

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



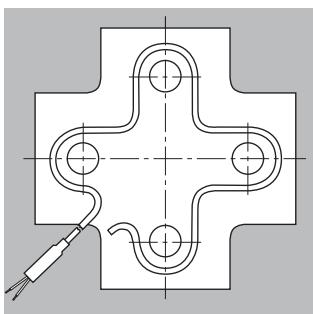
Technical key features

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
Coiled length tolerance	± 1.5% least ± 1 mm / 0.039 inch

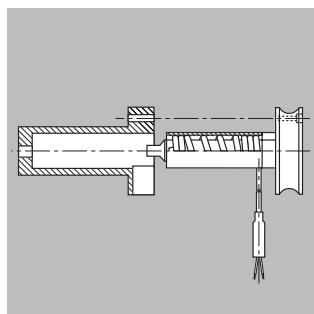
up to 0.47 inch: -0.2 / -7.9 mils
up to 1.18 inch: -3.9 / -11.8 mils
up to 1.57 inch: -7.9 / -15.7 mils
with reflection tube: +2.0 / +5.9 mils

* tested at environmental temperature

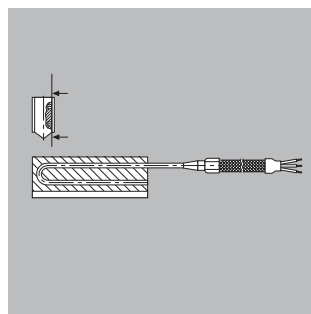
Application Fields



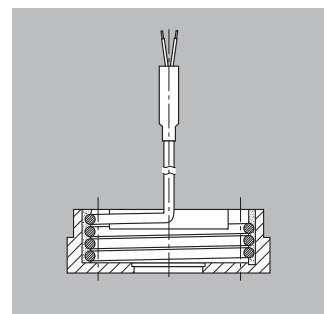
Hot runner industry
Heating of small distribution plates



