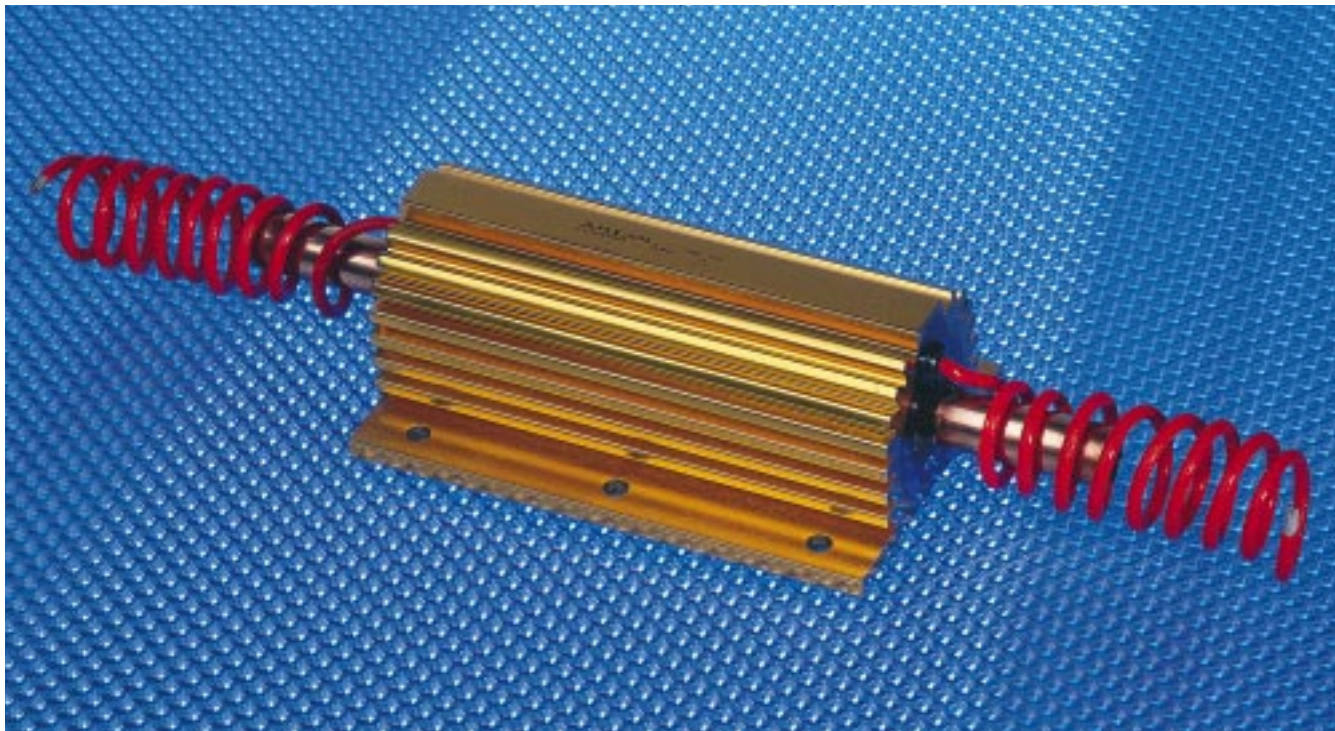


## WATER COOLED POWER RESISTORS **HSW600**



### FEATURES

- BALANCED COOLING
- LOW INDUCTION WINDINGS
- MOULDED-IN INSULATED CABLE TERMINATIONS
- HIGH POWER FOR SMALL SIZE

Having been originally designed for use in thyristor protection circuits, the HSW600 is most suitable where water cooling is available and space limited. The withdrawal of heat, internally and externally, ensures a low temperature gradient across the unit reducing internal stress. Heat is extracted internally through the cooling pipe and externally by direct mounting onto chassis or additional water cooled heatsink, thereby reducing temperature gradient across internal insulation.

