



Gopal Electronics

Model EP400

Digital Epstein Tester



Key Features

- Basic Accuracy 0.05%
- Fully Automatic Testing with software
- Auto & Manual Test method
- 35Hz to 200Hz precision source
- 700 Turns standard bridge
- 28 Keys for easy operation
- Auxiliary supply protection till 440V
- Surge, Spike & Harmonics Protection

Range

- 4 Range of source
- 8 Range of voltmeter
- 8 range of Ammeter
- 64 range power meter
- 35Hz to 200Hz (400Hz optional)

- Jumbo LCD Display
- Isolated USB 2.0 Port
- Multi Range source & Measure
- B/H Curve facility in software

Options Available

- Ep400 - 2KG - 18000 AT/M
- Ep400 - 1KG - 12000 AT/M
- Ep400 - 500Gram-10000 AT/M
- Ep400 - 250Gram-6000 AT/M

Complies to following standard

- BIS 649
- ASTM 343
- IEC 60404-2

Scope of Measurement

- Iron Loss Watt/kg
- Ampere turns per meter
- AC magnetizing force
- Minimum AC magnetization
- AC permeability

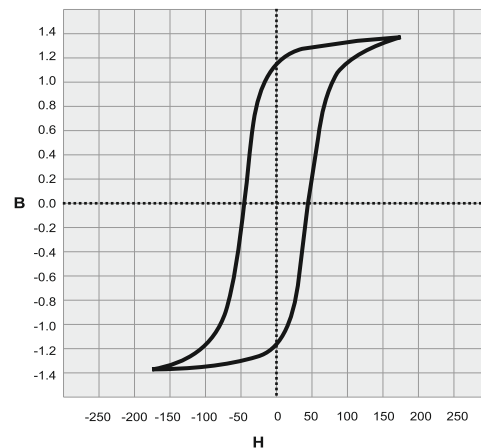
- Peak Permeability
- Hysteresis curve in software
- Bmax, Bmin, Hmax, Hmin of B/h Curve
- Amp Turns Vs Flux intensity measurement
- Graphical report of B/W, B/VA, B/Hrms, B/Hpeak, B/AC permeability, B/peak permeability

Hysteresis Evaluation



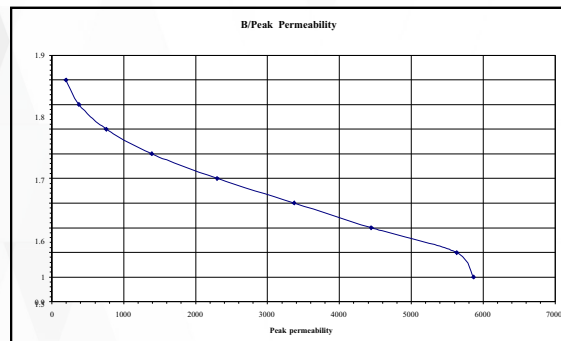
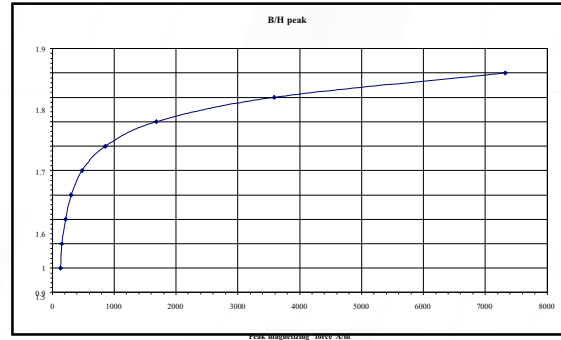
Calibration post provided so any electronics lab can calibrate the equipment

Hysteresis Evaluation



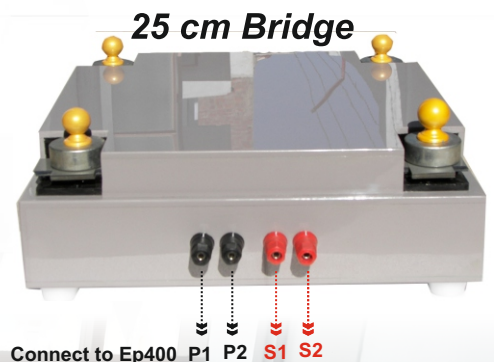
EP-400 is designed to measure AC magnetic properties of flat rolled magnetic materials at high frequency by using Watt-meter, Ammeter, Voltmeter and Source. Epstein bridge test method is a fundamental method for evaluating the magnetic performance of flat-rolled magnetic materials in either sheared or stress relief annealed condition. This test method is suitable for design, specification acceptance, service evaluation, and research and development.