Hot runner industry
Heating of various nozzles

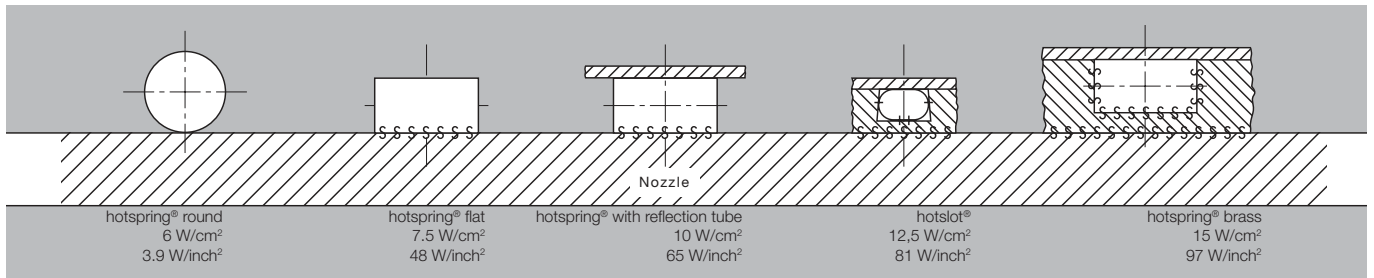


Packaging Industry
Heating of sealing bars

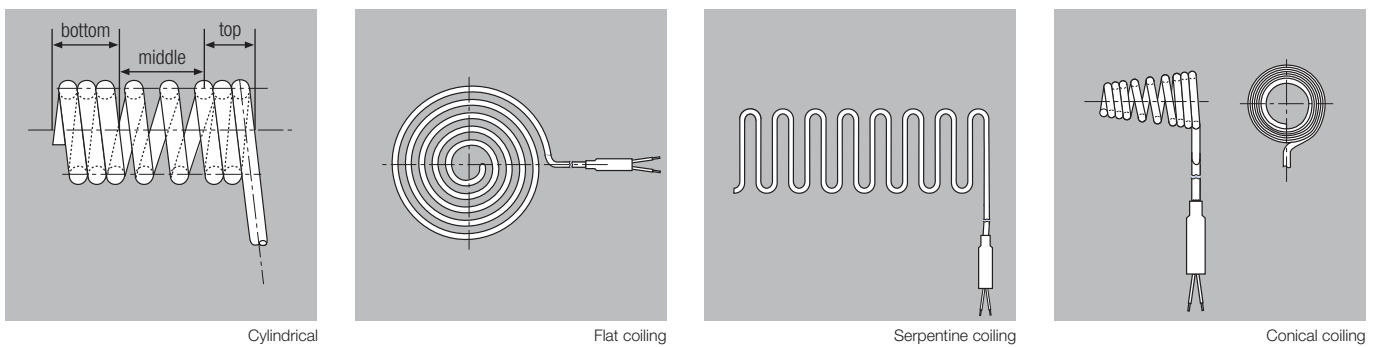


Packaging Industry
Heating of sealing jaws

Sheath surface load

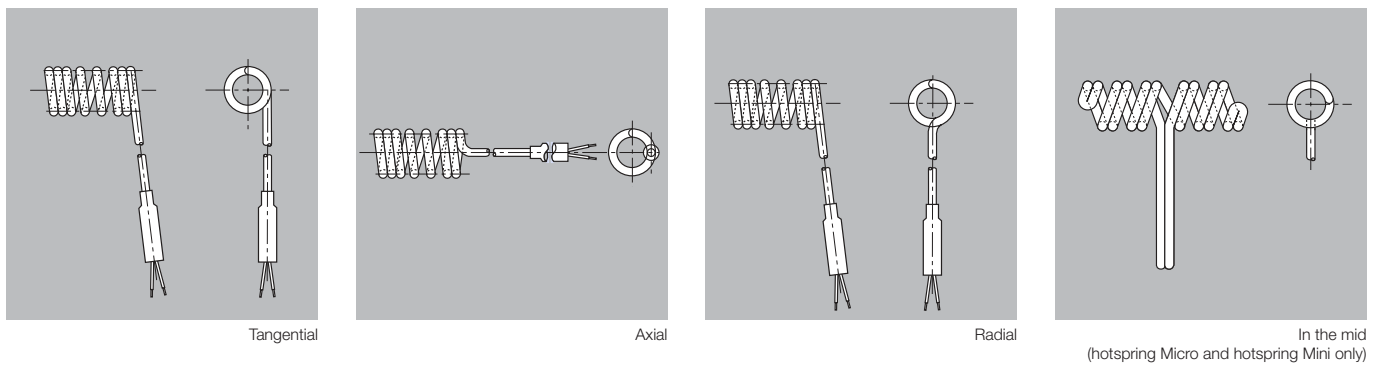


Coiling options



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

Exit options



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 [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	Casted in brass	Number of connection heads	Tangential connection head	Axial clamping band	Lock-System	
Micro /F	flat	1.0 x 1.6	300	□	□	□			2					
Mini /R	round	1.8	550	□	□	□			2					
Mini /F	flat	1.3 x 2.3	550	□	□	□	□	1*2		■	■	■		
Midi /F	flat	1.8 x 3.2	650	□	□	□		1	■*	■				
Classic /F	flat	2.2 x 4.2	1000	□	□	□	□	1		■				
Classic /Q	square	3.0 x 3.0	1000	□	□	□		1		■				
Classic /R	round	3.0	740	□		□		1						
Medium /R	round	4.0	740	□	□	□		1						
Maxi	flat	4.6 x 8.6	2100	□	□	□		0/1		■				

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

General Options



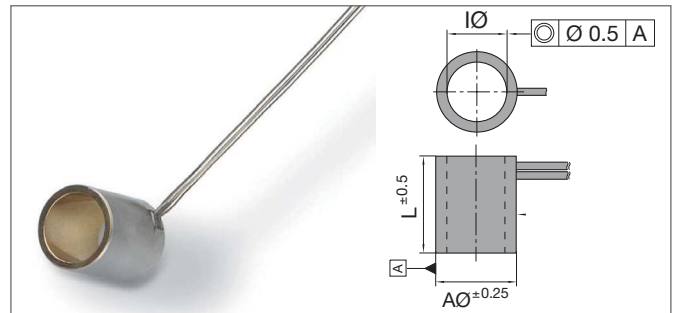
Straight

With coiling electrical specifications will be changed. Isolation 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



Casted in brass

- With or without protection tube along unheated zones
- Exit: axial or radial
- Wall thickness Mini = 2.5 mm / 0.984 inch Midi, Classic = 4.5 to 5.5 mm / 0.18 to 0.22 inch
- Inner Ø-tolerance: +0.05 mm / +2.0 mils or H7
- Outer Ø-tolerance: min ±0.25 mm / ±9.8 mils
- Temperature at brass sheath: max 650 °C / 1200 °F
- Inner Ø: 7 to 28 mm / 0.27 to 1.10 inch (more on request)
- Max. length: 200 mm / 7.9 inch (if Inner Ø > 28 mm / 1.10 inch max. length : 3x Inner Ø)

