

## Electrical Network Parameter Measurement & Analysis Services

An independent reference for assessing electrical network quality to international standards



*Improving electrical network quality and protecting industrial investment depend on accurate field measurements aligned with international standards*

The safety and operational efficiency of electrical networks depend on the quality of voltage and current, the stability of the supply frequency, and the compatibility between electrical loads and design parameters. Reliable field measurement is the most accurate way to confirm that a network performs as intended.

### ▪ Early detection through measurement

Systematic technical measurement of network parameters enables early detection of:

- Voltage fluctuations
- Voltage and current unbalance
- Harmonic distortion
- Low power factor
- High inrush currents and transient peaks
- Short interruptions and sudden voltage dips

### ▪ Verifying network performance

Reliable field measurement of network parameters is essential for verifying:

- Compliance of power quality with approved technical standards
- Network stability under varying load conditions
- A safe electrical supply to sensitive loads
- Reduced electrical losses and improved energy efficiency
- An extended operating life for equipment and systems

**Reliable measurement protects industrial investment and extends the operating life of equipment**



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## Scope of Services

Power-quality measurements compliant with IEC 61000 and IEEE 519 form the basis for assessing the performance and stability of electrical networks.

- **Electrical network measurements**
  - Voltage, current and frequency measurement
  - Power factor analysis
  - Load and peak recording (Load Profile)
  - Energy consumption studies
- **Power quality analysis**
  - Harmonic analysis
  - Phase unbalance assessment
  - Monitoring of voltage dips and interruptions
  - Analysis of transients and electrical noise
- **Applications**
  - Industrial facilities
  - Commercial buildings
  - Hospitals and laboratories
  - Data centres
  - Power stations and sensitive systems

## Technical Reports to IEC & ISO Standards

In preparing technical reports for electrical networks, Mizan applies a documentation and analysis methodology aligned with the relevant international standards, ensuring results that are clear, accurate and dependable.

### The technical reports issued by Mizan include the following:

- A detailed presentation of field measurement data, covering voltage, current and frequency; active, reactive and apparent power; and power factor
- Analysis of electrical harmonics up to the higher orders, compared against the limits permitted by IEC 61000 and IEEE 519
- Documentation of power-quality events such as sudden voltage dips and swells, short interruptions and transients
- Assessment of the impact of power quality on equipment and operational processes
- Identification of non-conformities, their locations and potential impact
- Clear, actionable technical recommendations



Field measurement of power-quality parameters to IEC 61000 and IEEE 519

**Accurate measurement is the foundation of a stable, safe electrical network**



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