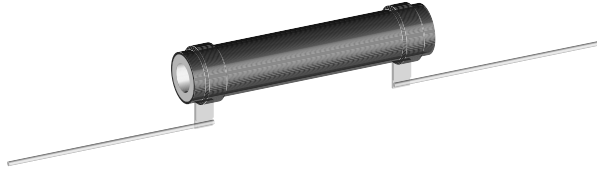


Wirewound Resistors, Industrial Power, Tubular



FEATURES

- High temperature silicon coating
- Complete welded construction
- Excellent for intermittent power and pulsing applications
- Available in non-inductive styles (model NHLW) with Aryton-Perry winding
- Axial or radial terminals for through hole or lead weld applications
- Excellent stability in operation (< 3 % change in resistance)



RoHS*
COMPLIANT

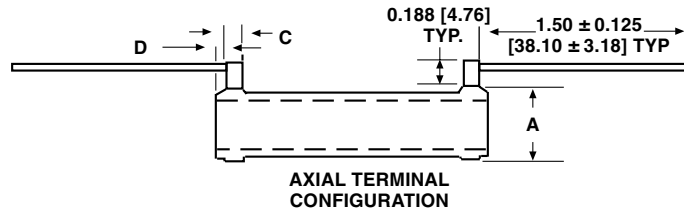
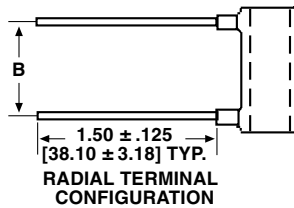
STANDARD ELECTRICAL SPECIFICATIONS					
GLOBAL MODEL	HISTORICAL MODEL	POWER RATING $P_{25\text{ }^\circ\text{C}}$ W	RESISTANCE RANGE Ω		WEIGHT (Typical) g
			$\pm 5\%$	$\pm 10\%$	
HLW03 NHLW03	HLW-3 NHLW-3	3	1.0 - 6K 1.0 - 700	0.10 - 6K 1.0 - 700	1.16
HLW05 NHLW05	HLW-5 NHLW-5	5.25	1.0 - 15K 1.0 - 1.9K	0.10 - 15K 1.0 - 1.9K	2.12
HLW06 NHLW06	HLW-6 NHLW-6	8	1.0 - 20.5K 1.0 - 2.7K	0.10 - 20.5K 1.0 - 2.7K	4.60
HLW10 NHLW10	HLW-10 NHLW-10	10	1.0 - 29K 1.0 - 3.7K	0.10 - 29K 1.0 - 3.7K	6.24
HLW12 NHLW12	HLW-12 NHLW-12	12	1.0 - 58K 1.0 - 3.9K	0.10 - 58K 1.0 - 3.9K	6.60
HLW15 NHLW15	HLW-15 NHLW-15	15	1.0 - 60K 1.0 - 4.3K	0.10 - 58K 1.0 - 4.3K	8.82
HLW20 NHLW20	HLW-20 NHLW-20	20	1.0 - 95K 1.0 - 6.8K	0.10 - 95K 1.0 - 6.8K	11.36

TECHNICAL SPECIFICATIONS		
PARAMETER	UNIT	HLW RESISTOR CHARACTERISTICS
Temperature Coefficient	ppm/ $^\circ\text{C}$	± 90 for 0.1 Ω to 0.99 Ω ; ± 50 for 1 Ω to 9.9 Ω ; ± 30 for 10 Ω and above
Dielectric Withstanding Voltage	V_{AC}	1000, from terminal to mounting hardware
Short Time Overload	-	10 x rated power for 5 seconds
Maximum Working Voltage	V	$(P \times R)^{1/2}$
Insulation Resistance	Ω	1000 M Ω minimum dry, 100 M Ω minimum after moisture test
Operating Temperature Range	$^\circ\text{C}$	- 55/+ 350

GLOBAL PART NUMBER INFORMATION																	
New Global Part Numbering: NHLW12A1Z10R00JF (preferred part number format)																	
N	H	L	W	1	2	A	1	Z	1	0	R	0	0	J	F		
GLOBAL MODEL	TERMINAL DESIGNATION	TERMINAL FINISH	RESISTANCE VALUE	TOLERANCE	PACKAGING CODE			SPECIAL									
NHLW12 <small>(See "Standard Electrical Specifications" table above for additional P/N's)</small>	A1 A2 R1 R2	E = Lead (Pb)-free Z = Tin/Lead	R = Decimal K = Thousand 10R00 = 10.0 Ω 1K000 = 1 k Ω	J = $\pm 5.0\%$ K = $\pm 10.0\%$	E = Lead (Pb)-free foam pack F = Tin/Lead foam pack (F01)			(Dash Number) (up to 2 digits) From 1 - 99 as applicable									
Historical Part Number example: NHLW-12-A1Z 10 Ω 5% F01 (will continue to be accepted)																	
NHLW-12	A1Z	10 Ω	5%	F01													
HISTORICAL MODEL	TERMINAL/FINISH	RESISTANCE VALUE	TOLERANCE	PACKAGING													