General 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



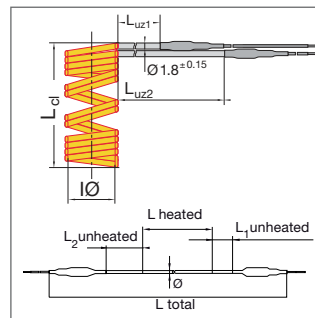
hotspring Lock-System
Front installation and removal
Ø I = 15 ... 25 mm / 0.59 ... 0.98 inch
Length = 25 ... 60 mm / 0.98 ... 2.36 inch
Wall thickness 2.8 mm / 0.11 inch

hotspring® Micro /F 1.0 x 1.6

Coil heater with flat cross section

Specifications

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 / 0.59 inch
Length tolerance heated zone	± 5%
Minimum inner bending radius	3 mm / 0.12 inch

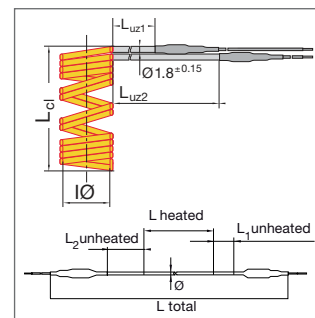
Items to be configured

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

hotspring® Mini /F 1.3 x 2.3
hotspring® Mini /R 1.8

Coil heater with flat or round cross section

Specifications

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 / 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, 230 V

Stock ID	Total length incl. heads [mm]	Wattage [W] coiled, flat	Length [mm] heated	Length [mm] unheated
7580469	556	120	296	65 / 115
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, 230 V,
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
7580480	556	120	296	65 / 115
7580521	642	160	382	65 / 115
7580682	735	210	475	65 / 115
7580783	835	250	575	65 / 115
7580856	960	300	700	65 / 115
7581068	1110	350	850	65 / 115
7581284	1306	450	1046	65 / 115

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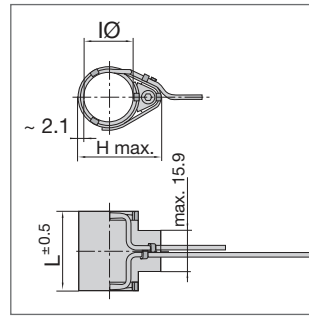
Coil Heater

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

Coil heater with flat cross section

Specifications

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



Stock range

Sheath material nickel, connection voltage 240 V, connection 1,800 mm / 70.9 inch, PTFE isolated, Cu-nickel plated, multi stranded

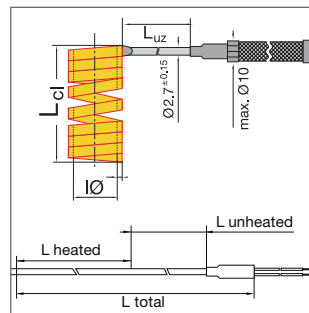
Stock ID	Total length [mm]	Wattage [W]	Length unheated [mm]	Inner Ø [mm]	Max. height [mm]
7603019	30.5	268	100 / 150	19.05	32.3
7603020	30.5	250	100 / 150	22.20	36.4

hotspring® Midi /F 1.8 x 3.2

Coil heater with flat cross section

Specifications

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%, least ± 2 mm / 0.08 inch
Length tolerance heated zone	± 3%
Minimum inner bending radius	4 mm / 0.16 inch



L_{coiled} = coiled length
 $L_{unheated}$ = 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)
7540300	340	130	250	65	
7840300	340	130	250	65	<input type="checkbox"/>
7540301	390	160	300	65	
7840301	390	160	300	65	<input type="checkbox"/>
7540302	440	190	350	65	
7840302	440	190	350	65	<input type="checkbox"/>
7540303	490	220	400	65	
7840303	490	220	400	65	<input type="checkbox"/>
7540304	540	250	450	65	
7840304	540	250	450	65	<input type="checkbox"/>
7540305	590	275	500	65	
7840305	590	275	500	65	<input type="checkbox"/>
7540306	690	330	600	65	
7840306	690	330	600	65	<input type="checkbox"/>
7540307	840	400	750	65	
7840307	840	400	750	65	<input type="checkbox"/>

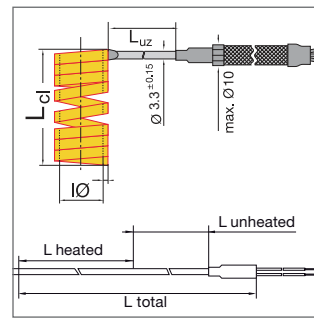
Part no. changes after adding options or coiling.

