

hotspring

Coil Heater



hotspring

Coil Heater

Components and Systems

Heating elements, thermal sensors and process control – hotset is your partner for the realization of intelligent product and service solutions in the field of industrial heat technology. Based on our international presence and our own production sites, we operate as a component supplier and development service provider for customers in all industries.

We supply you with components for your series production, we implement complex system solutions for you or we take over entire value chains: your requirements, your goals and your wishes always form the centre of our actions. You benefit from flexible production and logistics structures, an interdisciplinary engineering and over four decades of technology experience.

hotset – components. systems. projects.

hotspring

Coil heater

- For heating applications:
 - Hot runner nozzles with and without wattage distribution
 - Small hot runner distribution plates
 - Sealing bars and jaws for packaging machines
 - Machine nozzles for plastics and die-casting industries
- Multi-purpose and economical with a variety of
 - wattages, surface loads and customized heat distribution
 - wall thicknesses and mounting options
- Range of clamping options:
 - Undersized inner diameter for open coiled heater fitting
 - Lower thermal expansion with reflection tube
 - Tight fitting with axial screw clamping band
 - Tangential screw clamping band
 - hotspring Lock-System

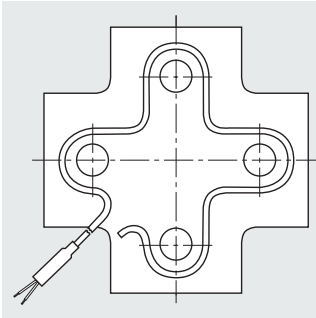


Technical features

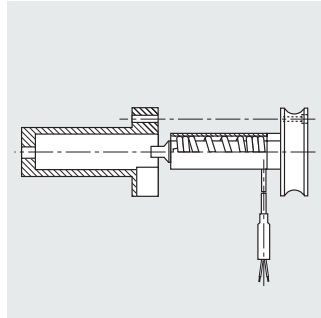
Insulation material	compressed MgO
Maximum sheath temperature of heating element	max. 750 °C / 1380 °F with reflection tube or clamping band max. 650 °C / 1200 °F
Maximum connection head temperature	max. 260 °C / 500 °F
Connection voltage	230 V standard, 250 V max. hotspring Maxi 440 V max.
Wattage tolerance*	± 10%
High voltage test*	min. 800 V AC, hotspring Maxi 1250 V
Insulation resistance*	≥ 5 MΩ at 500 V DC
Leakage current*	≤ 0.5 mA at 253 V AC
Max. total length straight	max. 3000 mm / 118 inch
Coiled inner Ø tolerance	up to Ø 12 mm: -0.05 / -0.20 mm up to Ø 30 mm: -0.10 / -0.30 mm up to Ø 40 mm: -0.20 / -0.40 mm with reflection tube: +0.05 / +0.15 mm up to 0.47 inch: -0.2 / -7.9 mils up to 1.18 inch: -3.9 / -11.8 mils up to 1.57 inch: -7.9 / -15.7 mils with reflection tube: +2.0 / +5.9 mils
Coiled length tolerance	± 1.5% least ± 1 mm / 0.039 inch

* tested at environmental temperature

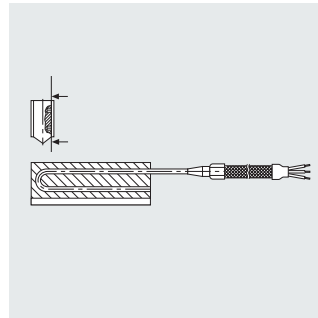
Application Fields



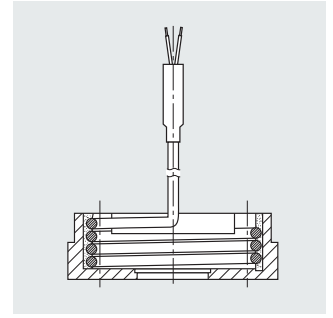
Hot runner industry
Heating of small distribution plates



