)

### **IMPORTANT:**

The LED on the end cap **WILL NOT** turn on unless the thermostat is triggered. Refer to the troubleshooting section for questions

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## 1.0 WARNINGS

### **WARNING**

The maximum size of the branch circuit shall not be less than 125% of the ampere load of the cable installed.

### **WARNING**

This product must be installed by a qualified person in accordance with this installation handbook and with the the National Electric Code (U.S.) as applicable. All electric connections must be made by a qualified electrician, according to the electrical and building codes effective in your region.

### **WARNING**

Two copies of a caution notice indicating the presence of electric de-icing and snow-melting equipment on the premises are packed with this unit. One notice must be posted at the fuse or circuit-breaker panel and the other on or next to the on/off control for the cable unit. Both notices must be clearly visible.

### **WARNING**

Do not use damaged heating cables, power cord or plug. Remove and replace immediately to prevent a fire, shock or arcing hazard.

### **WARNING**

Keep ends of heating devices and kit components dry before and during installation.

### **WARNING**

The conductive layer of this heating device must be connected to a suitable grounding/earthing terminal.

### **WARNING**

**SHOCK AND FIRE HAZARD.** If the cable system is not installed properly and/or damaged, fire or shock can occur and can result in serious personal injury or damage to property.

### **WARNING**

De-energize all power circuits before installation or servicing.

### **WARNING**

The presence of the heating devices shall be made evident by the posting of caution signs or markings where clearly visible.

### **AVERTISSEMENT**

La taille maximale du circuit de dérivation ne doit pas être inférieure à 125 % de la charge en ampères du câble installé.

### **AVERTISSEMENT**

Ce produit doit être installé par une personne qualifiée conformément au présent manuel d'installation. Tous les raccordements électriques doivent être effectués par un électricien qualifié, conformément aux codes de l'électricité et du bâtiment en vigueur dans votre région.

### **AVERTISSEMENT**

Deux exemplaires d'un avis de mise en garde indiquant la présence d'équipement de dégivrage électrique et de fonte de neige sur les lieux sont emballés avec cet appareil. Un avis doit être affiché au niveau du panneau de fusibles ou de disjoncteurs et l'autre sur ou à côté de la commande marche/arrêt du câble. Les deux avis doivent être clairement visibles.

### **AVERTISSEMENT**

Ne pas utiliser de câbles de chauffage, de cordon d'alimentation ou de fiche endommagés. Retirer et remplacer immédiatement pour éviter tout risque d'incendie, de choc ou d'arc électrique.

### **AVERTISSEMENT**

Garder les extrémités des appareils de chauffage et l'ensemble des composants au sec avant et pendant l'installation.

### **AVERTISSEMENT**

La couche conductrice de ce dispositif de chauffage doit être connectée à une borne de terre/terre appropriée.

### **AVERTISSEMENT**

**RISQUE DE CHOC ET D'INCENDIE.** Si le système de câbles n'est pas installé correctement et/ou endommagé, un incendie ou un choc peut se produire et entraîner des blessures graves ou des dommages matériels.

### **AVERTISSEMENT**

Mettre hors tension tous les circuits d'alimentation avant l'installation ou la maintenance.

### **AVERTISSEMENT**

La présence des dispositifs de chauffage doit être mise en évidence par l'apposition de panneaux de mise en garde ou de marques bien visibles.

## 1.1 GENERAL INFORMATION

This guide describes Pipe Freeze Pro Plug-In Self-Regulating Cable and how to install the system. It is important to thoroughly review this guide. For additional information regarding any aspect of this product, contact your friends at Radiant Solutions Company.

Pipe Freeze Pro self-regulating heat cables are designed to be used to prevent freezing on all common pipe materials including copper, PEX, PVC, ABS and galvanized in dry locations. Do not use Pipe Freeze Pro on flexible hoses, inside pipes or in wet locations. Self-regulating heat cable automatically calls for more energy when ambient outdoor temperatures are lower and conversely, less energy when outdoor temperatures are higher. Pipe Freeze Pro includes an integrated thermostat (the lump between the power cord and the heating cable). The thermostat will turn the cable ON when temperatures drop below about 37°F and turn the cable OFF above 50°F. Note, there is a temperature sensitivity range of about 5°F +/- on the thermostat.