### CHARACTERISTICS

Tolerance	Standard J ( $\pm 5\%$ ), please consult ARCOL for closer tolerances.
Temperature Coefficients typical values	Above 50R 25ppm/ $^{\circ}\text{C}$ . 1R-50R 50ppm/ $^{\circ}\text{C}$ . Below 1R 100ppm/ $^{\circ}\text{C}$ . For lower TC's please consult the factory.
Insulation resistance (Dry)	10,000 M $\Omega$ minimum.
Power dissipation @ high ambient temperatures	Dissipation derates linearly to zero at 200 $^{\circ}\text{C}$ .
Low inductive (NSW600)	Specify by adding N before the HSW code e.g. NHSW. Max value for NHSW600 is 12K5 ohms.
Insulation resistance (Dry)	10,000 M $\Omega$ minimum.
Construction	Water pipe & wound former is encapsulated in an aluminium housing ensuring good humidity seal and a high level of voltage protection.
Water pipe	Copper - other materials available on request.
Core	High Alumina Ceramic with high thermal conductivity and capable of withstanding severe thermal shock. It's ground finish ensures maximum contact with the resistive element for rapid heat transfer.
Element	Copper nickel alloy or nickel chrome alloy depending on ohmic value.
End caps	Stainless steel.
Encapsulant	High temperature moulding compound.
Housing	Anodised aluminium.
Terminals	Insulated flexible cable. Maximum length 610mm each end.

### ORDERING SYSTEM

N	H	S	W	6	0	0	2	R	2	J
LOW INDUCTION WINDING	SERIES			WATTS HEAT SINK MOUNTED			NOMINAL VALUE ( $\Omega$ )			TOLERANCE
TOLERANCE CODE				F = $\pm 1\%$		J = $\pm 5\%$		K = $\pm 10\%$		

ARCOL will be pleased to advise and to provide further information on the following subjects:

- HS resistors for pulse applications
- Maximum overload
- Inductance values
- Low ohmic values
- Special terminations
- Alternative aluminium housing designs and mountings

Arcol reserves the right to make changes in product specifications and availability without notice or liability. The information in this brochure is based on data obtained by our own research and is considered accurate. However, no warranty is expressed or implied regarding the accuracy of those data, the results to be obtained from the use thereof, of that any such use will infringe on any patent. This information is furnished upon the condition that the person receiving it shall make his own tests to determine the suitability thereof for his particular purposes.

# WATER COOLED POWER RESISTORS **HSW600**

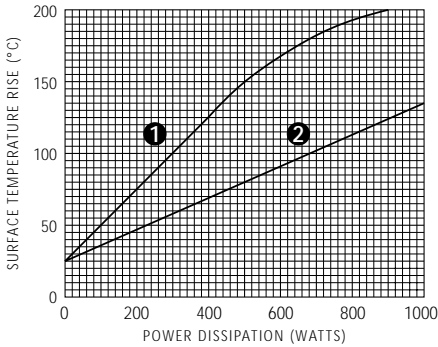
## ELECTRICAL SPECIFICATIONS

POWER RATING ON STANDARD HEAT SINK @ 25°C	RESISTANCE RANGE OHMS	LIMITING ELEMENT VOLTAGE DC/AC RMS	VOLTAGE PROOF AC PEAK	STABILITY ▲R % PER 1000 HRS	APPROX WEIGHT GMS	TYPICAL SURFACE TEMPERATURE RISE °C/W STANDARD HEAT SINK MOUNTED	STANDARD HEAT SINK (ALUMINIUM) RTH
600 WATTS	R1 - 50K	2200	3000	3%	625	0.19 °C/W	0.04 °C/W

**POWER RATING 600 Watts** mounted on 3750 cm<sup>2</sup> x 3mm aluminium plate with 25°C water flowing at rate of 2 litres per minute. See Curve 1.

**900 Watts** mounted on water cooled heatsink of thermal resistance 0.04°C/W with water at 25°C flowing at rate of 4 litres/minute. See Curve 2.

