

# TD81 Series AC Magnetic Properties Measuring System for Soft Magnetic Materials



\*Above picture is only for reference, subject to actual delivery

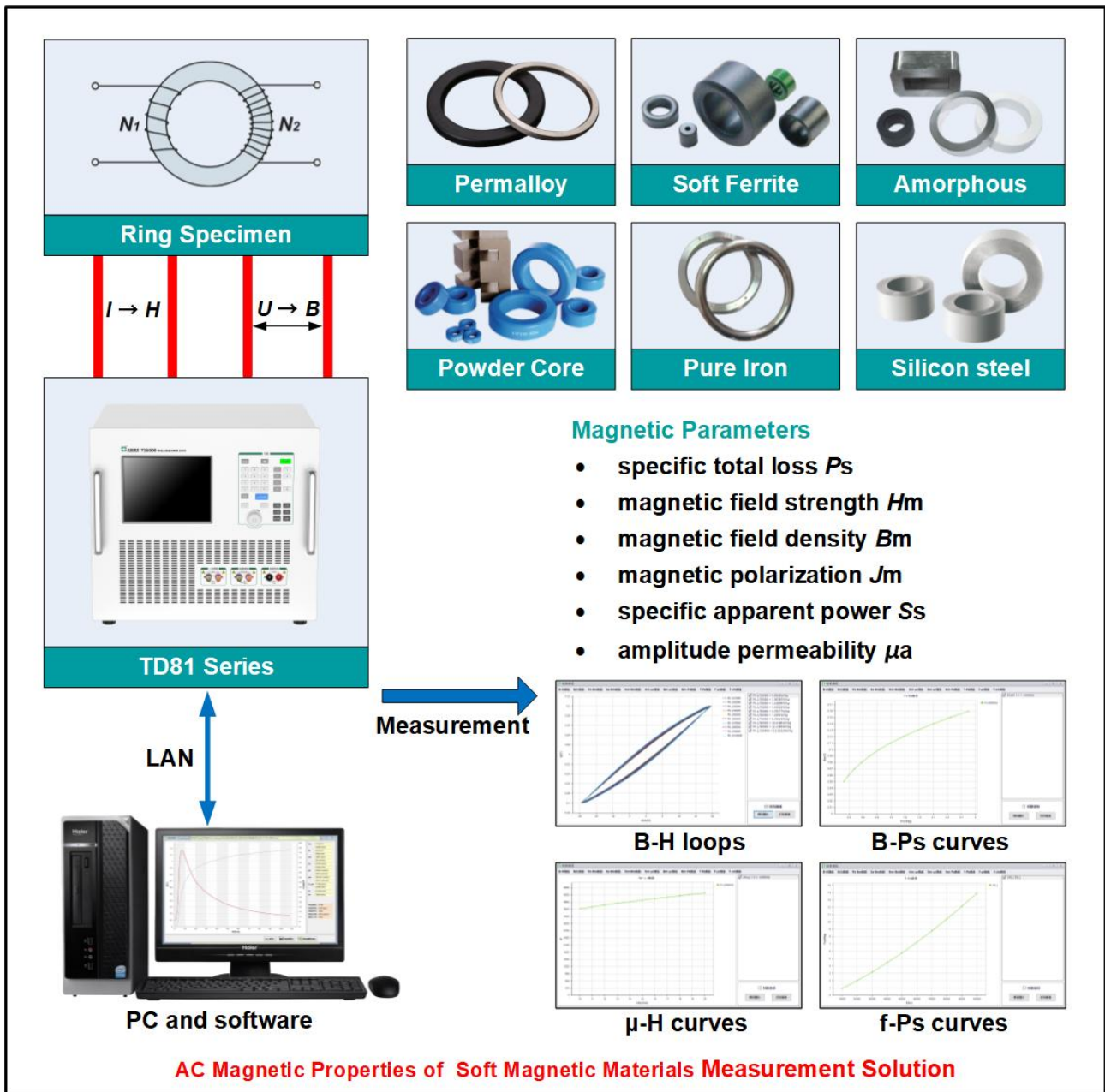
## 1. Summary

TD81 series is AC Magnetic Properties Measuring System for Soft Magnetic Materials. The product design conforms to the standard IEC 60404-6, GB/T 3658-2008. These series instruments cover frequency range from 20 Hz up to 1 MHz, depending on the selected model. It used for testing the AC magnetic properties and curves of ring core specimen.

## 2. Features

- Electrical parameters calibration function.
- Testing mode: setting  $H$  to measure  $B$  or setting  $B$  to measure  $Ps$ .
- Testing in full frequency range with good accuracy and repeatability.
- Automatically testing with professional software.
- Automatically calculating magnetic parameters and curves.
- Complete curves drawing and data management functions.
- Modular design, easy to upgrade or maintenance.

