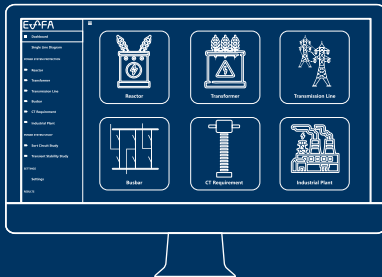
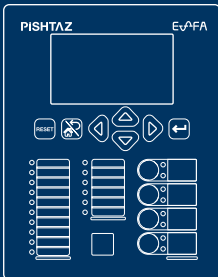
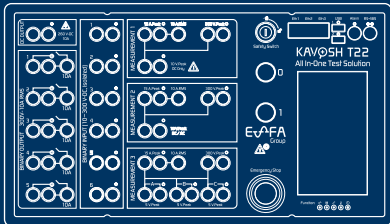


EVFA GROUP



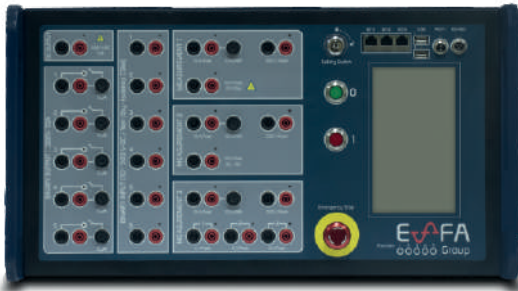
www.esfagroup.com

Our goal is to revolutionize the electricity industry. This is possible by changing the attitude of industry experts, which requires increasing the level of their knowledge and striving for change and progress. Our continuous program is to introduce new approaches in the design of equipment and their implementation based on modern world knowledge to change the design and operation of the electricity network with a more scientific and economical approach. ESFA Group is a designer and manufacturer of various protection relays, testing and troubleshooting equipment, measuring and intelligent devices in electrical networks. It is a provider of services and software systems in the above fields.

Evolution is Coming . . .

All-In-One Diagnostic Test Device for Electrical Equipment

0
2



- Numerous tests for high voltage substation equipment
- Variable output voltage, current and frequency up to 5 kVA
- Automatic and intelligent test process to save time
- Novel methods to perform tests and analyses

KAVOSH T22

03

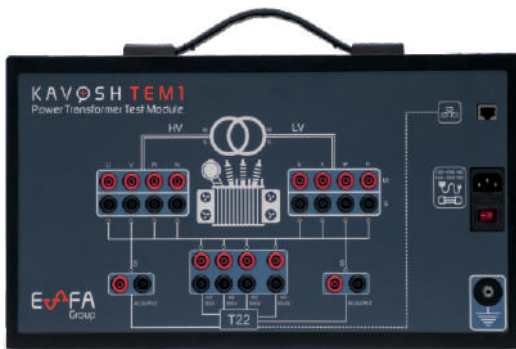
Dissipation Factor (Tan Delta) and Capacitance Measurement Module



- Measuring dissipation factor over a broad frequency and voltage range
- Reliable and safe operation
- Very high accuracy for measuring Tan Delta
- A patented approach for measuring on-site Tan Delta of capacitor voltage divider of CVTs

Power Transformer Automatic Test Module

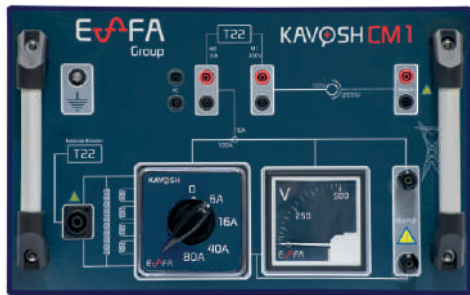
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4



- One wiring for all tests on three phases
- Wiring mistake check and alarm for correction
- Test duration reduction
- Easy and safe test performing

KAVOSH TEM1

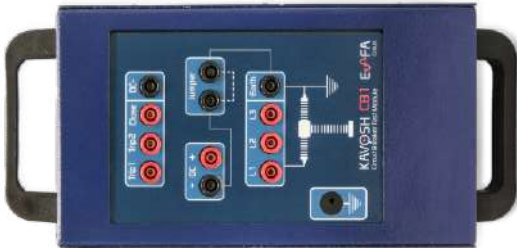
Coupling Module for Transmission Line, Cable and Grounding System Testing



- Calculation of series impedances and K_0 factor for using them in distance protection relay
- Tests on ground and line with various frequencies to increase test precision and repeatability
- Measurement of ground grid safety voltages
- Patented line impedance measurement under severe induced voltage conditions

Circuit Breaker Test Module

60



- Safe tests using dual ground method
- One wiring for all tests
- Fast mount on main module to simplify tests on MV and HV circuit breakers

KAVOSH CB 1

EvFA

Evolution is



KAVOSH *State of the Art in Diagnosis*

Diagnostic Test Set

SARV *Decide with Confidence*

Specialized Power System Software

Coming . . .

GROUP



HAFEZ

Art of Protection

Protection Relays

PAYESH

Sense of Precision

Measurement and Automation Devices

0
9

Multifunction Protection Relay



- Protection of HV, MV, and industrial systems
- Modular hardware including digital I/O card, communication card, and RTD box
- Comprehensive cyber security measures

PiSHTAZ 211



Compact Feeder Protection

1
0



- Distribution transformer, MV line, and Induction motor protection
- Smart setting capability
- Patented protection functions to enhance relay performance
- Fast trip mode for functions with instantaneous characteristic

HAFEZ131

1
1

Measuring Center and Smart Meter



- Electrical parameter measurement (current, voltage, frequency, power, and energy)
- Phase segregated current and voltage harmonic contents (up to 31st harmonics)
- Disturbance recorder (30 disturbances for 4 seconds) and event recorder (4000 events)
- High accuracy in voltage and current measurement (0.2%) and power measurement (0.3%)

PAYESH M111

Voltage Transformer Calibration System

1
2



- Measuring on-site accurate VT ratio and phase errors (uncertainty $< 0.01\%$ and < 1 minute)
- Compensating VT ratio error efficiently (final error $< 0.02\%$)
- Operating easily and safely
- Implementing quickly and economically

KAVOSH VT11

1 3

Power System Protection Coordination Software



- Power system study including power flow, short circuit, and transient stability
- Relay setting for various protective functions of MV, HV, and EHV systems
- Determining setting parameter values of digital relay considering to its brand
- Evaluating CT requirement

Energy Management System Software


1
4



- Online observability and state estimation
- Online balanced/unbalanced power flow
- Online contingency analysis
- Compliance with CIM based on IEC61968

SARV EMS

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