



## CP-CWH-MI-IB ■

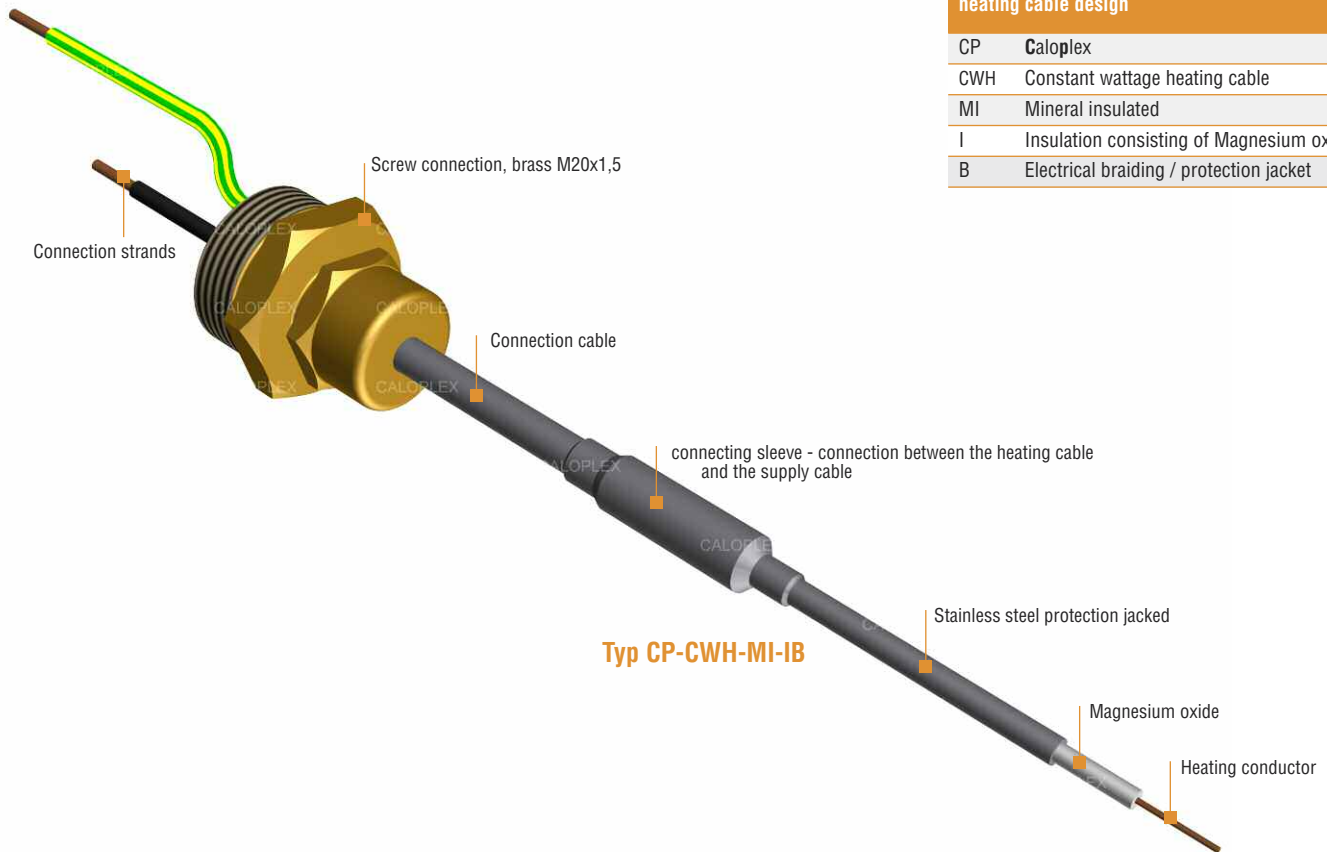
### Application

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



Typ CP-CWH-MI-IB

### 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 <sup>1,2</sup>
Minimum installation temperature	-60°C
Minimum bending radius	6x Outer diameter
Tolerance – resistor	±10%
Tolerance – length	±1% ≤5m≥±5cm
Tolerance – thickness	±0,05mm

<sup>1</sup> Nominal value at 20°C

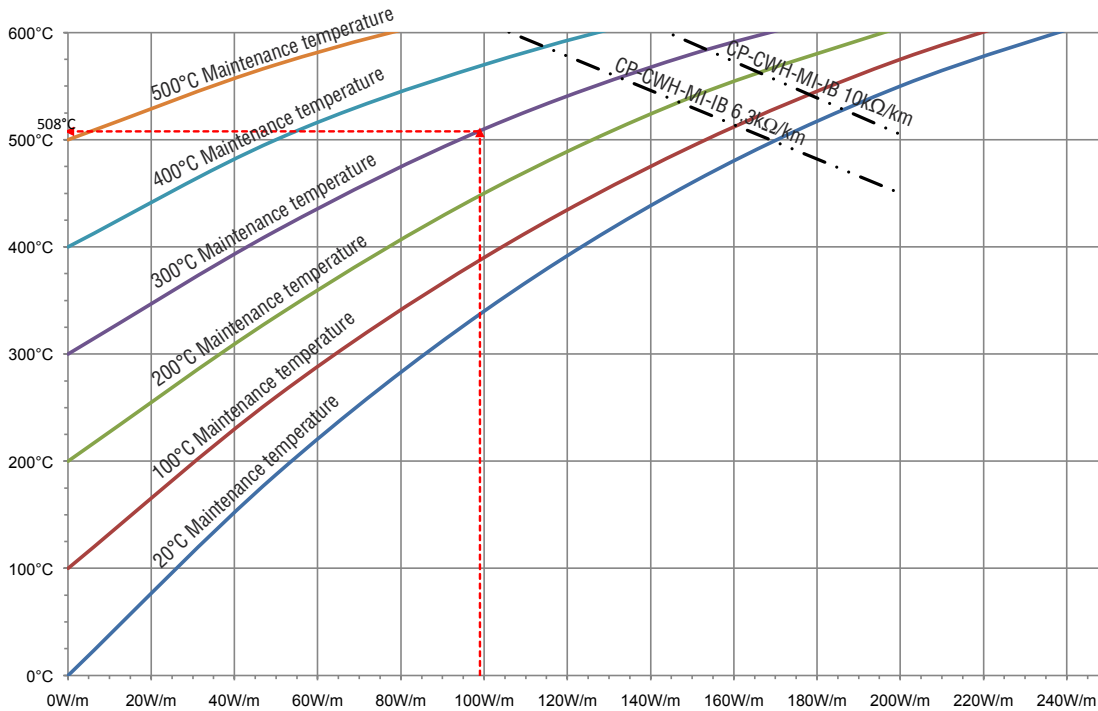
<sup>2</sup> RCD recommended



Caloplex GmbH  
Welterstraße 42  
57072 Siegen / Germany

Telefon: +49 (0) 271 / 7700285-0  
Fax: +49 (0) 271 / 7700285-19

info@caloplex.de  
www.caloplex.de



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 <sup>3</sup>	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

<sup>3</sup> corresponds cold cable of 2,5mm<sup>2</sup>

#### 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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