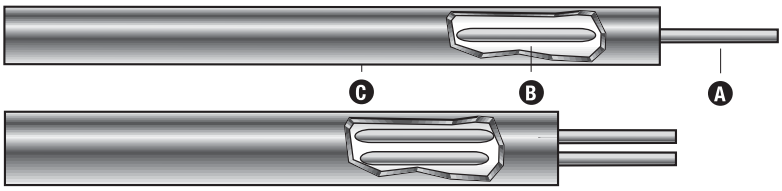
MI

Mineral Insulated High Temperature



- **Constant Output**
- **Impact Resistant, Heavy Duty Size**
- **Exposure Temperature to 1472°F (800°C)**
- **Any Design Voltage Up to 600 Volt**
- **High Watt Densities Available**
- **Industrial Freeze Protection**
- **Suitable for Hazardous Areas, Div. 1 and Div. 2**
- **Single and Double Conductor cables Available**

Description

MI Mineral Insulated Heating Cable is ideal for rugged industrial pipe tracing applications. Its tough outer sheath of Metallic resists damage during installation and provides a reliable electrical ground for safe operation. Mineral Insulated Heating Cable will not burn or support combustion.
All materials are inorganic and will not deteriorate with age.

Mineral Insulated Heating Cable is made with either one or two conductors, insulated with compacted magnesium oxide for high dielectric strength. Cable assemblies are custom made at the factory to meet your specific needs.

Applications

- Tank Heating
- High Temperature Process Maintenance
- Long, Single Circuit Runs
- Cryogenic Applications
- Freeze Protection

Features

- Mechanically Rugged Design
- Fire Resistant
- Alloy Features High Corrosion Resistance
- Long Circuit Lengths
- Built to Customer Design Specifications
- Series Wiring for Long Lengths
- Includes Pigtails for Wiring Connections.

