

SOLUTIONS IN INSTRUMENTATION

Customized solutions in instrumentation

For any specific requirements in instrumentation, our staff will be pleased to support you from the definition of specifications to the delivery of a suitable turn-key measurement solution.

Description

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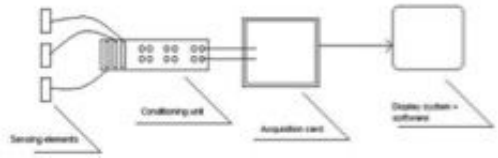
Here are the fields for which AOIP can bring its know-how and skills:

- Temperature:
  - Dried food, seeds...
  - Construction materials : concrete, cement...
  - Metal parts
  - Chemicals
  - Humidity:
    - Paper, wood, cement, glue...
    - Chemicals
    - Dried food, seeds...
    - Soils, sand
    - Distance:
      - Thickness variation (metal, glue...)
      - Non-contact distance measurement
      - Surface flatness
      - Wobbling, dynamic displacement
      - Process signals:
        - Vehicles (CAN bus...)
        - Chemicals
        - Sensor technology

An absolute expertise

- Definition of specifications with the customer
- Choice or design of the system parts
- Choice or design of the data processing software
- Implementation of the system in the customer environment
- Training
- Maintenance of the system



Wide fields of applications

Our expertise applies on various sectors and fields of application:

- Energy
- Pharmacy
- Aircraft industry
- Food processing
- Equipment for production
- Equipment for test bench
- Automotive

Examples of systems developed by AOIP

Non-contact measurement of disk brake performance features

Requirements: Performance (braking efficiency, brake life time...) depends on:

- Rotation Thickness Variation (RTV)): Not even and steady disk brake thickness
- Run out: Axis shift during rotation
- Wobbling: Unveven rotation or movement

Solution:

- Two or more capacitive sensors
- Two or more conditioning units
- Multi-channel data acquisition unit
- Real-time processing and easy-to-customize data management software

Application fields:

- Automotive: disk brake manufacturers
- Manufacturers of test bench: ageing test bench, automate non-contact distortion measurement

Humidity control inside bulk

Requirements:

- High accurate and sensitive humidity measurement inside bulk
- System adapted to field environment
- Measurement allowed up to water saturation

Solution:

- Two or more capacitive sensors
- Two or more conditioning units
- Multi-channel data acquisition unit
- Real-time processing and easy-to-customize data management software

Some solutions already exist on the market to measure humidity, although with some drawbacks:

Infra-red technology: Surface test only
Impedance technology:Little accurate solution due to simple phase test and only suitable for laboratory measurements

Application fields:

- Food processing: Producers of dried food, powders...
- Agriculture: Optimisation of irrigation, seed depth...
- Plastic industry: Control of solids content of plastic granules...
- Pharmacy: Research on humidity level optimisation, control of storage conditions, compliance to drug safety standards...
- Material: Paper, wood, cement, sand, phosphate...

Optimisation of compressor and turbine efficiency

Requirements:

- High frequency acquisition (up to 300 kHz) of distance values
- Very accurate data acquisition system
- Dedicated software

Solution:

- Two or more capacitive sensors
- Two or more conditioning units
- Multi-channel data acquisition unit
- Real-time processing and easy-to-customize data management software

Application fields:

- Energy / Aircraft: Manufacturers of turbines, blades, compressors...
- Aircraft: Test of turbine design, blade tip clearance, blade tip timing, control of blade safety...