## 1.2 CABLE SPECIFICATIONS

Cable Construction:	Self-regulating
Rating & Use:	For Dry Locations Only
Rated Voltage:	120V, 208V-240V
Output at 50°F (10°C) :	3.0 Watts per foot on pipe
Output at 32°F (10°C) :	4.0 Watts per foot on pipe
Lengths:	3 ft to 200 ft
Bending Radius (min.) :	0.8 in @ 5°F (-15°C)
Cable Dimensions:	6 mm thick x 8.5 mm wide
Min. Circuit Size:	15 amp
Max. Exposure Temp*:	150°F (65°C)
Min. Install Temp:	5°F (-15°C)
Power Cord:	40" 3-wire 16 AWG + lit plug
Buss Wires:	20 gauge AWG (A)
Conductor Insulation:	Self-regulating conductive core (B)
Inner Jacket:	Modified Polyolefin (C)
Braid:	Tinned copper (D)
Outer Jacket:	TPE (E)
LED Indicator:	100,000 hour duty cycle (F)
Utility Hole:	4mm (G)



Do not apply pull force to end cap



Some Pipe Freeze Pro self-regulating heat cables have an optional, factory-installed GlowCap™ (ABOVE), which is an injection molded end seal with a green LED indicator light. This device allows users to determine if either of the two main 20AWG buss wires have been severed. If one of the buss wires has been severed the green indicator light will NOT illuminate and the cable will not heat up. **Note: The green light will NOT light up unless the thermostat is triggered**, which occurs only at temperatures below 37°F. The GlowCap™ also features a utility hole that can be used in conjunction with cable tie to secure the end of the cable to the pipe if desired. Do not apply pull force to the utility hole.

LED Notes: The LED indicator light is not required to light up in order for the heat cable to work. Likewise, you can cover the end cap with insulation if you do not care to see the LED. Please see the troubleshooting section if the green light does not turn on.

\*This is the maximum temperature the cable should be exposed to for extended periods. Prolonged exposure to higher temperatures may cause premature cable degradation.

### 1.3 120 VOLT PRE-ASSEMBLED CABLE WATTAGE CHARTS

This charts display the watts consumed per Pipe Freeze Pro cable according to length at 50°F on standard pipe freeze protection applications (120 volt Pipe Freeze Pro models).

Length	In Air	On Pipe	Length	In Air	On Pipe
3 ft	6W	9W	40 ft	80W	120W
6 ft	12W	18W	60 ft	120W	180W
9 ft	18W	27W	80 ft	160W	240W
12 ft	24W	36W	100 ft	200W	300W
15 ft	30W	45W	125 ft	250W	375W
18 ft	36W	54W	150 ft	300W	450W
24 ft	48W	72W	175 ft	350W	525W
30 ft	60W	90W	200 ft	400W	600W

**NOTE:** The presence of the heating devices shall be made evident by the posting of caution signs or markings at appropriate locations and/or at frequent intervals along the circuit

### 1.4 HEATING CABLE SELECTION FOR PIPE FREEZE PROTECTION

Use the chart below to determine the appropriate cable length for your pipe freeze protection project (Suggested cable lengths are in grey tinted cells). This chart is based on the lowest outside temperature of 0°F (-18°C) with a minimum of 1/2" thick insulation. Use 1" thick insulation to provide protection in temperatures down to -40°F (-29°C). Add 1 foot of cable length for each valve or spigot along the pipe.

