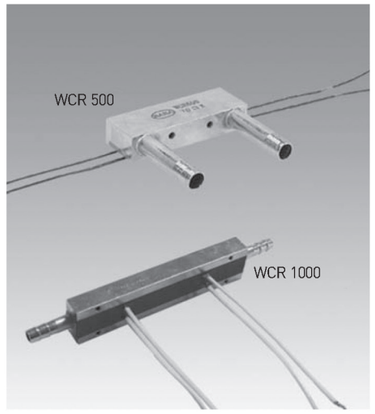
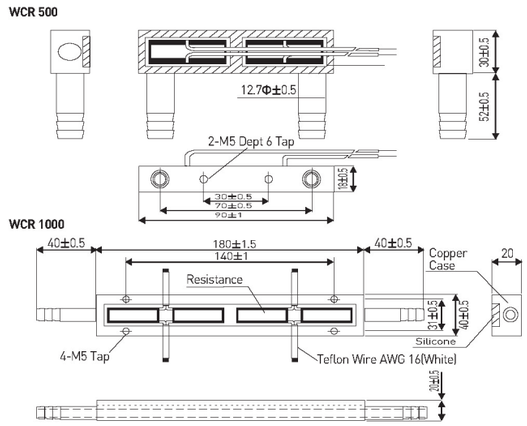
Water Cooled High Power Resistors WCR

These are 500W, 1000W high power resistors exhibiting very low operating temperatures. This model offers very bw inductance and high surge handling capacity. It consists of a flat resistive element with twisted air leads. A 5kV dielectric strength is ensured with an alumina substrate. The low operating temperature of the element gives a low failure rate in high-density, compact instruments and equipment. This model can be used in snubber resistors, GTO and IGBT in electric power conversion systems.

■ DIMENSIONS(mm)

WCR 500, 1000





■ CHARACTERISTICS

Rated Power	WCR500:500W(Water cooling)	WCR1000: 1000W(Water cooling)
Resistance Range	Stock Values: 10, 20, 40, 120Ω(Custom Values MOQ: 100pcs./ value)	
T.C.R	±250ppm/℃	
Resistance Tolerance	K(±10%)	
Dielectric Withstanding Voltage	AC 2,000V Between terminals and fin. Option: DC 5000V between terminals and fin	
Series Inductance	40nH / dual resistor(typical)	0.1 μH
Volume of Water Flow	2ℓ / 1Minute(minimum)	6ℓ / 1Minute(minimum)
Water Temp.	41℃ at Maximum at inlet, more than the dew point	
Case Temp. Rise	14℃	
Water Temp. Rise	1.4℃	
House Mouth	Standard: Nipple, any types are available	
Surface Temp. Rise	50.0℃	
Max. Element Surf. Temp	110℃	
Water Pressure Loss	0.06 kgf/㎠	0.1 kgf/㎠
Weight	355(g)	750(g)

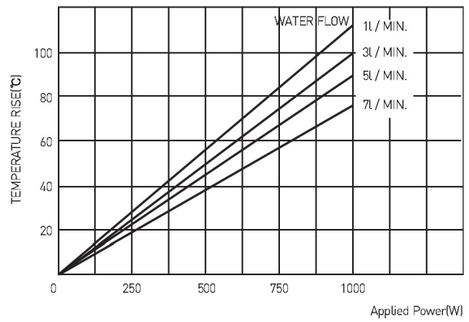
■ ORDERING PROCEDURE EXAMPLE

WCR500	H	*10+10Ω	K
Model #	T.C.R (H=250ppm/℃)	Resistance (*10+10Ω)	Tolerance (K= ±10%)

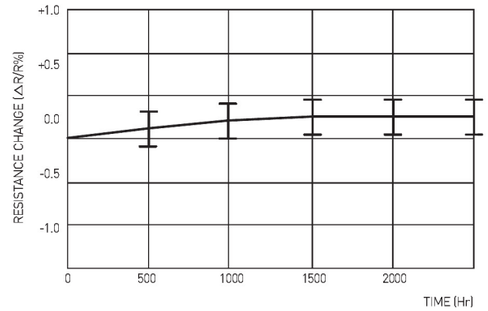
WCR500, 1000

■ TEMPERATURE INCREASE VERSUS POWER LOAD (WCR500)

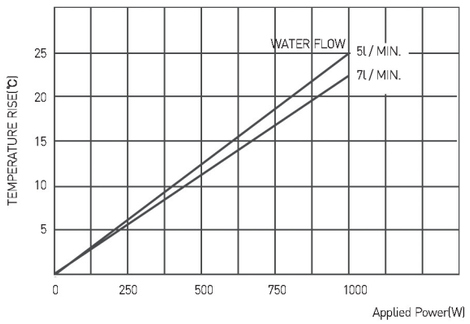
Element Surface Temperature Rise



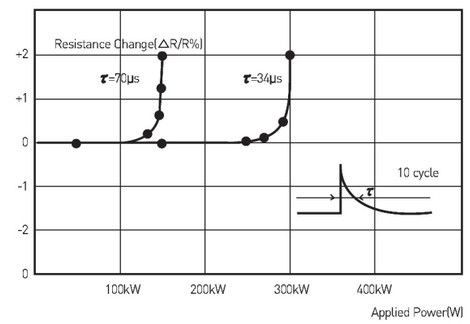
Load Life Characteristics



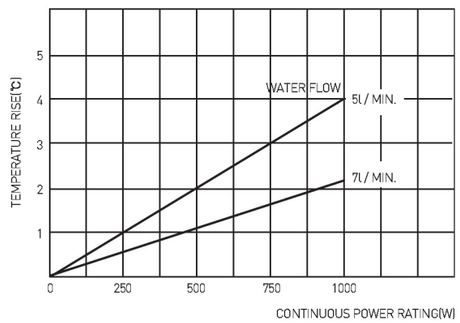
Case Temperature Rise



Impulse Test (Typical)



Cooling Water Temperature Rise vs. Power Rating



Note: The standard circuit consists of two elements(each with two leads),independently.
All measuring data was taken by connecting two elements in parallel.