



MI

Mineral Insulated (M.I.) Cable Assembly - One and Two Conductor

Features

Available sheath

- C: Bare copper.
- R: LSZH¹ Jacketed copper.
- SS: 825 Alloy seamless sheath.

Nominal voltages

- 120 to 480V

Temperature ratings

- See table.

Fire resistant

- M.I. heating cable is made of inorganic materials.
- It will not burn or support combustion.

Corrosion resistant

- LSZH Jacketed cables and 825 Alloy cables are corrosion resistant.
- Flexible, no degradation and low installation cost.

Standard cold lead lengths

- 20' (6 m) 19-strand THWN cold leads are standard on all M.I. heating cable assemblies.
- If longer cold leads are needed, specify at time of order. Cold lead can be of any length up to 200' (61 m).

Made to order product, to obtain a quote please contact factory.

¹ LSZH Low Smoke Zero Halogen that is made of non-halogenic thermoplastic compounds that inhibit smoke and toxic fumes when exposed to flames or other sources of extreme heat. Not available with stainless steel Alloy 825.





M.I. heating cable assembly base kit (supplied w/each M.I. heating cable assembly)

- Thermal Gradient (TG) section.
- THWN 19-strand cold leads.
- Pressure connectors.
- "A", "T", or "C" conduit body with gasket and cover.
- Delta dry (water repellent powder).
- Duct seal.
- Installation instructions.
- Factory assembled and tested.

Cold lead wire size (Chart 1)

Amps	AWG	Type	1 Conductor conduit body type	2 Conductor conduit body type
0-16	12	Stranded THWN	T	C
16-24	10		T	C
24-32	8		A	Not available
32-40	6		A	Not available

M.I. heating cable assembly splice kits

- Are available. Call Delta-Therm.

Application chart and recommendations (Chart 2)

Primary application	Application type	Prefix	Target watts	Target spacing in.	Target cable configuration	Standard thermal gradient length	Standard cold leads	Listing / Certification
						ft.	ft.	
Snow melting	Pedestrian	S	27	6	Z1C	2.5	20	UL/CSA
	Vehicular	S	22.5	6	Z1C	2.5	20	UL/CSA
	Hangar door	H	25	6	Z2C	2.5	20	UL/CSA
Roof/Gutter	Metal	M	8	6	2C	5	20	UL/CSA
	Plastic composite	R	6	6	Z2C	5	20	UL/CSA
Pipe/Tank trace	External	P	See design	6	2C	5	20	UL/CSA
	Internal ¹	IP	See design	6	2C	5	20	CSA
Permafrost prevention	In conduit ¹	T	12	48	2C	3	20	CSA
	Direct burial	F	12	48	Z1C	3	20	UL/CSA
Other	Custom	O	Custom	Custom	Open	Custom	20	Not listed

¹ Please contact factory for information.

Cable configurator (Chart 3)

Cable	# Conductors	Suffix	Designation	Voltage rating	Sheath	Max output air	Max output concrete	Max. temp. limit degrees °F	Max. amp./ Heater
Bare copper	1	C	1C	600	Cooper	22	30	392	40
Bare copper	2	C	2C	300	Cooper	22	30	392	24
Jacketed copper	1	R	Z1C	600	LSZH copper	8	30	194	40
Jacketed copper	2	R	Z2C	300	LSZH copper	8	30	194	24
Alloy 825	1	SS	S1C	600	825	58	58	1100	40
Alloy 825	2	SS	S2C	600	825	58	58	1100	24

NOTE: HDPE has been replaced with LSZH (Low Smoke Zero Halogen) covering.

Cable assemblies (Chart 4)

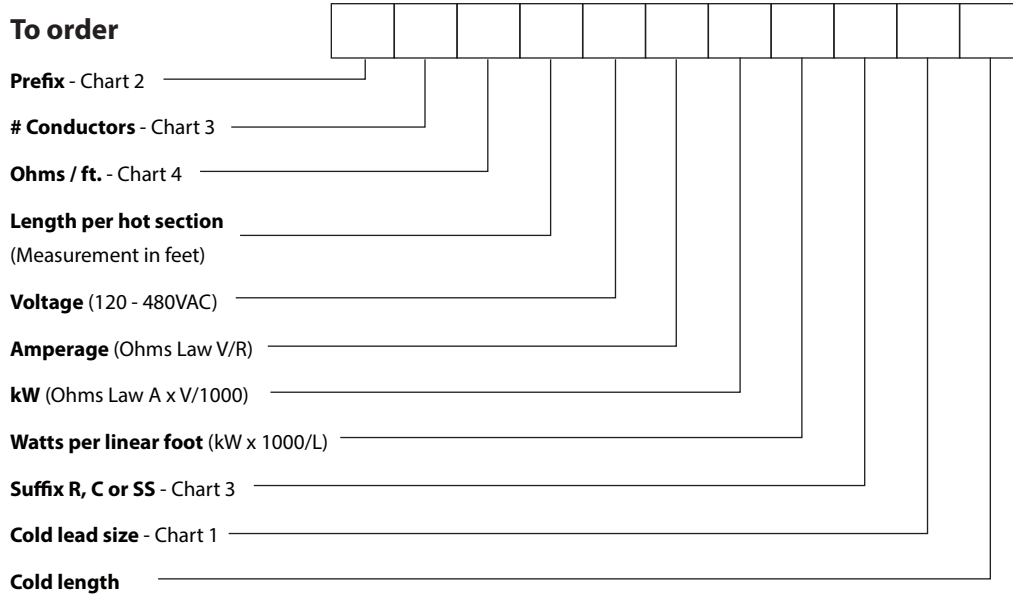
1 Conductor CU-LSZH	Ohms/ft.	0.610	0.390	0.300	0.200	0.150	0.105	0.080	0.060	0.040	0.030	0.020	0.010	-	-	-	-	-	-	
	Voltage Rating	600	600	600	600	600	600	600	600	600	600	600	600	-	-	-	-	-	-	
2 Conductor CU-LSZH ¹	Ohms/ft.	0.800	0.600	0.400	0.300	0.200	0.125	0.100	0.070	0.044	0.028	-	-	-	-	-	-	-	-	
	Voltage Rating	300	300	300	300	300	300	300	600	600	600	-	-	-	-	-	-	-	-	
1 Conductor Alloy 825	Ohms/ft.	2.0	1.60	1.30	1.00	0.850	0.700	0.500	0.280	0.200	0.150	0.118	0.0732	0.0581	0.0467	0.0366	0.0290	0.0231	0.0183	0.0145
	Voltage Rating	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
2 Conductor Alloy 825	Ohms/ft.	11.00	9.00	6.00	4.14	2.00	1.15	0.700	0.505	0.286	0.200	0.150	0.100	0.0775	0.0561	0.0402	0.0281	0.0200	-	-
	Voltage Rating	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	-	-

