



PRO DIT-960PV DIGITAL SOLAR INSULATION TESTER

INTRODUCTION

The Metravi PRO DIT-960 PV Solar Insulation Tester has the function of measuring Photovoltaic (PV) live insulation resistance, ordinary insulation resistance function (non-live), AC and DC voltage automatic recognition measurement and so on.

The PRO DIT-960PV can be used to measure Photovoltaic energised (maximum: 1000V DC) Insulation Resistance and conventional Insulation Resistance (de-energised) and also automatically identify AC/DC Voltage.

It has multiple functions including: Photovoltaic Insulation Resistance measurement without solar panel in power outage/short circuit condition or at night, Voltage Stepping, Bluetooth transmission, Automatic Discharge, High Voltage warning, remote-controlled test lead operation, and more.

The PRO DIT-960PV is commonly applied to test insulation resistance for various equipment such as Photovoltaic/ solar panels, battery energy storage system, new energy vehicles, etc.

FEATURES

- Photovoltaic insulation resistance measurement (PV)
- Conventional insulation resistance measurement
- AC/DC voltage testing (VDC/VAC)
- Maximum insulation resistance range: 4000MΩ
- Rated voltage for conventional output (Conventional insulation resistance: 4 positions): 125V, 250V, 500V, 1000V
- Rated voltage for PV output (Photovoltaic insulation resistance: 2 positions): 500V, 1000V
- Short-circuit current: <1.5mA
- Step of each range: 10% of rated voltage
- Comparative measurement of insulation resistance (COMP)
- Time-set measurement of insulation resistance (TIME)
- External voltage detection function to enable monitoring energised voltage of measured object automatically
- Designed with timer to record testing time automatically
- Automatic discharge and high voltage warning
- Analogue bar graph to display the range of insulation resistance testing result
- Manual/Automatic power-off
- Data Logging for upto 1000 sets of data
- Data storage/deletion function
- Data upload function
- Bluetooth Interface and Smartphone App
- Manual/Automatic backlight
- Mute function
- LCD high-definition segmented display





PRO DIT-960PV DIGITAL SOLAR INSULATION TESTER

GENERAL SPECIFICATIONS

Power supply	6X1.5V LR6 AA alkaline batteries
Rated voltage	125V, 250V, 500V, 1000V
Output voltage accuracy	+(0%~20%)
Testing range of insulation resistance	0.125MΩ~4000MΩ
Testing range of PV insulation resistance	0.50MΩ~4000MΩ
Output short-circuit current	<1.5mA
Continuous measurement of insulation resistance	✓ (Default Measurement Mode)
Time-set measurement	✓
Comparative measurement of resistance	✓
Voltage testing	Automatic identification of AC/DC voltage
Voltage step	✓
Test with external voltage	In conventional insulation resistance testing mode, it is forbidden to test if the external AC/DC voltage is greater than about 25V.
Test with external voltage	In PV mode, insulation resistance with external DC voltage of less than 1000V can be tested.
Timer	Record testing time automatically. Timing range: 0 sec~99 min and 59 sec
High voltage warning	If safety voltage is exceeded, the hazardous voltage symbol will flash
Automatic discharge	✓
Backlight	Manual/Automatic backlight
Data Logging	Capable to save 1000 sets of testing data
Communication functions	Upload the data to PC (unidirectional) via USB cable. Data can be uploaded and distributed via the Bluetooth APP.
Displaying battery power	✓ (If low battery indication occurs, an indication of charging in time is provided)
Auto power off	The Tester powers off after it is ON for 10 minutes (without high voltage being generated and without any operation)
Tester dimensions	161(L) x 117.3(D) x 63(H) mm
Tester weight	0.5kg (including battery)





PRO DIT-960PV DIGITAL SOLAR INSULATION TESTER

GENERAL SPECIFICATIONS

Operating altitude	≤2000m
Drop proof	1m
IP rating	IP54 (Overall protection with cover closed)
Pollution degree	2
Intended use	Indoor use
Operating environment	0°C ~ 40°C : <80%RH (No condensation) 40°C ~ 50°C : <70%RH
Storage environment	-20°C ~ 60°C : <75% (No condensation)
Measurement category	CAT II 1000V, CAT III 600V
Regulatory compliance	CE EN 61010-1; EN IEC 61010-2-034; EN 61557-1, -2.

