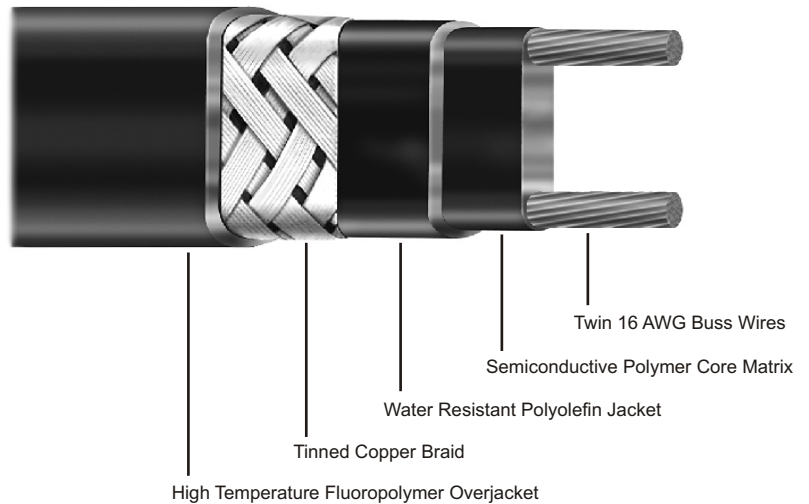
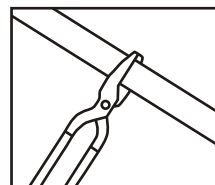


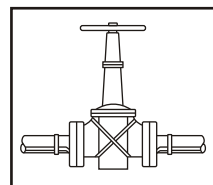
# HSRL, Div 1 Low Temperature Self-Regulating Heating Cable



- Division 1 Hazardous Locations
- Self-Regulating, Energy Efficient
- 16 AWG Buss Wire
- Circuit Lengths to 660 Feet
- Maximum Continuous Exposure Temperature (Power Off) 185°F (85°C)
- Industrial Freeze Protection Applications
- Freeze Protection of Fire Protection System Piping
- 3, 5, 8 and 10 Watts per Foot
- 120 and 208-277 Volts Available From Stock
- Size 3/8" x 1/8"
- Minimum Bend Radius is 1-1/8"



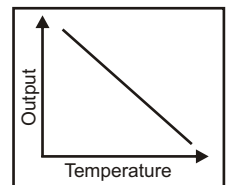
Cut to Any Length in Field



Can be Single Overlapped

Maintains  
150°F  
Withstands  
185°F

Low Temperature



Self Regulating

## Description:

Trasor HSRL self-regulating heating cable provides safe, reliable heat tracing for freeze protection of pipes, valves, tanks and similar applications. Constructed of industrial grade 16 AWG buss wire with a tinned copper braid and optional overjacketing. HSRL ensures operating integrity in Div. 1 hazardous environments as well as certain corrosive industrial environments. HSRL heating cable has a maximum maintenance temperature rating of 150°F (65°C).

## Features:

- Energy efficient, self-regulating HSRL uses less energy when less heat is required.
- Easy to install, HSRL can be cut to length in field.
- Field splices can be performed easily in minutes.
- HSRL features lower installed cost than steam tracing, less maintenance expense, and less downtime.

- HSRL can be single overlapped without burnout.
- Because HSRL is self-regulating, overtemperature conditions are virtually impossible.
- Trasor termination, splice, tee and end seal kits reduce installation time.

## Approvals:

**FM** Approved for ordinary and hazardous areas when used with Trasor accessories:

- Class I, Div. I, Groups B, C, D
- Class II, Div. I, Groups E, F, G
- Class III, Div. I

## Applications:

- Process Temperature Maintenance
- Freeze Protection of Pipes
- Fluid Flow and Viscosity Maintenance



Note: Due to the nature of Division I hazardous location applications consultation with a factory representative is required.

## Heating Cable System Design:

### 1. Calculate Heat Loss

Using the Trasor Design Guide (J-123) for Heat Tracing, calculate the heat loss of the system. To calculate the heat loss (Watts/ft) you will need to know the pipe diameter, insulation type and thickness, minimum ambient temperature and the pipe maintenance temperature. Contact factory for design guide or application recommendations.