¹ Some 2-conductor M.I. heating cable assemblies are limited to 277VAC.



Product description code

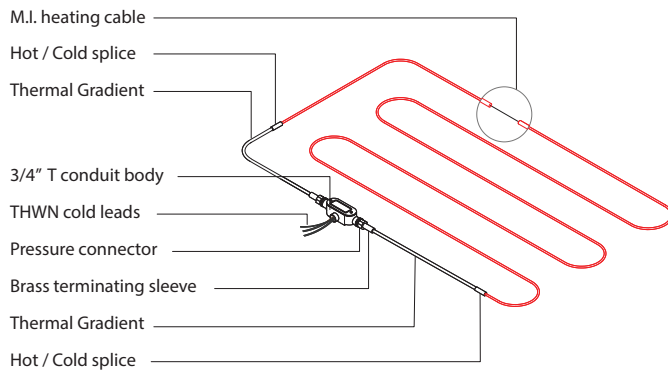
To order



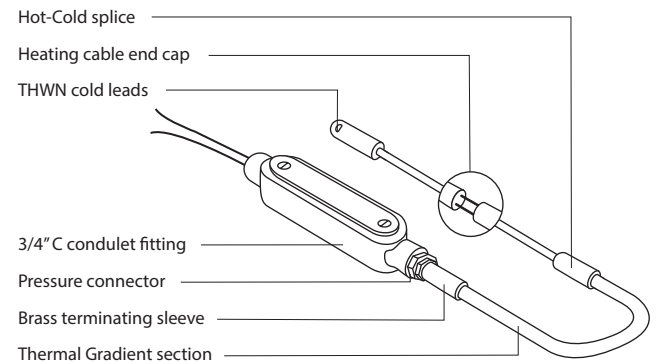
(Length required to reach junction box. NOTE: Voltage drop not to exceed 3%)

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Detail 1. One conductor cable assembly



Detail 2. Two conductor cable assembly





M.I. Mineral Insulated Alloy 825 Heat trace cable

One and Two Conductor

Delta-Therm seamless Alloy 825 sheath was developed to meet the demands of corrosive environments and high temperature applications. Delta-Therm uses only seamless Alloy 825 sheathing to avoid the potential problems associated with seam-welded tube.

Alloy 825 is resistant to reducing environments, stress corrosion and oxidizing environments. The relatively high nickel content of alloy 825, plus molybdenum and copper, makes it considerably more resistant to reducing environments (such as sulfuric or phosphoric acids) than most of the common stainless steels. It also effects a high resistance to stress corrosion cracking in chloride or alkaline environments. The chromium content, in combination with the nickel, makes the alloy resistant to a variety of oxidizing environments such as nitric acid solutions, nitrates and oxidizing salts.

Alloy 825 can be used at temperatures up to 1100 °F (800 °C) in normal atmospheres.

Alloy 825 limiting chemical composition, % by WT:

Nickel	38 - 46
Carbon	0.05 max.
Manganese	1.0 max.
Iron	Balance
Sulfur	0.03 max.
Silicon	0.5 max.
Copper	1.5 - 3.0
Chromium	19.5 - 23.5
Aluminum	0.2 max.
Titanium	0.6 - 1.2
Molybdenum	2.5 - 3.5

Alloy 825 heat trace cable quick reference guide¹

Alloy	Description
INCOLOY Alloy 825	Excellent resistance to wide variety of corrosives.
Nickel - Iron - Chromium	Resists pitting and intergranular type corrosion, reducing acids and oxidizing chemicals.

Nominal chemical composition % (major element)				Corrosion resistance												
Nickel (+Cobalt)	Iron	Chromium	Other	G-E = Good to excellent NR = Not recommended							A = Acceptable X = Check for specific data					
				Oxidation	Carburi- zation	Sulfuric Acid	Hydrochloric Acid	Hydro- fluoric	Phosphoric Acid	Nitric Acid	Organic Acid	Alkalis	Salts	Seawater	Chloride Cracking	
42	30	21.5	Mo 3.0 Cu 2.2	G-E	G-E	G-E	G-E	G-E	G-E	G-E	G-E	G-E	G-E	G-E	G-E	G-E

¹ Excerpt from Huntington Alloys Publication 78-348-2.