

The Vitreous Enamelled Resistors are available in a range from 30 to 625 watts. The nickel-chrome winding is protected by several coats of enamel, which has been fired to produce a high reliability resistor, capable of withstanding adverse conditions.

The Vitreous Enamelled Resistor is RoHS Compliant and can be supplied unmounted or with a variety of mounting styles.

H - Horizontal mounting      V - Vertical mounting  
TB - Through bolt mounting    F - Ferrule clips



## General Notes

### Ohmic Values

The range of ohmic values available are shown below. You may select any ohmic value between the max and min values.

### Low Inductance Windings

Ayrton Perry windings are available for resistors which are required to have substantially lower inductance.

### Thermal cut-outs

Cut-outs can be fitted to certain resistors which will operate a contact to disconnect the resistor to prevent overload damage.

### Electrical Data Power Rating - Continuous Duty

The two power ratings given to each type of resistor in the table are based on temperature rises of 280°C and 380°C\* respectively and relate to single resistors mounted in free air. \* PE & PT only.

## Ordering Procedure

Unless otherwise specified resistors will be supplied ready for a mechanical connection.

**Fixed Resistors** To specify fixed: Type, Mounting, Ohmic Value, Tolerance, e.g.: PE130H 400R ± 5%

**Adjustable Resistors** To specify add ADJ, e.g.: PE180H 350R ± 10% ADJ

**Tapped Resistors** To specify add TAPPED, e.g.: PE130H 400R ± 5% TAPPED

**Faston Terminals** To specify add FASTON TAGS, e.g.: PE40 200R ± 5% FASTON TAGS

**Ferrule Ended Resistors** To specify add F dead or WF for live, e.g.: PE180F 450R ± 5% or PE90LWF 27R ± 5%

**Corrugated Tape Resistors** To specify prefix PT, e.g.: PT130H 2R5 ± 10%

## Ohmic Value Range and Tolerances (other values and tolerances are available on request)

Size		30	40	45	60	90	130	150	180	220	320	380	
Type	Range	Ohmic Value											Tolerance
PE Fixed Wire	Min	2R2	4R7	4R7	4R7	10R	10R	12R	22R	22R	33R	47R	Over 10R ± 5% 10R or less ±10%
	Max	5K0	10K	10K	15K	30K	60K	70K	100K	120K	120K	125K	
PT Fixed Tape	Min	0R02	0R15	0R2	0R2	0R3	0R7	0R8	1R0	1R0	1R5	1R5	±10%
	Max	2R0	4R5	4R5	4R5	9R0	9R0	10R	20R	20R	30R	30R	
NI Non Inductive	Min	1R0	2R0	2R0	3R0	3R0	5R0	6R0	7R0	10R	25R	30R	±10%
	Max	500R	500R	500R	500R	1K0	1K5	1K5	1K5	1K5	2K0	2K5	
ADJ Adjustable	Min	2R2	2R2	4R7	4R7	8R2	15R	16R	20R	27R	36R	43R	±10%
	Max	1K3	3K9	2K2	3K9	6K2	11K	13K	16K	22K	22K	22K	
PE Rating Watts	@280°C	30	40	45	60	90	130	150	180	220	320	380	
	@380°C	35	65	65	75	125	175	195	230	285	420	500	
PT Rating Watts	@280°C	35	50	55	75	110	160	185	220	275	400	476	
	@380°C	44	80	80	90	185	215	245	285	400	560	625	

ARCOL UK Limited,  
Threemilestone Ind. Estate,  
Truro, Cornwall, TR4 9LG, UK.  
T +44 (0) 1872 277431  
F +44 (0) 1872 222002  
E sales@arcolresistors.com

[www.arcolresistors.com](http://www.arcolresistors.com)

The information contained herein does not form part of a contract and is subject to change without notice. Arcol operate a policy of continual product development, therefore, specifications may change.

It is the responsibility of the customer to ensure that the component selected from our range is suitable for the intended application. If in doubt please ask Arcol.

The Open Wire Wound Resistors are close wound with oxidised resistance wire and each resistor is fitted with an adjustable nickel silver tapping clip as standard. Extra tappings can be provided on request.

The Open Wire Wound Resistor is RoHS Compliant and can be supplied unmounted or with a variety of mounting styles.

H - Horizontal mounting      V - Vertical mounting  
TB - Through bolt mounting    F - Ferrule clips



## General Notes

### Ohmic Values

The range of ohmic values available are show below. You may select any ohmic value between the max and min values.

### Power Ratings - Continuous Duty

Open wound resistors are designed to operate at a maximum temperature rise of 280°C. If a lower surface temperature is required, please contact ARCOL.

### Resistance Tolerance

The standard tolerance on resistance for open wound resistors is  $\pm 10\%$  when fitted with one tapping clip.

## Ordering Procedure

Unless otherwise specified resistors will be supplied ready for a mechanical connection.

