

Type MG Precision High Voltage Resistors

Now with Extended Resistance Range to 10,000 Megohms and Additional Models

Temperature Coefficient as tight as 80 ppm/°C, Combined with Excellent Long-Term Stability and Precision Tolerances.

Caddock's Micronox® resistance films are the source of the Type MG Precision High Voltage Resistors' outstanding combination of performance features:

- Single-resistor values as high as 10,000 Megohms.
- Maximum continuous operating voltages as high as 48,000 volts ("-15" ratings).
- Overvoltage capabilities of 150% of standard working voltages for all models and values, (except "-15" ratings).
- Resistance Tolerances from ±1.0% to ±0.1%.
- Temperature Coefficient, for standard resistance range, of 80 ppm/°C in combination with resistance tolerances as tight as ±0.1%.
- Type MG resistors have demonstrated stability of 0.01% per 1,000 hours in extended load life testing of standard resistance range values.

This exceptional performance has been proven through many years of use in equipment that demands the highest reliability and stability, including TWT amplifiers, X-ray systems, geophysical instruments, and medical electronics.

Preconditioning for Power and Voltage Ratings

All power ratings and maximum operating voltage ratings are for continuous duty. These ratings are based on pre-stress voltage levels applied during the manufacturing process to provide for stable resistor performance even under momentary overload conditions.

Maximum operating voltages 60% higher than the values listed in the table may be specified by adding "-15" to the model number (Example: MG750-15). Note that overload and overvoltage ratings do not apply to the "-15" resistors. Resistance ranges for "-15" resistors shown in the table are from "-15 Min." to "Standard Max."

Non-Inductive Performance

Most models are manufactured with Caddock's Non-Inductive Design which uses a serpentine resistive pattern that provides for neighboring lines to carry current in opposite directions, thereby achieving maximum cancellation of flux fields over the entire length of the resistor. This efficient non-inductive construction is accomplished without derating of any performance advantages.

