



1. ELECTRICAL SPECIFICATIONS

Accuracy is calculated as \pm [% reading + (number of dgt) * resolution] at $23^{\circ}\text{C} \pm 2^{\circ}\text{C}$, 45 ÷ 55%RH, frequency: 45 ÷ 55Hz, waveform: sinusoidal

DC VOLTAGE

Range	Resolution	Accuracy	Input impedance	Overload protection
30.00mV	0.01mV	$\pm(0.5\% + 3)$ (*)	> 10G Ω // <40pF	1000V DC/ACrms
300.0mV	0.1mV	$\pm(0.5\% + 3)$		
3.000V	0.001V	$\pm(0.25\% + 1)$	> 11M Ω // <40pF	
30.00V	0.01V		> 10M Ω // <40pF	
300.0V	0.1V			
1000V	1V	$\pm(0.35\% + 1)$		

(*) = With zeroing feature . Add 35 dgt without zeroing feature

AC VOLTAGE

Range	Resolution	Accuracy (*)	Input impedance	Overload protection
3.000V	0.001V	$\pm(0.75\% + 2)$ (10 ÷ 300dgt)	> 11M Ω // <40pF	1000V DC/ACrms
30.00V	0.01V			
300.0V	0.1V	$\pm(0.75\% + 1)$ (> 300dgt)	> 10M Ω // <40pF	
1000V	1V			

(*) Frequency range: 45 ÷ 65Hz ; For frequency within 65 ÷ 1kHz the accuracy is $\pm(2.0\% + 3)$ for ranges 3 ÷ 300V

DC CURRENT

Range	Resolution	Accuracy	Output voltage	Overload protection
300.0 μ A	0.1 μ A	$\pm(1.0\%+5)$ (>10dgt)	15mV	Rapid fuse 1.6A / 1000V
3.000mA	0.001mA	$\pm(1.0\%+2)$	150mV	
30.00mA	0.01mA	$\pm(1.0\%+5)$ (>10dgt)	650mV	
300.0mA	0.1mA	$\pm(1.0\%+2)$	1V	
3.000A	0.001A	$\pm(1.0\%+5)$ (>10dgt)	100mV	Rapid fuse 16A / 1000V
10.00A	0.01A	$\pm(1.0\%+2)$	270mV	

AC CURRENT

Range	Resolution	Accuracy (*)	Output voltage	Overload protection
3.000mA	0.001mA	$\pm(1.5\%+2)$ (>10dgt)	150mV	Rapid fuse 1.6A / 1000V
300.0mA	0.1mA		1V	Rapid fuse 16A / 1000V
10.00A	0.01A		270mV	

(*)Frequency range: 45 ÷ 65Hz ; For frequency within 65 ÷ 1kHz the accuracy is $\pm(2.0\% + 3)$

FREQUENCY

Range	Resolution	Accuracy	Sensitivity	Overload protection
300.0Hz	0.1Hz	$\pm(0.5\%+1)$	1.5V÷100V(3V)	\leq 3kHz (1000V)
3.000kHz	1Hz		15V÷300V(30V)	\leq 30kHz (300V)
30.00kHz	10Hz		150V÷1kV(300V)	\leq 100kHz (30V)
100.0kHz	100Hz			

**DUTY CYCLE**

Range	Resolution	Accuracy	Overload protection
2.0% ÷ 98.0%	0.1%	±5dgt (2Hz÷1kHz) ±5dgt/kHz (1k÷10kHz)	≤3kHz (1000V) ≤30kHz (300V) ≤100kHz (30V)

RESISTANCE

Range	Resolution	Accuracy (*)	Output volatge	Overload protection
30.00Ω	0.01Ω	±(0.5% + 3) (*)	3.2V	1000V DC/ACrms
300.0Ω	0.1Ω	±(0.5% + 3)		
3.000kΩ	0.001kΩ	±(0.4% + 1)	1.25V	
30.00kΩ	0.01kΩ			
300.0 kΩ	0.1kΩ			
3.000MΩ	0.001MΩ	±(0.6% + 1)	3.2V	
30.00MΩ	0.01MΩ	±(2.0% + 1)		

(*) = With zeroing feature . Add 35 dgt without zeroing feature

DIODE TEST

Range	Resolution	Accuracy	Max open voltage	Overload protection
	1mV	±(0.25% + 1)	3.2V	1000VDC/ACrms

TEST CONTINUITY

Range	Buzzer	Overload protection
	R<120Ω	1000VDC/ACrms

CAPACITANCE

Range	Resolution	Accuracy	Overload protection
30.00nF	0.01nF	±(1.0% + 3) (*)	1000VDC/ACrms
300.0nF	0.1nF	±(1.0% + 3)	
3.000μF	0.001μF		
30.00μF	0.01μF	±(3.0% + 3)	

(*) = With zeroing feature . Add 50 dgt without zeroing feature

TEMPERATURE WITH Pt100 AND Pt1000 PROBES

Probe type	Range	Resolution	Accuracy (*)	Overload protection
Pt100	-200.0 ÷ 200°C	0.1°C	±(2°C + 5dgt)	1000VDC/ACrms
	200.0 ÷ 850.0°C		±(1.0 + 5)	
Pt1000	-100.0 ÷ 200°C		±(2°C + 2dgt)	
	200.0 ÷ 850°C		±(1.0 + 2)	

(*) Accuracy of only meter without probes



2. GENERAL SPECIFICATIONS

Electrical characteristics:

Conversion:	mean value
NMRR Normal Mode Rejection Ratio:	> 50dB (DC), >100dB (AC 50/60Hz)
CMRR Common Mode Rejection Ratio:	>120dB (DC) >70dB (AC 3V,30V,300V), >60dB (AC 1000V)


Display:

Characteristics:	3¼ LCD max 3100 points sign, decimal point and bargraph
Sample rate:	2 times/s, 1time/s (Ω and °C) for LCD display 20 times/s, 10 times/s (Ω) for bargraph
Overload indication:	OL or -OL

Fuses:

Type of fuse:	FF 1.6A/1000V, 6.3x32mm, 10kA (300mA) FF 16A/1000V, 10x38mm, 30kA (10A)
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Power supply:

Battery:	1x9V alkaline NEDA1604, JIS006P, IEC6F22
Low battery indication:	"  " symbol at display for battery voltage <7V
Battery life:	approx 220 hours (DCV, DCA), 80 hours (ACV, ACA)
Auto Power OFF:	after 10 minutes of idleness

Mechanical characteristics:

Dimensions (L x W x H):	195 x 84 x 35mm
Weight (included battery):	350g

Environmental conditions of use:

Reference temperature:	23 ± 2°C
Working temperature:	-10 ÷ 50°C
Working humidity:	<75%HR
Storage temperature:	-25 ÷ 70°C
Storage humidity:	<75%%HR

Standard guidelines:

Safety:	IEC/EN 61010-1
Insulation:	double insulation
Pollution degree:	2
Category of measure:	CAT IV 600V, CAT III 1000V
Max height of use:	2000m

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