

# Test & Measurement Instruments Product Overview



# About US

- → Registered with State of Georgia as "C" Corporation Office and Warehouse in Greater Atlanta Area (Kennesaw) Part of Global Group having **Manufacturing Operations** in Asia and Europe
- Precision Instrumentation









## India

- → Headquarters
- → Manufacturing Setup
- → R&D Setup



**Poland & China** 

→ Manufacturing Setup
→ R&D Setup



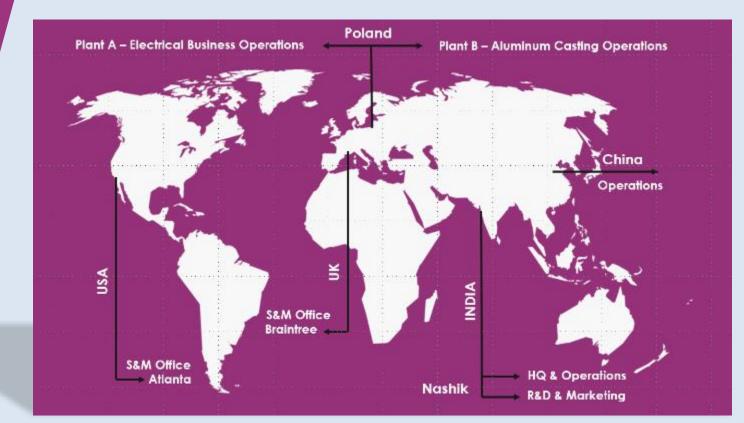
UK, US

→ Sales & Distribution
 → Warehouse
 → Mod Shop

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# **Global Footprint**





# **Business Horizons...**

Instrumentation Products & Test Equipment Standard product sales Brand Labelling Contract Manufacturing

Aluminium Die-Casting Customized part manufacturing

### **Energy Solution Labs**

Solutions for reducing the cost of energy

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### **Solar Solutions**

Manufacturing of Solar Inverters



# Certifications





















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**Analog Panel Meters** 





## **Digital Panel Meters**



Multi-Function Meters (Power/Energy Meters)



Energy Management & Data Analytics System



**Temperature Controller** 



I/O's & Converters, Data Loggers, & Paperless Recorders















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Transducers, **Isolators/Transmitters** 



**Power Supplies, Battery Chargers**, **Relays** 



**CTs & Shunts, CAM Switches** 



**Test & Measurement** Instruments



**Solar Inverters & Industrial Devices** 



# Test and Measurement Equipments Multimeters, Clamp Meters and Insulation Testers







## **Multimeters: 6k Series**





Gamma 30

digital multimeter is suited for universal, general applications in the electrical and electronics fields for training and education. The other key features include 3999 count, dual display, Data Hold and Peak Hold



#### Gamma 40

is a rugged, dual display, 6600 count, portable, universal application mutimeter with higher current measuring range of up to 660A( with Clamp). The other key features include Data Hold and Peak Hold



#### Gamma 70

is a rugged, TRMS, Functionally enhanced dual display, 6600 count, portable multimeter, a perfect tool for wide range of applications. The other key features include MIN/MAX, Data Hold and Peak Hold



#### Gamma 50

is a rugged, dual display , 6600 count, portable multimeter with current measuring capability of up to 16A. It is designed specifically for Transformers testing applications. The other key features include MIN/MAX, Data Hold and Peak Hold



#### Gamma 60

is a rugged, dual display, 6600 count , poratable multimeter with wide selection of measurements. The other key features include MIN/MAX, Data Hold and Peak Hold

IN/MAX, Data Hold and Peak Hold

## **Multimeters:** 6k Series

- Direct and Alternating Voltages from 100uV...1000V
- Direct and Alternating Currents from 10uA...10A
- Resistance upto 60 Mohms and Capacitance upto 40 mF with zero correction
- Frequencies upto 10 MHz
- Hold Measurement, Relative Measurement, Duty Cycle Measurement, Temperature Measurement and Peak Value Measurement





**Reliable-**Serving customers over three decades

**Rugged-** Rubber holster for Drop proof Operation



Mistake Proof-Automatic terminal blocking system to avoid wrong connections



## **Multimeters: Model 616 Features**



1000V Cat III/ 600 Cat IV as per International Standard IEC 61010-1-2010 and IEC 61557

