



ALSONIC-DSP

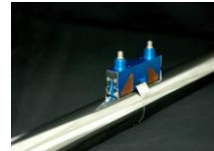
Ultrasonic Flowmeter Model Alsonic-DSP

GENERAL

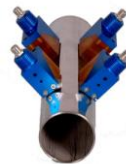
The **SMC Alsonic DSP** series is a fixed-mount, transit-time ultrasonic flowmeter with clamp-on transducers for non-invasive liquid measure device uses patented "fine time measurement technology", making use of ultrasonic beams that can measure at pico-seconds time intervals. This range of measurements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

FEATURES

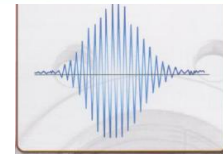
- Color Graphic LCD display 128x64 for flow rate, total flow & signal sh
- 4.0 Mbytes datalogger up to 200,000 data fields
- Velocities from 0.03 ~ 40 feet/sec (0.01 ~ ± 12 m/s)
- Any liquids containing ≤ 30% suspended solids, including waste water
- NIST traceable calibration certificate
- High accuracy; ±1.0% of reading with single path
±0.5% of reading with dual path
- Oscilloscope function for diagnostics
- AR (Anti-Round) Mode (patent pending)
- Fine Time Measurement Technology (Patented)
- Data logger function; includes date, totalizer, diagnostics
- Response time less than 1 second.



Single Path



Dual Path



Oscilloscope Function

SPECIFICATIONS

- Measuring Principle : Transit time differential
- Pipe Size : B Type : ½" ~ 4' (15 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, Aluminum, Asbestos
Fiberglass
- Liner Material : Tar Epoxy, Rubber, Mortar, Polypropylene,
Polystryal, Polystyrene, Polyester, Ebonite,
Polyethylene, Teflon
- Display : Color Graphic LCD 128x64 with backlight
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 with tactile action
- 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)
- Mounting : wall mounting
- Max. Cable Length : 650' (200 M)
- Power Consumption : Less than 20W
- Power Supply : 90 ~ 260V_{AC} 50/60 Hz
- Data Storage : Operation parameters and totalization
data are stored by EEPROM for more
than 10 years
- Output : two analog 4-20 mA
- Data Logger : 4.0 Mbytes, upto 200,000 bits of data
- Alarm : two relays for total, hi/low
- Communication : RS-232
- Dimension : 9" x 7 7/8" x 4 3/8" (230 x 200 x 110 mm)
- Weight : 7.25 lbs (3.3 Kg)
- Protection -Converter : NEMA 4 (IP65)
Sensor : IP68(Submersible)

SmartMeasurement.

10437 Innovation Drive, Suite 315, Milwaukee, WI 53226 USA

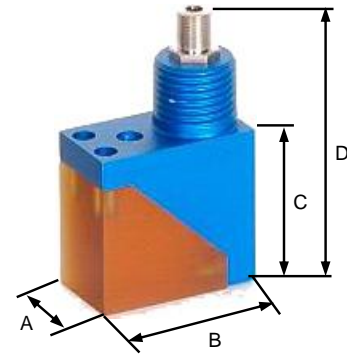
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➤ TRANSDUCER SPECIFICATIONS

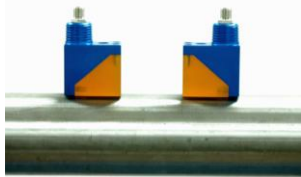
● **Standard transducers**

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)	½" ~ 4" (DN 15 ~ 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)	0" ~ 240" (DN500~6000mm)



Single path



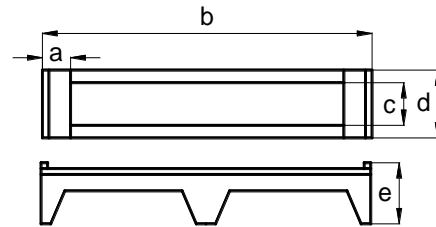
Dual Path



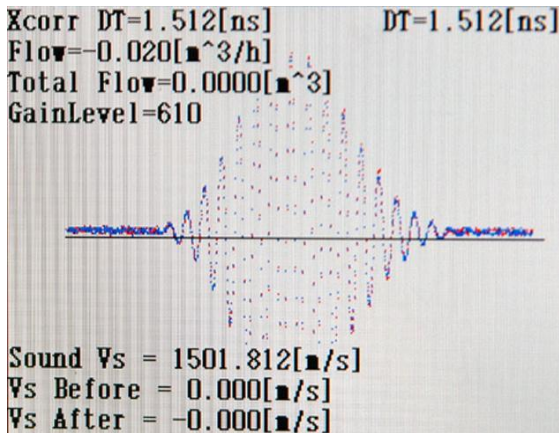
dual path or dual channel (can measure two pipe simultaneously)
 (user can select dual path or dual channel in programming)

● **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)

