DIGITAL CLAMP METER

(Measurement of AC Current upto 1000Amperes without interrupting the circuits)

TÜV CERT

MODEL : DCM 2250 / DCM 2250 T / DCM 2250 F

★ Accurate ★ Reliable ★ Safe ★ Easy to use ★ Attractive Look
★ Large LCD for Easy Reading ★ Back Light Display
★ 3½ Digits, Liquid Crystal display ★ Data Hold Facility

DCM 2250

AC Current : 20/200/1000A
AC Voltage : 750V
DC Voltage : 1000V
Resistance : 200/2000Ω
Diode & Audible continuity Test Facility

DCM 2250 T

AC Current : 20/200/1000A
AC Voltage : 750V
DC Voltage : 1000V
Resistance : 200/2000Ω
Temperature : 0° ~750°c
Audible continuity Test Facility

DCM 2250 F

AC Current : 20/200/1000A
AC Voltage : 750V
DC Voltage : 1000V
Resistance : 200/2000Ω
Frequency : 2kHz
Audible continuity Test Facility

INSTRUMENTS FOR ACCURACY & RELIABILITY

DIGITAL CLAMP METER

(Measurement of AC Current upto 1000Amperes without interrupting the circuits)

MODEL : DCM 2250 / DCM 2250 T / DCM 2250 F

★ Accurate ★ Reliable ★ Safe ★ Easy to use ★ Attractive Look
★ Large LCD for Easy Reading ★ Back Light Display
★ 3½ Digits, Liquid Crystal display ★ Data Hold Facility

AC Current		
Range	Resolution	Accuracy
20 A	0.01A	± 2.5% of rdg ± 5 digits
200 A	0.1A	< 20A ± 3.0% of rdg ± 5 digits 20- 200A ± 2.5% of rdg ± 5 digits
1000 A	1A	< 20A ± 4.0% of rdg ± 5 digits 20- 600A ± 3.0% of rdg ± 5 digits > 600A ± 4.0% of rdg ± 5 digits
Overload Protection : 1200A for 60 seconds maximum. Frequency range : 50Hz to 60Hz		

DC Voltage		
Range	Resolution	Accuracy
1000V	1V	± 1.5% of rdg ± 2 digits
Input Impedance : 10MΩ		

Frequency for 2250F only		
Range	Resolution	Accuracy
2kHz	1Hz	± 1.0% of rdg ± 2 digits
Frequency measuring range : 50Hz to 1kHz. Input voltage range : 100V to 750V.		

AC Voltage		
Range	Resolution	Accuracy
750V	1V	± 1.5% of rdg ± 5 digits
Input Impedance : 10MΩ Frequency range : 40Hz to 400Hz. Response : Average responding, calibrated in rms of a sine wave.		

Resistance		
Range	Resolution	Accuracy
200 Ω	0.1 Ω	± 1.5% of rdg ± 3 digits
2000 Ω	1 Ω	± 1.0% of rdg ± 3 digits

Continuity	
Range	Description
•))	If continuity exists (about less than 30Ω), built-in buzzer will sound.

Temperature for 2250T only		
Range	Resolution	Accuracy
400°C~750°C	1°C	± 1.0% of rdg ± 5 digits
0°C~400°C	1°C	± 1.0% of rdg ± 3 digits
- 40°C~0°C	1°C	± 1.0% of rdg ± 6 digits

GENERAL SPECIFICATIONS

Display	: LCD 1999 counts. Updates 2-3 / Sec.
Polarity Indication	: "—" display for negative polarity.
Over range indication	: Only figure "1" on the display.
Jaw Opening capability	: 42mm (Max conductor size)
Power	: Battery 9V . NEDA 1604 6F22 006P
Low battery indication	: "[-+]" appears on the display
Operating Environment	: 0°C to 40°C
Storage temperature	: -10°C to 50°C
Size	: 250mm X 99mm X 43mm
Weight	: Approx. 460g.

Accessories :

- Operator's Instruction Manual
- Set of test leads
- "K" type thermocouple (For 2250T only)
- Plastic Carrying Case
- 9 volt battery. NEDA 1604 6F22 006P type.

