

# HPR2000 / HPR1400 / HPR1000LC

## THICK-FILM, ULTRA HIGH POWER RESISTOR SERIES

### Characteristics



#### Features

- Non-Inductive design
- Ultra-high power density
- Highest Performance
- Materials in accordance with UL 94 V-0
- RoHS, REACH compliant



#### Applications

- Variable speed drives
- Power supplies
- Control devices
- Motor Control
- Robotics

### Description

TELPOD's HPR original series offers 2000, 1400 and 1000 watts of power dissipation when properly heatsinked. The design of the HPR series creates a constant pressure to the cooling plate of approximately 300 N for proper thermal flow. The HPR is ideal for variable speed drives, power supplies, control devices, robotics, motor control and other power designs.

### Technical parameters

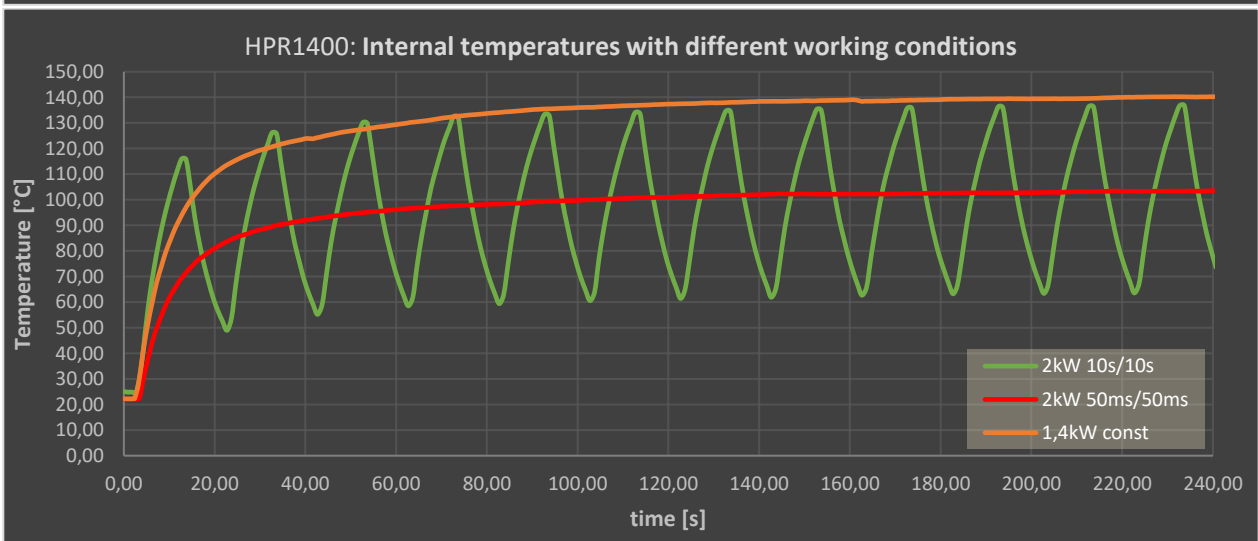
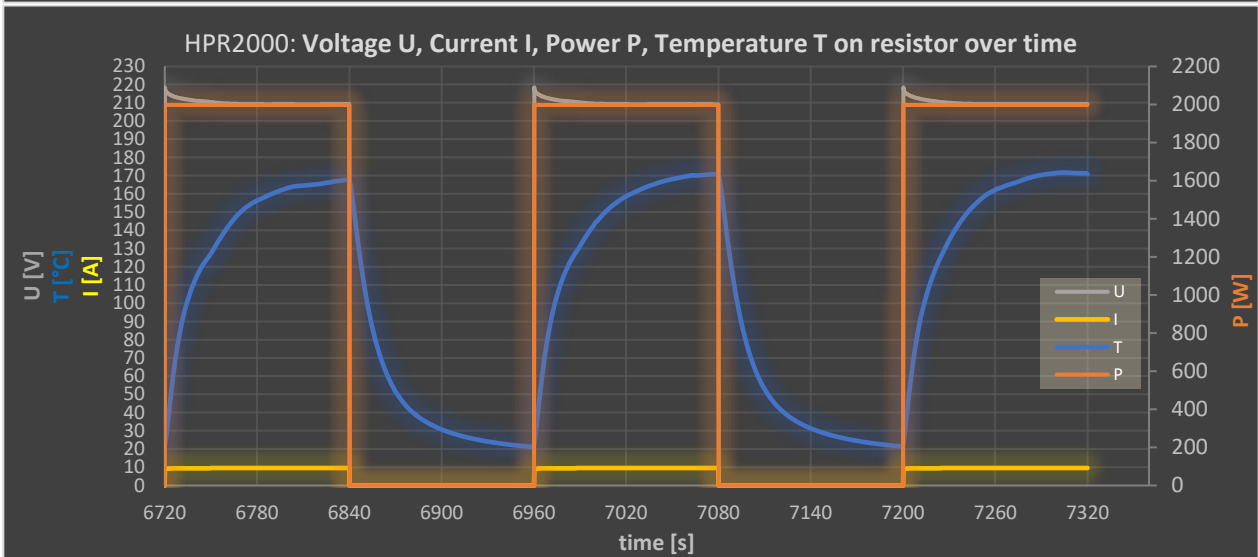
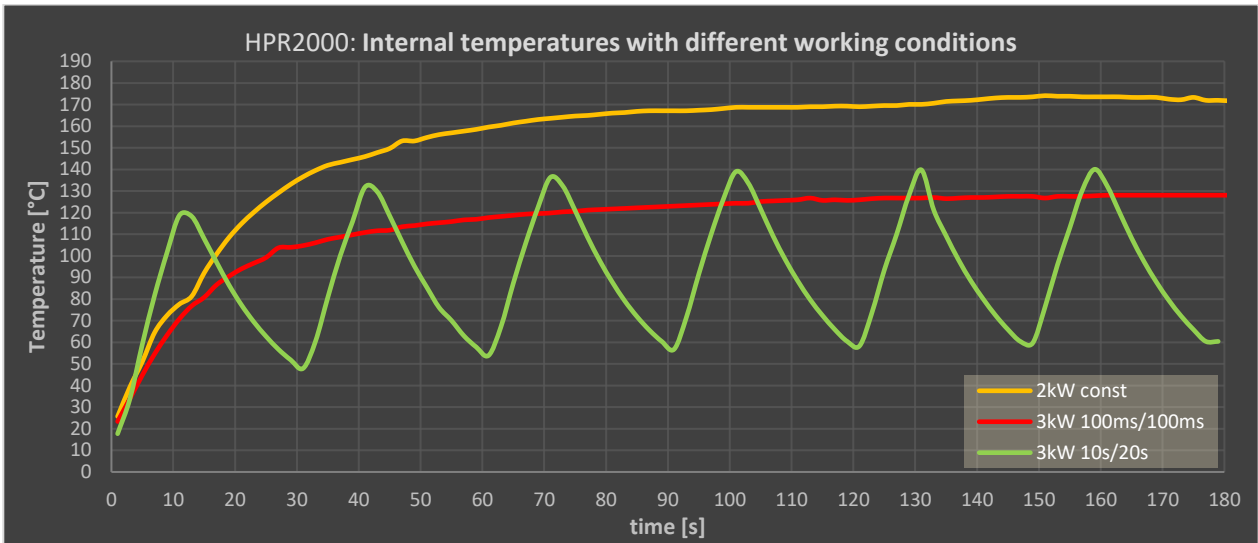
	HPR2000	HPR1400	HPR1000LC
Resistance range	1 Ω ... 100 kΩ	1 Ω ... 100 kΩ	1 Ω ... 100 kΩ
