

MX32

Mini semi-automatic cable fault locating, testing and diagnostic system for LV & MV & HV networks

The MX32 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 semi-automatic and requires manual plug-over switching for high voltage testing or in case of multiple modules. 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/HV 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.

SEMI-AUTOMATIC HV SWITCH

Automatic switching up to 40kV combined with plug-over switching for higher voltages such as HV testing reduces manual works to an acceptable level.

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)

VERSIONS

- MX32-T - DC testing series
- MX32-VT - VLF (cos) testing series
- MX32-VTD - VLF (sin) testing & diagnostic series

CABLE FAULT LOCATING / FIELD MEASUREMENT / M-line / MX32

SPECIFIC CHARACTERISTICS	BASIC	OPTIONAL
Automatic HV Switch to Output	-1phase 32kV over HV cable for core integrated modules	-1phase 40kV over HV cable for locating modules combined with plug-over switching for additional modules
Integrated Safety System	-PROSAFE 6D	-PROSAFE 8D
ANALYSIS & QUALIFICATION OF FAULTS		
Insulation resistance measurement		-10kΩ to 3GΩ
HV withstand testing	-DC32kV -Breakdown detection	T - DC 40kV or 80kV VT - DC60kV/VLF40kV (cos) VTD - DC68 or 90kV/VLF48 or 64kV (sin) HV Test & Distance to Fault (SyncTest)
Cable sheath testing	-10kV DC; 50mA	-15kV 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 TDR cable -Intermittent Fault Scanning
Pre-location TDR-HV modes	-Arc Reflection Technology inductive (ARTi)	-Decay Voltage Coupling -Surge Current Coupling
Fault Conversion modes		-1A -25A @ 0 to 15kV -Monitored Fault Conversion (SyncTest)
Sheath fault pre-location modes		-Bridge fault locator 6kV
MAPPING & PINPOINTING OF FAULTS		
Acoustic pinpointing in combination with Kamphone	-1000J @ 8/16/32kV	-2000 to 2500J @ 8/16/32kV -1000 to 2000J @ 4kV -500J @ 3kV
Sheath fault pinpointing in combination with intersheath R	-10kV; 50mA	-15kV; 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		-(VTD) 48kV rms; 1,6μF @ 0.1Hz -(VTD) 64kV rms; 1μF @ 0.1Hz
Partial discharge diagnostics & tan-delta diagnostics		-0 to 64kVrms ; ± 1 x 10 ⁻⁴ ; MWT (SyncTest)
GENERAL DATA		
Connection assemblies	-25m (HV + LV)	-50m; 75m (HV + LV + TDR + BFL)
Power supply & consumption	-230V/50Hz; max. 2,5kVA	-230V/50Hz; max. 4kVA
Weight	-260kg	-620kg