Pipe Diameter	Pipe Material	LENGTH OF PIPE																								
		5'	10'	15'	20'	25'	30'	35'	40'	45'	50'	55'	60'	65'	70'	75'	80'	85'	90'	95'	100'	125'	150'	175'	200'	
1/2"	Metal	6'	12'	18'	24'	37.5'	37.5'	37.5'	50'	50'	50'	62.5'	62.5'	75'	75'	75'	87.5'	87.5'	100'	100'	100'	125'	150'	175'	200'	
	Plastic	6'	12'	18'	24'	37.5'	37.5'	50'	50'	50'	62.5'	62.5'	75'	75'	75'	87.5'	87.5'	100'	100'	100'	125'	150'	175'	200'	x	
3/4"	Metal	6'	12'	18'	24'	37.5'	37.5'	37.5'	50'	50'	50'	62.5'	62.5'	75'	75'	75'	87.5'	87.5'	100'	100'	100'	125'	150'	175'	200'	
	Plastic	6'	12'	18'	24'	37.5'	37.5'	50'	50'	50'	62.5'	62.5'	75'	75'	75'	87.5'	87.5'	100'	100'	100'	125'	150'	175'	200'	x	
1"	Metal	6'	12'	18'	24'	37.5'	37.5'	37.5'	50'	50'	50'	62.5'	62.5'	75'	75'	75'	87.5'	87.5'	100'	100'	100'	125'	150'	175'	200'	
	Plastic	12'	12'	18'	24'	37.5'	37.5'	50'	50'	50'	62.5'	62.5'	75'	75'	75'	87.5'	87.5'	100'	100'	100'	125'	150'	175'	200'	x	
1 1/2"	Metal	6'	12'	18'	24'	37.5'	37.5'	37.5'	50'	50'	50'	62.5'	62.5'	75'	75'	75'	87.5'	87.5'	100'	100'	100'	125'	150'	175'	200'	
	Plastic	12'	18'	24'	37.5'	37.5'	50'	50'	50'	62.5'	62.5'	75'	75'	75'	87.5'	87.5'	100'	100'	100'	125'	125'	175'	200'	x	x	
2"	Metal	6'	12'	18'	24'	37.5'	37.5'	37.5'	50'	50'	62.5'	62.5'	75'	75'	75'	87.5'	87.5'	100'	100'	100'	125'	150'	175'	200'	x	
	Plastic	12'	18'	37.5'	37.5'	50'	62.5'	75'	75'	87.5'	100'	100'	125'	125'	150'	150'	150'	175'	175'	175'	200'	x	x	x	x	
2 1/2"	Metal	6'	18'	18'	24'	37.5'	50'	50'	50'	62.5'	62.5'	75'	75'	87.5'	87.5'	100'	100'	125'	125'	125'	125'	150'	200'	x	x	
	Plastic	12'	24'	37.5'	50'	62.5'	75'	87.5'	100'	125'	125'	150'	150'	175'	175'	200'	200'	x	x	x	x	x	x	x	x	

\* Actual cable lengths required will depend on the specifics of each application.

## 1.5 SAFEGUARDS AND WARNINGS

Read and understand all instructions and safety warnings in this manual. Electrical cables, when not installed correctly or are damaged, can present a fire, shock and arcing hazard. Additional Pipe Freeze Pro guidelines:

1. Do not use extension cords.
2. Do not bury cable or install in wet locations.
3. 30-mA ground fault protection of equipment is required for each heating cable branch circuit for maximum protection.
4. Before installing or servicing cable, ensure that all power to supply circuit(s) is OFF.
5. Do not twist cable during installation.
6. Do not expose cable to temperatures above 150°F (65°C), as this will damage the cable.
7. Installation must be in compliance with National Electrical Codes (NEC).
8. Use only fire-resistant insulation, such as pre-formed foam. Do not embed heating cable in insulation. Do not use fiberglass insulation.
9. Use 1/2" wide (minimum) fiberglass tape and/or plastic cable ties when attaching cable to pipe. Do not use wire or metal clamps.
10. For the warranty to be valid, the installer must comply with the requirements outlined in this manual.
11. Do not cut or attempt to alter the length of the cable as this may result in electrical shorting and shock.
12. Plug your cable in before temperatures drop below 32°F (0°C). This will reduce the likelihood of tripped circuits due to amperage spikes.

### NEVER

- Use fasteners such as nails, staples or screws to secure the cable.
- Attempt to install the cable system if it is damaged.
- Install a cable that is energized (plugged in).
- Allow the sharp edge of a tool to nick or damage the cable.
- Use heating cable for any purpose other than described in this manual.
- Install the heating cable in walls or in hidden areas.
- Install cable designed for 120V power source on 208/240V power source.
- Exceed the maximum circuit lengths as this will result in breaker trips and will prevent the heating cable from turning on in freezing conditions.
- Cut, slice or modify the heat cable as this can result in electrical shock or fire.
- Use Pipe Freeze Pro on pipes carrying anything other than water. This cable is not intended for use with hazardous materials or to be buried.
- Install heat cable in temperatures below 5°F (-15°C)
- Cover the power cord or thermostat with insulation. The thermostat will not work unless it is exposed to cold air for a period of time.

