Krautkrämer USIP|xs CV

ESSENTIAL & PERFORMANCE LINE

Multi-channel conventional ultrasonic instrument platform

- Industry-leading automation capabilities
- Scalable platform for utmost synergies
- Intuitive user interface for maximum ease of use

Krautkrämer USIP|xs CV is the all industrial purpose, multi-channel conventional ultrasonic instrument for integration into any automated and semi-automated inspection system.

With different T/R specifications and a multitude of channel configurations, the instrument is scalable in performance as well as associated cost. As a result, it is well suited for a wide range of applications and system sizes, such as Quality Assurance, Process Control and R&D.

Fast and easy to use

The plug-and-play instrument lives up to the latest usability standards and comes equipped with a vast array of integrated diagnostic features. The result: A quick start-up and operation without excessive staff training and learning efforts.

The integrated box design makes the instrument extremely easy to maintain in comparison to slot card type electronics due to fewer parts and interfaces.

Effective integration

Industry-leading automation and integration capabilities enable even the most complex systems to be built with less effort. Multiple interface standards make USIP|xs CV one of the best equipped instruments for effective integration into automated systems. The integrated field bus connection allows for a single cable connection to any PLC and minimizes wiring when designing larger systems.

A perfect fit for every application

As one of the largest platforms of conventional ultrasonic instruments, Krautkrämer USIP|xs CV offers UT performance and channel count that can be fully tailored to individual customer requirements – instead of a “one-size fits all” approach.

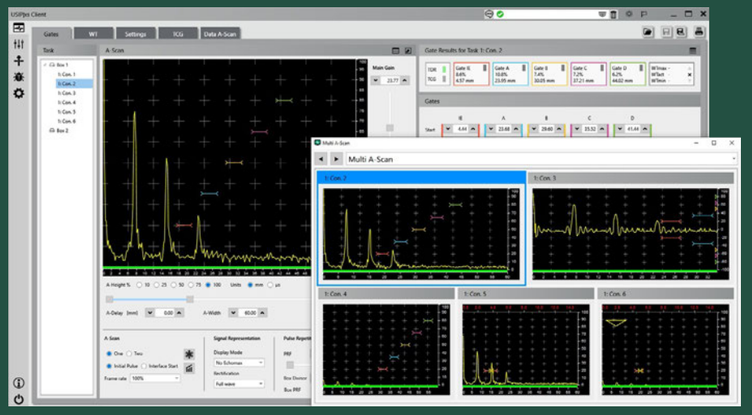
The platform concept creates synergies concerning technical infrastructure, instrument cost and integration know-how. This reduces the complexity in setting up and maintaining inspection systems since the scalable platform will offer the perfect instrument for any kind of system type and inspection need.

While the ESSENTIAL line is ideal for midrange applications with a high channel count – from 2 up to 12 channels for single instruments, the PERFORMANCE line was designed for more demanding use cases in UT. The high-end solution is equipped with 2, 4 or 8 channels that can be operated in parallel, allowing for more complex applications and a higher inspection speed if needed. Both instrument lines are available as single and multi-instrument systems.

Intuitive user interfaces for successful projects without excessive staff training

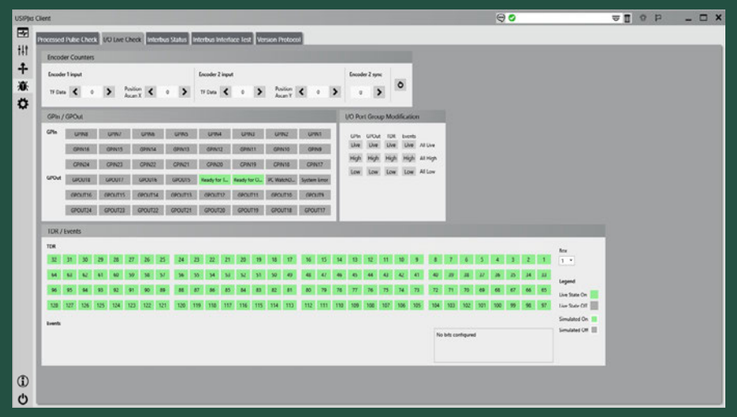
Graphical user interface (GUI)

- Graphical user interface compliant with the latest usability standards
- Up to 8 parallel A-Scans enable optimized inspection control
- All digital filters and up to 4 amplifiers per channel enable optimum setups under almost any inspection condition
- TCG function can be applied without limitations over the whole dynamic range



Interface monitoring

- Developed based on decades of experience as the leading manufacturer of ultrasonic testing systems
- Comprises a vast array of diagnostic tools and remote diagnostics capabilities to save time and efforts during start up, installation and commissioning



Software development kit (SDK)

Create your own, customized Graphical User Interface (GUI) or integrate your GUI into another HMI environment. The instrument can be operated via the standard GUI and the customized GUI in parallel. All parameter changes are synchronized online through the SDK software

Access all inspection raw data through the SDK:

- Collect gate data (amplitude, time of flight, gate events) for further processing in a customized inspection data display, evaluation or recording.
- Record digital Data A-Scans in real time for a fully customized evaluation.