Protection from Dust and Water Instrument: IP50 Terminals: IP 20 IEC 60529

Auto and Manual Ranging Mode, Auto Power Off, Continuous On mode

**Diode and Continuity Testing** 

**Automatic Terminal Blocking** 

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TRMS Value Measurement of AC quantities irrespective of waveform

Backlit Display Dual Display to show Main measurement and supporting parameters like Min/Max

Temperature measurement with K Type Thermocouple ( 0 to 1300 Deg C). Indication in Fahrenheit and Celsius scale

Peak Hold, Hold and REL Function Min/Max Function

Analog Scale with an indication of negative values

## **Multimeters: 60k Series**





#### Gamma 6012

The 6012 new multimeter is made for professional use that offers safety, high resolution, large range count,reliability, ruggedness, a complete tool for test automation and is equipped with more than 30 different measuring functions along-with option of plug and play USB for connection with PC



#### Gamma 6015

The 6015 new multimeter is made for professional use that offers safety, large range count, reliability, ruggedness, a complete tool for test automation and is equipped with more than 30 different measuring functions alongwith data logging facility & plug and play USB for connection with PC



#### Gamma 6013

The 6013 new multimeter is made for professional use that offers safety, high resolution, large range count, reliability, ruggedness, a complete tool for test automation and is equipped with many different measuring functions along-with option of plug and play USB for connection with PC

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#### Gamma 6016

The 6016 new multimeter is made for professional use that offers large range count, reliability, ruggedness, a complete tool for test automation, 100KHz Bandwidth and is equipped with 30 different measuring functions alongwith data logging facility & plug and play USB for connection with PC

#### with PC



### Gamma 6012/6013/6015/6016 Bluetooth Multimeter

The new Gamma 6012/6013/6015/6016 Bluetooth Multimeter is an advanced instrument with Bluetooth communication and Android/iOS based application for mobile phones, so all the data is made available on mobile screen. Its a complete tool for test automation with 30 different measuring functions

#### neasuring functions

made available on mobile screen. Its a complete tool for test automation with 30 different

## **Multimeters: 60k Series**



### **TRMS Multimeter**

- ✓ Data Logger and View Functions (upto 32000 readings)
- ✓ Plug & Play USB connectivity with PC
- 100 kHz Bandwidth for voltage measurement
- 1kHz low pass filter mode
- ✓ Go-No Go function
- VAC with1MOhm impedance
- Single fuse for mA and A ranges
- Adjustable square wave output
- Temperature measurement with J, K, Pt100 and Pt1000 sensor
- External power adapter for long hours of measurements
- Select clamp ratio for current measurement
- Conductance measurement
   Frequency/Period Measurement

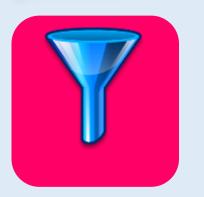
Functions/Features	6012	6013	6015	6016
Voltage VDC (Ri>9MΩ)	•	•	•	•
Voltage VAC TRMS (Ri>9MΩ)	•	•	-	•
Voltage LoZ VAC TRMS (Ri=1MΩ)		•	•	•
Voltage VAC TRMS (Ri>9MΩ) LPF 1kHz		•	•	•
Voltage LoZ VAC TRMS (Ri=1MΩ) LPF 1kHz		•	•	•
Voltage VACDC (Ri>9MΩ)	-	•	-	•
High impedance, high bandwidth mV measurement	Vm000	60mW 600mV	60mV/600mV	60mW600mV
Bandwidth VAC & mV ACDC	10kHz	10kHz	10kHz	100 kHz
FrequencyMeasurement				
Duty cycle %			-	•
Voltage level measurement dB,dBu,dBm		•	-	•
Resistance	•	•	•	•
Conductance measurement	•	•	-	•
Continuity test (I const = 1 mA)	•	•	•	•
Diode measurement (I const = 1 mA)	•	•	-	•
Temperature measurement (TYP J,TYP K)		•	•	•
Temperature measurement (PT100,PT1000)	•		•	•
Capacitance measurement			-	•
Current ADC	600mA	6 A/16 A	600 µA/6 mA	600 µA/6 mA
Current AAC+DC TRMS	ocomer	(20 A)	60 mA/600 mA	60 mA/600 mA
Current AAC TRMS			6 A/10 A (16 A)	6 A/10 A (16 A)
Bandwidth @ AAC+DC or AAC 10 kHz	•	•	-	•
Measurement with Clamp Sensor	•	•	-	•
Data Logging / Viewing Function			•	•
Protective rubber holster	•	•	-	•
Fuse 16A/ 1000V	1.6A		-	•
0-20mA/ 4-20mA percentage scale			-	•
Square wave Out			-	•
Self battery voltage measurement	•	•	-	•
MIN/MAX/AVG and Auto Hold functions	•	•	-	•
Dangerous contact voltage indication	•	•	-	•
REL/Zero function	•	•	-	•
USB IR-interface	Optional			
External power supply adapter				
Measuring Category	1000 V CAT III 600 V CAT IV	1000 V CAT I 600V CAT II	1000 V CAT III 600 V CAT IV	1000 V CAT III 600 V CAT IV

