

HELIOS



Electrical Heaters

Screw-in heating elements (with tube elements)

1.1	Without control	C/RK/3/G 1 1/2	Water
1.2	With thermostat	C/Th/RK/3/G 1 1/2	Water
1.3	With thermostat	C/Th/a/RK/a/G 1 1/2	Water
1.4	With run-dry protection	C/RK/TRO/3/G 1 1/2	Water
1.6	With thermostat	C/Th/i/INC/3/G 1 1/2	Domestic hot water
1.7	With double thermostat	C/Th/STB/i/INC/3/G 1 1/2	Domestic hot water
1.9	Without control	C/RE/3/G 1 1/2	Oil
1.10	With thermostat	C/Th/RE/3/G 1 1/2	Oil
1.11	With thermostat	C/Th/a/RE/3/G 1 1/2	Oil
1.12	With thermostat	C/ThO/2/G 2	Oil
1.13	Without control	C/RR/3/G 1 1/2	Different fluids
1.14	With double thermostat	C/Th/a/STB/RR/3/G 1 1/2	Different fluids

Screw-in heating elements (with exchangeable ceramic element)

3.1	With thermostat	O/Th G 2	Oil
3.3	Without control	G 5/8	Water, oil, air
3.4	Without control	G 1	Water, oil, air
3.5	Without control	G 1 1/2	Water, oil, air
3.6	Without control	G 2	Water, oil, air

Tank heaters

4.11	Tank heater	Flexible	EL heating oil
4.12	Tank heater	G 2	EL heating oil
4.13	Tank heater	Hydraulic oil	Hydraulic oil
4.14	Tank heater	Caustic soda solution	Caustic soda solution, water
4.15	Tank heater	AdBlue	AdBlue, water

Flanged heating elements

4.2	Flanged heating element	DN 65 – DN 500	Water, oil, air
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Immersion heating elements

5.1	Bath immersion heater		Acids, bases
5.2	Bath immersion heater with thermostat		Acids, bases
5.3	Z-shaped heating element		Different fluids
5.4	Large immersion boiler element	1000 – 5000 W	Different fluids
5.5	Large immersion boiler element	6000 – 15000 W	Different fluids
5.6	Drum heater		Different fluids
5.8	PTFE bath heater	Space-saving	Acids, bases
5.9	PTFE bath heater with thermostat	Space-saving	Acids, bases

Heating elements for room heating

6.1	Finned tube heating element		Air
6.3	Finned tube heating element with limiter		Air
6.3	Finned tube heating element with thermostat		Air
6.5	Switchgear cabinet heater		Air
6.6	Switchgear cabinet heater		Air
6.7	Heater fan		Air

Ceramic heating elements (without jacket tube)

7.1	Longitudinal grooves	Ø 15,5	Water, oil, air
7.2	Longitudinal grooves	Ø 26	Water, oil, air
7.3	Longitudinal grooves	Ø 37	Water, oil, air
7.4	Longitudinal grooves	Ø 47	Water, oil, air
7.5	Helical grooves	Ø 37	Water, oil, air
7.6	Helical grooves	Ø 47	Water, oil, air

Different heating elements

8.1	Heating plate		
8.3	High-power cartridge heater		Tools
8.4	Flat heating element		Plane surfaces
8.5	Ring heating element		Cylindrical bodies

High-power tubular heating elements Ø 8.4 mm

9.1	Application, design, mounting, shaping		
9.11	Finned-tube heating element	Ø 28	Air

Explosion-protected heating elements

10.1	Ex-Screw-in heating element		Different fluids
10.1	Ex-Flanged heating element		Different fluids
10.2	Ex-Level switch		Different fluids
10.3	Ex-Room heating element		Air
10.4	Ex-Temperature controller		Air
10.5	Ex-Finned tube heating element		Air
10.6	Ex-Finned tube heating element (stainless steel)		Air

Controllers







12.1	Temperature controller	To screw-in	Different fluids
12.3	Room temperature controller		Air







Gas heaters







13.1	Gas heater for temperatures up to 700 °C		Gases
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Continuous-flow heaters

