

PCUS[®] *pro* HF – HIGH-FREQUENCY ULTRASONICS DEVICE

Compact high-frequency ultrasonic frontend for fast automated testing of special welds and thin materials.

BETWEEN CLASSICAL ULTRASONICS AND ACOUSTIC MICROSCOPY

The ultrasonic frontend device PCUS[®] *pro* HF closes the existing gap between classical ultrasonic testing and acoustic microscopy. The inline-capable, compact frontend allows the automated testing of thin sheet metal, composite materials, complex joints or electronic components.

Thanks to the extreme compact design and very low power consumption the device can be mounted directly near the probe. With the integrated 4-axis scanner interface and the fast USB 3.0 super speed connection for data transfer rates of up to 320 MB/s, this device can be integrated seamlessly into industrial testing stations.

The PCUS[®] *pro* HF device can be used with the PCUS[®] *pro* Lab software suite or can be integrated into own testing software using .NET SDK (Software Development Kit) for the complete control of all hardware functions.

1 PCUS[®] *pro* HF frontend – front side.



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Category	Characteristics	Value
General	Dimensions (L, W, H)	190 x 150 x 43 mm ³
	Weight	940 g
	Operating temperature and humidity range	5...50 °C @ 75 % relative humidity (non-condensing)
Transmitter	Number of transmitters	1
	Transmitter pulse voltage into 50 Ω	-50 to -180 V adjustable
	Pulse	Negative rectangle pulse
	Output impedance	< 10 Ω
	Pulse width	0 to 50 ns, in steps of 1 ns
	Pulse fall time	< 1.5 ns
	Pulse delay	0 to 10 μs, in steps of 8 ns
	Pulse repetition frequency	Up to 20 kHz
Receiver	Number of receivers	1
	Input mode	Pulse/Echo or Transmit/Receive mode
	Frequency range	5 to 150 MHz
	Input impedance	50 Ω
	Filters	Four analog filters, software selectable, values on user's demand
	Preamplifier gain	0/20 dB switchable
	Main amplifier gain	0...50 dB, maximum input signal 2 V _{pp} (100 % screen height)
	TGC	–

Signal path	Probe delay	0 to 250 μs, in steps of 8 ns
	Maximum recording length	65,520 samples
	A/D converter	12 bit, 500 MS/s
	Gates	One echo start gate and four measurement gates
	Rectification	None, positive-, negative-, or full-wave
Interface and connectors	Transducer connector	2x SMA female
	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. 400 mA on locking DC plug 2.1mm, CLIFF FC681478
	Software	Digitally signed drivers for Windows® (Windows® 7 or higher), x86 and x64
For proper USB 3.0 operation, Windows 8.0 or higher is strongly recommended!		
Managed Windows® SDK based on .NET 4.8		
	PCUS® <i>pro</i> Lab testing software	

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