

MX12

Mini cable fault locating and test system for LV & MV networks

The MX12 represents a minimised system for testing, fault locating and diagnostics of underground power cables. Build on the MX-platform it integrates essential modern test methods into an easy to operate and economic design without compromises in safety or original measurement performance. The complete system and the plug-compatible extension modules are operated via central unified control unit. HV switching to test leads is all-automatic and requires no plug-over switching. Numerous additional available modules allow upgrading and customising the system to individual user requirements.



- + Minimised High Performance System
- + Central Computerised User Interface
- + Flexible With Numerous Extension Options

FEATURES

- Comprehensive fault locating in underground LV & MV cable networks;
- Comprehensive system covering full cycle from trouble shooting to isolating and precise fault pinpointing;
- Central control unit with menu guided operation following the working algorithm of cable fault locating;
- Separation of system control circuit from front-end data display based on Windows®;
- Inductive Arc Reflection Tech (ARTi) pre-location featuring no loss HV impulse voltage & energy conversion to fault including arc extension;
- Total low power consumption under 4kVA including high current burning;
- Broad range of additional plug-compatible or external test modules and devices.

INTEGRATED MEASUREMENT FUNCTIONS

- Analysis & Qualification of Faults
- Isolation & Pre-Location of Faults
- Mapping & Pinpointing of Faults
- Testing & Diagnostics with DC/VLF

CONCEPT

MINIMISED CONCEPT

Balancing measurement performance vs. size & economy, the MX includes the essential technologies to cover most faults. Available extension modules increase performance, flexibility and versatility.

AUTOMATIC CONTROL UNIT

One unified control interface operates the system. The app-style organised design is easy accessible and allows to trigger distinct test procedures directly. It's supported by a rotary encoder for setting precise measurement parameters.

AUTOMATIC MULTI-PHASE HV SWITCH

Automatic switching up to 40kV for rapid test lead connection and highest safety. One or Three Phase configuration.

DISTRIBUTED SYSTEM DESIGN (CAN-bus)

System modules are designed as stand-alone units with distributed controls based on CAN-bus. Discrete module failures will not shut down complete system. Multilayer controls reinforce system stability and provide system status and remote failure reporting.

ADVANCED SAFETY SYSTEM (PROSAFE)

Multidimensional system including:

- 1D Integrated emergency switch off & safety key lock
- 2D Guarded Discharge Technology
- 3D Faulty grounding conditions monitor (FU/EP)
- 4D Separation transformer
- 5D Door access monitor
- 6D Step voltage monitor (earth to vehicle chassis)
- 7D External emergency switch-off with status lights
- 8D Residual voltage indicator (1ph or 3ph)

VERSIONS

- MX12-T - DC testing series
- MX12-VT - VLF (cos) testing series
- MX12-VTD - VLF (sin) testing & diagnostic series

CABLE FAULT LOCATING / FIELD MEASUREMENT / M-line / MX12

SPECIFIC CHARACTERISTICS	BASIC	OPTIONAL
Automatic HV Switch to Output	-1phase 20kV over HV cable for core integrated modules	-3phase 40kV over HV cable for multiple modules
Integrated Safety System	-PROSAFE 6D	-PROSAFE 8D
ANALYSIS & QUALIFICATION OF FAULTS		
Insulation resistance measurement		-10kΩ to 3GΩ
HV withstand testing	-DC20kV -Breakdown detection	T - DC 40kV VT - DC30kV/VLF20kV (cos) VTD - DC30kV/VLF23kV (sin) HV Test & Distance to Fault (SyncTest)
Cable sheath testing	-12kV DC; 300mA	
ISOLATION & PRE-LOCATION OF FAULTS		
Integrated TDR Unit	-Measurement range: 95km (250km transient) -Measurement impulse: 160V; 50ns to 10μs -Impedance matching: 25 to 1600Ω	
Pre-location TDR-LV modes	-Direct 1ph over HV cable	-Direct 3ph over HV cable -Direct 3ph over TDR cable -Intermittent Fault Scanning
Pre-location TDR-HV modes	-Arc Reflection Technology inductive (ARTi)	-Decay Voltage Coupling -Surge Current Coupling
Fault Conversion modes	-500mA @ 0 to 20kV	-1,5A @ 0 to 12kV -Monitored Fault Conversion (SyncTest)
Sheath fault pre-location modes		-Bridge fault locator 6kV
MAPPING & PINPOINTING OF FAULTS		
Acoustic pinpointing in combination with Kamphone	-1000J @ 3/6/12kV	-2000J @ 3/6/12kV
Sheath fault pinpointing in combination with Locator S	-12kV; 300mA	
AF tracing and fault locating in combination with Tracer		-10W; 512Hz to 200kHz -250W; 512Hz to 9,95kHz
Mapping of trace and location		-GPS sensor & GIS software
TESTING & DIAGNOSTICS		
Insulation resistance diagnostics		-PI, DAR, DD, SV and ramping
HV testing & diagnostics	-Leakage current recording	VT - 18kV; 3,8μF @ 0.1Hz (cos) VTD - 18kV; 5μF @ 0.1Hz (sin)
GENERAL DATA		
Connection assemblies	-25m (HV + LV)	-50m (HV + LV + TDR + BFL)
Power supply & consumption	-230V/50Hz; max. 1,5kVA	-230V/50Hz; max. 4kVA
Weight	-160kg	-400kg