EP-400 has digital controlled crystal accurate 16 Bit sine wave Generator, which provides 35 Hz to 200 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, Watt-meter 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-400 is better than specified in national and international standards. (Reference to ASTM: 343, IEC: 60404-2, BIS: 649



Epstein Bridge Specification

1. Bridge Size = 25 cm (94 cm mean length)
2. Number of turns = 700 (Primary = Secondary)
3. Specimen size = 30mm x 280 to 305 mm
4. Specimen weight = as per bridge size 250gram / 500gram / 1Kg
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



Fully Automatic Test Method

Measure physical data of specimen

Enter specimen in bridge

Enter parameter in software

Full Test Report generated

Enter only five parameter in Software

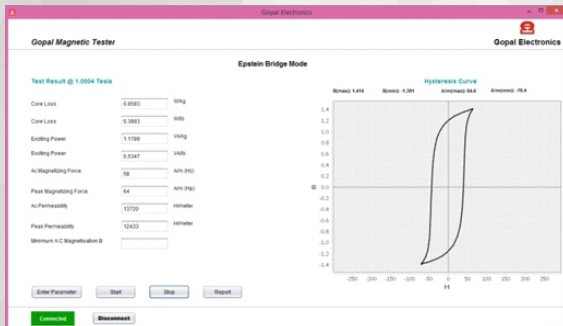
1. Weight of specimen
2. Length & Thickness of Specimen
3. Frequency
4. Density
5. Eddy Current

User have to just click on “START” after feeding all input parameter. EP-400 starts taking result for selected test points automatically. For testing at each test point, frequency, flux volt & induction automatically set using digital sampling method by micro controller. After completion of testing, software generates report in pdf.

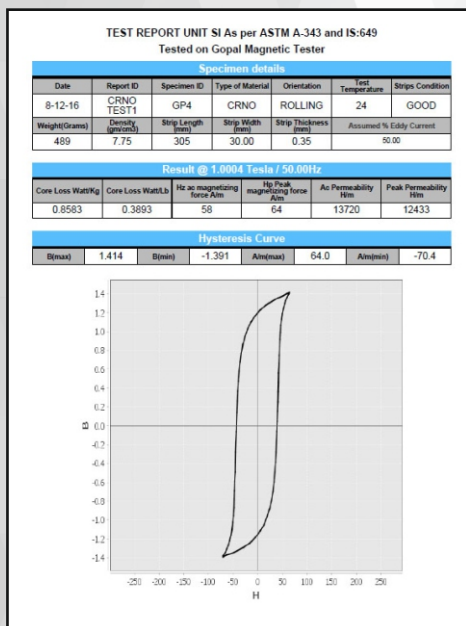
Benefits

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

“Gopal Magnetic Tester” is advanced software provided with EP-400 for fully automatic testing. User can test a specimen with eleven different Inductions and generate complete report within fifteen minutes. Test report provides hysteresis curve, B/W, B/VA, B/Hrms, B/Hpeak, B/Ac permeability, B/peak permeability etc.. at possible points to analyze magnetic property.



USER FRIENDLY operation and multiple use of EP- 400 , make it world leader of magnetic measurement. It has four operation modes one is standard 25 cm Bridge mode which can be operate by hardware and software both. Other three are User mode, Transformer mode and toroid mode which can only operate by hardware. USER MODE is provided as complimentary function for R&D purpose of user.



For example user wants to test small transformer, EI core, Torrid Core, Ring type core, and any different shape of core, then user mode provide facility to set source and set required Voltage and Frequency within Instruments specifications, and simultaneously displays 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.