Fixed Resistors To specify fixed: Type, Mounting, Ohmic Value, Tolerance, e.g.: PB130H 400R  $\pm 10\%$

Adjustable Resistors To specify add ADJ, e.g.: PB180H 350R  $\pm 10\%$  ADJ

Tapped Resistors To specify add TAPPED, e.g.: PB130H 400R  $\pm 10\%$  TAPPED

Faston Terminals To specify add FASTON TAGS, e.g.: PB40 200R  $\pm 10\%$  FASTON TAGS

Ferrule Ended Resistors To specify add F dead or WF for live, e.g.: PB180F 450R  $\pm 10\%$  or PB90LWF 27R  $\pm 10\%$

## Standard Ohmic Values and Tolerances

Size		30	40	45	60L	60S	90L	90S	130	150	180	220	320	380	
Type	Range	Ohmic Value													Tolerance
PB with one tapping	Min	0R2	0R5	0R5	0R5	0R4	0R5	0R4	0R4	0R5	0R7	0R7	1R0	1R2	$\pm 10\%$ as standard
	Max	510R	1KR	720R	1K3	1K3	2K1	3K2	3K2	4K0	5K2	6K8	9K8	9K8	
PB Rating Watts	@280°C	30	40	45	60	60	90	90	130	150	180	220	320	380	

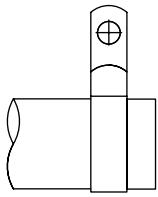
ARCOL UK Limited,  
Threemilestone Ind. Estate,  
Truro, Cornwall, TR4 9LG, UK.  
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E sales@arcolresistors.com

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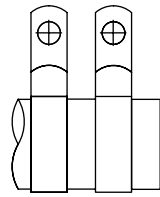
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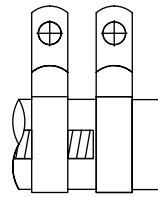
## Termination Styles



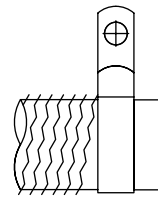
Type PE  
Standard resistor  
with untinned  
terminals.



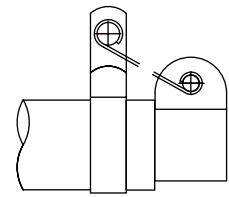
Type PE (Tapped)  
Tapped resistor.



Type PE (ADJ)  
Adjustable resistor.

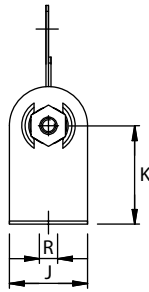
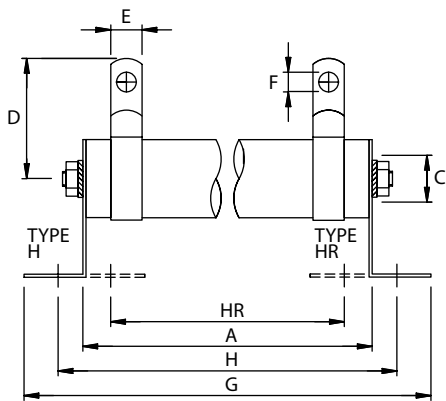


Type PT  
Corrugated tape  
wound resistor.

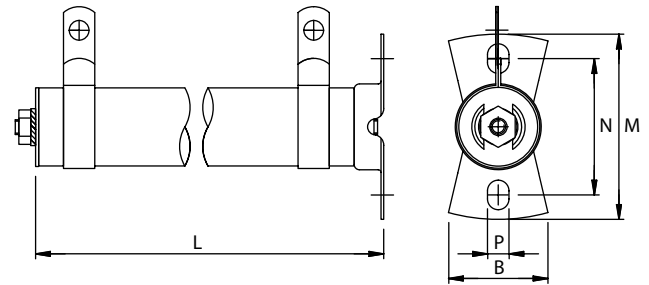


Type PE --- F and WF  
Resistor with live and  
dead ferrule ends.

