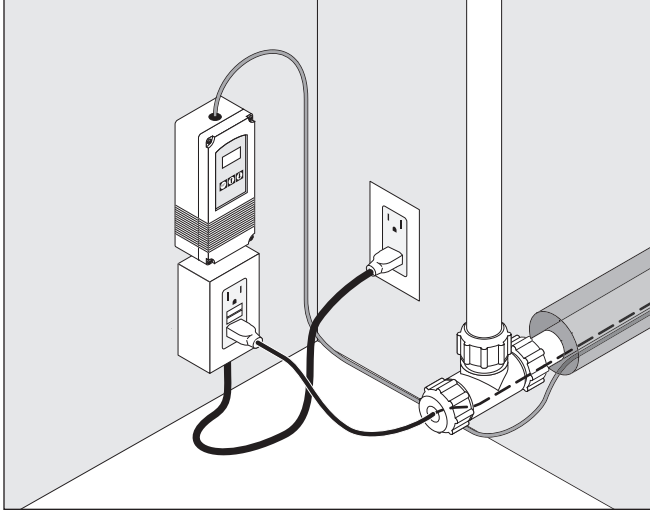




# Miser WinterGard™

## In-Pipe Heating Cable

### Installation Instructions



#### Description

Miser WinterGard is an energy efficient in-pipe heating cable for freeze protection of insulated plastic potable water lines. It is a tough mineral insulated heating cable, and includes cord and plug for ease of installation. The kit includes an electronic controller with built-in ground fault interrupter (GFI) protection. For use with either 1-inch or 1/4-inch plastic pipe.

#### Tools Required

- Screwdriver
- Pipe wrench to tighten nuts on tee fitting.
- Approximately 5 feet of strong string or cord.
- Electrician's fish tape
- A drill with appropriate bits for opening hole in outside wall to allow insulated pipe and temperature sensor to pass through.

#### Approvals



*Note: This product is suitable for use in potable water.*

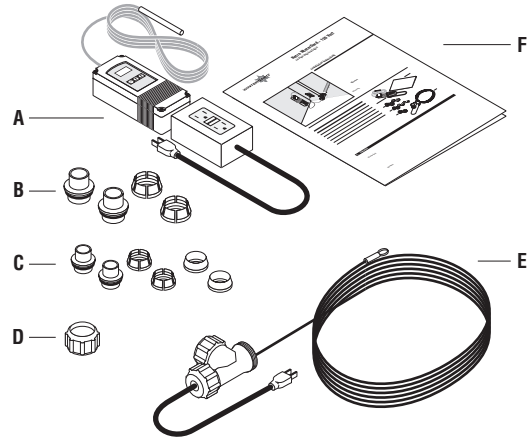
#### Additional Materials Required

- Plastic water pipe 1-inch or 1 1/4-inch I.D. capable of withstanding 206°F (97°C). **NOTE: The blue tee fitting supplied with this heating cable is designed to work with only the following pipe types:**
  - I.D. Series 75 & 100 (PE 1404) (SIDR 9)
  - I.D. Series 125 (PE 2306, 2406 or 3406 resin) (SIDR 11.5)
  - I.D. Series 160 (PE 3408 resin) (SIDR 9)

- (2) #10 or #12 mounting screws, for electronic controller
- Duct tape for attaching temperature sensor and sensor lead wire to pipe, and to seal pipe insulation
- Closed cell foam pipe insulation for your piping size, minimum 1/2-inch thick

#### Kit Contents

Item	Qty	Description
A	1	GFI protected electronic controller with 8 foot sensor lead wire
B	2	1 1/4-inch pipe adaptors
C	2	1-inch pipe adaptors
D	1	Nut for plastic tee fitting
E	1	Plug-in heating cable with plastic tee fitting
F	1	Installation instructions (English and French)



#### ⚠ WARNING:

Miser WinterGard must be installed correctly to ensure proper operation and to prevent shock, fire or damage to the pipe. Read these important warnings and carefully follow all the installation instructions.