| Model No. | Wattage | Max. Continuous Oper. Volt. | Overload Rating | Dielect. Strength | Resistance | | | | Dimensions in inches and (millimeters) | | |
|-----------|---------|-----------------------------|-----------------|-------------------|------------|----------|---------------|---------------|--|-----------------------------|----------------------------|
| | | | | | Min. | -15 Min. | Standard Max. | Extended Max. | A | B | C |
| MG650 | 0.5 | 600 | Type 1 | 750 | 200 Ω | N/A | 5 Meg | N/A | .313 ±0.020 (7.95 ±.51) | .094 ±0.015 (2.39 ±.38) | .025 ±0.002 (.64 ±.05) |
| MG655 | 0.5 | 600 | Type 1 | 750 | 200 Ω | N/A | 8 Meg | N/A | .313 ±0.030 (7.95 ±.76) | .109 ±0.025 (2.77 ±.64) | .025 ±0.002 (.64 ±.05) |
| MG660 | 0.6 | 1,000 | Type 1 | 750 | 400 Ω | N/A | 10 Meg | N/A | .500 ±0.030 (12.70 ±.76) | .094 ±0.015 (2.39 ±.38) | .025 ±0.002 (.64 ±.05) |
| MG680 | 0.8 | 2,000 | Type 1 | 750 | 600 Ω | N/A | 20 Meg | N/A | .750 ±0.030 (19.05 ±.76) | .094 ±0.015 (2.39 ±.38) | .025 ±0.002 (.64 ±.05) |
| MG710 | 1.0 | 4,000 | Type 1 | 750 | 800 Ω | N/A | 50 Meg | N/A | 1.000 ±0.040 (25.40 ±1.02) | .094 ±0.015 (2.39 ±.38) | .025 ±0.002 (.64 ±.05) |
| MG712 | 0.6 | 1,000 | Type 2 | 750 | 800 Ω | N/A | 20 Meg | N/A | .400 ±0.060 (10.16 ±1.52) | .140 ±0.030 (3.56 ±.76) | .025 ±0.002 (.64 ±.05) |
| MG714 | 1.0 | 1,000 | Type 2 | 750 | 200 Ω | 6.5 Meg | 20 Meg | N/A | .562 ±0.060 (14.27 ±1.52) | .150 ±0.030 (3.81 ±.76) | .032 ±0.002 (.81 ±.05) |
| MG715 | 1.0 | 2,000 | Type 2 | 750 | 400 Ω | 26 Meg | 50 Meg | N/A | .750 ±0.060 (19.05 ±1.52) | .140 ±0.030 (3.56 ±.76) | .025 ±0.002 (.64 ±.05) |
| MG716 | 1.5 | 4,000 | Type 2 | 750 | 600 Ω | 70 Meg | 75 Meg | N/A | 1.000 ±0.060 (25.40 ±1.52) | .140 ±0.030 (3.56 ±.76) | .025 ±0.002 (.64 ±.05) |
| MG717 | 1.5 | 2,000 | Type 2 | 750 | 600 Ω | 17 Meg | 75 Meg | 225 M | .710 ±0.050 (18.03 ±1.27) | .240 ±0.030 (6.10 ±.76) | .040 ±0.002 (1.02 ±.05) |
| MG720 | 2.0 | 6,000 | Type 2 | 750 | 1 K | N/A | 150 Meg | N/A | 1.500 ±0.080 (38.10 ±2.03) | .140 ±0.030 (3.56 ±.76) | .025 ±0.002 (.64 ±.05) |
| MG721 | 2.0 | 4,000 | Type 2 | 750 | 200 Ω | 51 Meg | 100 Meg | 300 M | 1.000 ±0.050 (25.40 ±1.27) | .240 ±0.030 (6.10 ±.76) | .040 ±0.002 (1.02 ±.05) |
| MG725 | 2.5 | 10,000 | Type 2 | 750 | 1.5 K | N/A | 200 Meg | N/A | 2.000 ±0.080 (50.80 ±2.03) | .140 ±0.030 (3.56 ±.76) | .025 ±0.002 (.64 ±.05) |
| MG730 | 3.0 | 6,000 | Type 2 | 1,000 | 500 Ω | 77 Meg | 250 Meg | 750 M | 1.500 ±0.080 (38.10 ±2.03) | .240 ±0.030 (6.10 ±.76) | .040 ±0.002 (1.02 ±.05) |
| MG731 | 2.6 | 4,000 | Type 2 | 1,000 | 200 Ω | 40 Meg | 150 Meg | 750 M | 1.000 ±0.060 (25.40 ±1.52) | .315 ±0.030 (8.00 ±.76) | .040 ±0.002 (1.02 ±.05) |
| MG735 | 3.6 | 10,000 | Type 2 | 1,000 | 750 Ω | 178 Meg | 300 Meg | 1,000 M | 2.000 ±0.080 (50.80 ±2.03) | .240 ±0.030 (6.10 ±.76) | .040 ±0.002 (1.02 ±.05) |
| MG740 | 3.6 | 6,000 | Type 2 | 1,000 | 300 Ω | 64 Meg | 300 Meg | 1,500 M | 1.500 ±0.060 (38.10 ±1.52) | .315 ±0.030 (8.00 ±.76) | .040 ±0.002 (1.02 ±.05) |
| MG745 | 5.0 | 15,000 | Type 2 | 1,000 | 1 K | 288 Meg | 500 Meg | 1,500 M | 3.000 ±0.100 (76.20 ±2.54) | .240 ±0.030 (6.10 ±.76) | .040 ±0.002 (1.02 ±.05) |
| MG750 | 5.0 | 10,000 | Type 2 | 1,000 | 400 Ω | 128 Meg | 500 Meg | 2,500 M | 2.125 ±0.060 (53.98 ±1.52) | .315 ±0.030 (8.00 ±.76) | .040 ±0.002 (1.02 ±.05) |
| MG780 | 7.5 | 15,000 | Type 2 | 1,000 | 600 Ω | 192 Meg | 750 Meg | 3,750 M | 3.125 ±0.060 (79.38 ±1.52) | .315 ±0.030 (8.00 ±.76) | .040 ±0.002 (1.02 ±.05) |
| MG785 | 8.0 | 20,000 | Type 2 | 1,000 | 800 Ω | 320 Meg | 1,000 Meg | 5,000 M | 4.000 ±0.120 (101.60 ±3.05) | .315 ±0.030 (8.00 ±.76) | .040 ±0.002 (1.02 ±.05) |
| MG810 | 10.0 | 25,000 | Type 2 | 1,000 | 1 K | 400 Meg | 1,250 Meg | 6,250 M | 5.000 ±0.120 (127.00 ±3.05) | .315 ±0.030 (8.00 ±.76) | .040 ±0.002 (1.02 ±.05) |
| MG815 | 15.0 | 30,000 | Type 2 | 1,000 | 1 K | 384 Meg | 2,000 Meg | 10,000 M | 6.000 ±0.120 (152.40 ±3.05) | .350 ±0.040 (8.89 ±1.02) | .040 ±0.002 (1.02 ±.05) |

