

SKF Static Motor Analyzers Baker 30, 40, 85

Power packs for testing high-voltage windings with SKF Static Motor Analyzers

Introduction

The Baker 30, Baker 40, and Baker 85 power packs are high-voltage generators designed for rigorous shop or field use. They provide a cost-effective solution for performing high-voltage motor and coil testing. The output voltage is controlled from 2 000 V up to a maximum of 40 000 V.

These power pack units perform both surge and DC high potential tests when used with the Baker DX or the Baker D12R static motor analyzers as the control and display. The Baker 30 can be controlled by Baker AWA-IV units. They incorporate a supply monitor for safe operation from a well grounded supply. In addition, 60 kV rated test lead cables are provided.

The surge generator is designed to provide IEEE 522-2004 compliant test voltages, both in the 30 kV and 40 kV units. The key design element of the surge test circuit is meeting the requirements for IEEE 522-2004 compliant test voltages. The tester supplies 0.1 to 0.2 μ s voltage pulses to the coil or winding under test. Additionally, Baker provides 0.1 μ F (30 kV) or 0.15 μ F (40 kV) storage capacitors to allow proper test voltages to be developed on highly capacitive loads such as large motor or generator stators.



Voltage rise time is 100 to 200 ns (0.1 to 0.2 μ s), so the PP30 complies with IEEE Standard 522-2004 and IEC Standard 34-15 when testing motor windings and coils.

The DC high potential (HiPot) test can also be done using these power packs along with the D12R or AWA. Test voltage is set by the output control from 2,000 V up to 40,000 V. Current is displayed and an overcurrent trip circuit monitors the test. If current exceeds the trip level, the test is automatically halted. In its most sensitive setting, the protective circuit will operate as low as 10 μ A.



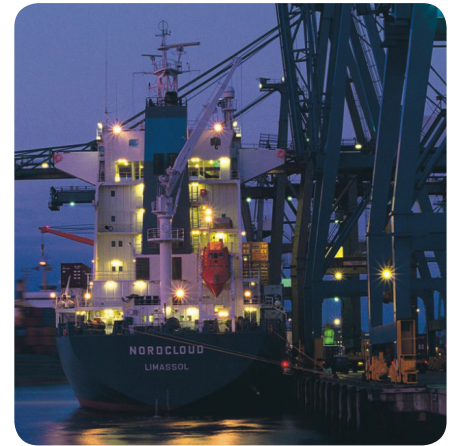
In addition, the host analyzer also monitors current. This provides a redundant level of safety for the DC high potential test.

The Baker 30, Baker 40 and Baker 85 are housed in a mobile case on pneumatic wheels. It provides power and accessory connections from the Baker DX or Baker AWA-IV (and older D12R) analyzers, and includes lead storage in a convenient portable unit. These features make the Baker 30, Baker 40 and Baker 85 the most powerful and most advanced impulse generators available.

The Baker 85 has additional functionality for testing of armatures. The lower impedance of series wound armatures

(traction motors, transit and lift truck armatures) make accurate surge testing difficult. To achieve sufficient voltage differences between adjacent bars, standard surge testers use excessive voltage which may harm windings.

The Baker 85 allows for safe testing of these coils using higher current. When testing these coils, a specific voltage is applied on adjacent commutator bars, reducing the need for excessively high voltage. Inter-bar voltages can be varied from 50 to 900 V on large, cross connected equalized armatures. This bar-to-bar testing is the preferred method of testing DC armatures used by manufacturers and rebuilders.



Surge test	Baker 30 ¹	Baker 40 ²	Baker 85 ²
Maximum output voltage	30 000 V	40 000 V	30 000 V
Maximum output current with leads shorted together			
Three-phase selector switch	1 400 to 1 500 A pulse width at 2 ms (Baker 30, Baker 85)		
1 hot lead (no 3 f switch)	2 600 A at 2 ms (Baker 40)		
Maximum impulse energy	45 J	120 J	45 J
DC high potential test			
Maximum output voltage	30,000 V	40,000 V	30,000 V
Maximum output current			
Overcurrent trip			
Current resolution			
Armature bar-to-bar test (Baker 85 only)			
Maximum voltage			3 200 V (no load)
Maximum current			10 000 A
Maximum pulse energy			45 J
Maximum test inductance			
Minimum test inductance			
Physical characteristics			
Weight	250 lbs (113,4 kg)	305 lbs (138,3 kg)	270 lbs (122,5 kg)
Dimensions (all units)	24 x 51 x 26 in (610 x 1 295 x 660 mm)		
Power requirements	110/220 V ³ 50/60 Hz, 1 000 W,	110/220 V ³ , 50/60 Hz, 1 000 W	110 V, 60 Hz, 1 000 W 220 V, 50 Hz, 1 000 W
Eight-inch (203,2 mm) pneumatic wheels Option: transport lifting strap kit			

¹ Operates with Baker AWA and D12R

² Operates with Baker DX and D12R

³ Single-phase

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PUB XX/P2 xxxxx EN · November 2013