- Miser WinterGard should not be used in un-insulated pipe. For un-insulated pipes use Retro WinterGard.
- The heating cable must be installed in accordance with local and national electrical codes.
- Do not use a two-prong outlet, an extension cord, or with any voltage other than 120 volts AC.
- The GFI protected electronic controller must be installed in a dry location.
- Do not unduly work or bend the cable. Bend gently and avoid repeated sharp bends, pinching, crimping, or flattening.
- Do not cut or alter the heating cable or power cord length.
- The heating cable must not pass through a valve or shut off of any kind.
- Do not install this heating cable on the outside of piping.
- Do not energize the system until installation is complete and the pipe is filled with water. Never energize the system if the pipe is not filled with water.
- The temperature sensor must contact the pipe at all times or it could sense an incorrect temperature.

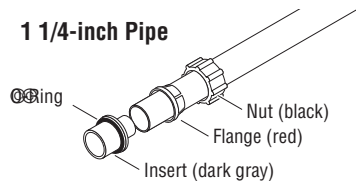
## Miser WinterGard Installation Instructions

### Heating Cable Installation

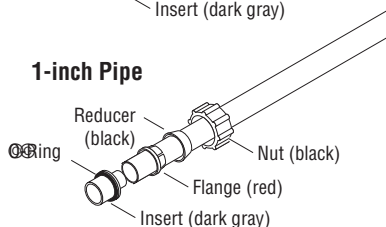
Before starting, measure the length of the run. Allow for the contour of the run, and allow enough distance out into the lake to get below the ice level or down into the well to get below the frost line. The pipe should be at least a foot longer than the heating cable.

1. Unroll the pipe along its route **starting from the power supply end**. If going into a lake or well, ensure that the heated portion of the pipe is long enough to extend well below the ice level. Lay the pipe out along the shore using weights as necessary to hold it down. At the power supply end, feed the end of the pipe through the wall of the structure and into position, close to the pressure tank/structure pipe.
2. Before installing the heating cable, cut the end of the supply pipe square and deburr. Slide black plastic nut from plastic bag over the pipe end. Select the correct fittings for your pipe size, either 1-inch or 1 1/4-inch. The black nut reducer is not required for the 1 1/4-inch adaptor set. Slide the black nut reducer, required only for 1" pipe, and red flange over the pipe, ensuring the taper on the nut reducer and red flange face towards the black nut as shown below. Tap insert into pipe, preferably with a flat object, such as a block of wood, that will not damage the plastic insert.

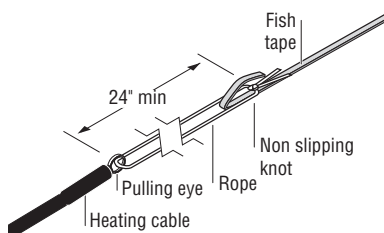
#### 1 1/4-inch Pipe



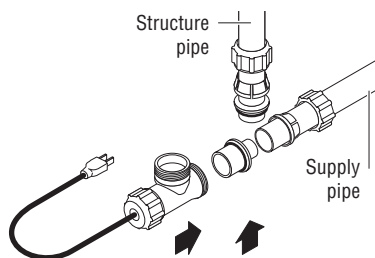
#### 1-inch Pipe



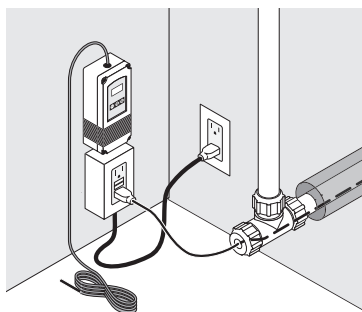
3. If at all possible, unroll the heating cable completely. Depending on the contour of the run, up to about 100 feet of heating cable can be simply pushed into the pipe; however an electrician's fish tape is recommended for all lengths and is available from rental supply stores. Starting at the end **away** from the power supply end, feed the fish tape back through the pipe. Tie the end of the fish tape to the eyelet on the heating cable. Tie the end of the fish tape to the eyelet on the heating cable, using a long piece of rope, so that the end of the fish tape is separated by about two feet from the end of the heating cable, and locate the knot at the fish tape end.