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## Multimeters: 60k Series



Plug & Play USB 2.0 for communication with PC & report generation



Low Pass Filter for accurate measurement at VFD drives

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Internal Memory for Data storage



Go-No-Go Test Facility to check pass/fail of devices



100 kHz bandwidth for high frequency Voltage measurement



High current measurement upto 6000A with clamp sensor



## **Multimeters: Model 6016 Features**



#### Tool for Automation USB 2.0 Interface application

Low Pass Filter (LPF) in VAC 10Mohm and VAC 1Mohm (selectable 1kHz low pass filter to reject high freq noise)

Low Input Impedance (Ri=1Mohm) Low impedance measurement helps eliminating error reading from ghost voltages

Current measurement with clamp sensor Measured current is auto calculated from selected clamp ratio

> Single Fuse (16A) for all the ranges of current from 600uA to 10A AC/DC as compared to two fuses





True RMS measurement of distorted waverform with Crest factor between 1 to 10

Square Wave Output can be generated from the DMM with user selectable frequency and adjustable duty cycle

View Function: Data Logged on the meter can be viewed directly on meter itself. Graphical analysis can be done on the PC based software

Capable of self battery voltage measurement. Separate fuse compartment (easier access for replacement)

Adjustable Beep Level setting for continuity testing (from 10 ohm to 90 ohm)

## **Multimeters: Model 6016 Features**



Room Temperature measurement can be sensed ad measured without external sensor

Dangerous Contact Voltage Indication: Presence of hazardous voltages (>35V AC and 50V DC) at terminals displayed

Software: Measurement data logging program for recording, visualizing, evaluating and documenting real time measured values

Configuration of parameters possible through the software

Dedicated navigation keys makes scrolling through menu and setting of parameters easy & comfortable





60mV and 600mV DC & ACDC range for accurate measurement of low volage output from sensors & transmitters

External Power Supply adaptor helps in conserving battery while performing long hours of measurement

Fully Programmable Go/No-Go functionality to give indication through buzzer for applied input lying inside or outside set band (settable)

100 kHz Bandwidth: Alternating voltages with frequencies upto 100 kHz can be measured accurately

Data logging of up to 32000 readings with real time stamping (log rate adjustable from 0.1 sec to 1 hour)

# **Multimeters: Bluetooth**





Viewing Multimeter screen on your Mobile



Real time Data Viewing on Cell Phone





Data-logging in Mobile becomes very simple if present on field for testing, instead of connecting laptop Setting functions of Multimeter is possible from Mobile App. two-

can be done 💲 🕕 🖽 🖫 🏭 68% 💵 14:34 **RISHABH 6016** 207.74 600 400 14:33:16 14:33:59 14:34:41 Enter File Name: filename P Status : Connected to RISH 601X BT

way communication

## **Multimeters:** Multi Series





#### **Gamma** 12 S

3 3/4 3100 counts Analog Digital Multimeter measures Vac, Vdc, Adc (300mA), Ohm, Continuity, Diode, Negative Value indication, Auto/ Manual range, continuity, Temp. (PT100/PT1000), OL warning, Auto off, Cat III 1000V/IV 600V, Aac upto 300A via clamp on CT



#### Gamma 14 S

3 <sup>3</sup>/<sub>4</sub> Digit 3100 counts which measures Vac, Vdc, Large range Aac (from 3mA), Large range Adc(from 300microA), Ohm Continuity Diode Data Hold, Polarity indication, Auto/ Manual range, continuity test, °C(PT100/1000), overload warning, Auto off, CAT III 1000V & CAT IV 600V



#### Gamma 16 S

Trms, 3 <sup>3</sup>/<sub>4</sub> Digit 3100 counts which measures Vac Vdc Vac+Vdc Aac+Adc Adc, Ohm Diode Farad,Hz, Duty cycle, Automatic Data Hold, Negative Value indication, Auto/ Manual range, continuity test, °C(PT100/PT1000), overload warning, Auto Power off, CAT III 1000V & CAT IV 600V



