

ARH/ARV (Metal Clad Wire Wound Resistors for Automobile)



The ARV(V=Vertical type) & ARH(H= Horizontal type) models are wire wound, metal-clad resistors for EV(Electric Vehicle), HEV(Hybrid Electric Vehicle), PHEV(Plug-in Hybrid Electric Vehicle) . These models have an extruded aluminium housing providing strong and rugged protection. These models controls inrush current through PRA(Power Relay Assembly) Option includes special leads for automobile.

GENERAL SPECIFICATIONS

Model	Rated Power [W] On Heat Sink	*Resistance Range[Ω]		Tolerance [%]
		Inductive Flying Leads	Non-Inductive Flying Leads	
ARV/ARH 60	60	0.1 ~ 400	0.1 ~ 180	D[±0.5%]
ARV/ARH 80	80	0.1 ~ 910	0.1 ~ 110	
ARV/ARH 100	100	0.1 ~ 1.1K	0.1 ~ 240	F[±1.0%]
ARV/ARH 120	120	0.1 ~ 1.3K	0.1 ~ 300	G[±2.0%]
ARV/ARH 150	150	0.1 ~ 1.6K	0.1 ~ 390	
ARV/ARH 200	200	0.1 ~ 2.2K	0.1 ~ 1.0K	J[±5.0%]
ARV/ARH 300	300	0.1 ~ 2.7K	0.1 ~ 1.5K	K[±10%]
ARV/ARH 400	400	0.1 ~ 4.3K	0.1 ~ 2.2K	
ARV/ARH 500	500	0.1 ~ 6.8K	0.1 ~ 3.0K	

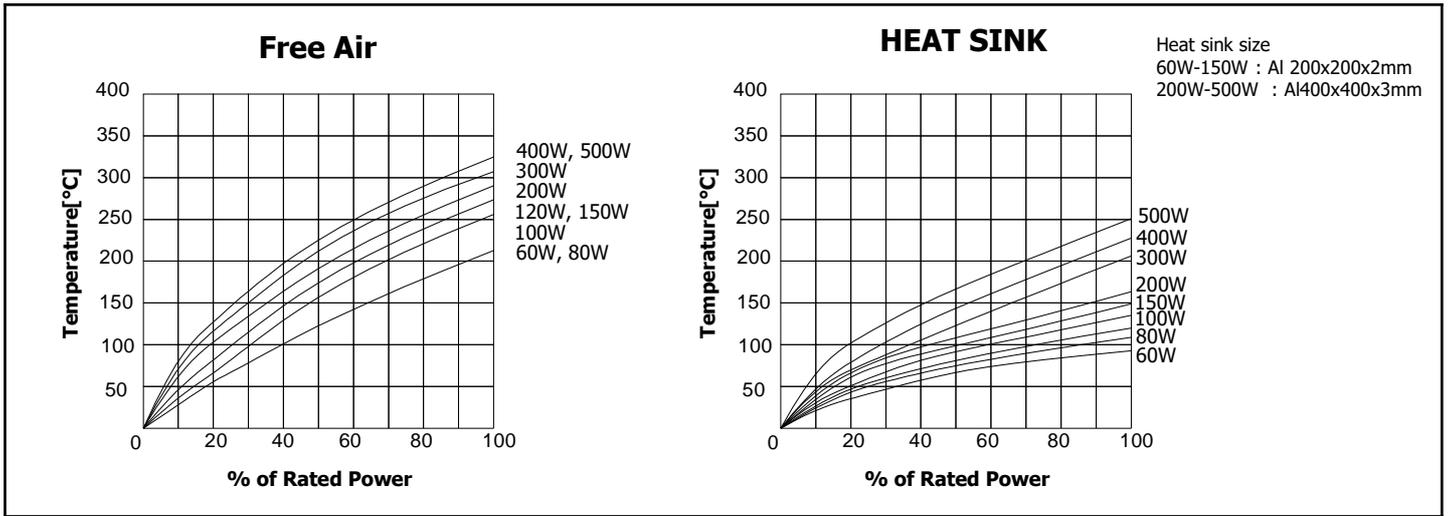
* Also available in extended ohmic ranges

