PROGRAMMABLE EXPLOSIVE DETECTOR & ANALYZER

Programmable/Non-programmable

V_b= 21. K_1.m. K_2.D1.log (D2/D1)…. COAXIAL ELECTRODE

Vb=Dielectric break test set up break down voltage, k_1=constant K_2=3.92.p/ (273+T),
D2= roller our diameter, D1= roller inner diameter, p= atm.pressure (cm),

DIMENSIONAL SPECIFICATION OF DIGITAL DIELECTRIC ANALYZERS

MHVOBT-0010	001-kilo volt	12x24x15 inch	MHVOBT-0300	0030 kilo volt	30x30x36 inch
MHVOBT-0020	0002-kilo volt	15x24x20 inch	MHVOBT-0500	0050 kilo volt	36x40x42 inch
MHVOBT-0050	0003 kilo volt	18x24x24 inch	MHVOBT-1000	0100 kilo volt	35x45x42 inch
MHVOBT-0100	0010 kilo volt	24x24x30 inch	MHVOBT-1500	0150 kilo volt	35x45x42 inch
MHVOBT-0200	0020 kilo volt	35x45x42 inch	MHVOBT-2000	0200 kilo volt	35x45x42 inch

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PROGRAMMABLE DIELECTRIC SAMPLE ANALYZERS

Programmable/Non-programmable

Introduction:

MHVOBT series of pulse type dielectric analyzers measures break down voltage & strength /capacitance/permitivity/temperature/curies point analyzers are available in more than 10 different models, virtually offering solutions to analyze all dielectric /insulations" parameters. These test set-ups are suitable for charetterizing transfornmer dielectric, bushing, insulation laminated, ferroelectrics material etc. These can measure permitivity, breakdown voltage, tan δ measurement up to 0.1 x10^{-6}dielectric losses, bipolar resistivity upto (10^{15} ohm.cm), Curie point on site. These has mechanically isolated inductrion heater for samples. Updated design topology ensures better controllability with additional integrated power/voltage and frequency control/protection. Company offers tailor made solution to custom requirement. Because of latest design technique with wide features, these test set ups are first choice for ceramic, biology, genetic, medicine paper and textile, petrochemical, polymers, lube dielectrics, avionic, nuclear, sugar, plastic, oxide powders, laminates hydrocarbon, mechanical, railway and many un-accountable application.

Opearting Principle:

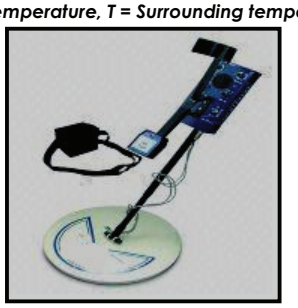
These variable frequency dielectric analyzers are line commutated I.G.B.T. controlled converters working in constant energy/power feedback/ cascade mode. Set energy/power immediately settles to set point with consistent regulation over wide load range with fail proof protection against over/under voltage.

Breakdown voltage/power for coaxial electrode is as under…….

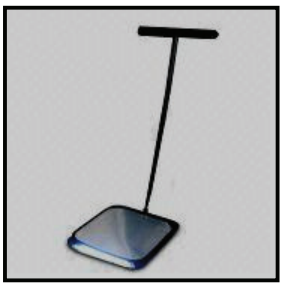
V_b= 21.m. K_2.D1.log (D2/D1), K2=3.92.p/ (273+T), D2= roller our diameter, D1= roller inner diameter, p= atm.*pressure (cm),* k_1=***constant***

$P = k_1/k_2. (V-Vb)^2. (f+25). (D1/D2)^{1/2}$ V_b = Break down voltage,V = applied voltage f = frequency, m=material factor(silicon=0.98,,glass=1.0)
Ta= Amb. Temperature, T = Surrounding temperature

