Elektron-ETTO s.r.o.
Hustopeče nad Bečvou • IČO: 26906040 • DIČ: CZ26906040
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Catalogue of heating elements

For heating liquids

Standard dimensions and power variants from the production range of Elektron-ETTO s.r.o.

Elektron-ETTO s.r.o. manufactures a complete range of tubular heating elements intended for direct and indirect heating of liquids — from single-phase elements for boilers, through three-phase industrial water heaters with flange, to special elements for heating oils, washing machines and dishwashers, honey and mash. The elements are manufactured in compliance with the harmonised standard EN 60335-1. This catalogue lists standard dimensions and power variants from the current production range — individual parameters of the heating element can be customised according to customer requirements.

Product overview

Heating elements for direct water heating in boilers

Type 01122 • Type 91573 • Type 01694 • Type 01855

Flanged heating elements for industrial water heaters

Type 01126 • Type 01129 • Type 01218

Heating elements for washing machines, dishwashers and similar appliances

Type 01038 • Type 01155 • Type 01201

Heating elements for heating oils and fuels

Type 01006 • Type 01016 • Type 01020 • Type 01117 • Type 01248

Heating elements for special applications (honey, indirect heating, molds)

Type 01163 • Type 05300 • Type 01336

Additional drawings

Type 01001 • Type 01002 • Type 01004 • Type 01010 • Type 01040 • Type 11031 • Type 11120

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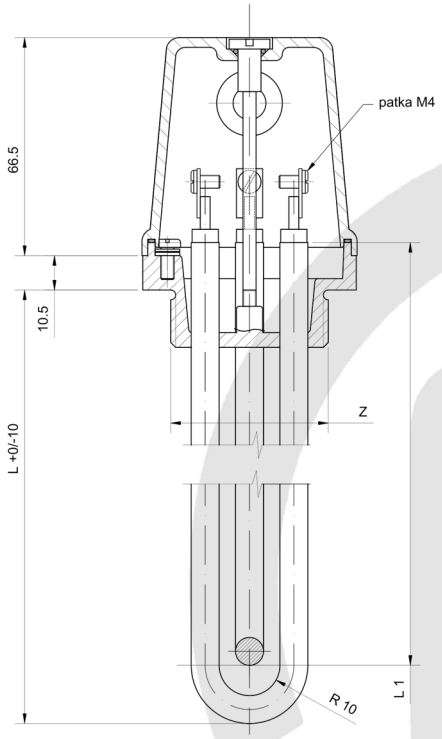
Type 01122/. . . .

Heating element designed for direct water heating in boilers, electric kettles and similar appliances. Operating pressure 1.0 MPa. The element consists of three U-shaped heating branches secured in a hexagonal head SW 65 (brass flanges — rods brazed) or SW 60 (stainless-steel flanges — rods TIG-welded), with M48 × 2 or G 6/4" thread. The flange is fitted with a cover of IP 54 protection, resistant up to 100 °C or up to 140 °C. The standard version up to 6 kW input can be connected to 230 V or 230/400 V. The standard version of 7.5 kW or higher input can be connected to 400 V or 400/230 V.

The first digit of the type number after the slash specifies the element version regarding the thread, material of the heating branches and the flange (see the table).



Versions table (Type 01122/. . . 0)

Type designation	W	V	heated length (mm)	in stock
1122/0010	1,5 kW	230 V	270	No
1122/0011	1,5 kW	230 V	150	Yes
1122/4011	1,5 kW	230 V	150	Yes
1122/4012	1,5 kW	230 V	290	No
1122/0020	2 kW	230 V	178	Yes
1122/4020	2 kW	230 V	178	Yes
1122/4022	2 kW	230 V	340	No
1122/0030	2,4 kW	230 V	203	Yes
1122/4030	2,4 kW	230 V	203	Yes
1122/4032	2,4 kW	230 V	360	No
1122/0040	3 kW	230 V	240	Yes
1122/4040	3 kW	230 V	240	Yes
1122/4043	3 kW	230 V	390	No
1122/0050	4 kW	230 V	303	Yes
1122/4050	4 kW	230 V	303	Yes

1122/4052	4 kW	230 V	420	No
1122/0060	4,5 kW	230 V	333	Yes
1122/4060	4,5 kW	230 V	333	Yes
1122/4062	4,5 kW	230 V	500	No
1122/0065	5 kW	230 V	365	No
1122/0070	6 kW	230 V	428	Yes
1122/4070	6 kW	230 V	428	Yes
1122/4072	6 kW	230 V	520	No
1122/0080	7,5 kW	400 V	520	Yes
1122/4080	7,5 kW	400 V	520	Yes
1122/2082	7,5 kW	400 V	610	No
1122/4082	7,5 kW	400 V	610	No
1122/0090	9 kW	400 V	615	Yes
1122/4092	9 kW	400 V	650	No
1122/0100	10 kW	400 V	700	No
1122/0110	12 kW	400 V	800	No

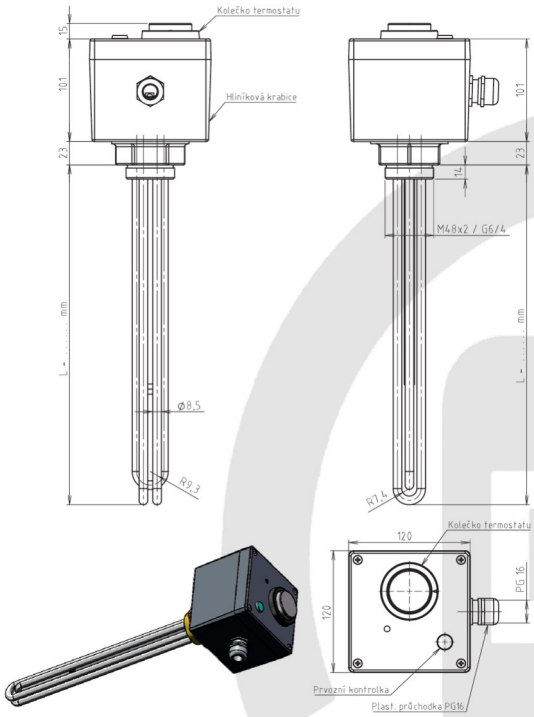
Element version — thread, material of heating branches and flange

Version	thread	rod material	flange material
0	M48 x 2	Cu nickel-plated	brass
1	G 6/4"	Cu nickel-plated	brass
2	M48 x 2	Cu	brass
3	G 6/4"	Cu	brass
4	M48 x 2	stainless steel	brass
5	G 6/4"	stainless steel	brass
6	M48 x 2	stainless steel	stainless steel
7	G 6/4"	stainless steel	stainless steel

Type 91573/. . . .

The heating element is designed for direct heating of water and similar liquids in electric water heaters, electric kettles and similar appliances. It is also used as a secondary heat source in heating systems of solar installations and heat pumps. The element is equipped with a thermostat with stepless control and a manually resettable capillary safety cut-out. Operating pressure 1.0 MPa. The heating branches are made of nickel-plated copper or stainless steel. The head is made of brass or stainless steel with a hexagonal SW 60. For appliances with DEMI water or similar liquids, the element is made of Incoloy 800. Aluminium cover with IP 54 protection.

The first digit of the type number after the slash specifies the element version regarding the thread, material of the heating branches and the flange (see the table).