CHARACTERISTICS

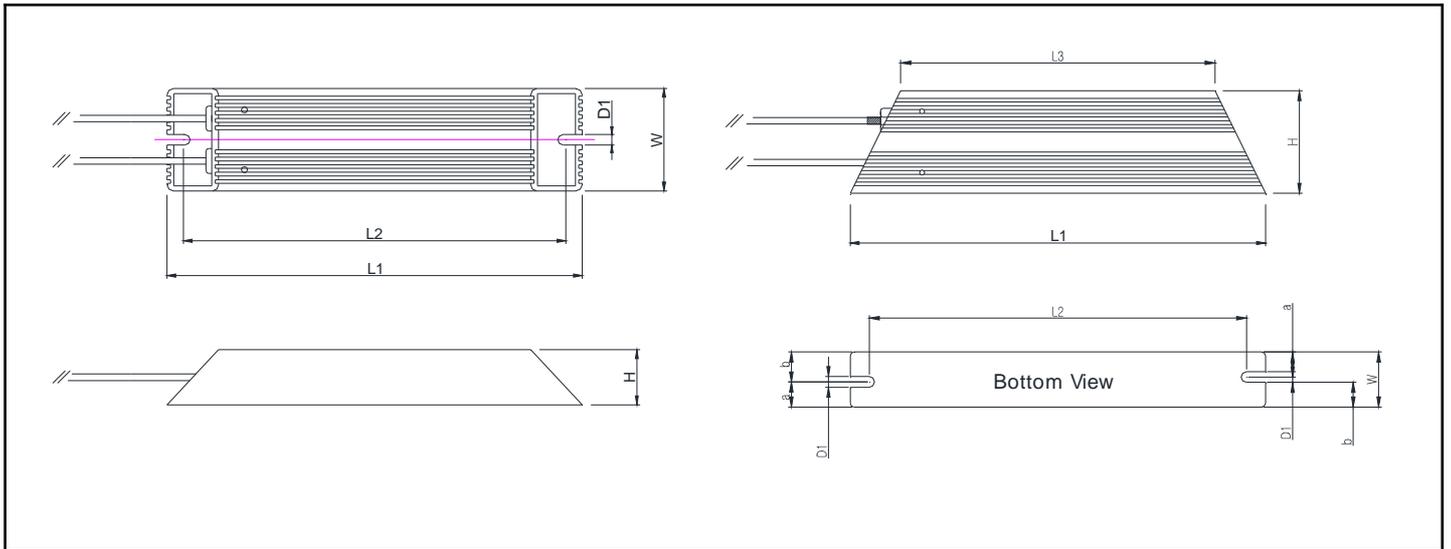
Values in [] mean Change in Ω After Test

Operating Temp.				- 55 ~ +200°C																		
Insulation Resistance				Min. 20M Ω																		
Dielectric Strength				AC1500V, (Available options : 2500V, 3500V, 4500V)																		
Temperature Coefficient				Max ± 260ppm/°C																		
Short Time Overload	±[2%+0.05Ω]			60W : 5 x Power rating 5Sec, 80~500W :10 X Power rating, 5 sec																		
Moisture Resistance	±[3%+0.05Ω]			40°C / RH95% 500 Hours, DC100V Case to Terminal																		
Thermal Shock	±[2%+0.05Ω]			Power Rating 30min, -25°C 15Min																		
Vibration	±[1%+0.05Ω]			10Hz ~ 55Hz ~ 10Hz[1min], 2 hours each direction																		
Vibration with thermal condition	±[5%+0.05Ω]	Thermal condition					-40°C ~ to +85°C (-40°C 10min, +85°C 10min)															
		Vibration condition	<table border="1"> <thead> <tr> <th>Vibration condition [Hz]</th> <th>10</th> <th>55</th> <th>180</th> <th>300</th> <th>360</th> <th>1000</th> </tr> </thead> <tbody> <tr> <td>Spectrum [(m/s₂)_z/Hz =G_z/Hz]</td> <td>9.9</td> <td>3.2</td> <td>0.12</td> <td>0.12</td> <td>0.06</td> <td>0.06</td> </tr> </tbody> </table>						Vibration condition [Hz]	10	55	180	300	360	1000	Spectrum [(m/s ₂) _z /Hz =G _z /Hz]	9.9	3.2	0.12	0.12	0.06	0.06
			Vibration condition [Hz]	10	55	180	300	360	1000													
Spectrum [(m/s ₂) _z /Hz =G _z /Hz]	9.9	3.2	0.12	0.12	0.06	0.06																
						41Hrs each directions																
Moisture Load Life	±[3%+0.05Ω]			40°C / RH95% Power Rating x 0.1, 1.5 Hours On, 0.5 Hours Off for 500 Hours +65°C, +25°C, -10°C / RH95% Power rating x 0.1 1.0 Hours On, 1.0 Hours Off For 240 Hrs.																		
Load Life	±[5%+0.05Ω]			Power rating 1.5 Hours on, 30 min Off 500 Hours																		
Operation Test	±[5%+0.05Ω]	Successful					+85°C, Rush Current Test, Specific Voltage, Capacitance, 1,000 ~ 15,000 Cycle															
		Failed test					+85°C, Rush Current Test, Specific Voltage, without Capacitance, 5 ~ 50 Cycle															
		Low Temp					-40°C, Rush Current Test, Specific voltage, Capacitance, 3 Hours															
Temp. Cycle	±[3%+0.05Ω]			+85°C 10min, -40°C 10min 1cycle 60min, 207 cycles																		