### ALWAYS

- Test your cable with an ice pack before installation (details in Section 2.1)
- Unplug the cable prior to installation.
- Inspect cable for damage before installation.
- Use a minimum of 1/2" thick pipe insulation on all applications.
- Leave the thermostat exposed (do not cover or insulate thermostat).
- Maintain a minimum 1" bending radius on the cable. (Do not kink cable)
- Verify that the cable system is grounded/protected by GFCI technology.
- Ensure that this product is installed by a qualified person in accordance with this manual and with the the National Electric Code (U.S.) as applicable. All electric connections must be made by a qualified electrician, according to the electrical and building codes effective in your region.
- Perform a bi-annual inspection of the cable system to determine if the cable is damaged and/or still operational. Before cold season verify proper operation and record notes in appropriate location. Keep notes on file.
- Secure cable to pipe approximately every 12"
- Keep cable in contact with pipe (never allow space or insulation between pipe and cable).

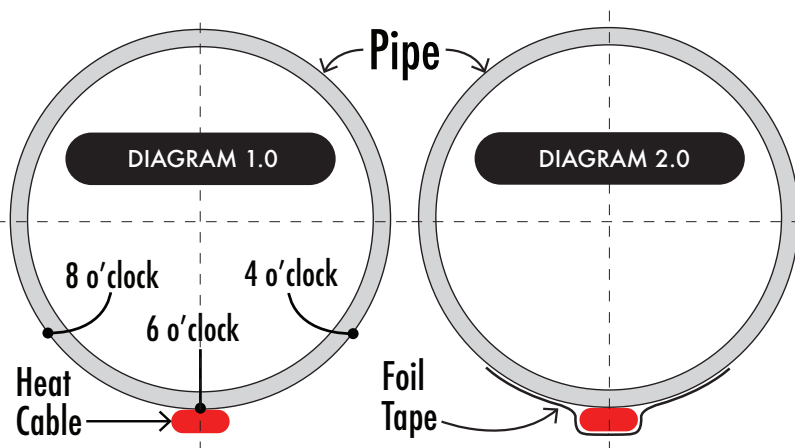


## 1.6 HEATING CABLE INSTALLATION ON PIPE

The integrated thermostat WILL NOT allow the cable or the green LED indicator in the end cap (if present) to turn on UNLESS temperatures are below 37°F. Keep in mind there is a temperature sensitivity range of about 4°F (+/-) so the cable may not turn on and off at exactly 37°F and 50°F. The green LED indicator at the end of the cable (if present) WILL NOT turn on unless the thermostat is triggered. See 'Troubleshooting' in Section 2.3 if cable does not warm up or LED does not turn on.

**BEFORE INSTALLATION:** Plug in your cable and test the thermostat to verify proper operation before installation. The easiest way to do this is by simply wrapping a common gel-based ice pack (taken directly from the freezer) around the thermostat. Be sure the ice pack is wrapped tightly around the thermostat. You can use tape to help compress the ice pack around the thermostat.

Within 5-10 minutes the LED indicator on the end of the cable should illuminate with a green color. After another 5-10 minutes the cable should feel warm to the touch. If you are testing in a bright room the green light will be subtle. See Section 2.1 for more ice pack test details. After verifying the proper operation of your thermostat and before installing the cable, check the pipe to make sure it is clean and dry. Remove any sharp edges on the pipe that could damage the heat cable. Verify the cable is the correct length, wattage and voltage prior to installation. Pipe Freeze Pro can be installed using a single run of cable at the 6 o'clock position on pipes that are 1" or less in diameter. On larger pipes use a double run with straight tracing at the 4 o'clock and/or 8 o'clock positions (Diagram 1.0, above). See Cable Selection Chart in section 1.4 for greater detail. Spiral applications use a lot of unnecessary cable and are therefore not generally recommended. Secure Pipe Freeze Pro to the pipe approximately every 12" using provided fiberglass tape in a manner that keeps the cable in direct contact with the pipe. Do not use duct tape, electrical tape or masking tape. Do not forget to wrap and insulate valves and spigots. There is not an exact pattern that must be followed. Simply wrap the cable in a way that provides adequate coverage to prevent freezing without kinking the cable. Excess cable remaining at the end of the pipe can be doubled back along the pipe. For additional thermal performance you may elect to install the cable using aluminium foil tape along the entire length of the cable (diagram 2.0, above). This helps maintain cable-to-pipe contact and reflect heat back into the pipe. This is particularly helpful on plastic pipes because they are not as thermally conductive as metal pipes. Be sure to keep the cable flat as you bend it during the application.