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

Specifications

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_{uz} = 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	<input type="checkbox"/>
7732821	370	215	280	65	
7832821	370	215	280	65	<input type="checkbox"/>
7733324	425	240	335	65	
7833524	425	240	335	65	<input type="checkbox"/>
7733829	475	295	385	65	
7833829	475	295	385	65	<input type="checkbox"/>
7734635	550	350	460	65	
7834635	550	350	460	65	<input type="checkbox"/>
7735240	610	400	520	65	
7835240	610	400	520	65	<input type="checkbox"/>
7736046	690	460	600	65	
7836046	690	460	600	65	<input type="checkbox"/>
7737661	850	610	760	65	
7837601	850	610	760	65	<input type="checkbox"/>
7739069	990	690	900	65	
7839069	990	690	900	65	<input type="checkbox"/>
7731185	1200	850	1110	65	
7831185	1200	850	1110	65	<input type="checkbox"/>
7731395	1400	950	1310	65	
7831395	1400	950	1310	65	<input type="checkbox"/>

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

7930316	390	215	300	65	
7940316	390	215	300	65	<input type="checkbox"/>
7930422	540	325	450	65	
7940422	540	325	450	65	<input type="checkbox"/>
7930627	740	470	650	65	
7940627	740	470	650	65	<input type="checkbox"/>
7930835	940	610	850	65	
7940835	940	610	850	65	<input type="checkbox"/>
7931043	1140	630	1050	65	
7941035	1140	630	1050	65	<input type="checkbox"/>
7931395	1400	950	1310	65	
7941395	1400	950	1310	65	<input type="checkbox"/>

Part no. changes after adding options or coiling.

hotspring®

Coil Heater

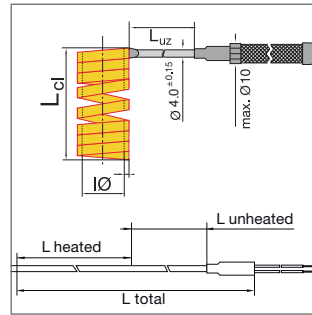
hotspring® Medium /R 4.0

Coil heater with round cross section

Specifications

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

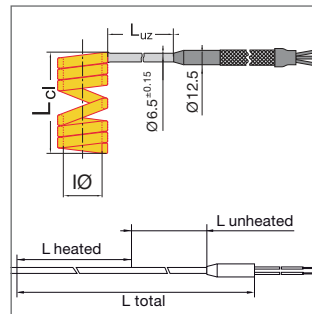
Coil heater with flat cross section with or without connection head

Specifications

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

Stock range

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



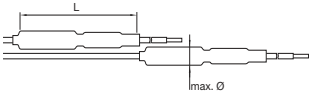
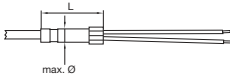
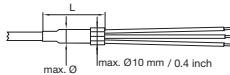
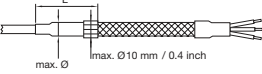
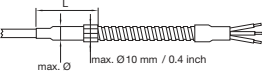
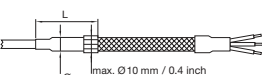
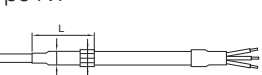

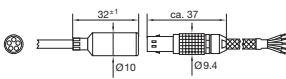
L_{cl} = coiled length
 L_{uz} = length unheated zone



