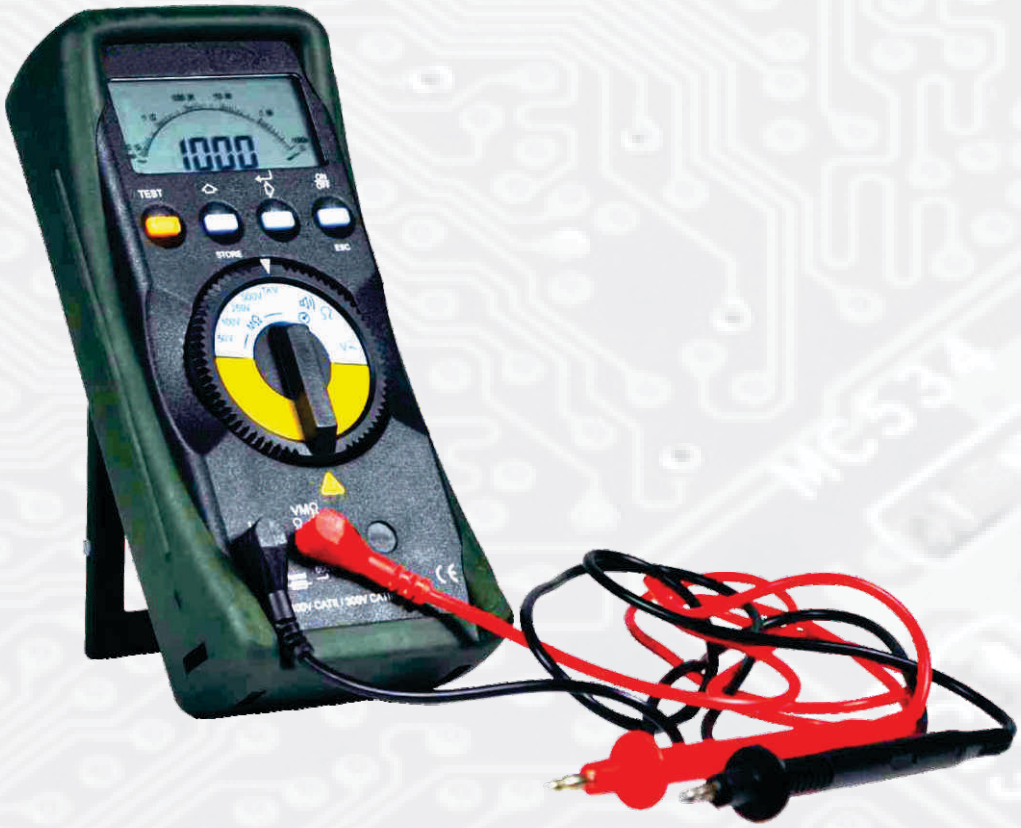
Technical Data Sheet

Zeta 20



Application

Zeta 20 is the digital Insulation and continuity Tester is suitable for following

- Measurement of the insulation resistance on electrically dead equipment and systems with test voltage up to 1000V.
- For testing motors, transformers, generators, switchgears.
- For testing of house hold application.
- Measurement of the insulation resistance of cables.
- Very useful for on-site maintenance and service departments.

