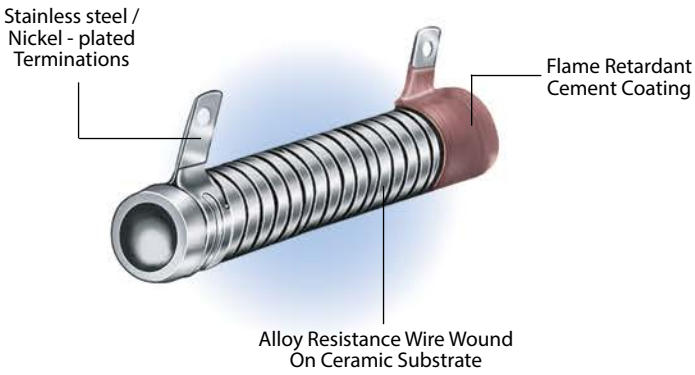


WIRE WOUND RESISTORS
CEMENT COATED TYPE

HIR
SERIES
HI POWER

Cement Coated Wire Wound Resistors

Industrial / Professional Applications

- Type 'A'- compatible for using with Amp type connectors
- Highly stable
- 10 W to 600 W
- R22 to 120K
- Useful for inexpensively dissipating large amounts of power in DC or low frequency AC circuits
- Flame retardant coating compatible with UL standards.
- Non-inductive style with Aryton Perry winding
- Pulse / Surge type available

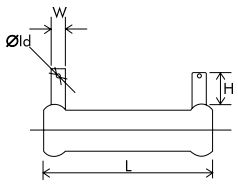
AEC-Q200 Qualified

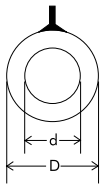
Pb-free * RoHS COMPLIANT

WIRE WOUND RESISTORS CEMENT COATED TYPE

HIR

PHYSICAL CONFIGURATION





HTR TYPE	POWER RATING at 70°C	DIMENSIONS (mm)						MOUNTING HARDWARE AVAILABLE	RESISTANCE RANGE		INDICATIVE WEIGHT PER PC (gms)
		L ±3	* D ±2	d ±1	W ±0.35	∅ ld ±0.3	H [+2/-0]		min	max	
R-10A	10W	27.0	15.0	7.7	4.75	1.4	6.35	101/301	R22	1K0	9.0
R-10B	10W	27.0	15.0	7.7	5.0	3.0	8.5	101/301	R22	1K0	9.2
R-15A	15W	40.0	15.0	7.7	4.75	1.4	6.35	101/301	R27	3K0	12.5
R-15B	15W	40.0	15.0	7.7	5.0	3.0	8.5	101/301	R27	3K0	12.8
R-20A	20W	60.0	15.0	7.7	4.75	1.4	6.35	101/301	R50	5K0	20.0
R-20B	20W	60.0	15.0	7.7	5.0	3.0	8.5	101/301	R50	5K0	20.5
R-25A	25W	75.0	15.0	7.7	4.75	1.4	6.35	101/301	R50	10K	21.0
R-25B	25W	75.0	15.0	7.7	5.0	3.0	8.5	101/301	R50	10K	21.5
R-40A	40W	75.0	26.0	14.3	4.75	1.4	6.35	102/303	1R0	15K	60.0
R-40B	40W	75.0	26.0	14.3	5.0	3.0	8.5	102/303	1R0	15K	61.0
R-50A	50W	100.0	26.0	14.3	4.75	1.4	6.35	102/303	1R6	20K	75.0
R-50B	50W	100.0	26.0	14.3	5.0	3.0	8.5	102/303	1R6	20K	76.0
R-60A	60W	115.0	26.0	14.3	6.35	1.65	8.5	102/303	2R2	25K	90.0
R-60B	60W	115.0	26.0	14.3	8.0	4.3	11.0	102/303	2R2	25K	92.0
R-80A	80W	130.0	26.0	14.3	6.35	1.65	8.5	102/303	2R2	35K	96.0
R-80B	80W	130.0	26.0	14.3	8.0	4.3	11.0	102/303	2R2	35K	97.0
R-100A	100W	150.0	33.2	19.1	6.35	1.65	8.5	103/303	3R0	40K	180.0
R-100B	100W	150.0	33.2	19.1	8.0	4.3	11.0	103/303	3R0	40K	182.0
R-125A	125W	165.0	33.2	19.1	6.35	1.65	8.5	103/303	3R0	47K	183.0
R-125B	125W	165.0	33.2	19.1	8.0	4.3	11.0	103/303	3R0	47K	185.0
R-150A	150W	200.0	33.2	19.1	6.35	1.65	8.5	103/303	3R3	56K	205.0
R-150B	150W	200.0	33.2	19.1	8.0	4.3	11.0	103/303	3R3	56K	207.0
R-200A	200W	250.0	33.2	19.1	6.35	1.65	8.5	103/303	4R7	68K	293.0
R-200B	200W	250.0	33.2	19.1	8.0	4.3	11.0	103/303	4R7	68K	296.0
R-300A	300W	250.0	45.0	24.0	6.35	1.65	8.5	104/304	5R6	75K	525.0
R-300B	300W	250.0	45.0	24.0	8.0	4.3	11.0	104/304	5R6	75K	528.0
R-400A	400W	330.0	45.0	24.0	6.35	1.65	8.5	104/304	10R	100K	760.0
R-400B	400W	330.0	45.0	24.0	8.0	4.3	11.0	104/304	10R	100K	765.0
R-500A	500W	300.0	55.0	27.0	6.35	1.65	8.5	104/304	10R	100K	1150.0
R-500B	500W	300.0	55.0	27.0	8.0	4.3	11.0	104/304	10R	100K	1155.0
R-600A	600W	330.0	55.0	27.0	6.35	1.65	8.5	104/304	10R	120K	1270.0
R-600B	600W	330.0	55.0	27.0	8.0	4.3	11.0	104/304	10R	120K	1270.0

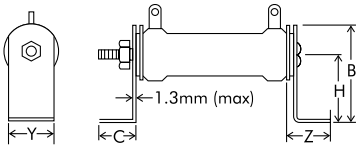
* HIR series are designed to withstand up to >5M. In the case where higher insulation is needed please suffix the HIR Type with SIL in which the insulation resistance will be > 1000M (Dry) & >100M (Wet)

* D-Dimensions given are indicative and could exceed tolerance given depending on resistance value being wound.

