

Are you already familiar with our industry-standard services?

- Accredited testing laboratory in accordance with DIN EN ISO/IEC 17025 for various NDT methods
- Certificate of competence of the accredited laboratory to qualify and validate (new) nondestructive testing methods for industrial testing practice in the field of ultrasonic testing
- Rapid transfer to market readiness for qualified, standard-compliant use in industrial applications, both for new developments (in-house developments) or for adaptations
- Our associated quality management system is certified in accordance with DIN EN ISO 9001

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High-performance, single-channel ultrasound electronics for industrial applications

IUSE



IUSE – 19" chassis (rear view)



Left: IUSE – Frontend; right: IUSE – Main board

IUSE – High-performance, single-channel ultrasound electronics for industrial applications

As a further development of the UNIU platform the inspection electronics IUSE specially zeroes in on industrial applications. Besides the extension to 16 multiplexed transmitter/receiver channels a modular interface concept is provided which allows the application-specific selection of the host interface from Ethernet, USB 3.0 and a proprietary, optical technique. Moreover, IUSE by default provides established algorithms for pre-compression of measurement data at high cycle repetition-rates and the option for a position-dependent gain correction when operated in conjunction with a coordinate trigger unit.

Technical data

General

- Power supply 19" chassis: 230 VAC
- Variant IUSE frontend: 24 VDC – 78 VDC or Power over Ethernet (PoE)

Data sampling

- ADC: 14 Bit at a sampling rate of 240 MSamples/s
- 128 kSamples sampling depth
- Up to 511 averages
- Echo-start function
- Gate processing, up to 4 gates (overlap is possible)
- HF data, A-scan or compressed TD data

Receiver

- 90 dB dynamic range
- 23 MHz analog bandwidth
- 16:1 multiplexed receiver channel

enables connection of up to 16 probes

- Up to 8 analog input filters (5 onboard + 3 pluggable)
- Run-time-dependent gain correction TGC (256 sampling points, 90 dB dynamics)
- Position-dependent gain correction PGC (128 sampling points, 90 dB dynamics)

Transmitter

- Onboard transmitter topology: Square pulse, negative
- Transmission voltage 200 V at 50 Ω
- Shot repetition rate up to 10 kHz

Ports

- Flexibly configurable I/O ports (e.g. for control of external components)
- 128 MByte internal data cache for rapid measurements
- Communication interface, standard Ethernet 1 Gbit/s or 100 Mbit/s, alternatively USB 3.0 or proprietary optical interface

Software support

- Inclusion in different frameworks (C++, C#, LabView, etc.) via integration toolkit (ITK)

Applications

IUSE is optimized for industrial use in automated inspection applications that request a high number of single channels at concurrently high repetition rate of the inspection cycle. The sturdy front-end design complements the default 19" chassis variant with a PoE-ready solution for near-sensor assembly. The integration toolkit simplifies embedding IUSE into customer-specific inspection systems by support of established software frameworks (C++, C#, LabView).