MCU

High Power, High Temperature heating cable for use on pipework and vessels.

MI CABLE

Copper Sheathed
Mineral Insulated Heating Cable

- *High performance output*
- *Wide temperature range*
- *Versatility*
- *Fire resistant*
- *High mechanical resistance*
- *Circuit length up to 2km*

INTRODUCTION

The MCU range of copper sheathed Mineral Insulated (MI) heating cable has been developed to meet the specific need for a cable having a high temperature capability and electrical resistance values needed for long circuit lengths.

To meet the requirement, Heat Trace have combined a copper sheath with heating conductors to enable an operating temperature of 200°C with resistance values from 2700Ω/km down to 4Ω/km.

MI Cables have excellent mechanical strength and are non-combustible. They are series resistance heaters which must be designed to provide the required heat output.

APPLICATIONS

The high temperature capabilities may be required for the following typical applications:-

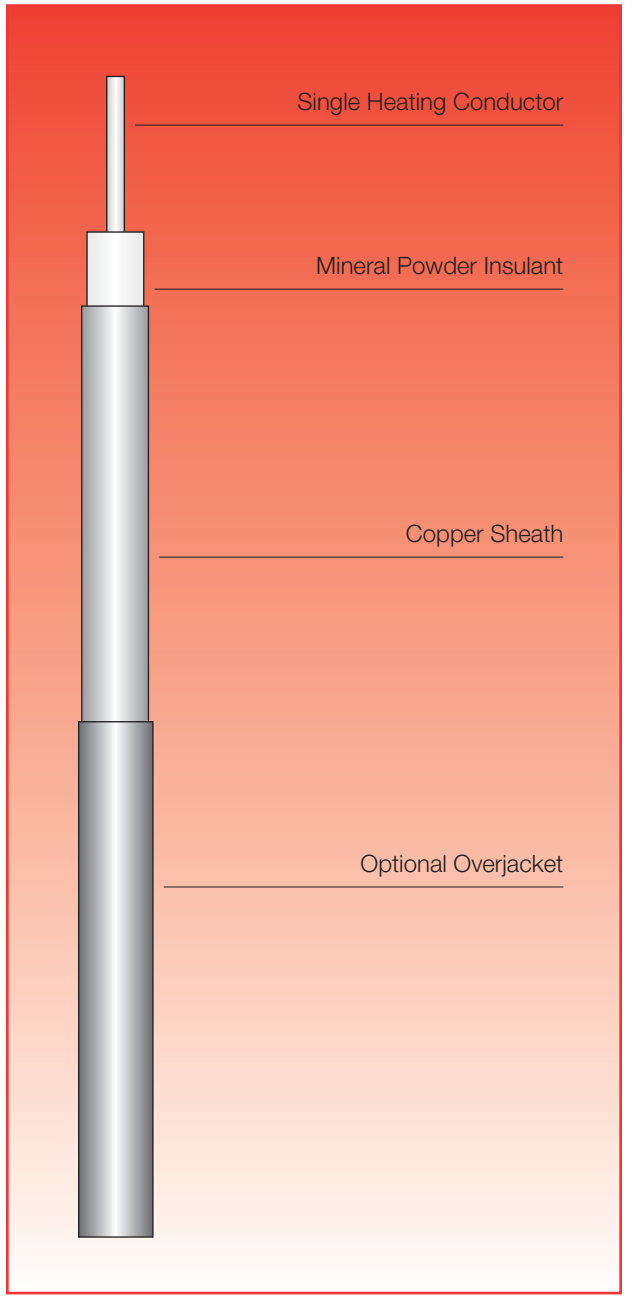
Chemicals & Petrochemicals - Vessels, tanks & pipelines

Power Generation

Oil & Gas - Transfer pipelines

The ability to be easily formed into shapes is useful for tank/vessel heating where unusual shapes (cones, hoppers, etc.) are encountered.

MI Cables may be used for most other general heat tracing applications if designed to provide the correct output. They may also be found in all underfloor (roads, ramps, sports grounds, horticultural, agricultural, space) heating duties where the mechanical strength of the cable is required.



