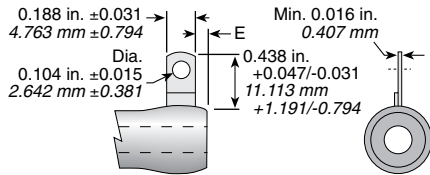


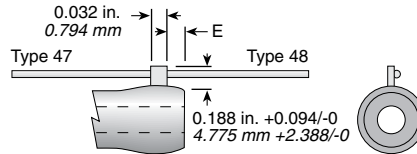
Resistor Terminals

Resistor Terminals for Tubular Cores

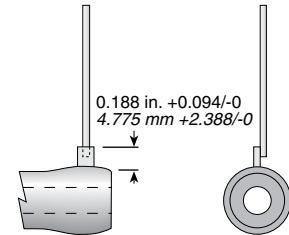
Type 57



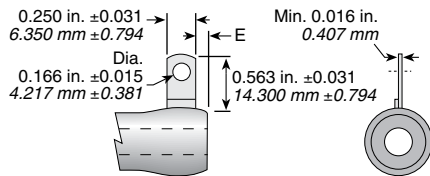
Type 47 and 48



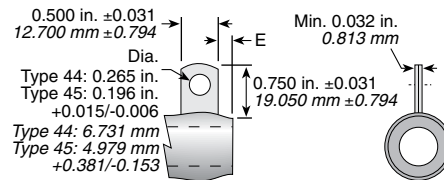
Type 48R



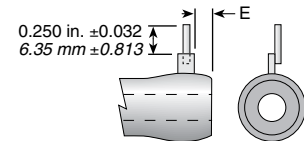
Type 40 and 40A



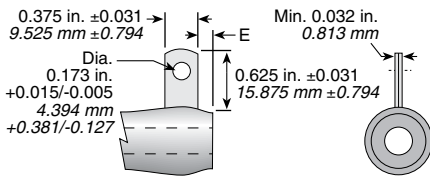
Type 44, 44A, 45, 45A, 45B



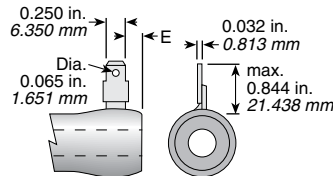
Type 58



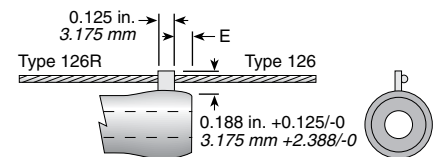
Type 46 and 46A



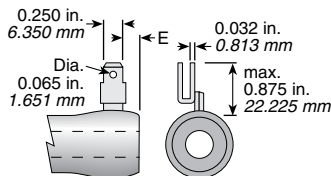
Type 538



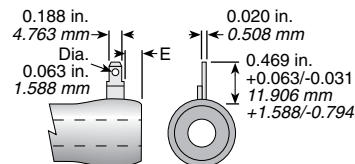
Type 126 and 126R



Type 535



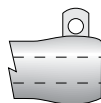
Type 532



Other Terminals

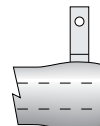
Type 49

.250 (6.35mm) wide x
0.313 (7.950mm)
.166 (4.217mm) dia.
hole. Solder coated.



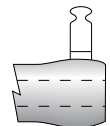
Type 51

.125 (3.175mm) wide
x height as specified.
0.063 (1.600mm) hole.
Solder coated.



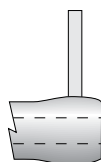
Type 68

.188 (4.775mm) wide
x 0.531 (13.488mm)
high. Solder coated.



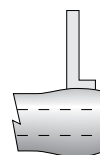
Type 50

Untinned lug intended for
welded connection.
0.063 (1.600mm) x
height as specified.



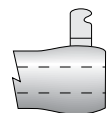
Type 52

For "wire wrap" (Keller,
Gardner-Denver T.M.)



