

# Pipe Tracing

PIPE FREEZE PREVENTION



# WARMZONE

PREMIER RADIANT HEATING



## Self-regulating Pipe Trace Cable

## Pipe Trace Solutions

### Self-regulating Heat Trace Cable

Warmzone's self-regulating pipe tracing cable is an ideal solution for industrial, commercial and residential pipe freeze protection as well as process temperature maintenance. The durable heat cable can be installed in industrial, commercial and residential pipe trace applications.

In addition to pipe freeze protection, Warmzone self-regulating pipe trace systems can also be used for process temperature maintenance applications where viscosity control at higher temperatures is required. Warmzone offers a range of pipe trace cable that can be used in a variety of industrial hazardous, non-hazardous and commercial applications. Heat tracing can be used in commercial, residential, and industrial applications with both metal and plastic piping.



*Industrial pipe tracing application.*



*Warmzone self-regulating heat cable is available for a wide range of commercial, industrial and residential pipe trace applications. The cable can be used for pipe freeze prevention as well as process temperature maintenance.*

The pre-terminated 120 V self-regulating heat cable is available in 50, 75, and 100-foot lengths. The pre-assembled 'plug and play' kits come with the option of a 6-foot standard or GFCI power plug.

The self-regulating cable adjusts heat output in response to ambient temperatures, so when the temperature rises, the electrical resistance increases and the consumption of electricity decreases, ensuring safe, energy-efficient operation. The cable will not overheat or burnout - even when touching or overlapping.

Also, because of the self-regulating properties, a thermostat may not be necessary in some applications. Warmzone heat cable is resistant to watery and inorganic chemicals and protected against abrasion and impact damage.

The termination, power connection, splice, tee, and end seal kit reduces installation time and requires no special skills or tools.

# Pipe Trace Solutions (RHSR Heat Cable)

Warmzone's self-regulating (RHSR), parallel heating pipe trace cable is designed for a variety of industrial applications and environments, including explosion-hazardous and nonhazardous areas up to a maximally admissible workplace temperature of +149°F (65°C). The versatile cable can be used for plastic or metal pipe freeze protection and flow maintenance of pipes, tanks, and valves. The cables are available on spools in lengths of 250, 500, and 1000 feet in 120, 208, 240, and 277 volts, and also in pre-assembled lengths in 120 volts.

## Features and Benefits

- Energy Efficient - Automatically varies its power output in response to pipe temperature changes.
- Easy to Install - Can be cut to any length required on site (up to max circuit length) so there's no wasted cable.
- Low Cost - Less installation cost than steam tracing; less maintenance expense and less downtime.
- Safe / Durable - Does not overheat or burn out, even when touching or overlapping.
- Versatile - Suitable for plastic or metal pipes, gutters and downspouts, and for use in non-hazardous, hazardous and corrosive environments.
- Quick Installation - The power connection, splice, tee and end seal kit will reduce installation time.
- Optional Outer Jacket - Makes the heating cable resistant to watery and inorganic chemicals and protects against abrasion and impact damage.
- 10-year warranty - NOT PRORATED
- Pre-assembled cable includes a 3-foot power cord and plug.




Warmzone self-regulating heat cable.



Cutaway view of Warmzone self-regulating heat trace cable.

## RHSR Technical Data

Service voltage	110-120, 208-277 V
Maximum maintain or continuous exposure temperature (power on)	149°F (65°C)
Maximum intermittent exposure temperature 1,000 hours (power on or off)	-40° to 185°F (-40° to 85°C)
Minimum installation temperature	-40°F (-40°C)
Protective braid resistance	< 18.2Ω/km
Bus wire gauge	16 AWG
Approvals	CSA; ordinary and hazardous
Certifications	 Class I, Div.2 Groups A,B,C,D Class II, Div.2 Groups F,G Class III

Pipe Tracing

## Maximum Circuit Length at Circuit Breaker Size

Cable	Startup Temp.	120 V				240 V			
		Breaker Size				15A	20A	30A	40A
RHSRR-6-1 and RHSRR-6-2	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	330	500	540
RHSRR-8-1 and RHSRR-8-2	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
RHSRR-10-1 and RHSRR-10-2	50°F (+10°C)	120	160	180	180	240	315	360	360
	32°F (0°C)	105	140	170	180	210	280	340	360
	14°F (-10°C)	95	125	165	180	190	250	330	360
	0°F (-18°C)	80	110	160	180	160	215	325	360
	-20°F (-29°C)	70	95	140	180	145	190	285	360
RHSRR-12-1 and RHSRR-12-2	50°F (+10°C)	80	140	150	150	160	270	310	310
	32°F (0°C)	75	130	145	150	150	260	290	310
	14°F (-10°C)	70	115	142	150	140	230	285	310
	0°F (-18°C)	60	80	140	150	120	160	280	310
	-20°F (-29°C)	50	65	110	150	105	140	225	310
RHSRR-12-1 and RHSRR-12-2	-40°F (-40°C)	45	60	90	140	90	125	190	280

\* Lengths may vary. Please contact a Warmzone representative for more information.

