

PCUS[®] pro LF – Low-frequency ultrasonic device

Compact low-frequency ultrasonic frontend for fast automated testing with air-coupled ultrasound.

Extends the PCUS Pro[®] family to low frequency testing

The ultrasonic frontend device PCUS[®] pro LF can be used to perform air-coupled ultrasonic testing and evaluation of materials like wood, CFRP or concrete with low frequency probes. The inline-capable, compact frontend allows the automated testing of glued CFRP or metal assemblies with robots or scanners as well as laboratory use for various low-frequency applications.

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.



PCUS[®] pro LF frontend – back side.

PCUS[®] pro LF Details

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 1 k Ω	± 50 V to ± 350 V adjustable
	Pulse	Bipolar rectangle pulse burst
	Output impedance	50 Ω
	Pulse width	0 to 20 μ s, in steps of 12.5 ns
	Number of burst pulse	1 to 16
	Pulse rise/fall time	10 ns
	Pulse repetition frequency	Up to 5 kHz

PCUS® pro LF Details

Category	Characteristics	Value
Receiver	Number of receivers	1
	Input mode	Pulse/Echo or Transmit/Receive mode
	Frequency range	50 kHz to 5 MHz
	Input impedance	1 K Ω
	Filters	Four analog filters, software selectable, values on user's demand
	Preamplifier gain	0/40 dB switchable
	Main amplifier gain	0...80 dB, maximum input signal 10 V _{pp} (100% screen height)
	TGC	0...80dB, max. 40 dB/ μ s
Signal path	Probe delay	0 to 819 μ s in increments of 12.5 ns
	Maximum recording length	65,535 samples
	A/D converter	14 bit, 80 MS/s
	Gates	One echo-start gate and four measurement gates
	Rectification	None, positive-, negative-, or full-wave
Interface and connectors	Transducer connector	2x LEMO 00
	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® pro Lab testing software	

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