

Epstein Tester EP-350

EP-350 is designed to measure AC magnetic properties of flat rolled magnetic materials at high frequency by using Wattmeter, Ammeter, Voltmeter and Source. Epstein bridge test method is a fundamental method for evaluating the magnetic performance of flat-rolled magnetic materials in either sheared or stress relief annealed condition. This test method is suitable for design, specification acceptance, service evaluation, and research and development.

EP-350 has digital controlled crystal accurate 16 Bit sine wave Generator, which provides 25 Hz to 450 Hz harmonics free non distorted power for testing of specimen. It has in built measuring meter, like Flux Voltmeter, RMS Voltmeter, RMS Ammeter, Peak Ammeter, Wattmeter and Power Factor meter with digital sampling method. These measuring devices are (temper proof) precisely calibrated to achieve high accuracy and long term stability. **Accuracy and stability of EP-350 is better than specified in national and international standards. (Reference to ASTM: 343, IEC: 60404-2, BIS: 649)**

Scope of Measurements

- Iron Loss Watt per Kg
- Iron Loss Watt per pound
- Ampere Turns per Meter
- Permeability
- B/H Curve (with Software)

Application

Quality Measurements of Flat Rolled Electrical Steel Sheet like CRGO, CRNGO, CRNO, HR etc...

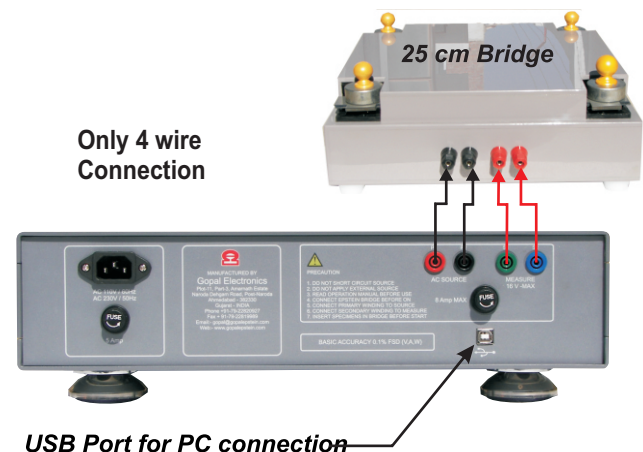
Software



High Precision Epstein Tester 25Hz TO 450Hz

Key Features

- Basic 0.1% Accuracy FSD
- **Fully automatic testing by software**
- Temper proof calibration
- Long terms stability
- Feather touch 24 Key
- 20 x 4 line LCD Display
- USB port to connect Software
- 25 Hz to 450 Hz Source
- 128 VA Source capacity
- Auto protection
- 700 Turns Standard Bridge
- Portable size
- Aluminum body



Fully Automatic Test Method



Enter only four parameter in Software

1. Weight of specimen
2. Length of Specimen
3. Frequency
4. Density

after completing all input parameter user have to press "START" button. Now EP-350 starts taking result for induction from 0.9Tesla to 1.8Tesla automatically. For testing at each induction, it sets frequency, flux volt & induction automatically using digital sampling method by micro controller. After completion of testing, software generates report in Ms-Excel sheet.

Benefits

- x No need to set Frequency
- x No need to set Flux volt
- x No need to set Induction
- x No need to Write down input & Result data
- x No chance of human error
- x Best accuracy of result
- x Save time

Operation Mode

25 cm Bridge mode

Parameter Input page

SETTING STATUS			
gm	500.00	B	1.5000
Lm	305.00	Hz	50.000
Dn	7.6500	%E	50.000

gm	= weight in gram
B	= Induction in Tesla
Lm	= Strip Length in mm
Dn	= Specific density of sample
Hz	= Frequency
%E	= Percentage of eddy Current

Result Page

Wkg	0.6814	Lb	0.3090
Am	48	ua	24867
Hp	40	up	29841
FINISH			

Wkg	= Watt per kg.
Lb	= Watt per pound
Am	= Ampere Turn per meter
ua	= AC permeability
up	= Peak permeability

"Gopal communication tool" is advanced software provided with EP-350 for fully automatic testing. User can test a specimen with nine different Inductions and generate complete report within ten minutes. Test report also plots various curve to analyze magnetic property.

USER MODE provided for other external testing using source & measure device of EP-350

FOR EXAMPLE if user want to test small Transformer, EI core, Torrid core, Ring type core, and any different shape of core, then user mode provide facility to set required Voltage and Frequency within instrument specifications, and simultaneously display Flux Volt, RMS Volt, RMS Amp, Peak Amp, Watt and Power Factor so user can analyses by self, what is Iron Loss, AT/m, Magnetizing force and Permeability. Normally this type of operation required technical person, to calculate various parameters, like core area effective weight, Flux Volt, Watt per kg etc.

Technical Specification

Sine wave Generator	= 25 to 450 Hz
Accuracy of frequency	= 0.03% which instrument can set
Source capacity	= 11.2 Amp Peak
Source max. Voltage	= 16.0 Volt RMS
Distortion of Sine wave	= 0.025%
Protection (Auto)Source	= > 8.0 Amp RMS + Fuse
Protection of power input	= Fuse
Input voltage	= 230V @ 50 Hz 3 Amp \pm 10% or 110V @ 60 Hz 4 Amp \pm 10%
Operation temperature	= 20° to 45° Celsius
Operation humidity	= less than 70%
Dimensions	= Wide =425mm Depth =557mm Height =100 mm +Leg
Weight	= 14.5 Kg
Accuracy of Voltmeter	= 0.1% FSD True RSM Volt
Accuracy of Flux meter	= 0.2% FSD Rectified mean Volt
Accuracy of Ammeter	= 0.1% FSD True RMS
Accuracy of Peak Ammeter	= 0.2% FSD
Accuracy of Power meter	= 0.1% FSD From 0.15PF to 1.00PF
Accuracy of PF meter	= 0.2% From 0.15PF to 1.00PF

COMPARISON OF ACCURACY OF EP-350 WITH DIFFERENT STANDARDS REQUIREMENT

Parameter	Accuracy of EP-350 \pm %	Accuracy required by		
		ASTM-343 \pm %	IEC-60404-2 \pm %	IS:649 \pm %
RMS Voltmeter	0.10	0.25	0.2	0.2
RMS Ammeter	0.10	1.00	0.2	1.0
Watt meter	0.10	0.25	0.5	0.3
Flux Voltmeter	0.20	0.25	0.2	0.2
Peak Ammeter	0.20	1.00	0.5	0.3
Repeatability	0.50	1.00	1.0	1.0

Epstein Bridge Specification

1. Bridge Size	= 25 cm (94 cm mean length)
2. Number of turns	= 700 (Primary = Secondary)
3. Specimen size	= 30 x 280 to 305 mm
4. Specimen weight	= 250gm to 500gm
5. Bridge weight	= 7.3 Kg approx.
6. Dimension	= 35 x 32.5 x 11.5 cm
7. Air flux compensating coil mounted inside the Bridge	

Standard Accessories

1. 25 CM Epstein Bridge	= 1
2. Bridge interface wire	= 4
3. Standard corner weight	= 4
4. Standard test sample	= 1
5. Mains AC Wire	= 1
6. USB interface wire	= 1
7. Operation manual	= 1
8. Calibration certificate(our lab)	= 1