



Warmup

Plan for a safe &  
maintenance-free  
winter with Warmup®  
**Pipe Freeze Protection**

Pipe Freeze Protection

## WHAT'S IN A SYSTEM?

### Why would you need a pipe freeze protection system?

Consider this: a gallon of water, when frozen, will expand to a volume 9% greater than the original gallon. So it is no surprise that a fully or partially frozen pipe will swell up and crack, in particular when there is trapped air in the pipe.

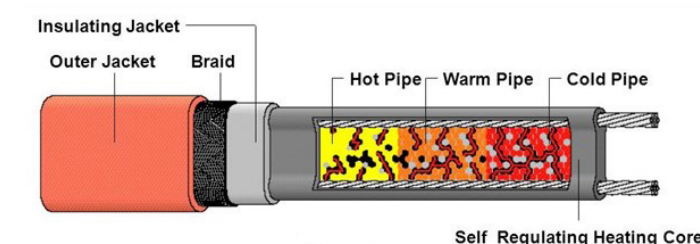
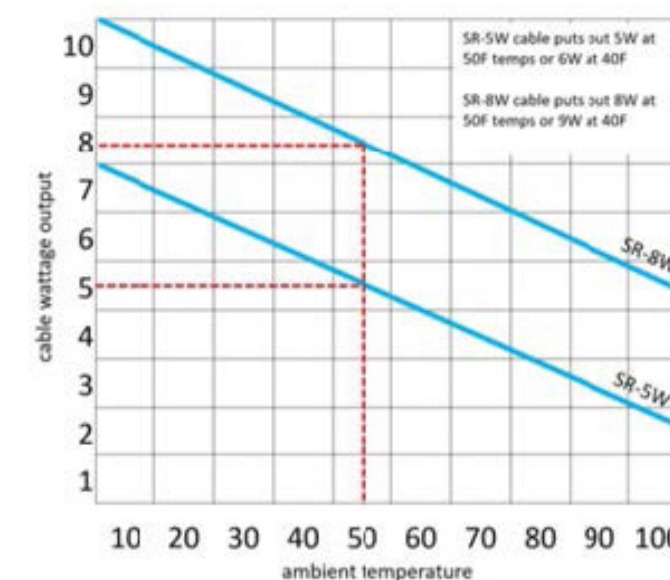
A bulge or crack in a pipe with ice seeping out is a clear indication of a burst pipe. **Occasionally, however, the pipe may look fine and a homeowner may not see the small fractures caused by ice expansion.** Unfortunately, once the ice inside a frozen pipe begins to melt and water seeps out, it is already too late. **Depending on the extent of the damage, total cleanup costs from a busted pipe can soar to tens of thousands of dollars.** State Farm Insurance estimates the average insurance claim for water damage from frozen pipes is approximately \$15,000.

### How does it work ?

If a building owner knows that a certain part of a structure with active water pipes may experience temperatures below freezing, the smart solution is to install a heating cable. **When combined with an integrated thermostat, the system is automatically turned "on" when temperatures drop below freezing.** The cables provide the needed level of heat to keep the pipes from freezing but not enough to heat the water inside of the pipes. The thermostat provides automatic control of the system so it saves energy by powering the cable only when required. For optimal performance of the system, pipe insulation can be installed over the cable to help retain heat, and plastic pipes can be wrapped in aluminum foil so the heat is dissipated evenly in the pipe

The benefit of this design is that the cables are installed once and left mounted on pipes for years — even when temperatures drop as low as -40°F (-40°C).

Self-regulating cables are built around a carbon core that expands and contracts with the ambient temperature. The colder it is, the more the core contracts and conducts the heat between the two power lines. So the cable automatically gets hotter as it gets colder. It is still recommended to tie it into a thermostat in order to shut it off completely when temperatures are consistently above 40F.





## WHAT IS THE WARMUP SOLUTION AND WHY DO YOU NEED IT?

Warmup offers a full range of cables for all types of pipes, residential and commercial. Our residential solutions include a jacketed and unjacketed range. The former is universal, and the latter is limited to indoor residential pipes or RV/Mobile homes. All our products come in custom lengths cut from spool or in convenient plug-in kits.