Hot runner industry
Heating of various nozzles

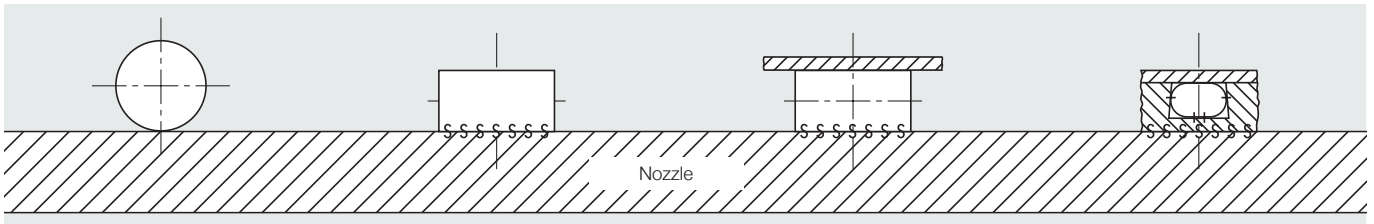


Packaging Industry
Heating of sealing bars



Packaging Industry
Heating of sealing jaws

Sheath surface load



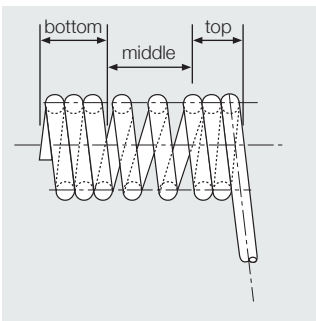
hotspring round
6 W/cm²
39 W/inch²

hotspring flat
7.5 W/cm²
48 W/inch²

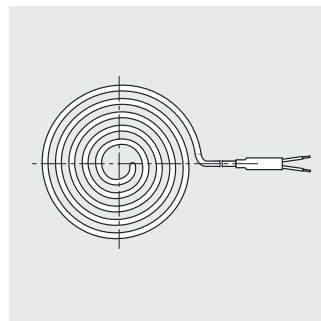
hotspring with reflection tube
10 W/cm²
65 W/inch²

hotslot
12,5 W/cm²
81 W/inch²

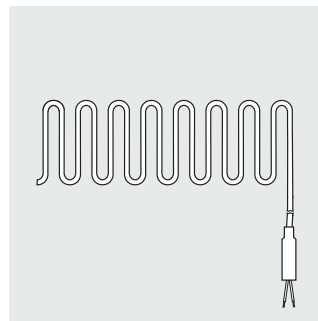
Coiling options



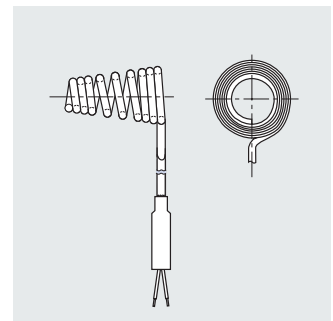
Cylindrical



Flat coiling



Serpentine coiling

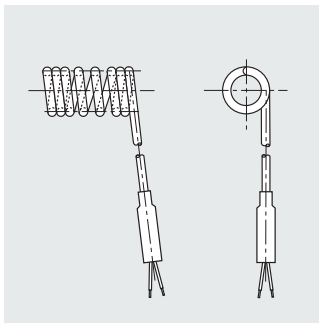


Conical coiling

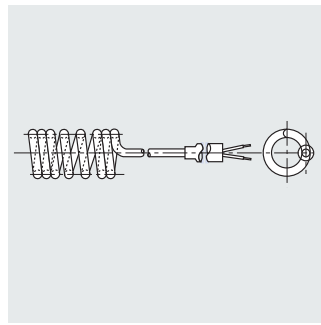
Options

- coiled tight
- coiled with defined pitch
(up to 50 mm per coil)
- coiled with wattage distribution

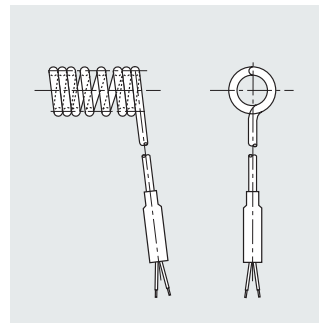
Exit options



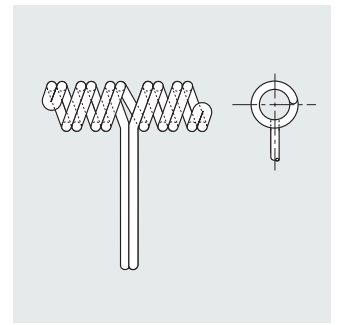
Tangential



Axial



Radial



In the mid
(hotspring Micro and
hotspring Mini only)