14.1	Flow tube with flanged heating elements DN 65 – DN 500		Water, oil, air
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<p>1.1 G1½ screw-in heating element Model C/RK/3/G1½</p> 	<p>Application Direct water heating.</p> <p>Design 3 nickel plated copper tube elements, 35 mm unheated, G1½ brass nipple, bright-galvanized steel hood, IP 30 protection system.</p> <p>* See last page</p>	<table border="1"> <thead> <tr> <th>Imm. length mm approx.</th> <th>Power Watt approx.</th> <th>Order No.</th> </tr> </thead> <tbody> <tr><td>175</td><td>2000</td><td>0101 0071</td></tr> <tr><td>230</td><td>3000</td><td>0101 0081</td></tr> <tr><td>330</td><td>4500</td><td>0101 0091</td></tr> <tr><td>405</td><td>6000</td><td>0101 0101</td></tr> <tr><td>520</td><td>7500</td><td>0101 0111</td></tr> <tr><td>620</td><td>9000</td><td>0101 0121</td></tr> <tr><td>770</td><td>12000</td><td>0101 0131</td></tr> </tbody> </table> <p>Surcharge for hood IP 65</p>	Imm. length mm approx.	Power Watt approx.	Order No.	175	2000	0101 0071	230	3000	0101 0081	330	4500	0101 0091	405	6000	0101 0101	520	7500	0101 0111	620	9000	0101 0121	770	12000	0101 0131																
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<p>1.11 G1¼, G1½, G2 screw-in heating element with thermostat, externally regulated</p> <p>Model C/Th/a/RE/3/G1¼ C/Th/a/RE/3/G1½ C/Th/a/RE/3/G2</p>  <p>Photograph shows hood for IP 65 protection system.</p>	<p>Application Controlled heating of: surface load Fluids that do not attack steel. Hydraulic fluids or similar, 1.5 W/cm² heat transfer oil, quenching oil. 2.3 W/cm²</p> <p>Design 3 steel-jacket tube elements, 35 mm unheated, G1¼, G1½ or G2 brass nipple, thermostat 30 to 110°C, steel hood, IP 30 protection system.</p> <p>* See last page</p>	<table border="1"> <thead> <tr> <th>Imm. length mm approx.</th> <th>Power Watt approx.</th> <th>Order No. Thread G1¼</th> <th>Order No. Thread G1½</th> <th>Order No. Thread G2</th> </tr> </thead> <tbody> <tr> <td colspan="5" style="text-align: center;">Surface load 1.5 W/cm²</td> </tr> <tr> <td>455</td> <td>1000</td> <td>0111 1011</td> <td>0111 0011</td> <td>0111 2011</td> </tr> <tr> <td>680</td> <td>1500</td> <td>0111 1021</td> <td>0111 0021</td> <td>0111 2021</td> </tr> <tr> <td>880</td> <td>2000</td> <td>0111 1031</td> <td>0111 0031</td> <td>0111 2031</td> </tr> <tr> <td>1100</td> <td>2500</td> <td>0111 1041</td> <td>0111 0041</td> <td>0111 2041</td> </tr> <tr> <td colspan="5" style="text-align: center;">Surface load 2.3 W/cm²</td> </tr> <tr> <td>240</td> <td>750</td> <td>0111 1111</td> <td>0111 0111</td> <td>0111 2111</td> </tr> <tr> <td>455</td> <td>1500</td> <td>0111 1121</td> <td>0111 0121</td> <td>0111 2121</td> </tr> <tr> <td>680</td> <td>2250</td> <td>0111 1131</td> <td>0111 0131</td> <td>0111 2131</td> </tr> <tr> <td>880</td> <td>3000</td> <td>0111 1141</td> <td>0111 0141</td> <td>0111 2141</td> </tr> </tbody> </table>	Imm. length mm approx.	Power Watt approx.	Order No. Thread G1¼	Order No. Thread G1½	Order No. Thread G2	Surface load 1.5 W/cm ²					455	1000	0111 1011	0111 0011	0111 2011	680	1500	0111 1021	0111 0021	0111 2021	880	2000	0111 1031	0111 0031	0111 2031	1100	2500	0111 1041	0111 0041	0111 2041	Surface load 2.3 W/cm ²					240	750	0111 1111	0111 0111	0111 2111	455	1500	0111 1121	0111 0121	0111 2121	680	2250	0111 1131	0111 0131	0111 2131	880	3000	0111 1141	0111 0141	0111 2141										
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<p>1.12 G2 screw-in heating element with thermostat</p> <p>Model C/RE/Th/0/2/G2</p> 	<p>Application Controlled heating of: surface load Fluids that do not attack steel. Hydraulic fluids or lube oil, 1 W/cm² flowing heat carriers and 4 W/cm² M and S heating oil.</p> <p>Design 2 steel-jacket tube elements, 40 mm unheated, G2 steel nipple, thermostat 0 to +120°C, differential gap 3 K, bright-galvanized steel hood, IP 65 protection system.</p> <p>* See last page</p>	<table border="1"> <thead> <tr> <th>Imm. length mm approx.</th> <th>Power Watt approx.</th> <th>Order No.</th> <th>Power Watt approx.</th> <th>Order No.</th> </tr> </thead> <tbody> <tr> <td colspan="5" style="text-align: center;">Surface load</td> </tr> <tr> <td colspan="5">1 W/cm²</td> </tr> <tr> <td>290</td> <td>700</td> <td>0112 0011</td> <td>2800</td> <td>0112 0111</td> </tr> <tr> <td>390</td> <td>1000</td> <td>0112 0021</td> <td>4000</td> <td>0112 0121</td> </tr> <tr> <td>460</td> <td>1250</td> <td>0112 0031</td> <td>5000</td> <td>0112 0131</td> </tr> <tr> <td>530</td> <td>1500</td> <td>0112 0041</td> <td>6000</td> <td>0112 0141</td> </tr> <tr> <td colspan="5">4 W/cm²</td> </tr> </tbody> </table>	Imm. length mm approx.	Power Watt approx.	Order No.	Power Watt approx.	Order No.	Surface load					1 W/cm ²					290	700	0112 0011	2800	0112 0111	390	1000	0112 0021	4000	0112 0121	460	1250	0112 0031	5000	0112 0131	530	1500	0112 0041	6000	0112 0141	4 W/cm ²																													
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<p>1.13 G1½ screw-in heating element</p> <p>Model C/RR/3/G1½, unregulated C/Th/RR/3/G1½ with thermostat, internally regulated C/Th/a/RR/3/G1½ with thermostat, externally regulated</p> 	<p>Application Heating thin oils, aqueous solutions and fluids that do not attack stainless steel mat.-no. 1.4541. Heating air up to 120°C. For air temperatures over 120°C, please ask for information.</p> <p>Design Order no. 01130... 3 stainless steel tube elements mat.-no. 1.4541, 35 mm unheated, G1½ brass nipple, bright-galvanized steel hood, IP 30 protection system; differences in Order No. 01131... for hood type, see 1.10, thermostat 0 to +120°C, 1 pin; differences in Order No. 01132... for hood type, see 1.11, thermostat 30 to 110°C, 3 pin.</p> <p>* See last page</p>	<table border="1"> <thead> <tr> <th>Imm. length mm approx.</th> <th>Power Watt approx.</th> <th>Order No. C/RR/3/G1½</th> <th>Order No. C/Th/RR/3/G1½</th> <th>Order No. C/Th/a/RR/3/G1½</th> </tr> </thead> <tbody> <tr> <td colspan="5" style="text-align: center;">Surface load 2 W/cm²</td> </tr> <tr> <td>455</td> <td>1350</td> <td>0113 0011</td> <td>0113 1011</td> <td>0113 2011</td> </tr> <tr> <td>680</td> <td>2000</td> <td>0113 0021</td> <td>0113 1021</td> <td>0113 2021</td> </tr> <tr> <td>880</td> <td>2700</td> <td>0113 0031</td> <td>0113 1031</td> <td>0113 2031</td> </tr> <tr> <td>1100</td> <td>3500</td> <td>0113 0041</td> <td>0113 1041</td> <td>0113 2041</td> </tr> <tr> <td colspan="5">Electrical connection to 230/400 V three-phase current</td> </tr> <tr> <td colspan="5" style="text-align: center;">Surface load 6 W/cm²</td> </tr> <tr> <td>455</td> <td>4000</td> <td>0113 0111</td> <td>0113 1111</td> <td>0113 2111</td> </tr> <tr> <td>680</td> <td>8000</td> <td>0113 0121</td> <td>0113 1121</td> <td>0113 2121</td> </tr> <tr> <td>880</td> <td>8000</td> <td>0113 0131</td> <td>0113 1131</td> <td>0113 2131</td> </tr> <tr> <td>1100</td> <td>10500</td> <td>0113 0141</td> <td>0113 1141</td> <td>0113 2141</td> </tr> <tr> <td colspan="5">Electrical connection to 3 x 400 V three-phase current</td> </tr> </tbody> </table>	Imm. length mm approx.	Power Watt approx.	Order No. C/RR/3/G1½	Order No. C/Th/RR/3/G1½	Order No. C/Th/a/RR/3/G1½	Surface load 2 W/cm ²					455	1350	0113 0011	0113 1011	0113 2011	680	2000	0113 0021	0113 1021	0113 2021	880	2700	0113 0031	0113 1031	0113 2031	1100	3500	0113 0041	0113 1041	0113 2041	Electrical connection to 230/400 V three-phase current					Surface load 6 W/cm ²					455	4000	0113 0111	0113 1111	0113 2111	680	8000	0113 0121	0113 1121	0113 2121	880	8000	0113 0131	0113 1131	0113 2131	1100	10500	0113 0141	0113 1141	0113 2141	Electrical connection to 3 x 400 V three-phase current				
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<p>1.14 G1½ screw-in heating element with thermostat and limiter Model C/Th/a/STB/RR/3/G1½</p> <p>with thermostat and run-dry protection Model C/Th/a/TRO/RR/3/G1½</p> 	<p>Application Heating chlorine-free water, weak acids and caustic solutions, surface load 2 W/cm²</p> <p>Design 3 stainless steel tube elements mat.-no. 1.4571, welded in, 35 mm unheated, G1½ stainless steel nipple, mat.-no. 1.4571, plastic case, off-white, IP 65 protection system; Order No. 01140... thermostat +30 to 110°C and 115°C limiter; Order No. 01141... thermostat +30 to +110°C, run-dry protection 165°C.</p> <p>* See last page</p>	<table border="1"> <thead> <tr> <th>Imm. length mm approx.</th> <th>Power Watt approx.</th> <th>Order No. C/Th/a/STB/RR/3/G1½</th> <th>Order No. C/Th/a/TRO/RR/3/G1½</th> </tr> </thead> <tbody> <tr> <td colspan="4" style="text-align: center;">Surface load 2 W/cm²</td> </tr> <tr> <td>455</td> <td>1350</td> <td>0114 0011</td> <td>0114 1011</td> </tr> <tr> <td>680</td> <td>2000</td> <td>0114 0021</td> <td>0114 1021</td> </tr> <tr> <td>880</td> <td>2700</td> <td>0114 0031</td> <td>0114 1031</td> </tr> <tr> <td>1110</td> <td>3500</td> <td>0114 0041</td> <td>0114 1041</td> </tr> <tr> <td colspan="4">Electrical connection to 230/400 V three-phase current</td> </tr> <tr> <td colspan="4" style="text-align: center;">Surface load 6 W/cm²</td> </tr> <tr> <td>455</td> <td>4000</td> <td>0114 0111</td> <td>0114 1111</td> </tr> <tr> <td>680</td> <td>8000</td> <td>0114 0121</td> <td>0114 1121</td> </tr> <tr> <td>880</td> <td>8000</td> <td>0114 0131</td> <td>0114 1131</td> </tr> <tr> <td>1110</td> <td>10500</td> <td>0114 0141</td> <td>0114 1141</td> </tr> <tr> <td colspan="4">Electrical connection to 3 x 400 V three-phase current</td> </tr> </tbody> </table>	Imm. length mm approx.	Power Watt approx.	Order No. C/Th/a/STB/RR/3/G1½	Order No. C/Th/a/TRO/RR/3/G1½	Surface load 2 W/cm ²				455	1350	0114 0011	0114 1011	680	2000	0114 0021	0114 1021	880	2700	0114 0031	0114 1031	1110	3500	0114 0041	0114 1041	Electrical connection to 230/400 V three-phase current				Surface load 6 W/cm ²				455	4000	0114 0111	0114 1111	680	8000	0114 0121	0114 1121	880	8000	0114 0131	0114 1131	1110	10500	0114 0141	0114 1141	Electrical connection to 3 x 400 V three-phase current																
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<p>3.1 G2 screw-in heating element with thermostat, internally regulated</p> <p>Model O/Th/G2</p> 	<p>Application</p> <p>Heating fluids that do not attack steel, hydraulic fluids or similar, surface load 1,6 W/cm².</p> <p>Design</p> <p>Steel jacket with exchangeable ceramic element, G2 brass nipple, thermostat 0 to +120°C, light alloy hood, IP 30 protection system, horizontal installation.</p> <p>* See last page</p>	<table border="1"> <thead> <tr> <th>Imm. length mm approx.</th> <th>Power Watt approx.</th> <th>Order No. for 230 V</th> <th>Order No. for 400 V</th> </tr> </thead> <tbody> <tr><td>300</td><td>450</td><td>0301 0011</td><td>0301 0111</td></tr> <tr><td>400</td><td>600</td><td>0301 0021</td><td>0301 0121</td></tr> <tr><td>500</td><td>750</td><td>0301 0031</td><td>0301 0131</td></tr> <tr><td>600</td><td>900</td><td>0301 0041</td><td>0301 0141</td></tr> <tr><td>700</td><td>1050</td><td>0301 0051</td><td>0301 0151</td></tr> <tr><td>800</td><td>1200</td><td>0301 0061</td><td>0301 0161</td></tr> <tr><td>900</td><td>1350</td><td>0301 0071</td><td>0301 0171</td></tr> <tr><td>1000</td><td>1500</td><td>0301 0081</td><td>0301 0181</td></tr> </tbody> </table> <p>Surcharge for aluminium hood IP 65</p>	Imm. length mm approx.	Power Watt approx.	Order No. for 230 V	Order No. for 400 V	300	450	0301 0011	0301 0111	400	600	0301 0021	0301 0121	500	750	0301 0031	0301 0131	600	900	0301 0041	0301 0141	700	1050	0301 0051	0301 0151	800	1200	0301 0061	0301 0161	900	1350	0301 0071	0301 0171	1000	1500	0301 0081	0301 0181									
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<p>3.3 G⁵/₈ (G¹/₂, G³/₄) screw-in heating element</p> 	<p>Application</p> <p>For heating: surface load low-viscosity oil, hydraulic fluid, 1.5 W/cm² fluids of similar viscosity to water. 2.5 W/cm²</p> <p>Design</p> <p>Exchangeable ceramic element, G⁵/₈ brass nipple, Ø 18 mm brass jacket tube, brass screw cap, IP 65 protection system, horizontal installation. Also available in G¹/₂ and G³/₄.</p> <p>* See last page</p>	<table border="1"> <thead> <tr> <th>Imm. length mm approx.</th> <th>Power (1.5 W/cm²) Watt approx.</th> <th>Order No.</th> <th>Power (2.5 W/cm²) Watt approx.</th> <th>Order No.</th> </tr> </thead> <tbody> <tr><td>150</td><td>130</td><td>0303 0011</td><td>200</td><td>0303 1011</td></tr> <tr><td>250</td><td>200</td><td>0303 0031</td><td>350</td><td>0303 1031</td></tr> <tr><td>350</td><td>300</td><td>0303 0051</td><td>500</td><td>0303 1051</td></tr> <tr><td>500</td><td>400</td><td>0303 0071</td><td>700</td><td>0303 1071</td></tr> <tr><td>700</td><td>600</td><td>0303 0091</td><td>1000</td><td>0303 1091</td></tr> <tr><td>900</td><td>750</td><td>0303 0111</td><td>1250</td><td>0303 1111</td></tr> <tr><td>1100</td><td>900</td><td>0303 0131</td><td>1550</td><td>0303 1131</td></tr> <tr><td>1300</td><td>1100</td><td>0303 0151</td><td>1850</td><td>0303 1151</td></tr> </tbody> </table>	Imm. length mm approx.	Power (1.5 W/cm ²) Watt approx.	Order No.	Power (2.5 W/cm ²) Watt approx.	Order No.	150	130	0303 0011	200	0303 1011	250	200	0303 0031	350	0303 1031	350	300	0303 0051	500	0303 1051	500	400	0303 0071	700	0303 1071	700	600	0303 0091	1000	0303 1091	900	750	0303 0111	1250	0303 1111	1100	900	0303 0131	1550	0303 1131	1300	1100	0303 0151	1850	0303 1151
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<p>3.4 G1 screw-in heating element</p> 	<p>Application</p> <p>For heating: surface load low-viscosity oil, hydraulic fluid, 1.5 W/cm² Fluids of similar viscosity to water. 2.5 W/cm²</p> <p>Design</p> <p>Exchangeable ceramic element, G1 brass nipple, Ø 28 mm brass jacket tube, brass screw cap, IP 65 protection system, horizontal installation.</p> <p>* See last page</p>	<table border="1"> <thead> <tr> <th>Imm. length mm approx.</th> <th>Power (1.5 W/cm²) Watt approx.</th> <th>Order No.</th> <th>Power (2.5 W/cm²) Watt approx.</th> <th>Order No.</th> </tr> </thead> <tbody> <tr><td>150</td><td>200</td><td>0304 0011</td><td>350</td><td>0304 1011</td></tr> <tr><td>250</td><td>350</td><td>0304 0031</td><td>550</td><td>0304 1031</td></tr> <tr><td>350</td><td>450</td><td>0304 0051</td><td>750</td><td>0304 1051</td></tr> <tr><td>500</td><td>650</td><td>0304 0071</td><td>1100</td><td>0304 1071</td></tr> <tr><td>700</td><td>900</td><td>0304 0091</td><td>1550</td><td>0304 1091</td></tr> <tr><td>900</td><td>1200</td><td>0304 0111</td><td>2000</td><td>0304 1111</td></tr> <tr><td>1100</td><td>1450</td><td>0304 0131</td><td>2400</td><td>0304 1131</td></tr> <tr><td>1300</td><td>1700</td><td>0304 0151</td><td>2850</td><td>0304 1151</td></tr> </tbody> </table>	Imm. length mm approx.	Power (1.5 W/cm ²) Watt approx.	Order No.	Power (2.5 W/cm ²) Watt approx.	Order No.	150	200	0304 0011	350	0304 1011	250	350	0304 0031	550	0304 1031	350	450	0304 0051	750	0304 1051	500	650	0304 0071	1100	0304 1071	700	900	0304 0091	1550	0304 1091	900	1200	0304 0111	2000	0304 1111	1100	1450	0304 0131	2400	0304 1131	1300	1700	0304 0151	2850	0304 1151
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<p>3.5 G1¹/₂ (G1¹/₄) screw-in heating element</p> <p>Model O/42</p> 	<p>Application</p> <p>For heating: surface load low-viscosity oil, hydraulic fluid, 1.5 W/cm² fluids of similar viscosity to water. 2.5 W/cm²</p> <p>Design</p> <p>Exchangeable ceramic element with grounding circuit, G1¹/₂ steel nipple, Ø 42 mm steel jacket tube, bright-galvanized steel hood, IP 30 protection system, horizontal installation.</p> <p>* See last page</p>	<table border="1"> <thead> <tr> <th>Imm. length mm approx.</th> <th>Power (1.5 W/cm²) Watt approx.</th> <th>Order No.</th> <th>Power (2.5 W/cm²) Watt approx.</th> <th>Order No.</th> </tr> </thead> <tbody> <tr><td>200</td><td>400</td><td>0305 0011</td><td>650</td><td>0305 1011</td></tr> <tr><td>400</td><td>800</td><td>0305 0031</td><td>1300</td><td>0305 1031</td></tr> <tr><td>600</td><td>1200</td><td>0305 0051</td><td>2000</td><td>0305 1051</td></tr> <tr><td>800</td><td>1600</td><td>0305 0071</td><td>2650</td><td>0305 1071</td></tr> <tr><td>1000</td><td>2000</td><td>0305 0091</td><td>3300</td><td>0305 1091</td></tr> <tr><td>1200</td><td>2400</td><td>0305 0111</td><td>4000</td><td>0305 1111</td></tr> <tr><td>1600</td><td>3200</td><td>0305 0131</td><td>5300</td><td>0305 1131</td></tr> <tr><td>2000</td><td>4000</td><td>0305 0151</td><td>6600</td><td>0305 1151</td></tr> </tbody> </table> <p>Surcharge for brass screw cap IP 65</p>	Imm. length mm approx.	Power (1.5 W/cm ²) Watt approx.	Order No.	Power (2.5 W/cm ²) Watt approx.	Order No.	200	400	0305 0011	650	0305 1011	400	800	0305 0031	1300	0305 1031	600	1200	0305 0051	2000	0305 1051	800	1600	0305 0071	2650	0305 1071	1000	2000	0305 0091	3300	0305 1091	1200	2400	0305 0111	4000	0305 1111	1600	3200	0305 0131	5300	0305 1131	2000	4000	0305 0151	6600	0305 1151