Type 69

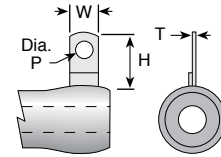
.125 (3.175mm) wide
x 0.375 (9.525mm)
high. Solder coated.



(continued)

Resistor Terminals

Resistor Terminals for Tubular Cores



Terminal Dimensions

Terminal Type	W		H		T		P		Core Diameter Range	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
40, 40A	0.25 ± 0.031	(6.35 ± 0.794)	0.563 ± 0.031	(14.3 ± 0.794)	min 0.016	(0.407)	0.166 ± 0.015	(4.217 ± 0.381)	0.313-1.125	(7.95-28.575)
44, 44A	0.5 ± 0.031	(12.7 ± 0.794)	0.750 ± 0.031	(19.05 ± 0.794)	min 0.032	(8.13)	0.265 +0.015/-0.006	(6.731 +0.381/-0.153)	0.75-1.125	(19.05-28.575)
45, 45A, 45B	0.5 ± 0.031	(12.7 ± 0.794)	0.750 ± 0.031	(19.05 ± 0.794)	min 0.032	(8.13)	0.196 +0.015/-0.006	(4.979 +0.381/-0.153)	0.75-1.125	(19.05-28.575)
46, 46A	0.375 ± 0.031	(9.525 ± 0.794)	0.625 ± 0.031	(15.875 ± 0.794)	min 0.032	(8.13)	0.173 +0.015/-0.005	(4.394 +0.381/-0.127)	0.563-1.50	(14.3-38.1)
47, 48, 48R	0.125 ± 0.031	(3.175 ± 0.794)	0.188 +0.094/-0	(4.775+2.38/-0)	N/A		N/A	N/A	0.0210-0.563	(5.25-14.3)
57	0.188 ± 0.031	(4.763 ± 0.794)	0.438	(11.113)	min 0.016	(0.407)		N/A	0.25-0.75	(6.35-19.05)
			+0.047/-0.031	+1.191/-0.794)						
58	0.125 ± 0.031	(3.175 ± 0.794)	0.188 +0.094/-0	(4.775+2.38/-0)	N/A		N/A	N/A	0.0210-0.563	(5.25-14.3)
126, 126R	0.125 ± 0.031	(3.175 ± 0.794)	0.188 +0.094/-0	(4.775+2.38/-0)	N/A		N/A	N/A	0.313-1.125	(7.95-28.575)
532	0.188 ± 0.031	(4.763 ± 0.794)	0.469	(11.906)	0.020	(0.508)	0.063	(1.588)	0.313-1.125	(7.95-28.575)
			+0.063/-0.031	+1.588/-0.794)						
535	0.25 ± 0.031	(6.35 ± 0.794)	max 0.875	(22.225)	0.032	(8.13)	0.065	(1.651)	0.313-2.5	(7.95-63.5)
538	0.25 ± 0.031	(6.35 ± 0.794)	max 0.844	(21.438)	0.032	(8.13)	0.065	(1.651)	0.313-2.5	(7.95-63.5)

40A- Has screw #6-32 x .5 with 2 nuts and washers, 44A- Has screw 20 x .625 with 2 nuts and washers, 45A- Has screw #8-32 x .625 with 2 nuts and washers, 45B- Has screw #10-32 x .625 with 2 nuts and washers, 46A- Has screw #8-32 x .625 with 2 nuts and washers

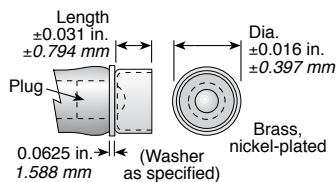
Edge Distance—Dimension “E”

