Seztec Ultra Pro-Lite Ultrasonic Flowmeter



Portable Clamp-On Ultrasonic Flow Measurement of Liquids

Features

- Non-invasive clamp-on measurement for any sonically conductive liquid; no cutting, no process shutdown
- Advanced UK-developed digital signal processing (DSP) for stable, accurate flow readings
- Pipe sizes from 10 to 1200+ mm (0.4 to 47+ inch) with two interchangeable transducer sets
- Flow velocity 0.01 to 25 m/s (0.03 to 82 ft/s), 100:1 turndown, 0.15 % repeatability
- Backlit graphic display with waveform signal diagnostics for fast, verifiable setup
- 4 MB internal data logger, 12 stored measurement sites, totalizers on all measured values
- Optional wall thickness gauge for pipes with unknown wall thickness
- Rechargeable PP3 Li-ion battery (2 supplied) for approx. 12 hours of operation, or USB power
- IP65 transmitter in a protective rubber case; IP54 or IP68 transducers

Applications

Designed for locations where space is limited or where installing an in-line flowmeter is impractical. Typical sectors: industrial and energy, oil and gas, power generation, water and wastewater, medical and science. Typical liquids: clean water, dirty water, chemicals and petrochemicals, fuel and oil.

SEZTEC Smart Systems

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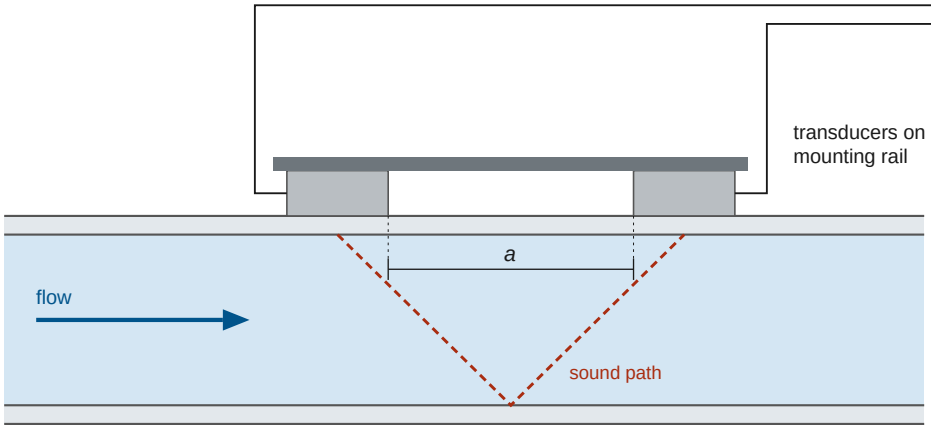
Function

Measurement principle

The transducers are clamped to the outside of a pipe that is completely filled with liquid. Ultrasonic signals are transmitted alternately by each transducer and received by the other. Because the liquid is moving, the signal travelling with the flow arrives sooner than the signal travelling against it. The transmitter measures this transit time difference and calculates the flow velocity along the sound path, then converts it to volumetric flow rate using the pipe cross-section.

The received signals are processed digitally. The received waveform can be displayed on screen, so the operator can check signal quality and transducer coupling before logging data.

Typical measurement setup



a – transducer spacing, measured from inner face to inner face of the transducers

Example of a reflect (V) arrangement: both transducers on the same side of the pipe, mounted on the supplied rail.



Ultra Pro-Lite transmitter

Application limits

- The pipe must be completely full of liquid at the measuring point.
- Gas or solids content must be below 10 % of volume.
- Accuracy depends on the installation: pipe condition, straight run and correct pipe data entry. Use the optional wall thickness gauge where wall thickness is unknown.

Transmitter

Technical data

		Ultra Pro-Lite
		
design		portable, handheld
measurement		
measurement principle		clamp-on ultrasonic, transit time difference, digital signal processing
flow velocity	m/s ft/s	0.01 to 25 0.03 to 82
resolution	mm/s	0.25
turndown ratio		100:1
repeatability		0.15 % of measured value
measurement rate	Hz	1
fluid		any sonically conductive liquid, full pipe, gas or solids content < 10 % of volume
pipe size	mm inch	10 to 1200+ (transducer dependent, see Transducers) 0.4 to 47+
measurement uncertainty (flow velocity)		
standard		±1 to 2 % of measured value, depending on application
with process calibration		±0.5 % of measured value, calibrated against a reference meter
transmitter		
power supply		• rechargeable PP3 Li-ion battery (2 supplied) • USB
operating time	h	approx. 12 (battery)
display		graphic display, backlit
keypad		tactile keypad with audio feedback
degree of protection		IP65
dimensions	mm inch	165 x 83 x 26.2 (see dimensional drawing) 6.50 x 3.27 x 1.03
weight	g lb	850 1.87
ambient temperature	°C °F	-10 to +65 14 to 149
measuring functions		
physical quantities		flow velocity, volumetric flow rate
totalizer		all measured values can be totalized
diagnostic functions		waveform signal display
wall thickness		optional, with wall thickness gauge IC-US-WTG-LEMO
communication interfaces		
service interfaces		• Micro USB (data) • USB-C (charging)
data logger		
capacity	MB	4
measurement sites		12 stored site configurations

Dimensions



Dimensions in mm (165 x 83 x 26.2 mm = 6.50 x 3.27 x 1.03 inch). Left: side and front view. Right: top view with transducer and USB connectors.