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<p>3.6 G2 screw-in heating element</p> <p>Model O/52</p>  <p>Photograph shows hood for IP 65 protection system</p>	<p>Application</p> <p>For heating: surface load low-viscosity oil, hydraulic fluid, 1.5 W/cm² fluids of similar viscosity to water. 2.5 W/cm²</p> <p>Design</p> <p>Exchangeable ceramic element with grounding circuit, G2 steel nipple, Ø 52 mm steel jacket tube, bright-galvanized steel hood, IP 30 protection system, horizontal installation.</p> <p>* See last page</p>	<table border="1"> <thead> <tr> <th>Imm. length mm approx.</th> <th>Power (1.5 W/cm²) Watt approx.</th> <th>Order No.</th> <th>Power (2.5 W/cm²) Watt approx.</th> <th>Order No.</th> </tr> </thead> <tbody> <tr><td>200</td><td>500</td><td>0306 0011</td><td>800</td><td>0306 1011</td></tr> <tr><td>400</td><td>1000</td><td>0306 0031</td><td>1650</td><td>0306 1031</td></tr> <tr><td>600</td><td>1450</td><td>0306 0051</td><td>2450</td><td>0306 1051</td></tr> <tr><td>800</td><td>1950</td><td>0306 0071</td><td>3250</td><td>0306 1071</td></tr> <tr><td>1000</td><td>2450</td><td>0306 0091</td><td>4100</td><td>0306 1091</td></tr> <tr><td>1200</td><td>2950</td><td>0306 0111</td><td>4900</td><td>0306 1111</td></tr> <tr><td>1600</td><td>3900</td><td>0306 0131</td><td>6550</td><td>0306 1131</td></tr> <tr><td>2000</td><td>4900</td><td>0306 0151</td><td>8150</td><td>0306 1151</td></tr> </tbody> </table> <p>Surcharge for brass screw cap IP 65</p>	Imm. length mm approx.	Power (1.5 W/cm ²) Watt approx.	Order No.	Power (2.5 W/cm ²) Watt approx.	Order No.	200	500	0306 0011	800	0306 1011	400	1000	0306 0031	1650	0306 1031	600	1450	0306 0051	2450	0306 1051	800	1950	0306 0071	3250	0306 1071	1000	2450	0306 0091	4100	0306 1091	1200	2950	0306 0111	4900	0306 1111	1600	3900	0306 0131	6550	0306 1131	2000	4900	0306 0151	8150	0306 1151
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<p>4.1.1 Tank heater flexible installation</p> 	<p>Application</p> <p>Maintaining EL heating oil at correct temperature, to avoid faults due to wax separation. For tanks up to 100.000 litres.</p> <p>Testing: TÜV (Technical Inspection Association)</p> <p>Design</p> <p>DN 150 steel flange, vertical oil-resistant cable, immersion depth 400 to 2.950 mm (adjustable), 3 steel tube elements, surface load 4 W/cm², temperature controller, safety temperature limiter and terminal box, IP 65 protection system.</p> <p>* See last page</p>	<table border="1"> <thead> <tr> <th>Imm. depth adjustable mm approx.</th> <th>Min. imm. depth mm approx.</th> <th>Power Watt approx.</th> <th>Order No.</th> </tr> </thead> <tbody> <tr><td>550 - 2950</td><td>210</td><td>3000</td><td>0401 1011</td></tr> <tr><td>550 - 2950</td><td>230</td><td>4500</td><td>0401 1021</td></tr> <tr><td>550 - 2950</td><td>250</td><td>6000</td><td>0401 1031</td></tr> <tr><td>550 - 2950</td><td>275</td><td>7500</td><td>0401 1061</td></tr> <tr><td>550 - 2950</td><td>300</td><td>9000</td><td>0401 1041</td></tr> <tr><td>550 - 2950</td><td>400</td><td>10500</td><td>0401 1051</td></tr> </tbody> </table> <p>130 x 94 x 58 mm display unit, IP 54 protection system, with terminals and indicator lights.</p>	Imm. depth adjustable mm approx.	Min. imm. depth mm approx.	Power Watt approx.	Order No.	550 - 2950	210	3000	0401 1011	550 - 2950	230	4500	0401 1021	550 - 2950	250	6000	0401 1031	550 - 2950	275	7500	0401 1061	550 - 2950	300	9000	0401 1041	550 - 2950	400	10500	0401 1051																	
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<p>4.1.2 G2 tank heater flexible installation</p> 	<p>Application Maintaining EL heating oil at correct temperature, to avoid faults due to wax separation.</p> <p>Design G2 threaded nipple, vertical oil-resistant cable, support wire, adjustable from 400 to 2.000 mm, 1 steel jacket tube element, surface load 4 W/cm², temperature controller, safety temperature limiter, power cable with protection contact plug.</p> <p>* See last page</p>	<table border="1"> <thead> <tr> <th>Imm. depth adjustable mm approx.</th> <th>Min. imm. depth mm approx.</th> <th>Power Watt approx.</th> <th>Order No.</th> </tr> </thead> <tbody> <tr> <td>400 - 2000</td> <td>100</td> <td>2000</td> <td>0401 2011</td> </tr> </tbody> </table>	Imm. depth adjustable mm approx.	Min. imm. depth mm approx.	Power Watt approx.	Order No.	400 - 2000	100	2000	0401 2011																																																																																																																																																												
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<p>4.1.3 Tank heater for hydraulic fluid</p> 	<p>Application Maintaining hydraulic fluid temperature at +15°C to +50°C in installations, machine tools, presses, lifts, etc. The tank heater is laid or placed in the fluid. No screws or flange attachments.</p> <p>Design Helical tube heating element 230 V, 250 W to 1000 W. Surface load 0.6 W/cm² or 1.2 W/cm². Temperature controller, 3-wire plastic cable. On request, 2 magnets for placing and removing the metal pick-up in the oil.</p>	<table border="1"> <thead> <tr> <th>Imm. depth adjustable mm approx.</th> <th>Power Watt approx.</th> <th>Order No. without magnets</th> <th>Order No. with magnets</th> </tr> </thead> <tbody> <tr> <td colspan="4">Surface load 1.2 W/cm² for HLP</td> </tr> <tr> <td>80 - 2000</td> <td>250</td> <td>0401 3011</td> <td>0401 3041</td> </tr> <tr> <td>80 - 2000</td> <td>500</td> <td>0401 3021</td> <td>0401 3051</td> </tr> <tr> <td>80 - 2000</td> <td>1000</td> <td>0401 3031</td> <td>0401 3061</td> </tr> <tr> <td colspan="4">Surface load 0.6 W/cm² for HFC und HFD-R</td> </tr> <tr> <td>80 - 2000</td> <td>250</td> <td>0401 3111</td> <td>0401 3141</td> </tr> <tr> <td>80 - 2000</td> <td>500</td> <td>0401 3121</td> <td>0401 3151</td> </tr> <tr> <td colspan="4">Surface load 0.6 W/cm² for HFA</td> </tr> <tr> <td>80 - 2000</td> <td>250</td> <td>0401 3211</td> <td>0401 3241</td> </tr> <tr> <td>80 - 2000</td> <td>500</td> <td>0401 3221</td> <td>0401 3251</td> </tr> </tbody> </table>	Imm. depth adjustable mm approx.	Power Watt approx.	Order No. without magnets	Order No. with magnets	Surface load 1.2 W/cm ² for HLP				80 - 2000	250	0401 3011	0401 3041	80 - 2000	500	0401 3021	0401 3051	80 - 2000	1000	0401 3031	0401 3061	Surface load 0.6 W/cm ² for HFC und HFD-R				80 - 2000	250	0401 3111	0401 3141	80 - 2000	500	0401 3121	0401 3151	Surface load 0.6 W/cm ² for HFA				80 - 2000	250	0401 3211	0401 3241	80 - 2000	500	0401 3221	0401 3251																																																																																																																								
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<p>4.1.4 Tank heater for caustic acid solution</p> 	<p>Application Maintaining caustic acid solutions at a temperature of 20°C, to avoid faults due to crystallization in the system. Low overall height allows heating of fluid solutions from a level of 210 mm.</p> <p>Design DN 150 stainless steel flange mat.-no. 1.4571, caustic-solution-resistant vertical tube, 3 tube elements of special material, surface load 2 W/cm², temperature controller set to maintain a caustic solution temperature of + 20°C, terminal box, IP 65 protection system.</p> <p>Immersion depth according to customer's specification.</p>	<table border="1"> <thead> <tr> <th>Length mm approx.</th> <th>Min. imm. depth mm approx.</th> <th>Power Watt approx.</th> <th>Order No.</th> </tr> </thead> <tbody> <tr> <td>to 2000</td> <td>210</td> <td>1500</td> <td>0401 4011</td> </tr> <tr> <td>to 2000</td> <td>230</td> <td>2250</td> <td>0401 4021</td> </tr> <tr> <td>to 2000</td> <td>250</td> <td>3000</td> <td>0401 4031</td> </tr> </tbody> </table> <p>Additional charge for greater immersion depths. Additional charge for run-dry protection.</p> <p>The tank heater is also available in titanium.</p>	Length mm approx.	Min. imm. depth mm approx.	Power Watt approx.	Order No.	to 2000	210	1500	0401 4011	to 2000	230	2250	0401 4021	to 2000	250	3000	0401 4031																																																																																																																																																				
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<p>4.1.5 Tank heater for AdBlue (Urea solution)</p> 	<p>Application Maintaining caustic AdBlue at a temperature to avoid faults due to crystallization in the system. Low overall height allows heating of fluid solutions from a level of 130 mm.</p> <p>Design DN 150 stainless steel flange mat.-no. 1.4571, caustic-solution-resistant vertical tube, stainless steel tube element mat.-no. 1.4571, surface load 1.9 W/cm², temperature controller, welded construction, terminal box, IP 65 protection system.</p> <p>Immersion depth according to customer's specification. Controller adjusted according to customer's specification.</p>	<table border="1"> <thead> <tr> <th>Length mm approx.</th> <th>Min. imm. depth mm approx.</th> <th>Power Watt approx.</th> <th>Order No.</th> </tr> </thead> <tbody> <tr> <td>to 2000</td> <td>130</td> <td>1000</td> <td>0401 5011</td> </tr> <tr> <td>to 2000</td> <td>130</td> <td>2000</td> <td>0401 5021</td> </tr> </tbody> </table> <p>Additional charge for greater immersion depths. Additional charge for run-dry protection.</p>	Length mm approx.	Min. imm. depth mm approx.	Power Watt approx.	Order No.	to 2000	130	1000	0401 5011	to 2000	130	2000	0401 5021																																																																																																																																																								
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<p>4.2 Flanged heating element</p> 	<p>Application Heating fluids in hydraulic, lubrication, and heat transfer installations, water in storage tanks and systems, chemical fluids.</p> <p>Design DIN 2527 steel flange, PN 16 to PN 100, U-shaped tube elements, installation length up to 3.500 mm, in steel, copper, titanium, and various stainless steels. Also with exchangeable elements. Nominal widths up to DN 500 mm.</p> <p>Thermostat 0 to 120 °C, differential gap 3 K, switching power 16 A to 400 V, 1 pin, lacquered steel hood, IP 30 or IP 65 protection system</p> <p>TÜV inspection possible.</p> <p>Complete continuous-flow heaters are also available.</p>	<table border="1"> <thead> <tr> <th>Flange DN</th> <th>Imm. length mm approx.</th> <th>Power Watt approx.</th> <th>Order No.</th> <th>Power Watt approx.</th> <th>Order No.</th> </tr> </thead> <tbody> <tr> <td colspan="6">Oil heating - Surface load</td> </tr> <tr> <td colspan="5"></td> <td>1.5 W/cm²</td> <td>2.3 W/cm²</td> </tr> <tr> <td>65</td> <td>450</td> <td>2000</td> <td>0402 0011</td> <td>3000</td> <td>0402 1011</td> </tr> <tr> <td>100</td> <td>450</td> <td>3000</td> <td>0402 0021</td> <td>4500</td> <td>0402 1021</td> </tr> <tr> <td>65</td> <td>870</td> <td>4000</td> <td>0402 0051</td> <td>6000</td> <td>0402 1051</td> </tr> <tr> <td>100</td> <td>670</td> <td>4500</td> <td>0402 0061</td> <td>6700</td> <td>0402 1061</td> </tr> <tr> <td>125</td> <td>670</td> <td>6000</td> <td>0402 0081</td> <td>9000</td> <td>0402 1081</td> </tr> <tr> <td>125</td> <td>870</td> <td>8000</td> <td>0402 0101</td> <td>12000</td> <td>0402 1101</td> </tr> <tr> <td>150</td> <td>670</td> <td>9000</td> <td>0402 0111</td> <td>13500</td> <td>0402 1111</td> </tr> <tr> <td>150</td> <td>870</td> <td>12000</td> <td>0402 0131</td> <td>18000</td> <td>0402 1131</td> </tr> <tr> <td>200</td> <td>670</td> <td>18000</td> <td>0402 0141</td> <td>27000</td> <td>0402 1141</td> </tr> <tr> <td>250</td> <td>670</td> <td>27000</td> <td>0402 0171</td> <td>40500</td> <td>0402 1171</td> </tr> <tr> <td>200</td> <td>870</td> <td>24000</td> <td>0402 0151</td> <td>36000</td> <td>0402 1151</td> </tr> <tr> <td>250</td> <td>870</td> <td>36000</td> <td>0402 0181</td> <td>54000</td> <td>0402 1181</td> </tr> <tr> <td colspan="6">Water heating - Surface load</td> </tr> <tr> <td colspan="5"></td> <td>6 W/cm²</td> <td>10 W/cm²</td> </tr> <tr> <td>65</td> <td>400</td> <td>6000</td> <td>0402 2011</td> <td>12000</td> <td>0402 3011</td> </tr> <tr> <td>100</td> <td>400</td> <td>9000</td> <td>0402 2021</td> <td>18000</td> <td>0402 3021</td> </tr> <tr> <td>65</td> <td>770</td> <td>12000</td> <td>0402 2051</td> <td>24000</td> <td>0402 3051</td> </tr> <tr> <td>100</td> <td>610</td> <td>13500</td> <td>0402 2061</td> <td>27000</td> <td>0402 3061</td> </tr> <tr> <td>125</td> <td>610</td> <td>18000</td> <td>0402 2081</td> <td>36000</td> <td>0402 3081</td> </tr> <tr> <td>125</td> <td>770</td> <td>24000</td> <td>0402 2101</td> <td>48000</td> <td>0402 3101</td> </tr> <tr> <td>150</td> <td>610</td> <td>27000</td> <td>0402 2111</td> <td>54000</td> <td>0402 3111</td> </tr> <tr> <td>150</td> <td>770</td> <td>36000</td> <td>0402 2131</td> <td>72000</td> <td>0402 3131</td> </tr> <tr> <td>200</td> <td>610</td> <td>54000</td> <td>0402 2141</td> <td>108000</td> <td>0402 3141</td> </tr> <tr> <td>200</td> <td>770</td> <td>72000</td> <td>0402 2151</td> <td>144000</td> <td>0402 3151</td> </tr> </tbody> </table>	Flange DN	Imm. length mm approx.	Power Watt approx.	Order No.	Power Watt approx.	Order No.	Oil heating - Surface load											1.5 W/cm ²	2.3 W/cm ²	65	450	2000	0402 0011	3000	0402 1011	100	450	3000	0402 0021	4500	0402 1021	65	870	4000	0402 0051	6000	0402 1051	100	670	4500	0402 0061	6700	0402 1061	125	670	6000	0402 0081	9000	0402 1081	125	870	8000	0402 0101	12000	0402 1101	150	670	9000	0402 0111	13500	0402 1111	150	870	12000	0402 0131	18000	0402 1131	200	670	18000	0402 0141	27000	0402 1141	250	670	27000	0402 0171	40500	0402 1171	200	870	24000	0402 0151	36000	0402 1151	250	870	36000	0402 0181	54000	0402 1181	Water heating - Surface load											6 W/cm ²	10 W/cm ²	65	400	6000	0402 2011	12000	0402 3011	100	400	9000	0402 2021	18000	0402 3021	65	770	12000	0402 2051	24000	0402 3051	100	610	13500	0402 2061	27000	0402 3061	125	610	18000	0402 2081	36000	0402 3081	125	770	24000	0402 2101	48000	0402 3101	150	610	27000	0402 2111	54000	0402 3111	150	770	36000	0402 2131	72000	0402 3131	200	610	54000	0402 2141	108000	0402 3141	200	770	72000	0402 2151	144000	0402 3151
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200	670	18000	0402 0141	27000	0402 1141																																																																																																																																																																	
250	670	27000	0402 0171	40500	0402 1171																																																																																																																																																																	
200	870	24000	0402 0151	36000	0402 1151																																																																																																																																																																	
250	870	36000	0402 0181	54000	0402 1181																																																																																																																																																																	
Water heating - Surface load																																																																																																																																																																						
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65	400	6000	0402 2011	12000	0402 3011																																																																																																																																																																	
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65	770	12000	0402 2051	24000	0402 3051																																																																																																																																																																	
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200	770	72000	0402 2151	144000	0402 3151																																																																																																																																																																	

