



Measurement, Analysis, Monitoring and Protection

For more than 20 years the IfTA GmbH has been dedicated to measure, analyze and monitor dynamics and vibrations. Located near Munich, Germany, IfTA develops, manufactures and distributes modular hard and software solutions. IfTA systems monitor and prevent combustion dynamics in gas turbines for power generation worldwide and assure that engines are running reliably and efficiently. Further applications range from measurement and analysis on test beds over vibration monitoring to active damping of combustion dynamics and surge control. All IfTA products stand for highest quality, flexibility and ease of use.

Systems for...



Combustion dynamics



Rotor dynamics



Compressor instabilities



Vibrations



Gearboxes & bearings



Acoustic phenomena

Analysis Software

- Dynamics & operating data
- Large measurement data
- User-friendly workflow
- Matlab import/export

Active Control

- Combustion dynamics
- Surge control
- Monitoring option

Measurement Systems

- Flexible input channels:
U, I, Q, IEPE, strain gauge
- 100 kHz @ 24 Bit, synchronous
- Live FFT & correlations

Monitoring & Protection

- Combustion & rotor dynamics
- Live FFT & correlations
- Autonomous 24/7 storage

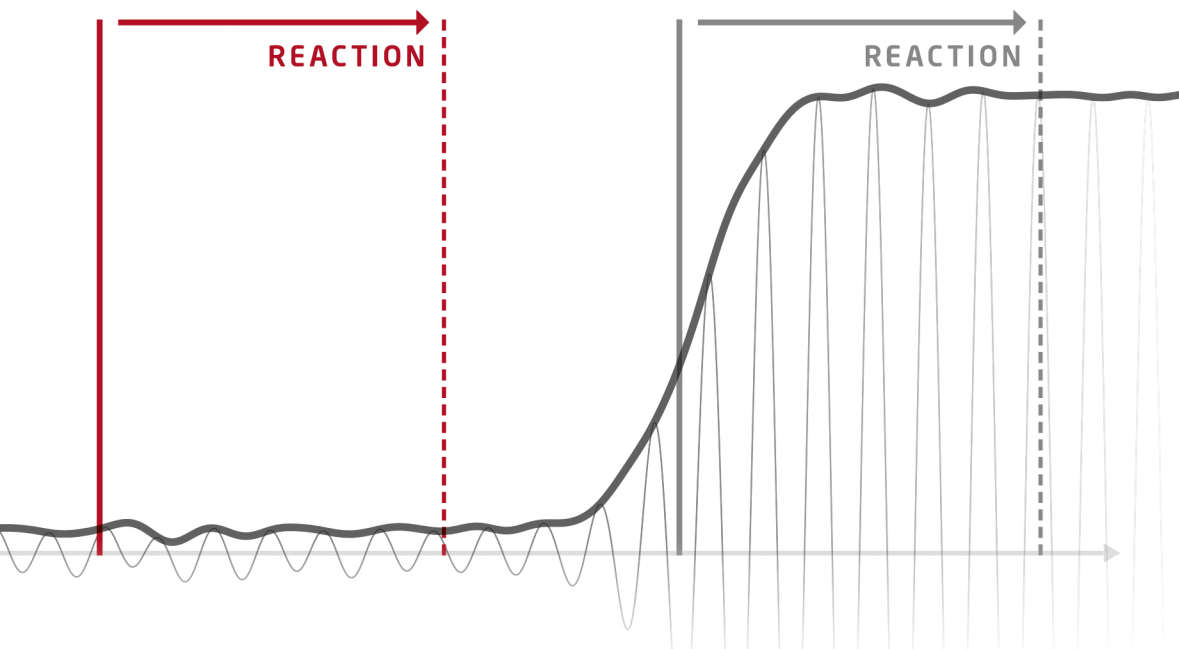
Measurement Chain

- High temperature pressure sensors
- In-line / integrated charge amplifier
- Charge Signal Generator



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Part-load limit reduction of a Frame 9E using the IfTA PreCursor for combustion dynamics.

The actual part-load limit of a gas turbine is variable, depending on machine state and atmospheric conditions. In order to operate a Frame 9E gas turbine as close as possible to its part-load limits, a strategy is implemented to monitor the restricting phenomena in real-time, rather than retaining a conservative global minimum.

A special challenge in this strategy is the monitoring of combustion dynamics, which under circumstances spreads out around the circumference of the can-annular gas turbine. The acoustic oscillation amplitudes can arise unannounced, influencing the combustion process and ultimately leading to mechanical failure. An in real-time calculated precursor for combustion dynamics sends the thermoacoustic stability margin to the control system of the gas turbines, allowing automatic stabilization upon reaching the part-load limit. Besides the precursor other quantities are monitored, including the CO-emissions, allowing for optimization of the part-load combustion process, resulting in a significant economic benefit for the power plant operation.

To receive the **full technical paper** contact us at info@ifta.com.

Key advantages of the IfTA PreCursor:



Detect instabilities earlier

Detect combustion instabilities earlier than other protection systems - before amplitudes even grow.



Prevent damage

React early, even before the actual risk of damage and prevent shut downs and the need for repair.



Contact Us

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Save costs

Reduce costs for maintenance, repair and shut downs due to improved machine reliability.

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