



K | KASTRA



Corporate Presentation

Electrical testing solutions for the oil sector in Equatorial Guinea
In collaboration with MEGGER

INTRODUCTION

KAISTRA SL, your partner in MEGGER solutions.
At KAISTRA, we offer you MEGGER products, synonymous with quality and precision. We provide fast, reliable service and expert advice so that you always find the solution you need..

WHO ARE WE?

- ◆ An Equatorial Guinean company with more than a decade of experience in the maintenance and infrastructure sector.
- ◆ Local partner of international companies like MEGGER, guaranteeing availability, in-country logistics, and specialized support.
- ◆ Recognized for our operational efficiency, compliance, reliability, and commitment to local development.
- ◆ We support infrastructure projects with practical solutions tailored to local needs.



WHY CHOOSE KASTRA AS YOUR LOCAL PARTNER?

Benefits of working with us:

Permanent local presence for personalized and prompt service

Knowledge of the administrative and legal environment in Equatorial Guinea.

Local billing in XAF / national contracts without international banking complications

After-sales service and continuous technical support

After-sales service and continuous technical support

Partnerships with leading brands such as MEGGER for certified equipment with international warranty

OUR VALUES

01/ 

EFFICIENCY

02/ 

SAFETY

03/ 

TRANSPARENCY

04/

QUALITY

05/

**SOCIAL AND ENVIRONMENTAL
RESPONSIBILITY**



OUR SERVICES INCLUDE:



Cable Test and Diagnostics

Tests that we enable include:

- Cable fault location
- DC and AC insulation testing
- VLF testing
- Sheath testing
- Partial discharge analysis, mapping, and test services
- Time domain reflectometry
- Tan delta/power factor diagnostics
- Withstand testing



Protection Relays and Systems

Tests that we enable include:

Complex 3-phase testing

Single phase testing

Primary and secondary injection



Circuit Breakers

Tests that we enable include:

Contact resistance

Timing

Motion

Dynamic resistance

Vibration

DualGround™ Method



Transformer Test and Diagnostics

Tests that we enable include:

- Winding resistance
- Turns ration measurement
- Oil condition tests
- Dynamic resistance tests
- Sweep frequency response analysis
- Dielectric frequency response measurement
- Partial discharge test services

Low-Voltage Installations

Tests that we enable include:

Insulation testing

Continuity testing

Loop impedance

RCD protection

Ground/Earth testing

PAT testing

General Electrical Testing

Tests that we enable include:

5, 10 and 15 kV insulation resistance

Low resistance and continuity

Power quality

Online and offline partial discharge

Battery load test and cell impedance

Motor Generator Testing

Tests that we enable include:

Stator and rotor winding insulation

Surge test

Winding resistance

Load tests

On and offline testing

Power quality





Relevant Testing Equipment

Best-in-Class products

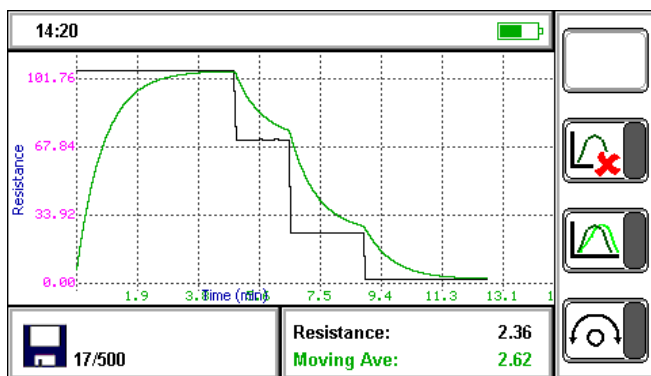


OUR PRODUCTS

DET2/3 - Advanced Earth (Ground) Tester



- High resolution of 1 mΩ, ideal for large earth (ground) systems
- Versatile test modes
- High accuracy for earth (ground) electrode grid and soil resistivity tests
- Rechargeable battery power that can last all day with a fast re-charge (up to 10 hours)
- Robust instrument with IP65 protection
- Automatic test frequency selection, with filters and high current features
- Diagnostic trace display
- Data storage
- Large colour display that shows numeric and graphical results



- Use of the latest processors and a large internal memory allows for immediate calculations of resistivity (Wenner or Schlumberger method) and the ability to save a complete day's worth of test results
- Test result data can be downloaded directly through a USB flash drive or straight to a Windows PC running PowerDB™ software.