"CIE" in a continuing efforts to offer excellent products at a fair value, reserves the right to change models, specifications and designs without notice

Note : Inspection if any at our works will be carried out as per facility available only with us

CAMBRIDGE INSTRUMENTS & ENGG. CO.

DIGITAL CLAMP METER

(Measurement of Current 2000Amperes without interrupting the circuits)

★ **Accurate** ★ **Reliable** ★**Safe** ★**Easy to use**
★ **Attractive Look , Large LCD for Easy Reading**

With Frequency, Temperature, Voltage, Resistance, Diode, Audible Continuity, Data Hold facility

MODEL : DCM 2350

Back Light Facility

2000 A AC

Display	: LCD, 3½ digit, 1999 counts, updates 2-3/sec
Polarity indication	: "—" displayed for negative polarity
Overrange indication	: Only figure "1" on the display (at MSB)
Jaw opening capability	: 55mm (Max conductor size)
Power	: 9V battery, NEDA 1604 or IEC 6F22
Low battery indication	: " " appears on the display
Operating Environment	: 0°C TO 40°C
Storage temperature	: -10°C TO 50°C
Altitude	: 2000m
Dimensions	: 282mm x 104mm x 47mm
Weight	: Approx. 500g

INSTRUMENTS FOR ACCURACY & RELIABILITY

DIGITAL CLAMP METER

MODEL : DCM 2350

DC Voltage		
Range	**Resolution**	**Accuracy**
2V	1mV	± 1.0% of rdg ± 3 digits
20V	10mV	± 0.5% of rdg ± 1 digits
200V	0.1V	
1000V	1V	± 1.0% of rdg ± 3 digits
Input Impedance : 10MΩ		

AC Voltage		
Range	**Resolution**	**Accuracy**
200V	0.1V	± 0.7% of rdg ± 1 digit
750V	1V	
Input Impedance : 10MΩ Frequency range : 40Hz to 400Hz. Response : Average responding, calibrated in rms. of sine wave.		

AC Current		
Range	**Resolution**	**Accuracy**
200A	0.1A	< 600A ±2.0% of rdg ± 5 digits
2000A	1A	> 600A ±3.0% of rdg ± 5 digits
Overload Protection : 1200A for 60 seconds maximum. Frequency range : 50Hz to 60Hz.		

Diode & Continuity	
Range	**Description**
→|←	Display read approximate forward voltage of diode
•)))	If continuity exists (about less than 40Ω), built-in buzzer will sound

Resistance		
Range	**Resolution**	**Accuracy**
200Ω	0.1Ω	± 1.5% of rdg ± 10 digits
20KΩ	10Ω	
2MΩ	1KΩ	

Frequency		
Range	**Resolution**	**Accuracy**
2kHz	1Hz	± 2.0% of rdg ± 5 digits
20kHz	10Hz	± 1.5% of rdg ± 5 digits

Temperature			
Range	**Resolution**	**Test Range**	**Accuracy**
0°C to 750°C	1°C	0°C to 400°C	± 1.0% of rdg ± 3 digits
		400°C to 750°C	± 2.0% of rdg ± 1 digits

ACCESSORIES • Operator's Instruction manual • Set of test leads • "K" type thermocouple
For DCM 2350 • Plastic Carrying Case • 9 volt battery. NEDA 1604 6F22 006P type.

'CIE' In a continuing effort to offer excellent products at a fair value, reserves the right to change models, specifications and designs without notice.

CAMBRIDGE INSTRUMENTS & ENGINEERING CO.

DIGITAL EARTH RESISTANCE TESTER

3½ Digit L.C. Display (Provided with Ni-cd Re-chargeable Battery)

TÜV CERT
An ISO 9001: 2000 Certified Co.

MODEL : DET-2000

SPECIAL FEATURES

- Rugged ABS body
- Easy to use hand held meter
- Ni-cd Re-chargeable Cells
- Facility as to make bench top type instrument
- Confirms to ISS : 9223/1979

- Four terminals {To measure earth resistance as well as specific soil resistivity}
- Lo-Bat or▲ indication appears on Display indicating that the cells (batteries) have gone down, which can be recharged by connecting to 230V, 50Hz AC mains supply through charging cord provided with the instrument

INSTRUMENTS FOR ACCURACY & RELIABILITY

DIGITAL EARTH RESISTANCE TESTER

3½ Digit L.C. Display (Provided with Ni-cd Re-chargeable Battery)

An ISO 9001: 2000 Certified Co.