Product Features

Analog + Digital Display: (Log Scale For Insulation Measurement)	The Analog scale for insulation resistance measurement is logarithmic in nature which gives the dynamic performance of an analog insulation tester. The Analog scale is linear for low ohm and voltage measurement.
User selectable backlit display	The instrument is provided with user selectable for taking measurements in dark areas/poor lighting conditions
Connector jack for external mains adapter (optional)	The instrument can be operated from mains supply (230 V AC) instead of batteries using external mains adapter (230 V AC/9 V) DC, 500 mA (4.5 VA) (isolated)
Rechargeable (optional)	The instrument can be provided with inbuilt circuit to recharge rechargeable battery of 1.5 V AA size
Test voltages 50 V/100 V/250 V/500 V/1000 V	The voltages from 50 V to 100 V can be selected for insulation resistance measurement. It covers all insulation tests up to 1000 V
Insulation resistance measurement	The instrument is capable of measuring insulation resistance from 10 kΩ…2GΩ
Low resistance measurement (0.01 Ω ...99.9Ω)	Low resistances can be measured up to 99.9 Ω. There are two measuring ranges for Low Ω: 9.99Ω & 99.9Ω
Hands free continuity testing	Continuity testing (0-10 Ω with acoustic signal) can be done without pressing test button. In addition to the display function, an acoustic signal can be activated which sounds if the adjustable limit value is violated
Voltmeter	Instrument measures voltages > 25 V…600 V AC/DC
Low battery indication	Automatic display of the symbol "⊣⊢" when battery cells are exchausted
Stop watch	This function allows you to measure elapsed time up to one hour
Protective holster for rough duty	A holster of soft rubber with tilt stand protects the meter against damage in case of shocks and drop

Automatic discharge for capacitive circuits after test measurement	Capacitive devices under test , such as cables and windings ,that get charged during the test, are discharged by the tester
Live circuit detection	Displays presence of voltages > 25 V irrespective of function selected
Blown fuse indication	The display FUSE points to a blown fuse
Pre-selectable measurement time for insulation resistance measurement	In normal course, the insulation test terminates and the measured insulation resistance value remains on the display for 2 sec after the test key is released. With the
Pre-selectable measurement time	feature, the insulation test continues and the measured value remains on the display for the pre-determined time. Pre-selectable time: 10 sec-5 min
Pre-selectable time checks (GO/NO-GO option) for MΩ/GΩ	An acoustic signal can be generated when measured value of insulation resistance falls below an adjustable limit value
Lead resistance null value	The instrument provides a facility to compensate the resistance of the leads for accurate measurement of low resistances
Storage of MIN/MAX values:	In addition to the display of actual measured value, the minimum or maximum value can constantly be updated or stored
Storage memory for last 10 readings	The instrument provides a facility to store and recall 10 values in each of 5 ranges of insulation resistance measurement, continuity and resistance measurement
Auto power OFF function	The instrument turns off automatically, if any of the keys or the selector switch have not been activated for about 10 min in insulation range and 5 min in other ranges or can be switched to continuous operation

Technical Specifications

Meas.Function	Range	Resolution	Accuracy ± (...% of rdg ±...Digit)	Overload value
Insulation 1) Resistance mΩ U50V, 100V	0.01 mΩ to 0.99 mΩ	10 KΩ (0.01 MΩ)	+ 3% + 2D	1200 Vrms 10 sec
	>1.0 mΩ to 9.9 mΩ	100 KΩ (0.1 MΩ)	+ 5% + 2D	
	>10 mΩ to 99 mΩ	1 MΩ	+ 30%	
Insulation 1) Resistance mΩ U250V, 500V, 1000V	0.01 mΩ to 9.99 mΩ	10 KΩ (0.01 MΩ)	+ 5% + 2D	1200 Vrms 10 sec
	>10.0 mΩ to 99.9 mΩ	100 KΩ (0.1 MΩ)	+ 5% + 2D	
	>100 mΩ to 999 mΩ	1 MΩ	+ 30% Service Error	
LowOhms 2)Ω	0 to 9.99 mΩ	0.01 KΩ at210mA	+ 3% + 2D	1200 Vrms 10 sec
	>10.0 mΩ to 99.9 mΩ	0.1 Ω 21 mA	+ 5% + 2D	
Continuity	0 to 9.99 mΩ	0.01 Ω at210mA	+ 3% + 2D	1200 Vrms 10 sec
	>10.0 mΩ to 99.9 mΩ	0.1 Ω 21 mA	+ 5% + 2D	
VAC/DC	25V to 450 V	1V	+ 2% + 3D	1200 Vrms 10 sec
	450V to 600V	1V	+ 3%	

1) For Insulation Resistance Range:

- Terminal voltage on open circuit (DC)- 0% + 30% of rated voltage
- Short circuit current < 2mA
- Test current on load 1 mA at minimum pass values of insulation as specified in VDE 0413 Part1.