Approximate calculation of the stretched heated length

$$\text{heated length straight} = (l \text{ } \varnothing \text{ coiled} + \text{heater height}) \times \pi \times \text{number of windings} \times 2^*$$

(* „x 2“ applicable for hotspring Micro and hotspring Mini with two heads only)

Performance Range

hotspring	Specifications				Options							Special editions			
	Specifications	Dimensions (H x W / Ø) [mm]	Max. wattage [W]	Thermocouple in heater	Thermocouple coiled in reflection tube	Reflection tube	Reflection tube with thermal decoupled temperature measure ring	Available in straight condition	Number of connection heads	Smaller connection head	Tangential clamping band	Axial clamping band	Lock-System		
Micro /F	flat	1.0 x 1.6	300	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		2		<input checked="" type="checkbox"/>					
Mini /R	round	1.8	550	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	2							
Mini /F	flat	1.3 x 2.3	550	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		2		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
Midi /F	flat	1.8 x 3.2	650	<input type="checkbox"/>		<input type="checkbox"/>		1	<input checked="" type="checkbox"/> *	<input checked="" type="checkbox"/>					
Classic /F	flat	2.2 x 4.2	1000	<input type="checkbox"/>		<input type="checkbox"/>		1		<input checked="" type="checkbox"/>					
Classic /Q	square	3.0 x 3.0	1000	<input type="checkbox"/>		<input type="checkbox"/>		1		<input checked="" type="checkbox"/>					
Classic /R	round	3.0	740	<input type="checkbox"/>			<input type="checkbox"/>	1							
Medium /R	round	4.0	740	<input type="checkbox"/>			<input type="checkbox"/>	1							
Maxi	flat	4.6 x 8.6	2100	<input type="checkbox"/>		<input type="checkbox"/>		0/1		<input checked="" type="checkbox"/>					

* Ø max. 4.9 mm / 0.193 inch, max 2.3 A, lead protection sleeve option, without thermocouple

General Options



Straight

With coiling electrical specifications will be changed.
Insulation resistance and high voltage must be checked before operation.



Reflection tube

- Increased max. sheath surface load
- Optimized heat transfer to the nozzle
- Protection against mechanical damage
- Thermal decoupled temperature measure ring option

Clamping options

Clamping options for optimized heat transfer from heating element to the heated tool.

Increases max. allowed sheath surface load and protects against mechanical damage.



Tangential screw clamping band
Ø I = min. 30 mm / 1.18 inch



Axial screw clamping band
as special edition for hotspring Mini
Front installation and removal



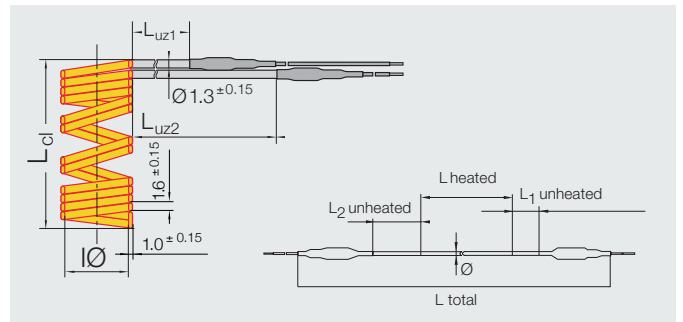
hotspring Lock-System
Front installation and removal
Ø I = 15 ... 25 mm / 0.59 ... 0.98 inch
Length = 25 ... 60 mm / 0.98 ... 2.36 inch
Wall thickness 2.8 mm / 0.11 inch

hotspring Micro /F 1.0 x 1.6

Coil heater with flat cross section

Technical features	
Sheath material	Stainless steel or nickel
Connection head dimensions	Ø 5.5 x 40 mm / 0.22 x 1.57 inch
Minimum Length unheated zone	25 mm / 0.98 inch
Length tolerance unheated zone	± 5%, min ± 15 mm / 0.59 inch
Length tolerance heated zone	± 5%
Minimum inner bending radius	3 mm / 0.12 inch

