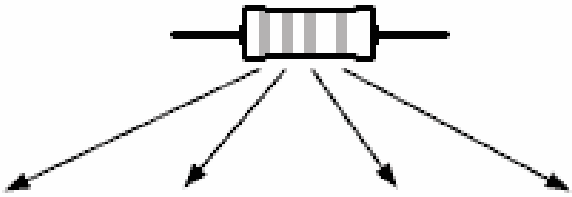
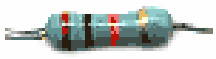
Códigos y series de las Resistencias

Código de colores



Colores	1ª Cifra	2ª Cifra	Multiplicador	Tolerancia
Negro		0	0	
Marrón	1	1	x 10	± 1%
Rojo	2	2	x 10^2	± 2%
Naranja	3	3	x 10^3	
Amarillo	4	4	x 10^4	
Verde	5	5	x 10^5	± 0.5%
Azul	6	6	x 10^6	
Violeta	7	7	x 10^7	
Gris	8	8	x 10^8	
Blanco	9	9	x 10^9	
Oro			x 10^{-1}	± 5%
Plata			x 10^{-2}	± 10%
Sin color				± 20%

- **Ejemplo:** 

  Si los colores son: (**Marrón** - **Negro** - **Rojo** - **Oro**) su valor en ohmios es:

  1 **0** **x 100** **5 %** = **1000Ω** = **1KΩ**

  Tolerancia de ± **5%**

5 bandas de colores

- **T**ambién hay resistencias con 5 bandas de colores, la única diferencia respecto a la tabla anterior, es qué la tercera banda es la 3ª Cifra, el resto sigue igual.

MULTIMETRO FLUKE 45

DC Current

Range	Resolution			Accuracy	Burden Voltage
	Slow	Medium	Fast		
30 mA	—	1 µA	10 µA	0.05 % + 3	0.45 V
100 mA	—	10 µA	100 µA	0.05 % + 2	1.4 V
10 A	—	1 mA	10 mA	0.2 % + 5	0.25 V
10 mA	100 nA	—	—	0.05 % +	0.14 V
100 mA	1 µA	—	—	50.05 % + 5	1.4 V
10 A	100 µA	—	—	0.2 % + 7	0.25 V
* Typical at full range					

Maximum Input

To be used in protected, low energy circuits only, not to exceed 250 V or 4800 Volt-Amps. (IEC 664 Installation Category II.)

mA 300 mA dc or ac rms. Protected with a 500 mA, 250V, IEC 127-sheet 1, fast blow fuse

A 10 A dc or ac rms continuous, or 20 A dc or ac rms for 30 seconds maximum. Protected with a 15 A, 250 V, 10,000 A interrupt rating, fast blow fuse.

Note

Resistance between the COM binding post and the meter's internal measuring circuits is approximately .003 Ω.

AC Current

Range	Resolution			Burden Voltage*
	Slow	Medium	Fast	
10 mA	100 nA	—	—	0.14 V
30 mA	—	1 µA	10 µA	0.45 V
100 mA	1 µA	10 µA	100 µA	1.4 V
10 A	100 µA	1 mA	10 mA	0.25 V
* Typical at full range				

Accuracy

Range	Frequency	Accuracy		
		Slow	Medium	Fast
mA (To 100 mA)	20-50 Hz	2 % + 100	2 % + 10	7 % + 2
mA (To 100 mA)	50 Hz-10 kHz	0.5 % + 100	0.5 % + 10	0.8 % + 2
mA (To 100 mA)	10 -20 kHz	2 % + 200	2 % + 20	2 % + 3
A (1-10A)	20-50 Hz	2 % + 100	2 % + 10	7 % + 2
A (1-10A)	50 Hz-2 kHz	1 % + 100	1 % + 10	1.3 % + 2
A (0.5 to 1A)	20-50 Hz	2 % + 300	2 % + 30	7 % + 4
A (0.5 to 1A)	50Hz-2 kHz	1 % + 300	1 % + 30	1.3 % + 4

mA accuracy specifications apply within the following limits, based on reading rate:

