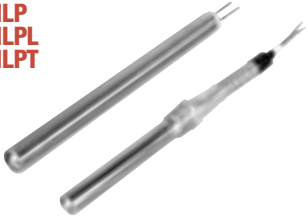










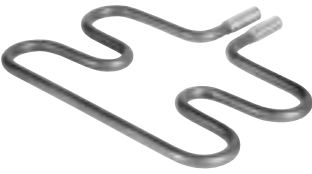




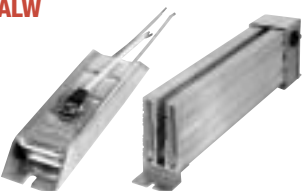
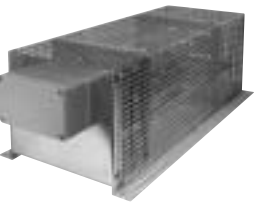
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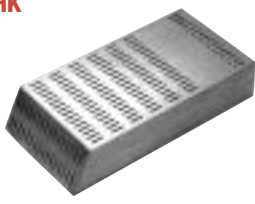
PRODUCTION OVERVIEW



TÜRK+HILLINGER
ELECTRIC HEATERS

TYPE	DESCRIPTION	TECHNICAL DATA	APPLICATIONS
HLP HLPL HLPT	 High-power density cartridge heater Metal-sheathed cartridge heater with ground sheath. Special construction and compactness allow extremely high surface loading, i. e. the maximum power in the smallest possible space.	Voltages available: up to 1000 V Surface loading: up to 50 W/cm ² according to type. Permissible surface temp.rise: 750°C max. Diameters available: 2,8 – 32 mm Connection: solid wires	Plastics industry, engineering industry, wood working machinery, paper industry, shoemaking machinery, domestic appliances, high-vacuum techniques, foundries, laboratory equipment, packaging industry
HLP	 Low-voltage, high-power cartridge heater High power cartridge heater voltage range up to 42 V max. High compactness allows high surface loading, i. e. giving the maximum power in the smallest space. The outer sheath is used as the return conductor.	Voltages available: up to 42 V Diameters available: 2,8; 4,5; 5 mm Surface loading: upto 30 W/cm ² Permissible temperature rise: abt. 750°C max. at Ø 2,8 mm; abt. 850°C max. at Ø 5 mm.	Automotive industry, Packaging machines, heating small machine parts
HLPR HPA	 PTC-Heating elements Heating elements in cartridge shape or in special execution (e.g. type HPA) equipped with self-regulating resistance elements.	HLPR: Diameter: 9; 10; 11; 12; 16 mm Length: 50 mm to 1400 mm (Ø 12 mm) HPA: E.g. dimensions: 55 x 38 x 19 mm Power: abt. 100 W Voltage: abt. 400 V Temperature: max. abt. 300°C	Heating of liquids, preheating of oil and petrol, frost protection
PMV	 Lightly compacted cartridge heater Metal-sheathed cartridge heater with outer sheath of CrNi-steel. Compared with conventional cartridge heaters of the same dimensions and power, these have greater mechanical strength and a longer life. Suitable for heating solid and fluid media.	Surface loading: abt. 6,5 W/cm ² Permissible temperature rise: 750°C max. Diameters: 10; 12,5; 16; 20 mm Tolerance on dia.: +0,2 mm Connections: pure solid wires, abt. 30 mm long or insulated leads	Plastics industry, engineering industry, wood working machinery, shoe-making machinery, domestic appliances, high-vacuum techniques, foundries, laboratory equipment, packaging industry
RP RPT	 High performance tubular cartridge heaters High performance tubular cartridge heaters offer high watt density with low mass, being used, where space is at a premium. They are available with and without thermocouple.	Possible voltages: up to 250 V Power: max. 80 W/100 mm length Heat resistance: max. 750°C. 3 and 4 mm Ø max. 3000 mm; 1,8 mm Ø max. 1500 mm; 1,3 mm Ø max. 1200 mm; 5,5 x 3,9 mm \square max. 3000 mm; max. 2000 mm: 2,2 x 4,2 mm \square 2,5 x 4,0 mm \square 1,8 x 3,2 mm \square 1,4 x 2,3 mm \square 3,2 x 3,2 mm \square	In the plastics industry for the heating of nozzles and hotrunner tooling. Generally applied where space is restricted.
HP	 Nozzle heater The heater consists of a low mass tubular cartridge heater type RP or RPT coiled onto a cylindrical sleeve with precise ID. It is available with or without thermocouple.	Voltages: up to 250 V Watt density: max. 15 W/cm ² Max. temperature on inner tube: 450°C with a brass-, 750°C with a NiCr-steel-inner sleeve	Heating of nozzles for the plastics industry, heating of liquids within tubes, heating of metals with circular cross section.
TE	 Thermocouple A robust construction with miniaturised connection sleeve, quick response time and a moisture proof design are features of the sheathed thermocouple type TE. Available ungrounded or insulated from the sheath. Compensation leads are preferably teflon insulated and protected by a wire mesh hose.	Available lengths: 20 – 1500 mm Diameter: 1; 1,5; 3; 4; 5 mm Connection sleeve: Ø 3 x 15 mm Sheath material: CrNi-steel AISI 321 Insulation: highly compacted magnesium oxide. Max. temperature: Fe-CuNi 600°C Ni-CrNi 750°C Dielectric strength: 500V Insulation resistance: > 50 M Ω	Temperature measuring in heaters, especially injection nozzles for the plastics industry.
FLC	 Flat heating element Flat heating element with CrNi-steel sheath and integrated tubular heater type RHK.	Voltage: up to 480 V Surface loading: abt. 5 W/cm ² Dielectric strength: 1250V Temperature resistance: abt. 750°C max. Section: 33 x 7 mm Length: 200 - 600 mm Connections: threaded tab M4	Heating of surfaces, e.g. heating boilers, heating frames, heating of plates, stamping dies and moulds, antifreeze for liquid tanks

