



HT7051N

Rel.1.01 of 12/09/2008

Professional insulation meter up to 5kVDC

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1. ELECTRICAL SPECIFICATION

Uncertainty is indicated as $\pm$ (% rdg + no. of dgt) at 23°C $\pm$ 5°C, con relative humidity <80%HR

DC/AC TRMS VOLTAGE

Range	Resolution	Uncertainty	Overload protection
10 ÷ 660V	1V	$\pm(2\%\text{rdg}+2\text{dgt})$	CAT IV 600 to ground

INSULATION RESISTANCE

Range	Test Voltage	Resolution	Uncertainty (*)
0.01M Ω ÷ 0.19M Ω	$\geq 100\text{V DC}$	$\leq 1\%\text{rdg}$	$\pm(5\%\text{rdg} + 7\text{dgt})$
0.20M Ω ÷ 199G Ω			$\pm(5\%\text{rdg}+3\text{dgt})$ if $R_{\text{mis}} \leq \frac{\text{Test Voltage}}{5\text{nA}}$
0.20M Ω ÷ 499G Ω	$\geq 250\text{V DC}$		
0.20M Ω ÷ 999G Ω	$\geq 500\text{V DC}$		$\pm(20\%\text{rdg}+3\text{dgt})$ if $R_{\text{mis}} > \frac{\text{Test Voltage}}{5\text{nA}}$
0.20M Ω ÷ 1.99T Ω	$\geq 1000\text{V DC}$		
0.20M Ω ÷ 4.99T Ω	$\geq 2500\text{V DC}$		
0.20M Ω ÷ 9.99T Ω	5000V DC		

(*) Load Capacitance < 1nF

GENERATED TEST VOLTAGE (compliance to IEC/EN61557-2)

Test mode	Nominal test voltage	Uncertainty
FIX	100V, 250V, 500V, 1kV, 2.5kV, 5kV	-0%, +10% +15V
AJUSTABLE	100 ÷ 1kV in steps of 25V	
	1kV ÷ 5kV in steps of 50V	
RAMP	100 ÷ 1kV in steps of 25V	
	1kV ÷ 5kV in steps of 50V	

TEST CURRENT

Test Voltage	Test current
100 ÷ 5000V	1mA $\leq$ Test Current $\leq$ 3mA (**)

(**) Test current automatically controlled.

TEST TIME

Setting Range	Resolution
5s – 99min 59s	1s

CAPACITANCE

Range	Resolution	Resistance Load	Test Voltage (Vn)	Uncertainty
1nF ÷ 999nF	1nF	≥ 5MΩ	Vn ≤ 5kV	±(10%rdg+5dgt)
1.00μF ÷ 5.00μF	0.01μF		Vn ≤ 2.5kV	
1nF ÷ 999nF	1nF			
1.00μF ÷ 9.99μF	0.01μF		Vn ≤ 1kV	
10.0μF ÷ 19.9μF	0.1μF			
1nF ÷ 999nF	1nF			
1.00μF ÷ 9.99μF	0.01μF			
10.0uF ÷ 49.9uF	0.1uF			

Capacitor charge time (OV $\rightarrow$ 5000V): < 3s x 1 μF

Capacitor discharge time (5000V $\rightarrow$ 25V): < 5s x 1 μF

**LEAKAGE CURRENT**

Range	Resolution	Uncertainty
1nA ÷ 99.9nA	0.1nA	$\pm(7\%rdg+3dgt)$ if $R_{mis} \leq \frac{Test\ Voltage}{5nA}$
100nA ÷ 999nA	1nA	
1.00μA ÷ 9.99μA	0.01μA	
10.0μA ÷ 9.99μA	0.1μA	
100μA ÷ 999μA	1μA	$\pm(22\%rdg+3dgt)$ if $R_{mis} > \frac{Test\ Voltage}{5nA}$
1.00mA ÷ 2.5mA	0.01mA	

P.I (Polarization Index) – D.A.R (Dielectric Absorption Ratio)

Range	Resolution	Uncertainty
0.01 ÷ 9.99	0.01	$\pm(5\%rdg+3dgt)$ if $R_{mis} \leq \frac{Test\ Voltage}{5nA}$
		$\pm(20\%rdg+3dgt)$ if $R_{mis} > \frac{Test\ Voltage}{5nA}$

(*) Load Capacitance < 1nF



2. GENERAL CHARACTERISTICS

DISPLAY, MEMORY, SERIAL INTERFACE

- Backlight LCD with three simultaneous readings:
Group 1 (main) → Insulation Resistance, Leakage Current, PI, DAR, Capacitance
Group 2 → Test voltage (nominal and generated)
Group 3 → Test Time
- Bargraph: 32 segments
- Low battery indications
- Memory: 700 test
- Communication interface: RS232 optoinsulated

POWER SUPPLY:

- Internal battery charger, power supply: 110-120V 50/60Hz, 20VA
- Internal NiMH rechargeable battery
- Protection fuse on power supply: T 200mA/250V, Ir: 1.5kA
- Low battery indication:  symbol at display
- Battery life: >1000 Test @ 5kV on 5MΩ (test time: 5s, delay between two test: 25s)
according to IEC/EN61557-2. (par. 6.7)
- AutoPowerOFF: after 5min since last operation

ENVIRONMENT:

- Ref. Temperature: 23°C ± 5°C
- Working temperature: 0° ÷ 40°C
- Maximum relative humidity: < 80%UR
- Storage temperature: -10 ÷ 60°C
- Storage humidity: < 80%UR

MECHANICAL DATA:

- Dimensions: 360(L) x 310(W) x 195(H) mm
14.2" (L) x 12.2" (W) x 7.7" (H)
- Weight: about 3.5kg
about 7.8lb

GUIDELINES

Instrument's safety	IEC/EN61010-1, IEC/EN61557-1, IEC/EN61557-2
Technical documentation :	IEC/EN61187
Accessories safety :	IEC/EN61010-031
Insulation:	Double insulation
Type of Protection:	2
Mechanical protection:	IP40 (open case), IP53 (closed case)
Over voltage category:	CAT IV 600V to ground, max 600V between inputs
Maximum altitude	max altitude 2000m
Patented certification:	TÜV protocol conformity

This instrument complies with the requirements of the European Low Voltage Directives 2006/95/EEC (LVD) and EMC 2004/108/EEC