V & VT Vitreous Enamelled Resistors

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 C - 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. * V & VT only.

Ordering Procedure

Unless otherwise specified resistors will be supplied ready for a mechanical connection.
Fixed Resistors To specify: Type, Mounting, Ohmic Value, Tolerance, e.g.: V130H 400R J
Adjustable Resistors To specify add ADJ,
e.g.: V180H 350R K ADJ
Tapped Resistors To specify add TAPPED,
e.g.: V130H 400R K TAPPED
Faston Terminals To specify add FASTON TAGS,
e.g.: V40 200R J FASTON TAGS
Ferrule Ended Resistors To specify add F dead or WF for live,
e.g.: V180 F 450R K or V90L WF 27R K
Corrugated Tape Resistors To specify prefix VT,
e.g.: VT130H 2R5 K

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

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O Open Wire Wound Resistors

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 C - 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 ± 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.: O130H 400R K
Adjustable Resistors To specify add ADJ,
e.g.: O180H 350R K ADJ
Additional Tap Resistors To specify add Tapped,
e.g.: O130H 400R K TAP
Faston Terminals To specify add FASTON TAGS,
e.g.: O40 200R K FASTON TAGS
Ferrule Ended Resistors To specify add F dead or WF for live,
e.g.: O180 F 450R K or O90L WF 27R K

Standard Ohmic Values and Tolerances

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

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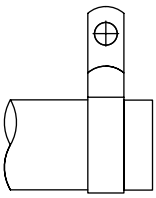
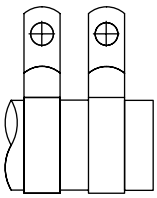
V, VT, O Vitreous & Open Wound Resistors

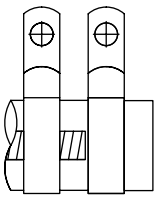
Termination Styles



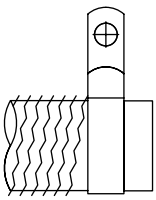
Type V
Standard resistor with untinned terminals.



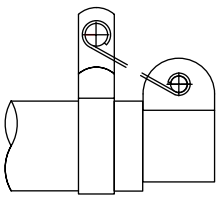
Type V (Tapped)
Tapped resistor.



Type V (ADJ)
Adjustable resistor.

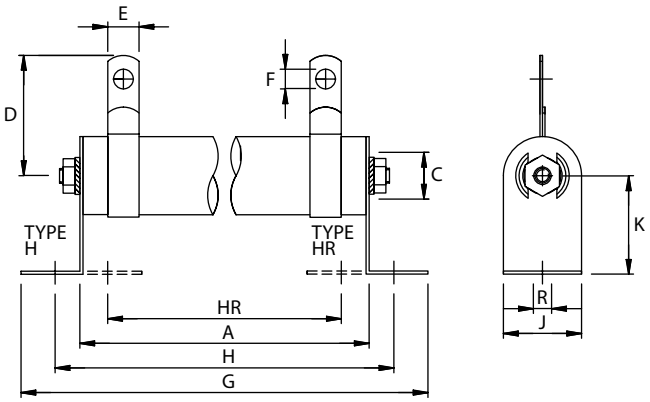


Type VT
Corrugated tape wound resistor.

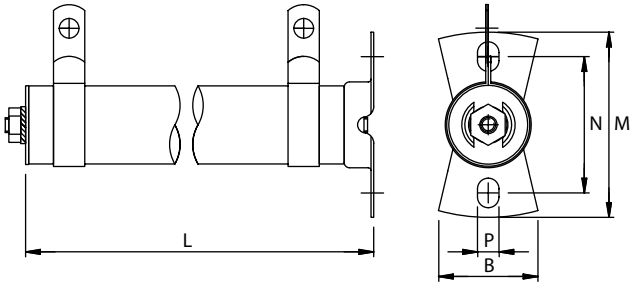


Type V - - - F and WF
Resistor with live and dead ferrule ends.

H and HR Mounting



V Mounting

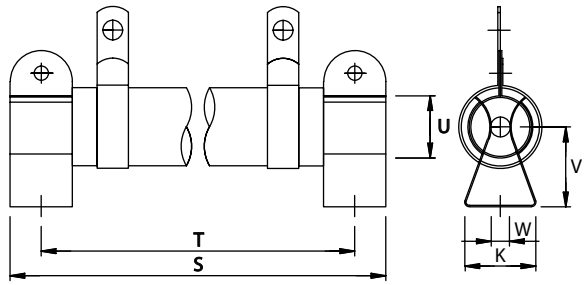


Dimensions (mm)

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

VT 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)

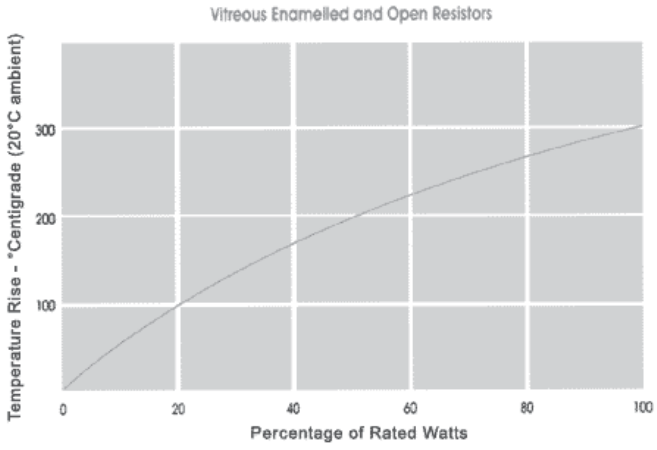
Type	Size	Watts 280°C	Watts 380°C*	S	T	U	V	W
O & V VT	30	30 35	35 44	76	65	14	19	4
O & V VT	40	40 50	65 80	127	116	14	19	4
O & V VT	45	45 55	65 80	83	70	27	32	6
O & V VT	60L	60 75	75 90	121	108	21	32	5
O & V VT	60S	60 75	75 90	102	90	27	32	6
O & V VT	90L	90 110	150 185	197	184	21	32	5
O & V VT	90S	90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

*380°C applies to vitreous enamelled resistors only.

Temperature Rise and Power Dissipation

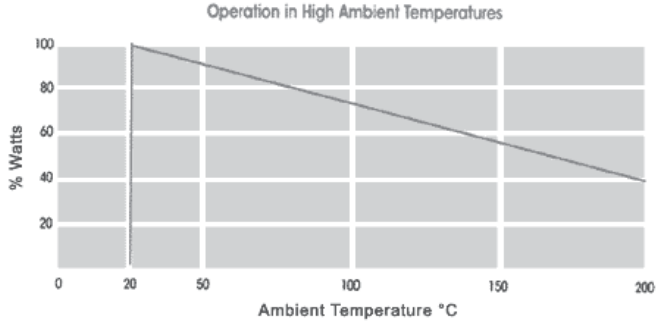
Power Rating - Continuous Duty

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.