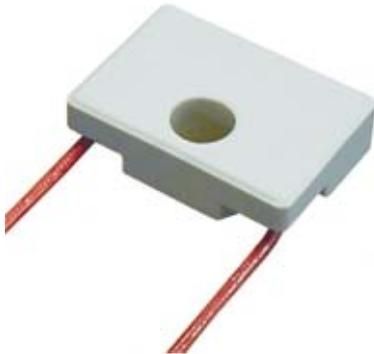


HEATING RESISTOR - HR

FEATURES



- Dimensions, resistive value and surface temperature can be designed according to customer specification
- Wirewound , metal film or PTC technology the heating element
- Incorporated fuse resistor (optional) for overload protection
- Ceramic case and special inorganic resin provide high thermal conductivity and moisture resistance
- Non-flammable

QUICK REFERENCE DATA

DESCRIPTION	HR
Resistance Range ⁽¹⁾ (typical) and Tolerance Single voltage (110 V or 220 V)	1.6 K Ω up to 10 k Ω Tolerance 5% or 10%
Resistance range (Typical) (Dual Voltage)	300 Ω up to 2 k ⁽¹⁾ (ambient temperature)
Voltage	Single 110 V and 220 V, dual voltage
Basic specifications	IEC 60115-1
Surface temperature on ceramic (Typical) (other values under request)	120, 140 and 160 °C
Insulation Voltage	> 2000 V
Leads electrical insulation	2000 V (3000 V under request)

(1) Other ohmic values available under request
Pulse load de behavior available on request
Hot spot and solder spot available on request

TECHNOLOGY

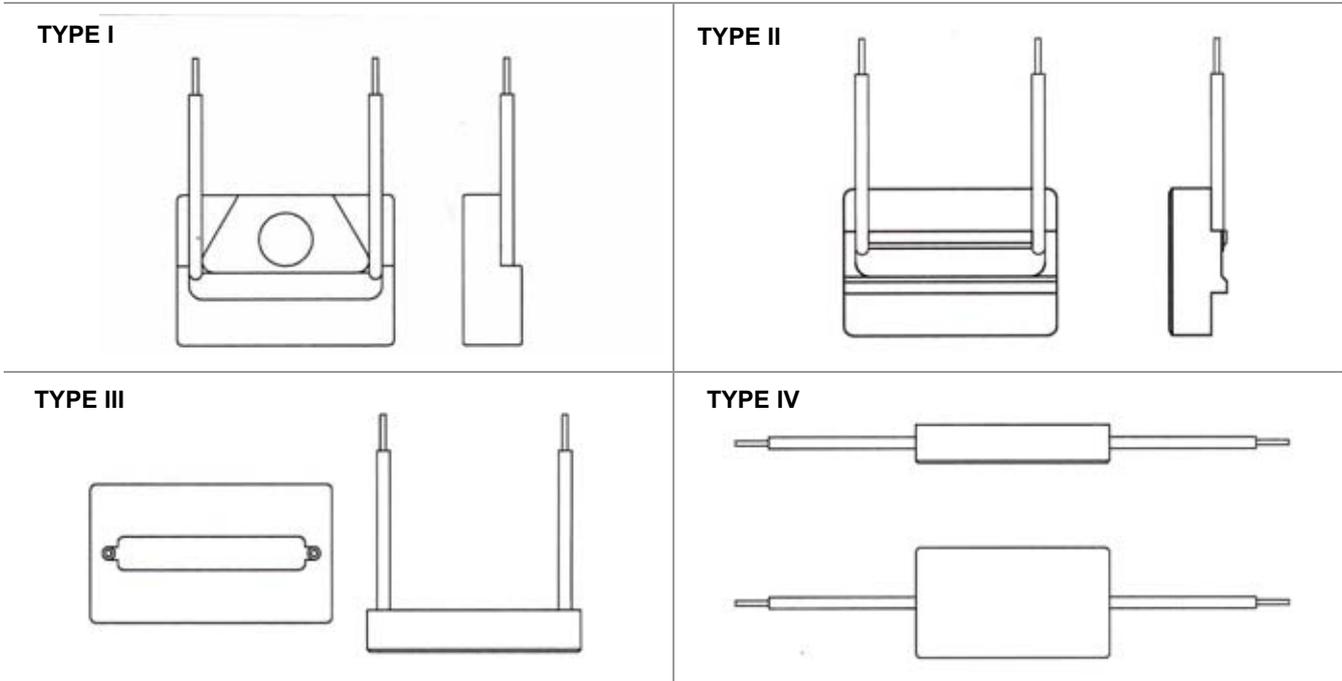
The product consists of a resistive heating element, assembled inside a special ceramic case, which assures excellent mechanical, thermal and moisture protection.

Available in three technologies:

- Wirewound resistive core or metal film resistor for single voltage (110 V or 220 V).
- PTC resistive element for dual voltage appliances (110 V and 220 V).
- The ceramic case can be designed for use with solid tablets, liquid refills or both.

HR

MECHANICAL DATA



Type I – Resistor for use with solid tables and liquid refill
 Type I, type III and type IV – Resistor for use with solid tablets
 Standards types available
 Both types could be produced with single or dual voltage

MARKING

Example:

PHX 8k9 5% 427

(Phoenix Company - Ohmic value - Tolerance - Production date year (4) and week (27))

ORDERING INFORMATION

General code for heating resistor; **2306 332 90 xxx**

The last three digits (xxx) indicate the specific type (style, length of terminal, ohmic value and tolerance).

TESTS AND REQUIREMENTS

Essentially all tests and requirements presented below, follow the schedule of IEC standard, publication 60115-1, 60115-4 and 60068.-2

Table 1. Test and requirements.

IEC 60155-1 CLAUSE	IEC 60068-2 TEST METHOD	TEST	PROCEDURE	REQUIREMENTS
4.13	-	Short time overload	Room temperature; dissipation $10 \times P_n$; 5 s ($P_n = V^2 / R$)	$\Delta R/R_{max} \pm 2\%$
4.24	3(Ca)	Damp heat (steady state)	56 days; 40 °C; 90 to 95% RH; loaded with $0.01P_n$ ($P_n = V^2 / R$)	No visual damage $\Delta R/R_{max} \pm 3\%$
4.25.1	-	Endurance at 25 °C	1000 h loaded with P_n ($P_n = V^2 / R$) 1.5 h ON and 0.5 h OFF	No visual damage $\Delta R/R_{max} \pm 5\%$