

## 1. ELECTRICAL SPECIFICATIONS

Accuracy calculated as  $\pm[\% \text{readings} + (\text{dgt} \times \text{resolution})]$  referred to  $18^\circ\text{C} \div 28^\circ\text{C}$ ,  $<75\% \text{RH}$

### DC Voltage

Range	Resolution	Accuracy	Input impedance	Overload protection
600.0mV	0.1mV	$\pm(0.8\% \text{rdg} + 8 \text{dgt})$	$>10 \text{M}\Omega$	1500VDC
6.000V	0.001V	$\pm(0.5\% \text{rdg} + 5 \text{dgt})$		
60.00V	0.01V			
600.0V	0.1V	$\pm(0.8\% \text{rdg} + 5 \text{dgt})$		
1500V	1V			

### AC TRMS Voltage

Range	Resolution	Accuracy (*)	Input impedance	Bandwidth	Overload protection
6.000V	0.001V	$\pm(1.2\% \text{rdg} + 5 \text{dgt})$ (50 $\div$ 60Hz)	$>9 \text{M}\Omega$	50Hz $\div$ 1kHz	1000VDC/ACrms
60.00V	0.01V				
600.0V	0.1V	$\pm(2.5\% \text{rdg} + 5 \text{dgt})$ (61 $\div$ 1kHz)			
1000V	1V				

(\*) Accuracy specified from 10% to 100% of the measuring range, sinusoidal waveform

Accuracy of PEAK function:  $\pm(10\% \text{reading})$ , Response time of PEAK function: 1ms

For a non-sinusoidal waveform, accuracy is:  $\pm(10.0\% \text{rdg} + 20 \text{digits})$

Integrated NCV sensor for AC voltage detection: LED on for phase-earth voltage in range 100V - 1000V, 50/60Hz

### AC+DC TRMS Voltage

Range	Resolution	Accuracy (*) (50Hz $\div$ 1kHz)	Input impedance	Bandwidth	Overload protection
6.000V	0.001V	$\pm(2.5\% \text{rdg} + 20 \text{dgt})$	$>10 \text{M}\Omega$	50Hz $\div$ 1kHz	1000VDC/ACrms
60.00V	0.01V				
600.0V	0.1V				
1000V	1V				

### AC TRMS Voltage with low impedance (LoZ)

Range	Resolution	Accuracy (*) (50Hz $\div$ 1kHz)	Input impedance	Bandwidth	Overload protection
6.000V	0.001V	$\pm(3.0\% \text{rdg} + 20 \text{dgt})$	300k $\Omega$	50Hz $\div$ 1kHz	1000VDC/ACrms
60.00V	0.01V				
600.0V	0.1V				
1000V	1V				

(\*) Accuracy specified from 10% to 100% of the measuring range sinusoidal waveform

For non-sinusoidal waveform, accuracy is:  $\pm(10.0\% \text{rdg} + 20 \text{digits})$

### AC+DC TRMS Voltage with low impedance (LoZ)

Range	Resolution	Accuracy (*) (50Hz $\div$ 1kHz)	Input impedance	Bandwidth	Overload protection
6.000V	0.001V	$\pm(3.5\% \text{rdg} + 40 \text{dgt})$	$<300 \text{k}\Omega$	50Hz $\div$ 1kHz	1000VDC/ACrms
60.00V	0.01V				
600.0V	0.1V				
1000V	1V				



## DC Current

Range	Resolution	Accuracy	Overload protection
60.00A	0.01A	$\pm(2.0\%rdg + 8dgt)$	1000ADC/ACrms
600.0A	0.1A		
1000	1A		

## AC TRMS Current / INRUSH Current

Range	Resolution	Accuracy (50Hz ÷ 60Hz)	Overload protection
60.00A	0.01A	$\pm(2.5\%rdg + 5dgt)$	1000ADC/ACrms
600.0A	0.1A		
1000	1A		

(\*) Accuracy specified from 10% to 100% of the measuring range, Input impedance: > 9M $\Omega$ , sinusoidal waveform  
Response time INRUSH function: 100ms