Versions table (Type 91573/. . . 0)

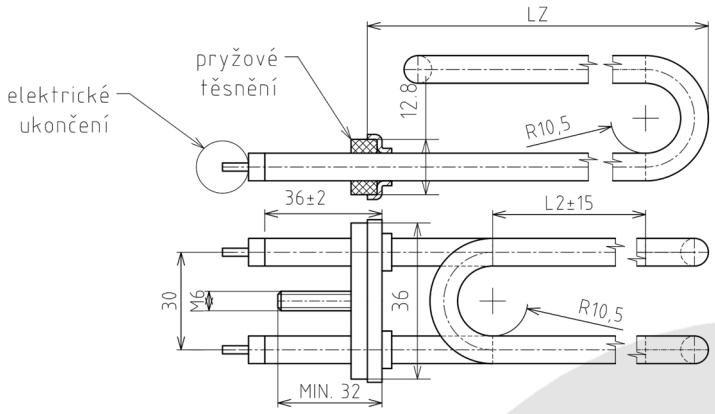
Type designation	W	V	heated length (mm)
91573/0010	1,5 kW	230 V	240
91573/0011	1,5 kW	230 V	240
91573/0020	2 kW	230 V	240
91573/0030	2,4 kW	230 V	240
91573/0040	3 kW	230 V	240
91573/0050	4 kW	230 V	305
91573/0060	4,5 kW	230 V	335
91573/0065	5 kW	230 V	365
91573/0070	6 kW	230 V	430
91573/0080	7,5 kW	400 V	520
91573/2082	7,5 kW	400 V	610
91573/0090	9 kW	400 V	615
91573/4092	9 kW	400 V	650
91573/0100	10 kW	400 V	700
91573/0110	12 kW	400 V	800

Element version — thread, material of heating branches and flange

Version	thread	rod material	flange material
0	M48 x 2	Cu nickel-plated	brass
1	G 6/4"	Cu nickel-plated	brass
2	M48 x 2	Cu	brass
3	G 6/4"	Cu	brass
4	M48 x 2	stainless steel	brass
5	G 6/4"	stainless steel	brass
6	M48 x 2	stainless steel	stainless steel
7	G 6/4"	stainless steel	stainless steel

Type 01694/. . . .

Single-phase heating element for direct water heating in boilers.

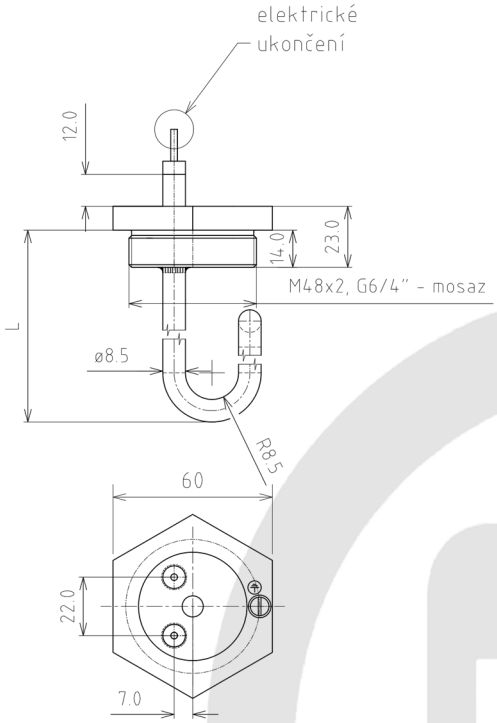


Versions table (Type 01694/. . . 0)

Version	U [V]	P [W]	Lz	L2	rod material
010	230	1000	215	114	Cu, nickel-plated
020	230	1350	210	90	Cu, nickel-plated
030	230	1600	300	190	Cu, nickel-plated
040	230	1750	270	175	Cu, nickel-plated
050	230	2400	375	275	Cu, nickel-plated
060	230	2000	375	170	Cu, nickel-plated
070	230	850	155	50	Cu, nickel-plated
080	120	1000	240	145	Cu, nickel-plated
011	230	1000	215	114	Cu
021	230	1350	210	90	Cu
031	230	1600	300	190	Cu
041	230	1750	270	175	Cu
051	230	2400	375	275	Cu
061	230	2000	375	170	Cu
071	230	850	155	50	Cu

Type 01855/. . . .

Single-phase heating element for direct water heating in boilers. Maximum operating pressure 1 MPa. The material of the heating rods is copper, nickel-plated copper or stainless steel depending on the material of the tank shell.



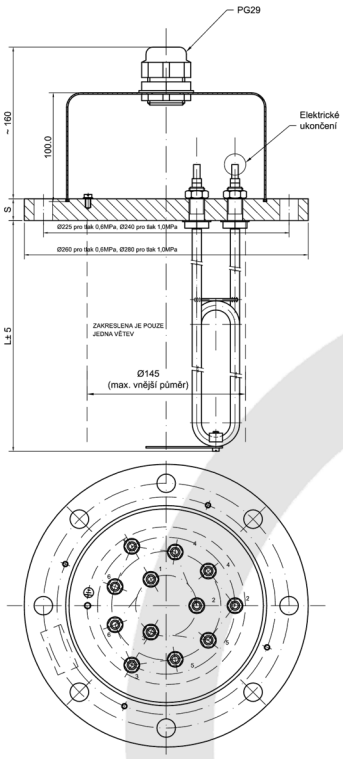
Versions table (Type 01855/. . . 0)

Version	U [V]	P [W]	L	Z	rod + finish	note
001	230	800	285	M48x2	Cu nickel-plated	U-shaped rod
002	230	1000	370	M48x2	Cu nickel-plated	U-shaped rod
003	230	1600	293	M48x2	Cu nickel-plated	
004	230	2000	353	M48x2	Cu nickel-plated	
005	230	2400	363	M48x2	Cu nickel-plated	
201	230	800	285	M48x2	Cu	U-shaped rod
202	230	1000	370	M48x2	Cu	U-shaped rod
203	230	1600	293	M48x2	Cu	
204	230	2000	353	M48x2	Cu	
205	230	2400	363	M48x2	Cu	
301	230	800	285	G 6/4"	Cu	U-shaped rod
302	230	1000	370	G 6/4"	Cu	U-shaped rod
303	230	1600	293	G 6/4"	Cu	
304	230	2000	353	G 6/4"	Cu	
305	230	2400	363	G 6/4"	Cu	
401	230	800	285	M48x2	stainless	U-shaped rod

402	230	1000	370	M48x2	stainless	U-shaped rod
403	230	1600	293	M48x2	stainless	
404	230	2000	353	M48x2	stainless	
405	230	2400	363	M48x2	stainless	
501	230	800	285	G 6/4"	stainless	U-shaped rod
502	230	1000	370	G 6/4"	stainless	U-shaped rod
503	230	1600	293	G 6/4"	stainless	
504	230	2000	353	G 6/4"	stainless	
505	230	2400	363	G 6/4"	stainless	

Type 01126/. . . .

Heating element for direct water heating at an operating pressure up to 0.6 MPa or up to 1 MPa. The material of the heating rods is copper, nickel-plated copper or stainless steel depending on the material of the tank shell. IP 42 protection. Counter-flange see EN 1092-1.