Resistance tolerance	±10%, 5%	±10%, 5%, 1%	±10%, 5%, 1%
Rated power P <sub>N</sub>	2000W	1400W	1000W
Impulse overload	3000W @ 10s	2000W @ 10s	1500W @ 10s
Dielectric strenght	> 7kV	> 7kV	> 8kV
Insulation resistance	> 400GΩ (5kV, 30s)	> 400GΩ (5kV, 30s)	> 400GΩ (5kV, 30s)
Creeping distance	> 74mm	> 74mm	> 74mm
Clearance	39mm	39mm	39mm
Temperature coefficient of resistance	0 ±100 ppm/°C	0 ±100 ppm/°C	0 ±100 ppm/°C
Working temperature range	-55°C ... +170°C	-55°C ... +170°C	-55°C ... +170°C
Inductance	80nH	80nH	80nH
Capacity @ 100kHz	100pF	140pF	70pF
Thermal resistance	0,10°C/W	0,12°C/W	0,16°C/W
Mounting - torque for electrical contacts M5	1,5...1,7Nm	1,5...1,7Nm	1,5...1,7Nm
Mounting - torque for assembly M4	1,3...1,6Nm	1,3...1,6Nm	1,3...1,6Nm
Internal temperature sensor (optional)	PT100/1000, AD22105, (others on request)	PT100/1000, AD22105, (others on request)	PT100/1000, AD22105, (others on request)

For more information, please contact the technical department.