Items to be configured

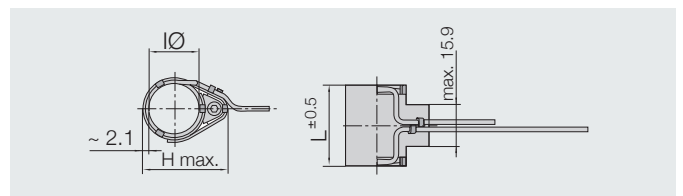


L_{cl} = coiled length
 L_{uz} = length unheated zone

hotspring Mini /F 1.3 x 2.3 with axial screwed clamping band

Coil heater with flat cross section

Technical features	
Sheath material	Stainless steel or nickel
Connection head dimensions	Ø 5,5 x 40 mm / 0.22 x 1.57 inch
Minimum Length unheated zone	25 mm / 0.98 inch
Length tolerance unheated zone	± 5%, least ± 15 mm
Length tolerance heated zone	± 5%
Minimum inner bending radius	3 mm / 0.12 inch
Wall thickness	2.1 mm / 0.083 inch
Tightening torque of the clamping screw	1.5 Nm



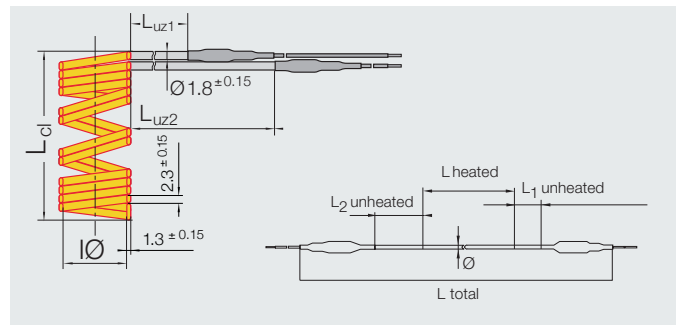
Stock range

Sheath material nickel, connection 1.800 mm / 70.9 inch, PTFE isolated, Cu-nickel plated, multi stranded

Stock ID	Total length [mm]	Wattage [W]	Voltage [V]	Length [mm] unheated	Inner Ø [mm]	Recommended nozzle diameter [mm]	Max. height [mm]
7603019	30.5	268	240	100 / 150	19.05	19.05 +0.03	32.3
7603020	30.5	250	230	100 / 150	22.20	22.20 +0.03	36.4

hotspring Mini /F 1.3 x 2.3
hotspring Mini /R 1.8
Coil heater with flat or round cross section

Technical features	
Sheath material	Stainless steel or nickel
Connection head dimensions	Ø 5.5 x 40 mm / 0.22 x 1.57 inch
Minimum Length unheated zone	25 mm / 0.98 inch
Length tolerance unheated zone	± 5%, min ± 15 mm / 0.59 inch
Length tolerance heated zone	± 5%
Minimum inner bending radius	3 mm / 0.12 inch



L_{co} = coiled length
 L_{uz} = length unheated zone

Stock range

Flat cross section coiled

Stock ID	Total length incl. heads [mm]	Wattage [W] coiled, flat	Length [mm] heated	Length [mm] unheated
7580510	642	160	382	65 / 115
7580671	735	210	475	65 / 115
7580772	835	250	575	65 / 115
7580845	960	300	700	65 / 115
7581057	1110	350	850	65 / 115
7581273	1306	450	1046	65 / 115

Part no. changes after adding options or coiling.

Stock range

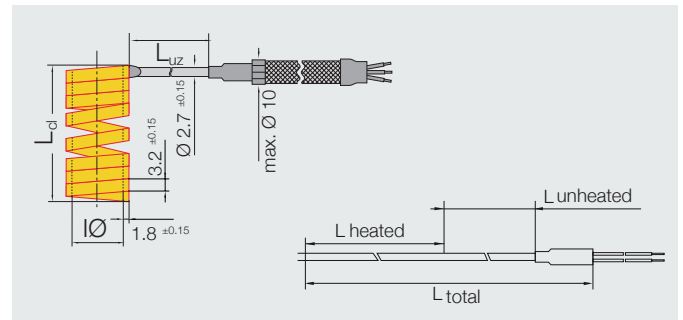
Round cross section straight, U-shaped bent, connection 2,000 mm / 78.4 inch, PTFE isolated, Cu-nickel plated, multi stranded