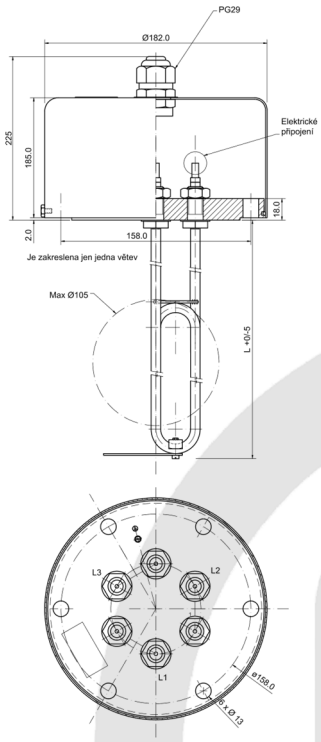
Versions table (Type 01126/. . . 0)

Version	U [V]	P [W]	L [mm]	ØD	ØD1	S	Jt [MPa]	no. and size of bolts	rod material
001	400V/230	15000	505	260	225	20	0,6	8ks M16x60 Fe/Ni	Cu/Ni
002	400V/230	18000	575	260	225	20	0,6	8ks M16x60 Fe/Ni	Cu/Ni
003	400V/230	24000	735	260	225	20	0,6	8ks M16x60 Fe/Ni	Cu/Ni
004	400V/230	30000	870	260	225	20	0,6	8ks M16x60 Fe/Ni	Cu/Ni
0021	400V/230	18000	575	260	225	20	0,6	8ks M16x60 Fe/Ni	Cu - untreated
0031	400V/230	24000	735	260	225	20	0,6	8ks M16x60 Fe/Ni	Cu - untreated
2010	400V/230	15000	505	280	240	24	1,0	8ks M20x80 Fe/Ni	Cu/Ni

2011	400V/230	15000	505	280	240	24	1,0	8ks M20x80 Fe/Ni	Cu - untreated
2020	400V/230	18000	575	280	240	24	1,0	8ks M20x80 Fe/Ni	Cu/Ni
2030	400V/230	24000	735	280	240	24	1,0	8ks M20x80 Fe/Ni	Cu/Ni
2040	400V/230	30000	870	280	240	24	1,0	8ks M20x80 Fe/Ni	Cu/Ni
2041	400V/230	30000	870	280	240	24	1,0	8ks M20x80 Fe/Ni	Cu - untreated
2042	400V/230	30000	870	260	225	20	0,6	8ks M16x60 Fe/Ni	Cu - untreated
2050	400V/230	24000	735	280	240	24	1,0	8ks M20x80 Fe/Ni	Cu - untreated
501	400V/230	15000	505	260	225	20	0,6	8ks M16x60 Fe/Ni	17350
502	400V/230	18000	575	260	225	20	0,6	8ks M16x60 Fe/Ni	17350
503	400V/230	24000	735	260	225	20	0,6	8ks M16x60 Fe/Ni	17350
504	400V/230	30000	870	260	225	20	0,6	8ks M16x60 Fe/Ni	17350
7010	400V/230	15000	505	280	240	24	1,0	8ks M20x80 Fe/Ni	17350
7020	400V/230	18000	575	280	240	24	1,0	8ks M20x80 Fe/Ni	17350
7030	400V/230	24000	870	280	240	24	1,0	8ks M20x80 Fe/Ni	17350
7040	400V/230	30000	735	280	240	24	1,0	8ks M20x80 Fe/Ni	17350

Type 01129/. . . .

Heating element for direct water heating at an operating pressure up to 1 MPa. The material of the heating rods is copper, nickel-plated copper or stainless steel depending on the material of the tank shell. IP 42 protection.

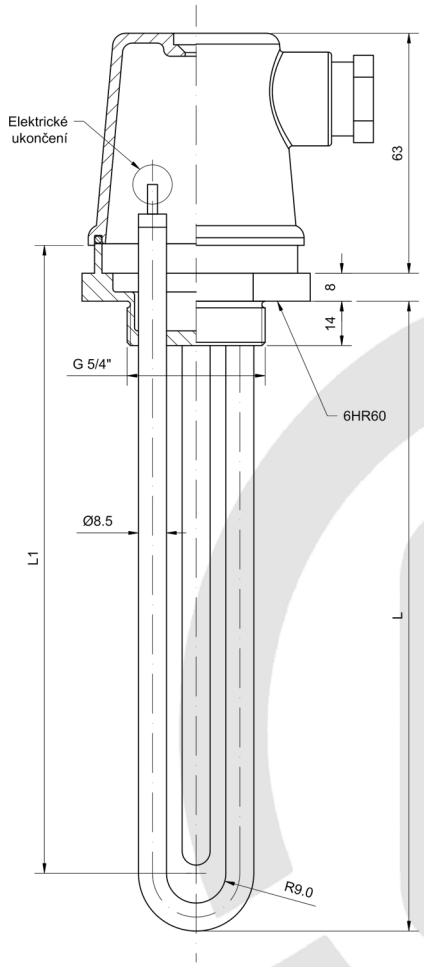


Versions table (Type 01129/. . . 0)

Version	U [V]	P [W]	L [mm]	rod material
001	400	7500	505	Cu/Ni
002	400	9000	505	Cu/Ni
003	400	12000	705	Cu/Ni
004	400	15000	805	Cu/Ni
501	400	7500	505	17350
502	400	9000	505	17350
503	400	12000	705	17350
504	400	15000	805	17350
505	500	15000	860	17350

Type 01218/. . . .

Three-phase heating element with G 5/4" thread for direct heating of liquids. Maximum operating pressure 1 MPa. The material of the heating rods is copper, nickel-plated copper or stainless steel depending on the material of the tank shell and the liquid specification. IP 54 protection.

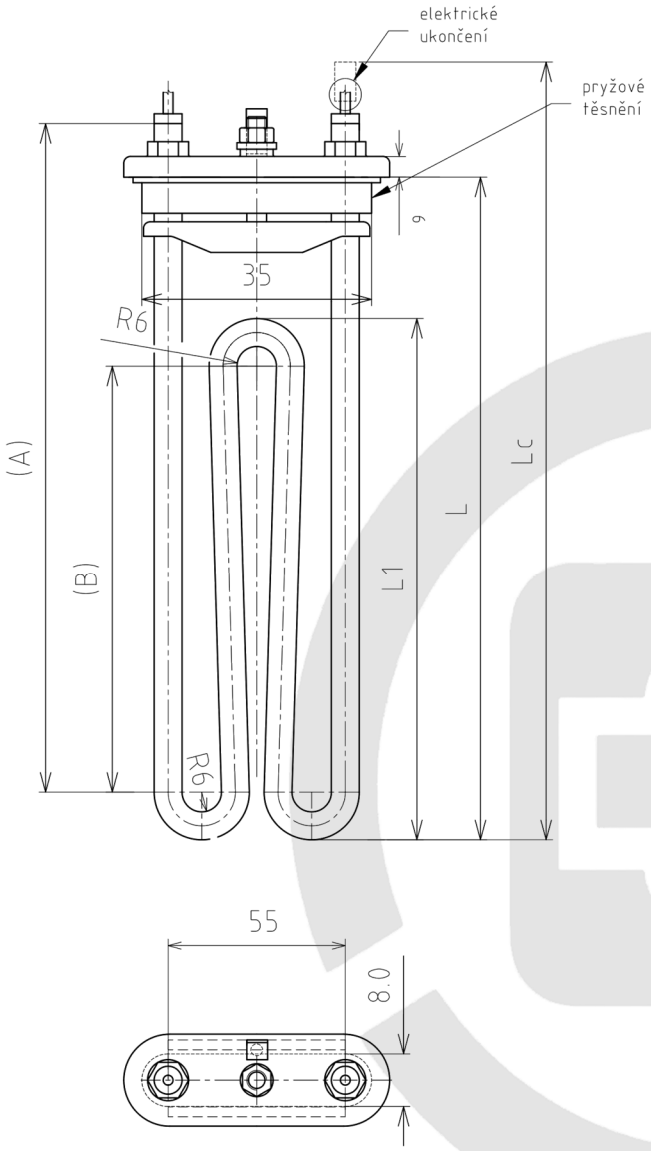


Versions table (Type 01218/. . . 0)

Version	U [V]	P [W]	L [mm]	rod material
001	230	3000	250	17 350
005	230	2400	205	Cu
006	230	3000	250	Cu
010	230/400V	4500	360	17 350
011	230/400V	6000	430	Cu

Type 01038/. . . .

