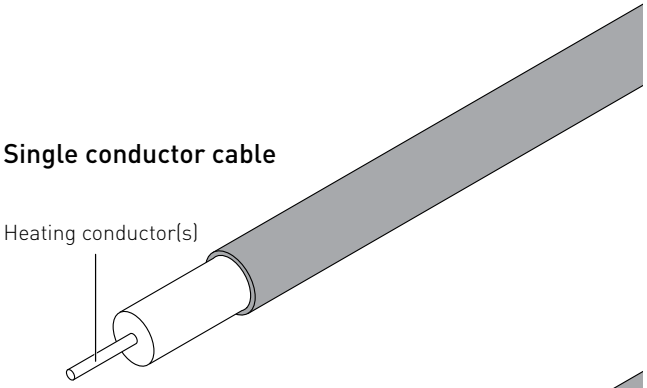
Raychem MI HEATING CABLES

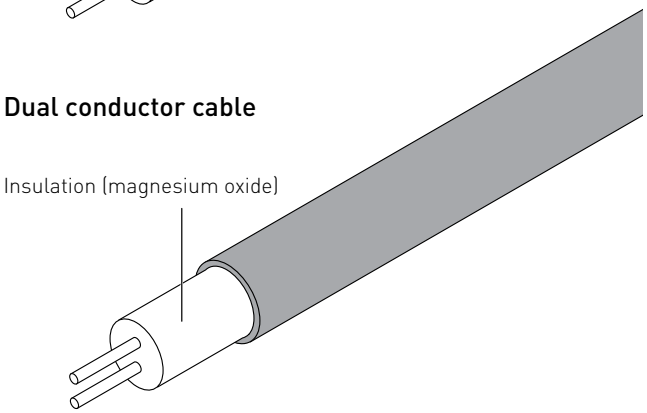
NOMENCLATURE FOR MI HEATING SYSTEMS - MI HEATING CABLES (BULK CABLES)

TYPICAL CABLE CONSTRUCTIONS

Single conductor cable



Dual conductor cable



Raychem MI heating cables are available for a wide range of applications.

For more details about the different MI heating cable types, also refer to the product datasheets.

VARIOUS CONSTRUCTIONS OF THE MI BULK HEATING CABLES ARE AVAILABLE:

HCC/HCH:	Copper sheathed MI heating cables
HDF/HDC:	Cupro-nickel sheathed MI heating cables
HSQ:	Stainless steel sheathed MI heating cables
HAx:	Alloy 825 sheathed MI heating cables
HIQ:	Inconel sheathed MI heating cables

MI BULK HEATING CABLES ARE SUPPLIED IN A RANGE OF DIFFERENT CONSTRUCTIONS, THE PRODUCT REFERENCES USE THE FOLLOWING NOMENCLATURE:

Example: HCHH1L2000BK

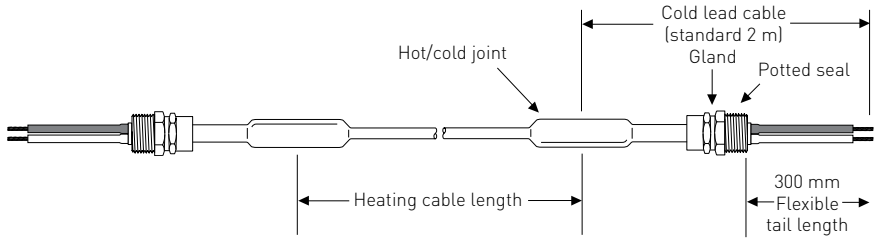
H	H denotes a heating cable	**H**=Heating Cable
C	Sheath material	**C**=Copper **D**=Cupro-Nickel **S**=Stainless steel **A**=Alloy 825 **I**=Inconel 600
H	Conductor material (examples)	**C**=Copper **H**=Copper Alloy and a variety of other metal alloys
H	Oversheath material (optional for copper cables only)	**H**=HDPE P=FEP
1	Number of conductors	1 or 2
L	Normal operating voltages	Refer to datasheets of individual heating cables
2000	Conductor resistance	in Ω/km - i.e. 2000=2000 Ω/km
BK	Oversheath colour (optional)	**BK**=Black OR=Orange

MI heating units consist of a heating cable, the hot-cold joint as well as the cold lead cables with an appropriate seal and gland. The connection and sealing of an MI heating unit is critical for a safe and reliable operation.

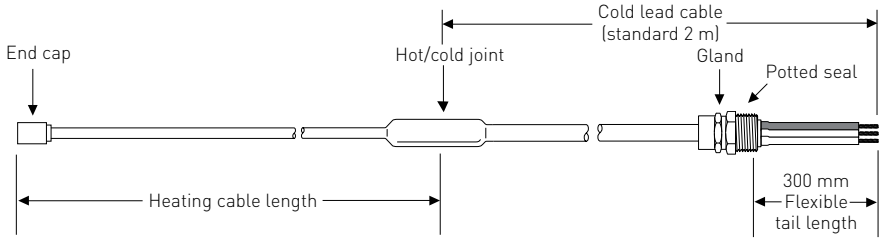
Pentair strongly recommends the use of factory-terminated heating units, which guarantee a consistently high level of quality. The stainless steel (HSQ), Inconel 600 (HIQ) and Alloy 825 (HAx) can be delivered with laser welded joints and/or end caps to provide the optimum weld quality and highest reliability. We recommend the use of laser welded joints and/or end caps when the load or exposure temperatures cause element temperatures above 300°C. For use in hazardous areas, MI heating units need to be assembled by Pentair or an authorized installer.