TYPE	DESCRIPTION	TECHNICAL DATA	APPLICATIONS
RKF	 <p>Flat tubular heater</p> <p>Compacted, metal-sheathed heater with flat oval cross section; one-, two- or three- connections on one or both sides. Sheathing: CrNi-steel. Heat conductor: Chrome nickel wire NiCr 8020 or other NiCr alloys. Insulation material: pure magnesium oxide</p>	<p>Voltage: up to 480 V Max. temperature load of sheath: 700°C max. Cross sections: 13 x 5,5 mm, 17 x 6 mm, 22 x 6 mm. Max. lengths: abt. 5000 mm</p>	<p>Air- and gas heaters, fluid heaters, oil heaters, dryers, tarmac layers</p>
RHK	 <p>Tubular heater</p> <p>Sealed metal-sheathed tubular heater. Can be supplied straight or bent. Threaded stud connections at both ends.</p>	<p>Voltages: up to 480 V Sheath material: Cu and CrNi-steel Diameters: 16; 8,5; 6,5; 5 mm Max. lengths: 16 mm and 5 mm Ø, about 3000 mm 8,5 mm Ø, about 4000 mm 6,5 mm Ø, about 3800 mm 4 mm and 3 mm Ø, about 1500 mm</p>	<p>Plastics industry, engineering industry, shoe machine industry, domestic appliances, foundries, high vacuum applications, laboratory equipment, packaging industry</p>
EHK	 <p>Immersion heaters</p> <p>Electrical heating element manufactured from tubular heaters that are bent to a hairpin (U-shaped) and are brazed or welded into a threaded nipple G 1 1/2 ISO 228.</p>	<p>Immersion heaters are suitable for connection to three-phase or single-phase alternating current. Surface loading: depending on material to be heated, up to 25 W/cm² Heat resistance: max. 850°C Max. immersion length: 2200 mm</p>	<p>Heating of fluid or gaseous substances for example: hot-water cooker, boilers, oil heaters, air heaters.</p>
RHR	 <p>Finned tubular heating element</p> <p>Finned tubular heating elements of the type RHK, where the surface area is enlarged by a strip in order to heat gases. At a high power the surface temperature is small and the heating element is short.</p>	<p>Max. sheat temperature if made of CrNi-steel: 550°C Possible diameters: heater Ø 8.5; fins Ø 20 or Ø 28 mm Distance between fins: 5 mm</p>	<p>Channel-air heaters for air-conditioning and drying apparatus.</p>
HRR	 <p>Electrical air heater</p> <p>Channel heater with a housing of stainless steel or zinc-plated sheet metal with flanges on both sides and mounted finned heaters type RHR.</p>	<p>Wattages: from 2 KW to 108 KW Dimensions: from 250 x 250 x 180 mm to 800 x 800 x 250 mm Upon specification 400 or 480 V possible. Three phase star connection or delta connection possible.</p>	<p>Air conditioning and climatisation, industrial dryers.</p>
PK	 <p>Heating units without metal casings</p> <p>Ceramic heating unit without metal casing. The heater wire is located in several axially-parallel holes and is prevented from coming out by locked ends. The connections mounted on a plug-in head.</p>	<p>Operation voltages: up to 480 V Surface loading: approx. 22 W/cm² Max. temperature: approx. 650°C at outer surface Diameters available: 26 mm 32 mm; 45,9 mm Connections: Plug pins, twisted ends, leads or cable</p>	<p>For heating gaseous media, e.g., for welding plastic.</p>
ALW	 <p>Retardation resistor</p> <p>Highly compacted aluminium sheath resistors with flat rectangular section can be supplied with or without cooling fins. To be applied for frequency controllers or similar applications. The resistors can be assembled as a module to achieve higher permanent wattages. Protection to IP 24, IP 54 or IP 65 (with connection box).</p>	<p>Voltage: up to 800 V Temperature controller: 180°C max. Range: from 1 Ω to 500 Ω Dielectric strength: 4000 V Connection box or leads, UL-approved</p>	<p>Frequency converters, manufacturing industry, electrical industry, speed controllers</p>
RHK	 <p>Retardation resistor</p> <p>Highly compacted tubular heaters assembled with a protective housing made from zinc plated sheet metal. This device is designed to smooth performance peaks within an electronic control system up to 10800 W. Can be supplied with IP 20 as standard or IP54 and IP 64 with a connection box.</p>	<p>Tensions: up to 800 V Sheath temp. of tubular heater: max. 600°C 1 to 6 tubular heaters: 200x200x550 mm constant power: max. 7200 Watt 7 to 9 tubular heaters: 625x270x270 mm constant power: max. 10800 Watt Dielectric strength: 1800 V Connection: Connection box or leads, UL-approved</p>	<p>Frequency converters, electrical controls, lifts, motor controls</p>