5.1 Bath immersion heater



Tested and certified to VDE standard

Application

Helios bath heaters are particularly suitable for the direct heating of: water, caustic solutions, acids, disinfectants, oils and other fluids, which can support a surface load of 2.5 W/cm².

Design

Helios bath heaters consist of an exchangeable 230 V element, exchangeable protective tube and IP 65 hood with power cable.

The jacket tube material depends on the type of fluid to be heated.

Technical advantages:

If glass or porcelain tubes break, the heating element can still be used.

The power cable can be arranged axially or radially by rotating the cap.

* See last page

Tube length mm	Min. Imm. depth mm approx.	Power Watt approx.	Thermostat without Order No.	Thermostat with Order No.
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Special hard porcelain, Ø 46.5 mm				
300	250	500	0501 0011	0502 0011
450	350	1000	0501 0031	0502 0031
600	450	1500	0501 0051	0502 0051
800	600	2500	0501 0071	0502 0071
1000	800	3000	0501 0081	0502 0081

Engineering glass, Ø 46 mm				
300	250	500	0501 1011	0502 1011
450	350	1000	0501 1031	0502 1031
600	450	1500	0501 1051	0502 1051
800	600	2500	0501 1071	0502 1071
1000	800	3000	0501 1081	0502 1081

Teflon (PTFE), Ø 46 mm				
300	250	500	0501 3011	0502 3011
450	350	750	0501 3021	0502 3021
600	450	1000	0501 3031	0502 3031
800	600	1400	0501 3041	0502 3041
1000	800	1900	0501 3051	0502 3051

Titanium, Ø 40 mm				
300	250	500	0501 4011	0502 4011
450	350	1000	0501 4031	0502 4031
600	450	1500	0501 4051	0502 4051
800	600	2500	0501 4071	0502 4071
1000	800	3000	0501 4081	0502 4081

Steel, Ø 42 mm				
300	250	500	0501 5011	0502 5011
450	350	1000	0501 5031	0502 5031
600	450	1500	0501 5051	0502 5051
800	600	2500	0501 5071	0502 5071
1000	800	3000	0501 5081	0502 5081

Stainless steel mat.-no. 1.4571, Ø 42.4 x 1.6 mm				
300	250	500	0501 6011	0502 6011
450	350	1000	0501 6031	0502 6031
600	450	1500	0501 6051	0502 6051
800	600	2500	0501 6071	0502 6071
1000	800	3000	0501 6081	0502 6081

Stainless steel mat.-no. 1.4539, Ø 42.4 x 1.5 mm				
Quartz, Ø 46.5 mm please ask for information				

5.2 Bath immersion heater with thermostat



Application

Helios bath heaters are particularly suitable for the controlled heating of: water, caustic solutions, acids, disinfectants, oils and other fluids, which can support a surface load of 2.5 W/cm².

Design

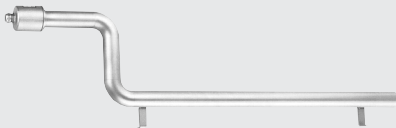
Helios bath heaters with thermostat consist of a 230 V heating element, the appropriate protective tube, thermostat 0 to +120°C with polypropylene protective tube and the terminal box with power cable. All parts are exchangeable.

* See last page

Power Watt approx.	Shank A mm approx.	Shank B mm approx.	Order No. Steel	Order No. Stainless steel
1000	400	300	0503 0011	0503 1011
1300	500	400	0503 0021	0503 1021
1700	600	400	0503 0031	0503 1031
2100	750	500	0503 0041	0503 1041
2500	850	500	0503 0051	0503 1051
3000	950	600	0503 0061	0503 1061
3500	1050	600	0503 0071	0503 1071
4000	1200	800	0503 0081	0503 1081
5000	1500	800	0503 0091	0503 1091
6000	1800	1000	0503 0101	0503 1101

Titanium, Ø 40 mm, with plastic screw cap – please ask for information.

5.3 Z-shaped heating element



Application

Hung heating element. For heating fluids in large tanks and flat tubs.

Design

horizontal heated shank A, vertical unheated shank B, horizontal unheated shank, 200 mm long. Brass screw cap, IP 65 protection system, protective jacket tube of steel, stainless steel and titanium. The jacket tube material depends on the type of fluid to be heated.

* See last page

5.4 Large immersion boiler element



Application

Heating water and other non-aggressive fluids, which can support a surface load of 8 W/cm².

Design

Tube elements, Ø 8,4 mm, stainless steel, plastic screw cap as handle, IP 65 protection system, power cable 3 x 1.5 W/cm², with protection contact plug (not included from 4000 W), and adjustable retaining clamp (not included in 1000 W). only order no. 050520.. thermostat 30 to +110°C, differential gap 5 K, switching power 16 A to 400 Volt, 1 pin.

* See last page

Imm. depth mm approx.	Min. Imm. depth mm approx.	Power Watt approx.	Thermostat without Order No.	Thermostat with Order No.
-----------------------	----------------------------	--------------------	------------------------------	---------------------------

210	60	1000	0504 0011	
300	80	2000	0504 0021	
650	80	2000	0504 0031	0505 2011
650	130	3000	0504 0041	0505 2021
650	130	4000	0504 0051	0505 2031
650	180	5000	0504 0061	0505 2041

Electrical connection 230 V AC for powers up to 3000 W, electrical connection 400 V AC for powers from 4000 W.

5.5 Large immersion boiler element



Application

Heating water and other non-aggressive fluids, which can support a surface load of 8 W/cm².

Design



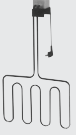


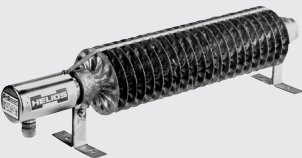

3 tube elements, Ø 8,4 mm, stainless steel, bright-galvanized steel hood, IP 30 protection system, with handhold. only order no. 050500.. thermostat 30 to +110°C, differential gap 5 K, switching power 16 A to 400 Volt, 3 pin.


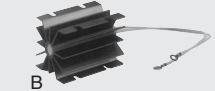

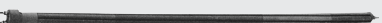



* See last page



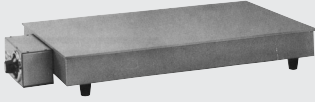


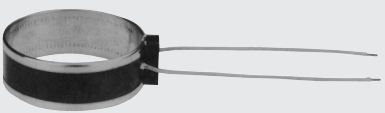
Imm. depth mm approx.	Min. Imm. depth mm approx.	Power Watt approx.	Thermostat without Order No.	Thermostat with Order No.
-----------------------	----------------------------	--------------------	------------------------------	---------------------------

650	80	6000	0505 1011	0505 0011
650	130	9000	0505 1021	0505 0021
650	130	12000	0505 1031	0505 0031
650	180	15000	0505 1041	0505 0041

Electrical connection 3 x 400 V three phase current.