- Models with low inductance construction are in shaded areas.
- Models with Caddock's Non-Inductive Resistance Pattern are in non-shaded areas.

Specifications:

Resistance Tolerance:

| Resistance Range | Tolerance |
|------------------------|---------------------------|
| Standard | ±1%, ±0.5%, ±0.25%, ±0.1% |
| St'd with "-15" rating | ±1% |
| Extended Range | ±1% |

Temperature Coefficient:

| Resistance Range | TC Specifications |
|-------------------------------------|---|
| Standard and St'd with "-15" rating | ±80 ppm/°C from -15°C to +105°C, referenced to +25°C. |
| Extended Range | ±80 ppm/°C from +25°C to +105°C, -200 ppm/°C to +50 ppm/°C from -15°C to +25°C. |

Insulation Resistance: 10,000 Megohms, min.

Overload/Overvoltage: 5 times rated power with applied voltage not to exceed 1.5 times maximum continuous operating voltage for 5 seconds.

Type 1: DC Voltage

Type 2: DC Voltage or V_{rms} AC

| Resistance Range | Overload/Overvoltage, ΔR |
|------------------------|--------------------------|
| Standard | 0.5% max. |
| St'd with "-15" rating | N/A |
| Extended Range | 0.8% max. |

Thermal Shock: Mil-Std-202, Method 107, Cond. C, ΔR 0.25% max.

Moisture Resistance: Mil-Std-202, Method 106, ΔR 0.4% max.

Load Life: 1,000 hours at +125°C at rated voltage, not to exceed rated power.

| Resistance Range | Load Life, ΔR |
|------------------------|---------------|
| Standard | 0.5% max. |
| St'd with "-15" rating | 0.8% max. |
| Extended Range | 0.8% max. |

Solderable Leads

Encapsulation: High Temperature Silicone Conformal.

Applications Engineering
17271 North Umpqua Hwy.
Roseburg, Oregon 97470-9422
Phone: (541) 496-0700
Fax: (541) 496-0408

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Type MG Precision High Voltage Resistors

| | |
|-------|--|
| MG650 | |
| MG655 | |
| MG660 | |
| MG680 | |
| MG710 | |
| MG712 | |
| MG714 | |
| MG715 | |
| MG716 | |
| MG720 | |
| MG725 | |
| MG717 | |
| MG721 | |
| MG730 | |
| MG735 | |
| MG745 | |
| MG731 | |
| MG740 | |
| MG750 | |
| MG780 | |
| MG785 | |
| MG810 | |
| MG815 | |



N Non-inductive performance with Caddock's exclusive design

Most models are available with Caddock's Non-inductive Serpentine Pattern

Certain products shown in this catalog are covered by one or more patents, there are also patents pending.



Design Assistance in Developing High Voltage Resistor Sets with Low TC Tracking.

For immediate engineering assistance in developing Low Ratio TC matched high voltage resistor sets, contact our Applications Engineering and we will be pleased to offer the best solution from our high voltage resistor product capabilities.

Ordering Information:

Model Number: MG750 - 100M - 1% Tolerance
 Resistor Value: _____

Applications Engineering
 17271 North Umpqua Hwy.
 Roseburg, Oregon 97470-9422
 Phone: (541) 496-0700
 Fax: (541) 496-0408

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Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



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