

# 210 Series

## Dividohm® Vitreous Enamel Adjustable Power



### FEATURES

- Terminals suitable for soldering or bolt connection.
- Adjustable lug supplied
- High wattage applications
- All-welded construction
- Rugged lead free vitreous enamel coating.
- Flame resistant coating
- Additional adjustable lugs available
- RoHS compliant product available. Add "E" suffix to part number to specify

Choose Ohmite's 210 Type adjustable resistors for applications requiring settings at different resistance values. These wirewound resistors are equipped with an adjustable lug, making them ideal for adjusting circuits, obtaining odd resistance values and setting equipment to meet various line voltages. 210 Type resistors feature a hollow core to permit secure fastening with spring-type clips or thru bolts with washers. They also offer the durability of lead free vitreous enamel coating and all-welded construction. Mounting brackets not included with resistors.

### SERIES SPECIFICATIONS

| Series | Wattage | Ohms      | Core Code | Voltage | Standard Terminal |
|--------|---------|-----------|-----------|---------|-------------------|
| D12    | 12      | 1.0-10K   | D         | 565     | 57                |
| D25    | 25      | 1.0-25K   | K         | 625     | 40                |
| D50    | 50      | 1.0-100K  | K         | 1625    | 40                |
| D75    | 75      | 1.0-100K  | K         | 2625    | 40                |
| D100   | 100     | 1.0-100K  | M         | 2845    | 40                |
| D175   | 175     | 1.0-100K  | P         | 3595    | 46                |
| D225   | 225     | 1.0-100K  | P         | 4595    | 46                |
| D500   | 500     | 1.5-15K   | S         | 4970    | 45                |
| D1000  | 1000    | 3.0-27.7K | S         | 8900    | 45                |

Other sizes available; contact Ohmite. Also available in low cost Centohm or Silicone coating; contact Ohmite.

### CHARACTERISTICS

|                                        |                                                                                                                                                                                                                                                                                                                          |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Adjustability</b>                   | 10% to 90% of full value. Wattage is proportional to this adjusted resistance value.                                                                                                                                                                                                                                     |
| <b>Coating</b>                         | Lead free vitreous enamel. Large models (500 watts and up) are supplied in Silicone Ceramic. Also available in low-cost Centohm coating; Consult factory.                                                                                                                                                                |
| <b>Core</b>                            | Tubular ceramic.                                                                                                                                                                                                                                                                                                         |
| <b>Terminals</b>                       | Solder coated radial lug. RoHS solder composition is 96% Sn, 3.5% Ag, 0.5% Cu                                                                                                                                                                                                                                            |
| <b>Adjustable terminal</b>             | Nickel plated steel. (Screwdriver type adjustable lug supplied standard. Other types, including silver contact units, available.)                                                                                                                                                                                        |
| <b>Derating</b>                        | Linearly from 100% @ +25°C to 0% @ +350°C.                                                                                                                                                                                                                                                                               |
| <b>Tolerance</b>                       | ±10% (K)                                                                                                                                                                                                                                                                                                                 |
| <b>Power rating</b>                    | 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 approx. one-half. |
| <b>Overload</b>                        | 10 times rated wattage for 5 seconds.                                                                                                                                                                                                                                                                                    |
| <b>Temperature coefficient</b>         | ±260 ppm/°C                                                                                                                                                                                                                                                                                                              |
| <b>Dielectric withstanding voltage</b> | 1000 VAC: 12 to 100 watt rating. 3000 VAC: 175 and 225 watt rating (measured from terminal to mounting bracket)                                                                                                                                                                                                          |
| <b>Max. amps</b>                       | To calculate, use the formula $\sqrt{P/R}$ .                                                                                                                                                                                                                                                                             |

**Power limitations for high resistance values:** When resistance exceeds the resistance values listed below, derate the Power Rating by 25% to improve reliability:

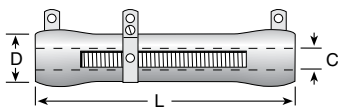
| Power rating | Resistance value | No power derating necessary for ratings higher than |
|--------------|------------------|-----------------------------------------------------|
| 12W          | 4,500Ω           | 100W.                                               |
| 25W          | 9,000Ω           |                                                     |
| 50W          | 20,000Ω          |                                                     |
| 75W          | 35,000Ω          |                                                     |
| 100W         | 50,000Ω          |                                                     |