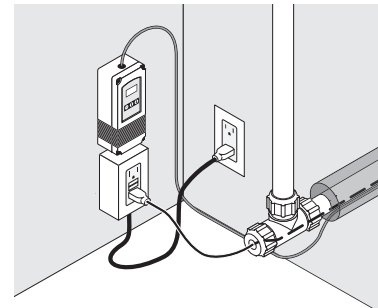
4. Pull the heating cable **slowly** into the pipe, with a second person uncoiling / feeding the heating cable into the pipe from the other end. Pull the heating cable all the way into the pipe. The end of the heating cable will not be visible, since the pipe has been cut longer than the heating cable. However the string will appear, and can be cut and withdrawn completely from the heating cable by simply pulling through (the knot is cut off to ensure it does not snag in the eyelet and prevent the string from being removed).
5. Before attaching the blue tee to the supply pipe, ensure that the 'O'-ring seal is correctly positioned on the insert. Slide the red flange (and nut reducer, if used) up to insert shoulder. Push end of tee body over end of the insert and 'O'-ring seal assembly. Engage and tighten nut with a wrench.
6. Attach the vertical segment of the blue tee to structure water system. Use black nut from the tee, and follow directions as given in steps 2 and 5 for connecting to the supply water system.
7. Attach a foot valve or submersible pump (if required) to the lake/well/water supply end, if not already connected.



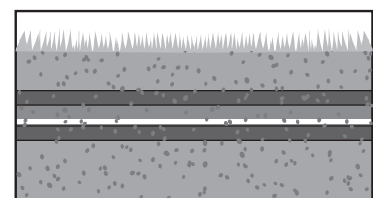
8. Check that the black nut securing the heating cable into the tee is tight. Tighten with a wrench if required. Also check that the brass nut where the flexible cord exits the tee is tightened securely (60 to 70 inch-lbs. torque). Do not over tighten brass nut as this may damage the internal 'O'-ring seal. Test the system at normal pressure to check that it is leak free.
9. Mount the electronic controller in a dry location near a 120 volt outlet. Ensure that the pipe is filled with water and plug the controller power cord into the outlet. **Note:** Do not plug in the power cord if the pipe is empty as this could cause overheating and damage to the pipe.



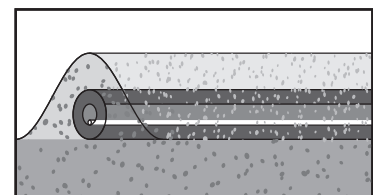
10. Carefully uncoil the temperature sensor and sensor lead wire, and push the sensor back out through the wall of the structure along the pipe. Tie the sensor lead wire to the pipe at intervals using tape, and secure the sensor firmly to the pipe using duct-tape, to ensure consistent contact. The sensor is placed away from the structure to the extent allowed by the lead wire. The sensor must be secured to the outdoor section of pipe that is most likely to freeze first (not buried deeply). If the sensor lead wire is too short, contact Tyco Thermal Controls for recommendations.



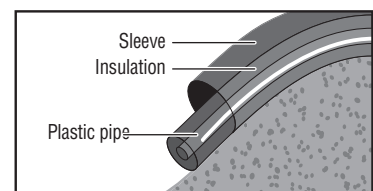
11. Insulate the entire length of pipe, including the temperature sensor, with 1/2-inch thick closed-cell foam insulation. The insulation must extend all the way down below the ice level.
12. Protect the pipe from the wind by burying it at least three inches deep or covering it with earth as shown. If this is not possible, slide a larger plastic pipe, sometimes referred to as "Big O" or drawpipe, over the exposed section. Where the pipe enters a well or lake, a sleeve of larger diameter than the pipe at this point will offer protection from abrasion damage.