* Pb containing terminations are not RoHS compliant, exemptions may apply

DIMENSIONS in inches [millimeters]



GLOBAL MODEL	A (MAX.)	B TYPICAL	C ± 0.031 [0.79]	D TYPICAL	CORE DIMENSIONS			AXIAL TERMINAL DESIGNATION	RADIAL TERMINAL DESIGNATION	MOUNTING HARDWARE
					LENGTH ± 0.063 [1.59]	O.D.	I.D. ± 0.031 [0.79]			
HLW03	0.297 [7.54]	0.282 [7.16]	0.063 [1.59]	0.047 [1.19]	0.438 [11.11]	0.203 [5.16]	0.125 [3.18]	A2Z	R2Z	-
HLW05	0.344 [8.73]	0.469 [11.91]	0.063 [1.59]	0.047 [1.19]	0.625 [15.88]	0.250 [6.35]	0.125 [3.18]	A2Z	R2Z	-
HLW06	0.406 [10.32]	0.688 [17.48]	0.125 [3.18]	0.094 [2.38]	1.000 [25.40]	0.313 [7.94]	0.188 [4.76]	A1Z	R1Z	101, 204, 301
HLW10	0.563 [14.29]	0.688 [17.48]	0.125 [3.18]	0.094 [2.38]	1.000 [25.40]	0.438 [11.11]	0.313 [7.94]	A1Z	R1Z	101, 203, 301
HLW12	0.406 [10.32]	1.438 [36.53]	0.125 [3.18]	0.094 [2.38]	1.750 [44.45]	0.313 [7.94]	0.188 [4.76]	A1Z	R1Z	101, 204, 301
HLW15	0.563 [14.29]	1.188 [30.18]	0.125 [3.18]	0.094 [2.38]	1.500 [38.10]	0.438 [11.11]	0.313 [7.94]	A1Z	R1Z	101, 203, 301
HLW20	0.563 [14.29]	1.688 [42.88]	0.125 [3.18]	0.094 [2.38]	2.000 [50.80]	0.438 [11.11]	0.313 [7.94]	A1Z	R1Z	101, 203, 301

TERMINAL FINISH

Terminals are 20 AWG for HLW03 and HLW05 size and 18 AWG for all other sizes. "E" Finish - 100 % Sn, coated Copperweld®. "Z" Finish - 60/40 Sn/Pb coated Copperweld®.

MOUNTING HARDWARE DIMENSIONS in inches [millimeters]

HORIZONTAL THRU-BOLT		PUSH-IN		VERTICAL THRU-BOLT	
DIMENSION	BRACKET TYPE	DIMENSION	BRACKET TYPE	DIMENSION	BRACKET TYPE
	101		203 204		301
X	1.063 [26.99]	X	0.625 [15.88] 0.375 [9.53]	X (Approximate)	0.438 [11.11]
Y	0.500 [12.70]	H	0.672 [17.07] 0.281 [7.14]	THREAD	8-32
Z	0.859 [21.83]	Y	0.250 [6.35] 0.250 [6.35]		
H	1.000 [25.40]	Z	0.469 [11.91] 0.344 [8.73]		
B	1.375 [34.93]	HOLE (Dia.)	0.161 [4.09] 0.144 [3.66]		
C	0.750 [19.05]				
MOUNTING SLOT	0.219 x 0.438 [5.56 x 11.11]				

MATERIAL SPECIFICATIONS

Element: Copper-nickel alloy of nickel-chrome alloy, depending on resistance value

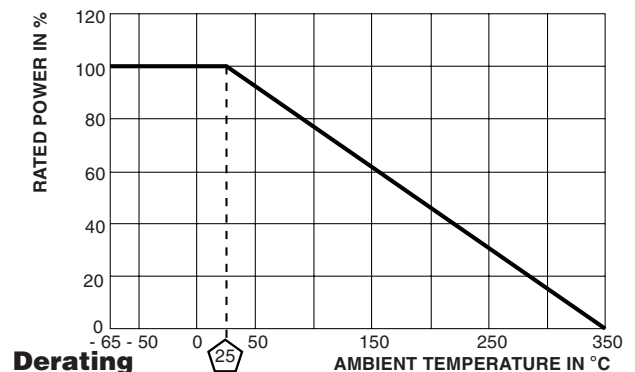
Core: Ceramic, steatite

Coating: Special high temperature silicone

Standard Terminals: Model "Z" terminals are tinned Copperweld®

Terminal Bands: Steel

Part Marking: DALE, Model, Wattage, Value, Tolerance, Date Code





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