Data A-Scan capabilities: Up to 4096 samples; configurable resolution per channel to reduce data size. Content per sample:

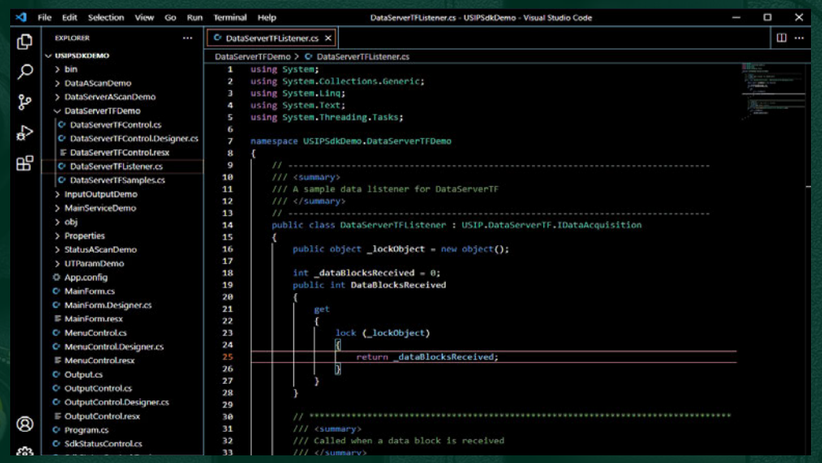
- 1x amplitude value (rectified amplitudes), resp. 2x (RF amplitudes)
- Encoder data x, y position (optional)
- Gate data: amplitude, time of flight (optional)
- Configurable amplitude resolution 16 bit or 24 bit (global parameter)

For eased communication within a system, the SDK unlocks additional digital I/O interfacing capabilities that can be used via the SDK-API, e.g. for PLC handshake, Inspection start/stop, Ready for testing, etc. :

- OUT: 3x via D-Sub, 12x via bus gateway; IN: 7x via D-Sub, 16x via bus gateway
- The SDK software supports C# / .net.

The scope of supply consists of:

- 2, 5 or 10 licenses for use of the Krautkrämer USIP|xs CV Software Development Kit with one Krautkrämer USIP|xs instrument or multi-instrument assembly and within an offline development environment
- Software
- Programmers handbook
- HTML File with sample codes and support text
- Language of software and documentation: EN



Ultraproof 2.0 chart recording software

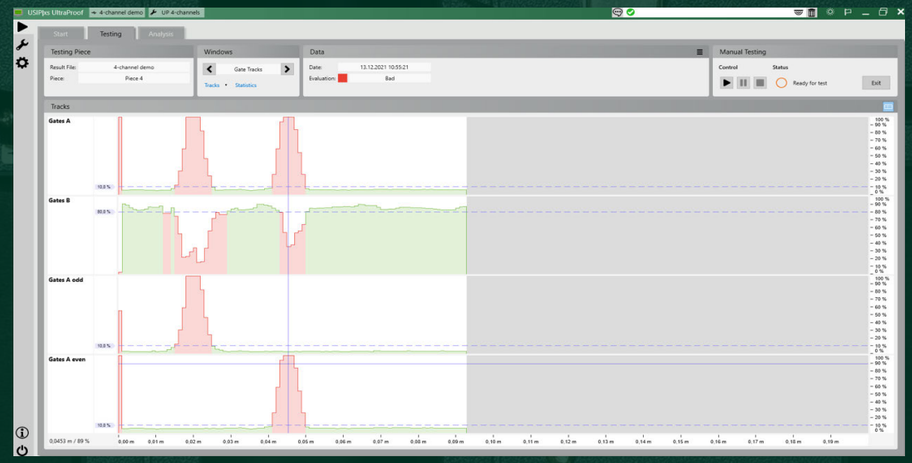
Digital strip chart recording software for installation on the USIP|xs system's PC.