## HOW TO SPECIFY CABLE FOR YOUR PROJECT

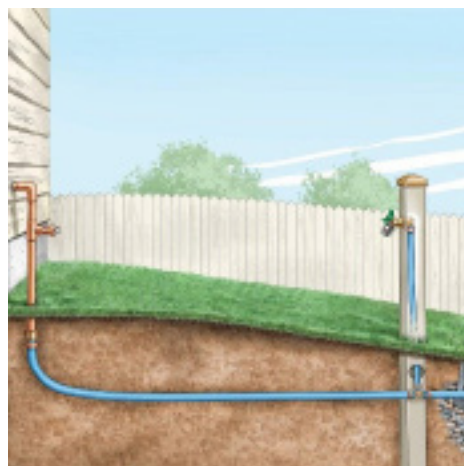
### Environment

The first consideration is whether you are protecting a pipe that is indoors or outdoors. Indoors means unheated crawlspaces, basements and garages (for example). For indoor applications, choose from either jacketed or unjacketed, for outdoor applications exposed to weather, always select jacketed cables and accessories.

### Length of Cable

To “trace” a pipe you will need to gather two bits of information: (1) the total length of the pipe to protect and (2) the size and material of your pipe.

Gather the total length of pipe to be ‘traced’ and protected. Account for additional footage on spigots and valves (add 1ft). If your pipe makes a “T” connection, consider a “T splice” kit in the accessories, or double your cable footage for an out-and-back layout.



### Size and Type of Pipe

Metal pipes are easier to protect because they conduct the heat better than PVC or Ceramic pipes. And of course, the larger the pipe diameter, the more output (wattage) it will take to prevent the contents from freezing. This is where you should consider two key improvements to your project:

1. Insulation: Even a half-inch of wrap-around insulation will drastically reduce the heatloss of your cable
2. Aluminum Tape: this will not only secure the cable to the pipe, but also help spread the heat from the cable farther.

The below chart is a summary view of what it would take to protect a pipe where winter temperatures dip into the -20F. For a complete chart, check Warmup’s spec sheets online.

Pipe Size / Insulation	None	1/2"	1"
1" Pipe	5W/ft	4W/ft	3W/ft
2" Pipe	10W/ft	8W/ft	5W/ft
4" Pipe	20w/ft	16W/ft	8W/ft

There are two ways to achieve the suggested wattage

For example: If you’re trying to protect a 20ft run of 2” PVC pipe in Chicago, you will need 20ft worth of 10 watt output. You can achieve this by doubling runs of 5 watt cable, or use an 8-watt cable and spiral it around the pipe. This way you have more feet of cable per foot of pipe.



### What if my pipe is underground (and other tips)?

You should still insulate when possible as dirt/sand is a conductor and will reduce the cable’s effectiveness. It is also smart to consider where to put the cable around the pipe. In a pipe overhead, place the cable at 4-o’clock or 7-o’clock so that if you hit the pipe from below, you’re not hitting the cable directly. For pipe buried underground, place tyhe cable at 4 or 7 o’clock as well, to avoid hitting it with tools or a shovel.

### Electrical Provisions

While most projects under 100ft do not typically cause electrical concern, larger runs will require considerations of dedicated circuits and circuits of the correct size. Speak to your electrician and consider the chart below. **For example, in Chicago, you can put up to 330ft of 5-watt cable on a 20A circuit**

	AMBIENT TEMPERATURE		120V				240v			
	AT START-UP		15A	20A	30A	40A	15A	20A	30A	40A
SR-5W	50°F	10°C	230	270	270	270	460	540	540	540
	32°F	0°C	230	270	270	270	460	540	540	540
	14°F	-10°C	180	210	270	270	360	420	540	540
	0°F	-18°C	140	190	270	270	285	380	540	540
	-20°F	-29°C	125	165	250	270	250	<b>330</b>	500	540
	-40°F	-40°C	110	145	220	270	220	295	440	540
SR-8W	50°F	10°C	150	200	210	210	300	400	420	420
	32°F	0°C	150	200	210	210	300	400	420	420
	14°F	-10°C	140	150	205	210	280	300	410	420
	0°F	-18°C	100	130	200	210	200	265	400	420
	-20°F	-29°C	85	115	175	210	175	235	350	420
	-40°F	-40°C	80	105	155	210	155	210	315	420