Terminals	.250		.313		.438		.563		.750		1.00		1.125		1.500		1.625		2.500		
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	
40-40A-49-50-																					
57-68-69-126-126R-532	.031	.794	.094	2.381	.094	2.381	.094	2.381	.125	3.175	.156	3.969	.219	5.556	—	—	—	—	—	—	—
44-44A-45-45A-45B-46-46A	—	—	—	—	—	—	.250	6.350	.250	6.350	.250	6.350	.250	6.350	—	—	—	—	—	—	—
535-538	—	—	.125	3.175	.125	3.175	.125	3.175	.125	3.175	.156	3.969	.219	5.556	.250	6.350	.250	6.350	.500	12.700	

Dimension “E” can be varied and is often reduced for cores 2.00 (50.80mm) or less in length or sometimes increased for greater leakage distance to ground. Tolerance on “E” is ± 0.016 (0.397mm) up to 0.125 (3.175mm) and ± 0.063 (1.588mm) above.

Type 140

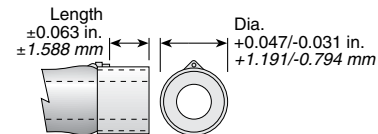
For Cores 0.438 (11.113mm) to 1.125 (28.575mm) O.D.



Ferrule		Catalog No.	
Diameter In.	Length mm	No Washer	With Washer
.563	14.288	.500	12.700
.688	17.463	.563	14.288
.813	20.638	.500	12.700
1.125	28.575	.500	12.700

* Up thru 0.563 (14.288mm) D core.
† Up thru 0.750 (19.050mm)

Type 141

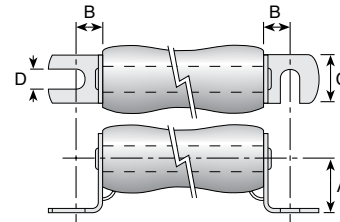


Ferrule		Catalog No.		Core O.D.	
Diameter In.	Length mm	In.	mm	In.	mm
.625	15.875	.625	15.875	141/10	.563 14.288
.813	20.638	.688	17.463	141/13	.750 19.050
1.062	26.988	.688	17.463	141/17	1.000 25.400
1.188	30.163	.688	17.463	141/19	1.125 28.575

Ferrules are brass, natural finish.

Type 63

Cores 0.563 (14.288mm) to 0.750 (19.050mm) O.D. --- Cat No. 63/12
Cores 1.000 (25.400mm) to 1.125 (28.575mm) O.D. --- Cat No. 63/18



Cat. No.	A		B		C		D (Min.)	
	±.031 In.	(.794 mm)	±.031 In.	(.794 mm)	±.031 In.	(.794 mm)	In.	mm
63/12	.781	19.844	.438	11.113	.750	19.050	.250	6.350
63/18	.875	22.225	.813	20.638	1.125	28.575	.313	7.938

