

## Consistent Precision & Reliability

Precision and reliability are the **heart and soul** of VPG Foil Resistors. For decades we have been known to produce supreme quality products complying with the strictest global standards worldwide. As market demands, we've extended our product line with APR – our new brand for standardized products.

Providing you with the widest selection of highly precise and reliable foil resistors from made-to-order to standardized, that meet any required qualifications.



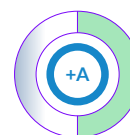
VFR  
**RESISTORS**  
A VPG Brand



**AE** Alpha Electronics  
A VPG Brand



**POWERTRON**  
A VPG Brand



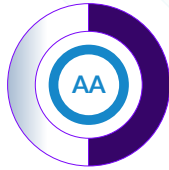
**APR**  
A VPG Brand

# VPG Foil Resistors consists of four brands



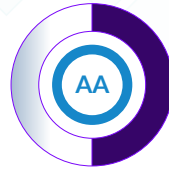
## VFR – Bulk Metal Foil®

Foil precision resistors produces AAA-class resistors made-to-order, offering high standing reliability and best long-term stability, meeting the EEE /QPL standards.



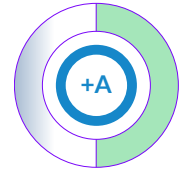
## Alpha Electronics

provides AA class foil resistors, high precision programmable certified resistance decade boxes, primary & secondary standard resistors. Custom designs for thin film resistors and RTD simulators complying with MIL standard.



## Powertron

provides AA class high precision power current sense foil resistors in lower resistance and custom design for thick film power resistors complying with MIL standards.



## APR

provides off the shelf A+ class standard surface mount resistors packaged in tape & reel and power current-sense resistors with resistance values based on E24 & E96 codes complying with the AEC-Q200 standardization.

### Key Features

Temperature coefficient of resistance (TCR):  
± 0.2 ppm/°C - typical  
Resistance Range: 1 mΩ-1.84 MΩ  
Resistance tolerance: to ±0.005%  
Power Rating: to 10 W  
Load Life Stability under Rated Power: to ±0.0025% -typical

EEE / QPL

### Key Features

Temperature coefficient of resistance (TCR):  
±0.2 ppm/°C - typical  
Resistance Range: 1 mΩ-10 MΩ  
Resistance tolerance: to ±0.01%  
Power Rating: to 500 W  
Load Life Stability under Rated Power: to ±0.005% -typical

MIL Standard

### Key Features

Temperature coefficient of resistance (TCR):  
±25 ppm/°C - typical  
Resistance Range: 20 mΩ-10 TΩ  
Resistance tolerance: to ±0.05%  
Power Rating: to 900 W  
Load Life Stability under Rated Power: to ±0.5%

MIL Standard

### Key Features

Temperature coefficient of resistance (TCR):  
±2 ppm/°C - typical  
Resistance Range: 0.3 mΩ-1 TΩ  
Resistance tolerance: to ±0.005%  
Power Rating: to 20 W  
Load Life Stability under Rated Power: to ±0.005% -typical

AEC-Q200



**VPG Foil Resistors**

VFR • ALPHA ELEC. • POWERTRON • APR

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