#### Gamma 13 S

3 <sup>3</sup>/<sub>4</sub> Digit 3100 counts which measures Vac, Vdc, Aac, Adc (current measurement upto 16A), Ohm, Continuity, Diode, Data Hold, Polarity indication, Auto/ Manual range, continuity test, °C ( PT100/1000), overload warning, Auto off, interface & CAT II 1000V & CAT III 600V protection

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#### Gamma 15 S

3 <sup>3</sup>/<sub>4</sub> Digit 3100 counts which measures Vac, Vdc, Aac (from 3mA), Adc (from 300microA), Ohm, Diode, DataHold, Farad, Hz Duty cycle, Neg Value ind, Auto/ Manual range, continuity test, Temp. (PT100/PT1000), overload warning, Auto Power off, CAT III 1000V & CAT IV 600V



#### Gamma 10

Trms, 4 <sup>3</sup>/<sub>4</sub> digit 31000 counts which measures Vac, Vdc (0.05% accuracy), Vac+Vdc, Aac+Adc, Ohm, Continuity, Diode, Automatic DataHold, Negative Value indication, Auto/ Manual range, continuity test, Temp.(PT100/PT1000), overload warning, Auto Power off, CAT III 1000V & CAT IV 600V

## **Multimeters: Gamma 12 Features**



Automatic Terminal Blockign system for fool proofing wrong connections

Min/Max Value Storage – Minimum and Maximum value is constantly stored and updated

Power Economizing Circuit: The meter disconnects when the measured value remains unchanged for 10 mins & no controls are operated during the time

> Indication of Negative Values on the Analog Scale while measuring DC Quantities

> > TRMS value measurement for measurement of AC signals with distorted waveforms

precision instrumentation



Continuity Test: Testing for short and open circuit conditions. Facility of sound signal possible as well.

Protective Rubber Holster with tilt stand protects the meter against damage in case of shock and drop

Auto Data Hold function holds measured value on the digital display while the changing values keep getting displayed on the analog scale

Auto-ranging/Manual Range selection helps getting the based resolution in the range being measured

Temperature Measurement with temperature sensor Pt100/ Pt1000

## **Multimeters: Gamma 20 Features**



Backlit Display: User selectable backlit display available for taking measurements in poor visibility area/darkness

High Resolution and Precision: 6 digits for DC Quantities and 5 digits for AC Quantities

Convenient Trip Display: Simultaneous measurement of volt & Hz or Volt & min, max values or Amps & min, max values

Trues RMS value measurement with distorted waveforms



Additional Functions: Resistance, Temperature, Continuity, Diode, Capacitance, Frequency, Duty Cycle

Measurement Category: 1000V CAT III/ 600V CAT IV as per IEC Standard 61010-1

Automatic Blocking Sockets (ABS) – To prevent incorrect connection of measurement cables and inadvertent selection of the wrong measured quantity

Overload Protection: All functions are safeguarded upto 1000V by overload protection

## **Clamp Meters:** Current and Power Clamps





#### Delta ES 400/1000 AC

Rish Clamp ES measure Important parameters like AC current & voltage, DC voltage, Capacitance, Ohm & continuity, Frequency and duty cycle and temperature measurement.



#### Delta Clip-ON CT's

RishClamp-ON CT (frequency 40Hz... 1KHz)measures current without interrupting the conducting line used directly with Rish multimeters. Compliance-CAT III 600V per IEC 61010. Accuracy 1 .Used for electrically isolated measure of AC. Models:1000A/5A, 1000A/1A, & 300A/0.3A



#### Delta 1000A/300A AC/DC

3<sup>3</sup>/<sub>4</sub> digit 1000A AC/DC Clamp meter measures Aac/dc Vac/dc Vdc F Ohm & continuity Hz Dutycycle °C, at awkward positions of bus-bars, conductors difficult to access.180°rotating clamp jaws with 55/50mm Jaw opening Backlite display Auto/Manual mode.

#### Auto/Manual mode.



### Delta Clamp Power 1000A/400A AC/DC

**Deltci** POWER 1000A/400A measures, calculate and displays important electrical parameters of single phase or three phase power system. It also features Resistance, continuity, diode and non contact voltage detection.