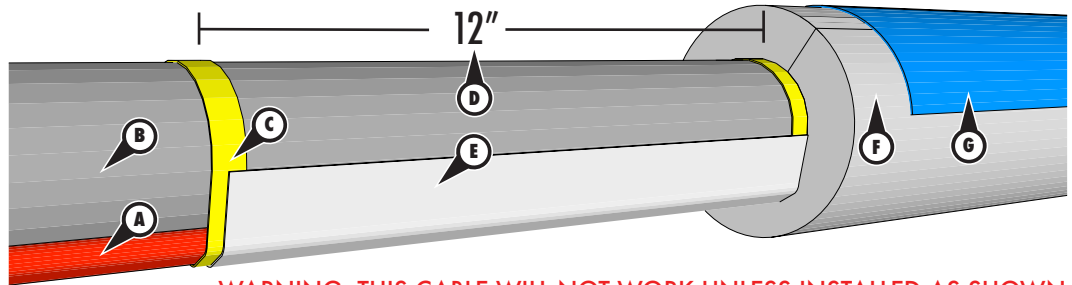


## 1.7 NEXT STEP: THERMAL INSULATION

All areas with heat cable should be covered with a minimum of 1/2" thick thermal insulation. Do not leave cables exposed. For protection down to -40°F (-29°C) use 1" thick insulation. Pre-formed foam insulation or equivalent must be used on all areas that receive heat cables. Fiberglass insulation is not recommended. Before any thermal insulation is installed, check the cable for proper operation and that it is free of damage such as cuts or gouges. Use standard duct tape to secure the thermal insulation on the pipes. Nylon cable ties may be used. Do not cover the thermostat or power cord with insulation. Pipe Freeze Pro will not prevent pipes from freezing without thermal insulation.

## 1.7 THERMAL INSULATION CONTINUED...

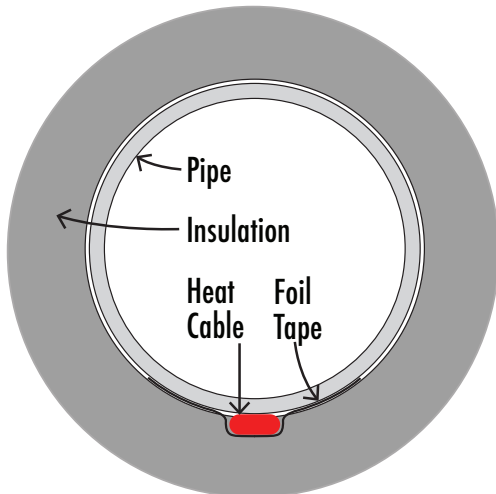
Place the provided warning labels on outside of insulation where they are visible to indicate the presence of heating cable. After the cable and insulation are fully installed, turn the circuit breaker on to give power to the cable. The pipe should feel warm within one hour providing the ambient temperature is below 37°F. Above is a close-up of an ideal installation. Note that we have shown one cable on a pipe of approximately 1" diameter.