DET24C- Digital Earth Clamps



- Elliptical clamp shape improves access to earth cables and straps up to 50 mm
- Low maintenance flat jaw interface
- Measures ground resistance from $0.05\ \Omega$ to $1500\ \Omega$
- Measures true RMS ground leakage current from $0.5\ \text{mA rms}$ to $35\ \text{A rms}$
- CAT IV 600 V safety rating
- Backlit LCD Display

- ❑ The earth resistance clamp meters are particularly suitable for measuring earth resistance in various installations such as buildings, pylons and RF transmitter sites without system disconnection.
- ❑ In addition, they can be used for the inspection and verification of lightning protection systems and virtually any installation where a current loop can be generated.

MOM2 – Contact/Low Resistance micro-Ohmmeter



- Up to 220 A
- Battery supplied
- Lightweight – 1 kg
- Safe test – DualGround™
- Auto range: 1 $\mu\Omega$ to 1000 m Ω
- Bluetooth® PC communication
- Complies with IEEE and IEC standards

INGVAR- Primary Injection Test System



- **Most Advanced Primary Current Injection Test System to simplify all types of switchgear and CT commissioning, ground grid, circuit breaker testing and more**
- **Up to 5000 A output current**
- **Two units, each of about 20 kg (44 lbs), simplifies transportation**
- **Unique I/30 function allows the current to be pre-set using low current to prevent test sample heating, thus eliminating corruption of test result**

SVERKER 900

3-Phase Relay and substation test system



- The toolbox for substation 3-phase testing
- Three currents and four voltages
- Stand-alone functionality
- Rugged and reliable for field use
- Generation of 900 V and 105 A in single phase mode
- Secondary and primary testing

APPLICATION

- Commissioning and maintenance of distributed and generator power Substation
- Protection relays
 - ▶ Electromechanical relays
 - ▶ Static relays
 - ▶ Numerical relays
 - ▶ Self-powered relays
- Plotting current transformer excitation curves
- Current and voltage transformer ratio tests
- Burden measurement for CT circuits
- Polarity (direction) tests
- Impedance measurement
- Primary injection in switchgear
 - ▶ Three phase
 - ▶ Single phase
- Checking SCADA annunciation and measurement values
- Wiring check
- Relays with current transformer-operated trip release unit

TRAX Transformer and Substation Test System



- Power transformer
 - ▶ Ratio and phase
 - ▶ Winding resistance
 - Single phase up to 100 A
 - Three-phase/six windings up to 16 A (with TSX 300/303)
 - ▶ Tap changer testing (single-phase or three-phase)
 - Continuity
 - Dynamic current
 - Dynamic voltage
 - True dynamic resistance (new method for measuring timing and resistances)
 - Ripple
 - Slope
 - Motor current
 - ▶ Demagnetization (adaptive method for fast and efficient process)
 - ▶ Magnetic balance
 - ▶ Excitation current
 - ▶ Leakage reactance/short-circuit impedance
 - ▶ Zero-sequence impedance
 - ▶ Frequency response of stray losses (FRSL)
 - ▶ Tan delta/power factor with individual temperature correction (ITC) and voltage dependence detection (VDD)
 - ▶ Capacitance
- Voltage transformer
 - ▶ Ratio and polarity
 - ▶ Phase and magnitude error
 - ▶ Secondary burden (manual)
 - ▶ Voltage withstand (manual)
- Resistance testing
 - ▶ Contact resistance
 - ▶ DualGround™ measurements
- Circuit breaker testing
 - ▶ Main and resistor contact timing: O, C, OC, CO, OCO
 - ▶ Operating voltage
 - ▶ Coil current
 - ▶ Contact resistance
 - ▶ Breaker graphs: Timing, voltage and current
- Primary testing
 - ▶ Circuit breakers
 - ▶ General primary injection tests
- AC insulation testing
 - ▶ Tan delta/Power factor
 - ▶ Capacitance
 - ▶ Tip-up testing
 - ▶ 1-505 Hz frequency range

Power factor/Dissipation factor ($\tan\delta$) Test Set

DELTA4000 Series

12 kV Insulation Diagnostic System



- Wide frequency test voltage (1-500 Hz), includes DFR diagnostic capability
- Accurate measurement results under high noise conditions as tested to 765 kV substations
- Lightweight, rugged two-piece design
- Patented built-in individual temperature correction eliminates the need for temperature correction tables
- Industrial 300 mm (12 in.) touch-screen controller