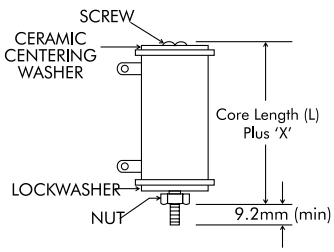
* Resistor types suffixed with 'A' are compatible with Amp F 187 connectors from 10 watt to 50 watt size and are compatible with Amp 250 connectors from 60 watt to 600 watt size. Resistor types suffixed with 'B' have large center holes in the lugs-refer Øld, to facilitate attaching cables to them by using nut & bolt or soldering after threading the wires through them.

MOUNTING SPECIFICATIONS

HORIZONTAL THRU-BOLT



VERTICAL THRU-BOLT



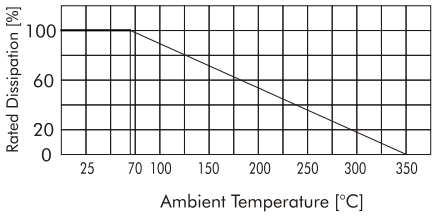
WIRE WOUND RESISTORS CEMENT COATED TYPE

HIR

BRACKET TYPE	Y ±1.0mm	Z ±2mm	H ±2mm	MOUNTING SLOT ±0.5mm	C ±2mm	B ±2mm
101	12.0	22.0	25.0	5.5 X 8.5	19.0	35.0
102	20.0	25.0	33.0	5.5 X 11.0	20.0	46.0
103	32.0	30.0	37.0	7.0 X 11.0	22.0	54.0
104	48.0	32.0	57.0	7.0 X 11.0	23.0	82.0

BRACKET TYPE	X (APPROXIMATE) (mm)
301	12.0
303	15.0
304	16.0

DERATING CURVE



ELECTRICAL AND ENVIRONMENTAL CHARACTERISTICS

PARAMETER/PERFORMANCE TEST/TEST METHOD	PERFORMANCE REQUIREMENTS
Power Rating (Rated Ambient Temperature)	Full power dissipation at 70°C and linearly derated to zero at 350°C (Refer derating curve above)
Resistance Tolerances Available	±10% [K]; ±5% [J]; ±3% [H]; ±2%[G]; ±1% [F]
Temperature Range	-55°C to +350°C with suitable derating as per derating curve above
Voltage Rating / Limiting Voltage / Max. Working Voltage	$V = \sqrt{P \times R}$
Maximum Overload Voltage	Varies depending on resistance value, duration of overload and type of pulse waveform (Contact Factory for details)
Voltage Proof / Dielectric Withstanding Voltage (Based on limiting voltage x 2 or 500V whichever is applicable for 60 secs)	ΔR ± (1% + R05)
Short Time Overload (10 x Rated power for 5 secs)	ΔR ± [2% + R05]
Temperature Co-efficient of Resistance	<R10 ± 120 ppm/°C ; <1R0 ± 80 ppm/°C ; <100R ± 60 ppm/°C ; >100R ± 90 ppm/°C or 30 ppm/°C (depending on wire selected)
Insulation Resistance (Test Method no. 302 of MIL 202F)	Cement Type : ≤5M (Dry) Insulated Type : >1000M (Dry) ; >100M (Wet)
Thermal Shock (Limiting voltage applied until temperature stabilizes and then placed in cold chamber -55°C for 15 minutes)	ΔR ± [2% + R05]
Damp Heat (Steady State) / Humidity (70°C at 95% R.H for 250 hours)	ΔR ± [3% + R05]
Low Temperature Storage (-55°C for 1 day)	ΔR ± [≤2% + R05]
Extreme Heat Storage (225 hours at +350°C)	ΔR ± [≤2% + R05]
Endurance - Load Life [70°C with limiting voltage - 1.5 hours on / 0.5 hours off for 1000 hours]	ΔR ± [≤3% + R05]
Solvent Resistance [IPA for 60 secs ± 10 secs]	No effect on coating / marking.

Notes :
1. Resistance values below and above the shown resistance range are possible on request.
2. Non-inductive types in this series are possible.
3. Dimensions given are to be used as a guide only, they can be varied to a certain extent due to technical reasons. For example, larger terminals may be used for very low values.
4. Pulse / Surge resistors are available in this series.

TYPICAL APPLICATIONS

1. Grid resistor
2. Voltage dropping resistor
3. Bias supply resistor
4. High voltage bleeder resistor in power supplies
5. Voltage divider networks
6. Filament dropping resistor
7. Load resistor.

ORDERING INFORMATION

Series	HTR Type	Packing	Resistance Value	Tolerance	Type of Mounting Hardware
HIR	R20A/R20A*	Bulk R20A/R20A*	100R	J	101 / 301

1. RoHS version - R20A *
2. For Pulse Type - R20AI
3. For Non-inductive Type - N R20A
4. For Insulated Type - N R20ASIL