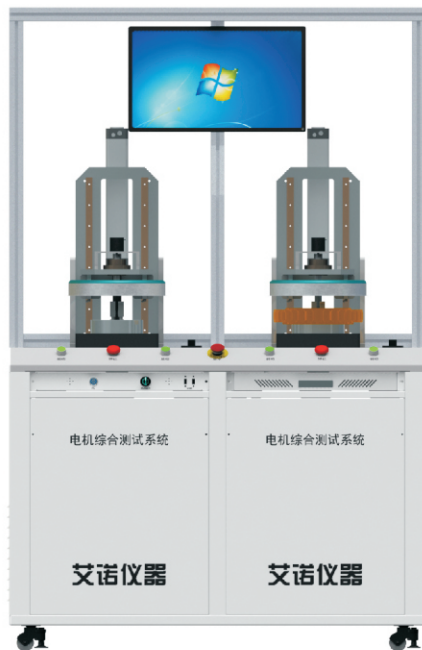


Comprehensive DC Brushless Motor Test Scheme AN8355(F)



Product Introduction

This product is suitable for testing of dynamic performance of various types of DC brushless motors with/without load, widely used in household brushless motors, electric vehicle motors, fan motors, drone motors, brushless power tools and other industries.

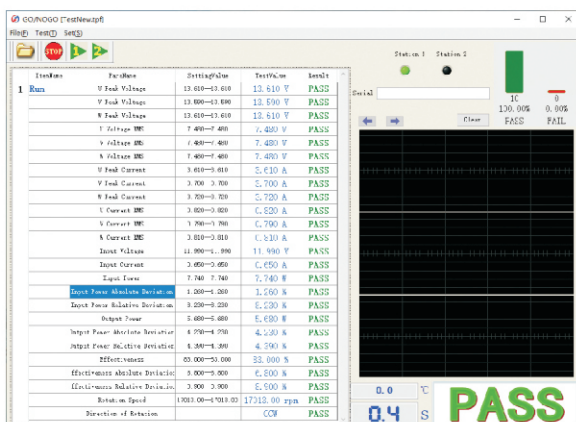
Features

- Broadband: signal detection of 0.5Hz~100KHz ultra-wideband.
- High accuracy: measurement accuracy of voltage/current up to 0.2%.
- Efficient: One-time wiring to complete all testing items such as static, no load, Hall signal, etc., high efficiency.
- 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
- Motor: withstand voltage, insulation, resistance, back electromotive force, no load, speed, Hall, rotation.

Test cases



Specifications

General parameters of AN8355S(F)/AN8355M(F) series				
Application industries		Household brushless motors, electric vehicle motors, fan motors, drone motors, brushless power tools, etc.		
Model of product		AN8355S(F)	AN8355M(F)	Custom parameters
Withstand voltage test	Output voltage	Range: 300 ~ 3000 VAC, step: 10V		5000 VAC
		Allowable error: $\pm (2.5\% \times \text{setting} + 10\text{V})$		
	Break down current	Range: 0.10~20.00 mA		100 mA
		Allowable error: $\pm (2.5\% \times \text{reading} + 5 \text{ words})$		
	Duration	Range: 1.0~99.9s, allowable error: $\pm (1\% \times \text{setting} + 0.1\text{s})$		
Insulation test	Output voltage	Range: 200 ~ 1000 VDC, step: 5V		
		Allowable error: $\pm(3\% \times \text{setting} + 5\text{V})$		
	Ripple coefficient	< 5%		
	Resistance measurement	Range: 1.0~500M Ω		
		Allowable error: $\leq 200\text{M}\Omega$, $\pm(3\% \times \text{reading} + 5 \text{ words})$		
	Duration	Range: 1.0~99.9s, allowable error: $\pm (1\% \times \text{setting} + 0.1\text{s})$		
Resistance test	Test and measurement	Range: 0.1~20k Ω , unit: Ω		1m Ω ~ 400K Ω
		Allowable error: $\pm(0.3\% \times \text{reading} + 3 \text{ words})$		
	Temperature measurement	(0.0~60.0) $^{\circ}\text{C}$, allowable error: $\pm 0.5^{\circ}\text{C}$		
Resistance balance	Calculation formula	Resistance -Resistance average /Resistance average*100%		
	Display range	0.0%~99.9%		
Interturn test	Pulse voltage	Range: 300~3000 V, step: 100V		5000 V
		Allowable error: $\pm(3\% \times \text{setting} + 10\text{V})$		
	Wavefront time	$\leq 0.5\mu\text{s}$		
	Acquisition frequency	5kHz~40MHz		
	Wave parameters	Area, difference area, (1~10) consecutive impacts; range: 0~99%		
Inductance test	Test range	0.0001 μH -99.99kH		
	Allowable error	0.5%		
	Test frequency	100Hz, 120Hz, 1kHz, 10kHz		
	Test level	0.1, 0.3, 1.0 (V)		
Back electromotive force	Voltage range		(1.0- 300.0) V ;	Level-0.02
	Allowable error		$\pm(0.5\% \times \text{reading} + 4 \text{ words})$	
	Range of speed		100-3000rpm	
No-load test	Voltage range		(50.0- 300.0) V ;	Level-0.02
	Allowable error		$\pm (0.3\% \times \text{reading} + 0.2\% \times \text{range})$	
	Current		(0.05- 20.00) A ;	
	Allowable error		$\pm (0.3\% \times \text{reading} + 0.2\% \times \text{range})$	
	Range of power		(1.0-6.0k) W ; (1.0-6.0k) W ;	
	Allowable error		$\pm(0.8\% \times \text{reading} + 0.2\% \times \text{range})$	
Load test	Load range		(0.20-0.75) Nm 0.20-0.75 Nm	
Hall test	Voltage range		(0.5- 10.0) V	
	Allowable error		$\pm(0.5\% \times \text{reading value} + 2)$	
	Frequency		(10- 1000) Hz	
	Allowable error		$\pm(0.1\% \times \text{reading value} + 1)$	
	Duty cycle		20-80%; allowable error $\pm 1\%$	
Rotation test	Decision parameter		CW/CCW/None	