Slow Reading Rate:	Between 15,000 and 99,999 counts (full range)
Medium Reading Rate:	Between 1,500 and 30,000 counts (full range)
Fast Reading Rate:	Between 150 and 3,000 counts (full range)

DC Voltage

Range	Resolution			Accuracy	
	Slow	Medium	Fast	(6 Months)	(1 Year)
300 mV	—	10 µV	100 µV	002 % + 2	0.025 % + 2
3 V	—	100 µV	1 mV	0.02 % + 2	0.025 % + 2
30 V	—	1 mV	10 mV	0.02 % + 2	0.025 % + 2
300 V	—	10 mV	100 mV	0.02 % + 2	0.025 % + 2
1000 V	—	100 mV	1 V	0.02 % + 2	0.025 % + 2
100 mV	1 µV	—	—	0.02 % + 6	0.025 % + 6
1000 mV	10 µV	—	—	0.02 % + 6	0.025 % + 6
10 V	100 µV	—	—	0.02 % + 6	0.025 % + 6
100 V	1 mV	—	—	0.02 % + 6	0.025 % + 6
1000 V	10 mV	—	—	0.02 % + 6	0.025 % + 6

Input Impedance

10 MΩ in parallel with <100 pF

Note

In the dual display mode, when the volts ac and volts dc functions are selected, the 10 MΩ dc input divider is in parallel with the 1 MΩ ac divider.

True RMS AC Voltage, AC-Coupled

Range	Resolution		
	Slow	Medium	Fast
300 mV	—	10 µV	100 µV
3 V	—	100µV	1 mV
30 V	—	1 mV	10 mV
300 V	—	10 mV	100 mV
750 V	—	100 mV	1 V
100 mV	1 µV	—	—
1000 mV	10 µV	—	—
10 V	100 µV	—	—
100 V	1 mV	—	—
750 V	10 mV	—	—

Accuracy

Frequency	Linear Accuracy			dB Accuracy		Power*	Max Input at Upper Freq
	Slow	Medium	Fast	Slow/Med	Fast		
20-50 Hz	1 % + 100	1 % + 10	7 % + 2	0.15	0.72	2 % + 10	750 V
50 Hz-10 kHz	0.2 % + 100	0.2 % + 10	0.5 % + 2	0.08	0.17	0.4 % + 10	750 V
10-20 kHz	0.5 % + 100	0.5 % + 10	0.5 % + 2	0.11	0.17	1 % + 10	750 V
20-50 kHz	2 % + 200	2 % + 20	2 % + 3	0.29	0.34	4 % + 20	400 V
50-100 kHz	5 % + 500	5 % + 50	5 % + 6	0.70	0.78	10 % + 50	200 V

* Error in power mode will not exceed twice the linear accuracy specification

Accuracy specifications apply within the following limits, based on reading rate:

Slow Reading Rate: Between 15,000 and 99,999 counts (full range)
Medium Reading Rate: Between 1,500 and 30,000 counts (full range)
Fast Reading Rate: Between 150 and 3,000 counts (full range)

Ohms

Range	Resolution			Accuracy	Typical Full Scale Voltage	Max Current Through the Unknown
	Slow	Medium	Fast			
300 Ω	—	10 mΩ	100 MΩ	0.05 % + 2 + 0.02Ω	0.25	1 mA
3 kΩ	—	100 MΩ	1 Ω	0.05 % + 2	0.24	120μA
30 kΩ	—	1 Ω	10 Ω	0.05 % + 2	0.29	14 μA
300 kΩ	—	10 Ω	100 Ω	0.05 % + 2	0.29	1.5 μA
3 MΩ	—	100 Ω	1 kΩ	0.06 % + 2	0.3	150 μA
30 MΩ	—	1 kΩ	10 kΩ	0.25 % + 3	2.25	320 μA
300 MΩ*	—	100 kΩ	1 MΩ	2 %	2.9	320 μA
100 Ω	1 mΩ	—	—	0.05 % + 8 + 0.02 Ω	0.09	1 mA
1000 Ω	10 mΩ	—	—	0.05 % + 8 + 0.02Ω	0.10	120 μA
10 kΩ	100 mΩ	—	—	0.05 %+8	0.11	14 μA
100 kΩ	1 Ω	—	—	0.05 % + 8	0.11	1.5 μA
1000 kΩ	10 Ω	—	—	0.06 % +_8	0.12	150 μA
10 MΩ	100 Ω	—	—	0.25 % + 6	1.5	150 μA
100 MΩ*	100 kΩ	—	—	2 % + 2	2.75	320 μA