Bury the pipe a minimum of 3 inches deep

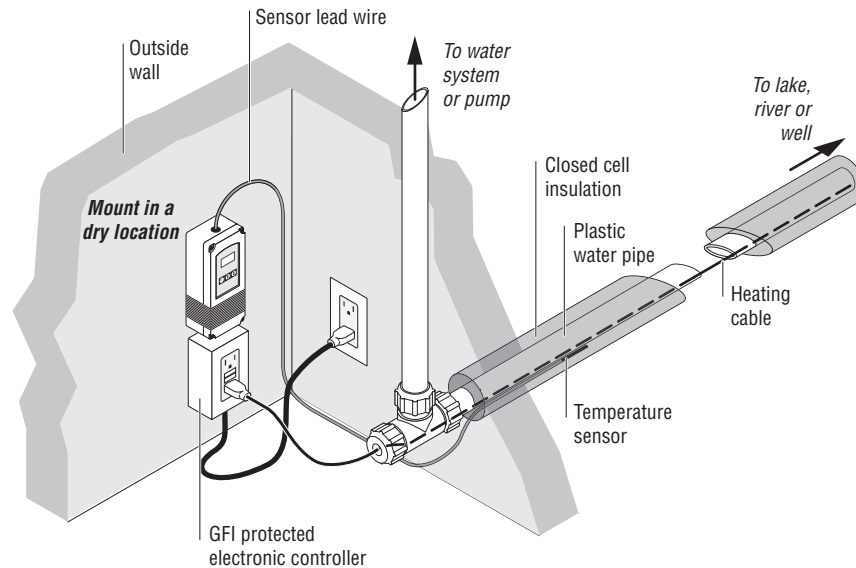


Running above ground, cover with 3 inches of soil or sand

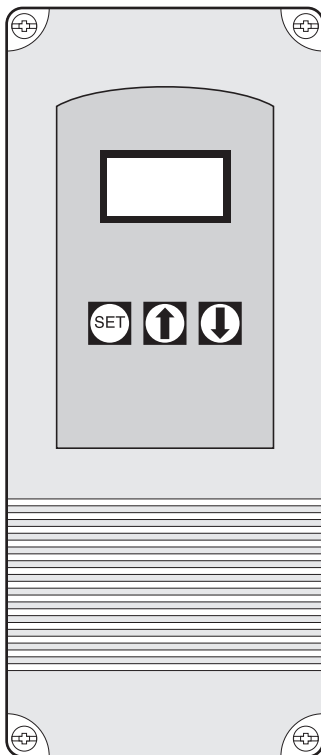


On rocky or inclined surfaces, and where the pipe enters the lake, protect with oversized plastic pipe (4 inch diameter or larger)

## Typical System



## Programming the Electronic Controller



### Factory settings:

Setpoint: 4°C (40°F)  
 Differential: 2°C (4°F)  
 Mode: H1

If you would like to change this setting, follow procedure below.

### Setting the Control

- 1) Select temperature setting (°F or °C)
- 2) Select the Setpoint and Differential
- 3) Select Heating Mode (H1)

**Note that the factory default settings are in °C.**

### Procedure:

Start programming by pressing **SET**

- 1 (a) Use the **↑** or **↓** arrows to select preferred temperature setting (°F or °C) (Example °F)

**F**

- (b) Press **SET**

- 2 (a) Use the **↑** or **↓** arrows to select the setpoint (Example: 40°F)

**40**

- (b) Press **SET**

- (c) Use the **↑** or **↓** arrows to set differential (Example: 4°F)

**4**

- (d) Press **SET**

- 3 (a) Use the **↑** or **↓** arrows and select "H1" (For Heating Mode)

**H1**

- (b) Press **SET**

## Miser In Pipe Heat Tape Installation

**Note:** Do not select a differential higher than 4°F (or 2°C). Do not select a setpoint below 40°F (or 4°C). Make sure you select the "H1" heating mode (do not select C1 or this will put it in cooling mode).