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# IRONMETER

TRMS MULTIMETERS WITH BUILT-IN LED TORCH  
AND TOTAL AUTORANGE (FLASHMETER)

**IRONMETER** is the true tester for construction sites, realized with a very **sturdy structure** capable of resisting every shock, ready to rise again after any fall (**even from 3 m high**) and keep working with the very same precision and reliability. It is provided with all of the typical functions of everyday use, but also features an **in-built LED torch** to illuminate poorly lit environments, when necessary. **FLASHMETER**, according to the quantity present at the input, **automatically switches** between voltage and resistance measurement.

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## Functions

	<b>IRONMETER</b>	<b>FLASHMETER</b>
TRMS Measurements	•	•
Automatic selection of measurements	-	•
AC/DC Voltage	• (600V)	• (600V)
AC/DC Current	• (10A)	-
Resistance/Continuity Test	•	•
Detection of AC voltage without contact	•	•
Frequency	•	-
Capacitance, Diode test	•	-
Duty cycle	•	-
Built-in flashlight	•	•
Auto HOLD function	-	•
Autorange	•	•
Backlight	•	•
Auto Power OFF	•	•



## Main features

Power supply:	2x1.5V batteries type AAA IEC LR03
Safety:	IEC/EN61010-1
Measurement category:	CAT III 600V
Insulation:	double insulation
Pollution level:	2
Max operating altitude:	2000m
Display:	4 LCD, 4000 dots, decimal sign and point
Protection fuses:	Yes ( <b>IRONMETER</b> )
Dimensions (LxWxH):	120x65x45mm ( <b>IRONMETER</b> ) 140x75x40mm ( <b>FLASHMETER</b> )
Weight (batteries included):	200g ( <b>IRONMETER</b> ) 220g ( <b>FLASHMETER</b> )



## Included accessories

4324-2	Pair of test leads with tip 2/4mm
	Batteries
	Transport bag
	User Manual



## 1. ELECTRICAL SPECIFICATIONS

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

### DC VOLTAGE

Range	Resolution	Accuracy	Overload protection
400.0mV	0.1mV	$\pm(1.0\% \text{rdg} + 3 \text{dgt})$	600VDC/ACrms
4.000V	0.001V		
40.00V	0.01V		
400.0V	0.1V		
600V	1V		

Input impedance: 10M $\Omega$ 

### AC TRMS VOLTAGE

Range	Resolution	Accuracy (50 ÷ 60Hz) (*)	Overload protection
4.000V	0.001V	$\pm(1.0\% \text{rdg} + 3 \text{dgt})$	600VDC/ACrms
40.00V	0.01V		
400.0V	0.1V		
600V	1V		

(\*) Accuracy specified from 5% to 100% of measurement range, Input impedance: 10M $\Omega$ 

Frequency range: 50Hz ÷ 60Hz (generic waveform), 45Hz ÷ 1kHz (sinusoidal waveform)

Crest factor:  $\leq 3$  (up to 300V),  $\leq 1.5$  (up to 600V)

### DC CURRENT

Range	Resolution	Accuracy	Overload protection
400.0 $\mu$ A	0.1 $\mu$ A	$\pm(1.0\% \text{rdg} + 3 \text{dgt})$	Fast Fuse 0.5A/600V (inputs mA, $\mu$ A)
4000 $\mu$ A	1 $\mu$ A		
40.00mA	0.01mA		
400.0mA	0.1mA		
4.000A	0.001A	$\pm(1.2\% \text{rdg} + 3 \text{dgt})$	Fast Fuse 10A/600V (input 10A)
10.00A (*)	0.01A		

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

### AC TRMS CURRENT

Range	Resolution	Accuracy (*) (50Hz ÷ 60Hz)	Overload protection
400.0 $\mu$ A	0.1 $\mu$ A	$\pm(1.2\% \text{rdg} + 3 \text{dgt})$	Fast Fuse 0.5A/600V (inputs mA, $\mu$ A)
4000 $\mu$ A	1 $\mu$ A		
40.00mA	0.01mA		
400.0mA	0.1mA		
6.000A	0.001A	$\pm(1.8\% \text{rdg} + 5 \text{dgt})$	Fast Fuse 10A/600V (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

Function	Test current	Open voltage
	<0.35mA	3VDC



## RESISTANCE AND CONTINUITY TEST

Range	Resolution	Accuracy	Buzzer	Overload protection
400.0Ω	0.1Ω	±(1.5%rdg+5dgt)	<50Ω	600VDC/ACrms
4.000kΩ	0.001kΩ			
40.00kΩ	0.01kΩ			
400.0kΩ	0.1kΩ			
4.000MΩ	0.001MΩ	±(2.5%rdg+20dgt)		
40.00MΩ	0.01MΩ			

## FREQUENCY (Electronic circuits)

Range	Resolution	Accuracy	Sensitivity
10.00Hz ÷ 10kHz	0.01Hz	±(1.2%rdg)	15Vrms

## DUTY CYCLE

Range	Resolution	Accuracy
0.1 – 99.9%	0.1%	±(1.2%rdg + 2dgt)

Pulse frequency range: 5Hz ÷ 150kHz, Pulse width: 100µs ÷ 100ms

## CAPACITANCE

Range	Resolution	Accuracy	Overload protection
40.00nF	0.01nF	±(4.5%rdg+10dgt)	600VDC/ACrms
400.0nF	0.1nF		
4.000µF	0.001µF	±(3.0%rdg+5dgt)	
40.00µF	0.01µF		
400.0µF	0.1µF		
4000µF	1µF	±(5.0%rdg+5dgt)	



## 2. GENERAL SPECIFICATION


### Display:

- LCD, 4 dgt 4000 counts, sign and decimal point
- Automatic polarity indication
- Backlight
- "OL" over range indication
- Response time: 3/s

### Features:

- Data HOLD
- MAX/MIN
- Built-in white torch
- Auto Power OFF after 15 minutes of idleness

### Low battery indication:

- The symbol "" appears when the battery voltage is low

### Operating temperature:

- 5C ÷ 50°; <80%HR

### Storage temperature:

- C-200°; <80%HR

### General information:

- Max altitude of use: 2000m
- Pollution degree: 2
- Insulation: double insulation

### Power supply:

- 2x1.5V alkaline batteries type AAA LR03

### Dimensions (L x W x H)

- 120 x 65 x 45mm

### Weight (included battery)

- 200g

### Reference guidelines:

- Safety :IEC/EN61010-1, CAT III 600V
- EMC: IEC/EN61326-1

**This product conforms to the prescriptions of the European directive on low voltage 2006/95/EEC and to EMC directive 2004/108/EEC**

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