



# ALSONIC-DSP

## Ultrasonic Flowmeter Model Alsonic-DSP

### GENERAL

**ALSONIC DSP** series is a fixed mounted, transit-time ultrasonic flowmeter, with clamp-on transducers for non-invasive liquid measurement. Our Alsonic-DSP uses patented "fine time measurement technology" ultrasonic beam that can measure at pico-seconds time resolution enabling accurate, drift-free flow measurement in liquids that contain a second phase of entrained solids or gas bubbles. The use of DSP technologies enables "Cross Correlation" of ideal signals to erase noise, and make a three-dimensional cross section of the velocity distribution flow profile of the medium flowing through the pipe. DSP technology also allows the use of "FFT (Fast Fourier Transform)" to make the two signals the same frequencies, greatly increases its signal-to-noise ratio for accurate, drift-free flow measurement in liquids.

### FEATURES

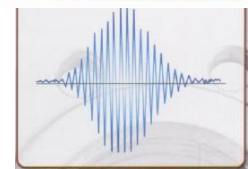
- ❑ Color Graphic LCD display 128x64 for flow, total & signal shape
- ❑ 4.0 Mbytes datalogger up to 200,000 data fields
- ❑ Velocities from 0.01 ~ +/- 12 m/s.
- ❑ Any liquids contains solids less 30% including waste water
- ❑ Transducers for pipe size form 13 to 6000 mm.
- ❑ High accuracy of +/-1.0% of reading with single path  
+/-0.5% of reading with dual path
- ❑ Oscilloscope function for diagnostic
- ❑ AR (Anti-Round) Mode (patent pending)
- ❑ Fine Time Measurement Technology (Patented)
- ❑ Data logger function, include date, totalizer, signal condition.. Etc.
- ❑ Response time less than 1 second.



Single Path



Dual Path



Oscilloscope Function

### SPECIFICATION

- |                       |  |                         |  |
|-----------------------|--|-------------------------|--|
| ● Measuring Principle | : Transit time difference  | ● Keypad                | : 16 Key with tactile action   |
| ● Pipe Size           | : B Type : 15 mm ~ 100 mm (1/2" ~ 4")<br>: C Type : 50 mm ~ 300 mm (2" ~ 12")<br>: D Type : 200 mm ~ 1000 mm (12" ~ 40")<br><b>E Type : 500 mm ~ 6000 mm (20" ~ 240")</b>  | ● Response Time         | : Less than 1 second   |
| ● Pipe Material       | : Cast Iron, Stainless Steel, Ductile Iron<br>Copper, PVC, Aluminum, Asbestos<br>Fiberglass... etc.  | ● Flow Velocity         | : 0.01 ~ +/- 12 m/s  |
| ● Liner Material      | : Tar Epoxy, Rubber, Mortar, Polypropylene,<br>Polystyryal, Ploystryene, Polyester, Ebonite,<br>Polyethylene, Teflon... etc.   | ● Resolution            | : 0.001 m/s  |
| ● Display             | : Color Graphic LCD 128x64 with backlight<br>Flowrate : 4 1/2 digit<br>Totalizer : 10 digit, Positive, Negative & Net values.<br>Engineer Unit : M3, Liter, US Gallon, Imperial Gallon,<br>Million Gallon, Cubic Feet, US Barrels,<br>Imperial Barrels, Oil Barrel.<br>Time Unit : Second, Minute, Hour, Day.<br>Other : Oscilloscope fuction for diagnostic | ● Ambient Temperature   | : -20 ~ +60 °C   |
| ● Accuracy            | : +/- 1% of reading with single path<br>: +/- 0.5% of reading with dual path   | ● Mounting              | : wall mounting  |
| ● Repeatability       | : +/-0.2% of reading   | ● Max. Cable Length     | : 200 M  |
|                       |  | ● Power Consumption     | : Less than 20W  |
|                       |  | ● Power Supply          | : 90 ~ 260Vac 50/60 Hz   |
|                       |  | ● Data Storage          | : Operation parameters and totalization<br>date are stored by EEPROM for more<br>than 10 years |
|                       |  | ● Output                | : two 4-20 mA  |
|                       |  | ● Data Logger           | : 4.0 Mbytes, upto 200,000 bits of data  |
|                       |  | ● Alarm                 | : two relay for total, hi/low  |
|                       |  | ● Communication         | : RS-232   |
|                       |  | ● Dimension             | : 230 * 200 * 110 mm   |
|                       |  | ● Weight                | : 3.3 Kg   |
|                       |  | ● Protection -Converter | IP65   |
|                       |  |                         | Sensor : IP68(Submersible)   |

### SmartMeasurement.

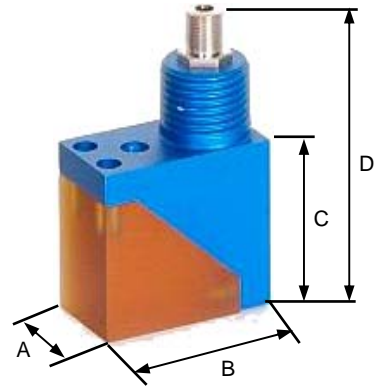
2960 Polk St. Suite 12, San Francisco, CA 94109 USA  
TEL : +1- 415 - 673 - 0143 FAX : +1- 415 - 673 - 4416