TYPE	DESCRIPTION	TECHNICAL DATA	APPLICATIONS
HR 	Spiral heaters Heater with exposed heating filament located within ceramic plates or mica strips with a sheath metal housing. For use only with upstream or downstream fan blowers.	Operating voltages: up to 440 V Wattages up to max. 10 kW Max. loading: approx. 9 W/cm ² Max. temperature: approx. 600°C Outer dimensions: 360 x 50 x 90 mm 160 x 54 x 100 mm 235 x 50 x 85 mm	For tumbler dryers and industrial hot-air blowers.
DE 	Water heater Continuous water heater consisting of one or more tubular heaters and a tube being compacted in an aluminium profile. Can be supplied in straight or bent execution. If two heaters are used they can be wired in parallel or in series. The heaters can be equipped with a temperature limiter and/or with a thermostat.	Voltage: up to 480 V Power: max. 6 kW Dielectric strength: 1250 V Water tube diameter: max. 20 mm Connection: tab connector or insulated leads	Heating and keeping warm of all liquids, also circulation, e.g. heating of water, bathroom heaters.
PMVA 	Heating elements for refrigerators Heating elements with CrNi-steel sheath. Insulated by compacted MgO. Insulated connection leads at one end and steamproof seals.	Operating voltages: up to 250 V Surface loading: approx. 10 W/cm ² Max. temperature: approx. 600°C Diameter: 9,6 ± 0.1 mm Min. length: 165 mm of which 80 mm is heated. Power: 65 to 250 W Connections: copper leads with double insulation if requested	For absorption type refrigerators, oil preheaters.
RKW 	Electric heating units for railway points Complete, ready to use heating units for railway points, consisting of flat heater type RKF and water-tight connection box. All accessories available for the assembly on standard S 49, S 54 and UIC 60 rails.	Operating voltages: up to 800 V Different performance ratings available. Stainless steel connection sleeve with cable and CrNi-steel fixation clamps for the connection to the rail.	For the heating of switch points on railways and tramways.
SCHUW 	Safety resistor Shock proof resistor with heavy steel housing. Resistance strip embedded in highly compacted MgO.	Min. resistance: 0,05 Ω Max. power: 4000 A during 30 msec. Connection thread: on demand M10 or M12	Resistor to prevent the axial roller bearings of railway vehicles from current overload when they are running on electrified railways.
HK 	Electric heater Heater assembly for air heating with stainless steel housing.	Voltage: up to 480 V Wattage: 200 – 500 W max. temp. of the housing: 65°C Protection: IP 54 Dimensions: about 500x300x(100-200)	Heating of railway wagons.

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