Heating element for direct water heating in washing machines and similar appliances.



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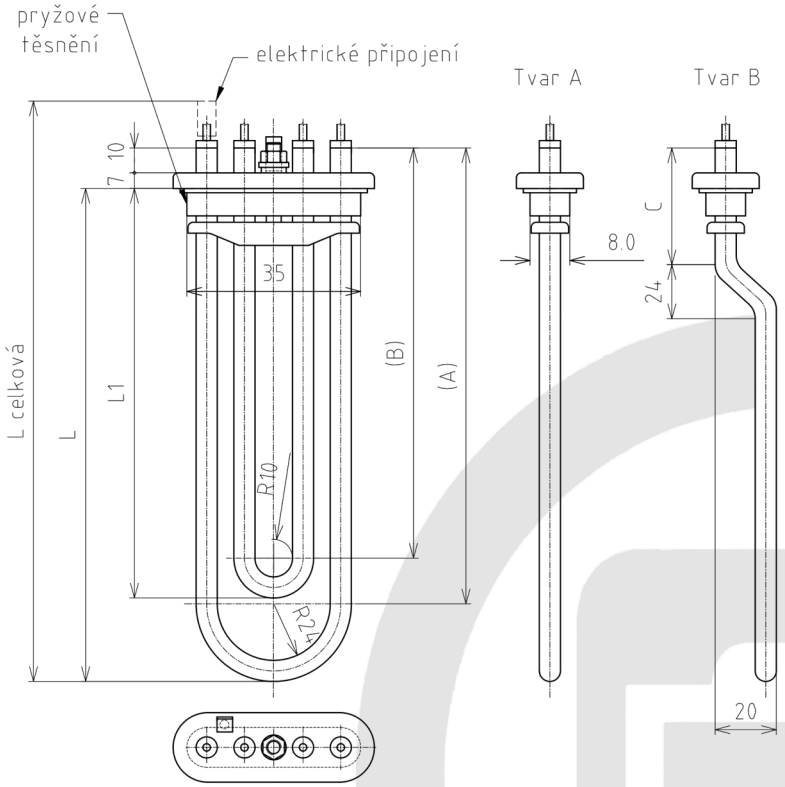
Type 01155/. . . .

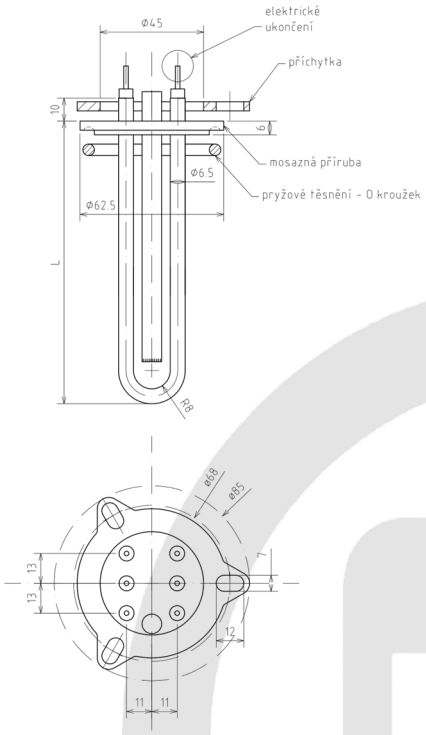
Heating element with two heating rods for direct water heating in washing machines and similar appliances.



Type 01201/. . . .

Heating element for direct water heating in dishwashers.

Version 0010 is available for immediate sale from stock.

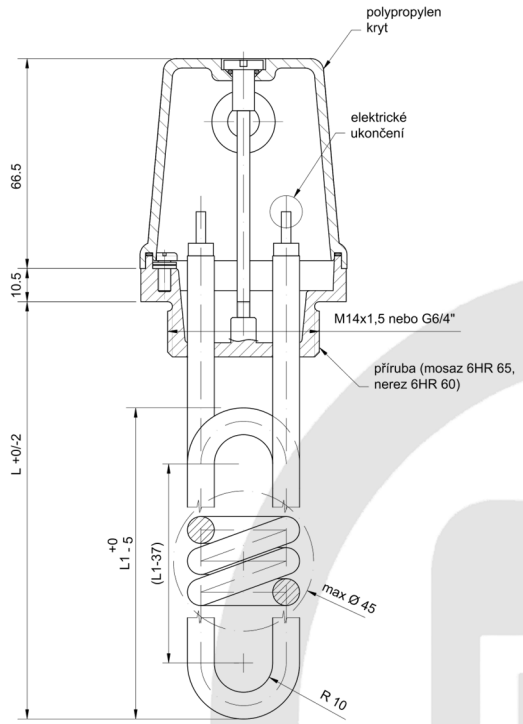


Versions table (Type 01201/. . . 0)

Version	U [V]	P [W]	L	sensor pocket	Ø rod	note
0010	230	3x2000	326	ne	6,5	
0011	230	3x2000	326	ne	8,5	
0020	230	3x1333	326	ne	6,5	
0030	400	3x3000	440	ne	6,5	
0040	230	3x1333	326	ano	6,5	
0050	230	3x2000	326	ano	6,5	
0090	230	3x4000	600	ano	8,5	
0012	230	3x2000	326	ne	6,5	
0014	230	3x2000	440	ne	8,5	
0013	230	3x2000	326	ne	8,5	Y connection

Type 01006/. . . .

Single-phase heating element for direct heating of oils or similar liquids. The watt density of the heating rod (W/cm²) is selected based on the oil specification so that no carbonisation occurs. IP 54 protection. Operating pressure up to 0.6 MPa. Cover resistant up to 100 °C or up to 140 °C.

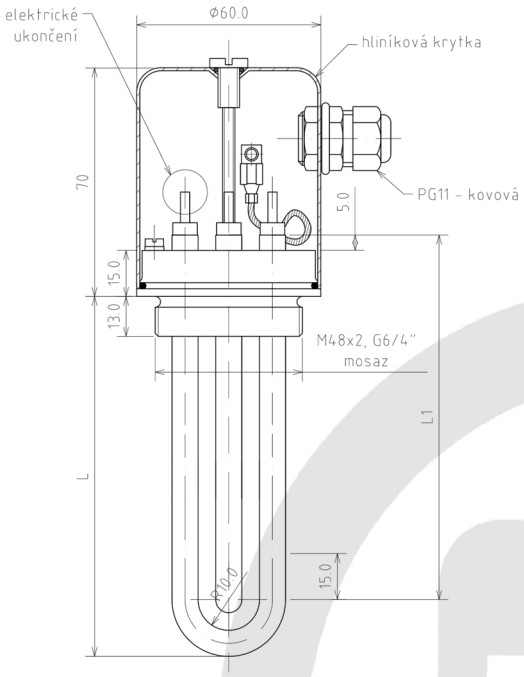


Versions table (Type 01006/. . . 0)

Version	U [V]	P [W]	L [mm]	Z
001	230	2000	640	M48x2
002	230	1500	355	M48x2
003	230	500	180	M48x2
004	230	500	380	M48x2
005	22,8	160	190	M48x2
006	45,6	320	190	M48x2
007	230	2000	550	M48x2
011	230	500	300	M48x2
012	230	750	450	M48x2
013	500	2000	300	G1 1/2"
014	230	1000	580	M48x2
015	230	500	150	M48x2
017	400	1800	598	M48x2
018	230	1250	680	M48x2
019	24	300	250	G1 1/2"
020	24	300	250	M48x2
022	250	1000	580	M48x2
023	230	800	180	G1 1/2"
024	230	1000	580	G1 1/2"

Type 01016/. . . .