MODEL : DET-2000

APPLICATION

"CIE" Digital Earth Resistance Tester is designed to measure the resistance of earth used in power circuit,. Telecommunications, Railway Electrification, Domestic and Industrial electrical installations.**The tester measures directly the resistance of the earth** and also measure **the ground resistivity**. The sturdy, elegant and compact body makes the instrument portable, easy to use, Hand-held instrument

TECHNICAL SPECIFICATION

Display	:	3½ Digits, L.C.D.
Accuracy	:	0% to 10% of the range.....±3% 10% to 90% of the range.....±1.5% 90% to 100% of the range.....±3%
Dimensions (in mm)	:	172x98x38 (Approx.)
Weight	:	575 gm (Approx.)
H. V. Test	:	2KV AC (r.m.s.) For 1 min. Between electrical circuit and containing case
Insulation Resistance Test	:	More than 25 MΩ at 500V DC between electrical circuit & containing case.
Standard Accessories	:	(i) Carrying Case (ii) Charging Cord (iii) Instruction Manual
OPTIONAL ACCESSORIES (at extra cost)	:	• 4 Nos. M. S. SPIKE (45cm Length) • 1 Nos. HAMMER • 4 Nos. Cable (50 Feet) • 1 No. PLIER • 1 Nos. SCREWDRIVER, ALL IN ONE CANVAS BAG
Guarantee	:	Guaranteed for 12 (twelve) months against any manufacturing defects.

Available In Following Dual Ranges

1. 0 — 20 — 200Ω
2. 0 — 10 — 1000Ω
3. 0 — 100 — 1000Ω
4. 0 — 5 — 500Ω
5. 0 — 10 — 100Ω

Any other combination of ranges can also be made on specific requirement.

PROCEDURE FOR TESTING

The digital Earth Resistance tester has four terminals marked as E1, P1, P2 & E2 is suitable for measuring earth resistance as well as Earth resistivity.

MEASUREMENT OF EARTH RESISTANCE :

To measure Earth resistance with digital earth tester, it should be used as three terminal type. For that terminals E1 & P1 are to be shorted and connected to the Earth connection whose resistance has to be found (As shown in Fig. 1)
Connect as per Fig. 1 and take the reading by pressing the Test switch. Note down the reading displayed on the LCD of the instrument.

MEASUREMENT OF EARTH RESISTIVITY

To find out the earth Resistivity for preferred positioning and depth of proposed electrode system, four terminals method is to be used. Connect the instrument terminals as per Fig. 2
All the four spikes to be buried in one straight line and distance between them to be kept same. The value of "L" may be kept between 50' to 70' . Take the reading by pressing the Test switch (taking care of range factor), observed value is in ohms. The value of Earth Resistivity "ρ" may be obtained from the following formula. $\rho = 2\pi LR$ ohms-cms.

Where R = Value of Earth Resistance measured in ohms.
L = Distance between spikes in cm
π = 3.14
ρ = Earth's Resistivity in ohms-cms.

MEASUREMENT OF RESISTANCE (Non Inductive or Non - Capacitive)
Connect the unknown Resistance 'X' as per Fig. 3 below and the resistance can be directly read over the LCD of the meter by pressing the test switch.

