ADX
Automated Static Motor Analyzer

Megger
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).**

DESCRIPTION

The ADX family includes models designed to perform tests at voltages up to 15 kV. The five main voltage options include 4 kV, 6 kV, 12 kV, 15 kV, and each voltage range has further feature options for low voltage winding testing, Partial Discharge and Armature testing. Couple the ADX with a PPX to increase test voltages up to 40 kV for testing high voltage assets.

The Megger Baker ADX is used for motor winding, coil, assembled motor, and generator testing. It can 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 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.

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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 MS Word. 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.

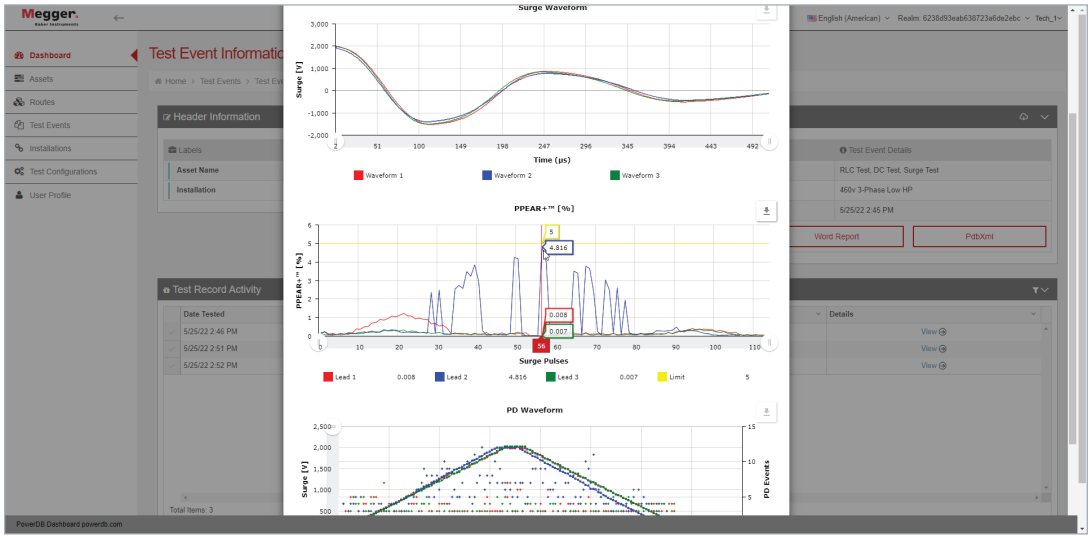
Asset configuration can be done directly on the ADX or remotely via PowerDB Dashboard. The integrated system allows access through any internet-connected device to create and edit assets, test configurations, installations, and routes. No matter where the changes are made, they are automatically synchronized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



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SPECIFICATIONS

Hardware and system specifications

Parameter	Value
Weight	ADX4, 6, 12, 15 46.3 lbs. (21 kg) ADX Armature 52 lbs (23 kg)
Dimensions (W x D x H)	18 x 23 x 8.5 in (457 x 584 x 216 mm)
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
Wi-Fi	802.11 a/b/g/n Dual Band 2.4 / 5 GHz
Ethernet	Gigabit 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	
Polish	*Available soon*
Russian	
Chinese	Traditional and Simplified

Instrument rating summary

Parameter	Variant	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 *Ensure that the unit has sufficient time to warm to ambient temperature before operating after storing the unit in a colder area.*		0–60° C (32–140° F)
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
Voltage limits	ADX4	Nominal 100 V–4 kV
	ADX6	Nominal 100 V–6 kV
	ADX12	Nominal 100 V–12 kV
	ADX15	Nominal 100 V–15 kV
Standard Kelvin 4-wire test leads voltage rating		16 kV DC peak
Maximum input voltage rating		See Caution below

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 of the ADX User Guide, "General Operating and Safety Information" for complete information on safely connecting and operating the unit.

