

IFTA DYNAMASTER

SIMPLIFY YOUR MEASUREMENT



IFTA DYNAMASTER *Simplify your measurement*

Future-oriented products are an integral part of IfTA's success. With our expertise, we develop innovative solutions that provide productivity advantages for our customers: The new IfTA DynaMaster data-acquisition and analysis system is a ready-to-use solution that saves you a considerable amount of development work. All IfTA systems follow this principle of beneficial usability and stand for stability, robustness and reliability. IfTA DynaMaster is based on our proven technology, which is being used in gas turbines and power plants around the world.

You get hardware and software from the same reliable source. With IfTA DynaMaster's coordinated components, you measure the complex simply better:

IFTA DYNAMASTER

AD4Pro measurement module

- FlexSense technology
- High-resolution:
51kHz with 24 Bit

Integrated SlotPC

- Data analysis
- Aggregation/Recording



Ethernet

The IfTA DynaMaster system consists of a modular housing - which can be combined with various measurement modules, such as the AD4Pro - and an integrated SlotPC as well as the analysis software IfTA Trend.

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IFTA TREND



Visualization

- Intuitive control
- Powerful Plots

Post-processing

- Filtering
- Calculation
- Correlation

FLEXIBLE, MODULAR, INNOVATIVE.

The advantages of IfTA
DynaMaster at a glance:

Advantage 1: The new FlexXense technology of the AD4Pro.

The AD4Pro measurement module provides voltage- and current measurement, includes charge amplifiers, preamplifiers and (Wheatstone) bridge circuits for strain gauges and Kulites, as well as IEPE power supply for each of its 4 inputs.

Advantage 2: Modular design with an integrated SlotPC.

IfTA DynaMaster offers online data analysis and storage in two expandable modular housing options. With 4 or even 11 module slots, you can use a variety of cards from our portfolio.

Advantage 3: The inno- vative visualization and analysis software IfTA Trend.

IfTA Trend offers intuitive operation, clear visualization, processing of on-line and off-line data, as well as simple, multi-functional off-line data analysis including a variety of powerful plots.

Advantage 1: IFTA AD4PRO *with FleXense technology*

The new IFTA AD4Pro measurement module has four input channels with FleXense technology. Dynamic signals can be sampled at up to 51.2 kHz in true 24 bit resolution.

Developed on the basis of feedback from our users, FleXense provides precision and flexibility.



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FleXense technology

01 Voltage	04 Charge
02 Current	05 Strain gauge
03 IEPE	06 Kulite

Individually configurable in software

4 analog data-acquisition inputs for static and dynamic signals

- galvanic isolation up to $\pm 250V$
- synchronous sampling
- switchable AC/DC coupling
- high SNR up to 145dB
- sample rate up to 51.2 kHz with true 24 bit resolution

Mode per-input freely selectable via software:

- 01 Voltage
 - $\pm 25 V / \pm 2.5 V$
 - $1 M\Omega$ input impedance
- 02 Current
 - $\pm 44 mA / \pm 25 mA$
 - 100Ω input impedance
- 03 IEPE power supply
 - 10 mA (at up to 20 V)
 - cable length up to 100 m
- 04 Charge
 - $\pm 2000 pC / \pm 200 pC$
 - Differential amplifier
 - Adjustment for „popcorn effect“
- 05 Strain gauges
 - 1/4, 1/2 and full-bridge
 - internal reference resistors
 - $\pm 50 mV / \pm 5 mV$ max. bridge voltage
- 06 Piezo-resistive sensors, e.g. Kulite sensors
 - 5 V bridge power supply
 - $\pm 50 mV / \pm 5 mV$ max. bridge voltage

4 inputs, each with 6 signal modes: FleXense technology simplifies measurement setup.

FleXense. Makes Sense.

Use every input in your data-acquisition system. You don't have to worry about whether you have enough appropriate inputs - each input is compatible with each sensor: FleXense makes sense - technologically and economically.

Advantage 2: THE MODULAR DESIGN

The IfTA DynaMaster is available in two housing sizes with an integrated SlotPC for data analysis, -recording and -distribution.



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Depending on housing size, either 4 or 11 analog and digital input cards can be used. Of course, modules can also be added later. Start with the basics and grow with your needs.

For monitoring, protection and control applications, we recommend upgrading to our IfTA OMS® or IfTA AIC® systems. These systems offer analog and digital output modules as well as a Profibus module.