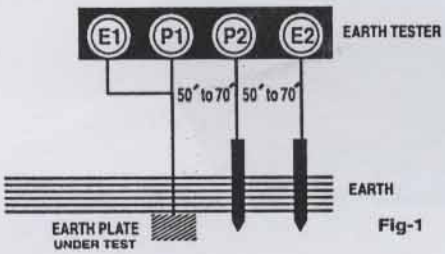


Fig-1

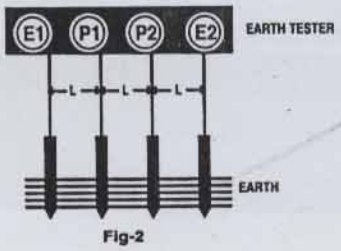


Fig-2

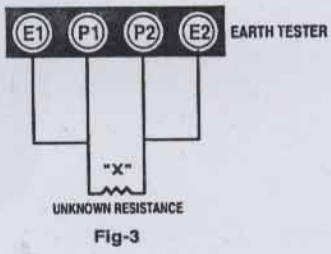


Fig-3

'CIE' in a continuing effort to offer excellent products at a fair value, reserves the right to change models, specifications and designs without notice.

Manufactured & Designed by :

CAMBRIDGE INSTRUMENTS & ENGINEERING CO.

CIE

MODEL : DIT-5005

An ISO 9001: 2000 Certified Co.

TÜV CERT

DIGITAL INSULATION TESTER

3½ Digits L.C. Display (Provided with Ni-cd Re-chargeable Battery)

SPECIAL FEATURES

- Rugged ABS body
- Easy to use hand held meter
- Ni-cd Re-chargeable Cells
- Facility as to make bench-top type instrument
- Confirms to IS : 10656-1983
- Accurate & Quick response
- Graceful appearance
- Direct Measurement of Insulation Resistance
- Lo-Bat indication on Display

APPLICATION

Ideal for Insulation Measurement of

- Electrical Equipments (Motor, Transformer, Machine etc.)
- Household Appliances (Mixer, Toaster, Washing Machine Etc.,)
- Industrial, Commercial & Residential installations
- Electrical Cables for Distribution Networks
- Cables for Communication Networks

INSTRUMENTS FOR ACCURACY & RELIABILITY

DIGITAL INSULATION TESTER

TÜV CERT

3½ Digits L.C. Display (Provided with Ni-cd Re-chargeable Battery)

MODEL : DIT-5005

APPLICATION

'CIE' Insulation Tester is a compact portable unit incorporating most modern features used for direct reading of electrical operating machines, Rotating Plant equipment, Stationary apparatus, Insulation Control and switching equipment, Distribution networks,Communication cables, Insulators, Transformers, Industrial Installations, Cable, electrical components, wiring and other devices capable of carrying the rated voltages. It is a versatile instruments in locating intermittent shorts, defective electrical connections, insulation and conductor failure and in preventing costly repairs & break down insulation value.

TECHNICAL SPECIFICATION

Display	:	3½ Digits, L.C.D.
Accuracy	:	**Insulation** ±3% of F.S. ± 5 digits
		Out put Voltage (DC) ±10% at rated resistance
Confirms to	:	ISS 10656-1983
Dimensions (in mm)	:	172x98x38 (Approx.)
Weight	:	550 gms (Approx.)
H. V. Test	:	2KV AC (r.m.s.) For 1 min. Between electrical circuit and containing case
Insulation Resistance Test	:	More than 50 MΩ at 500V DC between electrical circuit & containing case.
Standard Accessories	:	(i) Carrying Case (ii) Charging Cord
		(iii) Testing Lead (1m length) (iv) Instruction Manual
Guarantee	:	Guaranteed for 12 (twelve) months against any manufacturing defect.

AVAILABLE IN FOLLOWING RANGES :

(i) 500V DC/ 0-200MΩ
(ii) 1000V DC / 0 - 200MΩ
(iii) 1000V DC / 0 -2000MΩ

'CIE' in a continuing effort to offer excellent products at a fair value, reserves the right to change models, specifications and designs without notice.