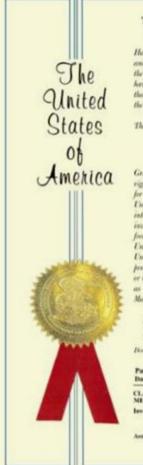
calculate and displays important electrical parameters of single phase or three phase power system. It also features Resistance, continuity, diode and non contact voltage detection.

### Delta 300/1000A AC

3<sup>3</sup>/<sub>4</sub> digit 1000A/300A Clamp meter measures Aac Vac Vdc F ? continuity Hz Dutycycle °C, at awkward positions of bus-bars, conductors difficult to access.180°rotating clamp jaws with 55/50mm Jaw opening Backlite display Auto/Manual mode,Double moulded soft touch cover & firm grip

## **Clamp Meters:** Current and Power Clamps





#### The Director of the United States Patent and Trademark Office

Hen verviced an application for a patient for a new and useful invention. The tills and description of the investion are enclosed. The requirements of late have been complied with, and it has been determined that a petient on the invention shall be granted ander the law.

#### Thurefore, this

#### **United State Patent**

Grants to the person (i) having title to this patent the right to exclude others from making, using, offering for sule, or selling the invention throughout the United States of function or infooting the invention into the United States of America, and if the invention is a process, of the right to exclude others from using, offering for sule or selling throughout the United States of America, or importing into the United States of America, penducts much by that process, for the irres of junction, or importing into the United States of America, penducts much by that process, for the irres of junction of a maintenance for as provided by 35 U.S.C. 41 (b). See the a Maintenance for Notice on the insole of the over.

Jaid J. Kalles



Patent No.: US 7,944,197 B2

Date of Patont: May 17, 2011 CLAMP METER WITH ROTARY MEEHANISM FOR CLAMP J495 Inventory: Taobar Gajkamar Shok, Sashik (IN);

Kaldeep Hanmatras Shaham, Nashik (IN); Amst Ashskran Deshnuckh, Nashik (IN) ee: Rishabh Instruments Private Limited,

Nasheli, Malsarashtra State (PA)

**Clamp Jaw** 

Patented rotating jaw design US Patent No. 7944197 B2 For Rotary Mechanism for Clamp Jaw

US Patent No. 8,120,350 B2 For Safe Trigger Mechanism of Digital Clamp Meter



## **Clamp meters: Power Clamp**



Rotating Clamp jaws facilitate the measurement at physically difficult positions.

- Clamp Jaws can be opened or closed with the trigger placed at bottom side away from jaws making it safe from electrical hazards
- Location and design of trigger eliminates fatigue caused by single finger operation
- Comfortable operation of push button and function selector switch in adverse field conditions



AC & DC Voltages upto 1000V AC & DC Current upto 1000A Inrush/Peak Value Measure **Active/Reactive/Apparent Power Horse-Power Measurement** kWH measurement Measurement upto 49<sup>th</sup> Harmonics **Phase Angle Total Harmonic Distortion Distortion Factor Power Factor, Crest Factor** LPF Mode for VFD Application

## **Multimeters: Model 6016 Features**



Large Jaw Opening of 51mm and 41mm for 1000A and 400A resp.

Inrush Current Measurement – Meter triggered with inrush current>5A. Inrush current for 100 mSec measured

Three Phase Power Measurement – Can measure power in 3ph3w and 3ph4w bal/unbalance system without manual calculation

Data Hold Function: The reading on the display can be latched for hands free operation

Min/Max Function: Meter records latest Minimum and Maximum readings being measured

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Power can be displayed in Horsepower Unit (typically required in motor applications)

LPF mode available for voltage and current for true measurement of parameters in VFD application

Non-Contact Voltage Detection: Meter detects presence of voltage between 100V to 1000V without electrical connection and provides acoustic signal

Dual Display: User Friendly dual display shows simultaneous parameters of measuring input quantity

Backlit for measurement in poor light/visibility conditions

# Insulation Testers: Handheld/Tabletop Models





Zeta IO Battery Operated

Analog Digital Insulation & continuity tester for measure of 10Kohm-999Mohm with selectable test voltage upto 1000V. LR measurement from 0.01-99.9 ohm & upto 600V AC/DC. Storage of Min, Max & last 50 readings. Preselectable measurement time, stop watch, fuse blow, auto power off



### Zeta 20 Battery Operated (optional mains operated)

Analog digital Insulation & continuity tester for measure of 10Kohm-2Gohm with selectable test voltage upto 1000V. LR measurement from 0.01-99.9 ohm & upto 600V AC/DC. Storage of Min, Max & last 50 readings. Preselectable measurement time, stop watch, fuse blow, auto power off

#### time, stop watch, fuse blow, auto power off



#### Low Voltage Polycarbonat Body Insulation Tester

New Polycarbonate Body ITS series is a low voltage portable Insulation Tester which offers the measurement of insulation in LT Transformers, Motors, Generators or Domestics appliances.

