

## 1. TECHNICAL SPECIFICATIONS – DMM FUNCTIONS(\*)

Accuracy is indicated as  $\pm$  (% readings + no. of digits) at 23°C  $\pm$  5°C, con relative humidity <60%UR.

### DC VOLTAGE (Autorange)

Range	Resolution	Accuracy	Input impedance	Overload protection
1.0mV $\div$ 999.9mV	0.1mV	$\pm(0.5\%rdg + 2 \text{ dgt})$	1M $\Omega$	605Vrms max
1.000V $\div$ 9.999V	1mV			
10.00V $\div$ 99.99V	10mV			
100.0V $\div$ 605.0V	100mV			

### AC VOLTAGE TRMS (Autorange)

Range	Resolution	Accuracy (30 $\div$ 70Hz)	Accuracy (70 $\div$ 400Hz)	Input Impedance	Crest factor
1.0mV $\div$ 999.9mV	0.1mV	$\pm(1.0\%rdg + 2dgt)$	$\pm(2.0\%rdg+2 \text{ dgt})$	1M $\Omega$	3
1.000V $\div$ 9.999V	1mV				1.5
10.00V $\div$ 99.99V	10mV				
100.0V $\div$ 605.0V	100mV				

### AC/DC VOLTAGE: MAX / MIN / AVG / PEAK

Function	Range	Resolution	Accuracy	Response time
MAX, MIN, AVG	1.0mV $\div$ 999.9mV	0.1mV	$\pm(5.0\%rdg + 10dgt)$	500ms
	1.000V $\div$ 9.999V	1mV		
	10.00V $\div$ 99.99V	10mV		
	100.0V $\div$ 605.0V	100mV		
PEAK	10.0mV $\div$ 999.9mV	0.1mV		1ms
	1.000V $\div$ 9.999V	1mV		
	10.00V $\div$ 99.99V	10mV		
	100.0V $\div$ 605.0V	100mV		

### AC CURRENT TRMS (with external clamp)

Range	Resolution	Accuracy (30 $\div$ 70Hz)	Accuracy (70 $\div$ 400Hz)	Crest factor	Overload protection
1.0mV $\div$ 999.9mV	0.1mV	$\pm(1.0\%rdg+2 \text{ dgt})$	$\pm(2.0\%rdg+2 \text{ dgt})$	3	605Vrms max
1.000V $\div$ 1.200V	1mV			1.5	

Nominal output voltage: 1Vfs

### AC CURRENT: MAX / MIN / AVG / PEAK (with external clamp)

Function	Range	Resolution	Accuracy	Response time	Overload protection
MAX, MIN, AVG	1.0mV $\div$ 999.9mV	0.1mV	$\pm(5.0\%rdg+10 \text{ dgt})$	500 ms	605Vrms max
	1.000V $\div$ 1.200V	1mV			
	10.0mV $\div$ 999.9mV	0.1mV		1ms	
PEAK	1.000V $\div$ 3.000V	1mV			

### RESISTANCE AND CONTINUITY TEST

Range	Resolution	Accuracy	Continuity test	Overload protection
0.00 $\Omega$ $\div$ 39.99 $\Omega$	0.01 $\Omega$	$\pm(1.0\%rdg+5 \text{ dgt})$	R $\leq$ 40 $\Omega$	605Vrms max for 1 minute
40.0 $\Omega$ $\div$ 399.9 $\Omega$	0.1 $\Omega$			
400 $\Omega$ $\div$ 3999 $\Omega$	1 $\Omega$			
4.00k $\Omega$ $\div$ 39.99k $\Omega$	10 $\Omega$			

### FREQUENCY (with test leads)

Range	Resolution	Accuracy	Input voltage
30.0 $\div$ 199.9Hz	0.1Hz	$\pm(0.5\%rdg+2 \text{ dgt})$	1.0mV $\div$ 599.9V
200 $\div$ 400Hz	1Hz		

### FREQUENCY (with external clamp)

Range	Resolution	Accuracy	Input voltage	Overload protection
30.0 $\div$ 199.9Hz	0.1Hz	$\pm(0.5\%rdg+2 \text{ dgt})$	1.0mV $\div$ 1.000V	605Vrms max
200 $\div$ 400Hz	1Hz			

## 2. TECHNICAL SPECIFICATIONS – VERIFY TESTS(\*)

Accuracy is indicated as  $\pm$  (% readings + no. of digits) at  $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$ , con relative humidity  $<60\% \text{UR}$ .