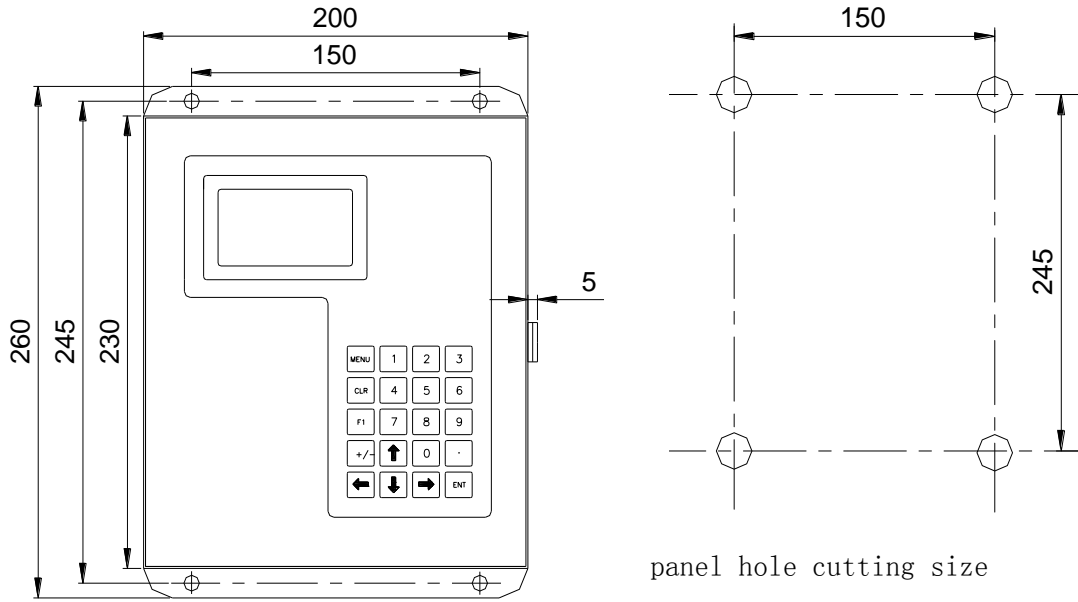


● **Oscilloscope Function (Diagnostic)**

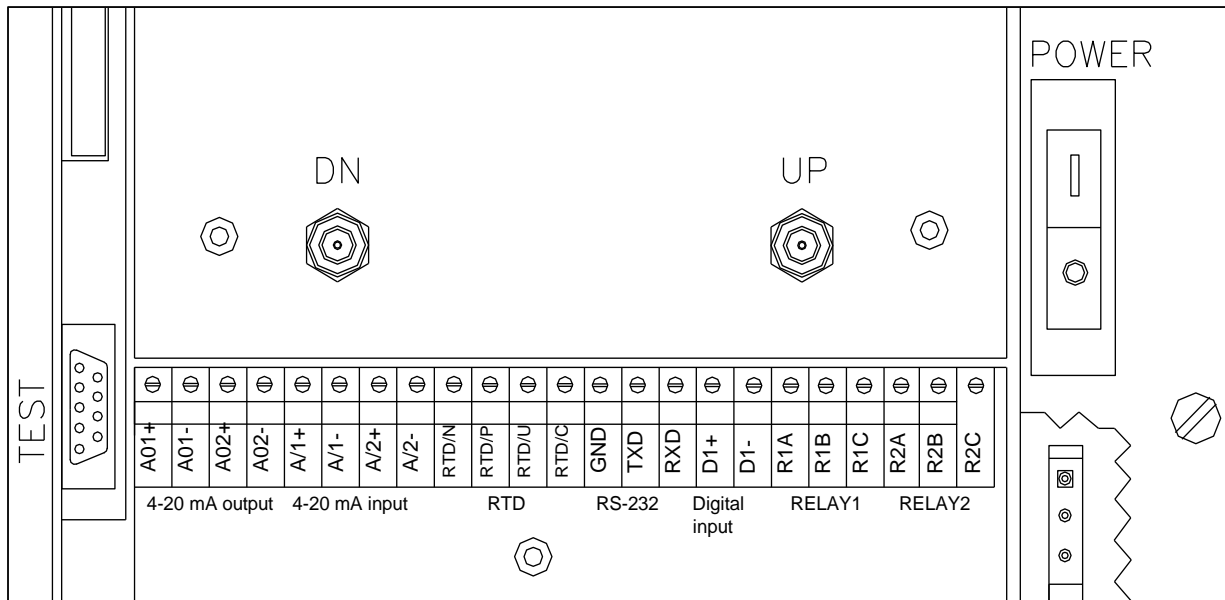


➤ DIMENSIONS

● Alsonic-DSP NEMA 4



➤ WALL MOUNTING WIRING



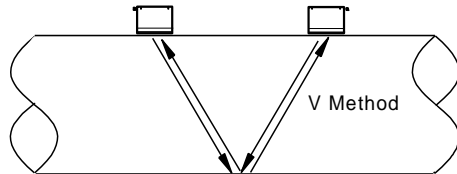
Please contact your SMC application engineer

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 diameter, material, wall thickness, lining type, lining thickness
Pipe Condition	Straight pipe condition (10D upstream, 5D downstream of sensor location required)

7 Model Selection Guide

Alsonic-DSP						
Example 1: Alsonic-DSP-100N-XLB-C10						
Example 2: Alsonic-DSP-100DN- 2(XLB)- 2(C10)						
Alsonic-DSP-	**	**	**	**		Description
100N-single pass/channel	100N					Flow Meter
100DN - dual path/channel	100DN					
1/2" ~ 4" (DN 15 ~ 100 mm) and mounting track	XLB					Transducers and mounting rack
2" ~ 12" (DN 50 ~ 300mm) and mounting track	XLC					
8" ~ 40" (DN 200-1000mm) and mounting track	XLD					
20" ~ 240' (DN500~6000mm) and mounting track	XLE					
* cable length is 10 meter standard, and max. cable distance 200 M			Cxx			Extra Cable



- * Alsonic-DSP normal installation is reflect (V) method, not direct (Z) mode
- * when using single path with reflect mode, accuracy is double that of direct mode and the same as four path
- * when using dual path with reflect mode, accuracy is the same as four path