**➤ TRANSDUCER SPECIFICATION**

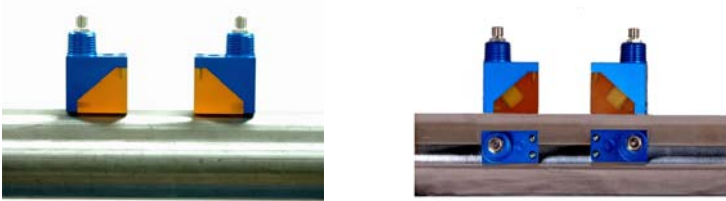
● **Standard-Transducers**

Fluid Temperature : -20 ~ +120 °C

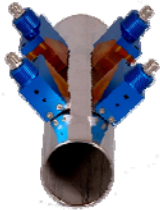
Model	A	B	C	D	Pipe Size
XLB	23 mm	42 mm	37 mm	63 mm	DN 15 ~ 100 mm
XLC	35 mm	60 mm	45 mm	72 mm	DN 50 ~ 300 mm
XLD	35 mm	93 mm	50 mm	86 mm	DN200~1000mm
XLE	51 mm	145 mm	76 mm	111 mm	DN500~6000mm



**Single path**



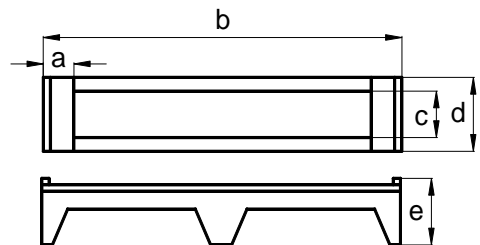
**Dual Path**



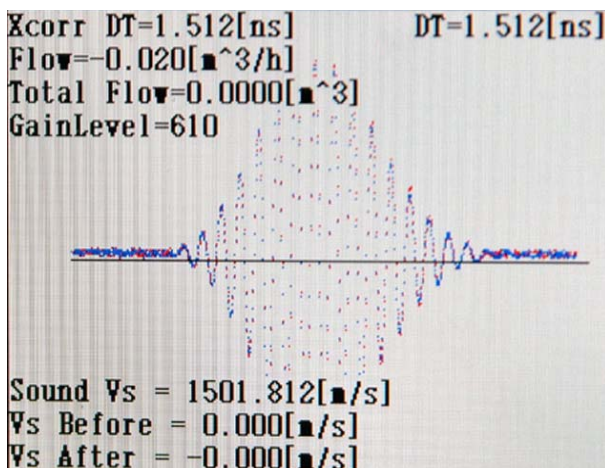
dual path or dual channel (can measure two pipe simultaneously)  
 (user can select dual path or dual channel in programming)

● **Mounting Track Size**

Model	a	b	c	d
M-XLB	30 mm	280 mm	23 mm	23 mm
M-XLC	40 mm	380 mm	35 mm	43 mm
M-XLD	40 mm	700 mm	35 mm	43 mm
M-XLE	40 mm	380 mm	51 mm	70 mm