### Continuity test on protective and equalizing conductors

Range ( $\Omega$ )	Resolution ( $\Omega$ )	Accuracy	Overload protection
0.01 $\div$ 19.99	0.01	$\pm(5.0\% \text{ rdg} + 3\text{dgt})$	605Vrms max
20.0 $\div$ 99.9	0.1		

Test current:  $> 200\text{mA DC}$  for  $R \leq 4\Omega$  (included calibration)  
Resolution on current measurement: 1mA

Open-circuit voltage:  $4\text{V} \leq V_0 \leq 24\text{V}$

### Insulation Resistance (DC Voltage)

Range ( $\text{M}\Omega$ )	Resolution ( $\text{M}\Omega$ )	Accuracy	Overload protection
0.00 $\div$ 19.99	0.01	$\pm(5.0\% \text{ rdg} + 2\text{dgt})$	605Vrms max
20.0 $\div$ 199.9	0.1		
200 $\div$ 999	1	$\pm(10.0\% \text{ rdg} + 2\text{dgt})$	

Test Voltage: 500V DC  
Test voltage accuracy:  $-0\% \div +10\% \text{ rdg}$   
Short circuit current:  $<3.0\text{mA}$   
Nominal test current: 1mA @  $1\text{k}\Omega \times V_{\text{nom}}$ ; 1mA @ 500 k $\Omega$

### RCD Tripping time

Range (ms)	Resolution (ms)	Accuracy	Overload protection
2 $\div$ 400	1	$\pm(2.0\% \text{ rdg} + 2\text{dgt})$	605Vrms max

Nominal trip-out currents: 30mA, 30x5mA, 100mA, 300mA  
RCD type: AC, Standard  
Phase-Earth voltage: 110V  $\div$  265V  
Frequency: 50Hz  $\pm$  0.5Hz / 60Hz  $\pm$  0.5Hz  
Limit contact voltage: 50V

### Global Earth Resistance $R_A$ without RCDs tripping

Range ( $\Omega$ )	Resolution ( $\Omega$ )	Accuracy	Overload protection
1 $\div$ 1999	1	$\pm(5.0\% \text{ rdg} + 2\text{dgt})$	605Vrms max

Phase-Earth voltage: 110V  $\div$  265V  
Frequency: 50Hz  $\pm$  0.5Hz / 60Hz  $\pm$  0.5Hz  
Test current:  $<15\text{mA}$   
Limit contact voltage: 50V

### PHASE SEQUENCE / CONFORMITY (1 wre measurement)

Type of measure	Voltage range (V)	Frequency range (Hz)	System type
SEQUENCE	90 $\div$ 315 (Phase – Earth)	45 $\div$ 65	up to 315 (Phase – Earth)
CONFORMITY			up to 550V (Phase – Phase)

### PHASE SEQUENCE / CONFORMITY (2 wre measurement)

Type of measure	Voltage range (V)	Frequency range (Hz)	System type
SEQUENCE	110 $\div$ 315 (Phase – Neutral)	45 $\div$ 65	up to 315 (Phase – Earth)
CONFORMITY			up to 550V (Phase – Phase)

## 3. TECHNICAL SPECIFICATIONS – LAN CABLES TESTS(\*)

### Connector and remote units

Input for LAN cables:	RJ45
Remote units recognized:	#1, #2, #3, #4, #5, #6, #7, #8

### Cables type

• UTP, STP, SSTP, FTP:	4 twisted pairs cables
• Categories:	from CAT3 to CAT6
• Maximum length cable:	100m

### Wire mapping detected conditions

• Open cables	• Crossed pairs
• Shorted cables	• Splitted pairs
• Reversed pairs	• Miswire

### Reference standards

• TIA 568/B	• ISO 11801
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## 4. GENERAL SPECIFICATIONS(\*)

### DISPLAY:

Features:	Dual numeric, 10000 points
Visible area:	73x73 mm

### POWER SUPPLY:

Batteries:	4 batteries 1.5V type LR6-AA-AM3-MN 1500
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### MECHANICAL FEATURES:

Dimensions:	240 (W) x 100(L) x 45(D) mm
Weight (included batteries):	about 0.8 kg

### WORKING ENVIRONMENTAL CONDITIONS:

Reference temperature:	23°C ± 5°C
Working temperature:	0° ÷ 40°C
Allowed relative humidity:	< 80% HR
Storage temperature:	-10 ÷ 60°C
Storage humidity:	< 80% HR

### TEST VERIFIES REFERENCE STANDARDS:

Continuity test with 200mA:	IEC 61557-4
Insulation resistance:	IEC 61557-2
Earth resistance:	IEC 61557-5
RCDs test:	IEC 61557-6

### GENERAL REFERENCE STANDARDS:

Safety of measuring instruments:	EN61010-1 + A2(1997)
Product type standard:	IEC61557-2, 3, 4, 5, 6
Insulation:	class 2 (double insulation)
Pollution degree:	2
Overvoltage category:	CAT III 550V AC Phase - Ground CAT III 550V AC Phase - Phase
Use:	internal use; max altitude: 2000m
EMC:	EN61326-1 (1998) + A1 (1999)

This instrument complies with the European Directive for CE marking.

(\*) *Technical specifications can be revised without notice*