MHVOBT-0010



MHVOBT-0075



MHVOBT-0075

Electrical Mechanical spcification of Insulation b Break-down Voltage/Moisture/Permitivity//Resistivity Specification:

model	Dissipation factor measurement	Relative permittivity	Spec. resistance measurement	Temperature measurement	Accuracy/ Repeatability	Electrode Material	Cooling
MHVOBT-0010	4…1x10^{-6}	1…30	2.5 MΩm…100 TΩm	11…110 °C	99.5 100	golsd coated brass/ss	Air/dielectric
MHVOBT-0020	4…1x10^{-6}	1…30	2.5 MΩm…100 TΩm	11…110 °C	99.5 100	golsd coated brass/ss	Air/dielectric
MHVOBT-0030	4…1x10^{-6}	1…30	2.5 MΩm…100 TΩm	11…110 °C	99.5 100	golsd coated brass/ss	Air/dielectric
MHVOBT-0050	4…1x10^{-6}	1…30	2.5 MΩm…100 TΩm	11…110 °C	99.5 100	golsd coated brass/ss	Air/dielectric
MHVOBT-0075	4…1x10^{-6}	1…30	2.5 MΩm…100 TΩm	11…110 °C	99.5 100	golsd coated brass/ss	Air/dielectric
MHVOBT-0100	4…1x10^{-6}	1…30	2.5 MΩm…100 TΩm	11…110 °C	99.5 100	golsd coated brass/ss	Air/dielectric
MHVOBT-0200	4…1x10^{-6}	1…30	2.5 MΩm…100 TΩm	11…110 °C	99.5 100	golsd coated brass/ss	Air/dielectric
MHVOBT-0300	4…1x10^{-6}	1…30	2.5 MΩm…100 TΩm	11…110 °C	99.5 100	good coated brass/ss	Air/dielectric
MHVOBT-0500	4…1x10^{-6}	1…30	2.5 MΩm…100 TΩm	11…110 °C	99.5 100	golsd coated brass/ss	Air/dielectric
MHVOBT-1000	4…1x10^{-6}	1…30	2.5 MΩm…100 TΩm	11…110 °C	99.5 100	golsd coated brass/ss	Air/dielectric

DIGITAL INSULATION ELECTRICAL BREAK-DOWN VLTAGE /MOISTURE/PERMITIVITY/RESISTIVITY SPECIFICATION:

General electrical/mechanical Source specifications:

Operating voltage 220 volts, 1phase, 40-60 Hz
Range of capacitance:/ 10^{-15}-10^{-12} farad/10^{--12}-10^{--07} /10^{--06}-10^{--01}1/0^{--01}-10^{-+04} farad AC/DC
Resolution of capacitance measurement: 1:100000
Range of Dissipation factor measurement: 4…1x10^{-6}
Resolution of Dissipation factor measurement: 1:100000
Range of Relative permitivity: 1.0- 30.0
Resolution of relative permitivity measurement: 1:100000
Range of Spec. Resistance measurement: 2.5 m…100 giga-ohm
Resolution of resistance measurement: 1:100000
Range of Temperature measurement: 11…110 °C
Resolution of temperature measurement: 1:100000
Range of peak- voltage/current :0-200 kilo volts / 10^{-12}-10^{-07} amp/10^{-7}-10^{-2} amp least count- 5.0 pico ampere or optional/ AC/DC
Resolution of voltage/current measurement: 1:100000

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Temperature resolution 1 °C / 1.8 °F
Resolution of Temperature measurement: 1:100000
Repeatability for Dissipation factor measurement/ Relative permitivity/resistance/temperature/voltage/current: 100%
Voltage/current control accuracy: 99.9999% of set point or better for CC/CV/CE
Accuracy: 99.990& have reading
Ripple: 0.000001% of set point for voltage/0.000001% for CC or optional/amended
Burden: less than 100 micro volt/full scales current or better
Input capacitance: 10 nF
Repeatability: 100 of reading
Linearity adjustment: upto 100 nano volt
Input imedence: ultra low (<1000 nano volt burdon),
Filtering: low pass (adjustable)
Offset: variable upto 10,000 nano volts (manual/auto)
CMMR: >80 db at 50-60 Hz
Isolation: > 100 giga ohm
Temperature coefficient of variation: < 10^{-9}12ppm
Connector: BNC-9 pinx2 and BNC-25 pinx2
Internal rechargeable battery 1 x 12V / 7,2Ah
Display 51/2 &61/2 digit LED display
OTHER OPTION: DC/AC/PULSE (100-10000 PULSE/SEC)
Protection over voltage/short ckt
Option: These power supplies may offer in pulse mode.
Interface: RS-232/U.S.B. Operating voltage: 220 volt A.C. (50-20,000 Hz)/ 12 volts D.C.
Option: ADDITIONAL SOFTWARE to plot V/I OR ANY DESIRED INFERENTIAL PARAMETER.
THESE SPECIFICATIONS OR PART THERE OF MAY BE MODIFIED TO MEET ANY TAILOR MADE SOLUTION

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