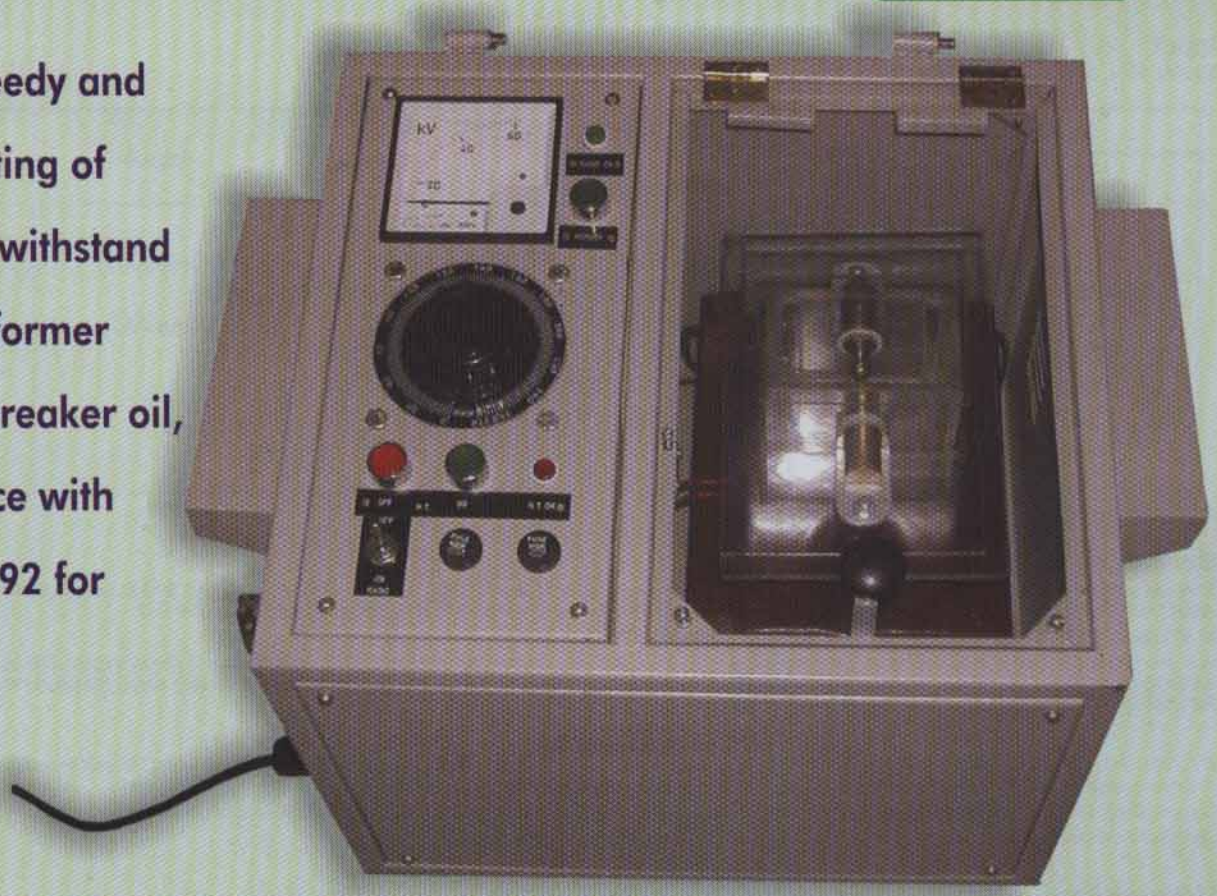
Manufactured & Designed by :

CAMBRIDGE INSTRUMENTS & ENGINEERING CO.

OIL TEST SET

7000 Series

Ideal for speedy and accurate testing of Breakdown/withstand test of transformer and circuit breaker oil, in accordance with IS 6792 : 1992 for oil testing.



MODEL NO.		Output Voltage (AC Volts) **	Capacity	Input	Duty
Motor Operated	Manual Operated				
CIE / 7050 MOT	CIE/7050	0 - 50 KV	500 VA	230 V ±10%	Intermittent
CIE / 7060 MOT	CIE/7060	0 - 60 KV	600 VA	50Hz,	
CIE / 7070 MOT	CIE/7070	0 - 70 KV	700 VA	1 phase AC	
CIE / 7090 MOT	CIE/7090	0 - 90 KV	900 VA		
CIE / 7100 MOT	CIE/7100	0 - 100 KV	1000 VA		
CIE / 7120 MOT	CIE/7120	0 - 120 KV	1200 VA		

** Continuously Variable with centre point of H.V. winding grounded.

SPECIAL FEATURES

• Mains ON/OFF switch. • Neon Lamps to indicate L.T. ON & H.T. ON • Autotransformer for smooth & continuous Variation of output voltage. • Zero start inter locking • HT chamber door interlocking • Overvoltage indication • Lamp to indicate "Regulator not at zero" for Motorised Set. • Memory device with push buttom switch to show the break down voltage. • 96sq. mm. AC moving iron type voltmeter connected to the L.T. side and scaled in KV. • Provided With Test Vessel (Oil Cell) made from non-absorbent insulating material fitted with two brass spheres of diameter between 12.5 to 13mm, placed at a distance of 4mm or 2.5mm. A gauge is provided along with the cell to adjust the gap.