MI HEATING UNITS ARE AVAILABLE IN DIFFERENT CONFIGURATIONS (unit types)

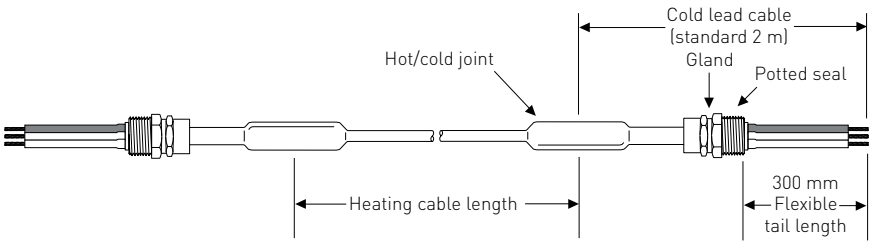
MI heating unit type B (single conductor)



MI heating unit type D (dual conductor)



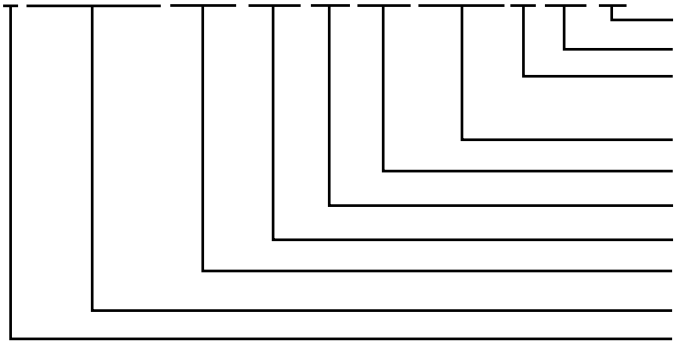
MI heating unit type E (dual conductor)



The cold lead length includes 300 mm long flexible tails. Earth tails are supplied as standard on all heating units. Glands are fitted with washers and locknuts. Other configurations available on request.

THE ORDER REFERENCE OF MI HEATING UNITS USES THE FOLLOWING NOMENCLATURE

B/HSQ1M1000/43.0M/1217/230/2.0M/SC1H2.5/X/M20/EX



When ordering, the complete order reference of the MI heating unit needs to be provided. For hazardous areas, information must also be provided about the T-rating and temperature data relevant to the application (max. sheath temperature data) to enable the correct representation of data on hazardous area tags attached to the completed heating unit in the factory.

Any missing detail may lead to potential delays in order processing.

SELECTION OF MI COLD LEADS

Raychem MI cold lead cables are available in different constructions:

CC: Copper sheath, copper conductor

CCH: HDPE jacketed copper sheath, copper conductor

DC: Cupro-Nickel sheath, copper conductor

SC: Stainless steel sheath, copper conductor

IC: Inconel 600 sheath, copper conductor

AC: Alloy 825 sheath, copper conductor

For selection of the MI cold lead, the environmental exposure (chemicals etc...), as well as the current rating need to be considered. Pentair typically recommends using the same or superior sheath materials for the cold lead as used for the heating cable. Cold leads are normally selected based on the operating current of the heating unit at maintain temperature. For higher temperatures, the current can be significantly higher during the transitional start-up phase. If the application involves more frequent heat-up from lower temperatures, we recommend selecting the cold lead size based on the start-up current.

HOT COLD JOINTS

The connection between the heating cable and the cold lead (hot-cold joint) is one of the most critical elements for the reliability of a MI heating unit. Various types are available for different sheath materials of the heating cables and cold leads.

Sheath material for heating cable	Standard joint material for brazed units	Joint material for laser-welded units
Copper	Brass	N/A
Cupro-nickel	Brass for cupro-nickel cold lead	N/A
Cupro-nickel	Stainless for stainless steel cold lead	N/A
Stainless steel	Stainless steel	Stainless steel
Inconel	Stainless steel	Special alloy
Alloy 825	Stainless steel	Special alloy

The option for laser welded units is not available for MI heating cables with a copper or cupro-nickel sheath.

COLD LEAD SELECTION TABLE

Cross section	Numbers of conductors	Cold lead order reference	Diameter (mm)	Current rating (A)	Standard gland size
1.0	2	AC2H1.0	7.3	18	M20
2.5	1	CC1H2.5	5.3	34	M20
		DC1H2.5	5.3	34	M20
		SC1H2.5	5.3	34	M20
		AC1H2.5	5.3	34	M20
2.5	2	AC2H2.5	8.7	28	M20
6.0	1	CC1H6	6.4	57	M20
		DC1H6	6.4	57	M20
		SC1H6	6.4	57	M20
		AC1H6	6.4	57	M20
6.0	2	AC2H6	14.0	46	M32
10.0	1	CC1H10	7.3	77	M25
		DC1H10	7.3	77	M25
16.0	1	CC1H16	8.3	102	M25
		DC1H16	8.3	102	M25
		AC1H16	8.3	102	M25
25.0	1	CC1H25	9.6	133	M32
		AC1H25	10	133	M32
35.0	1	CC1H35	10.7	163	M32

Brass glands are standard on all heating units.

The cold lead selection table does not show all possible combinations (other gland materials, sizes, optional PVC shrouds, etc.); contact Pentair for more details.
For the on-site terminations and repair of cold leads, the use of Pre-terminated MI double Cold Ends (PCE) is strongly recommended. Refer to Accessories for more information.

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