## DC Current by means of standard clamp transducers

Range	Output ratio	Resolution	Accuracy (*)	Overload protection
1000mA	1000mV/1000mA	1mA	$\pm(0.8\%rdg + 5dgt)$	1000VDC/ACrms
10A	100mV/1A	0.01A		
40A (**)	10mV/1A	0.01A		
100A	10mV/1A	0.1A		
400A (**)	1mV/1A	0.1A		
1000A	1mV/1A	1A		

(\*) Accuracy referred to the sole instrument without transducer; (\*\*) with clamp transducer HT4006

## AC, AC+DC Current by means of standard clamp transducers

Range	Output ratio	Resolution	Accuracy (*)		Overload protection
			(50Hz ÷ 60Hz)	(61Hz ÷ 1kHz)	
1000mA	1V/1mA	1mA	$\pm(0.8\%rdg.+5dgt)$	$\pm(2.4\%rdg+5dgt)$	1000VDC/ACrms
10A	100mV/1A	0.01A			
40A (**)	10mV/1A	0.01A			
100A	10mV/1A	0.1A			
400A (**)	1mV/1A	0.1A			
1000A	1mV/1A	1A			

(\*) Accuracy referred to the sole instrument without transducer; (\*\*) with clamp transducer HT4006

## AC TRMS Current by means of flexible clamp transducer (F3000U)

Range	Output ratio	Resolution	Accuracy (*) (50Hz ÷ 400Hz)	Overload protection
30A	100mV/1A	0.01A	$\pm(3.0\%rdg.+5dgt)$	1000VDC/ACrms
300A	10mV/1A	0.1A		
3000A	1mV/1A	1A		

(\*) Accuracy referred to the sole instrument without transducer ; Accuracy specified from 5% to 100% of the measuring range  
Accuracy of PEAK function:  $\pm(10\%reading+20dgt)$ , Response time of PEAK function: 1ms

## Diode test

Function	Test current	Open voltage
	<1.5mA typical	3.3VDC

## Frequenza (electrical circuits)

Range	Resolution	Accuracy	Sensitivity	Overload protection
40.00Hz÷10kHz	0.01Hz ÷ 0.001kHz	$\pm(0.5\%rdg)$	$\pm 2Vrms$	1000VDC/ACrms



### Frequency (electronic circuits)

Range	Resolution	Accuracy	Overload protection
60.00Hz	0.01Hz	±(0.2%rdg+5dgt)	1000VDC/ACrms
600.0Hz	0.1Hz		
6.000kHz	0.001kHz		
60.00kHz	0.01kHz		
600.0kHz	0.1kHz		
6.000MHz	0.001MHz		
10.00MHz	0.01MHz		

Sensitivity: >2Vrms (@ 20% ÷ 80% duty cycle) and f<100kHz; >5Vrms (@ 20% ÷ 80% duty cycle) and f>100kHz

### Resistance and Continuity test

Range	Resolution	Accuracy	Buzzer	Overload protection
600.0Ω	0.1Ω	±(1.0%rdg + 10dgt)	≤50Ω	1000VDC/ACrms
6.000kΩ	0.001kΩ	±(0.8%rdg + 5dgt)		
60.00kΩ	0.01kΩ			
600.0kΩ	0.1kΩ			
6.000MΩ	0.001MΩ	±(2.5%rdg + 10dgt)		
60.00MΩ	0.01MΩ			

### Duty Cycle

Range	Resolution	Accuracy
10.0% ÷ 90.0%	0.1%	±(1.2%rdg + 8dgt)

Pulse frequency range: 40Hz ÷ 10kHz, Pulse amplitude: ±5V (100μs ÷ 100ms)

### Capacitance

Range	Resolution	Accuracy	Overload protection
60.00nF	0.01nF	±(3.0%rdg + 20dgt)	1000VDC/ACrms
600.0nF	0.1nF	±(3.0%rdg + 8dgt)	
6.000μF	0.001μF		
60.00μF	0.01μF		
600.0μF	0.1μF		
6000μF	1μF	±(3.5%rdg + 20dgt)	
60.00mF	0.01mF	±(5.0%rdg + 40dgt)	
100.0mF	0.1mF		