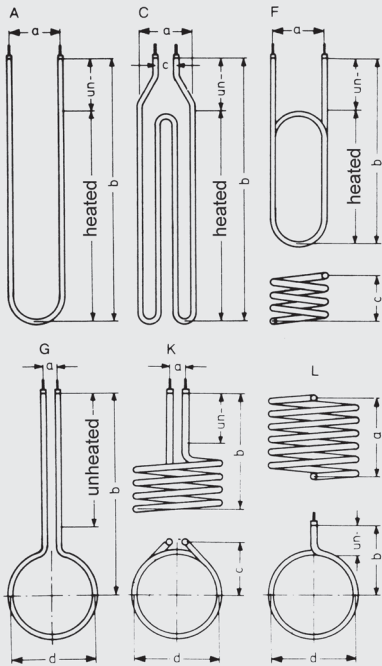
<p>5.6 Drum heater</p> 	<p>Application Heating fluids that do not attack steel or stainless steel. High-viscosity oils, grease, etc. that support a surface load of 1 W/cm², or low-viscosity oils and fluids that support a surface load of 4 W/cm².</p> <p>Design 2 tube elements, Ø 8.4 mm, steel or stainless steel, mat.-no. 1.4571, plastic hood, IP 65 protection system. Also available with thermostat + 30 to + 110°C, differential gap 5 K, Ø 110 mm sheet metal hood, IP 30 protection system, with handle. * See last page</p>	<table border="1"> <thead> <tr> <th>Imm. depth mm approx.</th> <th>Min. imm. depth mm approx.</th> <th>Power Watt approx.</th> <th>Thermostat without Order No.</th> <th>Thermostat with Order No.</th> </tr> </thead> <tbody> <tr> <td colspan="5">Steel jacket, 1 W/cm²</td> </tr> <tr> <td>530</td> <td>250</td> <td>700</td> <td>0506 0011</td> <td>0506 0411</td> </tr> <tr> <td>810</td> <td>380</td> <td>1000</td> <td>0506 0021</td> <td>0506 0421</td> </tr> <tr> <td colspan="5">Stainless steel jacket, 4 W/cm²</td> </tr> <tr> <td>530</td> <td>250</td> <td>2800</td> <td>0506 0311</td> <td>0506 0711</td> </tr> <tr> <td>810</td> <td>380</td> <td>4000</td> <td>0506 0321</td> <td>0506 0721</td> </tr> </tbody> </table>	Imm. depth mm approx.	Min. imm. depth mm approx.	Power Watt approx.	Thermostat without Order No.	Thermostat with Order No.	Steel jacket, 1 W/cm ²					530	250	700	0506 0011	0506 0411	810	380	1000	0506 0021	0506 0421	Stainless steel jacket, 4 W/cm ²					530	250	2800	0506 0311	0506 0711	810	380	4000	0506 0321	0506 0721																															
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<p>5.8 PTFE space-saving bath heater</p> <p>A</p>  <p>B</p> 	<p>Application Heating aggressive fluids, caustic solutions, acids, disinfectants, electrolytes, etc.</p> <p>Design Proven high-power 230 V tube elements, with PTFE coating, temperature-resistant up to about 260°C, PTFE spacer, Makrolon connection box, IP 65 protection system, cable guide with strain-relief clamp, PVC power cable, 2 m length, moulded plug with protection contact (3-pin CEE plug available on request), plastic-coated retaining bracket.</p>	<table border="1"> <thead> <tr> <th>Illus-tration</th> <th>Imm. depth mm approx.</th> <th>Min. imm. depth mm approx.</th> <th>Width mm approx.</th> <th>Power Watt approx.</th> <th>Order No.</th> </tr> </thead> <tbody> <tr><td>A</td><td>560</td><td>320</td><td>270</td><td>1000</td><td>0508 0011</td></tr> <tr><td>A</td><td>830</td><td>460</td><td>450</td><td>2000</td><td>0508 0021</td></tr> <tr><td>A</td><td>1010</td><td>430</td><td>450</td><td>2000</td><td>0508 0031</td></tr> <tr><td>A</td><td>1240</td><td>870</td><td>200</td><td>2000</td><td>0508 0041</td></tr> <tr><td>A</td><td>1430</td><td>870</td><td>200</td><td>2000</td><td>0508 0051</td></tr> <tr><td>B</td><td>560</td><td>320</td><td>270</td><td>1000</td><td>0508 0111</td></tr> <tr><td>B</td><td>830</td><td>460</td><td>450</td><td>2000</td><td>0508 0121</td></tr> <tr><td>B</td><td>1010</td><td>430</td><td>450</td><td>2000</td><td>0508 0131</td></tr> <tr><td>B</td><td>1240</td><td>870</td><td>200</td><td>2000</td><td>0508 0141</td></tr> <tr><td>B</td><td>1430</td><td>870</td><td>200</td><td>2000</td><td>0508 0151</td></tr> </tbody> </table>	Illus-tration	Imm. depth mm approx.	Min. imm. depth mm approx.	Width mm approx.	Power Watt approx.	Order No.	A	560	320	270	1000	0508 0011	A	830	460	450	2000	0508 0021	A	1010	430	450	2000	0508 0031	A	1240	870	200	2000	0508 0041	A	1430	870	200	2000	0508 0051	B	560	320	270	1000	0508 0111	B	830	460	450	2000	0508 0121	B	1010	430	450	2000	0508 0131	B	1240	870	200	2000	0508 0141	B	1430	870	200	2000	0508 0151
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<p>5.9 PTFE space-saving bath heater with thermostat, externally regulated</p> <p>B</p> 	<p>Application Heating aggressive fluids, caustic solutions, acids, disinfectants, electrolytes, etc.</p> <p>Design Proven high-power 230 V tube elements, with PTFE coating, temperature-resistant up to about 260°C, PTFE spacer, Makrolon connection box, IP 65 protection system, cable guide with strain-relief clamp, PVC power cable, 2 m length, moulded plug with protection contact (3-pin CEE plug available on request), plastic-coated retaining bracket. Thermostat controlled range 0 to +100°C.</p>	<table border="1"> <thead> <tr> <th>Illus-tration</th> <th>Imm. depth mm approx.</th> <th>Min. imm. depth mm approx.</th> <th>Width mm approx.</th> <th>Power Watt approx.</th> <th>Order No.</th> </tr> </thead> <tbody> <tr><td>A</td><td>560</td><td>320</td><td>270</td><td>1000</td><td>0509 0011</td></tr> <tr><td>A</td><td>830</td><td>460</td><td>450</td><td>2000</td><td>0509 0021</td></tr> <tr><td>A</td><td>1010</td><td>430</td><td>450</td><td>2000</td><td>0509 0031</td></tr> <tr><td>A</td><td>1240</td><td>870</td><td>200</td><td>2000</td><td>0509 0041</td></tr> <tr><td>A</td><td>1430</td><td>870</td><td>200</td><td>2000</td><td>0509 0051</td></tr> <tr><td>B</td><td>560</td><td>320</td><td>270</td><td>1000</td><td>0509 0111</td></tr> <tr><td>B</td><td>830</td><td>460</td><td>450</td><td>2000</td><td>0509 0121</td></tr> <tr><td>B</td><td>1010</td><td>430</td><td>450</td><td>2000</td><td>0509 0131</td></tr> <tr><td>B</td><td>1240</td><td>870</td><td>200</td><td>2000</td><td>0509 0141</td></tr> <tr><td>B</td><td>1430</td><td>870</td><td>200</td><td>2000</td><td>0509 0151</td></tr> </tbody> </table>	Illus-tration	Imm. depth mm approx.	Min. imm. depth mm approx.	Width mm approx.	Power Watt approx.	Order No.	A	560	320	270	1000	0509 0011	A	830	460	450	2000	0509 0021	A	1010	430	450	2000	0509 0031	A	1240	870	200	2000	0509 0041	A	1430	870	200	2000	0509 0051	B	560	320	270	1000	0509 0111	B	830	460	450	2000	0509 0121	B	1010	430	450	2000	0509 0131	B	1240	870	200	2000	0509 0141	B	1430	870	200	2000	0509 0151
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<p>6.1 Finned-tube heating element</p> 	<p>Application Heating and anti-frost protection for: assembly pits, crane driver cabs, payment booths, toilets, greenhouses, workshops, workplaces, cellars, transformer stations, building construction trucks, water supply installations, switchgears.</p> <p>Design Stainless steel finned tube, with 2 supports, 1 or 3 stainless steel Ø 8.4 mm elements, bright-galvanized steel hood, IP 65 protection system, Pg 11 screw-in cable connection with strain-relief clamp.</p>	<table border="1"> <thead> <tr> <th>Tube length mm approx.</th> <th>Power Watt approx.</th> <th>Stainless steel Order No.</th> </tr> </thead> <tbody> <tr><td>500</td><td>500</td><td>0601 2011</td></tr> <tr><td>500</td><td>1000</td><td>0601 2021</td></tr> <tr><td>750</td><td>750</td><td>0601 2041</td></tr> <tr><td>750</td><td>1500</td><td>0601 2051</td></tr> <tr><td>1000</td><td>1000</td><td>0601 2071</td></tr> <tr><td>1000</td><td>2000</td><td>0601 2081</td></tr> <tr><td>1500</td><td>1500</td><td>0601 2111</td></tr> <tr><td>1500</td><td>3000</td><td>0601 2121</td></tr> <tr><td>2000</td><td>2000</td><td>0601 2151</td></tr> <tr><td>2000</td><td>4000</td><td>0601 2181</td></tr> <tr><td>3000</td><td>6000</td><td>0601 2211</td></tr> </tbody> </table> <p>* Hood is separated (50 mm gap)</p>	Tube length mm approx.	Power Watt approx.	Stainless steel Order No.	500	500	0601 2011	500	1000	0601 2021	750	750	0601 2041	750	1500	0601 2051	1000	1000	0601 2071	1000	2000	0601 2081	1500	1500	0601 2111	1500	3000	0601 2121	2000	2000	0601 2151	2000	4000	0601 2181	3000	6000	0601 2211																														
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<p>6.3 Finned-tube heating element with limiter</p> 	<p>Application Heating and anti-frost protection for: assembly pits, crane driver cabs, payment booths, toilets, greenhouses, workshops, workplaces, cellars, transformer stations, building construction trucks, etc.</p> <p>Design Stainless steel finned tube, with 2 supports, stainless steel Ø 8.4 mm heating element, 230 V, bright-galvanized steel hood, IP 65 protection system, Pg 11 screw-in cable connection with strain-relief clamp, with limiter.</p> <p>without protective cage: max. case temperature 170°C with protective cage: max. case temperature 100°C</p>	<table border="1"> <thead> <tr> <th>Tube length mm approx.</th> <th>Power Watt approx.</th> <th>protective cage without Order No.</th> <th>protective cage with Order No.</th> </tr> </thead> <tbody> <tr><td>500</td><td>500</td><td>0603 0511</td><td>0603 0611</td></tr> <tr><td>750</td><td>750</td><td>0603 0521</td><td>0603 0621</td></tr> <tr><td>1000</td><td>1000</td><td>0603 0531</td><td>0603 0631</td></tr> <tr><td>1500</td><td>1500</td><td>0603 0541</td><td>0603 0641</td></tr> <tr><td>2000</td><td>2000</td><td>0603 0551</td><td>0603 0651</td></tr> </tbody> </table> <p>for garages max. case temperature 110°C.</p> <table border="1"> <tbody> <tr> <td>1500</td> <td>1000</td> <td>0603 0311</td> <td>0603 0321</td> </tr> </tbody> </table>	Tube length mm approx.	Power Watt approx.	protective cage without Order No.	protective cage with Order No.	500	500	0603 0511	0603 0611	750	750	0603 0521	0603 0621	1000	1000	0603 0531	0603 0631	1500	1500	0603 0541	0603 0641	2000	2000	0603 0551	0603 0651	1500	1000	0603 0311	0603 0321																																						
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<p>6.3 Finned-tube heating element with thermostat</p> 	<p>Application Heating and anti-frost protection for: assembly pits, crane driver cabs, payment booths, toilets, greenhouses, workshops, workplaces, cellars, transformer stations, building construction trucks, etc.</p> <p>Design Stainless steel finned tube, with 2 supports, stainless steel Ø 8.4 mm heating element, 230 V, bright-galvanized steel hood, IP 65 protection system, Pg 11 screw-in cable connection with strain-relief clamp, with thermostat.</p> <p>The continuous adjustable heating element temperature from 50 °C up to 250 °C ensures the adaptation of the power to the heat requirement.</p>	<table border="1"> <thead> <tr> <th>Tube length mm approx.</th> <th>Power Watt approx.</th> <th>Order No.</th> </tr> </thead> <tbody> <tr><td>500</td><td>1000</td><td>0603 0411</td></tr> <tr><td>750</td><td>1500</td><td>0603 0421</td></tr> <tr><td>1000</td><td>2000</td><td>0603 0431</td></tr> <tr><td>1500</td><td>3000</td><td>0603 0441</td></tr> </tbody> </table> <p>Also available with protective cage.</p>	Tube length mm approx.	Power Watt approx.	Order No.	500	1000	0603 0411	750	1500	0603 0421	1000	2000	0603 0431	1500	3000	0603 0441																																																			