The following modules are available:



AD4

4 fast, synchronous analog inputs (voltage, current and optionally IEPE); sampling rate up to 51.2 kHz



AD4Pro

4 fast, synchronous analog Flexense inputs (voltage, current, IEPE, charge, strain gauge, Kulite); sampling rate up to 51.2 kHz



AD32

32 analog inputs for slower processes; sampling rate up to 50 Hz



DigIn16

16 digital inputs; sampling rate up to 50 Hz

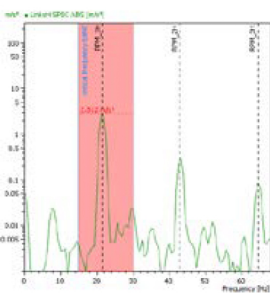


DA8

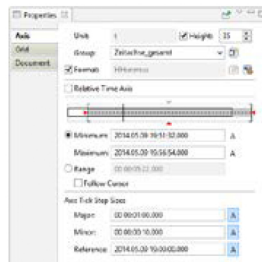
8 buffered analog outputs (voltage, current) from AD4(Pro)

IfTA Trend is full of advantages: multifunctional measurement-data analysis with an intuitive user interface and powerful visualization. On-line and off-line analysis of your data are united in a single program. The ability to process large data sets is another strength. This software is an integral part of IfTA DynaMaster.

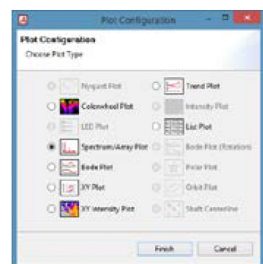
New users immediately benefit from the intuitive graphical user interface. The software's productive method of operation allows you to focus on your core tasks, a benefit that our long-standing customers particularly appreciate.



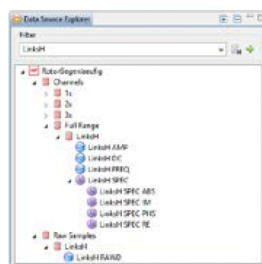
Adaptive grid lines and definable frequency ranges provide a clear overview.



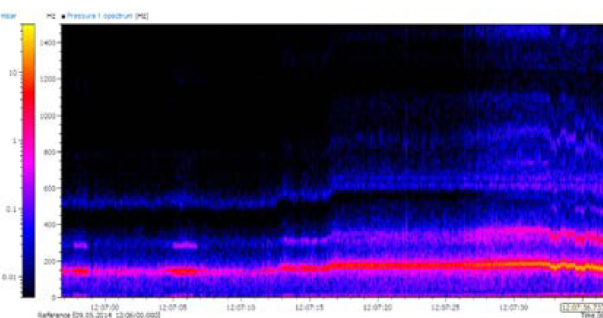
Powerful control of axis properties and the ability to group axes for an efficient workflow.



Only signal-appropriate plots are offered.



Quickly find any desired signal with the Data Source Explorer.



Spectra are calculated online by the integrated SlotPC.
Monitor a live spectrogram.

IfTA Trend - time saving:

- Drag & Drop and flat menu structures
- Smart editor for document layout
- Synchronous cursors in all plots
- Intuitive setting of plot-characteristics, e.g. zoom level
- Intelligent axis grouping
- Data source explorer with intelligent filtering

IfTA Trend - powerful plots*:

- Trend Plot
- Intensity Plot
- Spectra Plot
- Colorwheel Plot
- XY Plot
- XY Intensity Plot
- List Plot
- Polar Plot
- LED Plot
- Table Plot
- Orbit Plot
- Shaft Centerline Plot
- Nyquist Plot
- Bode Plot

*) Availability of plots depends on license type

IfTA Trend - big data analyzed fast

- Fast processing of large amounts of measurement data (e.g. 10 GB) (hours/days/years)
- Merging of several measurements

IfTA Trend - other highlights

- Relative time axis for comparing different periods of time (e.g. for several starting procedures)
- Two measurement cursors with delta calculation
- Signal-dependent grid lines, e.g. grid line in the spectrum follows shaft speed
- Frequency band monitoring
- Scripts for automatic report generation

SYSTEM CONSUL- TING

We put IfTA technologies together according to your needs, so you get the optimum measurement and analysis solution. You benefit from our comprehensive application knowledge. Knowledge that ensures convincing successes for your applications. The result is your freedom to focus on the essentials. We undertake the preparatory work, assist you throughout the process and advise you if you are looking for further flexible solutions.

IfTA Systems built by and for dynamics and vibration experts.

Measurement Scenario

Low-emission combustion systems are subject to continuous development. Combustion dynamics and their effect on the structure of the combustor are important aspects to be considered in this process. To measure these dynamics, dynamic pressure sensors, acceleration sensors and strain gauges are used.

Without FleXense

Due to high temperatures, instead of the usual IEPE sensors, high-temperature piezoelectric sensors with external charge amplifiers are used. Strain gauge sensors also require external pre-amplifiers and bridge resistors.

All this results in complex measurement setups with a multitude of sources of error. Effort and costs are high.

With FleXense

High temperature sensors, strain gauges and IEPE-sensors can be connected directly to the IfTA AD4Pro. The need for external amplifiers is eliminated. This simplifies measurement setup, reduces costs and increases your productivity.





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CONTACT

Let us know how we can help you. We will be happy to offer our advice concerning IfTA technologies and look forward to hearing from you.

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