

# ADX

## Automated Static Motor Analyzer

**Megger**<sup>®</sup>  
Baker Instruments



- Complete range of essential tests to determine motor health, analyze trends, and find faults.
- These include high voltage tests for surge, PD, DC insulation resistance (IR, DA, PI), and DC HiPot (standard, step, or ramp).
- Plus, low voltage testing for winding resistance, inductance, and capacitance.
- Test voltages from 4 kV to 15 kV (and up to 40 kV coupled with a Megger Baker PPX).
- Available with built-in armature hardware in the ADX 15A model.

### DESCRIPTION

The ADX family includes models designed to perform tests up to 15 kV. The five main options include 4 kV, 6 kV, 12 kV, 15 kV, and 15 kV-A (Armature). These analyzers can be coupled with PPX to increase test voltages to 30 kV or 40 kV for tests on high voltage motors, coils, and generators.

The Megger Baker ADX is used for motor winding, coil, assembled motor, and generator testing. It will be used by Original Equipment Manufacturers, Industrial Maintenance Engineers, Motor Repair Shops, and Service Engineers working on equipment in the field for verification, validation, fault finding, and research; or to serve as part of a maintenance program.

Tests Performed:

- Winding Resistance
- Inductance
- Capacitance
- Insulation Resistance
- Dielectric Absorption (DA)
- Polarization Index (PI)
- DC HiPot
- DC Step-Voltage
- DC Continuous Ramped
- Surge analysis with EAR+™
- Partial Discharge on Surge



### FEATURES

- Detachable IEC61010-compliant HV / LV Kelvin test leads
- PowerDB Dashboard secure cloud-based analysis software
- 10.4-inch daylight viewable touch screen
- Industrial IP68 Waterproof Silicone Keyboard
- Choice of Manual, Automatic, or Sequence testing
- Screen-level context sensitive help
- Adaptable search capability
- Asset management tools
- Configurable Route based testing
- Pulse-to-Pulse and Line-to-Line Error Area Ratio analysis
- Import existing databases from AWA and DX
- Android operating system

- 2 x USB ports and ethernet connection
- HDMI port for duplicating screens
- Wi-Fi and Bluetooth enabled
- Foldable viewing stand

### BENEFITS

- Asset-centric approach provides opportunities for turnkey testing.
- Sequence mode leverages the approach for fully-automatic testing.
- Data analysis features identify service needs and reduce down time.
- Remote asset configuration via PowerDB Dashboard frees the ADX for testing needs.
- Separating Asset from Installation opens opportunities for data analysis.
- Battery backup allows transport between assets without needing to shut down.

### DATA STORAGE, ANALYSIS, REPORT GENERATION, AND MANAGEMENT

All test results are saved and stored locally on the ADX, and are automatically synchronized with the cloud-based application PowerDB Dashboard for users with internet connection.

Test results can be analyzed through Dashboard. Comparing current and historical data can reveal downward trends and other issues, indicating when action should be taken to service assets and avoid unplanned downtime.

The built-in Report Generator provides on-board test result viewing that can be sent directly to a printer. Reports can be printed from the ADX wirelessly to a networked printer, or directly via a USB-connected printer. Data can be accessed securely through PowerDB Dashboard to view and download reports in either MS Word or PDF. Data can also be exported in other formats such as CSV.

The ADX can function as an off-line system, utilizing PowerDB Print Engine software to create, edit, and print reports on a local computer. Data is transferred via ADX export to a USB drive, uploaded to a local computer, and edited as an MS Word document.

ADX software allows users to easily create, view, and edit assets, test configurations, installations, and routes. The asset-centric approach provides administrators and management with all the tools needed to set up a turnkey environment, simplifying the asset testing process for operators.

Asset configuration can be done directly on the ADX or remotely via PowerDB Dashboard. The integrated system allows access through any internet-connected device to create and edit assets, test configurations, installations, and routes. No matter where the changes are made, they are automatically synchronized between the ADX and PowerDB Dashboard via internet connection.



### EASE OF USE

The ADX has a large, 10.4-inch touch screen. The industrial-grade, daylight-viewable color display was designed to work in all environments. The user interface features large, intuitive icons for easy touch operation—even when an operator is wearing insulated electrical gloves.

### ADDITIONAL KEY FEATURES

- High-definition graphical user interface displays surge test waveforms.
- Displays DC HiPot results.
- Displays hundreds of coil waveforms for quick analysis.
- Stores reference waveforms for comparison coil testing.
- Secure cloud-based data storage
- Ability to create and edit assets and test configurations remotely through PowerDB Dashboard
- Internal battery backup secures data due to unexpected power loss.

### ACCESSORIES

#### Megger DLRO Connect system

Used for low-voltage testing along with the RLC adapter.



