PHASED-ARRAY INSPECTION SYSTEM
SONOAIR®
AIR-COUPLED NONDESTRUCTIVE TESTING
MADE IN GERMANY
Air-coupled ultrasonic testing is mainly used in process control in production chains and is perfectly suited for testing materials and structures composed of composites (laminates and sandwich structures), ceramics, concrete, glass, polymers (plastics), wood and metal. Thus, a wide range of inspection tasks e.g. interface detection, bonding characterization, inhomogeneity detection or the detection of internal discontinuities and inclusions can be covered. In addition, impurities and damage to materials and test pieces are prevented in the production process, thus eliminating costly cleaning steps. Ultimately, this is accompanied by an increase in effectiveness and quality. For highly attenuating materials, the performance of the system is critical. The ultrasonic sensors, the scanning area and the system settings should be flexibly adapted to the test task and the material. These high expectations are met with the new and modular testing system SONOAIR®. With the world’s first air-coupled phased-array inspection system you are one step ahead.

MEASUREMENT METHODS

TRANSMISSION
Probes are placed on both sides of the test object

PITCH CATCH
Probes are placed at the same side of the test object
AIR-COUPLED TESTING
Inspection of highly attenuating materials

MODULAR CONCEPT
Upgradeable and adaptable system due to the modular concept

AIR-COUPLED PROBES
High resolution due to the use of focusing transducers

UP TO 4 CHANNELS
Up to 4 transmitter and receiver channels with freely configurable square wave burst transmitters and low noise receiving amplifiers

COMPONENTS: SCANNER, RACK AND SOFTWARE
WORLD’S FIRST PHASED-ARRAY AIR-COUPLED INSPECTION SYSTEM

SOFTWARE
Display of measurement results as A-, B-, C- or D-Scan
Repositioning of measurement gates after the inspection
Storage of the complete A-scans for every measurement point during the testing process (optional)
Individual signal processing algorithms e.g. for filters (optional)

TRAINING
Offered in cooperation with the expert for air-coupled ultrasonic testing Forschungszentrum Ultraschall FZ-U (research center for ultrasonics)

With theoretical lectures and practical demonstrations the training sessions provide a profound introduction into the subject. Participants also have the opportunity to bring along their own material samples in order to inspect them with experts.

Contact: www.fz-u.de
APPLICATIONS: MATERIALS, COMPOUNDS AND STRUCTURES

We conduct feasibility studies!

- CFRP
- GFRP
- Honey Comb Structures
- Laminates
- Thin Metal Bonds
- Ceramics / Refractories
- Concrete
- Rubber
- Foams
- Wood

DIDN’T FIND YOUR APPLICATION? CONTACT US!
### GENERAL DATA

19" unit consisting of:
- PC with Windows and software; Digitizer 16 Bit, 100 MS/s; Transmitter unit; Receiver unit

Operating temperature: 5 to 40 °C

Network interface: 1 GBit/s LAN

Protection class: IP20

Standards: IEC 61010, IEC 60204

### TRANSMITTER

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of channels</td>
<td>Unlimited</td>
</tr>
<tr>
<td>Pulse height of the output signals</td>
<td>Up to 400 V (optional up to 800 V)</td>
</tr>
<tr>
<td>Frequency range</td>
<td>35 to 750 kHz</td>
</tr>
<tr>
<td>Maximum power</td>
<td>2 kW (400 V), 4 kW (800 V)</td>
</tr>
<tr>
<td>Square wave burst transmitter</td>
<td>Freely configurable (the pulse width can be selected individually for every square wave pulse of the burst)</td>
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### RECEIVER

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of channels</td>
<td>Unlimited</td>
</tr>
<tr>
<td>Frequency range</td>
<td>25 to 650 kHz (optional up to 3 MHz)</td>
</tr>
<tr>
<td>Gain</td>
<td>0 to 120 dB, 0.5 dB increment</td>
</tr>
<tr>
<td>Noise</td>
<td>1 nV/√Hz</td>
</tr>
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</table>

### SCANNER

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
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</thead>
<tbody>
<tr>
<td>Scanning area (X x Y x Z)</td>
<td>500 x 500 x 160 mm</td>
</tr>
<tr>
<td>Positioning accuracy</td>
<td>20 µm</td>
</tr>
<tr>
<td>Scanning increment</td>
<td>Minimum 50 µm</td>
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### PROBES

SONOSCAN CF series with robust stainless steel housing

Frequency range: 50 kHz to 400 kHz

Relative sensitivity: Up to -30 dB

Resolution: Up to 2 mm

Focusing: Permanent focus with shaped lens or electronically adaptable focus with multi channel Fresnel zone design

### SOFTWARE

- Easy to operate and intuitive graphic user interface
- Separate windows for parametrization of the system components (transmitter, receiver, scanner)
- Individual screen layout
- Storing of complete A-scans for every measurement point during the testing process
- Repositioning of the gates after the measurement
- Individual signal processing algorithms e.g. for filters
- Display of the test results as A-, B-, C- or D-Scan
- Storing and documentation of complete data sets

### EXAMPLE OF MEASUREMENT RESULT

C-Scan and D-Scan of honey comb structure with impact damages

Frequency: 200 KHz

### SALES & SUPPORT

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Certified according to ISO 9001

Subject to change without notification!
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