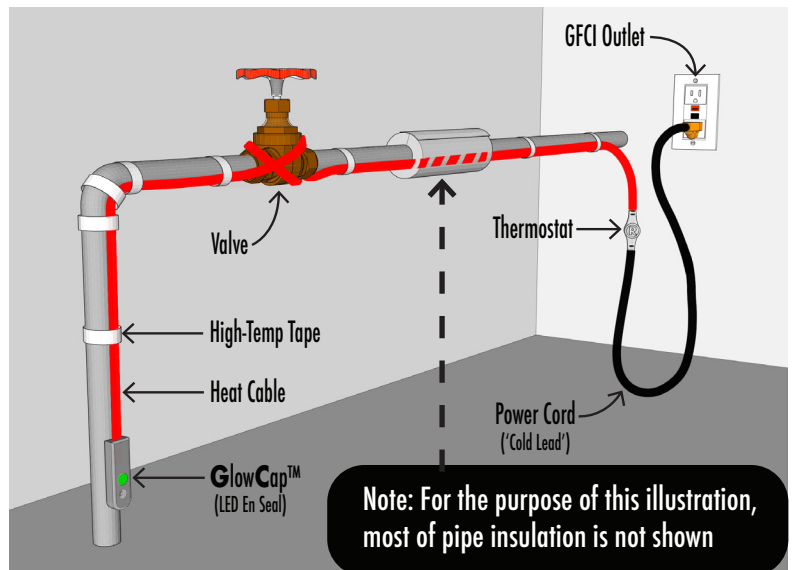
**WARNING: THIS CABLE WILL NOT WORK UNLESS INSTALLED AS SHOWN**

The heat cable (A) is secured to the pipe (B) with glass cloth tape (C) approximately every 12" (D). A continuous strip of aluminium foil tape (E) can be installed if desired (We strongly recommend this on non-metallic pipes). Once the cable is secured to the pipe you must install a layer of 1/2" (minimum) standard pipe insulation minimum (F). You may install thicker insulation if you would like to increase energy efficiency but DO NOT use fiberglass insulation as it is not effective for pipe freeze heat trace applications. Finally, the pipe insulation should be secured using a high-quality tape such as duct tape (G). Use one or two small pieces of pipe insulation and some duct tape to cover the body of any valves in your installation.

## 1.8 GENERAL DIAGRAMS



**CABLE WILL NOT WORK UNLESS INSTALLED DIRECTLY ON PIPE AND INSULATED AS SHOWN**



**Note: For the purpose of this illustration, most of pipe insulation is not shown**



## 1.9 CABLE TESTING AND MAINTENANCE

Using a 1000vDC megohmmeter set to 1000 volts, check the resistance between both of the power prongs on the plug (together) and the ground prong both before and after installing the heating cable. This test can only be performed if the thermostat is in a cold environment and is allowing the cable to be energized. The minimum reading should be 1000 megohms. If the readings fall below 1000 megohms, replace the cable with a new unit. Detecting cable damage prior to installation can prevent additional labor costs. Do not attempt to repair the cable. Record the original values for the original cable test and compare subsequent readings taken during regular maintenance to the original values. Testing should be performed yearly. A history of resistance readings can be useful in spotting moisture ingress into the cable.

## 2.0 WARRANTY

Radiant Solutions Company (the Company) warrants its electric self-regulating heat cable (the Product) to be free from defects in materials and workmanship for a period of 10 years to the first owner and/or original purchaser of the product. You must register your warranty with the company at [www.radiantsolutionscompany.com](http://www.radiantsolutionscompany.com) within 60 days of purchase to qualify for warranty coverage. Under this Limited Warranty, the Company will provide the following: If the product is determined by the Company to be defective in materials and workmanship and has not been damaged as a result of abuse, misapplication or modification, the Company will refund all or part of the manufacturer's published list price of the Product at the time of purchase. The Company's maximum liability shall not in any case exceed the list price for the product claimed to be defective. Warranty requires the installation be performed in strict accordance with the details outlined in this manual. Failure to do so voids the warranty completely. The Company is not responsible for damage to product it deems the result of neglect, abuse or lack of maintenance. For warranty claims, the purchaser is responsible for the costs associated with the installation, removal and reinstallation of the products including both labor and shipping costs incurred to return the product to the Company.

In order to make a warranty claim, you must:

- A. Provide the Company with sufficient details relating to the nature of the defect, the installation, the history of operation and any repairs that may have been made. This must be done in writing within 30 days of discovery of the alleged warranty issue.
- B. At the Company's discretion and at the owner's expense, ship the Product to the Company or the Company's local distributor.
- C. Provide proof that the Product was installed in accordance with the applicable Product Installation Manual and any special written design or installation guidelines by Radiant Solutions Company for this project.
- D. Provide proof that the Product was installed in accordance with the National Electrical Code (NEC) or the Canadian Electrical Code, or all applicable local building and electrical codes.
- E. Provide a retail sales receipt or proof of purchase.
- F. Make a record of your cable testing and inspection on an annual basis and keep on file.

The following are not covered by this Limited Warranty:

- A. Any incidental or consequential damage, including inconvenience, loss of time or loss of income.
- B. Any labor or materials required to repair or replace the Product or controls.
- C. Any freight or delivery costs related to the Product to or from our facility.
- D. Any costs associated with the analysis needed to discover or diagnose a potential problem with the cable system.
- E. Radiant Solutions Company will not be responsible for consequential damages relating to failure of this product for any reason.
- F. Any failure of LED indicator lights in the cable system (i.e., at plug or end seal) as these are convenience features and not relevant to the essential to cable performance.



