

Handheld Live-Line Testing & Detection Services

White Paper 2026 | Detection finds the problem, products monitor continuously, services re-check regularly

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Why handheld detection and professional services

Online monitoring provides long-term, continuous situation awareness; handheld live-line testing covers stage-based, full-coverage field surveys and precise defect localisation. The two are complementary engines of equipment condition management.

Pain points: (1) equipment status is invisible before online monitoring goes live; (2) new/refurbished stations need acceptance and preventive testing; (3) major hidden hazards need compliant reports and rectification advice from qualified institutions.

HUWOR is both a sensor manufacturer and a licensed testing service provider - a closed-loop capability most pure equipment vendors lack: 'detection finds the problem - online monitoring tracks it - periodic service re-checks it'.

HUWOR detection + product closed loop

Detection & discovery: handheld live-line testing + outage testing, hazard discovery and reporting.

Continuous monitoring: online monitoring products (PD / arrester / temperature / SF6) for long-term tracking.

Service re-check: annual comprehensive testing, instrument rental, post-rectification re-testing.

Value-added consulting: pattern interpretation, defect cause analysis, rectification plans, acceptance report compilation.

Self-developed handheld instruments (excerpt)

Multifunction PD detector HMJ9001-Q - tested by State Grid Electric Power Research Institute (report DZ20173917, 2017-12).

Wireless multifunction PD detector HMJ9001-QW - Xi'an HV Research Institute (NO.210020E, 2021-01).

Multi-channel PD diagnostic system HMJ9041 - Xi'an HV Research Institute (190083E, 2019-12).

Portable integrated cable tester HMJ9030 - Zhuhai Quality & Metrology Supervision & Inspection Institute (DDWT1900214, 2019-11).

Switch coil inter-turn short-circuit tester HMJ9020 - Xuchang KETOP (JW192458, 2019-12).

Handheld gas detector HMJ9050 - Xi'an HV Research Institute (NO.200116E, 2020-09).

PD intensive-care system HMJ9040 - Xuchang KETOP (JW202858G, 2020-11).

Instruments comply with GB/T 6587-2012 (general specification for electronic measuring instruments).

Live-line testing & test service system

Since 2015, HUWOR has provided live-line detection and fault diagnosis across transmission/substation/distribution voltage classes for State Grid and CSG, backed by 29 in-house testing instruments in four business lines:

HV/MV equipment live-line state detection (no outage): 4-in-1 switchgear PD (TEV + AE + UHF + HFCT) with FLIR T640 infrared; cable live HFCT screening; full-scene infrared thermography per DL/T 664; transformer iron-core grounding current + infrared + counter checks; SF6 RMU one-stop inspection (RA912F purity/humidity/decomposition + in-cabinet UHF/ultrasonic PD); confined-space gas safety (MSA Altair 4X).

Outage offline HV testing (key differentiator): 10 kV cable DAC damped-oscillating-wave complete testing with OHV DAC-M30 dual-cabinet system per DL/T 1576, IEC 60270 - step withstand + PD inception/extinction + tan-delta + TDR single-end metre-level localisation (< 1% error); TDR-407 cable fault coarse ranging; insulation DC testing support. Note: DAC-M30 outputs up to 30 kV peak, compliant for 6/10 kV cables; most market vendors lack the original 200 nF compensation capacitor, causing waveform distortion on short (< 200 m) cables - HUWOR covers full conditions.

Instrument rental: DAC-M30 complete set (main unit + compensation capacitor + safety box) and full PD inspection kit (UHF/TEV/HFCT + FLIR infrared), with or without certified operators.

Value-added services: annual packaged station/plant comprehensive testing; unique two-stage cable diagnosis (live HFCT screening -> outage oscillating-wave TDR precise location); PD pattern professional interpretation; CSG-standard completion test patterns and acceptance reports; detection-to-product linkage.

Core differentiation

Exclusive hardware: scarce German OHV DAC-M30 original dual-cabinet complete set (main unit + 200 nF compensation capacitor) in the Greater Bay Area - most vendors have single-unit sets with waveform distortion on short cables.

One-stop closed-loop diagnosis: full live screening kit + outage metre-level localisation - no need for two service vendors.

Full voltage coverage: 10 kV / 35 kV switchgear, cables, transformers and SF6 chambers all testable live.

Location: equipment based in Zhuhai; 4-hour response in Zhuhai/Zhongshan/Jiangmen; Guangdong west / southern Hunan dispatchable.

Expertise: operators trained on the original DAC system, full PRPD pattern interpretation with professional rectification advice - not just meter reading.

Local moat: scarce DAC-M30 + 26 years of power-industry reputation + State Grid Sichuan/Jiangxi and CSG framework awards + self-produced sensors/online monitoring forming a 'testing + product' closed loop.

Trust evidence

Three-grid awards: 2026 State Grid Sichuan (first 2025 grid sporadic materials e-commerce procurement) and State Grid Jiangxi (first 2026 framework agreement, ranked No.1); 2025 consecutive CSG framework awards.

Qualifications: national high-tech enterprise since 2010; live-line testing, infrared testing, special operations (HV/LV/height), power installation (repair/test), instrument calibration, work safety certificates.

IP: 39 granted patents (11 invention), 63 software copyrights; Guangdong famous high-tech products.

Testing system: self-developed handheld instruments tested by State Grid EPRI / Xi'an HV / Xuchang KETOP / Zhuhai QMII; online PD monitoring system passed CSG 3.0 and State Grid testing.

About Huawang Technology (HUWOR)

Zhuhai Huawang Technology Co., Ltd. (HUWOR) is a national high-tech enterprise established in 2010, specialising in condition monitoring and assessment of power equipment. The company supplies smart sensors, testing instruments and online monitoring systems for partial discharge detection, with R&D; centres in Zhuhai and Xi'an, 39 granted patents (11 invention), 63 software copyrights and ISO 9001/14001/45001 certified manufacturing. HUWOR supports OEM and ODM projects for distributors and system integrators worldwide.