

Electric Steel Sheet Tester DAC-BHW-5



Introducing Magnetic Potentiometer Method, DAC-BHW-5 can conduct magnetic characteristic measurements with a single sheet of test samples. Quality Control of silicon steel in sheets can be easily accomplished. B-H Curve can be observed with an oscilloscope. Interface RS232C and IEEE488 are equipped as standard. Different testing coils (D1, D2, and an optional D3) are provided and can be applicable wide ranges of specimen.



Magnetic materials for electrical appliances are evaluated by the characteristics with Magnetic Field Strength (H), Magnetic Flux Density (B) and Core Loss (W). So far the magnetic standard test has been traditionally practiced by the 25cm Epstein method. However, the EPSTEIN measuring system requires a lot of test pieces, special preparation of several measuring devices and quite operational skill as well.

This instrument can simplify the Epstein test method and examine the magnetic characteristics related to B, H and W with a single sheet of an iron core inserted in the B-H Detector. The Magnetic Field Strength (H) and the Magnetic Flux Density (B) detected by the B-H Detector can be automatically controlled by a built-in microprocessor, and alphanumerically displayed as B, H and Watt of the measured sample.

As an optimum means for quality control of electrical steel sheets, the instrument has been utilized broadly among producers of electrical steel sheets as well as assembly makers like transformer or motor manufacturers.

Test Specimen Oriented and non-oriented core in sheet

Specification	Exciting	Magnetic Flux in sign wave		
	Applicable Size of specimen			
	Thickness	D1:0.100-1.000mm	D2:0.100-1.000mm	D3:0.100-2.000mm
	Width	D1:10.0-50.0mm	D2:10.0-100.0mm	D3:10.0-50.0mm
		(D3 as option)		
	Measuring Range	Magnetic Flux Density :0-2.000 T		
		Magnetizing Force : 0-5000 A/m		
		Watt Loss : 0.20.00 W/kg		
	Measuring Accuracy	± (3%rdg+2 digits) by an electric calibration.		
	Density Adjust	5-9.99 g/cm ³		
	Measuring Frequency	50Hz or 60Hz, synchronized with AC source		
	AC Source	100V-240V ± 10% 50/60Hz		
	Interface	GP-IB and RS232C		
	Output	B/H monitoring, BNC type		
	Size and Weight	Main Unit, DAC-BHW-5	W430xH199xD450(mm)	15kg
		BH Detector	W177xH270xD213(mm)	4kg
	Accessory	1)Connecting Cable	1	
		2)BH Detector	1	
		3)Detecting Coil, D1 and D2	1 each	
		4)AC Cord	1	

Electrical Steel Sheet Tester DAC-BHW-5

Flux Density	Magnetizing Force	Watt loss*		Watt loss**	
2T	5k A/m	0	200.0 W/kg	0	20.00 W/kg
	2000 A/m	0	20.00 W/kg	0	2.000 W/kg
	200 A/m	0	2.000 W/kg	0	200.0 mW/kg
200mT	2000 A/m	0	2.000 W/kg	0	200.0 mW/kg
	200A/m	0	200.0 mW/kg	0	20.00 mW/kg
	20 A/m	0	20.00mW/kg	0	2.000 mW/kg

* Low Resolution Range **High Resolution Range

Features

- Test can be done with small quantity of specimen (single sheet).
- Preparation for test specimen is simple. Inserting it into the B-H Detector is all that is necessary.
- Influence by the gap between test specimen and detector is minimized in principle.
- Possible to measure magnetic characteristics at low magnetic field.
- When combined with an oscilloscope, B-H curve can be observed directly.
- Measurement is possible with test specimens in small size (Minimum area : 10 × 60mm).
- Measurement results are closely coincident with those data obtained by Epstein Method.***
- Portable type, suitable for field test.
- Easy-to-read digital display.
- User-Friendly for operating in dialogue.
- Automatic measurement can be done with PC, and then automatic data processing such as evaluation of magnetic permeability.
- B-H Curve can be recorded with use of a memory-installed X-Y recorder supplied on request. Br and Hc Values are obtained from the B-H curve.

Note ***

DAC-BHW-5 is adjusted to closely match the values obtained by Epstein instruments for test samples meeting the conditions below. To ensure accuracy in testing electrical steel sheets, prepare and measure test samples as shown below.

- 1) Test samples with width of 30mm and length of 100mm or more, cut using a typical shearing machine (warping of 20 μ or less, shear angle of 1°)
- 2) For test samples exhibiting directionality, use methods recommended by the steel manufacturer for performance of annealing
- 3) Test samples without warp or twist
- 4) Measure several test samples, and take the average

- Specifications and drawings in this catalogue are subject to change without prior notice for improvement.
- Copyright 2007 SOKEN ELECTRIC CO., LTD., all rights reserved.

SOKEN

SOKEN ELECTRIC CO., LTD.

3-57-124 Kami-Ishihara Choufu Tokyo 182-0035 Japan

TEL +81-(0)424-90-6929 FAX +81-(0)424-90-6807

<http://www.soken-jp.com> e-mail:s2258@soken-jp.com