ALSONIC-DSPPL

Ultrasonic Flowmeter

Model ALSONIC-DSP Series

GENERAL

The SMC Alsonic DSPPL series is a portable transit-time ultrasonic flowmeter with clamp-on transducers for non-invasive liquid measurement. This device uses patented "fine time measurement technology", making use of ultrasonic beams that can measure at pico-seconds time intervals. This rapid array of measurements enables accurate, drift-free flow rate measurement in liquids that contain a second phase of entrained solids or gas bubbles. The use of DSP technology enables "Cross Correlation" of ideal signals to cancel extraneous noise signals, and create a three-dimensional cross section of the velocity distribution profile of the medium flowing through the pipe. DSP technology also enables the use of "FFT (Fast Fourier Transforms)" in order to generate the two signals at the same frequency; thereby increasing the signal-to-noise ratio for accurate, drift-free flow measurement in liquids.

FEATURES

- Color Graphic LCD display 128x64 for flow rate, total flow & signal shape
- 4.0 Mbytes data logger with up to 200,000 data fields
- Velocities from 0.03 ~ 40 feet/sec (0.01 ~ ± 12 m/s)
- Measures flow rates for any liquid containing ≤ 30% suspended solids, including waste water
- NIST traceable calibration certificate
- High accuracy; ±1.0% of reading with single path
  ±0.5% of reading with dual path
- Oscilloscope function for diagnostics
- Durable carrying case allows for portable use of the instrument
- Fine Time Measurement Technology (Patented)
- Data logger function; includes date, totalizer, diagnostics
- Response time less than 1 second.

SPECIFICATIONS

Measuring Principle:	Transit time differential
Pipe Size:	B Type : ¾" ~ 4" (20 mm ~ 100 mm) C Type : 2" ~ 12" (50 mm ~ 300 mm) D Type : 12" ~ 40" (200 mm ~ 1000 mm) E Type : 20" ~ 240" (500 mm ~ 6000 mm)
Pipe Material:	Cast Iron, Stainless Steel, Ductile Iron Copper, PVC, PVDF, Aluminum, Asbestos Fiberglass
Liner Material:	Tar Epoxy, Rubber, Mortar, Polypropylene Polystryal, Polystyrene, Polyester, Ebonite Polyethylene, Teflon
Display:	Color Graphic LCD 128x64
Flowrate:	4 ½ digit
Totalizer:	10-digit, Positive, Negative & Net values
Engineering Units:	m³, Liter, US Gallon, Imperial Gallon, Million Gallon, Cubic Feet, US Barrels, Imperial Barrels, Oil Barrel.
Time Units:	Second, Minute, Hour, Day
Other:	Oscilloscope function for diagnostics
Accuracy:	± 1% of reading with single path ± 0.5% of reading with dual path
Repeatability:	± 0.2% of reading

Keypad:	16-key touch pad
Response Time:	Less than 1 second
Flow Velocity:	0.03 ~ 40 feet/sec (0.01 ~ ± 12 m/s)
Resolution:	0.003 feet/sec (0.001 m/s)
Ambient Temperature:	-4 ~ 140 °F (-20 ~ 60 °C)
Fluid Temperature:	-40 ~ 250° F (-40 ~ 120° C)
Max. Cable Length:	650' (200 M)
Power Consumption:	Less than 20W
Power Supply:	Battery operated; 90 ~ 260V_{AC} 50/60 Hz recharger included
Data Storage:	Operation parameters and totalization Data stored via EEPROM for more than 10 years
Output:	Two analog 4-20 mA
Data Logger:	4.0 Mbytes,up to 200,000 bits of data
Alarm:	Two alarm outputs configurable for total, hi/low flow rate
Communication:	RS-232
Dimensions:	See page 2
Weight:	7.25 lbs. (3.3 Kg)
Protection Converter:	NEMA 4 (IP65)
Sensor:	IP68 (Submersible)

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TRANSDUCER SPECIFICATIONS

■ Standard transducers

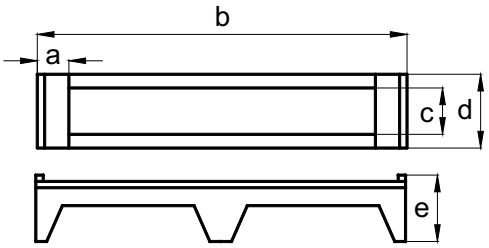
Fluid Temperature : -4 ~ 250 ° F (-20 ~ 120 ° C)

Model	A	B	C	D	Pipe Size (Nominal)
XLB	0.90" (23 mm)	1.65" (42 mm)	1.45" (37 mm)	2.48" (63 mm)	3/4" ~ 4" (DN 20 ~ 100 mm)
XLC	1.38" (35 mm)	2.36" (60 mm)	1.77" (45 mm)	2.83" (72 mm)	2" ~ 12" (DN 50 ~ 300 mm)
XLD	1.38" (35 mm)	3.66" (93 mm)	1.97" (50 mm)	3.38" (86 mm)	8" ~ 40" (DN200~1000mm)
XLE	2.00" (51 mm)	5.70" (145 mm)	3.00" (76 mm)	4.37" (111 mm)	20" ~ 240" (DN500~6000mm)

