

Ultrasonic transducer S1808

DATA SHEET

Intended use

A general-purpose low-frequency transducer S1808 for the dry-point-contact (DPC) excitation or acquiring shear-horizontal ultrasonic waves in highly scattering materials (concrete, wood, stones etc.) can be used in ready-made housing with the Lemo00 plug or non-wired for self-tailored applications, e.g. for customization of transducer arrays by the customer.

Main technical specifications

Type of transducer:	Dry-point-contact
Type of generated wave mode:	Shear-horizontal
Special properties:	Couplant-free operation
Nominal frequency:	250 kHz
Electric capacity of the piezoelectric element:	980 ± 100 pF
Maximum excitation pulse voltage, V:	400 V
Delay time in transducer protector:	0.9 μs
Connector type:	LEMO00.250
Overall dimensions:	11x22.6 mm
Weight:	14 gr
Operating temperature range:	from -20 to +50 °C



Measurement conditions and equipment used

Temperature 25°C, rel. humidity 43%

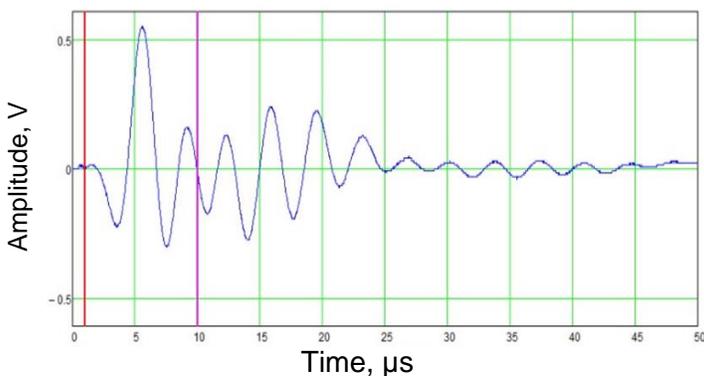
Generator transmitting signal: square pulse with 200 V amplitude, duration 10 μs

Receiving path parameters: integrating amplifier bandwidth 0.001 – 40 MHz, noise 0.7 μV / √Hz, input resistance 4 kΩ.

Calibration sample: 3D box UCB500, plexiglass, thickness 175 mm, longitudinal wave velocity 2700 m/s, transversal waves velocity 1300 m/s.

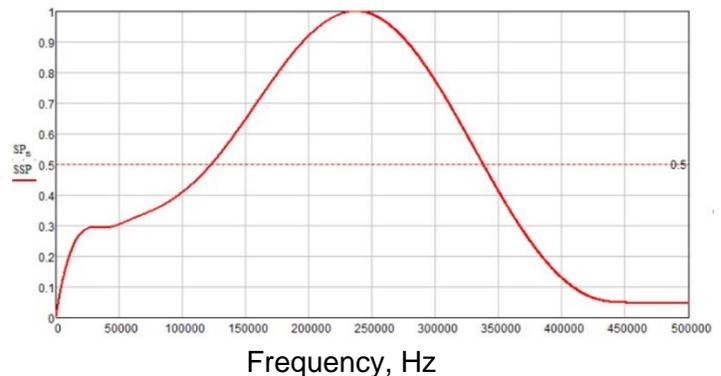
Measured characteristics

Shape of the measured pulse



Pulse duration:	6.15 μs
Maximum AFR frequency f_p :	236.52 kHz
Lower AFR frequency f_l :	122.64 kHz
Upper AFR frequency f_u :	340.52 kHz

Amplitude frequency response



Operating AFR frequency f_c :	217.88 kHz
Nominal double conversion ratio S_{rel} :	-60 dB
Absolute band width P :	154.32 kHz
Relative band width B_w :	92.1 %