Stock ID	Total length incl. heads [mm]	Wattage [W] straight, round	Length [mm] heated	Length [mm] unheated
7580682	735	210	475	65 / 115
7580856	960	300	700	65 / 115
7581068	1110	350	850	65 / 115
7581284	1306	450	1046	65 / 115

hotspring Midi /F 1.8 x 3.2

Coil heater with flat cross section

Technical features	
Sheath material	Stainless steel
Connection head dimensions	Ø 6.9 x 25 / 0.27 x 0.98 inch
Minimum Length unheated zone	25 mm / 0.98 inch
Length tolerance unheated zone	± 5%, min ± 2 mm
Length tolerance heated zone	± 3%
Minimum inner bending radius	4 mm / 0.16 inch



L_{cl} = coiled length
 L_{uz} = length unheated zone

Stock range

Straight or coiled, connection 1,000 mm / 39.4 inch, type N (see connection options), brown/blue, Thermocouple ungrounded

Stock ID	Total length incl. head [mm]	Wattage [W]	Length heated [mm]	Length unheated [mm]	Thermocouple type J (Fe-CuNi)
7840300	340	13	250	65	√
7540301	390	160	300	65	
7840301	390	160	300	65	√
7840302	440	190	350	65	√
7540303	490	220	400	65	
7840303	490	220	400	65	√
7540304	540	250	450	65	
7840304	540	250	450	65	√
7540305	590	275	500	65	
7840305	590	275	500	65	√
7540306	690	330	600	65	
7840306	690	330	600	65	√
7540307	840	400	750	65	
7840307	840	400	750	65	√

Part no. changes after adding options or coiling.

hotspring Classic /F 2.2 x 4.2

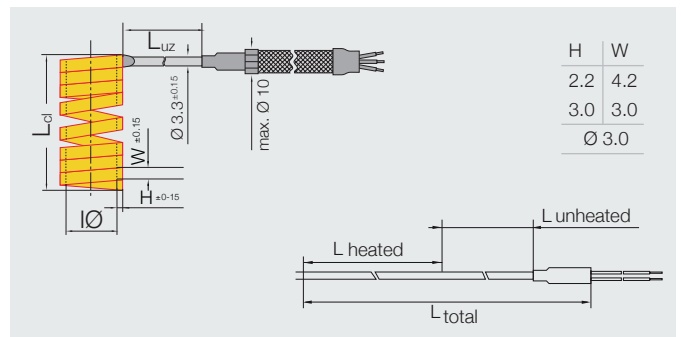
hotspring Classic /Q 3.0 x 3.0

hotspring Classic /R 3.0

Coil heater with flat, square or round cross section

Technical features

Sheath material	Stainless steel
Connection head dimensions	Ø 6.9 x 25 mm / 0.27 x 0.98 inch
Minimum Length unheated zone	25 mm / 0.98 inch
Length tolerance unheated zone	± 5%, least ± 15 mm / 0.59 inch
Length tolerance heated zone	± 1%
Minimum inner bending radius	4 mm / 0.16 inch



L_{cl} = coiled length
 L_{uz} = length unheated zone

Stock range

2.2 x 4.2, Straight or coiled, connection 1,000 mm / 39.4 inch type NG (see connection options), brown / blue,
Thermocouple ungrounded

Stock ID	Total length incl. head [mm]	Wattage [W]	Length heated [mm]	Length unheated [mm]	Thermocouple type J (Fe-CuNi)
7732519	340	195	250	65	
7832519	340	195	250	65	√
7732821	370	215	280	65	
7832821	370	215	280	65	√
7733324	425	240	335	65	
7833524	425	240	335	65	√
7733829	475	295	385	65	
7833829	475	295	385	65	√
7734635	550	350	460	65	
7834635	550	350	460	65	√
7735240	610	400	520	65	
7835240	610	400	520	65	√
7736046	690	460	600	65	
7836046	690	460	600	65	√
7737661	850	610	760	65	
7837601	850	610	760	65	√
7739069	990	690	900	65	
7839069	990	690	900	65	√
7731185	1200	850	1110	65	
7831185	1200	850	1110	65	√
7731395	1400	950	1310	65	
7831395	1400	950	1310	65	√

3.0 x 3.0, straight or coiled, connection 1,000 mm / 39.4 inch, Type NG (see connection options), brown / blue,
Thermocouple ungrounded