2) For Low Ohms/Continuity Ranges:

- Open Circuit Voltage 5V + 1V D.C.
- Lead Resistance Compensation: 0-9.99W.

Power Supply	
Battery	6 x 1.5 V cells IEC L R6 non-rechargeable cells(Rechargeable Alkaline Manganese cells provided in case of rechargeable feature)

Service Life	
Without Backlit ON	Typically 2500 × 5 sec operation (1200 5 sec for rechargeable)
With backlit ON	Typically 1250 × 5 sec operation (750 5 sec for rechargeable
Battery Test	Automatic display of the Symbol "⊣⊢"when battery cells are exhausted
Fuse	500mA (F) / 440V H.B.C. 10kA min (32mm×6mm)
Mains Adapter (optional)	23 OV AC/DC 9V, 500 mA (4.5VA) (isolated)

Environmental Conditions

Temperature Coefficient	<0.1% per°C
Operating Temp.	-20°C...+40°C (Full range) -20°C...+60°C (upto 100MΩ)
Storage Temp.	-25°C...+65°C
Relative Humidity	90% RH at 40°C max

Display

LCD display field (65mm × 30mm) with analog indication and digital display and with display of unit of measured quantity and functions.

Analog

Display	Logarithmic Scale

Note: Battery cells should not be left in the instrument which may remain unused for extended period of time.

Autoturn OFF

Meter turns off automatically, if no keys or the selector switch have been activated for about 10 minutes in insulation range and 5 minutes in other ranges.

Digital

Display/Char Height	7 segment digits/ 12mm
Number of digits	3 digit for ,MΩ , G and VΩ , 4 digit for stop watch
Overflow Display	OL

Reference Conditions

Ambient Temp.	+23°C + 2K
Relative Humidity	45%...55%

Battery Voltage	8V + 0.1V
Voltage Measurement	AC(Shine), 50/60 Hz

Applicable Standards

IEC/EN 61010-1 VDE 0411-1	Safety regulations for electrical measuring, control, regulation and laboratory devices
IEC/EN 61557 VDE 0413 Part 1 Part 2 Part 3	Devices for testing, measuring and monitoring protective safety measures in system with voltages of upto 1000V A.C. and 1500 V D.C. -General Requirements -Insulation resistance measuring instruments -Low-resistance measuring instruments
Din 43751	Digital measuring instruments
IEC/En 61 326	Electromagnetic Compatibility (EMC)
EN 60529 VDE 0470-Part1	Test Instruments and test procedures Degree of Protection provided by enclosures (IP code)

EMC

IEC/EN 61326 (EMC)	Electromagnetic Compatibility

Electrical Safety

Protection Class	|| per IEC 61010-1/EN61010-1/VDE0411-1

Over Voltage

Category	||	|||
Nominal Voltage	600 V	300 V
Contamination Degree	2	2
Test Voltage	3.7KV-pr IEC 61010-1/ EN61010-1	

Mechanical Design

Protection	Instrument: IP 50 For terminal socket: IP 20 to DIN VDE 0470 part 1/ En60529 According		
Dimensions	W	H	D
	84MM	195mm	35mm
Weight	500g including battery		

Ordering Information

Product Code	ZT 20-	X	X	X	0000000000
Type	Zeta 20	1			
	Zeta 20 Adapter Zeta 20A	2			
	Zeta 20 With Carrying Case	3			
Cable Set	Normal		N		
	Fine Tip		F		
Cable Length	Normal with 10 meter cab. 10M			E	
	STD			S	

Manufactured by:
Sifam Tinsley Instrumentation Inc
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