

Comprehensive Stepping/Servo Motor Test Scheme AN83FX(F)



Product Introduction

This product is suitable for testing of reactive, permanent magnet, hybrid stepper motors, AC/DC servo motors. It can complete the test of the static, back electromotive force, hall, encoder and other items of the motor.

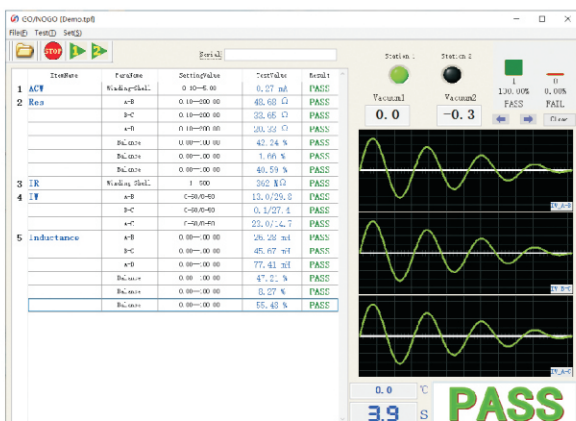
Features

- Wide range: test of ultra wide resistance range (1mΩ~400KΩ).
- High performance: voltage regulation, insulation, turn-to-turn and other voltage adjustments using closed-loop voltage feedback adjustment system to accurately control the voltage regulation and rising process, stable voltage output.
- One-stop: self-developed AC/DC power supply, convenient and unified before/after sale.
- Module: Module test unit to avoid interference, and customize single/multi-station, serial/parallel test system as required.
- Multi ports: USB, RS232, LAN and other ports, PLC simulation, TCP/IP network protocol, etc., to facilitate data interaction and instrument control.

Test items

- Stator: withstand voltage, insulation, resistance, resistance balance, interturn, inductance, rotation
- Complete machine: withstand voltage, insulation, winding resistance, inductance, back electromotive force, rotation.

Test cases



Specifications

General parameters of AN83FXS(F)/AN83FXM(F) series					
Application industries		Stepper motor, servo motor, etc.			
Model of product		AN83FXS(F)	AN83FXM(F)	Custom parameters	
Withstand voltage test	Output voltage	Range: 300 ~ 3000 VAC, step: 10V		5000 VAC	
		Allowable error: $\pm (2.5\% \times \text{setting} + 10V)$			
	Break down current	Range: 0.10~20.00 mA		100 mA	
		Allowable error: $\pm (2.5\% \times \text{reading} + 5 \text{ words})$			
Insulation test	Duration		Range: 1.0~99.9s, allowable error: $\pm (1\% \times \text{setting} + 0.1s)$		
	Output voltage	Range: 200 ~ 1000 VDC, step: 5V			
		Allowable error: $\pm(3\% \times \text{setting} + 5V)$			
	Ripple coefficient		< 5%		
	Resistance measurement	Range: 1.0~500M Ω			
		Allowable error: $\leq 200M\Omega$, $\pm(3\% \times \text{reading} + 5 \text{ words})$			
Resistance test	Duration		Range: 1.0~99.9s, allowable error: $\pm (1\% \times \text{setting} + 0.1s)$		
	Test and measurement	Range: 0.1~20k Ω , unit: Ω		1m Ω ~ 400K Ω ; 1m~400K Ω	
		Allowable error: $\pm(0.3\% \times \text{reading} + 3 \text{ words})$			
Resistance balance	Temperature measurement		(0.0~60.0) $^{\circ}\text{C}$, allowable error: $\pm 0.5^{\circ}\text{C}$		
	Calculation formula	$ \text{Resistance} - \text{Resistance average} / \text{Resistance average} \times 100\%$			
Interturn test	Display range		0.0% ~ 99.9%		
	Pulse voltage	Range: 300~3000 V, step: 100V		5000 V	
		Allowable error: $\pm(3\% \times \text{setting} + 10V)$			
	Wavefront time		$\leq 0.5\mu\text{s}$		
	Acquisition frequency		5kHz~40MHz 5kHz~40MHz		
Inductance test	Wave parameters		Area, difference area, (1~10) consecutive impacts; range: 0~99%		
	Test range		0.0001 μH ~99.99kH		
	Basic accuracy		0.5%		
	Test frequency		100Hz, 120Hz, 1kHz, 10kHz		
Back electromotive force	Test level		0.1, 0.3, 1.0 (V)		
	Voltage range		0.5~50V or 1~400.0V;		Level-0.02
	Allowable error		$\pm (0.3\% \times \text{reading} + 0.2\% \times \text{range})$		
Rotation test	Range of speed		100-3000rpm		
	Decision parameter		CW/CCW/None		

Optional information					
Optional function	Interphase voltage	Interphase insulation	Static moment	Hall signal	Encoder
AN8353S	√	√	----	----	----
AN8353M	√	√	√	√	√