

PONTOS Fact Sheet

PONTOS - Dynamic 3D Analysis

Modern product development demands a better understanding of the dynamic component behaviour. This requires an efficient component development of just a few iteration cycles. For the measuring technology to be used, this means that in addition to high absolute accuracies, numerous measuring points and an efficient practical handling are required.

In contrast to conventional displacement measuring systems, the PONTOS system reduces the measuring procedure to a fraction of the time. In addition, the understanding of the measuring results is visually supported by an animated representation.



PONTOS replaces conventional displacement measuring systems and accelerometers. Independent of the structures to be measured, displacements and deformations are captured rapidly in a non-contact manner.

- Door/hood slam
- Dynamic behaviour of components
- Component position in wind tunnel
- Deformation measurement of aerodynamically loaded structures
- NVH
- Drop tower tests
- Verification of simulations

Results

The dynamic measuring system PONTOS provides for any number of measuring points information about:

- 3D Coordinates
- 3D Displacements
- Deformation
- Speed
- Acceleration



These results are presented in versatile manners and are available to export as ASCII datasets. Due to a visualization of the recorded camera images combined with diagrams, the component behaviour can be analysed easily and in an intuitive manner.

Measuring Tasks



The easy handling of the robust measuring system allows its use directly on-site with the component to be measured in its natural installation position and environment. Complex measuring tasks in the automotive industry as well as in the aerospace industry can be solved easily and fast.

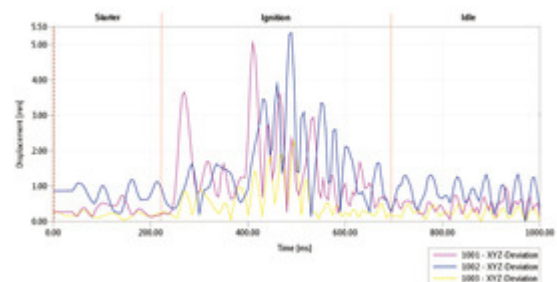
- Complex motion analysis
- Component deformation
- Mode shapes
- Relative motion
- Gap size changes
- Flush

PONTOS Features

- Simple specimen preparation
- Ultra-light measurement targets
- Frame rates independent of the number of the captured markers
- Customized triggering of the image acquisition
- Recording of analog signals
- Insensitivity to ambient conditions, such as vibrations and light changes
- Easy adjustment to different measuring areas and tasks

Complete workflow in one software application

The entire measuring, evaluation and documentation process is carried out within the integrated PONTOS Software. The full potential of the available hardware is used to capture and evaluate the measuring area efficiently and with high accuracy.



Technical Data

The PONTOS system records analog signals to trigger the image capturing and to document the load situation and the measuring sequence.



System Configurations	PONTOS 5M	PONTOS 4M	PONTOS 12M	PONTOS HS
Camera Resolution (pixel)	2448 x 2050	2358 x 1728	4096 x 3072	1280 x 1024
Frame Rate (Hz)	up to 15 (29)	up to 60 (480)	up to 24 (367)	up to 500 (4000)
Measuring Area	cm ² up to >m ²	cm ² up to >m ²	cm ² up to >m ²	cm ² up to >m ²
Accuracy	depending on measuring area up to 0.001 mm			
Number of measured markers	unlimited	unlimited	unlimited	unlimited
Camera Base	fixed/variable	fixed/variable	fixed/variable	fixed/variable
Integrated Cable Guide	•	•	•	•
Laser pointer	3 or 1	3 or 1	3 or 1	3 or 1
Illumination	integrated	integrated	integrated	integrated
High-End 19"PC	•	•	•	•
Notebook	•	-	-	-
Control Device	Sensor Controller	Sensor Controller	Sensor Controller	Sensor Controller
Sensor Dimensions (mm ³)	typ. 700 x 200 x 140	typ. 700 x 200 x 140	typ. 700 x 200 x 140	typ. 700 x 200 x 140
Specimen Temperature	typ. -100°C up to +1500°C			
Weight (kg)	5	7	7	7

Additional configurations

High Speed

Camera Resolution (pixel)	up to 1024x1024
Frame Rate (Hz)	up to 5000 (1000000)

High Speed

Measuring Area	cm ² up to >m ²
Accuracy	depending on measuring area up to 0.001 mm
Number of measured markers	unlimited
Camera Base	variable
Illumination	external
High-End 19"PC	•
Notebook	•
Control Device	optional
Specimen Temperature	typ. -100°C up to +1500°C