Heating element for direct heating of liquids with an aluminium cover for greater mechanical and thermal resistance. IP 54 protection. Maximum operating pressure 1 MPa. The flange is fitted with a hexagonal SW 50.

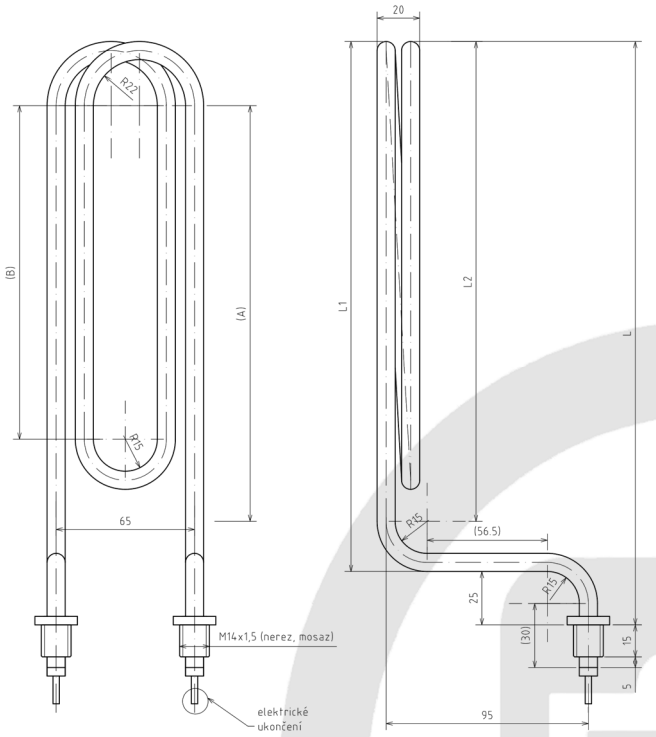


Versions table (Type 01016/. . . 0)

Version	U [V]	P [W]	L	L1	Z	rod material
101	400V/230	9000	800	801,5	M48x2	Cu
001	230/400V	4500	1000	1001,5	G1 1/2"	AISI 316L
002	230/400V	4500	945	944,5	G1 1/2"	AISI 321
003	230/400V	4000	345	346,5	M48x2	Cu
004	230/400V	3000	390	391,5	G1 1/2"	AISI 316L
005	230/400V	3000	425	426,5	G1 1/2"	AISI 321
006	230/400V	3000	425	426,5	G1 1/2"	Incoloy 800
007	230/400V	2800	390	391,5	G1 1/2"	AISI 321
008	230/400V	2800	390	391,5	G1 1/2"	Incoloy 800
009	230/400V	3000	800	801,5	M48x2	AISI 304
0010	230/400V	6000	440	441,5	G1 1/2"	AISI 321
011	230/400V	3500	450	451,5	M48x2	AISI 321
012	230/400V	3000	315	316,5	G1 1/2"	AISI 316L
013	230/400V	3000	230	231,5	G1 1/2"	AISI 316L
014	230/400V	9000	620	621,5	G1 1/2"	AISI 316L
015	400V/230	4000	1240	1241,5	G1 1/2"	AISI 321
016	230/400V	2000	895	896,5	M48x2	AISI 321
017	230/400V	2667	985	986,5	M48x2	AISI 321
018	230/400V	1500	270	271,5	G1 1/2"	AISI 304
020	400V/230	4500	1150	1146,5	G1 1/2"	AISI 304

Type 01020/. . . .

Heating element located at the bottom of tanks for direct heating of liquids (oil in fryers, steam generators etc.).

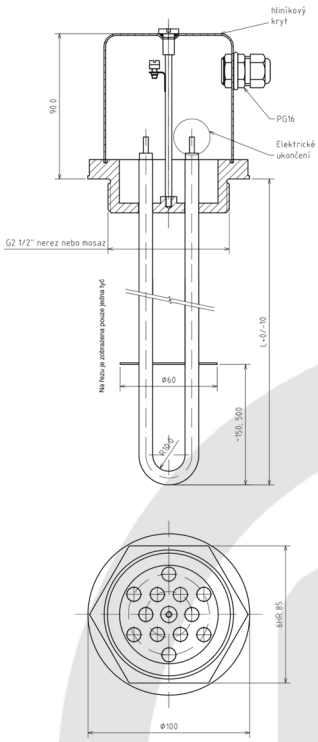


Versions table (Type 01020/. . . 0)

Version	U [V]	P [W]	L	L1/A	L2/B	rod material
000	230	2000	360	335/281	310/256	Incoloy 800
001	230	3000	440	415/361	390/336	Incoloy 800
002	230	3000	600	575/521	550/496	Incoloy 800
003	230	2000	430	390/343	375/333	AISI 304
004	230	2000	430	375/328	360/318	AISI 321
005	230	1000	430	375/328	360/318	AISI 321

Type 01117/. . . .

Heating element for direct heating of liquids with G 2 1/2" thread.

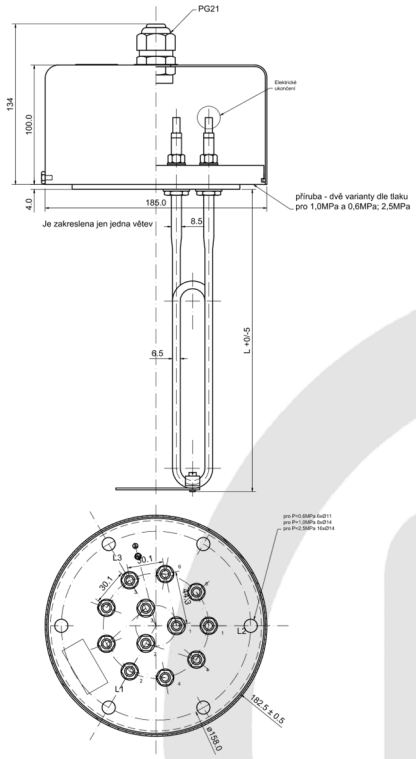


Versions table (Type 01117/. . . 0)

Version	U [V]	P [W]	L [mm]	rod material	flange material	watt density
000	400V/230	10000	920	17 350	brass	
001	400V/230	30000	980	17 350	brass	
002	400V/230	3000	800	17 248	brass	p=1,22 W/cm²
003	400V/230	20000	660	I800	17240	p=10 W/cm²
004	400V/230	22500	740	I800	17240	p=10 W/cm²
005	400V/230	9000	400	I800	brass	
006	400V/230	4000	555	17240	brass	
007	400V/230	25000	750	17350	brass	
008	400V/230	7500	800	17248	17240	
009	400V/230	4500	945	17350	brass	
011	400V/230	5000	1700	17248	brass	p=1,1 W/cm²
012	400V/230	9000	410	17350	brass	
013	3 x 500	15000	600	AISI316Ti	17240	
014	400V/230	4000	255	AISI316Ti	17240	

Type 01248/. . . .

Three-phase heating element for direct heating of oils or similar liquids. The watt density of the heating rod (W/cm²) is selected based on the oil specification (e.g. SAE) so that no carbonisation occurs. IP 42 protection. Operating pressure depending on the flange up to 0.6 MPa, 1 MPa or 2.5 MPa.