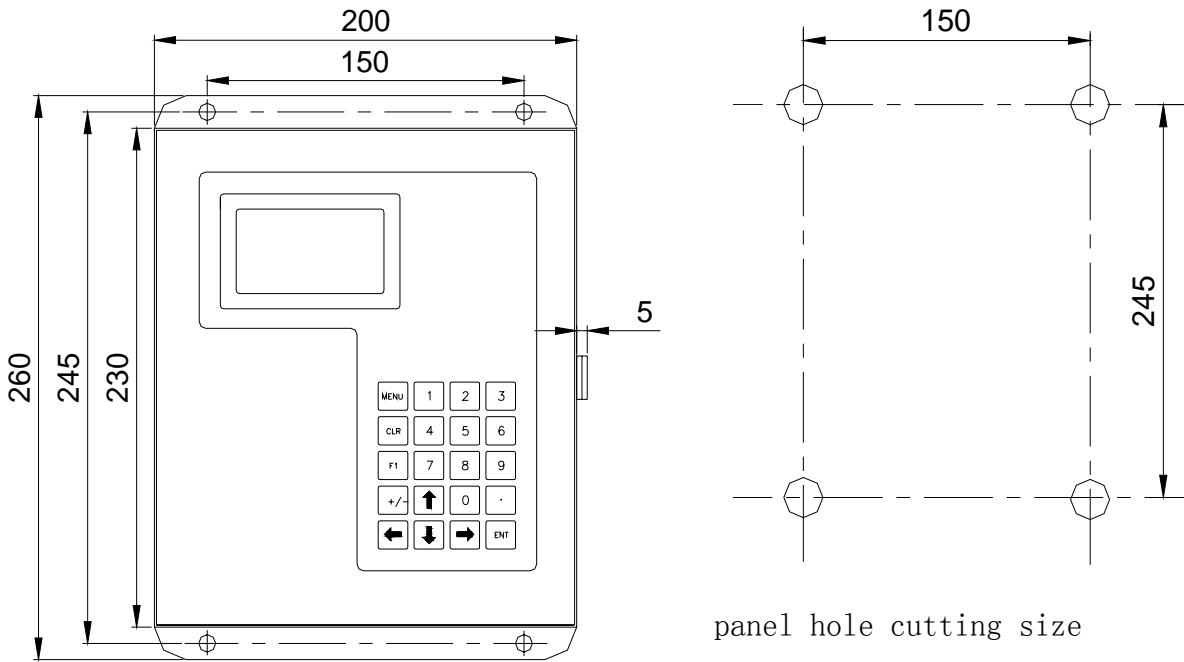


● **Oscilloscope Function (Diagnostic)**

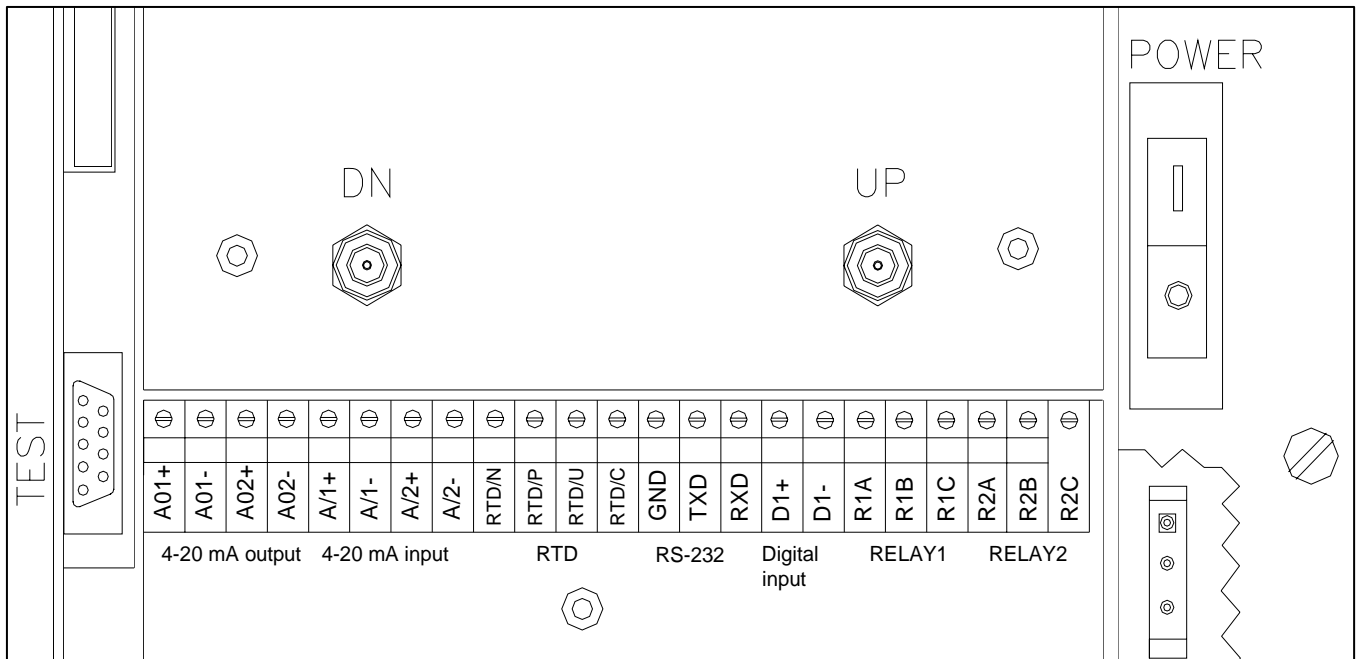


**➤ DIMENSIONS**

• Alsonic-DSP NEMA 4



**➤ WALL MOUNTING WIRING**



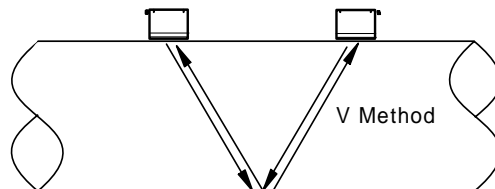
## Oscilloscope Function (Diagnostic)

You also need to provide the following information:

Type of Fluid	We need the name of your fluid, including operating density and viscosity
Line Size	pipe size and sensor connection type (insertion, clamp, etc..)
Process Pressure and Temperature	2960 Polk St. Suite 12, San Francisco, CA 94109 USA
Type of Electronics	output and install type (compact, wallmount, panelmount, etc..)
Pipe name and material	pipe diameter, material, wall thickness, lining type, lining thickness
Pipe Condition	Straight Pipe Condition (10D upstream, 5D downstream required)

## ➤ 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						
DN 15 ~ 100 mm and mounting track	XLB					Transducers and mounting rack	
DN 50 ~ 300mm and mounting track	XLC						
DN 200-1000mm and mounting track	XLD						
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 use single path with reflect mode, accuracy is double than direct mode and same with dual path
- \* when use dual path with reflect mode, accuracy is same with four path