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)

Pb-free Available

e3

RoHS* COMPLIANT

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	HISTORICAL MODEL	POWER RATING $P_{25\,°C}$ W	RESISTANCE RANGE Ω		WEIGHT (Typical) g
			± 5 %	± 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/°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 × rated power for 5 seconds
Maximum Working Voltage	V	$(P \times R)^{1/2}$
Insulation Resistance	Ω	1000 MΩ minimum dry, 100 MΩ minimum after moisture test
Operating Temperature Range	°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		

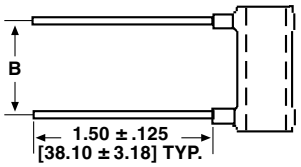
GLOBAL MODEL	TERMINAL DESIGNATION	TERMINAL FINISH	RESISTANCE VALUE	TOLERANCE	PACKAGING CODE	SPECIAL
NHLW12 (See "Standard Electrical Specifications" table above for additional P/N's)	**A1** **A2** **R1** **R2**	**E** = Lead (Pb)-free **Z** = Tin/Lead	**R** = Decimal **K** = Thousand **10R00** = 10.0 Ω **1K000** = 1 kΩ	**J** = ± 5.0 % **K** = ± 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)

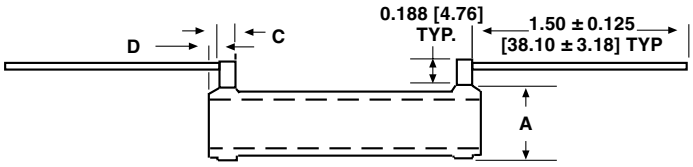
NHLW-12	A1Z	10 Ω	5 %	F01
HISTORICAL MODEL	TERMINAL/FINISH	RESISTANCE VALUE	TOLERANCE	PACKAGING

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

DIMENSIONS in inches [millimeters]



RADIAL TERMINAL CONFIGURATION



AXIAL TERMINAL CONFIGURATION

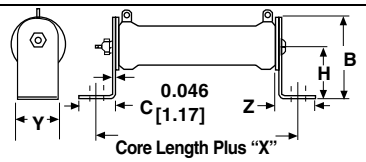
GLOBAL MODEL	A (MAX.)	B TYPICAL	C ± 0.031 [0.79]	D TYPICAL	CORE DIMENSIONS			AXIAL TERMINAL DESIGNATION	RADIAL TERMINAL DESIGNATION	MOUNTING HARDWARE
					LENGTH ± 0.063 [1.59]	O.D.	I.D. ± 0.031 [0.79]			
HLW03	0.297 [7.54]	0.282 [7.16]	0.063 [1.59]	0.047 [1.19]	0.438 [11.11]	0.203 [5.16]	0.125 [3.18]	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®.

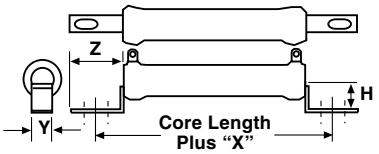
MOUNTING HARDWARE DIMENSIONS in inches [millimeters]

HORIZONTAL THRU-BOLT



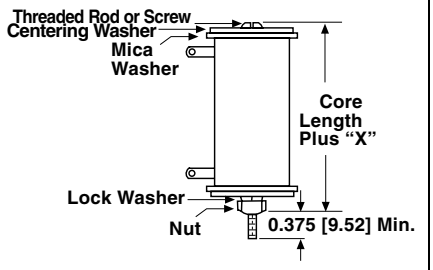
DIMENSION	BRACKET TYPE
	101
X	1.063 [26.99]
Y	0.500 [12.70]
Z	0.859 [21.83]
H	1.000 [25.40]
B	1.375 [34.93]
C	0.750 [19.05]
MOUNTING SLOT	0.219 × 0.438 [5.56 × 11.11]

PUSH-IN



DIMENSION	BRACKET TYPE	
	203	204
X	0.625 [15.88]	0.375 [9.53]
H	0.672 [17.07]	0.281 [7.14]
Y	0.250 [6.35]	0.250 [6.35]
Z	0.469 [11.91]	0.344 [8.73]
HOLE (Dia.)	0.161 [4.09]	0.144 [3.66]

VERTICAL THRU-BOLT



DIMENSION	BRACKET TYPE
	301
X (Approximate)	0.438 [11.11]
THREAD	8-32

MATERIAL SPECIFICATIONS

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

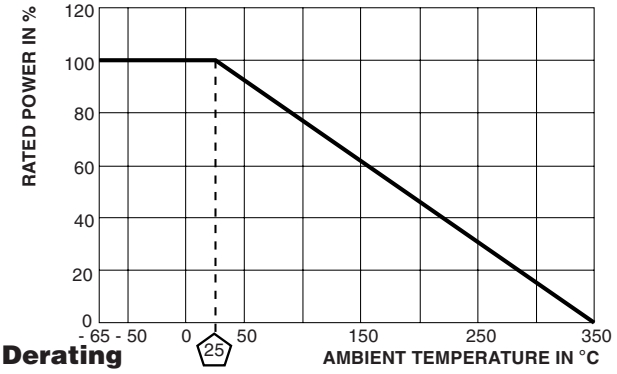
Core: Ceramic, steatite

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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