

Baker PPX Power Packs

Megger[®]
Baker Instruments

High Voltage motor testing made easy

The Baker PPX 30 Power Pack shown in combination with the Baker AWA-IV static electric motor analyzer



Baker PPX Power Packs

Introduction

High-voltage motors and generators are critical to the operation of industrial plants and power generation facilities. Testing of this equipment during the manufacturing process, or in a plant as part of a predictive maintenance program, or in a motor shop before and after repair, requires equipment that can perform tests at voltages as high as 40 kV.

Finding large motor issues and faults: no problem

The Megger Baker Power Packs PPX30, PPX30A and PPX40 provide increased test voltage ranges for our static motor and coil analyzers, up to 40 kV. This makes these power pack/analyzer combinations ideal for assessing insulation condition on form-wound coils, high-voltage AC motors, large DC motors and transformers.

Accurately assess high voltage windings with a complete range of tests

Effective testing of medium and high voltage apparatus insulation requires a range of tests to characterize and locate insulation weaknesses and defects. Baker power packs used with Baker static motor analyzers thoroughly test the ground wall insulation between a motor stator's core and windings by combining multiple tests, including:

- Megohm test
- Step and ramp voltage tests
- High-potential (hipot) test
- Polarization index (PI) and dielectric absorption (DA) tests

The condition of winding (turn-to-turn) and phase-to-phase insulation is assessed with:

- Surge test
- Pulse-to-pulse error-area ratio (PP-EAR) analysis

Coil resistance and inductance measurements are made to assure proper winding construction, and correct assembly of the coils into the motor. Capacitance to ground is also measured. (Inductance and capacitance tests require a Baker DX or Baker Power Pack Controller with applicable options.)





Improve worker safety

To minimize the risks of working with high-voltage motor test equipment, Baker power packs feature:

- Test leads that exceed power pack maximum test voltages (60 kV rated)
- Highly visible, easy-to-reach equipment stop (e-stop) buttons
- Available remote e-stop switches and safety lights

To further increase safety, all power packs require deliberate, multiple actions to initiate a test (e.g. combined use of a foot switch and a front panel button). Also, tests can't begin unless the test voltage is set to zero volts (can be overridden), or if an open (AC power) ground lead is detected. Finally, external contacts for light curtains or other third-party safety devices are available.

Choose the model that meets your needs

- Baker PPX30: Provides up to 30 kV of test voltage and has three switchable test leads for simple connections to three-phase apparatus.
- Baker PPX40: Single-lead tester that performs tests at voltages up to 40 kV.
- Baker PPX30A: Features an internal armature test circuit for testing large DC motors and components. When in armature mode, the test voltage is limited to 2100 V; however, the available test current is extended to 7000 Amps.

The Baker PPX cabinet features large 8 inch (203 mm) pneumatic wheels for easy transport to testing areas, an AC outlet for the host static motor analyzer and a storage area for power pack leads.

The Baker PPX30 Power Pack shown with the Baker DX static electric motor analyzer