Resistor Cores

Core and Terminal Selection for Type 200, 270, 400 and 470 Tubular Resistors

Free Air Wattage Rating	Nominal Core Dimensions			Code for Core Dia.	VITREOUS ENAMEL COATED					OHMICONE® SILICONE COATED								
	Length	Outside Diameter	Inside Diameter		Critical Resistance Limiting Factors					Critical Resistance Limiting Factors								
					Min. Ohms	For Ohms Over	Limit Watts and Working Voltage to	Max. Possible Ohms	Standard Terminal**	Min. Ohms	For Ohms Over	Limit Working Voltage to	Max. Possible Ohms					
3*	0.438" (11.1mm)	0.210" (5.25mm)	0.130" (3.17mm)	AA	0.13	Limits controlled by free air watts and max. possible ohms	3.48K	48, 58	0.1	8.0K	155	15.8K						
5.25*	0.625" (15.9mm)	0.250" (6.35mm)	0.135" (3.43mm)	CA	0.19								7.06K	48, 58	0.1	15.0K	281	34.0K
6.5	1.0" (25.4mm)	0.250" (6.35mm)	0.125" (3.18mm)	CA	0.10								2.30K	27.3K	57	21.6K	375	45.4K
8*	1.0" (25.4mm)	0.313" (7.95mm)	0.188" (4.76mm)	D	0.10	2.16K	17.1K	48, 57	0.1	9.87K	281	42.8K						
12*				D	0.10								51.6K	48, 57	50.0K	775	50.4K	
11	1.0" (25.4mm)	0.438" (11.1mm)	0.250" (6.35mm)	H	0.10	3.02K	Limit wattage to 78% of free air watts and working volts to 500V per inch of winding space between terminal edges	57	0.1	7.18K	281	35.3K						
15	1.5" (38.1mm)				0.10	6.03K							28.2K	40	21.1K	563	70.5K	
20*	2.0" (50.8mm)				0.11	10.1K							94.0K	48-40	44.0K	938	118.0K	
26	3.0" (76.2mm)				0.21	18.1K							169.0K	40	110.0K	1690	212.0K	
25*	2.0" (50.8mm)	0.563" (14.3mm)	0.313" (7.95mm)	K	0.15	12.9K	Limit wattage to 78% of free air watts and working volts to 500V per inch of winding space between terminal edges	40	0.1	35.2K	938	151.0K						
35	3.0" (76.2mm)				0.26	23.2K							100.0K	180.0K	81.6K	1690	272.0K	
50*	4.0" (101.6mm)				0.38	33.5K							260.0K	119.0K	2440	393.0K		
60	5.0" (127.0mm)				0.50	43.8K							340.0K	170.0K	3190	340.0K		
75*	6.0" (152.4mm)				0.61	54.1K							420.0K	207.0K	3940	420.0K		
24	1.5" (38.1mm)	0.750" (19.1mm)	0.50" (12.7mm)	M	0.10	9.49K	Limit wattage to 78% of free air watts and working volts to 500V per inch of winding space between terminal edges	40	0.1	11.1K	516	73.6K						
30	2.0" (50.8mm)				0.10	16.4K							12.2K	21.1K	26.6K	893	127.0K	
45	3.0" (76.2mm)				0.10	30.2K							38.8K	59.8K	1640	234.0K		
51	3.5" (88.9mm)				0.11	37.1K							47.6K	80.0K	2020	288.0K		
61	4.0" (101.6mm)				0.13	44.0K							56.5K	93.6K	2390	341.0K		
65	4.5" (114.3mm)				0.15	50.9K							65.3K	118.0K	2770	395.0K		
76	5.0" (127.0mm)				0.17	57.8K							74.2K	130.0K	3140	448.0K		
90	6.0" (152.4mm)				0.21	71.6K							91.9K	168.0K	3890	555.0K		
100*	6.5" (165.1mm)				0.23	78.5K							101.0K	182.0K	4270	609.0K		
52	3.0" (76.2mm)				1.0" (25.4mm)	0.625" (15.9mm)							N	0.11	Limits controlled by free air watts and working volts to 500V per inch of winding space between terminal edges	25.3K	40	0.1
70	4.0" (101.6mm)	0.17	37.2K	37.2K			78.9K	2350	448.0K									
85	5.0" (127.0mm)	0.22	49.1K	49.1K			113.0K	3100	591.0K									
105	6.0" (152.4mm)	0.27	61.0K	61.0K			141.0K	3850	734.0K									
112	6.5" (165.1mm)	0.30	67.1K	67.1K			159.0K	4220	805.0K									
120	7.0" (177.8mm)	0.33	72.9K	72.9K			176.0K	4600	877.0K									
140	8.0" (203.2mm)	0.38	84.8K	84.8K			204.0K	5350	1.02M									
176	10.0" (254.0mm)	0.49	109.0K	109.0K			267.0K	6850	1.31M									
40	2.0" (50.8mm)	1.125" (28.6mm)	0.75" (19.1mm)	P	0.10	Limits controlled by free air watts and working volts to 500V per inch of winding space between terminal edges	9.63K	46	0.1	6.66K	516	89.3K						
80	4.0" (101.6mm)				0.10								37.7K	37.7K	51.0K	2020	328.0K	
95	5.0" (127.0mm)				0.10								51.7K	51.7K	80.8K	2770	450.0K	
121	6.0" (152.4mm)				0.10								65.7K	65.7K	102.0K	3520	572.0K	
130	6.5" (165.1mm)				0.10								72.7K	72.7K	116.0K	3890	633.0K	
160	8.0" (203.2mm)				0.12								93.7K	93.7K	158.0K	5020	816.0K	
175*	8.5" (215.9mm)				0.13								101.0K	101.0K	166.0K	5390	877.0K	
225*	10.5" (266.7mm)				0.16								129.0K	129.0K	211.0K	6890	1.12M	
235	11.25" (285.8mm)				0.18								139.0K	139.0K	237.0K	7460	1.21M	
251	12.0" (304.8mm)				0.19								150.0K	150.0K	257.0K	8030	1.31M	
150	5.0" (127.0mm)	1.5" (38.1mm)	1.125" (28.6mm)	Q	0.10		34.2K	45	0.1	44.4K	2580	433.0K						
220	8.5" (215.9mm)	1.625" (41.3mm)	1.125" (28.6mm)	R	0.18		75.0K	45	0.1	123.0K	5210	351.0K						
275	10.5" (266.7mm)				0.23	96.6K	96.6K	164.0K	6710	452.0K								
300	11.75" (298.5mm)				0.26	110.0K	110.0K	195.0K	7650	516.0K								
250	6.0" (152.4mm)	2.5" (63.5mm)	1.75" (44.5mm)	S	0.15		6.11K	45	0.1	35.0K	2960	86.3K						
500	12.0" (304.8mm)				0.38	15.4K	15.4K	111.0K	7460	218.0K								
750	15.0" (381.0mm)				0.50	20.0K	20.0K	125.0K	9680	283.0K								
1000	20.0" (508.0mm)				0.69	27.7K	27.7K	180.0K	13400	392.0K								

