PCUS® pro ARRAY II – PHASED-ARRAY ULTRASONIC FRONTEEND

Full parallel phased-array frontend (128:128) for high-speed automated testing of weldings, wheelsets and CFRP structures.

UP TO 128 ELEMENTS FOR LARGE OR MULTIPLE PROBES

The PCUS® pro Array II is a complete phased-array ultrasonic frontend for use in automated and manual inspection systems using conventional or FMC/TFM techniques.

The integrated scanner interface and versatile connection options allows the direct connection of up to four incremental encoders and control signals. Testing at high speeds and with fully flexible parameterization is possible due to the high data transfer speed of up to 320 MB/s.

Due to the full parallel design the PCUS® pro Array II device is ready for high performance testing using newest and data intensive acquisition methods. The device can be used with the PCUS® pro Lab software or with .NET SDK (Software Development Kit), which enables customized solutions and get the total control over all hardware features.

All devices are calibrated and tested against the DIN EN ISO 18563-1 ultrasonic standard. New features can be implemented with firmware updates.
## PCUS® pro ARRAY II DETAILS

### Category | Characteristics | Value
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**General** | Dimensions (L, W, H) | 272 x 222 x 90 mm³
| Weight | 5.2 kg
| Operating temperature and humidity range | 5…50 °C @ 75 % relative humidity (non-condensing)

### Transmitter

| Number of transmitters | Up to 128
| Transmitter pulse voltage into internal 50 Ω | ±10 to ±85 V adjustable
| Pulse | Bipolar rectangle pulse
| Output impedance | < 10 Ω
| Pulse width | 0 to 500 ns, in steps of 2 ns
| Pulse rise/fall time | < 9 ns
| Pulse delay | 0 to 30 µs, in steps of 2 ns
| Pulse repetition frequency | Up to 15 kHz

### Receiver

| Number of receivers | Up to 128
| Input mode | Impulse/Echo
| Frequency range | 500 kHz to 30 MHz
| Input impedance | 50 Ω
| Filters | 4 analog band filters, digital filter
| Preamplifier gain | 0/20 dB switchable
| Main amplifier gain | 0 to 80 dB, maximum input signal 2 Vpp (100 % screen height)
| TGC | 0…80 dB, max. 40 dB/µs

### Signal path

| Probe delay | 0 to 524 µs, in steps of 8 ns
| Maximum recording length | 65535 samples
| A/D converter | 14 Bit, 125 MS/s
| Gates | One start gate and four measurement gates
| Rectification | None, positive-, negative-, or full-wave

### Interface and connectors

| Array transducer connector | 1x I-Pex or 2x I-Pex
| PC interface | USB 3.0 super speed/high-speed/full speed, USB 3.0 B-type connector
| Trigger in/out | TTL level on DSUB 44 I/O connector
| General purpose I/O (GPIO) | 3 digital inputs, 3 digital outputs, 2 auxiliary analog inputs on DSUB 44 I/O connector
| Scanner interface inputs | 4 axis, RS422 level on DSUB 44 I/O connector
| Power supply | 24 V DC, max. 8 A, Bulgin connector PX0412/3P

### Software

| Digitally signed drivers for Windows® (Windows® 7 or higher), x86 and x84
| For proper USB 3.0 operation, Windows 8.0 or higher is strongly recommended!

### System conformity

| The PCUS® pro Array II system meets all relevant requirements of DIN EN ISO 18563, Part 1

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