Stock ID	Total length [mm] incl. head	Wattage [W]	Voltage [V]	L heated [mm]	L unheated [mm]	with connection-head	connection-length [mm]	Thermo-couple
7508551	605	550	230	505	55	<input type="checkbox"/>	1.500	Type K, NiCr-Ni
7508564	700	700	230	600	55	<input type="checkbox"/>	1.500	Type K, NiCr-Ni
7508557	770	750	230	670	55	<input type="checkbox"/>	1.500	Type K, NiCr-Ni
7508552	800	700	230	700	55	<input type="checkbox"/>	1.500	Type K, NiCr-Ni
7508558	900	900	230	800	55	<input type="checkbox"/>	1.500	Type K, NiCr-Ni
7508565	980	1500	230	880	55	<input type="checkbox"/>	1.500	Type K, NiCr-Ni
7508566	1000	1000	230	900	55	<input type="checkbox"/>	1.500	Type K, NiCr-Ni
7508567	1100	1100	230	1000	55	<input type="checkbox"/>	1.500	Type K, NiCr-Ni
7508553	1215	1300	230	1115	55	<input type="checkbox"/>	1500	Type K, NiCr-Ni
7508554	1300	1500	230	1200	55	<input type="checkbox"/>	1.500	Type K, NiCr-Ni
7508568	1347	1700	230	1247	55	<input type="checkbox"/>	1.500	Type K, NiCr-Ni
7508559	1370	1600	230	1270	55	<input type="checkbox"/>	1.500	Type K, NiCr-Ni
7508569	1500	1700	230	1400	55	<input type="checkbox"/>	1.500	Type K, NiCr-Ni
7508555	1625	1800	230	1525	55	<input type="checkbox"/>	1.500	Type K, NiCr-Ni
7508560	1700	1900	230	1600	55	<input type="checkbox"/>	1.500	Type K, NiCr-Ni
7508570	1737	1700	230	1637	55	<input type="checkbox"/>	1.500	Type K, NiCr-Ni
7508571	1800	2000	400	1700	55	<input type="checkbox"/>	1.500	Type K, NiCr-Ni
7508572	1874	1700	230	1774	55	<input type="checkbox"/>	1.500	Type K, NiCr-Ni
7508556	2310	2600	400	2210	55	<input type="checkbox"/>	1.500	Type K, NiCr-Ni
7302521	315	300	230	250	65		1.000	
7402521	315	300	230	250	65		1.000	Type J, Fe-CuNi
7303527	415	450	230	350	65		1.000	
7403527	415	450	230	350	65		1.000	Type J, Fe-CuNi
7304531	515	550	230	450	65		1.000	
7404531	515	550	230	450	65		1.000	Type J, Fe-CuNi
7306543	715	800	230	650	65		1.000	
7406543	715	800	230	650	65		1.000	Type J, Fe-CuNi
7308550	915	1000	230	850	65		1.000	
7408550	915	1000	230	850	65		1.000	Type J, Fe-CuNi
7508561	2460	2800	400	2360	65		1.000	Type K, NiCr-Ni
7508573	2960	2800	400	2860	65		1.000	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
Micro / Mini 2 heads 	PTFE insulated Cu-nickel plated leads, with 2 connection heads \varnothing max. 5.5 mm / 0.22 inch L_{max} 40 mm / 1.58 inch						
Mini single headed / Midi small head 	PTFE insulated Cu-nickel plated leads, with 1 connection head \varnothing max. 4.9 mm / 0.193 inch, L_{max} 25 mm / 0.98 inch, max. 2.3 A						
Type N  option: ground wire			PTFE insulated Cu-nickel plated leads, multistranded, \varnothing max. 7,0 mm / 0.28 inch $L = 25$ mm / 0.98 inch			glass silk Ni-leads multistranded, \varnothing max. 13 mm/0.51 inch, $L = 45$ mm / 1.77 inch,	PTFE-Cu-nickel-plated, multistranded, \varnothing max. 10 mm / 0.4 inch, max. 7 A
Type NG  option: ground wire			PTFE insulated Cu-nickel plated leads, multistranded, \varnothing max. 7,0 mm / 0.28 inch, $L = 25$ mm / 0.98 inch glass silk protective sleeving			glass-silk Ni-leads multistranded, \varnothing max. 13 mm/0.51 inch, $L = 45$ mm / 1.77 inch, glass silk protective sleeving	PTFE-Cu-nickel-plated, multistranded, \varnothing max. 10 mm / 0.4 inch, max. 7 A, glass silk protective sleeving
Type NM  option: ground wire			PTFE insulated Cu-nickel plated leads, multistranded, \varnothing max. 7,0 mm / 0.28 inch, $L = 25$ mm / 0.98 inch flexible metal sleeving			glass-silk Ni-leads multistranded, \varnothing max. 13 mm/0.51 inch, $L = 45$ mm / 1.77 inch, flexible metal sleeving	PTFE, Cu-nickel-plated, multistranded, \varnothing max. 10 mm / 0.4 inch, max. 7 A, flexible metal sleeving
Type ND  option: ground wire			PTFE insulated Cu-nickel plated leads, multistranded, \varnothing max. 7,0 mm / 0.28 inch, $L = 25$ mm / 0.98 inch braided metal sleeving			glass-silk Ni-leads multistranded, \varnothing max. 13 mm/0.51 inch, $L = 45$ mm / 1.77 inch, braided metal sleeving	PTFE, Cu-nickel-plated, multistranded, \varnothing max. 10 mm / 0.4 inch, max. 7 A, braided metal sleeving
Type NT  option: ground wire			PTFE insulated Cu-nickel plated leads, multistranded, \varnothing max. 7,0 mm / 0.28 inch, $L = 25$ mm / 0.98 inch PTFE sleeving				
Plug connection LEMO 3 pins 			max. 8,0 A at 20 °C / 68°F				
Plug connection LEMO 5 pins 			max. 6,5 A at 20 °C / 68°F				