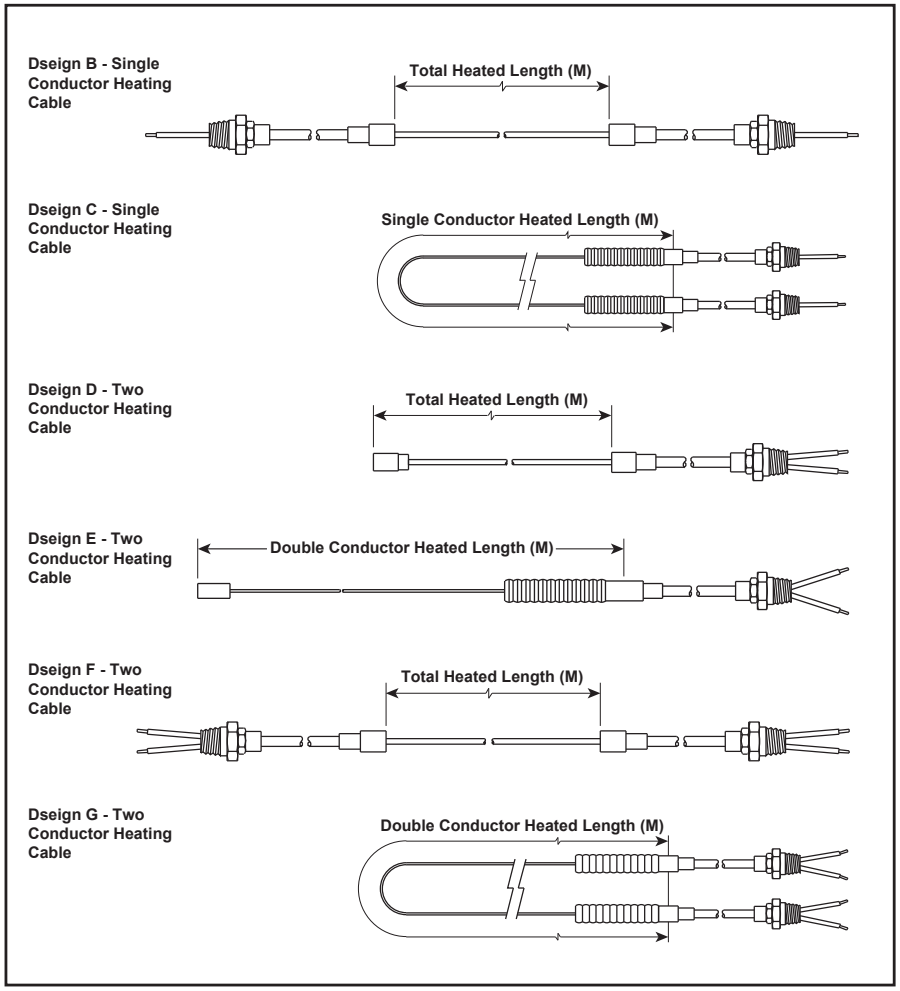
Construction

A **Resistance Wires —** One or two resistance wires.

B **Insulation —** High grade densely compacted mineral insulation.

C **Sheath —** Heavy Duty Metallic Sheath.

Cable Set Configurations



Note 1 - Standard cable sets include 1.0Meter non-heating cable with pigtails, brazed to customer specified length of Mineral Insulated Heating Cable. Gland fittings are PF1/2", PF3/4" (metric also available)

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Mineral Insulated High Temperature (cont'd.)

Applications

For applications with maintenance or exposure temperatures of 800°C or above, cable set configuration C, E or G should be used. These configurations include a 12" transition fitting to reduce the temperature at the hot-to-cold joint. The transition fitting should be positioned outside the thermal insulation to provide long and reliable service life. Contact the manufacturer surface heating group for assistance with the design of high temperature applications.

Cable Design for Pipes

Note 1 - Heater Design
Determine heater design to use. Design D is usually the most convenient design using two conductor cable.

Note 2 - Heat Loss (W/m)
Use the value calculated from technical section - Heat Loss Calculations, Pipe & Tank Tracing.

Note 3 - Cable Length (L)
Use the length calculated from Application & Selections Guidelines in this section.

Note 4 - Supply Voltage Available (V)
Determine what voltage is available. When different voltages are available, it provides multiple cable choices which may result in a more accurate design.

Note 5 - Calcuate Resistance per Meter (R/M)

$$R/M = \frac{V^{22}}{W/m \times L^{22}}$$

Note 6 - Select the Meter (R/M) Rating
Choose a cable having equal or the next lower resistance per Meter value from Ordering Information Table, next page.

Note 7 - Select Actual W/m. and total wattage (W)

$$W/m = \frac{V^{22}}{R/m \times L^{22}}$$

$$W = W/m \times L$$

Note 8 - Determine Current Draw(I)

$$I = \frac{W}{V}$$

Note 9 - Select Heater Single or Double Conductor Cold Lead Length
The cold lead length is determined by the customer or by using a nominal 1.0Meter. All cold leads are 6.0~8.0mm WG with 40 Amp maximum current capacity.

Note 10 - Convert Design to a Model Number

Model	Mineral Insulated High Temperature						
B	Mineral Insulated Heater Set Design						
	Code						
	1H01247SA	MI Heater Cable Catalog Reference					
		Code					
		110M	Heater Set Length in Meter (±1%)				
			Code				
			1052W	Heater Set Wattage			
				Code			
				380V	Operating Voltage		
					Code		
					1M	Cold Lead Length	
						Code	
						4.0	Pigtail Sqmm
B	**1H01247SA**	**110M**	**1052W**	**380V**	**1M**	**4.0**	**Typical Model Number**

Or dering Information

To Order - Complete the Model Number using the Matrix provided.
If applicable, specify hazardous location classifications.