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DC IR and HiPot test specifications

Parameter	Variant	Value
Voltage accuracy		± 2% ± 5 V
Maximum output current		1.2 mA
Displayed current resolution		1 nA
Current measurement resolution		16 pA
Current accuracy	Test voltage 0–2 kV	± 4% ± 5 nA
	Test voltage 2–4 kV	± 4% ± 10 nA
	Test voltage 4–8 kV	± 4% ± 25 nA
Overcurrent trip settings		Adjustable to 1.2 mA
IR measurement range		100 kΩ–1 TΩ

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 µH
	6 kV	100 µH
	12 kV	120 µH
	15 kV	170 µH
Voltage accuracy		±10%

Surge 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 µs

Resistance test specifications

Parameter	Value
Measurement range	0.001 Ω–100 KΩ
4-wire measurement	Yes
Maximum test current	10 A
Accuracy	±2% ±0.25 mΩ

Capacitance test specifications

Parameter	Value
Measurement range	0.01 nF–50 µF
4-wire measurement	Yes
Test frequency	4000 Hz
Accuracy	±5% ±1 nF

Inductance test specifications

Parameter	Value
Measurement range	0.01 µH–10 H (120 Hz) 0.01µH–200 mH (1000 Hz)
4-wire measurement	Yes
Test frequency	120, 1000 Hz
Accuracy	±5% ±5 µH

Armature specifications

Parameter	Value
Maximum surge voltage*	1900 V (no load)
Maximum surge current	5000 A
Maximum surge energy	11.3 J
Typical range of test inductance**	0.0 µH to 20 µH

* Maximum test voltage achievable is load dependent

** 0.29 µH is a typical minimum load for inducing minimum Paschen's breakdown voltage. The instrument is fully protected against running a test into an open circuit (>> 20 µH) or a complete short circuit (0.0 µH).

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Testing and safety standards compliance

Standard	Topic
IEC 61326-1 2020 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 61010-031:2022	Safety requirements for electrical equipment for measurement, control, and laboratory use. Safety requirements for hand-held probe assemblies for electrical measurement and test.
IEC 61010-2-034:2023	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 11:2015+AMD1:2016+AMD2:2019	Radiated Emissions and AC Mains Conducted Emissions
IEC 61000-3-2:2018+AMD1:2020	Harmonics
IEC 61000-3-3:2013+AMD1:2017+AMD2:2021	Flicker
IEC 61000-4-2:2009	Electro-Static Discharge Immunity Test
IEC 61000-4-3:2020	Radiated, Radio-Frequency, Electromagnetic Immunity
IEC 61000-4-4:2012	Electrical Fast Transient/Burst Immunity Test
IEC 61000-4-5:2014	Immunity to Surges
IEC 61000-4-8:2010	Power Frequency Magnetic Field Immunity Test
IEC 61000-4-11:2020	Voltage Dips/Interruptions Immunity Test

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ACCESSORIES			
	Product	Part Number	Description
	ADX-PLC	1014-115	Transport case for ADX
	ADX-ASR	1014-103	Armature Surge Accessory
	ADX-ASP	1014-104	ADX Armature Surge Probes
	ADX-ASC	1014-105	ADX Armature Surge Clips
	ADX-LVC	1011-928	ADX Low Voltage Kelvin Test Leads with Clips
	ADX-LVP	1011-929	ADX Low Voltage Kelvin Test Leads with Probes
	ADX-FSW	1014-110	ADX Foot Switch
	ADX-LV1	1014-029	2 x ADX Duplex 3 mtr test leads with Duplex pistol type probes
	KC1-C	1006-447	KC1-C KELVIN CLIP-CONNECT (X1) - Use with ADX-LV1
	CP1-C	1006-448	CP1-C CONCENTRIC PROBE-CONNECT (X1) - Use with ADX-LV1
	DTP1-C	1006-449	DTP1-C DUPLEX TWIST PROBE-CONNECT (X1) - Use with ADX-LV1
	DP1-C	1006-450	DP1-C DUPLEX PROBE-CONNECT (x1) - Use with ADX-LV1
	KC2-C	1006-451	KC2-C INSULATED KELVIN CLIP-CONNECT (X1) - Use with ADX-LV1

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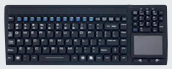
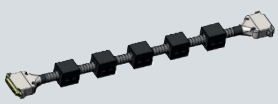
ACCESSORIES			
	Product	Part Number	Description
	ADX-KEY	1014-111	ADX Keyboard
	ADX-BPK	1014-114	ADX Backpack
	ADX-TSL	1014-108	ADX Safety Lights
	ADX-EQS	1014-109	ADX Equipment Stop with Warning Lights
	ADX-EQJ	1014-308	Equipment Stop Outlet Over-ride Jumper
	ADX-STL	1014-106	ADX Standard Test Lead Set (3x Red + 1x Black)
	ADX-TL2	1014-119	ADX Test Lead Set (3x Red + 1x Black) 2m
	ADX-TLR	1014-116	ADX Test Lead - Single 15kV Red test lead and labelling kit
	ADX-TLB	1014-117	ADX Test Lead - Single 15kV Black test lead and labelling kit
	ADX-CTL	1014-107	ADX Custom Test Lead Set (length) - by enquiry
	ADX-AGS	1014-600	ADX Ground Strap
	ADX-PCC	1015-495	ADX / PPX Tether Cable

