



1. ELECTRICAL SPECIFICATIONS

Accuracy calculated as $\pm[\% \text{reading} + (\text{num dgt} * \text{resolution})]$ ta 18°C ÷ 28°C, <75%RH

DC VOLTAGE

Range	Resolution	Accuracy	Input impedance	Overload protection
600.0mV	0.1mV	$\pm(0.8\% \text{rdg} + 5 \text{dgt})$	>10M Ω	1000VDC/ACrms
6.000V	0.001V			
60.00V	0.01V			
600.0V	0.1V			
1000V	1V			

AC TRMS VOLTAGE

Range	Resolution	Accuracy (*) (50Hz ÷ 60Hz)	Accuracy (*) (61Hz ÷ 400Hz)	Overload protection
6.000V	0.001V	$\pm(1.0\% \text{rdg} + 8 \text{dgt})$	$\pm(2.0\% \text{rdg} + 8 \text{dgt})$	1000VDC/ACrms
60.00V	0.01V			
600.0V	0.1V			
1000V	1V	$\pm(1.2\% \text{rdg} + 8 \text{dgt})$	$\pm(2.5\% \text{rdg} + 8 \text{dgt})$	

(*) Accuracy specified from 5% to 100% of measurement range

Input impedance: >10M Ω , Crest factor: ≤ 3 (up to 500V), ≤ 1.5 (up to 1kV)

DC/AC TRMS VOLTAGE WITH LOW IMPEDANCE (LoZ)

Range	Resolution	Accuracy (50Hz ÷ 400Hz)	Input impedance	Overload protection
600.0mV (*)	0.1mV	$\pm(0.8\% \text{rdg} + 5 \text{dgt})$	approx 3k Ω	1000VDC/ACrms
6.000V	0.001V			
60.00V	0.01V			
600.0V	0.1V			
1000V	1V			

(*) DC only

DC CURRENT

Range	Resolution	Accuracy (*)	Overload protection
600.0 μ A	0.1 μ A	$\pm(1.0\% \text{rdg} + 3 \text{dgt})$	Fast Fuse 800mA/1000VAC/DC (inputs mA, μ A)
6000 μ A	1 μ A		
60.00mA	0.01mA		
600.0mA	0.1mA		
6.000A	0.001A	$\pm(1.5\% \text{rdg} + 3 \text{dgt})$	Fast Fuse 10A/1000VAC/DC (input 10A)
10.00A (*)	0.01A		

(*) 20A for max 30s with not declared accuracy

AC TRMS CURRENT

Range	Resolution	Accuracy (*) (40Hz ÷ 400Hz)	Overload protection
600.0 μ A	0.1 μ A	$\pm(1.5\% \text{rdg} + 8 \text{dgt})$	Fast Fuse 800mA/1000VAC/DC (inputs mA, μ A)
6000 μ A	1 μ A		
60.00mA	0.01mA		
600.0mA	0.1mA		
6.000A	0.001A	$\pm(2.0\% \text{rdg} + 3 \text{dgt})$	Fast Fuse 10A/1000VAC/DC (input 10A)
10.00A (**)	0.01A		

(*) Accuracy specified from 5% to 100% of measurement range

(**) 20A for max 30s with not declared accuracy

**DIODE TEST**

Range	Max test current	Open voltage
	<0.9mA	2.8V

RESISTANCE AND CONTINUITY TEST

Range	Resolution	Accuracy	Buzzer	Overload protection
600.0Ω	0.1Ω	±(1.0%rdg+4dgt)	<100Ω	1000VDC/ACrms
6.000kΩ	0.001kΩ			
60.00kΩ	0.01kΩ			
600.0kΩ	0.1kΩ			
6.000MΩ	0.001MΩ	±(2.0%rdg+10dgt)		
60.00MΩ	0.01MΩ			

FREQUENCY (Electronic circuits)

Range	Resolution	Accuracy	Sensitivity	Overload protection
9.999Hz	0.001Hz	±(0.1%rdg+8dgt)	0.8Vrms min (20% < duty < 80%, <100kHz) 5Vrms min (20% < duty < 80%, >100kHz)	1000VDC/ACrms
99.99Hz	0.01Hz			
999.9Hz	0.1Hz			
9.999kHz	0.001kHz			
99.99kHz	0.01kHz			
999.9kHz	0.1kHz			
9.999MHz	0.001MHz			
40.00MHz	0.01MHz			

FREQUENCY (Electrical circuits)

Range	Resolution	Accuracy	Sensitivity	Overload protection
10Hz ÷ 400Hz	0.001Hz	±(1.5%rdg+5dgt)	15Vrms 10Arms	1000VDC/ACrms

DUTY CYCLE

Range	Resolution	Accuracy	Overload protection
0.1 ÷ 99.9%	0.01%	±(1.2%rdg+2dgt)	1000VDC/ACrms

Pulse width: 100μs ÷ 100ms ; Frequency: 5Hz ÷ 150kHz



2. GENERAL SPECIFICATIONS

Display:

- LCD, 4dgt, 6000 counts, sign, decimal point and bargraph
- Automatic polarity indication
- Backlight
- "OL" over range indication
- Response time: 2/s
- Conversion: TRMS

Features:

- Data HOLD
- MAX/MIN
- RANGE
- REL

Power supply:

- 1x9V alkaline battery NEDA 1604 IEC 6F22
- Battery life: ca. 25h (backlight ON), ca. 50h (backlight OFF)
- Auto Power OFF after 15 minutes of idleness

Mechanical specifications

- Dimensions (L x W x H): 175 x 85 x 55mm
- Weight (included battery): 360g
- Mechanical protection: IP40

Environmental conditions:

- Working temperature: 5 °C ÷ 40 °C,
- Working humidity: <80%RH
- Storage Temperature: -20 °C ÷ 60 °C
- Storage humidity: <80%RH
- Altitude max of use: 2000m

Reference guidelines:

- Safety : IEC/EN61010-1
- EMC : IEC/EN61326-1
- Pollution degree: 2
- Insulation: double insulation
- Measurement category : CAT IV 600V – CAT III 1000V

This product conforms to the prescriptions of the European directive on low voltage 2014/35/EU and to EMC directive 2014/30/EU

This product conforms to the prescriptions of the European directive 2011/65/EU (RoHS) and the European directive 2012/19/EU (WEEE)

optec
energie ist messbar

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