

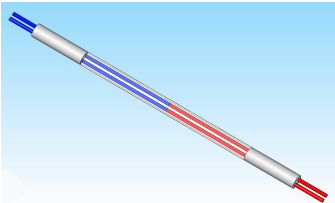
<b>Core material</b>	K = Constantan	Ni=Nickel	NC= NiCr80/20	BA=NiFe70/30				
<b>Sheath material</b>	VA=AISI 304L	VA2=AISI 304	VA3=AISI 316L	VA4=AISI 321	VA5=AISI 316Ti	VA6=AISI 314	VA7=AISI 309	VA8=AISI 310S
	I=Inconel600	I2=Inconel601	I3=Inconel625	I4=Inconel800	I5=Inconel825			
	H=Hastalloy C276	H1=Hastalloy X						
	HY=Haynes XY							

### Encoding scheme for requests and orders:

<2 - C - H – sheath material- loop line resistance [Ohms/m] - Ø [mm] – hot part length [mm] – IM - C – cold-end length [mm]>

#### Example:

order code '2-C-H-I-15,6-2,0-6000-IM-C-1000mm' = mineral-insulated 2-core heater with real cold ends, sheath material: „I“ (Inconel600), core: NiCr80/20, loop-line-resistance: 15,6 Ohm/m (+/-10% tol.), 2,0mm diameter, hot part length: 6000mm, cold end length: 1000mm



Heaters with real cold ends are without any change in diameter between heated part and cold ends.

ThermSys offers heaters in some standard-designs but according to customers needs also customized heaters in diameter, lengths, line resistances and sheath-materials are producible.

standard range		Loop line resistance [Ohm/m]	
sheath-Ø [mm]	minimum hot part lengths [mm]	hot part	cold end
		1,0	20
1,5	20	27,8	< 3
2,0	20	15,6	< 1,5
2,5	20	10,0	< 0,8
3,0	20	7,0	< 0,4
3,5	20	5,2	< 0,3
4,0	20	4,0	< 0,25

#### Indications for use and manufacturing tolerances:

- Standard tolerance line resistance: +/-10%
- Sheath-Ø-tolerances: +/-0,05mm
- Bending radius: 2-3 x outer sheath-Ø
- Do not bend heaters to often depending from bending ratio and accumulated / incremental plastic deformation of the heater materials!
- Standard hotpart-lengths tolerances: hotpart < 2m: +/-10mm, above +/-25mm
- Cold end length: customized
- Max. voltage / wattage over sheath depending from sheath-Ø, temperature gradient heater to heated parts / thermodynamic max. possible flow of energy from heater to heated part and heating up cycles. Please refer to our technical sheet „Using ThermSys mineral insulated-metal sheathed heaters and applications“
- Mineral insulation: Magnesiumoxyde (MgO) others on request
- Recommendation for use: stainless steel sheath up to 600°C Inconel600 sheath up to 1000°C