### 2. Select Cable Rating

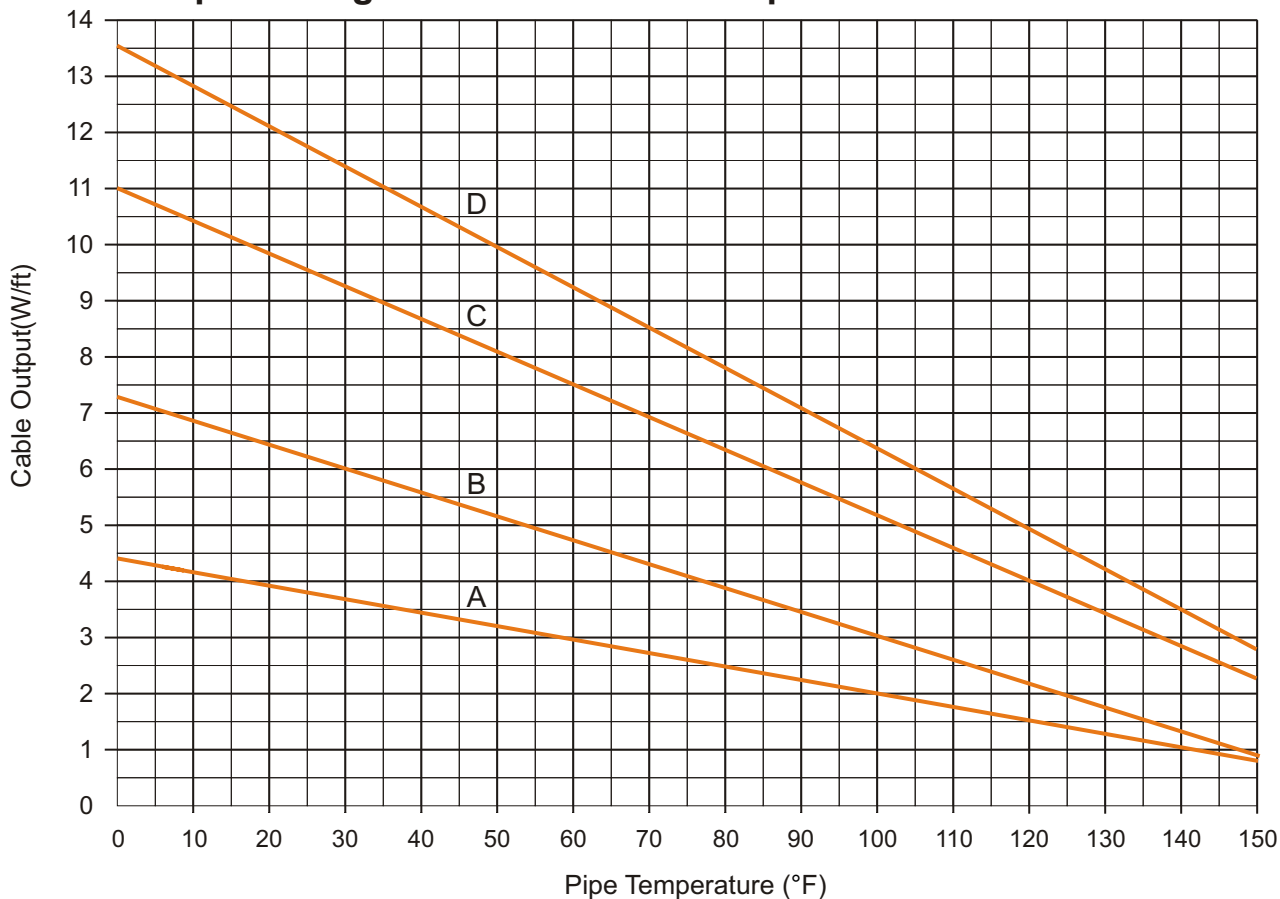
After calculating the heat loss for the pipe and adjusting for any application deviations, you may determine which cable rating to choose. Using the HSRL Thermal Output Ratings graph, select the lowest cable rating that will provide the required wattage at the pipe maintenance temperature. Adjust the cable output for line voltage if necessary. See table 2 for cable output at alternative voltages. Example: If the heat loss for a pipe at 70°F is 6 watts per foot, select curve "C" (HSRL8) that will produce 7 watts per foot at 70°F.

### 3. Determine Total Cable Length

In addition to the system piping, in-line equipment such as valves, flanges and pipe supports require additional heat tracing to maintain the system operating temperatures. Reference Trasor design guide (J-123).

Total cable length = Total feet of traced pipe + Cable allowance for components

## Thermal Output Ratings On Insulated Metal Pipe:



### Conversions:

Watts/Meter = Watts/Foot x 3.28

°C = (°F - 32) / 1.8

Output Curve	Model Number	W/Ft. @50°F
A	HSRL3	3W/Ft
B	HSRL5	5W/Ft
C	HSRL8	8W/Ft
D	HSRL10	10W/Ft

**HSRL**
**Circuit Breaker Selection:**

Circuit protection depends on the cable size being used and the start-up temperature. The National Electric Code (NEC 2002) requires the use of ground fault protection breakers for heating cable. A 30mA trip is recommended to avoid nuisance tripping. The following chart shows the maximum circuit length for a given breaker rating, at different start-up temperatures.