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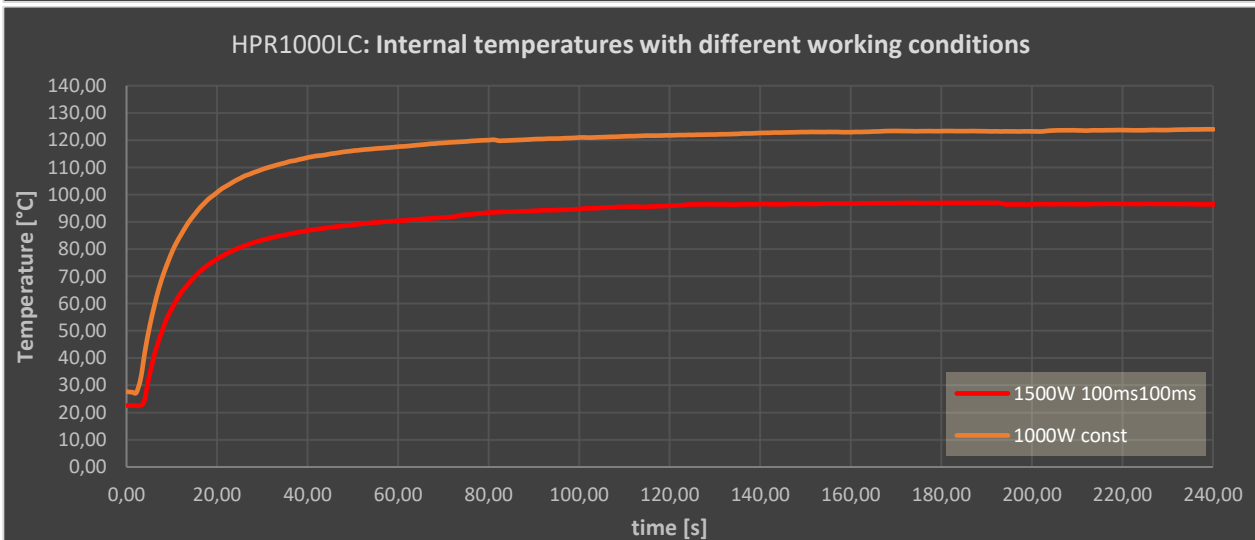
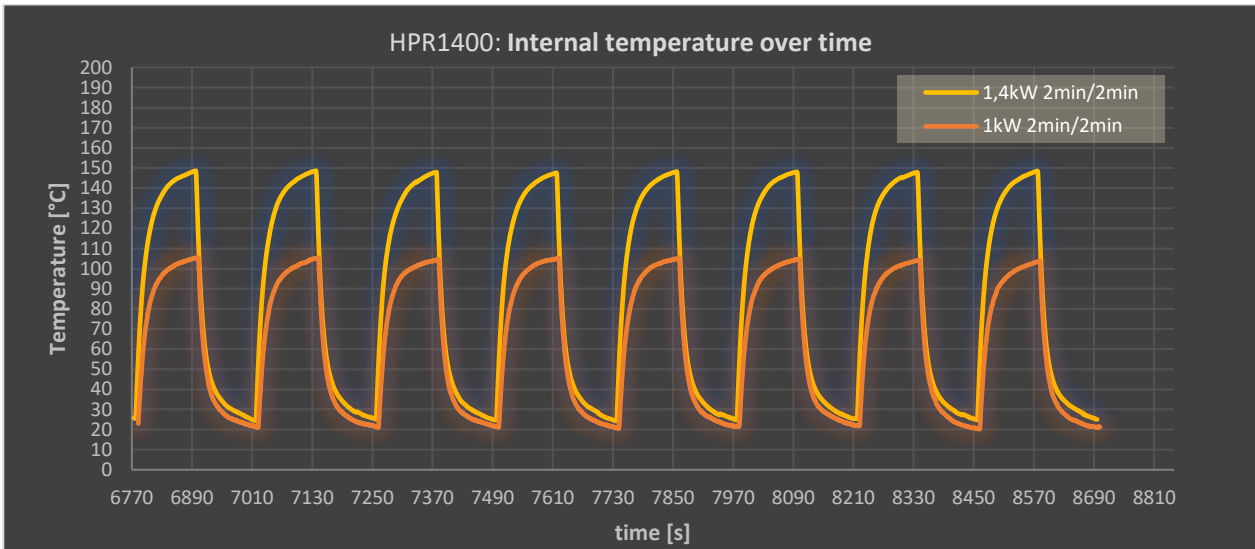
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**Assembly:**