INSTRUMENTS FOR ACCURACY & RELIABILITY

OIL TEST SET

7000 Series

This set is useful for testing dielectric strength of the insulating oils normally used for the distribution and high voltage transformers.

Technical Features :

Input :
230 V± 10%, 50Hz., 1 phase AC.

MODEL NO.		Output Voltage (AC Volts) (Continuously Variable) *	Capacity	Input	Duty
Motor Operated	Manual Operated				
CIE / 7050 MOT	CIE/7050	0 - 50 KV	500 VA	230 V ±10% 50Hz, 1 phase AC	Intermittent
CIE / 7060 MOT	CIE/7060	0 - 60 KV	600 VA		
CIE / 7070 MOT	CIE/7070	0 - 70 KV	700 VA		
CIE / 7090 MOT	CIE/7090	0 - 90 KV	900 VA		
CIE / 7100 MOT	CIE/7100	0 - 100 KV	1000 VA		
CIE / 7120 MOT	CIE/7120	0 - 120 KV	1200 VA		

* with centre point of H.V. winding grounded.

General arrangement :
The set will be consisting of the following : H.T. Transformer, Control Circuit, Test Cell with electrode, gauge and supply input cable of at least 2 metres length with 3 pin plug. The Set is in single unit. Instruction manual with circuit diagram will be supplied along with the Set.

H.V.Transformer
H.V. Transformer used in the Test set is cast resin type. The H.V. winding of the high voltage testing transformer is of graded insulation with centre point of H.V. winding grounded. This testing transformer is specially designed to withstand frequent sparkover or momentary short circuit conditions under which such testing transformers are supposed to operate.

Protection : Beside main switch and fuse in the input side, one "ON" and one "OFF" push button switch along with C.T. and contactor provides a snap acting automatic tripping of H.V. circuit in case of overload or breakdown of oil sample under test.

Overvoltage protection : For motorised sets, overvoltage protection is provided

Metering : 96sq. mm. AC moving iron type voltmeter connected to the L.T. side and scaled in KV

Mode of Operation : Sets will be available either in manual or in motor operated mode. In motor operated sets, the regulators are adjusted at approximately 2KV/sec. rate of rotation.

Test Vessel :
The Test Vessel (Oil Cell) fitted with two brass spheres of diameter between 12.5 to 13mm, placed at a distance of 4mm or 2.5mm. The test vessel made from non-absorbent insulating material. Gap of the spheres can be adjusted by adjusting one sphere while the other being fixed. Dimensions are generally as per IS 6792: 1992. A gauge is provided along with the cell to adjust the gap.

Test Set Housing :
The set is in single unit. All the components are housed within M.S. cabinet provided with wheels and handles for easy movement. A transparent cutout with suitable interlocking device is provided for covering the H.T. side. The Set will not get energised unless this H.T. end is covered. The oil cell is to be placed between the H.V. terminals.
For 50 KV to 80KV manually / motor operated sets, a M.S. hinged lid will be provided.
Features that can be provided at extra cost.
Tripping Set other than standard setting.
Digital Metering

Safety Measures :
• Zero start interlocking is provided to ensure that the H.V. circuit cannot be energised unless the regulating transformer is at zero position or brought back to zero position after each test. • A transparent cutout with suitable interlocking device is provided for covering the H.T. side. The Set will not get energised unless this H.T. end is covered.

Memory Switch :
Memory device along with push button switch enables the test set meter to show the breakdown voltage by pressing the memory switch **even after the high voltage circuit is tripped OFF.**

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