**Table 1**

Watts/Ft.	Start-up Temp.	Maximum Circuit Length (ft.) vs. Breaker Size (Amps)							
		120 Volt				240 Volt			
		15A	20A	30A	40A	15A	20A	30A	40A
3	50°F	305	360	NR	NR	600	660	NR	NR
	0°F	200	270	360	NR	415	555	NR	NR
	-20°F	185	245	360	NR	370	495	660	NR
5	50°F	185	250	NR	NR	375	505	NR	NR
	0°F	135	180	270	NR	270	360	540	NR
	-20°F	120	160	245	270	245	325	490	540
8	50°F	150	200	NR	NR	285	375	NR	NR
	0°F	110	145	215	NR	200	265	395	420
	-20°F	100	130	200	210	175	235	350	420
10	50°F	95	130	180	NR	160	210	315	360
	0°F	80	105	155	180	125	170	255	340
	-20°F	70	95	140	180	120	160	240	320

Thermal magnetic circuit breakers are recommended since magnetic breakers could “nuisance trip” at low temperature. NR = Not Required. Maximum circuit length has been reached in a smaller breaker size.

**Cable Specifications and Ratings:**

**Table 2**

Model Number	Operation Voltages (Vac)	Cable Output (W/Ft.) @ 50°F					Maximum Circuit Length (Ft.) ②	T-Rating ③
		Standard Voltages		Alt. Voltages w/ (Output Multiplier) ①				
		120V	240V	208V	220V	277V		
HSRL3-1CT	120	3	-	-	-	-	360	T6
HSRL3-2CT	208-277	-	3	2.4 (.80)	2.6 (.87)	3.4 (1.15)	660	T6
HSRL5-1CT	120	5	-	-	-	-	270	T5
HSRL5-2CT	208-277	-	5	4.1 (.82)	4.5 (.90)	5.6 (1.13)	540	T5
HSRL8-1CT	120	8	-	-	-	-	215	T5
HSRL8-2CT	208-277	-	8	6.9 (.86)	7.3 (.91)	9.0 (1.12)	420	T5
HSRL10-1CT	120	10	-	-	-	-	180	T4A
HSRL10-2CT	208-277	-	10	8.7 (.87)	9.2 (.92)	11.1 (1.10)	350	T4A

① Use multiplier to adjust cable output from output graph at temperatures other than 50°F

② See Table 1 for maximum circuit lengths by start-up temperature and breaker size.

③ T-Rating codes define the maximum surface temperature that the equipment will reach. Used in hazardous areas. Reference National Electric Code.

## HSRL

### Ordering Information:

HSRL= Self-Regulating, Low Temperature Heating Cable

HSRL - CT

**Power Rating**

- 3 = 3 Watts/Ft.
- 5 = 5 Watts/Ft.
- 8 = 8 Watts/Ft.
- 10 = 10 Watts/Ft.

**Voltage Rating**

- 1 = 120V
- 2 = 208-277V

**Braid**

CT = Tinned copper metallic braid for ground path fluoropolymer corrosion resistant overjacket. Specifically tested for Division I environments.

Note: Due to the nature of Division I hazardous location applications consultation with a factory representative is required.

**To Order:** Specify length, model number, and installation accessories.  
Example: HSRL5-1CT, 5W/Ft. Heating cable @ 120V

Cable Weight/1000 Ft. (Lbs)	
HSRL	66

### Accessories:

Trasor has a complete line of accessories specifically designed for use with HSRL cable. Use only Trasor accessories to ensure the performance of the heat trace system.

Table 3

Accessory	Part Number	Description
Thermostat	TXL-L1S TXR-L2S	NEMA 7 Air-sensing thermostat NEMA 7 Pipewall-sensing thermostat
Power Connection	HL-PC HL-S HL-T HL-ES	Power connection kit. Splice kit. Tee kit. End seal kit.
Pipe Straps	PS-1 PS-3 PS-10	Pipe strap to mount power connection box to pipe, 1/2 - 3/4" pipes Pipe strap to mount power connection box to pipe, 1 - 3-1/2" pipes Pipe strap to mount power connection box to pipe, 2-1/2 - 9" pipes
Fiberglass Tape	FGT-180	Fiberglass tape to secure cable to pipe, 180' roll x 1/2", install on 12" centers.
Aluminum Tape	HTF-150-2	Aluminum tape to enhance heat transfer, 150 foot roll. Apply over cable along entire length of circuit.
Caution Labels	EHTL-1	"Electric Heat Tracing" caution labels, 5 per package. Install every 20 feet.