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<p>6.5 Switchgear cabinet heaters</p>   <p>A C</p> <p>B D</p>	<p>6.6</p> <p>Application Maintaining switchgear cabinets at the correct temperature to prevent condensation.</p> <p>Design</p> <p>Illustration A Brass tube, Ø 18 mm, exchangeable element, IP 30.</p> <p>Illustration B Light alloy profile, exchangeable cartridge and flexible lead connections.</p> <p>Illustration C G^{5/8} screw-in heating element, Ø 18 mm brass jacket tube, IP 65.</p> <p>Illustration D Galvanized finned tube, Ø 38 mm, IP 65.</p>	<p>Dimensions</p> <table border="1"> <thead> <tr> <th>Illustration</th> <th>Dimensions mm approx.</th> <th>Power Watt approx.</th> <th>Order No.</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>500</td> <td>85</td> <td>0605 0111</td> </tr> <tr> <td>A</td> <td>500</td> <td>190</td> <td>0605 0121</td> </tr> <tr> <td>B</td> <td>52 x 52 x 75</td> <td>60</td> <td>0605 0211</td> </tr> <tr> <td>B</td> <td>52 x 52 x 75</td> <td>100</td> <td>0605 0221</td> </tr> <tr> <td>C</td> <td>200</td> <td>30</td> <td>0606 0311</td> </tr> <tr> <td>C</td> <td>200</td> <td>60</td> <td>0606 0321</td> </tr> <tr> <td>C</td> <td>500</td> <td>85</td> <td>0606 0331</td> </tr> <tr> <td>C</td> <td>500</td> <td>200</td> <td>0606 0341</td> </tr> <tr> <td>D</td> <td>280</td> <td>100</td> <td>0606 0421</td> </tr> </tbody> </table>	Illustration	Dimensions mm approx.	Power Watt approx.	Order No.	A	500	85	0605 0111	A	500	190	0605 0121	B	52 x 52 x 75	60	0605 0211	B	52 x 52 x 75	100	0605 0221	C	200	30	0606 0311	C	200	60	0606 0321	C	500	85	0606 0331	C	500	200	0606 0341	D	280	100	0606 0421					
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<p>6.7 Heater fan</p> 	<p>Application HELIOS heater fans are suitable for either transportable or stationary applications, and can be used for heating both dry and humid spaces.</p> <p>Design 370 x 320 x 300 mm casing (3000 - 9000 W), 460 x 390 x 360 mm casing (15000 - 21000 W); electric heater, 4-position switch, temperature controller, temperature limiter, 1.5 m power cable. Electrical connection: 3.000 W at 230 V AC; 6.000 W to 21.000 W at 230/400 V three-phase current.</p>	<table border="1"> <thead> <tr> <th>Power Watt</th> <th>Air volume m³/h</th> <th>Temperature increase K</th> <th>Order No.</th> </tr> </thead> <tbody> <tr> <td>1500/3000</td> <td>300/450</td> <td>14/19</td> <td>0607 0011</td> </tr> <tr> <td>3000/6000</td> <td>400/600</td> <td>21/28</td> <td>0607 0021</td> </tr> <tr> <td>4500/9000</td> <td>500/800</td> <td>25/32</td> <td>0607 0071</td> </tr> <tr> <td>7500/15000</td> <td>800/1400</td> <td>26/30</td> <td>0607 0041</td> </tr> <tr> <td>10500/21000</td> <td>800/1400</td> <td>37/42</td> <td>0607 0051</td> </tr> <tr> <td>Wall bracket</td> <td></td> <td></td> <td>0607 9001</td> </tr> <tr> <td>Wall bracket (from 15000 W)</td> <td></td> <td></td> <td>0607 9002</td> </tr> </tbody> </table>	Power Watt	Air volume m ³ /h	Temperature increase K	Order No.	1500/3000	300/450	14/19	0607 0011	3000/6000	400/600	21/28	0607 0021	4500/9000	500/800	25/32	0607 0071	7500/15000	800/1400	26/30	0607 0041	10500/21000	800/1400	37/42	0607 0051	Wall bracket			0607 9001	Wall bracket (from 15000 W)			0607 9002													
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<p>7.6 Ceramic heating element Ø 47</p> 	<p>Application For heating: high-viscosity oil, hydraulic fluid, fluids of similar viscosity to water. surface load 1.7 W/cm² 2.8 W/cm²</p> <p>Design Ceramic element support Ø 47, with helical groove, M5 terminal studs, IP 00 protection system, vertical and horizontal installation.</p> <p>* See last page</p>	<table border="1"> <thead> <tr> <th>Imm. length mm approx.</th> <th>Power Watt approx. (1.7 W/cm²)</th> <th>Order No.</th> <th>Power Watt approx. (2.8 W/cm²)</th> <th>Order No.</th> </tr> </thead> <tbody> <tr><td>200</td><td>500</td><td>0706 0011</td><td>800</td><td>0706 1011</td></tr> <tr><td>400</td><td>1000</td><td>0706 0031</td><td>1650</td><td>0706 1031</td></tr> <tr><td>600</td><td>1450</td><td>0706 0051</td><td>2450</td><td>0706 1051</td></tr> <tr><td>800</td><td>1950</td><td>0706 0071</td><td>3250</td><td>0706 1071</td></tr> <tr><td>1000</td><td>2450</td><td>0706 0091</td><td>4100</td><td>0706 1091</td></tr> <tr><td>1200</td><td>2950</td><td>0706 0111</td><td>4900</td><td>0706 1111</td></tr> <tr><td>1600</td><td>3900</td><td>0706 0131</td><td>6550</td><td>0706 1131</td></tr> <tr><td>2000</td><td>4900</td><td>0706 0151</td><td>8150</td><td>0706 1151</td></tr> </tbody> </table>	Imm. length mm approx.	Power Watt approx. (1.7 W/cm ²)	Order No.	Power Watt approx. (2.8 W/cm ²)	Order No.	200	500	0706 0011	800	0706 1011	400	1000	0706 0031	1650	0706 1031	600	1450	0706 0051	2450	0706 1051	800	1950	0706 0071	3250	0706 1071	1000	2450	0706 0091	4100	0706 1091	1200	2950	0706 0111	4900	0706 1111	1600	3900	0706 0131	6550	0706 1131	2000	4900	0706 0151	8150	0706 1151															
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<p>8.1 Heating plate</p> 	<p>Application For heating containers with fluids, tools, etc.</p> <p>Design 5 mm steel plate with tube elements, 230 V, varnished sheet steel casing and thermostat 50 to 300°C.</p> <p>For other sizes, please ask for information.</p> <p>Also available with electronic temperature control and digital temperature display.</p>	<table border="1"> <thead> <tr> <th>Plate length mm</th> <th>Plate width mm</th> <th>Power Watt approx.</th> <th>Order No.</th> </tr> </thead> <tbody> <tr><td>250</td><td>250</td><td>600</td><td>0801 0011</td></tr> <tr><td>400</td><td>250</td><td>1000</td><td>0801 0021</td></tr> <tr><td>500</td><td>300</td><td>1500</td><td>0801 0031</td></tr> <tr><td>600</td><td>360</td><td>2400</td><td>0801 0041</td></tr> </tbody> </table>	Plate length mm	Plate width mm	Power Watt approx.	Order No.	250	250	600	0801 0011	400	250	1000	0801 0021	500	300	1500	0801 0031	600	360	2400	0801 0041																																								
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<p>8.3 High-power cartridge heater</p> 	<p>Application For heating tools, shapes and machine parts.</p> <p>Design Heating element, embedded in highly-compressed insulation, nickel wire, insulated, 250 mm length, stainless steel jacket tube. Available diameters 6.5, 8, 10, 12.5, 16 and 20 mm; please ask for information.</p>	<table border="1"> <thead> <tr> <th>Ø mm</th> <th>Length mm</th> <th>Power Watt</th> <th>Order No.</th> <th>Power Watt</th> <th>Order No.</th> </tr> </thead> <tbody> <tr><td>12,5</td><td>40</td><td>160</td><td>0803 0611</td><td>315</td><td>0803 0711</td></tr> <tr><td>12,5</td><td>50</td><td>160</td><td>0803 0621</td><td>315</td><td>0803 0721</td></tr> <tr><td>12,5</td><td>60</td><td>200</td><td>0803 0631</td><td>400</td><td>0803 0731</td></tr> <tr><td>12,5</td><td>80</td><td>250</td><td>0803 0641</td><td>500</td><td>0803 0741</td></tr> <tr><td>12,5</td><td>100</td><td>250</td><td>0803 0651</td><td>500</td><td>0803 0751</td></tr> <tr><td>12,5</td><td>130</td><td>400</td><td>0803 0661</td><td>630</td><td>0803 0761</td></tr> <tr><td>12,5</td><td>160</td><td>500</td><td>0803 0671</td><td>800</td><td>0803 0771</td></tr> <tr><td>12,5</td><td>200</td><td>630</td><td>0803 0681</td><td>900</td><td>0803 0781</td></tr> </tbody> </table>	Ø mm	Length mm	Power Watt	Order No.	Power Watt	Order No.	12,5	40	160	0803 0611	315	0803 0711	12,5	50	160	0803 0621	315	0803 0721	12,5	60	200	0803 0631	400	0803 0731	12,5	80	250	0803 0641	500	0803 0741	12,5	100	250	0803 0651	500	0803 0751	12,5	130	400	0803 0661	630	0803 0761	12,5	160	500	0803 0671	800	0803 0771	12,5	200	630	0803 0681	900	0803 0781						
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<p>8.4 Flat heating element</p> 	<p>Application Heating containers and tools to 200°C max.</p> <p>Design Heating element insulated with micanite plates, set in metal sheet, with 200 mm insulated nickel wires.</p> <p>For other sizes, please ask for information.</p>	<table border="1"> <thead> <tr> <th>Length mm approx.</th> <th>Power Watt approx.</th> <th>Order No.</th> <th>Power Watt approx.</th> <th>Order No.</th> </tr> </thead> <tbody> <tr> <td colspan="2"></td> <td colspan="2">Width 20 mm approx.</td> <td colspan="2">Width 30 mm approx.</td> </tr> <tr><td>100</td><td>70</td><td>0804 0011</td><td>100</td><td>0804 1011</td></tr> <tr><td>500</td><td>500</td><td>0804 0151</td><td>600</td><td>0804 1151</td></tr> <tr> <td colspan="2"></td> <td colspan="2">Width 40 mm approx.</td> <td colspan="2">Width 50 mm approx.</td> </tr> <tr><td>100</td><td>140</td><td>0804 2011</td><td>170</td><td>0804 3011</td></tr> <tr><td>500</td><td>800</td><td>0804 2151</td><td>1000</td><td>0804 3151</td></tr> <tr> <td colspan="2"></td> <td colspan="2">Width 60 mm approx.</td> <td colspan="2">Width 70 mm approx.</td> </tr> <tr><td>100</td><td>200</td><td>0804 4011</td><td>250</td><td>0804 5011</td></tr> <tr><td>500</td><td>1250</td><td>0804 4151</td><td>1500</td><td>0804 5151</td></tr> </tbody> </table>	Length mm approx.	Power Watt approx.	Order No.	Power Watt approx.	Order No.			Width 20 mm approx.		Width 30 mm approx.		100	70	0804 0011	100	0804 1011	500	500	0804 0151	600	0804 1151			Width 40 mm approx.		Width 50 mm approx.		100	140	0804 2011	170	0804 3011	500	800	0804 2151	1000	0804 3151			Width 60 mm approx.		Width 70 mm approx.		100	200	0804 4011	250	0804 5011	500	1250	0804 4151	1500	0804 5151							
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<p>8.5 Ring heating element</p> 	<p>Application Heating cylindrical shapes and tools to 200°C max.</p> <p>Design Heating element insulated with micanite plates, set in metal sheet, with tensioning angle and 200 mm insulated nickel wires.</p> <p>For other sizes, please ask for information.</p>	<table border="1"> <thead> <tr> <th>iØ x width mm approx.</th> <th>Power Watt approx.</th> <th>Order No.</th> <th>iØ x width mm approx.</th> <th>Power Watt approx.</th> <th>Order No.</th> </tr> </thead> <tbody> <tr><td>30x30</td><td>100</td><td>0805 0011</td><td>60x30</td><td>220</td><td>0805 0161</td></tr> <tr><td>30x50</td><td>180</td><td>0805 0031</td><td>60x50</td><td>380</td><td>0805 0181</td></tr> <tr><td>30x80</td><td>280</td><td>0805 0051</td><td>60x80</td><td>500</td><td>0805 0201</td></tr> <tr><td>40x30</td><td>150</td><td>0805 0061</td><td>80x30</td><td>300</td><td>0805 0211</td></tr> <tr><td>40x50</td><td>250</td><td>0805 0081</td><td>80x50</td><td>420</td><td>0805 0231</td></tr> <tr><td>40x80</td><td>350</td><td>0805 0101</td><td>80x80</td><td>550</td><td>0805 0251</td></tr> <tr><td>50x30</td><td>180</td><td>0805 0111</td><td>100x30</td><td>360</td><td>0805 0261</td></tr> <tr><td>50x50</td><td>300</td><td>0805 0131</td><td>100x50</td><td>550</td><td>0805 0281</td></tr> <tr><td>50x80</td><td>420</td><td>0805 0151</td><td>100x80</td><td>850</td><td>0805 0301</td></tr> </tbody> </table>	iØ x width mm approx.	Power Watt approx.	Order No.	iØ x width mm approx.	Power Watt approx.	Order No.	30x30	100	0805 0011	60x30	220	0805 0161	30x50	180	0805 0031	60x50	380	0805 0181	30x80	280	0805 0051	60x80	500	0805 0201	40x30	150	0805 0061	80x30	300	0805 0211	40x50	250	0805 0081	80x50	420	0805 0231	40x80	350	0805 0101	80x80	550	0805 0251	50x30	180	0805 0111	100x30	360	0805 0261	50x50	300	0805 0131	100x50	550	0805 0281	50x80	420	0805 0151	100x80	850	0805 0301
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9.1 - 9.10