Standard scope of supply

item	qty
Ultra Pro-Lite transmitter	1
protective rubber case	1
transducer set (as ordered, see order codes)	1 set
clamping rail and straps	1
water-based coupling gel	1
tape measure	1
PP3 Li-ion rechargeable battery	2
Micro USB data cable	1
USB-C charging cable	1
carry case	1

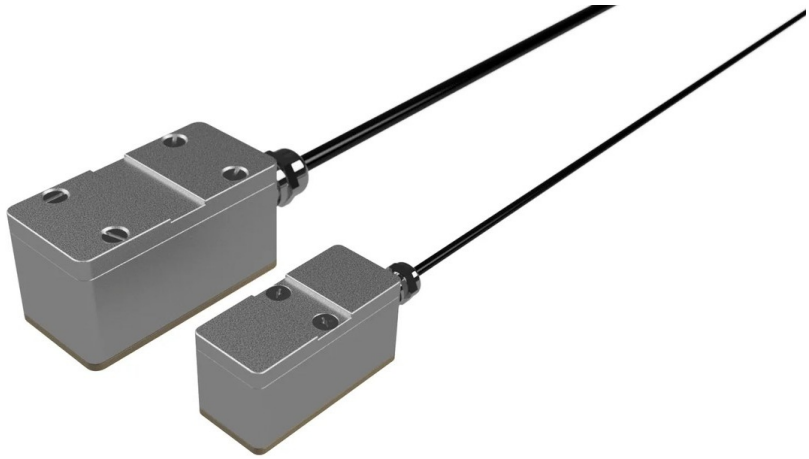


Ultra Pro-Lite kit and field installations.

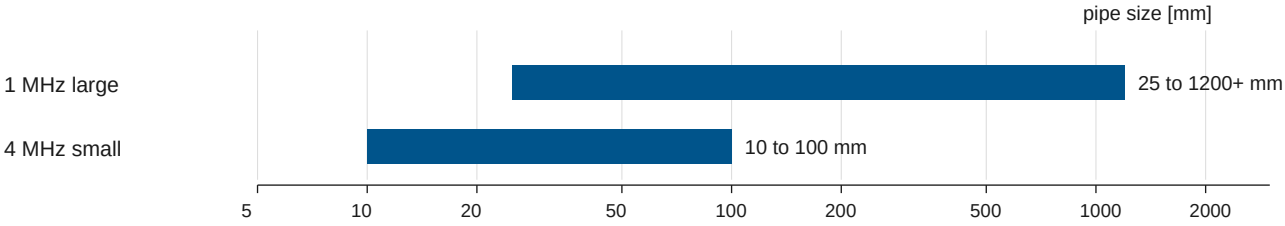
Transducers

Transducer selection

Select the transducer set by pipe size. Both sets connect to the same transmitter.



Ultra Pro-Lite transducers: 1 MHz large (left) and 4 MHz small (right).



Technical data

		1 MHz large	4 MHz small
transducer frequency	MHz	1	4
pipe size	mm inch	25 to 1200+ 1 to 47+	10 to 100 0.4 to 3.9
material		stainless steel and PEEK	stainless steel and PEEK
degree of protection		IP54 or IP68 (order option)	IP54 or IP68 (order option)
dimensions (l x w x h)	mm inch	60 x 30 x 35 2.36 x 1.18 x 1.38	40 x 20 x 25 1.57 x 0.79 x 0.98
application		standard installations	small pipes, locations with limited access
temperature	°C °F	-10 to +80 14 to 176	-10 to +80 14 to 176
cable length	m ft	10 (standard), longer cables available 33	10 (standard), longer cables available 33
mounting		clamping rail and straps	clamping rail and straps

Coupling

Water-based coupling gel is supplied for acoustic coupling between transducer and pipe wall.

Ordering

Ultra Pro-Lite with transducer set

order code	transducer	pipe size [mm]	pipe size [inch]	transducer protection
IC-UPF-10-L-IP54	1 MHz large	25 to 1200+	1 to 47+	IP54
IC-UPF-10-L-IP68	1 MHz large	25 to 1200+	1 to 47+	IP68
IC-UPF-40-S-IP54	4 MHz small	10 to 100	0.4 to 3.9	IP54
IC-UPF-40-S-IP68	4 MHz small	10 to 100	0.4 to 3.9	IP68

Order code structure: IC-UPF-[frequency: 10 = 1 MHz, 40 = 4 MHz]-[size: L = large, S = small]-[transducer protection].

Wall thickness measurement (optional)

Pipe wall thickness is a required input for accurate clamp-on measurement and is often unknown. The wall thickness gauge connects to the Ultra Pro-Lite transmitter and measures the wall thickness directly from the outside of the pipe.



order code	description
IC-US-WTG-LEMO	wall thickness gauge (WTG), LEMO connector

Contact

For quotations, longer transducer cables and application support, contact Seztec USA: **+1 (832) 899-4040 • sales@seztec.com • www.seztec.com**

For more information: **www.seztec.com**

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