Number	Description	Part Number
1	ADX modular lead, DLRO Connect accessories. Connects to the ADX RLC adapter and extension lead.	1014-029
2	Duplex connector extension lead 3 m long. Connects to ADX modular lead and any DLRO Connect termination.	1006-460
3	Duplex connector handspike probe with spring-loaded tips.	1006-450
4	Duplex connector concentric handspike.	1006-448
5	Duplex connector handspike twist probe with spring-loaded tips.	1006-449
6	Duplex connector Kelvin clip 1. Touch-proof clip with adjustable jaws.	1006-451
7	Duplex connector Kelvin clip 1. General-purpose heavy-duty clip.	1006-447

### Remote Test Status Indication Lights and Remote E-Stop



Number	Description
1	Remote Test Status Indication Lights E-Stop (TSIL-ES).
2	Remote Test Status Indication Lights (TSIL). A Stop Jumper must be installed on the open connector if a remote

### Foot switch

You can connect the footswitch (optional) to the Megger Baker ADX host or auxiliary units; it works in parallel with the Start (PTT) button. The footswitch enables hands-free use of the unit and gives you additional operating position options.



### ADX Armature Surge Clips

The ADX Armature Surge Clips (ADX-ASC) are commonly used during coil and DC motor testing. The longer middle section of the clips employs a shielded cable.



### Surge Test Probes and Clips

The Megger Baker ADX features accessories that facilitate surge testing including the Megger ADX Armature Surge Hand-held Probes (ADX-ASP), which are used during armature bar-to-bar testing.



### ADX Armature Surge accessory

For armature bar-to-bar surge testing, you can use the ADX Armature Surge accessory—(ADX ARM SRG).



### SPECIFICATIONS

#### *Physical specifications*

Model	Mass	Size (W x D x H)
ADX15	46.3 lbs. (21 kg)	18 x 23 x 8.5 in (457 x 584 x 216 mm)
ADX15A	50.7 lbs. lbs. (23 kg)	18 x 23 x 8.5 in (457 x 584 x 216 mm)

#### *System specifications*

Parameter	Value
Internal memory	RAM 2GB DDR3
Internal storage	8GB MMC and 480GB SSD Drive
Processor speed	1.0 Ghz (Quad core)
User interface	Capacitive touch screen, mouse, keyboard, stylus
Platform	Android
Display	10.4-in touch screen
Resolution	XGA 1024 x 768
Bluetooth	4.1 / BLE with CSA2 support
Wi-Fi	802.11 a/b/g/n Dual Band 2.4 / 5 GHz
Ethernet	Gigabit Ethernet 10/100/1000 Mbps
USB flash drive	USB 2.0
Battery Backup	4+ hours standby time

#### *Languages supported—user interface and documentation localization*

Language	Regional Translations
English	
French	Europe
Spanish	Europe and Latin America
Portuguese	Europe and Brazil
German	
Czech	
Russian	
Chinese	Traditional and Simplified

### *xInstrument rating summary*

Parameter	Variant / Option	Value
Internal and operating environment		Pollution degree 2
Operating altitude		≤ 3,000 m (9,842 ft)
Operating temperature		5–40° C (41–104° F)
Operating humidity		≤ 80% RH for temperature up to 31°C (88° F), decreasing linearly to 50% RH at 40° C (104° F).
Storage temperature		0–60° C (32–140° F)
Ensure that the unit has sufficient time to warm to ambient temperature before operating after storing the unit in a colder area.		
Storage humidity		Less than 95% non-condensing.
IP Rating		IP40
Mains Power Input		90–264 VAC, 47–63 Hz, 2.5 A, CAT II 300 V
Maximum generated voltage	ADX4	Nominal 100 V–4 kV
Peak voltage for AC or DC test	ADX6	Nominal 100 V–6 kV
	ADX12	Nominal 100 V–12 kV
	ADX15	Nominal 100 V–15 kV
	ADX15A	Nominal 100 V–15 kV
Maximum input voltage rating		Must be connected only to isolated, de-energized circuits. See Caution below.
Standard Kelvin 4-wire test leads voltage rating		16 kV DC peak



### **CAUTION**

The ADX must be connected only to isolated, de-energized circuits. Connection to live circuitry can expose personnel to severe electrical shock risk, permanently damage tester, and void warranty. Refer to chapter 1, “General Operating and Safety Information” for complete information on safely connecting and operating the unit.