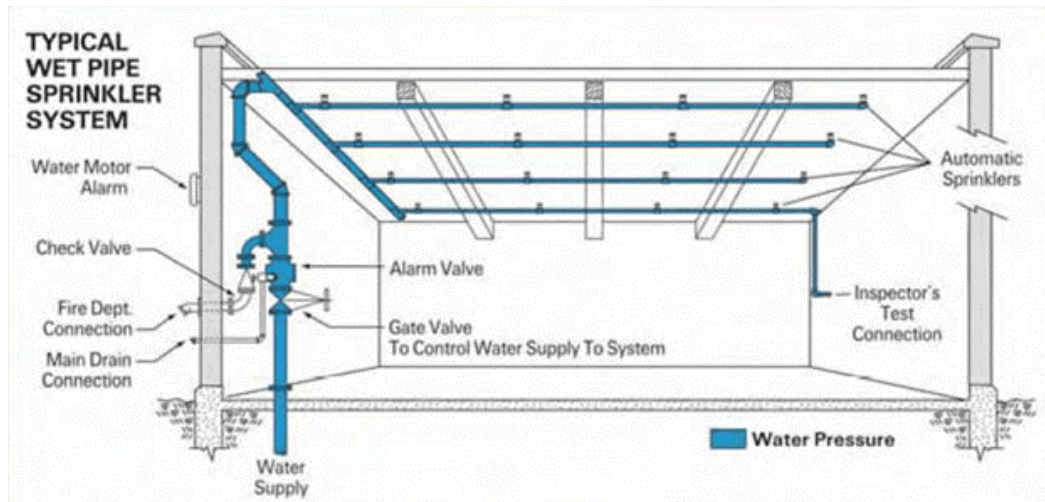
# WHAT IS REQUIRED FOR A TYPICAL INSTALLATION?

A typical project will require a certain length of 5 watt or 8 watt cable. If you use our plug in kits (p7), consider an SR-PLUG that will switch off the cable above 50F to avoid excess usage. We recommend using our aluminum tape (SR-TAPE-AL) to help spread the heat around the pipe and of course, plan for insulating around the pipe as well.

If your project is more custom, you will need a length of SR cable from spool (p7). To power it up, you will need a SR-POWER-KIT which contains and END splice. You may need some SR-SFIT-TEE to make "T" connections or plan for out-and-back cable footage.

Finally, consider SR-TAPE-AL (Aluminum Tape) for conductivity and the recommended insulation.

## Project Example:



Cable Needs	125' of 5 watt/ft at 120V	\$884.00
Pipe Diameter	1" - 1/2" insulation wrap required	N / A
Accessories	Power connection, end caps x4, aluminum tape, and optional warning labels	\$468.50
Control	TRF-115	\$195.50
Subtotal		\$1,548.00

# PIPE FREEZE PROTECTION CABLES: JACKETED

## Self-regulating cable for indoor and outdoor applications

Available in cut-to-length spools or plug-in kits, the Warmup Cable is applicable on metal, PVC and ceramic pipes, sprinkler systems and sewer drains.

The nature of the Self-regulating Cable causes its output of 5 or 8 W/lin ft to vary automatically with the outside conditions, thereby guaranteeing the safeguard of ducts and pipes.

Code	Description	Canada	USA	
120V	SR-5W-1-250	Self-Regulated 16GA Cable, 120V, 5W/linear foot. Sold in 250' length spools.	\$2,033.00	\$1,767.50
	SR-5W-1-500	Self-Regulated 16GA Cable, 120V, 5W/linear foot. Sold in 500' length spools.	\$4,417.50	\$3,534.00
	SR-5W-1-1000	Self-Regulated 16GA Cable, 120V, 5W/linear foot. Sold in 1000' length spools.	\$8,129.00	\$7,068.50
	SR-8W-1-250	Self-Regulated 16GA Cable, 120V, 8W/linear foot. Sold in 250' length spools.	\$ 2,093.00	\$1,819.50
	SR-8W-1-500	Self-Regulated 16GA Cable, 120V, 8W/linear foot. Sold in 500' length spools.	\$4,417.50	\$3,534.00
	SR-8W-1-1000	Self-Regulated 16GA Cable, 120V, 8W/linear foot. Sold in 1000' length spools.	\$8,368.00	\$7,276.00
240V	SR-5W-2-250	Self-Regulated 16GA Cable, 240V, 5W/linear foot. Sold in 250' length spools.	\$2,208.75	\$1,767.00
	SR-5W-2-500	Self-Regulated 16GA Cable, 240V, 5W/linear foot. Sold in 500' length spools.	\$4,417.50	\$3,534.00
	SR-5W-2-1000	Self-Regulated 16GA Cable, 240V, 5W/linear foot. Sold in 1000' length spools.	\$8,368.00	\$7,068.00
	SR-8W-2-250	Self-Regulated 16GA Cable, 240V, 8W/linear foot. Sold in 250' length spools.	\$2,093.00	\$1,819.50
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	SR-8W-2-1000	Self-Regulated 16GA Cable, 240V, 8W/linear foot. Sold in 1000' length spools.	\$9,095.00	\$7,276.00
120V	SR-K6FT	Self Regulating Kit with Plug, 6ft	\$91.00	\$79.00
	SR-K12FT	Self Regulating Kit with Plug, 12ft	\$132.00	\$105.00
	SR-K18FT	Self Regulating Kit with Plug, 18ft	\$162.00	\$129.50
	SR-K24FT	Self Regulating Kit with Plug, 24ft	\$178.00	\$154.50
	SR-K50FT	Self Regulating Kit with Plug, 50ft	\$339.00	\$271.00
	SR-K75FT	Self Regulating Kit with Plug, 75ft	\$420.00	\$365.00
SR-K100FT	Self Regulating Kit with Plug, 100ft	\$511.00	\$444.00	