*Because of the method used to measure resistance, the 100 MΩ (slow) and 300 MΩ (medium and fast) ranges cannot measure below 3.2 MΩ and 20 MΩ, respectively. "UL" (underload) is shown on the display for resistances below these nominal points, and the computer interface outputs "+1 E-9".

Open Circuit Voltage

3.2 V maximum on the 100 Ω, 300 Ω, 30 MΩ, 100 MΩ, and 300 MΩ ranges, 1.5 V maximum on all other ranges.

Input Protection

500 V dc or rms ac on all ranges

DEMESTRES 3801 A

DC CURRENT

Range	Accuracy	Resolution
20μA	± 2.0 % of rdg ± 5 digits	10nA
200μA	± 0.8 % of rdg ± 1 digits	0.1μA
2mA		1μA
20mA		10μA
200mA	± 1.2 % of rdg ± 1 digits	100μA
2A		1mA
10A	± 2.0 % of rdg ± 5 digits	10mA

Max Input Current: 2A:2A. 10A:10A continuous, 20A 15 sec.MAX.
Overload Protection: 2A/250V fuse (10A range unfused); Measuring Voltage Drop:200mV

AC CURRENT

Range	Accuracy	Resolution
20μA	± 3.0% of rdg ± 7 digits	10nA
200μA	± 1.8 % of rdg ± 3 digits	0.1μA
2mA	± 1.0 % of rdg ± 3 digits	1μA
20mA		10μA
200mA	± 1.8 % of rdg ± 3 digits	100μA
2A		1mA
10A	± 3.0% of rdg ± 7 digits	10mA

Max Input Current: 2A:2A. 10A:10A continuous, 20A 15 sec. MAX.
Overload Protection: 2A/250V fuse (10A range unfused); Frequency Range: 40Hz to 1kHz.
Indication: Average(rms of sine wave); Measuring Voltage Drop: 200mV.

DC VOLTAGE

Range	Accuracy	Resolution
200mV	± 0.5 % of rdg ± 1 digits	100μV
2V	± 0.8 % of rdg ± 1 digits	1mV
20V		10mV
200V		100mV
1000V		1V

Input Impedance: 10MΩ on all ranges.
Overload Protection: 250 Vrms AC for 200mV range, 1000 V peak or 700 Vrms AC for other ranges

AC VOLTAGE

Range	Accuracy	Resolution
200mV	±1.2 % of rdg ± 3 digits	100μV
2V	±0.8 % of rdg ± 3 digits	1mV
20V		10mV
200V		100mV
700V	±1.2 % of rdg ± 3 digits	1V

Input Impedance: 10MΩ on all ranges.
Frequency Range: 40Hz to 1kHz; Indication: Average(rms of sine wave).
Overload Protection: 250 Vrms AC for 200mV range and 1000 VDC or 700Vrms AC for other ranges.

RESISTANCE

Range	Accuracy	Resolution
200Ω	± 0.8 % of rdg ± 3 digits	0.1Ω
2KΩ	± 0.8 % of rdg ± 1 digit	1Ω
20KΩ		10Ω
200kΩ		100Ω
2MΩ		1KΩ
20MΩ	± 1.0 % of rdg ± 2 digits	10KΩ

Overload Protection:250V dc/ac rms on all ranges.

Open Circuit Voltage:Less than 700mV.