- Digital data interface to the USIP|xs single instrument or multi-instrument arrangements
- Records and displays the results of up to 160 gates per instrument
- Representation of event, amplitude and ToF [mm, inch] information
- All gate information can be grouped and assigned to suitable tracks according to the individual user requirements
- Strip chart display can be grouped into up to 8 configurable views containing up to 16 strip chart tracks each
- Max. 25000 length segments recordable per test piece (segment length configurable)
- Single piece or batch operation
- Start/pause/stop control via external test data release signals or manual
- "Ok" / "Not Ok" evaluation and interface signal
- Configurable statistics
- Report generator
- csv data export
- Viewer mode for review of stored inspection results

Feature availability, interfaces, look & feel and software operation vary from USIP40-Ultraproof. In case of specific needs or requirements, we recommend a software demo.

The scope of supply consists of:

- 1, 5 or 10 licenses for use of the Krautkrämer USIP|xs Ultraproof software with one Krautkrämer USIP|xs instrument or multi-instrument assembly
- Software
- Software manual
- Language of software and documentation:
  DE, EN, ES, FR, IT, PT, ZH, JA



Technical data		
Krautkrämer USIP|xs CV	**Essential**	**Performance**
Channels	2, 4, 8, 12 channel instrument 16, 24, 36 channel multi-instrument system	2, 4, 8 channel instrument 12, 16, 24, 32 channel multi-instrument system
Multiplexing	2, 4, 8 channel instrument: 2 parallel evaluation channels 12 channel instrument: 4 parallel evaluation channels	full parallel operation of all channels
Transmitter voltage	25 - 200 V	25 - 400 V
Transmitter pulse width	30 – 1000 ns	30 - 5000 ns
Pulse repetition frequency	max. 20 kHz	max. 20 kHz
Probe frequency	0.7 – 13 MHZ (-3 dB)	0.2 - 25 MHz (-3 dB)
Sampling rate	50 MHz, upsampled to 400MHz	100 MHz, upsampled to 400 MHz
Dynamic range	0 – 80 dB	0 - 106 dB
Gain per channel	1x main + individual gains for up to 3x gates	
TCG	1 curve per channel	
Gates per channel	5, incl. 1x interface echo gate	
Resolution of ToF	2.5 ns	
Power input	24 VDC/130 W	
Housing	19" rack mount or desk top Protective covering on request	
Protection grade	IP 54	
Temperature range	5 – 40 °C	
Probe connectors	Lemo 1, BNC	
Interfacing	Ethernet 1 Gbit/s Field bus 160 bit I/O D-Sub 78 Pin	
HW-interface signals per instrument	144 gate event bits 8x analog out 64x TDR in 4x encoder in	
UT instrument standard	EN ISO 22232-1	

Commercial offering	
Krautkrämer USIP|xs CV basic instrument packages	
Single instrument	**Essential:** 2, 4, 8 or 12 channel instrument, Lemo 1 Coax or BNC **Performance:** 2, 4, 8 channel instrument, Lemo 1 Coax or BNC 1x LAN cable, 2 m 1x power supply cable 24 V, 2 m 1x set 19" rack mounting 1x Krautkrämer USIP|xs operator GUI for installation on a customer supplied PC/laptop Operating manual Safety instructions Manufacturer's certificate
Multi-instrument systems	**Essential:** 16, 24 or 36 channel multi-instrument packages, Lemo 1 Coax or BNC **Performance:** 12, 16, 24, 32 channel multi-instrument system, Lemo 1 Coax or BNC 1x LAN cable 2 m per instrument 1x power supply cable 24 V, 2 m per instrument Optical data link cable instrument to instrument Electrical sync cable instrument to instrument 1x set 19" rack mounting per instrument 1x Krautkrämer USIP|xs operator GUI for installation on a customer supplied PC/laptop Operating manual Safety instructions Manufacturer's certificate
Accessories for power supply	
Desktop power supply unit	Universal, desk top style power supply unit 110/230 V-24 V, 50 Hz / 60 Hz
Accessories for interfacing	
Interface terminal 78 pin	78-pin terminal clamp incl. 2m cable for easy digital signal handover from the periphery to the instrument
Field bus gateway	Interbus – Profinet gateway for mounting rail installation incl. 2m cable for cost effective handover of large amounts of interface signals
Sync cable, 1 m	Needed in case an external sync pulse needs to be handed over to the instrument Configuration: 2x M12
Probes and probe cables	
Visit our probes' homepage on www.bakerhughes.com	
Instrument certification	
EN ISO 22232-1 certificate	Certification of the instrument according to EN ISO 22232-1
Krautkrämer USIP|xs app store	
Krautkrämer USIP|xs SDK	Software development kit
Krautkrämer USIP|xs Ultraproof	Digital strip chart recorder with integrated statistics and report generator