TECHNICAL SPECIFICATIONS

CONVENTIONAL INSULATION RESISTANCE

Position	Measurement range	Measurement accuracy	Overrange indication	Short-circuit current
125V	<1.51MΩ	For reference only	>1100MΩ	<1.5mA On-load current capacity (Only applicable to conventional insulation resistance measurement): 1mA~1.2 mA (125V, 0.125 MΩ); 250V, 0.25 MΩ; 500V, 0.5 MΩ; (1000V, 1.0 MΩ)
	1.51MΩ~100.0MΩ	±(1.5%+5)		
	100.1MΩ~1000MΩ	±(5%+6)		
250V	<1.51MΩ	For reference only	>2200MΩ	
	1.51MΩ~200.0MΩ	±(1.5%+5)		
	200.1MΩ~2000MΩ	±(5%+6)		
500V	<1.51MΩ	For reference only	>4200MΩ	
	1.51MΩ~1000MΩ	±(1.5%+5)		
	1001MΩ~4000MΩ	±(5%+6)		
1000V	<1.51MΩ	For reference only	>4200MΩ	
	1.51MΩ~1000MΩ	±(1.5%+5)		
	1001MΩ~4000MΩ	±(5%+6)		



1 MΩ (Mega Ohm) = 1000 KΩ = 10⁶Ω
Note: For insulation resistance measurement, a large offset value may occur if the measured capacitive reactance is greater than about 100nF.

*Technical Specifications & Appearance are subject to change without prior notice



PRO DIT-960PV DIGITAL SOLAR INSULATION TESTER

TECHNICAL SPECIFICATIONS

PHOTOVOLTAIC (PV) INSULATION RESISTANCE

Position	Measurement range	Measurement accuracy	Overrange indication	Short-circuit current
500V	<1.51MΩ	For reference only	>4200MΩ	<1.2mA
	1.51MΩ~1000MΩ	±(1.5%+5)		
	1001MΩ~4000MΩ	±(5%+6)		
1000V	<1.51MΩ	For reference only	>4200MΩ	
	1.51MΩ~1000MΩ	±(1.5%+5)		
	1001MΩ~4000MΩ	±(5%+6)		

Note: Measurement cannot be performed correctly if the open-circuit voltage of solar cell string or the energized voltage of other measured object is higher than the testing voltage. At PV 500V range, please use in the condition of open-circuit voltage of below 500V; at PV 1000V range, please use in the condition of open-circuit voltage of below 1000V.

OUTPUT VOLTAGE FOR CONVENTIONAL INSULATION RESISTANCE

Rated voltage	Output accuracy	Display accuracy	Output voltage range	Remark
125V	±(0%~20%)	1V	125V~150V	In conventional testing mode, the step voltage can be adjusted as: For 125V position: 125V, 138V, 150V
250V			250V~300V	For 250V position: 125V, 150V, 175V, 200V, 225V, 250V, 275V, 300V
500V			500V~600V	For 500V position: 250V, 300V, 350V, 400V, 450V, 500V, 550V, 600V
1000V			1000V~1200V	For 1000V position: 500V, 600V, 700V, 800V, 900V, 1000V

*Technical Specifications & Appearance are subject to change without prior notice



PRO DIT-960PV DIGITAL SOLAR INSULATION TESTER

TECHNICAL SPECIFICATIONS

OUTPUT VOLTAGE FOR PHOTOVOLTAIC (PV) INSULATION RESISTANCE

Rated voltage	Output accuracy	Display accuracy	Output voltage range	Remark
500V	$\pm(0\% \sim 20\%)$	1V	500V~600V	In PV testing mode, the step voltage can be adjusted as: For 500V position: 500V, 550V, 600V
1000V			1000V~1200V	For 1000V position: 500V, 600V, 700V, 800V, 900V, 1000V, 1100V

Note: When the PV measurement function is used, there is a current-limiting resistance of 1Ω connected to the EARTH terminal, so the output voltage will be divided by 1Ω and the resistance of the measurement terminal. For example, when measuring a resistance of $10M\Omega$, the output voltage will be divided by $1M\Omega$ and $10M\Omega$.

AC/DC VOLTAGE

Voltage measurement	Measurement range	Measurement accuracy	Range	Resolution	Overrange indication
DC Voltage	5~1000V	$\pm(1\%+4)$	500V: 5.0~499.9V	0.1V	>1050V
			1000V: 500~1050V	1V	
	-5~-1000V		-500V: -5.0~499.9V	0.1V	>-1050V
			-1000V: -500~1050V	1V	
AC Voltage	5~600V 50Hz/60Hz		300V: 5.0~299.9V	0.1V	>630V
			600V: 300~630V	1V	

Note: If the detected voltage exceeds the voltage testing range specified by the Tester, the LCD will provide an indication of over-voltage.



*Technical Specifications & Appearance are subject to change without prior notice