# 210 Series

## Dividohm® Vitreous Enamel Adjustable Power

### DIMENSIONS

(in. / mm)



| Series | Wattage | L            | D            | C            | Core Code | Standard Terminal |
|--------|---------|--------------|--------------|--------------|-----------|-------------------|
| D12    | 12      | 1.75 / 44.4  | 0.313 / 7.94 | 0.188 / 4.76 | D         | 57                |
| D25    | 25      | 2.0 / 50.8   | 0.562 / 14.3 | 0.313 / 7.94 | K         | 40                |
| D50    | 50      | 4.0 / 101.6  | 0.562 / 14.3 | 0.313 / 7.94 | K         | 40                |
| D75    | 75      | 6.0 / 152.4  | 0.562 / 14.3 | 0.313 / 7.94 | K         | 40                |
| D100   | 100     | 6.5 / 165.1  | 0.750 / 19.1 | 0.50 / 12.7  | M         | 40                |
| D175   | 175     | 8.5 / 215.9  | 1.125 / 28.6 | 0.75 / 19.1  | P         | 46                |
| D225   | 225     | 10.5 / 266.7 | 1.125 / 28.6 | 0.75 / 19.1  | P         | 46                |
| D500   | 500     | 12.0 / 304.8 | 2.50 / 63.5  | 1.75 / 44.5  | S         | 45                |
| D1000  | 1000    | 20.0 / 508.0 | 2.50 / 63.5  | 1.75 / 44.5  | S         | 45                |

### ORDERING INFORMATION

Coating  
Blank = Vitreous  
C = Centohm  
S = Silicone

RoHS Compliant

**D 2 5 K 1 0 0 E**

Series Wattage Tolerance Ohms  
J = 5% 1R0 = 1Ω  
K = 10% 250 = 250Ω  
1K0 = 1,000Ω  
25K = 25,000Ω  
25K5 = 25,500Ω

#### Made-to-order Parts

Core Diameter  
See "Core and Terminal Selection"

Terminal Type  
See "Resistor Terminals for Tubular Cores"

RoHS Compliant

**2 1 0 5 0 K 4 0 5 R 0 0 J E**

Coating  
210 = Vitreous  
410 = Silicone Ceramic  
610 = Centohm

Wattage

Ohms  
R500 = 0.500Ω  
1R00 = 1Ω  
250R = 250Ω  
1K00 = 1,000Ω  
25K0 = 25,000Ω  
25K5 = 25,500Ω

Tolerance  
J = 5%  
K = 10%

See 270 series custom core and terminal info

### Standard Values

| Ohmic value | Part No.<br>Prefix ▶<br>Suffix ▼ | 12 | 25 | 50 | 75 | 100 | 175 | 225 | 500 | 1000 |
|-------------|----------------------------------|----|----|----|----|-----|-----|-----|-----|------|
| 1.0         | 1R0E                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   | ✓   | ✓    |
| 2           | 2R0E                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   | ✓   | ✓    |
| 3           | 3R0E                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   | ✓   | ✓    |
| 4           | 4R0E                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   | ✓   | ✓    |
| 5           | 5R0E                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   | ✓   | ✓    |
| 7.5         | 7R5E                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   | ✓   | ✓    |
| 10          | 10RE                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   | ✓   | ✓    |
| 15          | 15RE                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   | ✓   | ✓    |
| 20          | 20RE                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   | ✓   | ✓    |
| 25          | 25RE                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   | ✓   | ✓    |
| 50          | 50RE                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   | ✓   | ✓    |
| 75          | 75RE                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   | ✓   | ✓    |
| 100         | 100E                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   | ✓   | ✓    |

| Ohmic value | Part No.<br>Prefix ▶<br>Suffix ▼ | 12 | 25 | 50 | 75 | 100 | 175 | 225 | 500 | 1000 |
|-------------|----------------------------------|----|----|----|----|-----|-----|-----|-----|------|
| 150         | 150E                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   | ✓   | ✓    |
| 200         | 200E                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   | ✓   | ✓    |
| 250         | 250E                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   | ✓   | ✓    |
| 300         | 300E                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   | ✓   | ✓    |
| 400         | 400E                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   | ✓   | ✓    |
| 500         | 500E                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   | ✓   | ✓    |
| 750         | 750E                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   | ✓   | ✓    |
| 800         | 800E                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   | ✓   | ✓    |
| 1,000       | 1K0E                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   | ✓   | ✓    |
| 1,250       | 1K25E                            | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   | ✓   | ✓    |
| 1,500       | 1K5E                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   | ✓   | ✓    |
| 2,000       | 2K0E                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   | ✓   | ✓    |
| 2,500       | 2K5E                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   | ✓   | ✓    |

| Ohmic value | Part No.<br>Prefix ▶<br>Suffix ▼ | 12 | 25 | 50 | 75 | 100 | 175 | 225 |
|-------------|----------------------------------|----|----|----|----|-----|-----|-----|
| 3,000       | 3K0E                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   |
| 4,000       | 4K0E                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   |
| 5,000       | 5K0E                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   |
| 6,000       | 6K0E                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   |
| 7,000       | 7K0E                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   |
| 7,500       | 7K5E                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   |
| 10,000      | 10KE                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   |
| 12,000      | 12KE                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   |
| 15,000      | 15KE                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   |
| 20,000      | 20KE                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   |
| 25,000      | 25KE                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   |
| 50,000      | 50KE                             | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   |
| 100,000     | 100KE                            | ✓  | ✓  | ✓  | ✓  | ✓   | ✓   | ✓   |

✓ = Standard values; check availability at [www.ohmite.com](http://www.ohmite.com)

50KΩ and 100KΩ resistance values involve very fine resistance wire and should not be used in critical applications without burn-in and/or thermal cycling.