# Self-Regulating Heat Cable Comparison

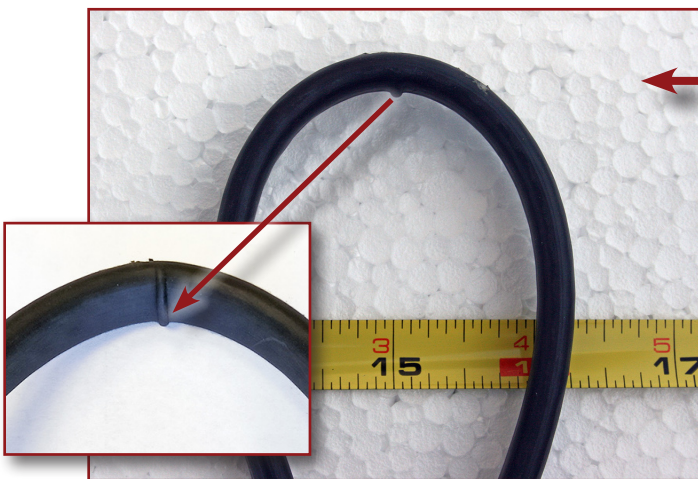
Warmzone self-regulating heat cable features a more flexible outer jacket and more durable carbon core than other leading brands of self-reg cable. These features provide more consistent performance, longer lifespan, and easier installation in cold temperatures.

## Key Features of Warmzone Self-regulating Heat Cable vs. Other Cable Brands

### Outer Jacket Quality

#### Typical Self-regulating Heat Cable

The outer jacket of typical self-reg cable tends to “bubble” or separate from the cable core when the cable is manipulated for turns. These irregularities create stress points on the cable that can result in water reaching the core, leading to erratic heating and eventual cable failure.



**Other Leading Brands of Self-regulating Cable**  
The outer jacket of most self-regulating heat cable separates from the core at a typical bend radius of 2 inches.

#### Warmzone Self-regulating Heat Cable

Warmzone self-regulating heat cable features a higher quality outer jacket that does not “bubble”. This reduces the chances of water seepage and cable failure.



**Warmzone Radiant Self-regulating Heat Cable**  
Warmzone self-regulating heat cable does not “bubble” at an even tighter bend radius of 1½ inches.

### Installation at Low Temperatures

#### Typical Self-regulating Heat Cable

Typical self-regulating cable has a minimum installation temperature of 32-40°F. This is because the carbon in the cable becomes brittle and can easily break when bent or manipulated at low temperatures.

The outer jacket also becomes stiff, making the securing of cable to the pipes difficult during cold weather installations. The outer jacket tends to “pucker” and pull away from the core when making bends, compromising the cable’s integrity and leading to cable failure.

Therefore installing most self-regulating heat cable at temperatures below 40°F is not recommended.



Warmzone self-regulating heat cable and plug with GFCI.

#### Warmzone Self-regulating Heat Cable

Warmzone self-regulating cable features a higher quality carbon center that is more resilient in low temperatures, thereby allowing the cable to be safely installed at temperatures as low as 0°F.

The higher quality outer jacket also remains flexible at low temperatures, resulting in more reliable performance and easier installation when securing to various pipe trace applications.

*“In all the years I’ve been installing radiant heating systems, I’ve noticed that “bubbles” in the outer jacket of the cable almost always result in a point of failure. The superior outer jacket of Warmzone’s self-reg cable helps to eliminate this problem.”*  
– Eric W., Licensed Contractor

# Pipe Trace Cable Accessories and Controls

*JSR-PTBO - Multiple entry octagon power connection kit with J-Box; hazardous locations, NEMA 4X*



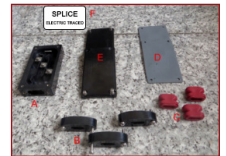
*JSR-JHE - End seal kit; hazardous locations*

- A** Seal plate for main box
- B** Main end seal box
- C** Grommets
- D** Label



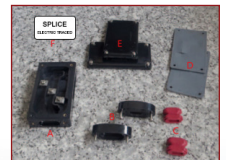
*JSR-JHS - Inline splice tee kit; hazardous locations*