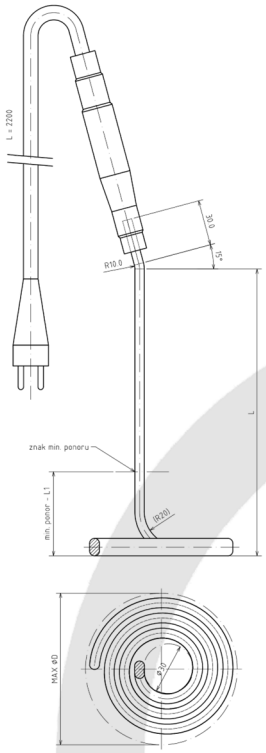


Versions table (Type 01248/. . . 0)

Version	U [V]	P [W]	L [mm]	Jt [MPa]	p [W/cm²]	note	no. of holes
001	400V/230	2500	400	0,6	0,96		6x Ø11
002	400V/230	3500	400	0,6	1,35		6x Ø11
003	400V/230	5500	800	0,6	1,0		6x Ø11
004	400V/230	4000	600	0,6	0,98		6x Ø11
005	400V/230	12000	1250	0,6	1,34		6x Ø11
006	400V/230	10000	950	0,6	1,86		6x Ø11
007	400V/230	7500	400	0,6	3,0		6x Ø11
008	400V/230	15000	800	0,6	2,8		6x Ø11
009	400V/230	6000	700	0,6	1,24		6x Ø11
010	400V/230	2660	400	0,6	1,02		6x Ø11
012	400V/230	3500	520	0,6	1,0		6x Ø11
013	400V/230	30000	1250	0,6	3,4	flange and cover stainless	6x Ø11
014	3 x 500	6000	700	1,0	1,24		8x Ø14

Type 01163/. . . .

Heating element for heating honey, mash and similar substances with a requirement for low working temperature on the surface of the heating rod.

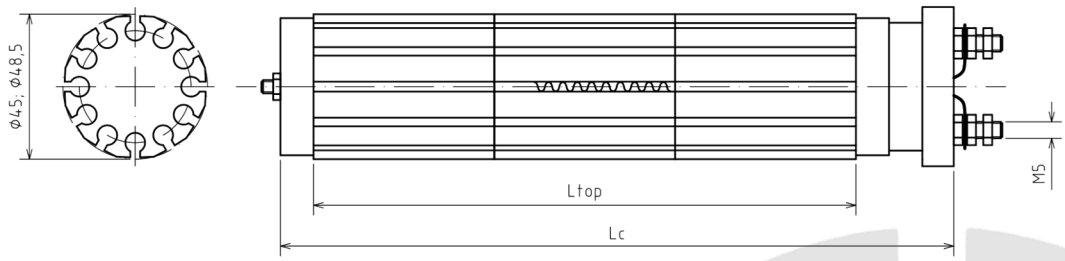


Versions table (Type 01163/. . . 0)

Version	U [V]	P [W]	L / A	L1	ØD	p [W/cm²]
001	230	50	645/613	15	170	0,08
002	230	50	645/613	15	215	0,08
003	230	20	292/260	15	66	0,47
004	230	75	645/613	15	300	0,11
010	230	50	1000/968	30	215	0,08
011	230	60	1000/968	30	215	0,10
012	230	75	645/613	15	170	0,12
013	230	120	1000/968	30	215	0,19
015	230	50	645/613	15	290	0,07
016	230	20	120/88,5	30	65	0,39
017	230	30	250/218,5	30	85	0,19
018	230	75	645/613	15	260	0,11
019	230	30	300/268,5	30	80	0,18
020	230	75	255/223,5	30	85	0,40
022	230	100	900/868	40	130	0,40

Type 05300/. . . .

Ceramic heating element for indirect heating of liquids in boilers, electroplating baths etc. Manufactured in single-phase or three-phase version depending on the element power. Usually placed horizontally in a metal, glass or porcelain tube according to the type of liquid being heated. Diameters other than those shown in the figure are also possible.



Versions table (Type 05300/. . . 0)

Version	U [V]	P [W]	D	Ltop	Lc
001	230	7000	48,5	850	900
002	400	3000	48,5	550	600
003	400	4000	48,5	850	900
005	400/230V	5000	48,5	2155	2270
006	230	6000	48,5	907	960
007	400/230V	7500	48,5	1930	1980
008	400/230V	7000	48,5	910	960
010	230	2400	48	300	350
012	400	6000	45	880	930
015	230	2000	48	300	350
017	230	2200	48	250	300
019	230	3300	48,5	570	620
026	230	3000	45	440	495
027	230	1700	45	550	600
028	400	4000	45	880	930
032	230	2600	48,5	453	505
033	230	4000	48,5	740	790
034	230	2000	48,5	400	450
035	2x230	2x1000	48,5	283	320
040	230	1000	48	200	250
036	400	7000	48,5	910	960
037	400	6000	48,5	910	960
038	230	2000	48,5	1080	1185
041	230	1600	45	330	380
047	230	3000	48,5	510	560
042	230	1500	48,5	340	390
043	230	6000	48,5	625	675
044	400	7500	48,5	1420	1470

046	230	2000	48,5	1077	1130
048	230	3000	48,5	625	675
049	230	2000	48,5	625	675
050	230	1750	48,5	560	520
051	230	2600	45	385	435
054	400/230V	5500	45	825	875
055	230	7500	48,5	1360	1410
058	230	2200	45	440	490
061	230	3300	48,5	680	730
064	230	800	48	250	300
065	230	3000	48	650	700
066	230	1000	48	150	200
067	150	1250	48	250	300
068	400	4000	48	6000	650
069	230	3300	48,5	623	683
070	230/400V	5000	48,5	850	900
071	230/400V	3000	48,5	510	560
072	230/400V	3600	46	810	860

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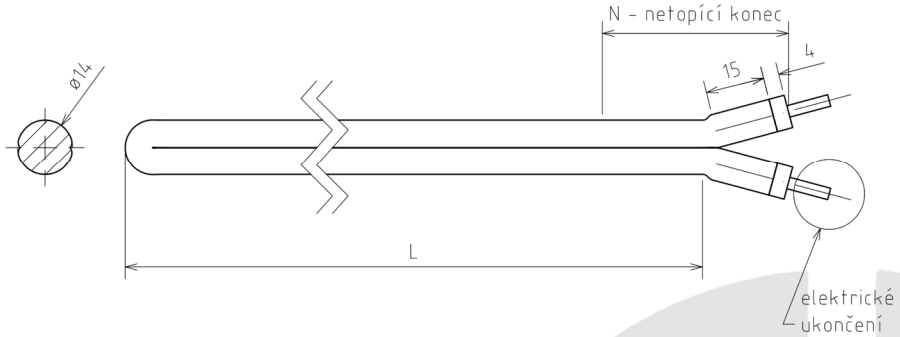
Type 01336/. . . .