### 3. Applications



#### 4. Magnetic Parameter specifications

Magnetic parameters		Uncertainty ( $k = 2$ ) @1 kHz	Repeatability
Main magnetic parameters	$P_s$	2.0%	1.0%
	$\mu_a$	3.0%	1.0%
	$B_m$	1.0%	0.5%
	$H_m$	1.0%	0.5%
	$\delta$	5.0%	1.5%
Other parameters	$B_r$	2.0%	1.0%
	$H_c$	3.0%	1.0%
	$\mu'$	3.0%	1.0%
	$\mu''$	3.0%	1.0%
	$\mu_L$	3.0%	1.0%

- Testing conditions: (  $23 \pm 5$  )°C,  $20 \text{ Hz} \leq F \leq 20 \text{ kHz}$ , demagnetized before testing.
- The ratio of the outer diameter to the inner diameter of the measured specimen should not be greater than 1.4, preferably less than 1.25.

## 5. Electrical Parameter Specifications

### 5.1 TD8110 / TD8120 / TD8130

Voltage range	10 mV <sub>pk</sub> ~200 V <sub>pk</sub>		
Current range	0.5 mA <sub>pk</sub> ~20 A <sub>pk</sub>		
Frequency range	20 Hz... 100 kHz... 200 kHz...500 kHz Optional		
Frequency Uncertainty	0.1%		
Frequency range (Hz)	Power (Peak)	Voltage and Current Uncertainty (k=2)	Power uncertainty (k=2)
$20 \leq F \leq 1 k$	700 VA	0.05%*RG <sup>①</sup>	0.1%*FS <sup>②</sup>
$1 k < F \leq 10 k$	700 VA	0.1%*RG <sup>①</sup>	0.2%*FS <sup>②</sup>
$10 k < F \leq 100 k$	700 VA	1.0 %*RG <sup>①</sup>	2.0%*FS <sup>②</sup>
$100 k < F \leq 300 k$	200 VA	2.5%*RG <sup>①</sup>	5.0%*FS <sup>②</sup>
$300 k < F \leq 500 k$	100 VA	5.0%*RG <sup>①</sup>	8.0%*FS <sup>②</sup>
Notes ①: RG is range value; ②: FS = Voltage range value × Current range value			


### 5.2 TD8140

Voltage range	10 mV <sub>pk</sub> ~68V <sub>pk</sub>		
Current range	0.5 mA <sub>pk</sub> ~6 A <sub>pk</sub>		
Frequency range	20 Hz... 1 MHz		
Frequency Uncertainty	0.1%		
Frequency range (Hz)	Power (Peak)	Voltage and Current Uncertainty (k=2)	Power uncertainty (k=2)
$20 \leq F \leq 1 k$	400VA	0.05%*RG <sup>①</sup>	0.1%*FS <sup>②</sup>
$1 k < F \leq 10 k$	400VA	0.1%*RG <sup>①</sup>	0.2%*FS <sup>②</sup>
$10 k < F \leq 100 k$	400VA	1.0 %*RG <sup>①</sup>	2.0%*FS <sup>②</sup>
$100 k < F \leq 300 k$	240 VA	2.5%*RG <sup>①</sup>	5.0%*FS <sup>②</sup>
$300 k < F \leq 500 k$	240 VA	5.0%*RG <sup>①</sup>	8.0%*FS <sup>②</sup>
$500 k < F \leq 1 M$	200 VA	8.0%*RG <sup>①</sup>	12%*FS <sup>②</sup>
Notes ①: RG is range value; ②: FS = Voltage range value × Current range value			

## 6. General specifications

<b>Power supply</b>	AC ( 220 ± 22 ) V, ( 50 ± 2 ) Hz
<b>Temperature performance</b>	Operating temperature: 0°C~45°C; Storage temperature: -20°C~70°C
<b>Humidity performance</b>	Operating Storage: < 80% @ 30°C, < 70% @ 40°C, < 40% @ 50°C Storage humidity: (20%~80%) R·H, non-condensing

## 7. Ordering Information

<b>TD81</b> 	<b>Testing Frequency</b>	
	Code	Note
	<b>10</b>	<b>20 Hz ~ 100 kHz</b>
	<b>20</b>	<b>20 Hz ~ 200 kHz</b>
	<b>30</b>	<b>20 Hz ~ 500 kHz</b>
	<b>40</b>	<b>20 Hz ~ 1 MHz</b>

e.g.: TD8110 represents testing frequency is 20 Hz~100 kHz.

## 8. Configuration List

No	Item name	Number	Configuration	Note
1	TD81 host	1	Standard	
2	Testing software	1	Standard	Installation CD-ROM
3	Test wires	1	Standard	
4	Computer	1	Optional	Third party Products
5	Printer	1	Optional	Third party Products
6	Workbench	1	Optional	Third party Products

- **Note:** The above is only for reference. The specific configuration list depends on the technical protocol.