High-power tubular heating element Ø 8.4
Tube length up to 7.000 mm



Application

Heating water, oil and other fluids, fixed bodies by integrating, clamping or casting in, air and gases.

Design

Heating element with M4 stainless steel terminal studs, embedded in highly compressed insulating material, protected by bendable metal tube of copper, steel, various stainless steels and titanium.

Mounting and integration with screw-nipples.

Thread	Length mm	Collar mm	Material
For 1 tube end			
M 14 x 1,5	10	SW19	1.4305
M 14 x 1,5	15	SW19	Br, St37, 1.4571
M 14 x 1,5	25	SW19	Br, St37, 1.4571
M 14 x 1,5	40	SW19	Br, St37, 1.4571
G 1/2	10	SW30	Brass
G 1/2	25	SW30	Brass

For 2 tube ends			
M 26 x 1,5	11	Ø 32	Brass
M 26 x 1,5	21	Ø 32	Brass
M 26 x 2	15	Ø 32	1.4571
M 26 x 2	23	Ø 32	1.4571
G 3/4	25	SW32	Brass
G 1	18	Ø 40	Brass

For 4 tube ends			
G 1	18	Ø 40	Brass

Accessories

Screw cap, IP 65 protection system, with IT-gasket

Thread	Length mm	Ø mm	Material
M 14 x 1,5	73	20	Brass
M 26 x 1,5	50	29	Brass
M 26 x 1,5	50	29	Plastic
G 3/4	50	29	Brass
G 3/4	50	29	Plastic
G 1	60	36	Brass
G 1	60	36	Plastic

* See last page

Tube length mm	Power Watt approx.	Surface load W/cm ²	Order No. 230 V
Copper jacket			
320	500	8.6	0910 0011
370	665	9.3	0910 0031
490	1000	9.7	0910 0041
550	1000	8.4	0910 0061
690	1500	9.6	0910 0071
750	1000	5.8	0910 0081
800	1000	5.4	0910 0091
800	1500	8.1	0910 0101
840	2000	10.2	0910 0111
950	1000	4.5	0910 0121
1000	1320	5.6	0910 0131
1000	2000	8.4	0910 0141
1070	2500	9.8	0910 0151
1270	3000	9.7	0910 0171
1320	2000	6.2	0910 0181
1500	3000	8.1	0910 0201
1570	4000	10.3	0910 0221
2000	4000	8.0	0910 0241
2500	5000	7.9	0910 0251

Steel jacket			
510	250	2.3	0910 1011
510	500	4.5	0910 1021
690	1000	6.4	0910 1041
800	1000	5.4	0910 1061
940	335	1.5	0910 1071
940	500	2.3	0910 1081
940	1000	4.5	0910 1091
940	1500	6.8	0910 1101
1240	2000	6.7	0910 1111
1390	500	1.5	0910 1121
1390	750	2.2	0910 1131
1390	1500	4.4	0910 1151
1390	2000	5.9	0910 1161
1790	660	1.5	0910 1191
1790	1000	2.3	0910 1201
1790	2000	4.5	0910 1211
1790	3000	6.7	0910 1221
2000	1000	2.0	0910 1231
2000	2000	4.0	0910 1241
2000	3000	6.0	0910 1251
2230	833	1.5	0910 1261
2230	2500	4.5	0910 1271

9.11

Finned-tube heating element Ø 28



Application

Heating the air or gases in air heaters, shrink-film ovens, convection ovens, convection and defrosting heaters.

Design

High-power tube element, jacket tube with Ø 28 mm fins, steel or stainless steel, M 14 x 1.5 x 15 mm steel or stainless steel nipple.

For other dimensions, please ask for information.

Finned-tube heating elements are available up to a straight length of 3000 mm.

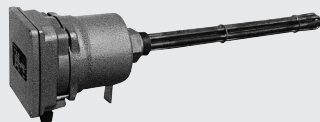
Power Watt approx.	Bend with fins		Bend without fins	
	Installed Length mm approx.	Order No.	Installed Length mm approx.	Order No.
Steel jacket (max. 400°C)				
1000	335	0912 1041		
1500	460	0912 1101	450	0912 2101
2000	685	0912 1161	675	0912 2161
3000	885	0912 1221	875	0912 2221
Stainless steel jacket (max. 550°C)				
1000	335	0912 3041		
1500	460	0912 3101	450	0912 4101
2000	685	0912 3161	675	0912 4161
3000	885	0912 3221	875	0912 4221

10.1



-Screw-in heating element
-Flanged heating element

with temperature controller and temperature limiter



Application

For heating non-flammable fluids, or heating fluids with a flash point $\geq 55^\circ\text{C}$ in open containers, where the fluids are not to be heated above flash point, in rooms where there is a risk of explosion.

Explosion protection type

"Flameproof Enclosure" and "Increased Safety"

Design




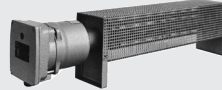



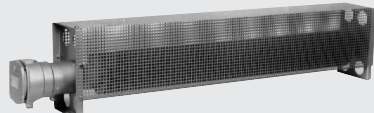


Cast iron housing, IP 54 protection system, G1 1/2 and G2 steel nipple or DIN 2527 steel flange, PN 16, C shape, Ø 8,4 mm tube element with stainless steel jacket, temperature controller and temperature limiter, for temperature classifications T1 to T6.

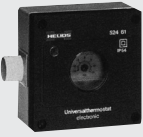
Screw-in elements with G2 thread are also available with G 1 1/2 thread.

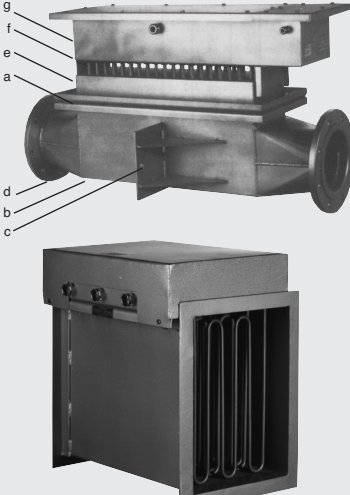
PTB-Certification for all heating elements, **ATEX-Certification** existent.


Thread	Imm. length mm approx.	Power Watt approx.	Order No.
Oil heating 1.5 W/cm²			
G1 1/2	510	750	1001 1021
G1 1/2	640	1000	1001 1031
G2	640	1500	1001 1051
Water heating 6 W/cm²			
G1 1/2	250	1500	1001 3011
G1 1/2	415	2500	1001 3031
G2	360	3000	1001 3051
G2	640	6000	1001 3071
Flange DN	Imm. length mm approx.	Power Watt approx.	Order No.
Oil heating 1.5 W/cm²			
40	620	1000	1001 6031
50	620	1500	1001 6061
80	930	4500	1001 6141
125	930	9000	1001 6191
Water heating 6 W/cm²			
40	440	3000	1001 8041
50	940	9000	1001 8111
80	930	18000	1001 8161
125	930	36000	1001 8201