### Temperature with K-type probe

Range	Resolution	Accuracy (*)	Overload protection
-40.0÷600.0°C	0.1°C	±(1.5%rdg + 3°C)	1000VDC/ACrms
601 ÷ 1000°C	1°C		
-40.0°F ÷ 600.0°F	0.1°F	±(1.5%rdg + 5.4°F)	
601°F ÷ 1800°F	1°F		
245.0K ÷ 600.0K	0.1°F	±(1.5%rdg + 3K)	
601K ÷ 1273K	1°F		

(\*) Instrument accuracy without probe ; Specified accuracy with stable environmental temperature at ±1°C



## Infrared temperature (only ECLIPSE)

Type of IR sensor	UFPA (80x80pxl, 34 $\mu$ m)
Spectrum response	8 ÷ 14 $\mu$ m
Visual range (FOV) / Lens	21°x 21° / 7.5mm
IFOV (@1m)	4.53mrad
Thermal sensitivity / NETD	<0.1°C (@30°C /86°F) / 100mK
Focusing	automatic
Minimum focus distance	0.5m
Image frequency	50Hz
Temperature readings	°C, °F, K
Available color palettes	5 (Iron, Rainbow, Grey, Reverse grey, Feather)
Laser pointer	class 2 according to IEC 60825-1
Built-in illuminator	white-light LED
Emissivity correction	0.01 ÷ 1.00 in steps of 0.01
Measuring cursors	3 (Fixed, Max Temp., Min Temp.)
Measuring range	-20°C ÷ 260°C (-4°F ÷ 500°F)
Accuracy	±3%reading or ±3°C (±5.4°F) (environmental temperature 10°C ÷ 35°C, object temperature >0°C)




## 2. GENERAL SPECIFICATIONS

### Mechanical characteristics

Dimensions (L x La x H):	280 x 100 x 50mm
Weight (battery included):	505g
Mechanical protection:	IP40
Max conductor size:	40mm

### Power supply

Battery type:	1x7.4V rechargeable Li-ION battery, 1200mAh
Battery charger power supply:	100/240VAC, 50/60Hz, 12VDC, 2A
Low battery indication:	symbol "  " on the display
Recharging time:	approx. 2 hours
Battery duration:	approx. 8 hours (Bluetooth deactivated) approx. 7 hours (active Bluetooth)
Auto power OFF:	after 15 ÷ 60min minutes' idling (may be disabled)

### Display

Characteristics:	color TFT, 6000 dots with bargraph
Sampling frequency:	3times/s
Conversion:	TRMS

### Functions:

- Data HOLD
- MAX/MIN/PEAK(1ms)
- RANGE
- REL
- Laser pointer (only ECLIPSE)
- White LED illuminator:
- Bluetooth connection (BLE 4.0) for connection to mobile devices by using **HTMercury APP**

### Internal memory

Characteristics:	max 128 snapshots (BMP format) max 16 recordings or 34 hours (SI=1s) sampling interval: 1s ÷ 15min duration single recording: max 10 hours
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### Environmental conditions for use

Reference temperature:	18°C ÷ 28°C
Operating temperature:	5°C ÷ 40°C
Allowable relative humidity:	<80%RH
Storage temperature:	-20°C ÷ 60°C
Storage humidity:	<80%RH

### Reference guidelines

Safety:	IEC/EN 61010-1
EMC:	IEC/EN61326-1
Insulation:	double insulation
Pollution degree:	2
Max height of use:	2000m
Measurement category:	CAT IV 600V, CAT III 1000V to ground

**This instrument satisfies the requirements of Low Voltage Directive 2014/35/EU (LVD)  
and of EMC Directive 2014/30/EU  
This instrument satisfies the requirements of European Directive 2011/65/EU (RoHS) and  
2012/19/EU (WEEE)**