*These core sizes are used for the standard items. See the listing of the resistance values under Types 200, 210 and 270

**See Application Note "Resistor Terminals for Tubular Cores," page 35.

Tolerance on Nominal Core Dimensions

Length	Tolerance
0.438 (11.113mm) to 4.00 (101.60mm)	±0.031 (0.794mm)
Over 4.00 (101.60mm) to 6.50 (165.10mm)	±0.047 (1.191mm)
Over 6.50 (165.10mm) to 11.25 (285.575mm)	+0.063 (1.588mm) / -0.094 (2.381mm)
Over 11.25 (285.575mm) to 20.0 (508.0mm)	±0.125 (3.175mm)

Tolerances do not include effect of longitudinal camber.

I.D.	Tolerance
To 0.500 (12.700mm)	±0.016 (0.397mm)
Over 0.500 (12.700mm) to 1.125 (28.575mm)	±0.031 (0.794mm)
Over 1.125 (28.575mm) to 1.750 (44.450mm)	±0.063 (1.588mm)

Maximum Diameter Over

Coating: The overall diameter of a finished resistor includes the build-up due to wire diameter, coating and terminal material. This results in a possible maximum increase in diameter of 0.188 (4.763mm) for low resistance, 1.125 (28.575mm) O.D. core resistors and larger; 0.156 (3.969mm) for resistors with smaller diameter cores. On all high resistance units the increase is generally less than 0.125 (3.175mm).

Other Core Sizes: Many other specials are available including cores with special inside diameter listed at right.

Cores with Non-standard I.D. (or O.D.)

O.D.	I.D.	Code
0.313" (7.938mm)	0.219" (5.556mm)	DA
0.438" (11.113mm)	0.313" (7.938mm)	HA
0.563" (14.288mm)	0.391" (9.922mm)	KA
0.625" (15.875mm)	0.453" (11.509mm)	LA
0.750" (19.050mm)	0.547" (13.891mm)	MA
0.938" (23.813mm)	0.563" (14.288mm)	UA
1.125" (28.575mm)	0.875" (22.225mm)	PA