

Rheostat Variable Power Resistors

C-shaped Wirewound Variable Resistors - FVR Series

**Rheostat, Variable Resistors
Control The Speed of a Motor**

▶ Preview

Token's Power Variable Resistor FVR Series is a C-shaped ceramic rod and wound with copper or chromium-alloy wire as a resistance element. Except for the slide contact surface, the entire component is coated with a high-temperature, non-flammable resin. After cooling and drying, insulation is applied through a high-temperature process. Then, a centered rotating adjuster component is installed, which slides along the resistance element and varies the resistance to the desired value.

Variable Resistors are often called potentiometers in books and catalogues. Variable FVR may be used as a rheostat with two connections (the wiper and just one end of the track) or as a potentiometer with all three connections in use.



Applications :

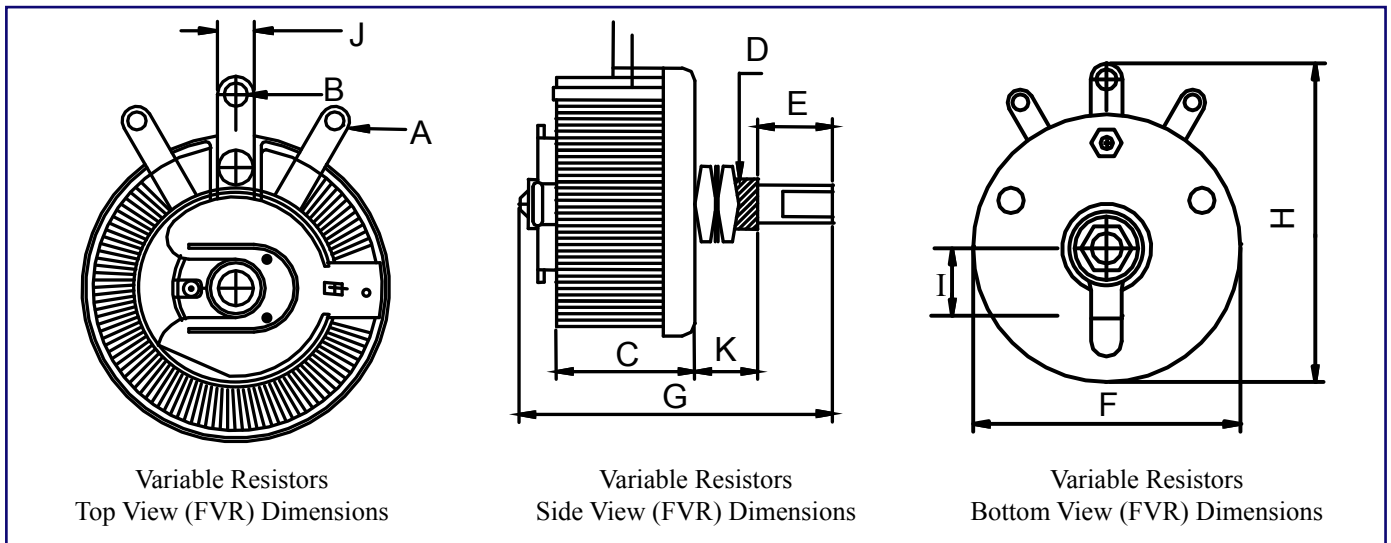
- Motor controller also use FVR Series as rheostats or potentiometer to control the speed of a motor by limiting the flow of current through them.
- They are used in many small appliances such as blenders, mixers, fans, and power tools.
- FVR Rheostats Series are also used as test instruments to provide an accurate resistance value.
- While FVR can be used to control electric ovens and cooktops, thermostats are preferred because they have additional parts which automatically adjust the current flow to maintain a constant temperature.

Features :

- Standard resistance tolerance is K($\pm 10\%$). Closer tolerances are available upon request.
- 3 Wattage Rating styles to choose: 25W, 50W, and 100W.
- Wide Max. Resistance range: $5\Omega \sim 5K\Omega$.