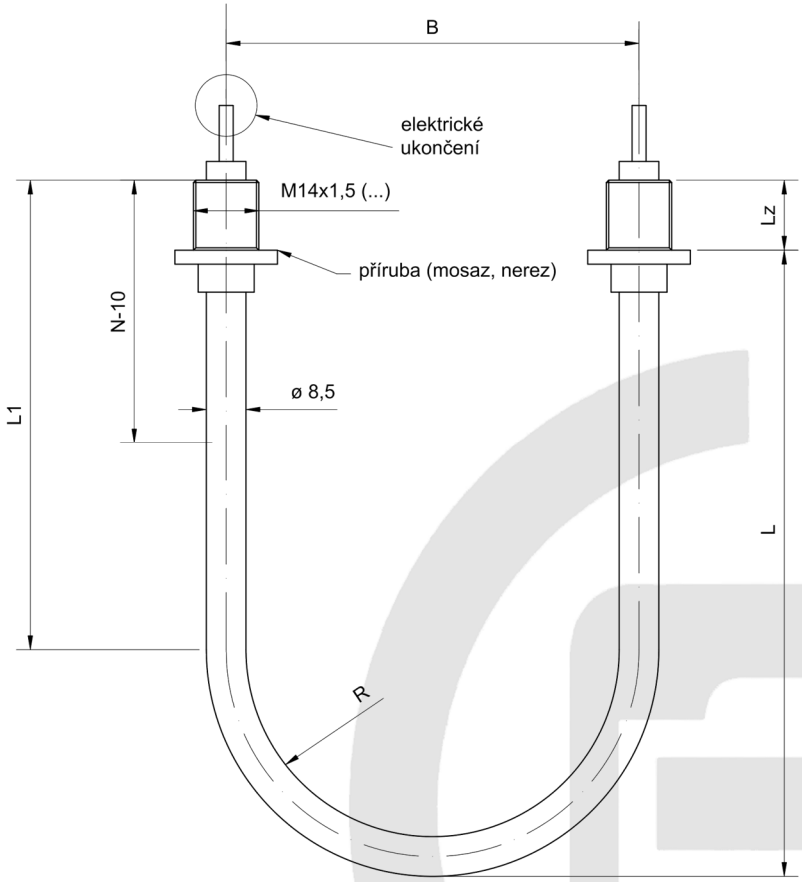
Heating element for indirect heating of liquids or for heating molds.



Versions table (Type 01336/. . . 0)

Version	U [V]	P [W]	L	N
001	115	400	140	40
002	230	1000	410	50
003	230	800	410	40
004	230	1200	500	40
005	230	500	240	40
006	230	700	350	40
007	400	1500	1460	40
008	400	3000	1170	50
009	230	800	235	40
010	230	800	250	50

Type 01001/. . . .


B
elektrické
ukončení
M14x1,5 (...)
Lz
příruba (mosaz, nerez)
N-10
ø 8,5
L1
L
R

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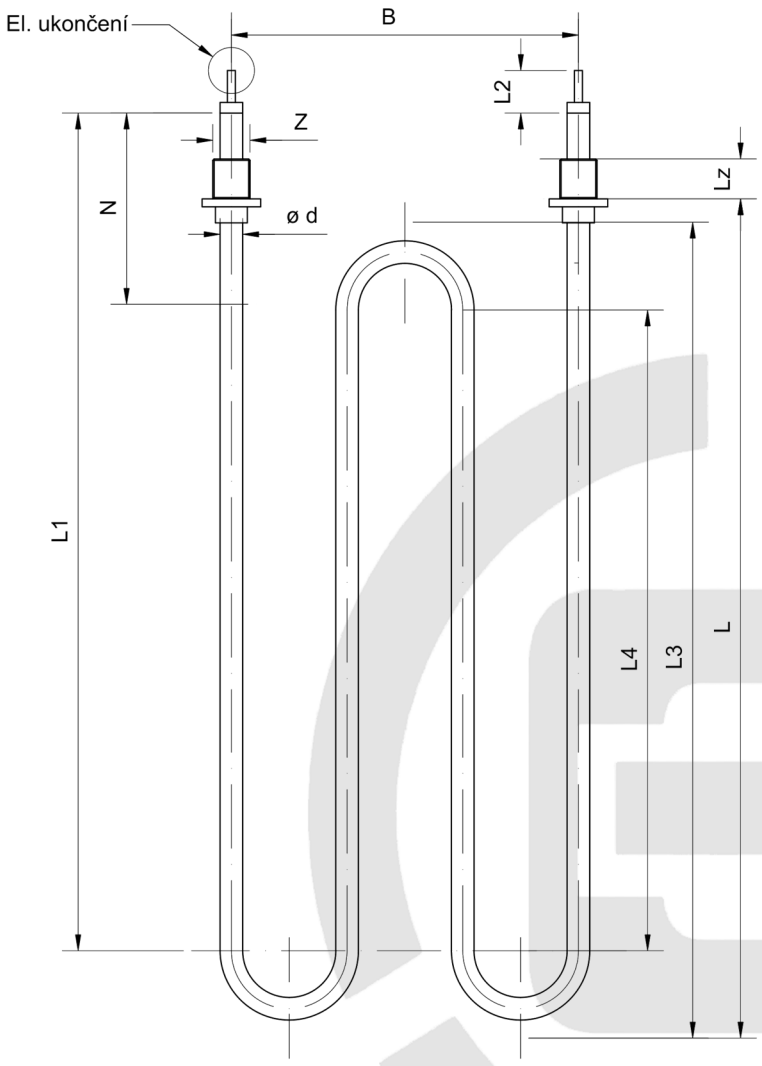
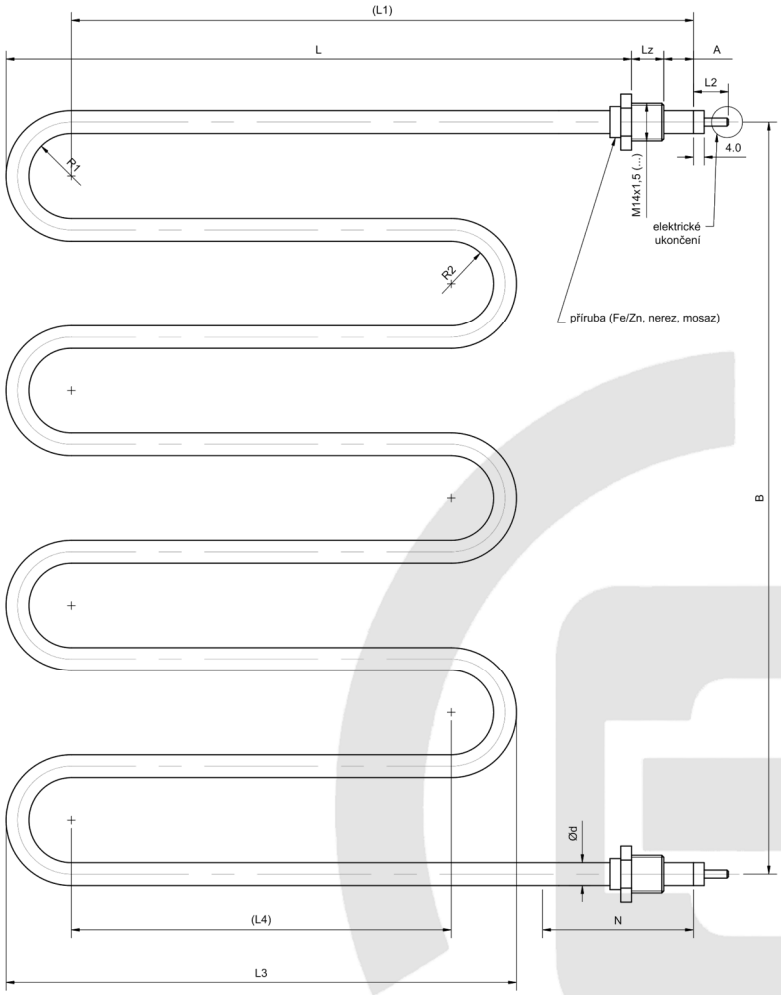
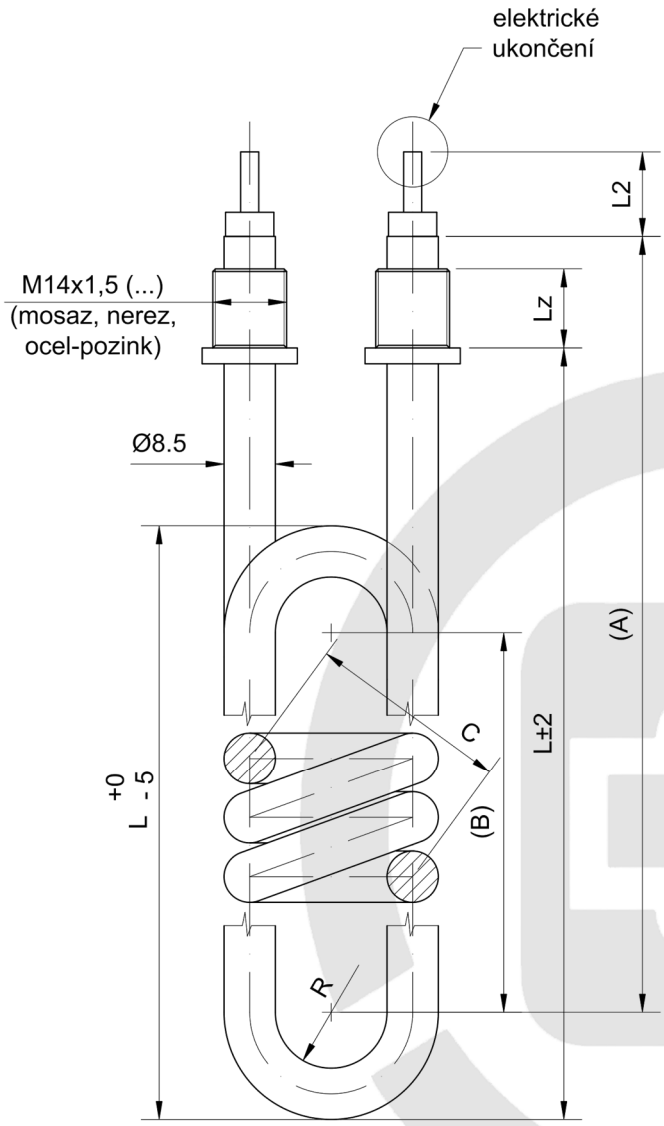
Type 01002/. . . .