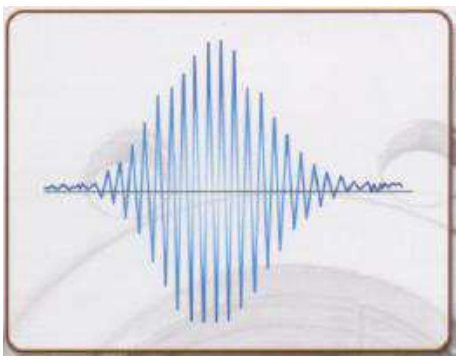
Dual path or dual channel - Users may measure two pipe simultaneously or use both paths to monitor a single pipe for improved accuracy and improved performance in high-particle count applications.

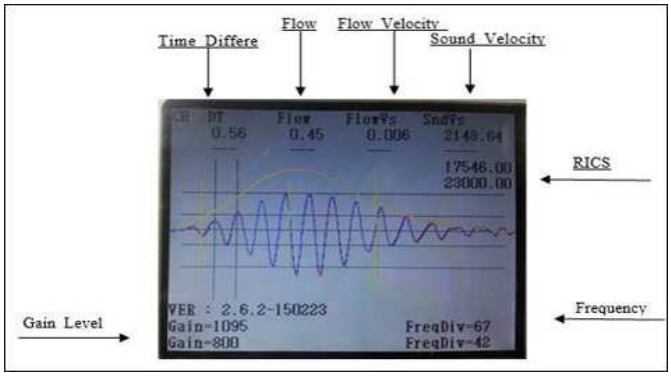
■ Mounting Track Size

Model	a	b	c	d
M-XLB	1.18" (30 mm)	11.00" (280 mm)	0.90" (23 mm)	0.90" (23 mm)
M-XLC	1.57" (40 mm)	14.96" (380 mm)	1.38" (35 mm)	1.69" (43 mm)
M-XLD	1.57" (40 mm)	27.55" (700 mm)	1.38" (35 mm)	1.69" (43 mm)
M-XLE	1.57" (40 mm)	14.96" (380 mm)	2.00" (51 mm)	2.75" (70 mm)



■ Oscilloscope Function (Diagnostic)





Smart Measurement

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INSTALLATION

- Display Module

Transducers

Mounting Kit

Smart Measurement

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You also need to provide the following information:

TYPE OF FLUID	Please provide the name of your fluid, including operating density and viscosity
LINE SIZE	Please indicate nominal pipe diameter and sensor connection type (insertion, clamp, etc..)
PROCESS PRESSURE AND TEMPERATURE	We will calibrate your flowmeter as close to your operating conditions as possible
TYPE OF ELECTRONICS	Please specify output and installation type (compact, wall mount, panel mount, etc...)
PIPE NAME AND MATERIAL	Please provide pipe material, wall thickness, lining type, lining thickness
PIPE CONDITION	Straight pipe condition (10D upstream, 5D downstream of sensor location required)

ALSONIC-DSPPL

ALSONIC-DSPPL	**	**	**	DESCRIPTION
Portable type, up to 2 path/channel, IP66, AC power, Two 4-20mA, Two Relays, One RS-232C/485	PL			Transmitter
Clamp-On, ⅓"~1¼" (DN6~30), up to 248°F (120°C), Intrinsically Safe, 0.02 to 12 m/s	XLA			Transducers
Clamp-On, ¾"~3" (DN20~80), up to 248°F (120°C), Intrinsically Safe, 0.02 to 12 m/s	XLB			
Clamp-On, 2"~12" (DN50~300), up to 248°F (120°C), Intrinsically Safe, 0.02 to 12 m/s	XLC			
Clamp-On, 12"~36" (DN300~900), up to 248°F (120°C), Intrinsically Safe, 0.03 ~ 40 feet/sec (0.02 to 12 m/s)	XLD			
Clamp-On, 20"~120" (DN500~3000), up to 248°F (120°C), Intrinsically Safe, 0.03 ~ 40 feet/sec (0.02 to 12 m/s)	XLE			
Clamp-On, 80"~236" (DN2000~6000), up to 248°F (120°C), Intrinsically Safe, 0.03 ~ 40 feet/sec (0.02 to 12 m/s)	XLF			
No cable		NC		Signal Cable
10m cable (standard).		C10		
cable length is **(≤200m)		C**		
No option			NN	Options
Mounting track for transducer XLA			MTA	
Mounting track for transducer XLB			MTB	
Mounting track for transducer XLC			MTC	
Mounting track for transducer XLD			MTD	
Mounting track for transducer XLE/XLF			MTE	
Portable easy mounting track for XLC, XLD			ETP	
Portable magnetic mounting track for XLC, XLD, XLE			MTP	
IR Remote control			RC	