### DC IR and HiPot test specifications

Parameter	Variant	Value
Voltage accuracy		$\pm 2\% \pm 5 \text{ V}$
Maximum output current		1.2 mA
Displayed current resolution		1 nA
Current measurement resolution		16 pA
Current accuracy	Test voltage 0–2 kV	$\pm 4\% \pm 5 \text{ nA}$
	Test voltage 2–4 kV	$\pm 4\% \pm 10 \text{ nA}$
	Test voltage 4–8 kV	$\pm 4\% \pm 25 \text{ nA}$
Overcurrent trip settings	Adjustable to 1.2 mA	Overcurrent trip settings
IR measurement range	100 k $\Omega$ –1 T $\Omega$	IR measurement range

### Surge test specifications

Parameter	Variant	Value
Nominal surge capacitance		100 nF
Typical surge energy		11.25 J at 15 kV
Typical short circuit current		700 A
Repetition rate		4 Hz nominal
Minimum inductance	4 kV	70 $\mu\text{H}$
	6 kV	100 $\mu\text{H}$
	12 kV	120 $\mu\text{H}$
	15 kV	170 $\mu\text{H}$
Voltage accuracy		$\pm 10\%$

### xSurge with Partial Discharge (PD) test specifications

Parameter	Value
Inception and extinction voltages (PDIV, PDEV)	Measured per IEC 61934
Repetitive inception and extinction voltages (RPDIV, RPDEV)	Measured per IEC 61934
Programmable PD threshold range (Resolution to 0.1 mV)	1.0–999 mV
PD time scaling	1.024–26,400 $\mu\text{s}$

### Resistance test specifications

Parameter	Value
Measurement range	0.001 m $\Omega$ –100 K $\Omega$
4-wire measurement	Yes
Maximum test current	10 A
Accuracy	$\pm 2\% \pm 0.25 \text{ m}\Omega$

### Inductance test specifications

Parameter	Value
Measurement range	0.01 $\mu$ H–10 H (120 Hz)
0.01 $\mu$ H–200 mH (1000 Hz)	
4-wire measurement	Yes
Test frequency	120, 1000 Hz

### Capacitance test specifications

Parameter	Value
Measurement range	0.01 nF–50 $\mu$ F
4-wire measurement	Yes
Test frequency	4000 Hz
Accuracy	$\pm$ 5% $\pm$ 1 nF

### ADX testing and safety standards compliance

Standard	Topic
IEC 61326-1 Ed. 2.0 2012-07	Electrical equipment for measurement, control, and laboratory use - EMC requirements – Table 1.
FCC 47CFR: Part 15 Subpart B: 2020	Unintentional Radiators
ICES-003 Issue 7, October 2020	Limits and Methods of Measurement to Information Technology Equipment (including Digital Apparatus).
IEC 61010-031:2015	Safety requirements for electrical equipment for measurement, control, and laboratory use. Safety requirements for hand-held probe assemblies for electrical measurement and test.
IEC 61010-2-034:2017	Safety requirements for electrical equipment for measurement, control, and laboratory use. Particular requirements for measurement equipment for insulation resistance and test equipment for electric strength.
IEC 62133-2:2017	Safety Test Standard of Li-Ion
CISPR 11:2009 +A1:2010, Class A	Radiated Emissions and AC Mains Conducted Emissions
IEC 61000-3-2:2014	Harmonics
IEC 61000-3-3:2013	Flicker
IEC 61000-4-2:2009	Electro-Static Discharge Immunity Test
IEC 61000-4-3:2010	Radiated, Radio-Frequency, Electromagnetic Immunity
IEC 61000-4-4:2012	Electrical Fast Transient/Burst Immunity Test
IEC 61000-4-5:2006	Immunity to Surges
IEC 61000-4-8:2010	Power Frequency Magnetic Field Immunity Test
IEC 61000-4-11:2004	Voltage Dips/Interruptions Immunity Test



### ORDERING INFORMATION

Item Description	Part Number
ADX 4 4 kV Standard ADX with DC Insulation Resistance (IR, DA, PI), DC HiPot (standard, Step, Ramp), and Surge tests only.	1013-911
ADX-4-RLC 4 kV Standard ADX with RLC (low voltage Resistance, Inductance, and Capacitance), DC Insulation Resistance (IR, DA, PI), DC HiPot (standard, Step, Ramp), and Surge tests.	1013-916
ADX-4-RLC-PD 4 kV Standard ADX with RLC (low voltage Resistance, Inductance, and Capacitance), DC Insulation Resistance (IR, DA, PI), DC HiPot (standard, Step, Ramp), Surge, and Partial Discharge tests.	1013-920
ADX-4-RLC-PD-PPI 4 kV Standard ADX with RLC (low voltage Resistance, Inductance, and Capacitance), DC Insulation Resistance (IR, DA, PI), DC HiPot (standard, Step, Ramp), Surge, and Partial Discharge tests. Includes Power Pack Interface.	1013-925
ADX-6 6 kV Standard ADX with DC Insulation Resistance (IR, DA, PI), DC HiPot (standard, Step, Ramp), and Surge tests only.	1013-912
ADX-6-RLC 6 kV Standard ADX with RLC (low voltage Resistance, Inductance, and Capacitance), DC Insulation Resistance (IR, DA, PI), DC HiPot (standard, Step, Ramp), and Surge tests.	1013-917
ADX-6-RLC-PD 6 kV Standard ADX with RLC (low voltage Resistance, Inductance, and Capacitance), DC Insulation Resistance (IR, DA, PI), DC HiPot (standard, Step, Ramp), Surge, and Partial Discharge tests.	1013-921
ADX-6-RLC-PD-PPI 6 kV Standard ADX with RLC (low voltage Resistance, Inductance, and Capacitance), DC Insulation Resistance (IR, DA, PI), DC HiPot (standard, Step, Ramp), Surge, and Partial Discharge tests. Includes Power Pack Interface.	1013-926

