A1100 Series

E-Motor Emulator



Product Introduction

The A1100 series motor simulator is a new type of power electronics device with integrated motor & load simulation, containing dynamic mathematical models and load models for various types of motors (permanent magnet synchronous motor PMSM, asynchronous motor ASM, etc.) The main circuit utilises high speed power switching devices and the control and model computing units utilise multi-core high speed processors, allowing accurate simulation of motor and load characteristics under all types of working conditions and PWM variable frequency drive conditions. Ideal for the R&D process, off-line and certification testing of motor controllers and general frequency converters.



E-motor Emulation



Four-quadrant Operation



Position & Temperature Sensor Simulation



Fault Injection



Multiple Load Types Simulation



Multiple Control Mode

Product Advantages

- Bidirectional energy flow
- Fault simulation
- High-speed data storage and export
- Accurate simulation of motor characteristics
 & high dynamicity testing
- Serve as an AC power supply under synchronous generator mode
- Emulate the working conditions of both permanent magnet synchronous motor & asynchronous motor
- No vibration & low noise
- Protection for DUT(device under test)
- Standard communication interfaces
- Response time ≤ 1ms



KEWELL TECHNOLOGY CO., LTD.

https://www.kewelltest.com/

Specifications

Model	Rated power* [kW]	Motor voltage* [V]	Rated current* [A]
A1100-G-150-450-400-EME	150	450	400
A1100-G-200-450-400-EME	200	450	400
A1100-G-200-800-400-EME	200	800	400
A1100-G-400-800-800-EME	400	800	800
E-Motor Emulator Parameters			
Phase	3		
Min. Current Slew Rate	1500A/ms		
Rated Rotating Speed	90000RPM(standard)/pole pair		
Motor Steering	Clockwise / Counterclockwise		
Motor Torque	Positive/Negative		
Number of Pole-pairs	1~20		
Resolver Excitation	3kHz~20kHz		
Motor Leakage Inductance	50uH~2650uH		
Current Frequency	0~1.5kHz		
Stator Resistance	0Ω~5Ω		
Motor Model	Synchronoud motor/Asynchronous motor		
Position Sensor	Resolver/Encoding disk/Hall sensor		
Fault Simulation	Short circuit/Disconnect/Real-time error simulation		
Temperature Sensor	4 channels, NTC or PTC		
Communication Interfaces	RS485/CAN/LAN		
Motor Model	Parameter Setting		
PMSM Model	D axis inductance Ls=Ld		
	Q Axis inductance Lq		
	Stator resistance Rs		
	Magnetic flux Ψ		
	Mech(Mechanical rotational inertia Mech)		
	Friction coefficient		
	p(Pole-pairs p)		
ASM Model	Rs(stator resistance Rs)		
	Rr(Rotor resistance Rr)		
	Lls(Stator leakage inductance Lls)		
	Llr(Rotor leakage inductance Llr)		
	Lm(Excitation inductance Lm)		
	Mechanical moment of Inertia mech		
	Friction coefficient		
	p(Pole-pairs p)		

Note: The rated power * can be customized according to customer requirements.

Test Waveforms