* See last page

<p>10.2  -Level switch</p>  <p>Photograph shows type for horizontal installation</p>	<p>Application Monitoring and control of liquids in hazardous areas. The level switch ensures a switch-off in case of a level shortfall less than 50 mm.</p> <p>Explosion protection type "Flameproof Enclosure" and "Increased Safety"</p> <p>Design Cast iron housing, IP 54 protection system, stainless steel flange DIN 2527, DN 65, PN 16, swimmer with bar magnet made of stainless steel.</p>	<table border="1"> <thead> <tr> <th>Mounting position</th> <th>Order No.</th> </tr> </thead> <tbody> <tr> <td>Horizontal</td> <td>1002 0041</td> </tr> <tr> <td>Vertical</td> <td>1002 0051</td> </tr> </tbody> </table>	Mounting position	Order No.	Horizontal	1002 0041	Vertical	1002 0051																																																	
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<p>10.3  -Room heating element</p> 	<p>Application Heating the air in workshops where there is a risk of explosion.</p> <p>Explosion protection type "Flameproof Enclosure" and "Increased Safety"</p> <p>Design Bundle of either 3 or 6 tube elements, cast iron housing, IP 54 protection system, with varnished protective cage, temperature controller and safety temperature limiter.</p>	<table border="1"> <thead> <tr> <th>Temperature Class</th> <th>Power Watt approx.</th> <th>Overall Length mm approx.</th> <th>Order No.</th> </tr> </thead> <tbody> <tr> <td>T2</td> <td>1500</td> <td>1450</td> <td>1003 2011</td> </tr> <tr> <td>T2</td> <td>3000</td> <td>1450</td> <td>1003 2021</td> </tr> <tr> <td>T3</td> <td>500</td> <td>900</td> <td>1003 0011</td> </tr> <tr> <td>T3</td> <td>800</td> <td>1225</td> <td>1003 0021</td> </tr> <tr> <td>T3</td> <td>1000</td> <td>1450</td> <td>1003 0031</td> </tr> <tr> <td>T3</td> <td>1500</td> <td>1225</td> <td>1003 0041</td> </tr> <tr> <td>T3</td> <td>2000</td> <td>1450</td> <td>1003 0051</td> </tr> <tr> <td>T3</td> <td>3000</td> <td>2025</td> <td>1003 0061</td> </tr> <tr> <td>T4</td> <td>500</td> <td>1450</td> <td>1003 1011</td> </tr> <tr> <td>T4</td> <td>800</td> <td>1225</td> <td>1003 1021</td> </tr> <tr> <td>T4</td> <td>1000</td> <td>1450</td> <td>1003 1031</td> </tr> </tbody> </table>	Temperature Class	Power Watt approx.	Overall Length mm approx.	Order No.	T2	1500	1450	1003 2011	T2	3000	1450	1003 2021	T3	500	900	1003 0011	T3	800	1225	1003 0021	T3	1000	1450	1003 0031	T3	1500	1225	1003 0041	T3	2000	1450	1003 0051	T3	3000	2025	1003 0061	T4	500	1450	1003 1011	T4	800	1225	1003 1021	T4	1000	1450	1003 1031							
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<p>10.4  -Temperature controller</p> 	<p>Application Automatic temperature control for room heaters where there is a risk of explosion.</p> <p>Explosion protection type "Powder Filling" and "Increased Safety"</p> <p>Design Sand encapsulation, IP 54 protection system case, temperature controller, 16 A switching power at 400 V max.</p>	<table border="1"> <thead> <tr> <th>Temperature controller Adjustment range °C</th> <th>Diff. gap K</th> <th>Order No.</th> </tr> </thead> <tbody> <tr> <td>- 20 ... + 50</td> <td>2,5</td> <td>1004 0011</td> </tr> <tr> <td>0 ... + 70</td> <td>2,5</td> <td>1004 0021</td> </tr> <tr> <td>0 ... + 100</td> <td>2,5</td> <td>1004 0031</td> </tr> <tr> <td>0 ... + 150</td> <td>3,8</td> <td>1004 0041</td> </tr> <tr> <td>0 ... + 190</td> <td>5,0</td> <td>1004 0051</td> </tr> <tr> <td>+ 40 ... + 290</td> <td>7,5</td> <td>1004 0061</td> </tr> </tbody> </table>	Temperature controller Adjustment range °C	Diff. gap K	Order No.	- 20 ... + 50	2,5	1004 0011	0 ... + 70	2,5	1004 0021	0 ... + 100	2,5	1004 0031	0 ... + 150	3,8	1004 0041	0 ... + 190	5,0	1004 0051	+ 40 ... + 290	7,5	1004 0061																																		
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<p>10.5  -Finned-tube heating element</p> 	<p>Application Heating the air in workshops where there is a risk of explosion.</p> <p>Explosion protection type "Flameproof Enclosure" and "Increased Safety"</p> <p>Design Ceramic element, 230 V, in finned tube, cast iron housing, IP 54 protection system, with varnished protective cage.</p>	<table border="1"> <thead> <tr> <th>Temperature Class</th> <th>Power Watt approx.</th> <th>Overall Length mm approx.</th> <th>Order No.</th> </tr> </thead> <tbody> <tr> <td>T2</td> <td>610</td> <td>740</td> <td>1005 0021</td> </tr> <tr> <td>T2</td> <td>1280</td> <td>1235</td> <td>1005 0041</td> </tr> <tr> <td>T2</td> <td>2000</td> <td>1840</td> <td>1005 0061</td> </tr> <tr> <td>T3</td> <td>360</td> <td>740</td> <td>1005 0091</td> </tr> <tr> <td>T3</td> <td>780</td> <td>1235</td> <td>1005 0111</td> </tr> <tr> <td>T3</td> <td>1145</td> <td>1840</td> <td>1005 0121</td> </tr> <tr> <td>T4</td> <td>200</td> <td>740</td> <td>1005 0131</td> </tr> <tr> <td>T4</td> <td>360</td> <td>1235</td> <td>1005 0141</td> </tr> <tr> <td>T4</td> <td>575</td> <td>1840</td> <td>1005 0151</td> </tr> </tbody> </table>	Temperature Class	Power Watt approx.	Overall Length mm approx.	Order No.	T2	610	740	1005 0021	T2	1280	1235	1005 0041	T2	2000	1840	1005 0061	T3	360	740	1005 0091	T3	780	1235	1005 0111	T3	1145	1840	1005 0121	T4	200	740	1005 0131	T4	360	1235	1005 0141	T4	575	1840	1005 0151															
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<p>10.6  -Finned-tube heating element of stainless steel</p> 	<p>Application Heating the air in workshops where there is a risk of explosion.</p> <p>Explosion protection type "Flameproof Enclosure" and "Increased Safety"</p> <p>Design Ceramic element, 230 V, in stainless steel finned-tube, stainless steel housing, IP 54 protection system.</p>	<table border="1"> <thead> <tr> <th>Temperature Class</th> <th>Power Watt approx.</th> <th>Overall Length mm approx.</th> <th>Order No.</th> </tr> </thead> <tbody> <tr> <td>T2</td> <td>610</td> <td>735</td> <td>1006 0051</td> </tr> <tr> <td>T2</td> <td>1280</td> <td>1230</td> <td>1006 0061</td> </tr> <tr> <td>T2</td> <td>2000</td> <td>1835</td> <td>1006 0071</td> </tr> <tr> <td>T3</td> <td>360</td> <td>735</td> <td>1006 0081</td> </tr> <tr> <td>T3</td> <td>780</td> <td>1230</td> <td>1006 0091</td> </tr> <tr> <td>T3</td> <td>1145</td> <td>1835</td> <td>1006 0101</td> </tr> </tbody> </table>	Temperature Class	Power Watt approx.	Overall Length mm approx.	Order No.	T2	610	735	1006 0051	T2	1280	1230	1006 0061	T2	2000	1835	1006 0071	T3	360	735	1006 0081	T3	780	1230	1006 0091	T3	1145	1835	1006 0101																											
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<p>12.1 Temperature controller Screw-in</p> <p>Can also be suspended.</p> 	<p>Application Maintaining fluids at constant temperature; flexible installation.</p> <p>Design Integrated thermostat, switching power 16 A, 400 V, 1 pin, G1½ sensor with jacket of brass, stainless steel or polypropylene, hood, IP 65 protection system.</p>	<table border="1"> <thead> <tr> <th>Temp. from °C</th> <th>to °C</th> <th>Imm. length mm</th> <th>Order No.</th> <th>Order No.</th> </tr> </thead> <tbody> <tr> <td colspan="3"></td> <td colspan="2" style="text-align: center;">Brass</td> </tr> <tr> <td>0</td> <td>120</td> <td>200</td> <td>1201 0061</td> <td>1201 1061</td> </tr> <tr> <td>0</td> <td>120</td> <td>300</td> <td>1201 0071</td> <td>1201 1071</td> </tr> <tr> <td>0</td> <td>120</td> <td>500</td> <td>1201 0081</td> <td>1201 1081</td> </tr> <tr> <td>0</td> <td>120</td> <td>1000</td> <td>1201 0091</td> <td>1201 1091</td> </tr> <tr> <td colspan="3"></td> <td colspan="2" style="text-align: center;">Polypropylene</td> </tr> <tr> <td>0</td> <td>120</td> <td>200</td> <td>1201 2061</td> <td></td> </tr> <tr> <td>0</td> <td>120</td> <td>300</td> <td>1201 2071</td> <td></td> </tr> <tr> <td>0</td> <td>120</td> <td>500</td> <td>1201 2081</td> <td></td> </tr> <tr> <td>0</td> <td>120</td> <td>1000</td> <td>1201 2091</td> <td></td> </tr> </tbody> </table>	Temp. from °C	to °C	Imm. length mm	Order No.	Order No.				Brass		0	120	200	1201 0061	1201 1061	0	120	300	1201 0071	1201 1071	0	120	500	1201 0081	1201 1081	0	120	1000	1201 0091	1201 1091				Polypropylene		0	120	200	1201 2061		0	120	300	1201 2071		0	120	500	1201 2081		0	120	1000	1201 2091	
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<p>12.3 Room temperature controller</p>  <p>Photograph shows IP 65 protection system</p>	<p>Application Maintaining air temperature by Helios room heating elements. For wall-fastening.</p> <p>Design Single-pole double-throw switch in a plastic housing.</p>	<table border="1"> <thead> <tr> <th></th> <th>Control range</th> <th>Order No.</th> </tr> </thead> <tbody> <tr> <td>Protection system IP 30</td> <td>-20° to +30°C</td> <td>1203 0111</td> </tr> <tr> <td>Protection system IP 65</td> <td>+ 5° to +35°C</td> <td>1203 0121</td> </tr> <tr> <td>Protection system IP 65</td> <td>-15° to +15°C</td> <td>1203 0141</td> </tr> </tbody> </table>		Control range	Order No.	Protection system IP 30	-20° to +30°C	1203 0111	Protection system IP 65	+ 5° to +35°C	1203 0121	Protection system IP 65	-15° to +15°C	1203 0141
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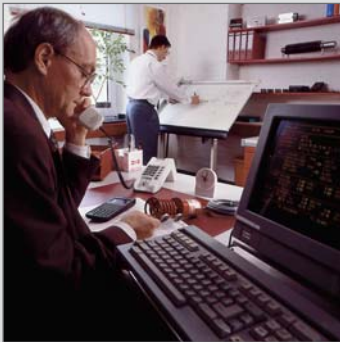
<p>13.1 Gas heater</p> 	<p>Application Helios gas heaters are used for heating non-explosive gases, for example air, water vapour, nitrogen etc., up to 700°C max., at up to 0.3 bar pressure. Heater fans (see paragraph 6.7.)</p> <p>Types:</p> <ul style="list-style-type: none"> a) Flange plate for installing in a rectangular building duct or convection oven b) Air duct for flange-mounting onto a building fan or air duct c) Special shapes at customer request <p>Additional types:</p> <ul style="list-style-type: none"> d) Air funnel for flange-mounting onto pipes e) Insulating plug above or below the flange, for heat insulation at temperatures up to 200°C f) Cooling zone between the insulating plug and connection case, at temperatures over 200°C g) Connection case in IP 65 (IP 30 Standard) <p>Design: Flange or air duct of galvanized steel or stainless steel. 8.4 mm diameter tube element of steel or stainless steel, mat.-no. 1.4541 or mat.-no. 1.4828, in versions with or without fins. Voltage, power, and switching sections at customer request. Regulation by temperature controller, limiter, PT 100 or thermocouples.</p> <p>To prepare the system, we need the following information:</p> <table border="0"> <tr> <td>type of gas heated :</td> <td>control type :</td> </tr> <tr> <td>gas volume :</td> <td>duct height :</td> </tr> <tr> <td>inlet temperature :</td> <td>duct width :</td> </tr> <tr> <td>outlet temperature :</td> <td>duct length (max.) :</td> </tr> <tr> <td>pressure :</td> <td>material :</td> </tr> <tr> <td>power :</td> <td>protection system :</td> </tr> <tr> <td>voltage :</td> <td>quantity :</td> </tr> <tr> <td>switching sections :</td> <td>special requests :</td> </tr> </table>	type of gas heated :	control type :	gas volume :	duct height :	inlet temperature :	duct width :	outlet temperature :	duct length (max.) :	pressure :	material :	power :	protection system :	voltage :	quantity :	switching sections :	special requests :
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<p>14.1 Continuous-flow heater</p> 	<p>Application: Helios continuous-flow heaters are used for heating:</p> <ul style="list-style-type: none"> a) demineralised water and ultrapure water for pharmaceuticals, not too aggressive acids, caustic solutions and other fluids that do not attack the stainless steels used by Helios GmbH b) Lubricating, heating, quenching, and hydraulic fluids, vegetable oils, water/glycol mixtures, emulsions, and other fluids that do not attack steel c) Air, nitrogen, and other non-explosive gases up to 150°C max. For special air and gas heaters, see paragraph 13.1 <p>Design: Helios continuous-flow heaters consist of 2 components:</p> <ul style="list-style-type: none"> a) Flow pipe with counter flange, feed and discharge connections, draining, vent and support stand (2 support stands for horizontal installation position). At customer request, the flow pipe can be fitted with a mineral matter retainer. b) Flanged heating element as described in paragraph 4.2. <p>HELIOS continuous-flow heaters are made according to the "AD 2000" information leaflets, without TÜV inspection.</p> <p>To prepare the system, we need the following information:</p> <table border="0"> <tr> <td>type of fluid heated :</td> <td>voltage :</td> </tr> <tr> <td>volume flow rate (m³/h) :</td> <td>control type :</td> </tr> <tr> <td>inlet temperature :</td> <td>installation position: horizontal/vertical</td> </tr> <tr> <td>outlet temperature :</td> <td>insulation required: yes/no</td> </tr> <tr> <td>pressure :</td> <td>material :</td> </tr> <tr> <td>power :</td> <td>quantity :</td> </tr> </table>	type of fluid heated :	voltage :	volume flow rate (m³/h) :	control type :	inlet temperature :	installation position: horizontal/vertical	outlet temperature :	insulation required: yes/no	pressure :	material :	power :	quantity :
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<p>Further product range</p> <ul style="list-style-type: none"> Integrated temperature controller Integrated temperature limiter Air heater, with explosion protection Tank heaters for chemical fluids Gate seal heaters, with flooding protection Roller heatings 	<p>Consultation We provide:</p> <ul style="list-style-type: none"> Heat requirement calculation Heat loss calculation Heating element selection Heating element layout Material selection Suggestions for installation Suggestions for control systems Circuit diagrams Operating and maintenance instructions Factory test reports 	<p>Special adaptations</p> <p>* These heating elements are available in other lengths, power ratings, voltages, and materials.</p> <p>If in doubt, please ask your supplier for the maximum permissible surface load of the fluid concerned.</p>
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HELIOS, your recognised reliable partner



Design and engineering



Washing machine



Heating wire winding machine



Filling station



Tubular heating element assembly



Quality control

Our Company

Established in 1914, the **HELIOS** company has grown into a recognised manufacturer of electric heating elements. **HELIOS** is a now well-known name in electric heating appliances.

Continuous innovation, outstanding technical know-how, the highest quality standards, reliable service supported by a technically well-informed sales organisation, together with the flexibility to satisfy the individual needs of our customers: these are the reasons for our success.

Total customer orientation is our company philosophy.

We employ qualified personnel with years of experience, specialised in providing tailor-made solutions to heating problems.

Specially fabricated and customised products form a substantial part of the services we provide.

With more than 4000 sq. metres of factory floor, we have all the technical resources needed to ensure a rationalised and flexible production.

The continuous quality controls that accompany our production process guarantee that our heating elements meet the most demanding standards.