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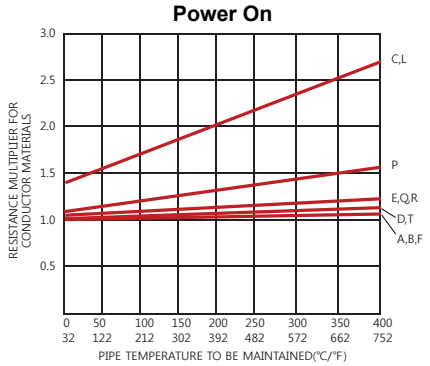
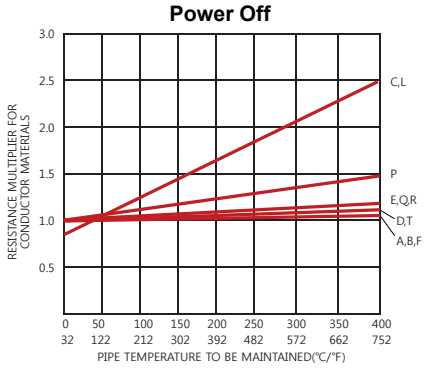
Resistance Correction Factor Power On



Power Off



600V Single Conductor Stainless Steel Sheathed Heating Cable

Cable Reference	Resistance (ohm/m @20℃)	Diameter (mm)	Max. Unjointed Length (m)	Weight (kg/km)
600V Single Conductor				
1H06562SA	6.560	4.0	120	66.40
1H05249SA	5.250	4.0	120	68.50
1H04265SA	4.265	4.0	400	52.50
1H03281SA	3.281	4.0	400	56.52
1H02789SA	2.789	4.0	400	58.75
1H02297SA	2.297	4.0	400	60.00
1H01640SA	1.640	4.0	400	60.90
1H01247SA	1.247	4.0	400	61.50
1H00984SA	0.984	4.0	400	58.30
1H00820SB	0.820	4.0	400	60.75
1H00656SB	0.658	4.0	400	61.42
1H00558SB	0.558	4.0	400	61.87
1H00492SB	0.492	4.0	400	61.36
1H00328SB	0.328	4.0	400	60.96
1H00262SB	0.262	4.0	400	60.61
1H00230SB	0.230	4.0	400	58.79
1H00197SB	0.197	4.0	400	60.02
1H00131SB	0.131	4.0	400	58.41
1H00118SB	0.118	4.0	400	60.32
1H00098SB	0.098	4.0	400	60.34
1H00066SQ	0.066	4.0	400	62.02
1H00052SC	0.052	4.0	400	62.00
1H00043SC	0.043	4.0	400	62.49
1H00033SL	0.033	4.0	400	58.11
1H00021SL	0.021	4.0	400	60.30
1H00013SL	0.013	4.6	310	78.50
1H00008SL	0.0080	5.8	160	129.33
1H00005SL	0.0055	5.0	210	120.15
1H00003SL	0.0033	6.1	140	164.65
1H00002SL	0.0026	6.5	125	189.38

(EX) 1 H 01247 S A
a b c d e

	Marking	Description
a)	1 or 2	number of conductors
b)	H or L	maximum voltage rating H=600V, L=300V
c)	5 dightnumber	resistance (01247=1.247 Ohm/m @ 20℃)
d)	S or C	sheath material
	S825=Alloy825 S600=Alloy600 S310=AISI310 S446=AISI446 S316=AISI316L **S321=AISI321** S304=AISI304 CN=Cupronickel C=Copper CH=Copper with HDPE jacket	
e)	Conductor material	manufacture standard

Note - 1) Tolerance on conductor resistance is ±5% for all 600 volt 1/C cables.
2) The maximum recommended loading is 210 watts per meter for all 600 volt 1/C cables.
3) For pipe tracing, the maximum recommended watts per meter of cable may be reduced to the pipe maintain or process temperature.
4) Minimum bend radius is 5 times nominal cable diameter.

Note - The outer dimension of the heating cable is manufacture standard. Therefore depending on the production process size may change.