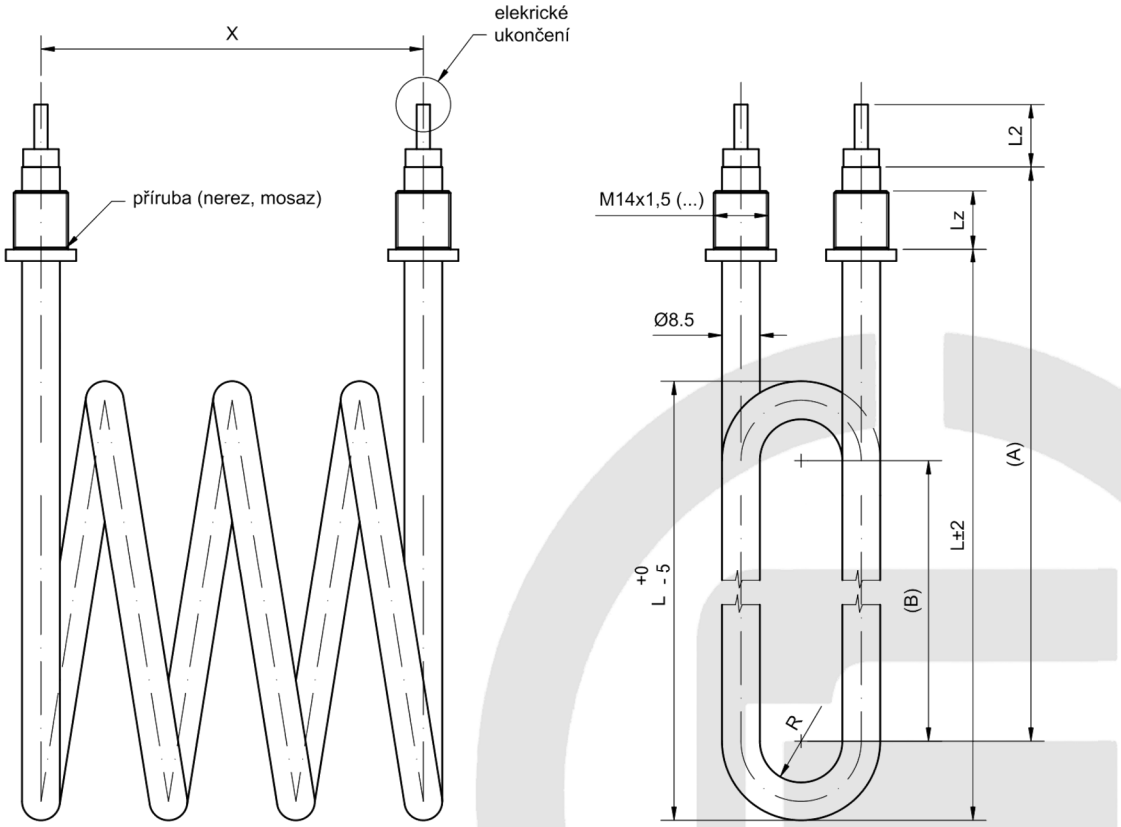
Type 01004/. . . .


(L1)
L
Lz
A
L2
4.0
R1
R2
M14x1.5 (...)
elektrické ukončení
příruba (Fe/Zn, nerez, mosaz)
B
Ød
(L4)
N
L3

Type 01010/. . . .


elektrické
ukončení
L2
M14x1,5 (...)
(mosaz, nerez,
ocel-pozink)
Lz
Ø8.5
(A)
L±2
C
(B)
+0
L - 5
R

Type 01040/. . . .


X
elekrické
ukončení
příruba (nerez, mosaz)
M14x1,5 (...)
Ø8.5
L2
Lz
(A)
L±2
(B)
+0
L - 5
R

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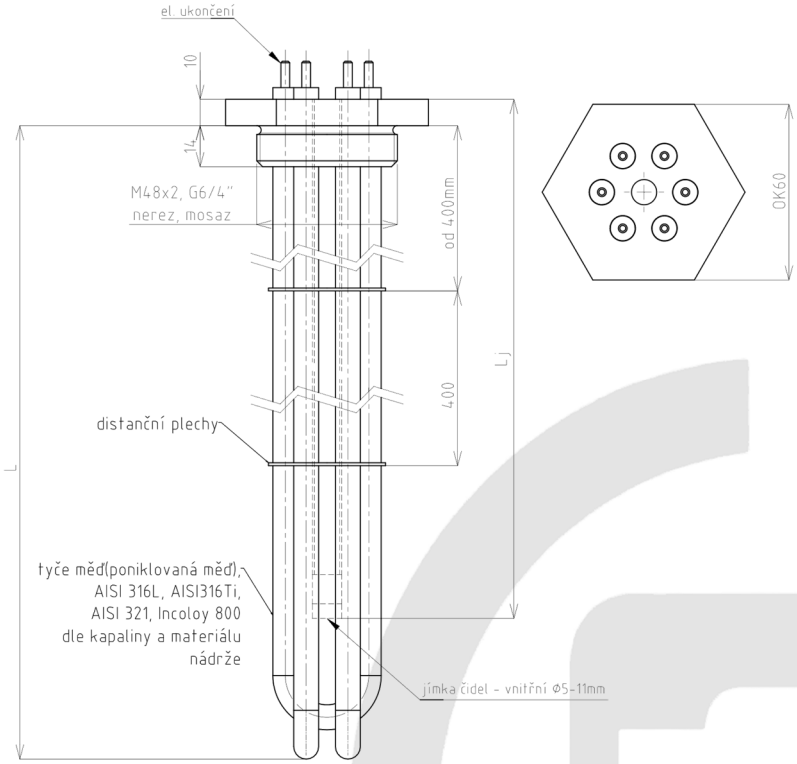
Type 11031/. . . .



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Type 11120/. . . .