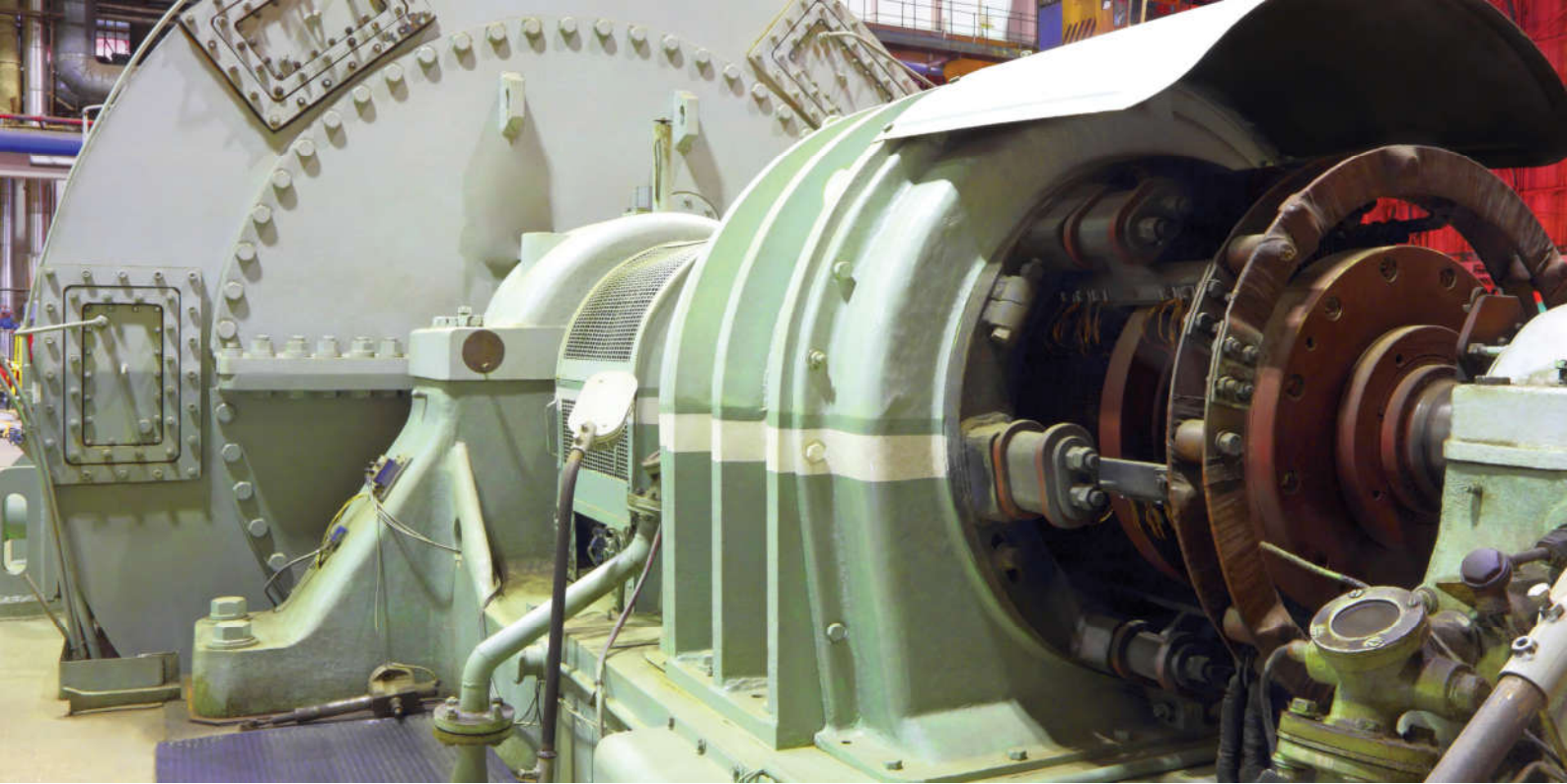
Benefits

- Provide extended test voltage ranges for static motor analyzers
- Accurately test large apparatus and coils
- Minimize unexpected motor failures
- Optimize productivity
- Improve worker safety
- Easy transport to testing areas

Features

- Regulated test voltages from 0kV to 40kV (with host unit)
- Complete range of tests
- Multiple safety features
- Large pneumatic wheels for mobility
- AC outlet and storage area for leads
- Arc detection
- Over-current detection
- User-settable voltage ramp rate eliminates nuisance trips and improves repeatability
- Fast, clearly reported HV coil testing mode (with Baker DX or Power Pack Controller)
- Professional results reporting





Motor repair shops

Megger's Baker DX static motor analyzer is the ideal controller for the Baker Power Pack PPX series in the context of a motor repair shop, allowing a range of winding insulation and ground wall condition tests to be run on motors on arrival and after repair.

Offering a full suite of manually-operated tests, the combination of DX and PPX makes a formidable tool for troubleshooting insulation issues on medium and high voltage apparatus, including ground wall, turn-to-turn and phase-to-phase insulation integrity, RLC and coil construction. Then, once the repair work is complete, a further round of quality assurance tests ensures that the equipment is ready to go back into service.

The PPX30A adds armature test functionality to the 30kV power pack, allowing rapid and efficient testing of large DC motors.



The ATF5000 armature test accessory makes testing armatures with many coils and commutator segments easy and fast

Predictive maintenance

For route-based, repeatable equipment testing as part of a predictive maintenance program in an industrial plant or power generation facility, the Baker AWA-IV static analyzer is the best choice for a controller for the Baker PPX family.

A maintenance supervisor can create a route for the technician, which includes predefining the set of tests and test parameters for each motor in the route. Results are captured in the AWA-IV and can be analyzed for motor condition trends, either on the analyzer itself, or exported to the supervisor's desktop or laptop computer.