# PIPE FREEZE PROTECTION CONTROLLERS

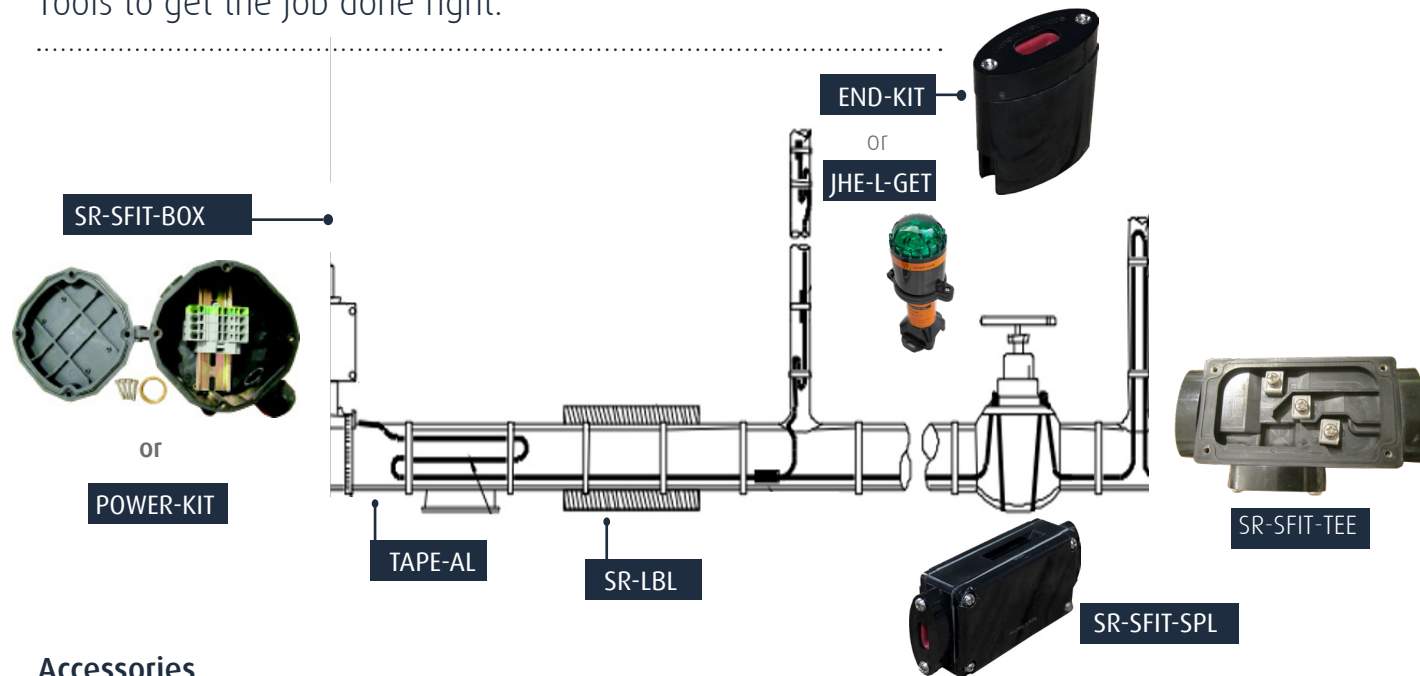
Self-regulating cable for indoor and outdoor applications

When combined with an integrated thermostat, the system is automatically turned “on” when temperatures drop below freezing.

Code	Description	Canada	USA
TF115-005	Ambient temperature thermostatic control for Pipe Freeze Protection and Deicing applications. Can be set from 0F to 120F trigger point. Comes with 5ft bulb sensor. 25A (120/208/240V).	\$245.00	\$195.50
TRACE-2	“Plug and Play” controller and power panel for Heat Tracing cables on freeze protection and deicing applications.	\$1,861.00	\$1,489.00

## Pipe Heating Accessories

Tools to get the job done right.