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ORDERING INFORMATION		
Part No.	**Name**	**Description**
1013-911	ADX-4	ADX with Surge and Insulation Resistance tests only (IR, PI, DA, Step Voltage, DC HiPot)
1013-912	ADX-6	
1013-913	ADX-12	
1013-914	ADX-15	
1015-887	ADX-4-A	ADX with Surge and Insulation Resistance tests (IR, PI, DA, Step Voltage, DC HiPot) and Armature coil
1015-895	ADX-6-A	
1015-903	ADX-12-A	
1013-915	ADX-15-A	
1013-916	ADX-4-RLC	ADX with Surge and Insulation Resistance tests (IR, PI, DA, Step Voltage, DC HiPot) and Low Resistance, Inductance and Capacitance
1013-916	ADX-4-RLC	
1013-917	ADX-6-RLC	
1013-918	ADX-12-RLC	
1013-919	ADX-15-RLC	
1015-888	ADX-4-RLC-A	ADX with Surge and Insulation Resistance tests (IR, PI, DA, Step Voltage, DC HiPot) and Low Resistance, Inductance and Capacitance and Armature coil
1015-896	ADX-6-RLC-A	
1015-904	ADX-12-RLC-A	
1015-911	ADX-15-RLC-A	
1015-889	ADX-4-PPI	ADX with Surge and Insulation Resistance tests (IR, PI, DA, Step Voltage, DC HiPot) fitted with PowerPack Interface
1015-897	ADX-6-PPI	
1015-905	ADX-12-PPI	
1015-912	ADX-15-PPI	
1015-890	ADX-4-PPI-A	ADX with Surge and Insulation Resistance tests (IR, PI, DA, Step Voltage, DC HiPot) fitted with PowerPack Interface and Armature coil
1015-898	ADX-6-PPI-A	
1015-906	ADX-12-PPI-A	
1015-913	ADX-15-PPI-A	

ORDERING INFORMATION		
Part No.	**Name**	**Description**
1015-891	ADX-4-RLC-PPI	ADX with Surge and Insulation Resistance tests (IR, PI, DA, Step Voltage, DC HiPot) and Low Resistance, Inductance and Capacitance fitted with Power Pack Interface
1015-899	ADX-6-RLC-PPI	
1015-907	ADX-12-RLC-PPI	
1015-914	ADX-15-RLC-PPI	
1015-892	ADX-4-RLC-PPI-A	"ADX with Surge and Insulation Resistance tests (IR, PI, DA, Step Voltage, DC HiPot) and Low Resistance, Inductance and Capacitance fitted with Power Pack Interface and Armature coil"
1015-900	ADX-6-RLC-PPI-A	
1015-908	ADX-12-RLC-PPI-A	
1015-915	ADX-15-RLC-PPI-A	
1013-920	ADX-4-RLC-PD	"ADX with Surge and Insulation Resistance tests (IR, PI, DA, Step Voltage, DC HiPot) and Low Resistance, Inductance and Capacitance and Partial Discharge"
1013-921	ADX-6-RLC-PD	
1013-922	ADX-12-RLC-PD	
1013-923	ADX-15-RLC-PD	
1015-893	ADX-4-RLC-PD-A	"ADX with Surge and Insulation Resistance tests (IR, PI, DA, Step Voltage, DC HiPot) and Low Resistance, Inductance and Capacitance and Partial Discharge and Armature coil"
1015-901	ADX-6-RLC-PD-A	
1015-909	ADX-12-RLC-PD-A	
1013-924	ADX-15-RLC-PD-A	
1013-925	ADX-4-RLC-PD-PPI	"ADX with Surge and Insulation Resistance tests (IR, PI, DA, Step Voltage, DC HiPot) and Low Resistance, Inductance and Capacitance and Partial Discharge and Power Pack Interface"
1013-926	ADX-6-RLC-PD-PPI	
1013-927	ADX-12-RLC-PD-PPI	
1013-928	ADX-15-RLC-PD-PPI	
1015-894	ADX-4-RLC-PD-PPI-A	"ADX with Surge and Insulation Resistance tests (IR, PI, DA, Step Voltage, DC HiPot) and Low Resistance, Inductance and Capacitance and Partial Discharge and Power Pack Interface and Armature coil"
1015-902	ADX-6-RLC-PD-PPI-A	
1015-910	ADX-12-RLC-PD-PPI-A	
1015-916	ADX-15-RLC-PD-PPI-A	