Notes: Set megger to 1000v. Both prongs of plug need to be shorted together during test, as shown above.

## 2.1 ICE PACK TEST

You should always test your cable for proper operation before installing it. The goal of the ice pack test is to simply cool down the thermostat on the cable to the point it is triggered, allowing the cable to be energized. If your cable comes with the GlowCap™ (LED end seal) on the end, you will know immediately when your thermostat is triggered because the LED will glow green. Normally, the thermostat will be triggered 5-10 minutes after wrapping it with an ice pack. The cable will warm up to the touch a few minutes after that. Follow these steps: 1) Plug your heat cable in and get a standard gel-based ice pack out of the freezer (large enough to completely cover the thermostat), 2) Immediately wrap the ice pack around the thermostat as shown below, making sure the ice pack is in good direct contact with the thermostat, 3) Monitor the GlowCap™ on the end of the cable for 5-10 minutes. After the green LED turns on wait another 5-10 minutes\* and the cable should begin to feel warm\*\*. Your Pipe Freeze Pro heat cable is ready for installation! You can also use the ice pack method to test the cable seasonally after installation using the below method if you like.

### Step One:

Plug the heat cable in and grab an ice pack from the freezer. Use a 4" x 8" (min.) ice pack.



### Step Two:

Wrap the ice pack around the thermostat with some tape to help hold it tightly in place.



### Step Three:

Wait 5-10 minutes for the green light to appear. The cable should get warm 5-10 minutes after that.



\*If you are testing in a bright space, the LED will not be bright. It's designed to be subtle unless in dark areas.

\*\*When installed, the heat cable will typically not get warmer than 60°F. It won't feel hot during the ice pack test, just warm.

## 2.2 TEST RECORDS & PROJECT NOTES

Use this area to make notes about your installation including key dates, product purchase information, system inspections, test logs, contractors, etc..

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## 2.3 TROUBLESHOOTING GUIDE

Please run through this guide before calling for technical support.

Issue	Possible Causes	Remedies
Green LED on end cap not turning on	1. Thermostat not triggered	A. Test thermostat with ice pack, per section 2.1, or, monitor cable when temperatures drop below 37°F for at least one hour. B. No power to cable; Check for circuit issues
	2. LED is broken	A. No remedy necessary because LED has no affect on cable performance.
Cable is warm but green LED not turning on	1. LED is broken	A. Monitor the cable by feeling for warmth. If it's warm, it's working! Broken/defective LED has no effect on the performance of the cable.
Cable not generating any heat	1. No power	A. Check for tripped circuit breaker or GFCI B. Test outlet with circuit tester C. Verify power at plug -- Is LED in plug glowing?
	2. Thermostat not triggered	A. Test thermostat with ice pack, per section 2.1, or, monitor cable when temperatures drop below 37°F for at least one hour. B. Replace cable - defective thermostat
Circuit breaker tripping	1. Circuit is overloaded	A. Remove other devices from circuit B. Reduce footage of cable on circuit C. Power up cable when temperatures are above freezing
	2. Short circuit	A. Check entire cable for damage; Repair or replace cable B. Check circuit for damage; Repair as needed
Frozen pipe	1. Cable not energizing	A. See causes and remedies above
	2. Thermal insulation issue	A. Check for damage to thermal insulation - pipe must be 100% covered B. Replace or augment insulation to boost R-value
	3. Inadequate cable coverage	A. Add more heat cable: Certain circumstances, such as pipes larger than 1" in diameter, pipes with low heat conductivity (plastic) or extreme environments may require the addition of a second line of cable to provide protection against freezing
Cable is not hot	This cable will NEVER get hot to the touch. It is meant only to get warm. If the cable feels warm it is working!	

If you have any questions, please call 877-387-4218 or visit [www.radiantsolutionscompany.com](http://www.radiantsolutionscompany.com)



### **Good vibes headed your way...**

Facts. Our main competitors are based in a communist country (you know the one...) and your support of our humble Minnesota business seriously means a lot to us. Your purchase not only helps buy bones for Blue but it provides security to the humans at Radiant Solutions Company too. As you would expect from your neighbors, we are here for you if you need anything. Just call or write.

If you have a minute to leave us a review on Amazon or Google, that would make our day. ❤️



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