- Between Resistor and heatsink used thermal grease 9,5W/mK (AAB TG4)
- Screwed to the radiator with a torque of 1.6 Nm with screws M4x20
- Electrical terminals screwed with a torque of 1.5Nm

**Cooling:**

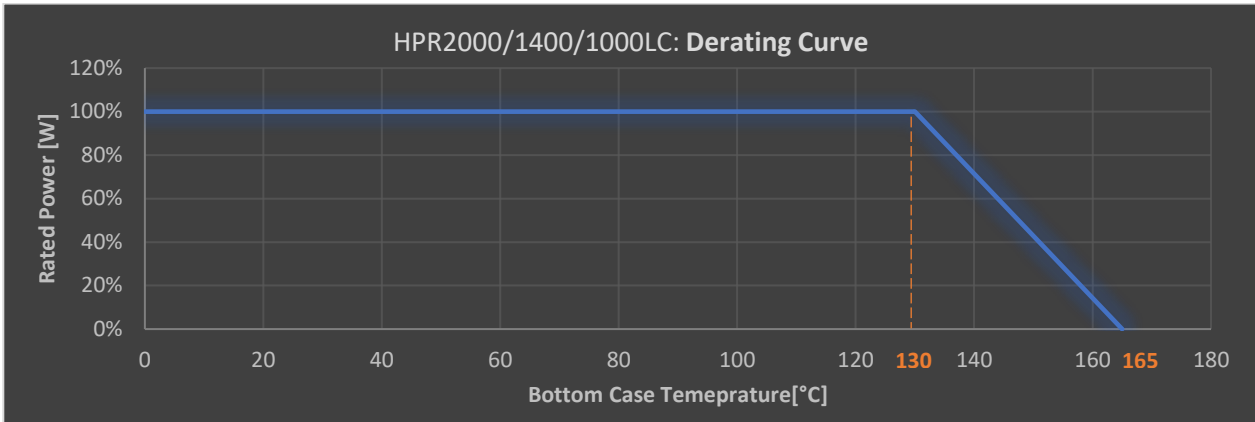
- Used heatsink:
  - Material: Copper,
  - Thermal resistance  $R_{th}$ : 0,025 K/W,
  - Water flow: 1 l/min (water in 18°C)

In order to ensure effective heat transfer, we recommend using effective thermal grease.

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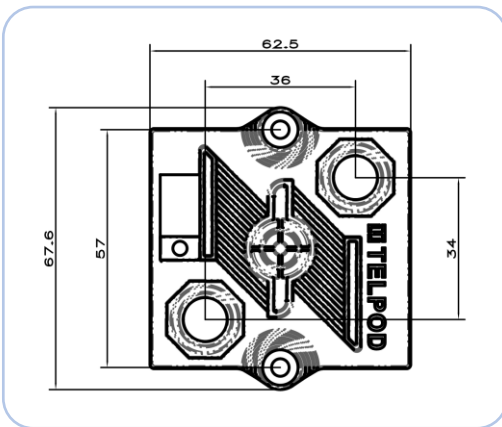
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## Dimensions and materials

*Dimensions in [mm]*



## Ordering informations

optional			
Series	Internal temperature sensor	Resistance	Tolerance
HPR2000	without (standard)	1Ω,...,100kΩ <small>xRx &lt; 10Ω &lt; xxR &lt; 1kΩ xKx &lt; 10kΩ xxK</small>	K = ±10 % (standard) J = ±5%, F = ±1%
HPR1400	Z – PT100		
HPR1000LC	X – PT1000 I – AD22105		

Example: HPR2000 X 20R K

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