Stock ID	Total length incl. head [mm]	Wattage [W]	Length heated [mm]	Length unheated [mm]	Thermocouple type J (Fe-CuNi)
7930316	390	215	300	65	
7940316	390	215	300	65	√
7930422	540	325	450	65	
7940422	540	325	450	65	√
7930627	740	470	650	65	
7940627	740	470	650	65	√
7940835	940	610	850	65	√
7931043	1140	630	1050	65	
7941035	1140	630	1050	65	√
7941395	1400	950	1310	65	√

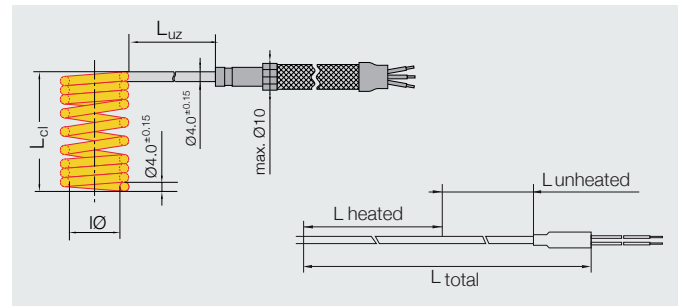
Part no. changes after adding options or coiling.

hotspring Medium /R 4.0

Coil heater with round cross section

Technical features	
Sheath material	Stainless steel
Connection head dimensions	Ø 6.9 x 25 mm / 0.27 x 0.98 inch
Minimum Length unheated zone	25 mm / 0.98 inch
Length tolerance unheated zone	± 5%, least ± 2 mm / 0.08 inch
Length tolerance heated zone	± 2,5%
Minimum inner bending radius	5 mm / 0.20 inch

Items to be configured

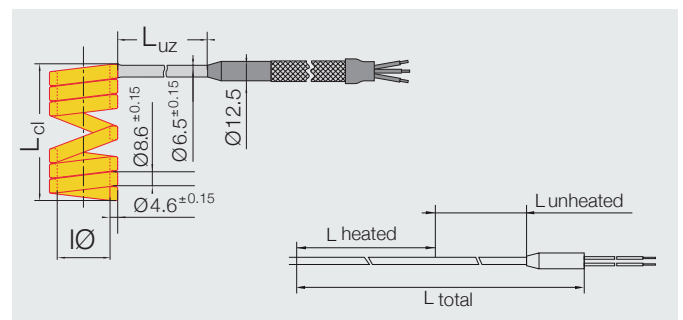


L_{cl} = coiled length
 L_{uz} = length unheated zone

hotspring Maxi /F 4.6 x 8.6

Coil heater with flat cross section with or without connection head

Technical features	
Sheath material	Stainless steel
Connection head dimensions	Ø 12.5 x 45 mm / 0.49 x 1.77 inch
Minimum Length unheated zone	45 mm / 1.77 inch
Length tolerance unheated zone	± 5%, least ± 2 mm / 0.08 inch
Length tolerance heated zone	± 1%
Minimum inner bending radius	10 mm / 0.40 inch
Connection voltage	max. 440 V



L_{cl} = coiled length
 L_{uz} = length unheated zone

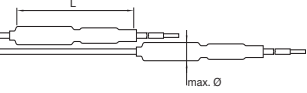
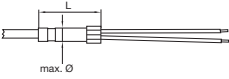
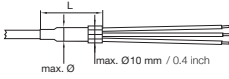
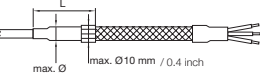
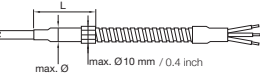
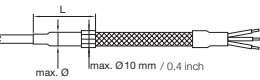
Stock range

Straight or coiled, connection type N (see connection options), Thermocouple ungrounded