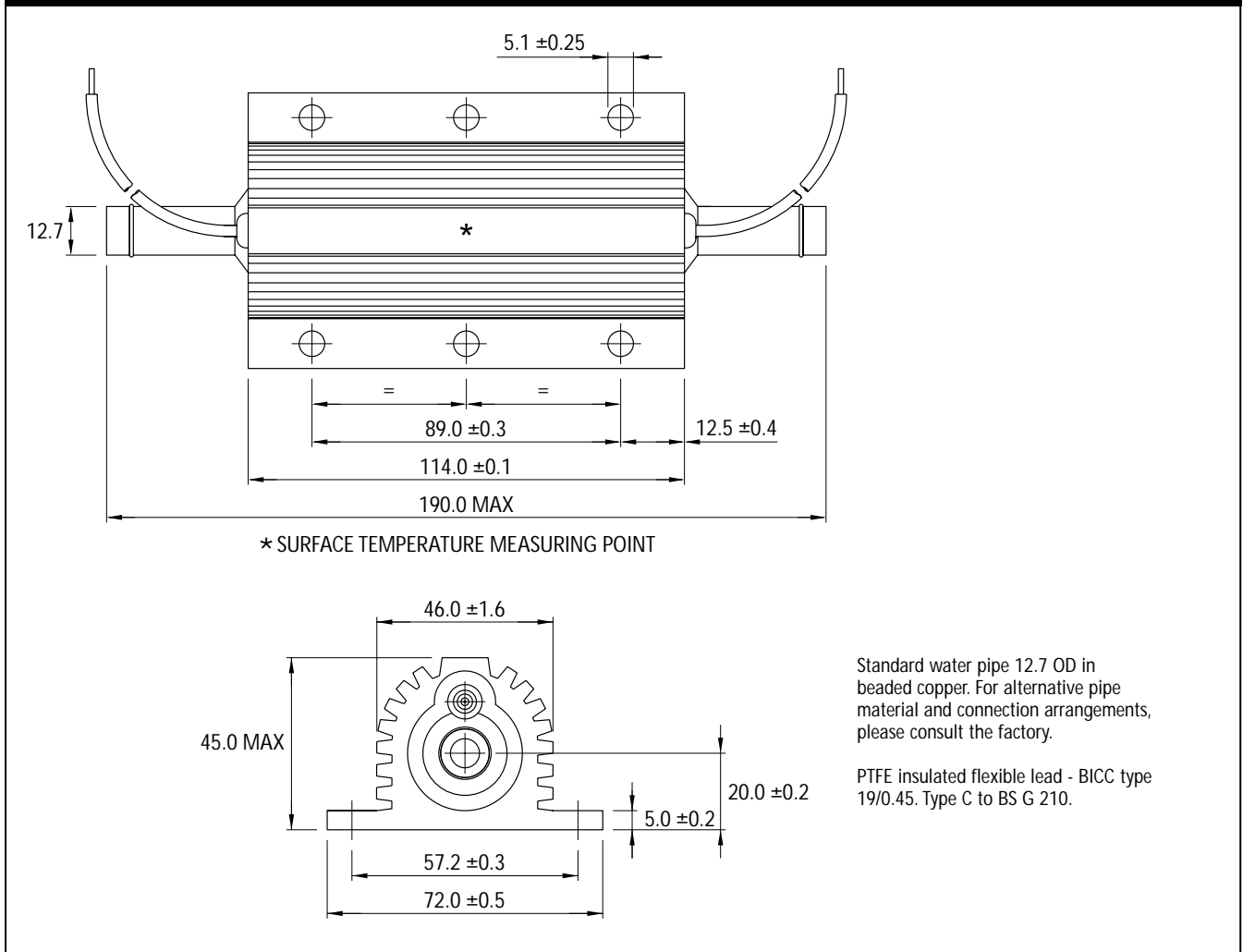
## TEMPERATURE RISE & POWER DISSIPATION



**CURVE 1** Resistor mounted on standard air cooled heatsink with water at 25°C flowing at rate of 2 litres/minute.

**CURVE 2** Resistor mounted on water cooled heatsink of Rth 0.04°C/W with water at 25°C flowing at rate of 4 litres/minute.

## DIMENSIONS



Standard water pipe 12.7 OD in beaded copper. For alternative pipe material and connection arrangements, please consult the factory.

PTFE insulated flexible lead - BICC type 19/0.45. Type C to BS G 210.

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