The Baker AWA-IV in combination with the Baker PPX power pack is also a powerful troubleshooting tool when issues arise with high-voltage motors, generators or transformers. It can expose insulation weaknesses and circuit imbalances, leading to informed decisions regarding repair or replacement.

Coil & motor manufacturers

The Baker PPX Power Packs are ideal for quick and efficient QA testing of large coils and motors during the manufacturing process, with each coil's results saved.

Standards-based testing

The Power Pack PPX's suite of high-voltage surge and HiPot tests complies with a range of industrial standards, including IEEE 43, 95, 522; NEMA MG-1; IEC 34-15; EASA AR-100; NFPA 79 and others.



Baker PPX Power Pack series specifications

	Baker PPX30	Baker PPX40	Baker PPX30A
Surge test			
Maximum output voltage	30 kV	40 kV	30 kV
Max output current (leads shorted)	1400 A	2600 A	1400 A
Maximum impulse energy	45 J	120 J	45 J
Accuracy	12%	12%	12%
DC high potential test			
Maximum output voltage	30 kV	40 kV	30 kV
Voltage accuracy	3%	3%	3%
Maximum output current	10 mA	9 mA	10 mA
Current accuracy	5%	5%	5%
Overcurrent trip	12/120/1200 μ A	12/120/1200 μ A	12/120/1200 μ A
Current scales (per division)	1/10/100 μ A	1/10/100 μ A	1/10/100 μ A
Armature bar-to-bar test (Baker PPX30A only)			
Maximum voltage	-	-	(no load) 2100 V
Maximum current	-	-	7000 A
Maximum impulse energy	-	-	45 J
Maximum test inductance	-	-	20 μ H
Minimum test inductance	-	-	0.4 μ H
Physical characteristics			
Weight	310 lbs (141 kg)	290 lbs (132 kg)	321 lbs (146 kg)
Power requirements	120 or 240 V AC, 50/60 Hz, 1000 W	120 or 240 V AC, 50/60 Hz, 1000 W	120 or 240 V AC, 50/60 Hz, 1000 W
Test leads	3	1	3+1 (armature)
Dimensions	Without handle and cable storage (W x H x D): 24 x 48 x 26 in (610 x 1219 x 660 mm) With handle and cable storage (W x H x D): 24 x 48 x 33 in (610 x 1219 x 838 mm)		
Operates with	Baker AWA-IV, DX, Controller	Baker DX, Controller	Baker AWA-IV, DX, Controller

Baker Power Pack Controller

The Baker Power Pack Controller is a low-cost option designed to operate the Baker PPX30, Baker PPX40 and Baker PPX30A high-voltage power packs. It is used when performing DC hipot and surge tests to record and display the results. This controller can only be used when attached to a Baker power pack; it is not a stand-alone analyzer.



Benefits

- Displays surge test waveforms
- Displays DC hipot results
- Displays hundreds of coil waveforms for quick analysis
- Stores reference waveforms when coil testing for future reference
- Fast waveform analysis
- Automatic indication of faulty coils
- Fast, efficient coil test function can store up to 400 coil results in a single record
- EAR bar chart analysis for quick identification and reporting of defective coils
- Easily print results directly from controller
- Export results to Surveyor DX desktop report software
- Master / reference waveform for coil test

Report storage and analysis

The Baker Power Pack Controller can store multiple test results in a single folder and automatically attach a time/date stamp. Data is quickly and easily reviewed using the

scroll button on the analyzer’s touch screen interface. Nameplate data is easy to enter, and can be sent directly to a printer through the front-panel USB port. Keep your company’s or client’s brand in front of customers by easily adding a logo to reports and screens. Test results with company logos can be exported to our Surveyor DX desktop report generation software on a PC.

Ease of use

The controller’s large, 8-inch diagonal touch screen is an industrial-grade, ruggedized color display designed to withstand the rigors of daily use in shop and field motor testing environments. The user interface features large, intuitive icons for easy touch operation, even when an operator is wearing insulated electrical gloves.

Options

The Power pack controller is available in three versions:

- Power Pack Controller
- Power Pack Controller with resistance test
- Power Pack Controller with RLC tests

Baker Power Pack Controller specifications

Power requirements	100 to 240 V AC, 50/60 Hz, 2.5 A
Dimensions (H x W x D)	40.6 cm x 35.6 cm x 20.3 cm (16 in x 14 in x 8 in)
Weight (all configurations)	15.4 kg (34 lbs)
VGA touch screen display	8-inch color touch screen
Optional accessories	USB printer, foot switch, remote equipment stop safety lights, Surveyor DX software