Specification

Sine wave Generator	35 to 200 Hz (400Hz optional)
Accuracy of frequency	0.03% which instrument can set
Maximum Source capacity	(30A for 2kg, 22A for 1kg, 16A for 500gram & 250 gram) Amp Peak @ 50Hz
Source max. Voltage	66 Volt RMS @ 50Hz =2kg, 44V=1kg, 20V=500gm, 10V=250gm
Distortion of Sine wave	0.025% @ 50Hz
Protection (Auto)Source	As per source capacity, no connection, short circuit, overload , low pf
Protection of power input	Electronics over voltage & under voltage protection
Input voltage	230V @ 50 Hz \pm 10% or 110V @ 60 Hz \pm 10%
Operation temperature	20° to 45° Celsius
Operation humidity	less than 70%
Dimensions	Wide = 580mm Depth =620mm Height =180 mm +Leg
Weight	> 30 Kg
Accuracy of Voltmeter	0.05% True Rms Volt @ 50Hz (8 Range)
Accuracy of Flux meter	0.05% Rectified mean Volt @ 50Hz (8 Range)
Accuracy of Ammeter	0.05% True Rms @ 50Hz (8 Range)
Accuracy of Peak Ammeter	0.1% @ 50Hz
Accuracy of Power meter	0.1% From 0.15PF to 1.00PF @ 50Hz
Accuracy of PF meter	0.1% From 0.15PF to 1.00PF @ 50Hz

COMPARISON OF ACCURACY OF EP-400 WITH DIFFERENT STANDARDS REQUIREMENT

Parameter	Accuracy of EP-400 \pm %	Accuracy required by		
		ASTM-343 \pm %	IEC-60404-2 \pm %	IS:649 \pm %
RMS Voltmeter	0.05	0.25	0.2	0.2
RMS Ammeter	0.05	1.00	0.2	1.0
Watt meter	0.10	0.25	0.5	0.3
Flux Voltmeter	0.10	0.25	0.2	0.2
Peak Ammeter	0.10	1.00	0.5	0.3
Repeatability	0.50	1.00	1.0	1.0

Standard Accessories

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

About Us

Gopal Electronics was established in 1989 by Mr. Gangaram Panchal in Ahmedabad (India), who has over 40 years of experience in magnetic measurement of soft and hard magnetic material. He invented the first product that was the single sheet watt loss tester for watt loss measurement



of motor stamping and EI type laminations. That product proves as very good solutions for the trades and suppliers of electrical stamping to evaluate their material grade. We setup our new manufacturing unit at naroda, Ahmedabad in 1995. Then the development chain starts and we developed range of products like Digital Iron Loss Tester, Holiday Detector, 3

Phase Power Analyzer Epstein tester, Franklin Tester, Turns ratio meter etc. Our range of products is world renowned. These instruments are endorsed by reputed companies like ABB, BHEL, Tata Steel, Emco Ltd, Alstrom (Areva), Crompton Greaves (Germany) etc.



Exporting to More than 45 Countries



Few of our Valued Customers

Tata Steel
Essar Steel
Ajanta Group
Orient Electric
Arev T&D
BHEL
Pitti Lamination
ABB
Crompton Greaves

Jindal's
Orpat
Su-Kam Power
Hero steel
Poggenamp
Schneider Electric
Uttam Bharat Electric
Transformer & Rectifier
Mangal Electric

Kotsons
Alstom
BRG
Emco
Navkar Transcore
Danke Electric
Electrotherm
Vilas Transcore
Galaxy Stampings

Enpay Transformers
Pressmatic Engineering
Elgi Equipments
Kirlosker
Lubi Pumps
Wilo-Mather&Platt
Sabar pumps
Unnati pumps
La-gajjar Pumps

Weg
Vijay Electric Ltd
Bajaj Electrical
Kryfs
MKS Transformer
Polmot motor
Rajastan transformer
SR Electrosteel
Voltec



Gopal Electronics (Works)

Plot-11, Part-3, Amarnath Estate,
Naroda Dehgam Road, Naroda
Ahmedabad-382330
Gujarat - India

Tele : +91 79 4039 7192

Cell : +91 94295 88576

Email : gopal@gopalelectronics.com | sales@gopalelectronics.com

Web : www.gopalepstein.com | www.gopalelectronics.com

Gopal Electronics (Sales Office)

505, Peהל Lake View, B/h Auda Lake,
Nr. Vaishnodevi circle, Khoraj
Ahmedabad-382481
Gujarat - India

Connect Us on Social Network