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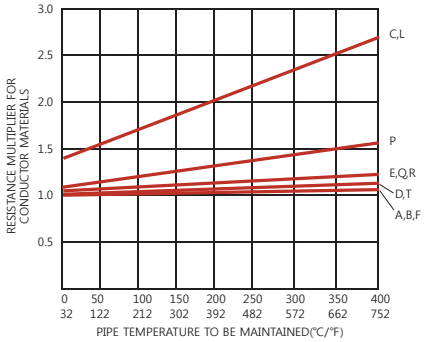
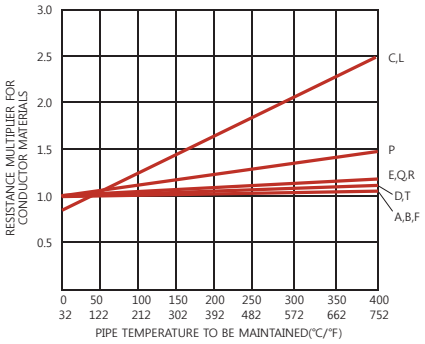
Resistance Correction Factor
Power On



Power Off



300V Double Conductor Stainless Steel Sheatbed Heating Cable

Cable Reference	Resistance (ohm/m @20℃)	Diameter (mm)	Max. Unjointed Length (m)	Weight (kg/km)
300V Double Conductor				
2L36089SF	36.089	3.8	1200	20.50
2L29527SF	29.527	3.8	1200	20.50
2L24606SA	24.606	3.8	1200	20.50
2L19685SA	19.685	3.8	1200	20.50
2L16404SA	16.404	3.8	460	57.60
2L13123SA	13.123	3.8	480	52.95
2L09022SA	9.022	3.8	480	53.14
2L08202SA	8.202	3.8	460	55.62
2L06562SA	6.562	4.0	415	61.97
2L05577SA	5.577	4.0	415	64.80
2L04593SA	4.593	4.5	415	69.70
2L03281SA	3.281	4.0	415	66.39
2L02297SB	2.297	4.0	415	61.02
2L01968ST	1.968	4.5	330	76.77
2L01640SB	1.640	4.0	330	81.87
2L01312SR	1.312	4.5	330	76.46
2L00984SB	0.984	4.0	415	71.15
2L00820SQ	0.820	4.0	415	65.37
2L00656SQ	0.656	4.0	415	63.82
2L00492SQ	0.492	4.0	415	61.87
2L00410SP	0.410	4.5	330	68.84
2L00328SQ	0.328	4.5	330	79.73
2L00279SQ	0.279	4.5	330	77.95
2L00230SQ	0.230	4.8	300	89.65
2L00164SQ	0.164	4.3	350	69.57
2L00131SC	0.131	4.8	300	87.92
2L00115SC	0.115	4.8	300	87.88
2L00098SC	0.098	4.5	330	79.08

Note - 1) Tolerance on conductor resistance is ±5% for all 300 volt 2/C cables.
2) The maximum recommended loading is 197 watts per meter for all 300 volt 2/C cables.
3) For pipe tracing, the maximum recommended watts per meter of cable may be reduced to the pipe maintain or process temperature.
4) Minimum bend radius is 5 times nominal cable diameter.
5) The outer dimension of the heating cable is manufacture standard. Therefore depending on the production process size may change.

750V MI Long Line Heating Cable

Cable Reference Bare Cable : CC LSF Covered : CCX	Conductor		Cable Diameter(mm)		Max. Conductor Resistance@20℃ ohm/km	Approximate Longest Coil Length(m)
	No.	Size (mm)	Bare	LSF		
1HH4.0	1	4.0	5.1	6.6	4.610	923
1HH6.0	1	6.0	4.6	7.7	3.080	719
1HH10.0	1	10.0	7.3	8.8	1.830	574
1HH16.0	1	16.0	8.3	9.8	1.160	446
1HH25.0	1	25.0	9.6	11.1	0.727	333
1HH35.0	1	35.0	10.7	12.2	0.524	273
1HH50.0	1	50.0	12.1	13.6	0.387	218
1HH70.0	1	70.0	13.7	15.2	0.268	174
1HH95.0	1	95.0	15.4	17.4	0.193	132
2HH1.5	2	1.5	7.9	9.4	12.100	511
2HH2.5	2	2.5	8.7	10.2	7.410	379
2HH4.0	2	4.0	9.8	11.3	4.610	326
2HH6.0	2	6.0	10.9	12.4	3.080	255
2HH10.0	2	10.0	12.7	14.2	1.830	197
2HH16.0	2	16.0	14.7	16.2	1.150	149
2HH25.0	2	25.0	17.1	19.1	0.727	107