APPLICATIONS

- | | |
|-----------------------------|--------------------|
| ■ Power transformers | ■ Bushings |
| ■ Distribution transformers | ■ Cables |
| ■ Instrument transformers | ■ Capacitors |
| ■ Rotating machines | ■ Circuit breakers |
| ■ Oil insulation | ■ Surge arresters |

STX40- Portable cable fault location unit



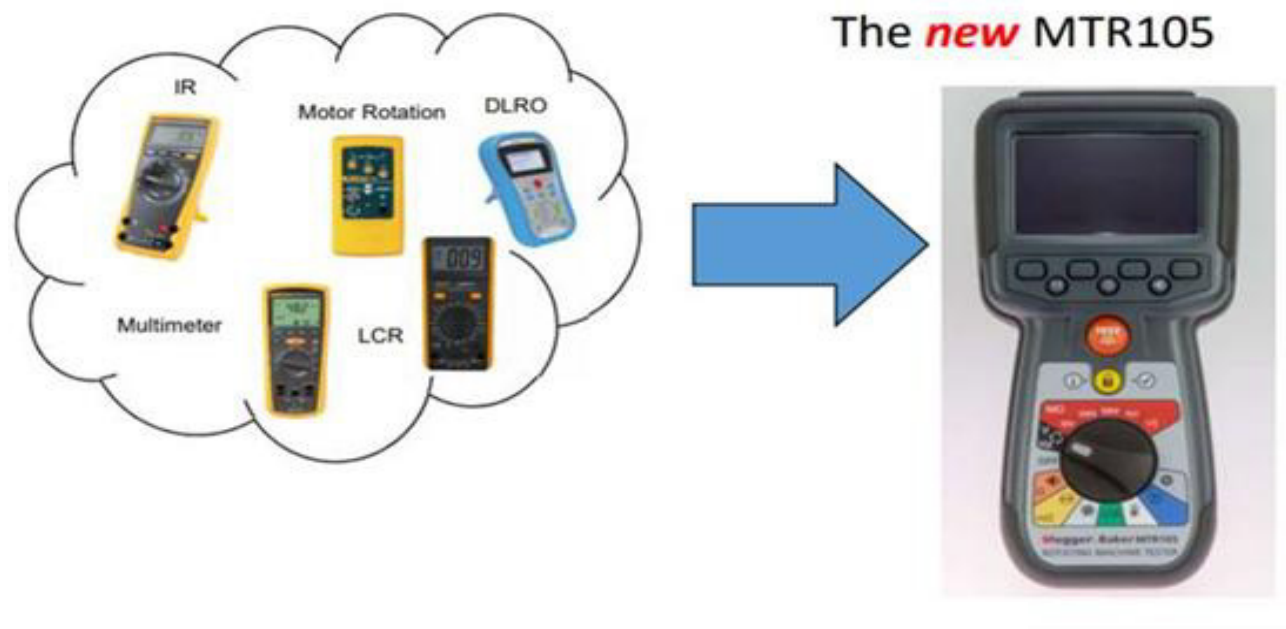
- Field-ready outdoor unit, IP 43
- Single “turn & click” rotary knob user interface
- Fully automated operation via software controlled motorised switches
- Surge/Thump energy 2,000 Joule
- Integrated radar (Teleflex®-type TDR)
- DC testing up to 40 kV, surging/thumping up to 32 kV, burning up to 40 kV
- Prelocation methods: Inductive ARM with Multishot, ICE and DECAY
- Built-in safety circuits for earth connection monitoring (F-Ohm) and touch potential monitoring (F-Voltage)

PD SCAN - Online PD handheld scanner



- ☐ For quick condition assessment of switchgear and cables, to avoid expensive unplanned outages in MV and HV plants

Hand-held static motor tester MTR105



- ❑ Full colour graphic display
- ❑ 3-phase insulation resistance
- ❑ Measurement and correction for insulation resistance
- ❑ Guard terminal
- ❑ DLRO four-wire (Kelvin measurement)
- ❑ Continuity testing and diode testing
- ❑ Motor direction of rotation
- ❑ Capacitance and inductance
- ❑ CAT III 600 V up to 3000 m
- ❑ Protection class IP54

Motor and generator testing – Megger ADX

Automated Static Motor Analyzer



- 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.

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

CONCLUSION

At KASTRA, we are proud to be your strategic partner in the supply of MEGGER products. Our commitment to quality, availability, and technical support ensures that each customer has reliable solutions tailored to their needs



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