



Application

Used for applications up to a maximum of 1000°C. Mineral-insulated constant wattage heating cable for use in the industrial sector. Advantages of this heating conductor are primarily a high possible energy density, corrosion resistance, a high mechanical strength and fire resistance. Due to its robust construction, the heating conductor can be applied in almost all industrial sectors.



heating cable design	
CP	Caloplex
CWH	Constant wattage heating cable
MI	Mineral insulated
I	Insulation consisting of Magnesium oxide
B	Electrical braiding / protection jacket



Technical data	
Jacket material	V4A (1.4541)/ Inconel600 (2.4816)
Insulation material	MgO (magnesium oxide)
Heating conductor material	NiCr-alloy
Operating voltage	300/500V U/U0 AC/DC
Electric strength	2000V AC/DC
Insulation resistance	1000M/Ω pro 1000m
Maximum admissible jacket temperature	600°C/ 1000°C
Leakage current	3mA pro 100m ^{1,2}
Minimum installation temperature	-60°C
Minimum bending radius	6x Outer diameter
Tolerance – resistor	±10%
Tolerance – length	±1% ≤5m±5cm
Tolerance – thickness	±0,05mm

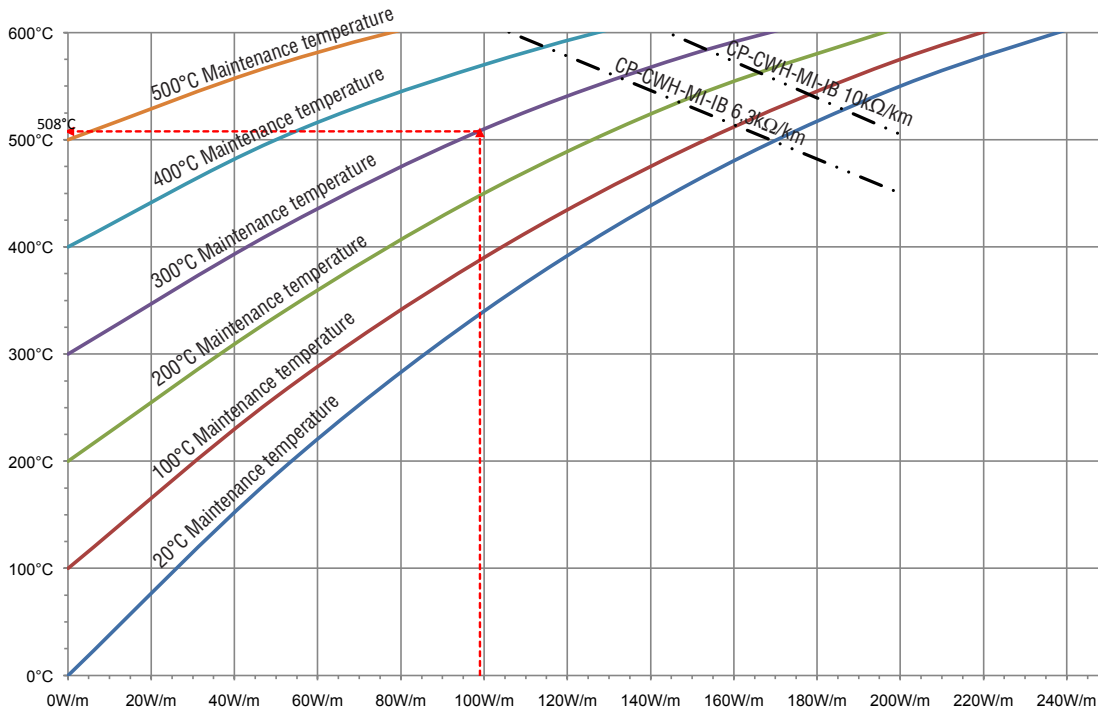
¹ Nominal value at 20°C
² RCD recommended



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The resistors 10kΩ/km and 6,3kΩ/km may only be used under the dotted line.

Resistance values		
Nominal resistance at 20°C [Ω/km]	Heating conductor diameter [mm]	Weight [kg/km]
10000	3,2	39
6300	3,2	39
4000	3,2	39
2500	3,4	46
1600	3,6	52
1000	3,9	62
630	4,3	78
400	4,7	96
250	5,3	127
160	5,3	127
7 ³	5,3	127

Resistance	Correction factor
10000	1
6300	1
4000	1
2500	0,952
1600	0,901
1000	0,840
630	0,769
400	0,714
250	0,645
160	0,538

³ corresponds cold cable of 2,5mm²

Notes:

When using the heating cable, a residual current circuit breaker (RCD) must be used, for long circuit lengths a 300mA one can be applied. In this case the triggering safety has to be proven based on calculations.

Design notes:

1. Calculate the required heat output as well as the corresponding output of watts per metre (for example: 110W/m; 1600Ω/km desired holding temperature 300°C).
2. Take the correction factor from the upper table with the desired resistance (example 0,901).
3. Multiply the factor with the calculated output of watts per metre (110W/m * 0,901 = 99W/m).
4. Read the occurring temperature of the outer sheath in the curve of the desired holding temperature with the respective output on the x-axis of the diagram (results in a jacket temperature of 508°C).



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