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**Zeta** 30

Insulation resistance with analog/digital multimeter measuring Vac Vdc Vac+Vdc Hz mADC mAAC+DC Ohm continuity, Diode Farad Temperature AC I measurement with clip-on sensor with measureemnt of 3GOhm with test V upto 1000V, Functions of Min, Max, Auto off



#### Zeta 5000 A/AK/M/R

HV insulation tester used for measurement from 10Kohm-1Teraohm with selectable test voltage upto 5KV. Voltage measurement upto 2.5KV AC/DC. Confirms to IS 2992(EN 61557) IP52, EMC. Available in Mains, rechargeable battery and crank operated. Guard terminal for elimination of surface current

current

operated. Guard terminal for elimination of surface

## **Insulation Testers: Zeta 50**



### Test Voltages up to 5000V

- Voltage measurement to 2000V
- Discharge of capacitive devices under test
- Measurement in accordance with EN61557 part 1 and 2
- Measurement Cables with heavy duty insulation
- Needle gauge with LEDs



\*Broad Measuring Range from 10 Kilo ohm to 1 Tera ohm \*Easy to read logarithmic scale \*Test Voltages – 100V, 250V, 500V, 1000V, 1500V, 2000V, 2500V, 5000V \*Voltage Measurement upto 2000V \*Guard Terminal eliminates surface current \*Power supply with batteries or crank generator (optional) or mains operated (optional)

## **Multimeters: Zeta20 Features**



Analog Scale (log scale) and Digital display for measurement

User Selectable Backlit display and connector jack for External mains adapter

Test Voltages from 50V to 1000V and Insulation Resistance measurement from 10 kOhm to 2 GOhm

Automatic discharge of devices under test that get charged during the test

Hands free continuity testing with acoustic signal Low resistance(0-100 ohm) and Voltage measurement facility (up to 600V ACDC

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Live Circuit voltages (>25V) detection irrespective of function selected Blown Fuse Indication on display

Pre-selectable limit checks (Go/No-Go option) for MOhm/GOhm Lead resistance null facility

Pre-selectable measurement time for Insulation resistance measurement (10 sec – 5 mins)

Storage of Min/Max Values Facility to store and recall 10 values in each of the 5 ranges of insulation msmt

Stopwatch (up to 1 hour) Auto Power Off function Protective holster for rough duty

## Coming Soon.. Zeta 5D+

ST

- Compact size for easy portability
- Insulation resistance measurement upto 2TΩ
- 3mA short circuit and 3 mA noise rejection current
- Diagnostic modes like PI, DAR, SV (step voltage), Ramp test
- Selectable test voltages upto 5000V in steps of 25V
- Innovative Internal memory upto 2000 readings with feature to add user information
- Complies with CE, IP 52, CAT IV 600V protection
- Software facility for logging & online reports generation
- Mobile app facility for operation via mobile and data logging
- Audio readout of test results



## Coming Soon.. Zeta 5Dx+/10Dx+

ST

- Insulation resistance measurement upto 10TΩ(5Dx+)/20TΩ(10Dx+)
- 6mA short circuit and 8 mA noise rejection current
- Diagnostic modes like PI, DAR, SV (step voltage), Ramp test, DD
- Selectable test voltages of 10V from 100 to 1000V & in steps of 25V from 1000V to 5000V (5Dx+)/10000V(10Dx+)
- Innovative Internal memory upto 2000 readings with feature to add user information
- Complies with CE, IP 67 (close case), IP 52 (open case), CAT IV 600V protection
- Software facility (as a standard) for online reports generation
- Mobile app facility for operation via mobile and data storage
- Audio readout of test results



# **Coming Soon..**



### Delta Solar

- DC voltage measurement upto 1500V for solar inverter panels
- AC/DC current upto 1500A
- Patented rotational jaw facility
- Patented trigger at back mechanism
- CAT IV 600V protection
- Complies with CE, IP 50 protection





### Bluetooth

- Power clamp with Bluetooth connectivity facility
- Mobile app for data logging purpose
- Bluetooth connectivity enhances the safety of operation



### Prashant Kajale (PK)

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