The FVR Series is RoHS compliant and lead free. For non-standard technical requirements and custom special applications, please contact us.

(FVR) 25W - 100W Dimensions



Variable Resistors
Top View (FVR) Dimensions

Variable Resistors
Side View (FVR) Dimensions

Variable Resistors
Bottom View (FVR) Dimensions

Wattage Rating	Dimensions(mm)												Resistance Range(Ω)
	A	B	C	D	E	F	G	H	I	J	K	Weight	
25W	2.5	3.2	22	3/8"	6x12	42	50	50	11	5	10	74/g	5 Ω -2.5K Ω
50W	4.2	4.2	28	3/8"	6x12	64	60	70	11	8	14	160/g	7 Ω -3.5K Ω
100W	4.2	4.2	42	3/8"	6x12	85	75	90	11	8	14	372/g	10 Ω -5K Ω

Application Notes

Determination of End Resistance Value of FVR, DQS, DSRA, DSRB, BSR, BSQ:

- Resistance Range means you can choose one maximum resistance value (End resistance value) at one of FVR, DQS, DSRA, DSRB, BSR, BSQ VR (Variable Resistor) type.
- After End Resistance Value confirmed, the minimum resistance (start resistance value) will be determined by depending on resistance of wire and wirewound type.

Power Rating of Variable Resistor:

The part Number formation of FVR, DQS, DSRA, DSRB, BSR, BSQ:

Product type - Rated Wattage - Resistance Value (Ω) - Resistance Tolerance

Product type means one of FVR, DQS, DSRA, DSRB, BSR, BSQ.

Rated Wattage means power rating at End Resistance Value.

Resistance Value (Ω) means maximum resistance value (End Resistance Value).

Resistance Tolerance means precision range of End Resistance Value.

1. Power Rating of VR (Variable Resistor) is determined by the maximum resistance value (End Resistance Value).
2. Resistance and Power Rating should be decreased while you are adjusting the screw.

Notes:

- Adjustability is 10% to 90% of full resistance value.
- Wattage is proportional to this adjusted resistance value.

Power Rating:

- Based on 25°C free air rating. The stated wattage rating applies only when the entire resistance is in the circuit.
- Setting the lug at an intermediate point reduces the wattage rating by approximately the same proportion.
- Example: If the lug is set at half resistance, the wattage is reduced by approximately one-half.

If you need current constant type or special specifications, please feel free to contact us.

▶ Performance Specifications

Test Item	Test Methods	Characteristics
Resistance tolerance	JIS-C-5261 5-1	Resistance tolerance $\pm 10\%$
Insulation resistance	JIS-C-5261 6-1 500VDC	100M Ω min
Dielectric withstanding voltage	JIS-C-5261 7-1 1000VDC 1 minute Between terminal and axis	Free of appearance or structural irregularity
Terminal strength	JIS-C-5261 6-5 3kg 30 seconds	Free of appearance or structural irregularity $\Delta R/R \leq \pm(2\%+0.1\Omega)$
Vibration	JIS-C-5261 6-6 1.5m/m 10 ~ 50 ~ 10 Hz/min X-Y-Z 2 hours each	Free of appearance or structural irregularity $\Delta R/R \leq \pm(2\%+0.1\Omega)$
Load life	JIS-C-5261 7-7	Free of appearance or structural irregularity $\Delta R/R \leq \pm(5\%+0.1\Omega)$
Full gyration angle	JIS-C-5261 6-1	300 \pm 5°C
Flame retardation	100% - 600% rated wattage load	US UL-94 flame retardation test V-0 grade noncombustible
Remarks	1. Resistance and resistance tolerance were tested in-house with micro resistance meter. 2. Coating refers to UL-certified data provided by supplier.	

▶ How to Order



① Part Number: FVR

② Rated Power (W): 25W
50W
100W

③ Resistance Value (Ω): Indicates resistance value in units of ohms.

④ Resistance Tolerance (%)

Code	Resistance Tolerance
K	$\pm 10\%$

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