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SPECIFICATION

CABLE SHEATH	Copper
CABLE INSULATION	MgO
MAXIMUM WITHSTAND VOLTAGE	2Kv
INSULATION RESISTANCE	1000 MΩ/1000m
MAXIMUM SHEATH TEMPERATURE	200°C (392°F)
EARTH LEAKAGE	3mA/100m

HEATER RANGE

CABLE REF	CABLE DIA (BARE) (mm)	CABLE RES @ 20°C Ω/m	COLD LEAD-IN CABLE SIZE mm²	COLD LEAD-IN CABLE DIA (mm)
MCU2.701K2700	2.7	2.7	2.5	5.3
MCU2.801K2000	2.8	2.0	2.5	5.3
MCU3.501K1600	3.5	1.6	2.5	5.3
MCU2.801K1250	2.8	1.25	2.5	5.3
MCU3.501K0800	3.5	0.8	2.5	5.3
MCU4.001K0630	4.0	0.63	2.5	5.3
MCU4.001K0450	4.0	0.45	2.5	5.3
MCU4.301K0315	4.3	0.315	2.5	5.3
MCU4.501K0220	4.5	0.22	2.5	5.3
MCU4.901K0140	4.9	0.22	2.5	5.3
MCU5.201K0100	5.2	0.10	2.5	5.3
MCU2.701CU0088	2.7	0.088	2.5	5.3
MCU3.201CU0063	3.2	0.063	2.5	5.3
MCU3.401CU0040	3.4	0.040	2.5	5.3
MCU3.701CU0025	3.7	0.025	6	6.4
MCU4.601CU0017	4.6	0.017	6	6.4
MCU4.901CU0011	4.9	0.011	6	6.4
MCU5.301CU0007	5.3	0.007	10	7.3
MCU5.901CU0004	5.9	0.004	16	8.3

INSULATED CABLE RATING FACTORS

CABLE TYPE	BARE	HDPE
MCU2.701K2700	1.150	0.763
MCU2.801K2000	1.076	0.714
MCU3.501K1600	0.860	0.571
MCU2.801K1250	1.076	0.714
MCU3.501K0800	0.928	0.634
MCU4.001K0630	0.829	0.588
MCU4.001K0450	0.829	0.588
MCU4.301K0315	0.780	0.564
MCU4.501K0220	0.751	0.548
MCU4.901K0140	0.698	0.521
MCU5.201K0100	0.663	0.502
MCU2.701CU0088	1.076	0.714
MCU3.201CU0063	1.000	0.666
MCU3.401CU0040	0.950	0.644
MCU3.701CU0025	0.886	0.615
MCU4.601CU0017	0.727	0.541
MCU4.901CU0011	0.698	0.521
MCU5.301CU0007	0.649	0.496
MCU5.901CU0004	0.597	0.463

MCU CORROSION RESISTANCE

SUBSTANCE	OVERJACKET MATERIAL NONE	HDPE
Sulphuric Acid	N/R	G/E
Hydrochloric Acid	N/R	G/E
Hydrofluoric Acid	A	A
Phosphoric Acid	A	A
Nitric Acid	N/R	A
Organic Acid	A	N/R
Alkalis	A	A
Sea Water	N/R	A
Chloride	X	A

Key: N/R = Not Recommended, G/E = Good-Excellent, A = Acceptable, X = Check for specific data

ORDERING CODE

MCU 4.30 1 CU 0315 H

- MCU — Copper Sheath
- 4.30 — Diameter of Cable (mm)
- 1 — Number of Conductors
- CU — Conductor Material:- *(CU=Copper, K=Copper Alloy*
- 0315 — Conductor Resistance †
- H — Optional HDPE Overjacket

(Max. sheath temperature 80°C)

† Conductor resistance is measured in Ohms per 1000m

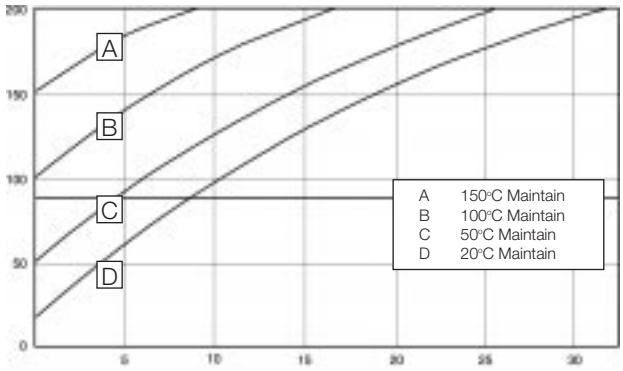
RATING FACTOR

Use the graph below to ensure that the cable sheath does not operate at an unsafe temperature.

1. Determine the "corrected" cable power output by multiplying actual design output by the rating factor in the table opposite.
2. Find the point on the graph where the "corrected" W/m output intersects with the maintain temperature of the equipment to be heated (interpolation may be necessary).
3. Read off from the left hand (y) axis the anticipated cable sheath temperature. This must be less than the cable maximum withstand temperature, and below any other limiting temperatures, eg. Temperature Classification.

POWER OUTPUT vs. SHEATH TEMPERATURE

Cable Sheath Temperature (°C)



Corrected Power Output W/m

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