



Inspector™ Application note

Using INSPECTOR™ For Class A Power Quality Monitoring
Utility-Grade Accuracy for Critical Electrical Networks



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From Monitoring to Trusted Measurement - Using INSPECTOR™

Power quality monitoring plays a critical role in modern electrical networks. While conventional monitoring solutions provide general visibility, critical and regulated environments require deterministic, auditable, and standards-aligned measurements.

Using INSPECTOR™, Class A Power Quality Monitoring delivers utility-grade accuracy, transforming power quality data from indicative information into trusted measurement suitable for high-impact decisions.



What Does Class A Mean When Using INSPECTOR™?

Class A monitoring is not defined by the number of parameters measured, but by how INSPECTOR™ performs, synchronizes, and validates each measurement.

Aspect	Class S Monitoring	Class A Monitoring
Intended use	General industrial monitoring	Critical and regulated networks
Measurement objective	Indicative assessment	Deterministic and auditable results
Accuracy level	Monitoring-grade	Utility-grade
Time alignment	Synchronized	Precisely synchronized
Compliance	Not Fully suitable	Fully suitable

Where INSPECTOR™ Class A Monitoring Is Used

INSPECTOR™ Class A Power Quality Monitoring is designed for networks where measurement credibility is essential:

- Power stations and substations
- Points of Common Coupling (PCC)
- Data centres, hospitals, airports
- Utility transmission & distribution networks
- Grid-connected industrial facilities
- Regulated and contractual energy environments

In these applications, data may be used for:

- Regulatory compliance
- Fault investigation
- Operational decision-making
- Contractual verification
- Dispute resolution

Indicative measurements are not sufficient - precision and standardization are mandatory.

What Enables Class A Accuracy?

The transition to Class A is driven by enhanced measurement methodology:

- Precise time synchronization for accurate event sequencing
- Standards-aligned event detection and classification
- Improved frequency estimation accuracy
- Consistent harmonics and unbalance calculations
- Full compliance with required Class A parameters

These enhancements ensure measurements are:

- Reproducible
- Defensible
- Auditable
- Standards-compliant

Why Accuracy Matters at Grid Level

In critical networks:

- Small voltage deviations affect wide system areas
- Harmonic distortion impacts compliance and equipment lifespan
- Frequency behavior reflects overall grid stability
- Event timing is crucial for fault localization

Monitoring-grade accuracy is no longer enough.

Class A accuracy ensures decisions are based on trusted, standardized, and verifiable data.



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