- A** Main box
- B** Pressure seal end
- C** Grommets
- D** Gaskets for main box
- E** Cover for main box
- F** Label



*JSR-JHT - Tee splice; hazardous locations*

- A** Main box
- B** Pressure seal end
- C** Grommets
- D** Gaskets for main box
- E** Cover for main box
- F** Label



*JSR10 - Splice / tee kit*

- A** Clamp tie
- B** Mastic strips (1½" long x 1" wide)
- C** Heat-shrinkable tube (8" long x 1" diameter)
- D** Heat-shrinkable tube (1" long x ⅛" diameter)
- E** Heat-shrinkable tube (1" long x ½" diameter)
- F** Uninsulated braid crimp
- G** Cable ties
- H** Insulated bus wire crimps
- I** Black cloth tape (6" long)
- J** Heat-shrinkable cap
- K** Heat-shrinkable tube for ground



*JSR00 - Power connection kit - with single end seal kit (JSR12)*

- A** Black-shrinkable tube (5½" long x ⅜" diameter)
- B** Green-shrinkable tube (6" long x ¼" diameter)
- C** Seal fitting and white grommet
- D** Black-shrinkable tube (1" long x ½" diameter)
- E** Mounting bracket for piping
- F** Gasket
- G** Lock nut
- H** Blue grommet
- I** Wire nuts
- J** Labels



*JSR12 - End seal kit*

- A** Heat shrinkable tubes (2)
- B** Woven braids (2)
- B** Heat shrink end caps (2)





## WARMZONE PIPE TRACE CABLE ORDERING INFORMATION

### Pre-Terminated Self-Regulating Cable (Pipe, Roof and Gutter)

Item Code	Description	Length	Output @ 50°F	Voltage
RHSR-120-50	Pre-terminated self-regulating heat cable	50	6W/ft.	120
RHSRT-120-75	Pre-terminated self-regulating heat cable	75	6W/ft.	120
RHSRT-120-100	Pre-terminated self-regulating heat cable	100	6W/ft.	120
RHSRT-120-50 GF	Pre-terminated self-regulating heat cable with ground fault protection	50	6W/ft.	120
RHSRT-120-75 GF	Pre-terminated self-regulating heat cable with ground fault protection	75	6W/ft.	120
RHSRT-120-100 GF	Pre-terminated self-regulating heat cable with ground fault protection	100	6W/ft.	120

### Self-Regulating Cable (Pipe, Roof and Gutter)

RHSR-120-6	Self-regulating heat cable	250'/500'/1000'	5W/ft.	120
RHSR-120-8	Self-regulating heat cable	250'/500'/1000'	8W/ft.	120
RHSR-120-10	Self-regulating heat cable	250'/500'/1000'	10W/ft.	120
RHSR-120-12	Self-regulating heat cable	250'/500'/1000'	12W/ft.	120
RHSR-240-6	Self-regulating heat cable	250'/500'/1000'	5W/ft.	208-277
RHSR-240-8	Self-regulating heat cable	250'/500'/1000'	8W/ft.	208-277
RHSR-240-10	Self-regulating heat cable	250'/500'/1000'	10W/ft.	208-277
RHSR-240-12	Self-regulating heat cable	250'/500'/1000'	12W/ft.	208-277
*Cut fee	*Cut fee for non 250'/500'/1000' rolls			

### RHSR Cable Accessories and Controls

Item Code	Description
JSR00-Pipe	Power connection kit, includes end seal kit (JSR12)
JSR03-Aluminum	Aluminum application tape
JSR03-Fiberglass	Fiberglass application tape
JSR08	Plug-in cord set, 120 V GFCI, 125-foot maximum run length
JSR10	Splice / tee kit
JSR12	End seal kit
WS-115	Air sensing NEMA 4 outdoor thermostat 120/240 V
WS-115R	Surface sensing NEMA 4 outdoor thermostat
WS-8C	Aerial mounted snow switch with remote moisture sensor (30 amps; 120-277 V)

### Class I Div 2

JSR-PTBO	Multiple entry octagon power connection kit with J-Box; hazardous locations, NEMA 4X
JSR-JHE	End seal kit; hazardous locations
JSR-JHS	Inline splice tee kit; hazardous locations
JSR-JHT	Tee splice; hazardous locations
JSR12L	End seal kit with light (can be used at beginning or end)
JSR-PP	Pipe trace power panel with GFEP (includes sensors)