### Accessories

Code	Description	Canada	USA
SR-TAPE-AL	Aluminum Foil Tape for Self-Regulating Cable. Sold in 90ft roll.	\$27.00	\$21.00
SR-LBL	Pack of 10 warning lables	\$26.06	\$20.85
SR-ZT-100	Bag of 100 Heavy Duty Zip Ties. 7" long. For use with WSM, WODH and NAMSR cable series. 50lbs load bearing capacity.	\$24.00	\$19.00
POWER-KIT	Power Connection Kit for Self-Regulating Cable. Includes 2" warning labels and 1"END-KIT.	\$87.00	\$69.00
SPLICE-KIT	Splice/Tee Kit for Self-Regulating Cable.	\$57.00	\$45.00
END-KIT	End Seal Kit for Self-Regulating Cable.	\$29.00	\$22.50
SR-SFIT-BOX	Power connection junction box (6x6x3) with Pipe-Mounting Bracket for Self-Reg connections.	\$275.00	\$220.50
SR-SFIT-SPL	In-line splicing box for fast and weathertight connections in the field.	\$87.00	\$69.00
SR-SFIT-TEE	3-Way T-splice box for fast and weathertight connections in the field.	\$94.00	\$75.00
SR-LENDCAP	Lit end cap for self regulating cable	\$357.50	\$275.00
SR-SFIT-PRO	Non-Strip field connection box	\$465.31	\$372.25

# INDOOR FREEZE PROTECTION CABLE: UNJACKETED

Most cost-effective solution to protect indoor water lines from freezing

## PRODUCT DESCRIPTION

The full range of Warmup UJ self-regulating cable is comprised of the cable in spool format as well as kits, a connection plug-in kit with end seal, and labels. The finished installation may require tape (SR-TAPE-UJ) or a thermostatic plug. The Warmup range offers the key advantage of 5W/linear foot of heat output. This high-output cable provides better results, better protection against frost, all with less cable required. Not suitable for applications in Canada.

## PRODUCT CODES

### Cables & Kits (120V)

SKU	Description	USA
SR-K6UJ	6' KIT	\$34.40
SR-K12UJ	12' KIT	\$44.00
SR-K18UJ	18' KIT	\$53.60
SR-K24UJ	24' KIT	\$63.20
SR-5W-1-250-U	250' SPOOL	\$619.00



KITS



SPOOL

### Accessories

SKU	Description	USA
SR-HTMK	Connection and end cap	\$25.12
SR-TAPE-UJ	Application tape (1/2" X 60ft)	\$21.00
SR-PLUG	Simple thermostatic controller to activate at fixed temperature. Switch 16A @ 120V / 12A @ 240V.	\$23.00



SR-HTMK



SR-TAPE-UJ



SR-PLUG

## APPLICATION

- Residential Indoor Pipe Protection
- RV/Mobile home applications

# CABLE CALCULATION

## Determine how much cable you need

Self-regulating cable can be applied in a linear or spiral fashion along the pipe. Self-regulating cable can be overlapped or crossed, though avoid excessive concentration of cable in a confined space (i.e. spooling of cable in single spot). To apply the correct amount of heat to protect the pipe from frost, follow the below multipliers.

Multiply the pipe length by the units below to decide how much cable is required. Example: on a 20ft pipe length in Chicago (-30°F possible ambient) with no insulation, use 20 x 1.5 = 30ft of cable. Apply the cable in an even spiraling fashion along the pipe. For plastic/PVC pipes, double the quantities obtained using the formula above.

For best results, use Warmup's Aluminum Tape (SR-TAPE-UJ) to secure the cable to the pipe.

	Insulation	None	1/2"	1"
1" Pipe	0 ° F Min. Ambient	1	1	1
	-30 ° F Min. Ambient	1.5	1.25	1
2" Pipe	0 ° F Min. Ambient	1.5	1.25	1
	-30 ° F Min. Ambient	2	1.75	1.5



## POWER SUPPLY & MAXIMUM CIRCUITS

All UJ cables should be power by 120V supply lines. Based on available amperage or breaker rating, limit the total length of cable on the circuit based on the chart below. Your region's "Minimum Start-up Temperature" will impact your maximum cable length.

(120V)	10A	15A	20A
32 ° F/0 ° C	107	127	133
14 ° F/-10 ° C	95	105	120
0 ° F/-18 ° C	73	93	113
-20 ° F/-30 ° C	60	80	107



# Warmup<sup>®</sup>

The world's **best-selling** floor heating brand™



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