SURFACE TEMPERATURE INCREASE VERSUS POWER LOAD

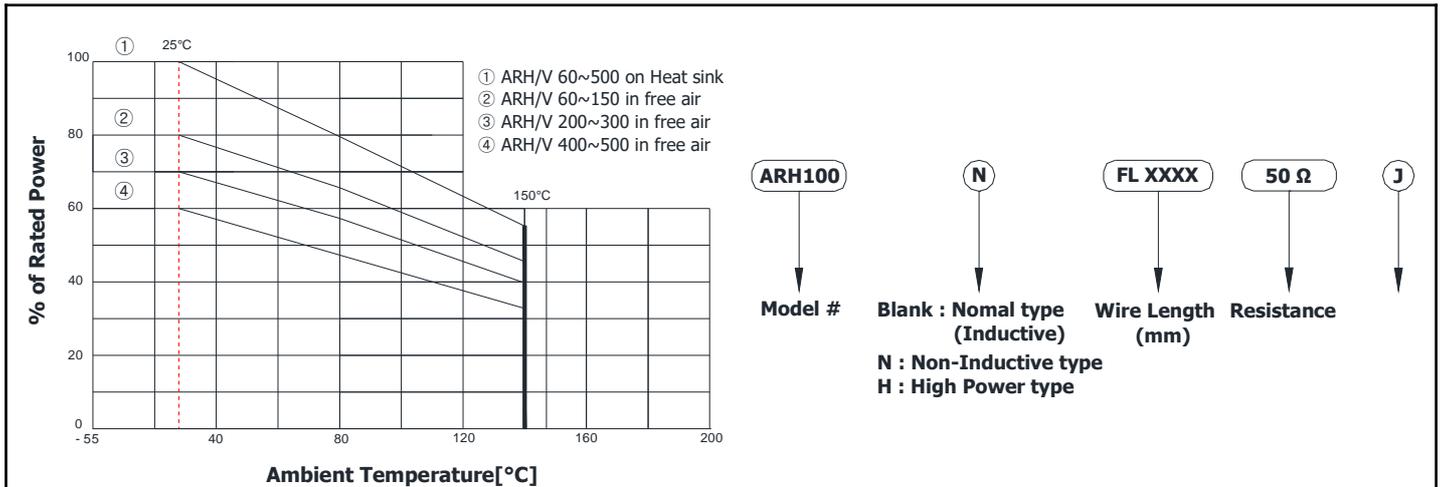


DIMENSIONS[mm]



Model	Dimension[mm]									Weight	
	L1±2	L2±2	L3±2	W±0.5	H±0.5	D1±0.3	a±0.5	b±0.5	ARH	ARV	
ARV/ARH 60	100	87	60	41[H] 22[V]	22[H] 41[V]	4.3	10	12	110	113	
ARV/ARH 80	150	137	110	41[H] 22[V]	22[H] 41[V]	4.3	10	12	195	189	
ARV/ARH 100	165	152	125	41[H] 22[V]	22[H] 41[V]	4.3	10	12	216	215	
ARV/ARH 120	182	169	142	41[H] 22[V]	22[H] 41[V]	4.3	10	12	245	241	
ARV/ARH 150	210	197	170	41[H] 22[V]	22[H] 41[V]	4.3	10	12	289	290	
ARV/ARH 200	165	146	125	60[H] 30[V]	30[H] 60[V]	5.3	13	17	485	447	
ARV/ARH 300	215	196	175	60[H] 30[V]	30[H] 60[V]	5.3	13	17	600	600	
ARV/ARH 400	265	246	225	60[H] 30[V]	30[H] 60[V]	5.3	13	17	770	780	
ARV/ARH 500	335	316	295	60[H] 30[V]	30[H] 60[V]	5.3	13	17	990	980	

DERATING CURVES & ORDERING PROCEDURE EXAMPLE



HIGH POWER TYPE SPECIFICATION [Preliminary version]

Model	Rated Power [W] In Free Air	*Resistance Range[Ω]		Tolerance [%]
		Inductive	Flying Leads	
ARV/ARH 100H	150	16 ~ 1.2 K		D[±0.5%] F[±1.0%] G[±2.0%] J[±5.0%] K[±10%]
ARV/ARH 120H	170	20 ~ 1.5 K		
ARV/ARH 200H	250	25 ~ 2.7 K		

CHARACTERISTICS

Operating Temp.		- 55 ~ +200°C
Load Life	±[5%+0.05Ω]	Power rating 100 Hours On

* Other characteristics are same as Standard

Values in [] mean Change in Ω After Test

DIMENSIONS[mm]

Model	Dimension[mm]									Weight	
	L1±2	L2±2	L3±2	W±0.5	H±0.5	D1±0.3	a±0.5	b±0.5	ARH	ARV	
ARV/ARH 100H	165	152	125	41[H] 22[V]	22[H] 41[V]	4.3	10	12	216	215	
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