Stock ID	Total length incl. head [mm]	Wattage [W]	Voltage [V]	Length heated [mm]	Length unheated [mm]	with connection-head	connection-length [mm]	Thermocouple
7508551	605	550	230	505	55	√	1500	Type K, NiCr-Ni
7508564	700	700	230	600	55	√	1500	Type K, NiCr-Ni
7508557	770	750	230	670	55	√	1500	Type K, NiCr-Ni
7508552	800	700	230	700	55	√	1500	Type K, NiCr-Ni
7508558	900	900	230	800	55	√	1500	Type K, NiCr-Ni
7508565	980	1500	230	880	55	√	1500	Type K, NiCr-Ni
7508567	1100	1100	230	1000	55	√	1500	Type K, NiCr-Ni
7508553	1215	1300	230	1115	55	√	1500	Type K, NiCr-Ni
7508554	1300	1500	230	1200	55	√	1500	Type K, NiCr-Ni
7508568	1347	1700	230	1247	55	√	1500	Type K, NiCr-Ni
7508559	1370	1600	230	1270	55	√	1500	Type K, NiCr-Ni
7508569	1500	1700	230	1400	55	√	1500	Type K, NiCr-Ni
7508555	1625	1800	230	1525	55	√	1500	Type K, NiCr-Ni
7508560	1700	1900	230	1600	55	√	1500	Type K, NiCr-Ni
7508572	1874	1700	230	1774	55	√	1500	Type K, NiCr-Ni
7508556	2310	2600	400	2210	55	√	1500	Type K, NiCr-Ni
7302521	315	300	230	250	65		1000	
7402521	315	300	230	250	65		1000	Type J, Fe-CuNi
7303527	415	450	230	350	65		1000	
7403527	415	450	230	350	65		1000	Type J, Fe-CuNi
7304531	515	550	230	450	65		1000	
7404531	515	550	230	450	65		1000	Type J, Fe-CuNi
7306543	715	800	230	650	65		1000	
7406543	715	800	230	650	65		1000	Type J, Fe-CuNi
7308550	915	1000	230	850	65		1000	
7408550	915	1000	230	850	65		1000	Type J, Fe-CuNi
7508561	2460	2800	400	2360	65		1000	Type K, NiCr-Ni

Part no. changes after adding options or coiling.

Connection options

Connection types	Micro	Mini	Midi	Classic	Medium	Maxi with head	Maxi no head
<p>Micro / Mini 2 heads</p> 	<p>PTFE insulated Cu-nickel plated leads, with 2 connection heads Ø max. 5.5 mm / 0.22 inch L_{max} 40 mm / 1.58 inch</p>						
<p>Midi small head</p> 	<p>PTFE insulated Cu-nickel plated leads, with 1 connection head Ø max. 4.9 mm / 0.193 inch, L_{max} 25 mm / 0.98 inch, max. 2.3 A</p>						
<p>Type N</p>  <p>option: ground wire</p>	<p>PTFE insulated Cu-nickel plated leads, multistranded, Ø max. 7,0 mm / 0.28 inch L = 25 mm / 0.98 inch</p>			<p>glass silk Ni-leads multistranded, Ø max. 13 mm / 0.51 inch, L = 45 mm / 1.77 inch</p>		<p>PTFE, Cu-nickel-plated, multistranded, Ø max. 10 mm / 0.4 inch, max. 7 A</p>	
<p>Type NG</p>  <p>option: ground wire</p>	<p>PTFE insulated Cu-nickel plated leads, multistranded, Ø max. 7,0 mm / 0.28 inch, L = 25 mm / 0.98 inch glass silk protective sleeving</p>			<p>glass-silk Ni-leads multistranded, Ø max. 13 mm / 0.51 inch, L = 45 mm / 1.77 inch, glass silk protective sleeving</p>		<p>PTFE, Cu-nickel-plated, multistranded, Ø max. 10 mm / 0.4 inch, max. 7 A, glass silk protective sleeving</p>	
<p>Type NM</p>  <p>option: ground wire</p>	<p>PTFE insulated Cu-nickel plated leads, multistranded, Ø max. 7,0 mm / 0.28 inch, L = 25 mm / 0.98 inch flexible metal sleeving</p>			<p>glass-silk Ni-leads multistranded, Ø max. 13 mm / 0.51 inch, L = 45 mm / 1.77 inch, flexible metal sleeving</p>		<p>PTFE, Cu-nickel-plated, multistranded, Ø max. 10 mm / 0.4 inch, max. 7 A, flexible metal sleeving</p>	
<p>Type ND</p>  <p>option: ground wire</p>	<p>PTFE insulated Cu-nickel plated leads, multistranded, Ø max. 7,0 mm / 0.28 inch, L = 25 mm / 0.98 inch braided metal sleeving</p>			<p>glass-silk Ni-leads multistranded, Ø max. 13 mm / 0.51 inch, L = 45 mm / 1.77 inch, braided metal sleeving</p>		<p>PTFE, Cu-nickel-plated, multistranded, Ø max. 10 mm / 0.4 inch, max. 7 A, braided metal sleeving</p>	

Notes



hotset

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