Item Description	Part Number
ADX 12 12 kV Standard ADX with DC Insulation Resistance (IR, DA, PI), DC HiPot (standard, Step, Ramp), and Surge tests only.	1013-913
ADX-12-RLC 12 kV Standard ADX with RLC (low voltage Resistance, Inductance, and Capacitance), DC Insulation Resistance (IR, DA, PI), DC HiPot (standard, Step, Ramp), and Surge tests.	1013-918
ADX-12-RLC-PD 12 kV Standard ADX with RLC (low voltage Resistance, Inductance, and Capacitance), DC Insulation Resistance (IR, DA, PI), DC HiPot (standard, Step, Ramp), Surge, and Partial Discharge tests.	1013-922
ADX-12-RLC-PD-PPI 12 kV Standard ADX with RLC (low voltage Resistance, Inductance, and Capacitance), DC Insulation Resistance (IR, DA, PI), DC HiPot (standard, Step, Ramp), Surge, and Partial Discharge tests. Includes Power Pack Interface.	1013-927
ADX-15 15 kV Standard ADX with DC Insulation Resistance (IR, DA, PI), DC HiPot (standard, Step, Ramp), and Surge tests only.	1013-914
ADX-15-RLC 15 kV Standard ADX with RLC (low voltage Resistance, Inductance, and Capacitance), DC Insulation Resistance (IR, DA, PI), DC HiPot (standard, Step, Ramp), and Surge tests.	1013-919
ADX-15-RLC-PD 15 kV Standard ADX with RLC (low voltage Resistance, Inductance, and Capacitance), DC Insulation Resistance (IR, DA, PI), DC HiPot (standard, Step, Ramp), Surge, and Partial Discharge tests.	1013-923
ADX-15-RLC-PD-PPI 15 kV Standard ADX with RLC (low voltage Resistance, Inductance, and Capacitance), DC Insulation Resistance (IR, DA, PI), DC HiPot (standard, Step, Ramp), Surge, and Partial Discharge tests. Includes Power Pack Interface.	1013-928

# ADX

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Item Description	Part Number
ADX-15A 15 kV Standard ADX with DC Insulation Resistance (IR, DA, PI), DC HiPot (standard, Step, Ramp), and Surge tests only. Includes Armature testing hardware and accessories.	1013-915
ADX-15A-RLC-PD 15 kV Standard ADX with RLC (low voltage Resistance, Inductance, and Capacitance), DC Insulation Resistance (IR, DA, PI), DC HiPot (standard, Step, Ramp), Surge, and Partial Discharge tests. Includes Armature testing hardware and accessories.	1013-924
Footswitch Operators initiate tests using the foot switch rather than the ADX front panel test switch during coil testing.	1014-110
ADX Armature Surge Accessory	1014-103
ADX Armature Surge Probes	1014-104
ADX Armature Surge Clips	1014-105
ADX Low Voltage Kelvin Test Leads with Clips	1011-928
ADX Low Voltage Kelvin Test Leads with Probes	1011-929
ADX Standard Test Lead Set	1014-106
ADX Custom Test Lead Set	1014-107

Item Description	Part Number
Megger Baker Test Station Indication Lights (TSIL) Remote accessory box that displays flashing red light when actively testing and green light when no testing is in progress.	1014-108
Megger Baker Test Status Indication Light Equipment Stop (TSIL-ES) Remote accessory box for ADX equipment stop with a button press. Also displays flashing red light when actively testing and green light when no testing is in progress	1014-109
Pelicase	1014-115
ADX Backpack	1014-114
ADX Test Lead - 15kV Red and labeling kit	1014-116
ADX Test Lead - 15kV Black	1014-117
2 x ADX Duplex 3-meter test leads with Duplex pistol type probes	1014-029
2 x DLRO Duplex 3-meter test leads - 4mm plugs to Connect system socket	1014-072
ADX Keyboard	1014-111
ADX Front Cover	1014-112

For complete Megger Baker Instruments EU declarations of conformity visit <https://megger.com/company/about-us/legal/eu-dofc>

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ISO 9001

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