## H and HR Mounting



## V Mounting

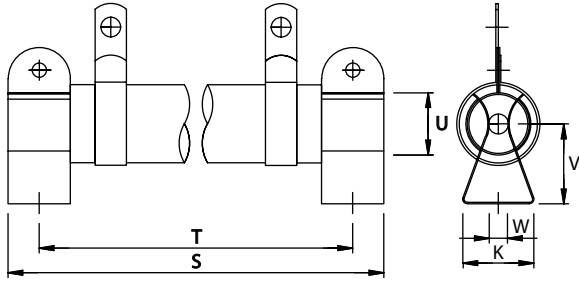


## Dimensions (mm)

Type	Size	Watts 280°C	Watts 380°C*	A	B	C	D	E	F	G	H	HR	J	K	L	M	N	P	R
PB & PE PT	30	30 35	35 44	51	19	9.5	25	6.3	4	72	62	42	16	20	64	38	25	4x6	4x6
PB & PE PT	40	40 50	65 80	102	19	9.5	25	6.3	4	123	113	93	16	20	114	38	25	4x6	4x6
PB & PE PT	45	45 55	65 80	51	32	19	37	6.3	4	91	75	30	28	27	64	54	41	5x8	5x13
PB & PE PT	60L	60 75	75 90	89	22	12.6	30	6.3	4	117	103	77	20	27	102	45	32	4x6	5x8
PB & PE PT	60S	60 75	75 90	70	32	19	37	6.3	4	110	94	48	28	27	83	54	41	5x8	5x13
PB & PE PT	90L	90 110	125 185	165	22	12.6	30	6.3	4	193	179	153	20	27	178	45	32	4x6	5x8
PB & PE PT	90S	90 110	125 185	102	32	19	37	9.5	6	142	126	80	28	27	114	54	41	5x8	5x13
PB & PE PT	130	130 160	175 215	152	32	19	37	9.5	6	192	176	130	28	27	165	54	41	5x8	5x13
PB & PE PT	150	150 180	195 245	178	32	19	37	9.5	6	218	202	156	28	27	191	54	41	5x8	5x13
PB & PE PT	180	180 220	230 285	216	32	19	37	9.5	6	256	240	194	28	27	229	54	41	5x8	5x13
PB & PE PT	220	220 275	285 400	267	32	19	37	9.5	6	307	291	245	28	27	279	54	41	5x8	5x13
PB & PE PT	320	320 400	420 560	267	45	28	43	9.5	6	318	291	248	44	51	-	-	-	-	7x14
PB & PE PT	380	380 476	500 625	305	45	28	43	9.5	6	356	327	286	44	51	-	-	-	-	7x14

PT Resistors - Dimension 'B' may vary up to 10mm greater, depending on the resistance value specified. \*380°C applies to vitreous resistors only.

## F and WF Mounting



## Dimensions (mm)

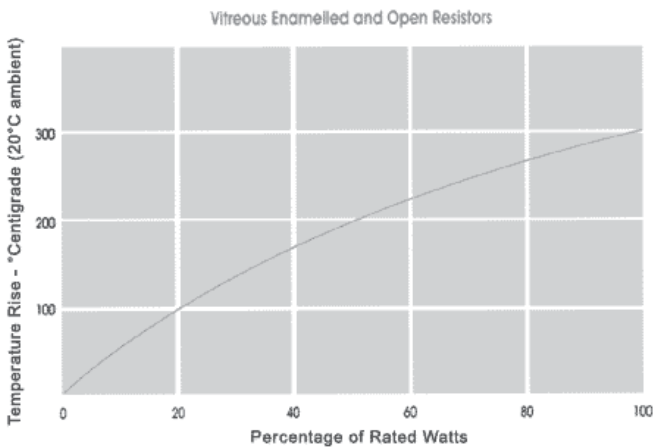
Type	Size	Watts 280°C	Watts 380°C*	S	T	U	V	W
PB & PE PT	30	30 35	35 44	76	65	14	19	4
PB & PE PT	40	40 50	65 80	127	116	14	19	4
PB & PE PT	45	45 55	65 80	83	70	27	32	6
PB & PE PT	60L	60 75	75 90	121	108	21	32	5
PB & PE PT	60S	60 75	75 90	102	90	27	32	6
PB & PE PT	90L	90 110	150 185	197	184	21	32	5
PB & PE PT	90S	90 110	125 185	133	121	27	32	6
PB & PE PT	130	130 160	175 215	184	171	27	32	6
PB & PE PT	180	180 220	230 285	248	235	27	32	6
PB & PE PT	220	220 275	285 400	298	286	27	32	6

\*380°C applies to vitreous enamelled resistors only.

## Temperature Rise and Power Dissipation

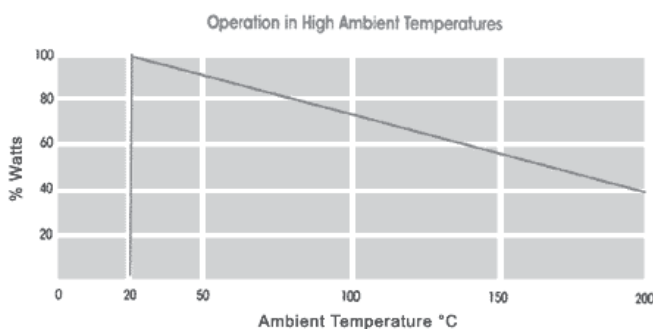
### Power Rating - Continuous Duty

Where it is desirable to limit the surface temperature of the resistor, refer to this graph.



### Operation in High Ambient Temperatures

When the ambient temperature is above 20°C resistors should be de-rated as shown on the graph below.



### Power Rating - Short Time

In cases where resistors are only required to be operated intermittently, a higher short time rating may be considered. Where it is desirable to limit the surface temperature of the resistor, refer to this graph.

The graph shows loading against time assuming a cooling time of at least 20 minutes between duty cycles.

