



ALSONIC-DDPL

Doppler Ultrasonic Flowmeter

Model Alsonic-DDPL

GENERAL

Alsonic DDPL Doppler flowmeters employ a pair of clamp-on transducers for non-invasive liquid measurement of solids-bearing or aerated liquids in metal or plastic pipes. Proprietary circuitry allows it to operate with lower concentrations of suspended solids versus competitive Doppler flowmeters in the market. Clamp-on transducers allow the instrument to be installed without shutting down the process flow. Two piezoelectric crystal transducers are clamped onto opposite sides of a liquid filled pipe. One transmits an ultrasonic signal through the pipe wall into the moving fluid while the other measures a portion of this signal reflected back by suspended solids, entrained gases or flow turbulence. Electronic circuitry compares the transmitted frequency with the received frequency. The difference, or frequency shift, is proportional to fluid velocity, in accordance with principles developed by Christian Johann Doppler. If the liquid is not moving (a zero flow condition) the transmitted and received frequencies are identical.



FEATURES

- Non-fouling transducer is immune to build-ups of grease, paraffin and other coating materials
- Solid-state measurement never requires re-calibration and is virtually maintenance-free
- Limited straight-run requirements
- Industry standard outputs allow direct interface to data loggers and controls systems
- Data logger function; includes date, totalizer, signal condition
- Operates with relatively clean liquids as well as liquids with high concentrations of suspended solids or aeration
- Alphanumeric keypad for field setup with two-line, backlit display; indicates instantaneous and totalized flows

SPECIFICATIONS

- | | | | |
|-------------------------|---|--------------------------|---|
| • Principle: | Doppler frequency shift | • Engineering Units: | FPS, GPM, MGD (MPS, LPM, m ³ /hr) |
| • Pipe Size: | (Std) 1 ~ 120 inches (25 ~ 3050 mm)
(Opt) 0.25 ~ 1 inch (6 ~ 25 mm) | • Ambient Temperature: | -22 ~ 160°F (-30 ~ 70 °C) |
| • Temperature: | (Std) -40° ~ 180°F (-40° ~ 82°C)
(Opt) -40° ~ 300°F (-40° ~ 150°C) | • Protection -Converter: | NEMA 4/IP-65 (IP-67) ABS |
| • Fluid Velocity: | Clamp on, 1 ~ 20 FPS (0.3 ~ 6.08 MPS)
Insertion: 0.5 ~ 20 FPS (0.15 ~ 6.08 MPS) | Transducers: | IP68 (Submersible) |
| • Minimum particulates: | 25 ppm of 30 micron size | • Max. Cable Length: | 6m, flexible armored conduit
Up to 100m |
| • Accuracy: | ±2% Full Scale | • Power Consumption: | less than 12VA |
| • Repeatability: | ±0.4% of Full Scale | • Power Supply: | |
| • Resolution: | 0.4% of Full Scale | Wall-mount: | 115/230 V _{AC} 50/60 Hz ±10% and 12V _{DC} |
| • Response Time: | 5 ~ 50 seconds, user configured, to 90% of value | Portable: | Internal lead acid gel cell battery provides up to 8 hrs of continuous operation. |
| • Display: | 2 line x 20 character alphanumeric LCD (backlit), 6 digit - flow rate, 6 digit - total flow | Hand-Held: | Up to 14 hours |
| • Indicators: | Power, signal strength, diagnostic codes, over-range, read, low battery, charge | • Outputs Wall-mount: | 4-20 mA, pulse, RS232, RS485 |
| | | • Portable: | 4-20 mA, 600 Ω max, isolated. |
| | | • Data Logger: | 4.0M bytes data logger up to 200,000 records. |
| | | • Approval | CE |

TRANSMITTER SPECIFICATION

■ Alsonic-DDPL Wall mount

Size: 9.6" x 7.7" x 4.5" (244(h) * 196(w) * 114(d) mm)
 Material: Fiberglass, IP65 according to EN60529
 Weight: 5.3 lbs (2.4kg)
 Power: AC: 85-265V_{AC} DC: 24V_{DC}/500mA
 Outputs: 4-20mA, relays for Totalizer and alarm output
 Display: 2 line x 8 characters LCD, 8-digit rate or 8-digit total (resettable)
 flow rate, velocity and total



■ Alsonic-DDPL Portable

Size: Transmitter: 9.25" x 4.9" x 1.75" (235x125x45 mm)
 Case: 16.1" x 12.6" x 3.1" (410x320x80mm)
 Material: ABS NEMA 4/IP65 according to EN60529
 Weight: 6.6 lbs. (3kg)
 Power: AC: 85-265V_{AC} rechargeable battery up to 50 hours
 Outputs: 4-20mA, relays for totalizer and alarm output
 Display: 2 line x 8 characters LCD, 8-digit rate or 8-digit total (resettable)
 flow rate, velocity and total



■ Alsonic-DDPL Hand held

- The flow meter is equipped with a rechargeable battery with 85-265V_{DC} power, up 14 hours per charge
- The 4-20mA output interfaces with most recording and logging systems by transmitting an analog current signal that is proportional to system flow rate.
- The output load is up to 750 Ω max, internal power supply.



TRANSDUCER SPECIFICATION

■ Clamp on Transducers

Model	Pipe Size	A	B	C	D	Fluid Temperature
D1	1 ~ 122" (25~3048mm)	1.65" (42mm)	1.00" (25mm)	1.00" (25mm)	0.78" (20mm)	-40 ~ 180°F (-40°C~82°C)
D2	1 ~ 122" (25~3048mm)	2.35" (60mm)	2.35" (43mm)	1.70" (43mm)	0.90" (23mm)	-40 ~ 300°F (-40°C~150°C)
D3	¼" ~ 3" (6~80mm)	3.13" (80mm)	3.13" (53mm)	2.08" (53mm)	1.38" (35mm)	-40 ~ 180°F (-40°C~82°C)



■ Accessories



Carrying Bag



Silicone Grease

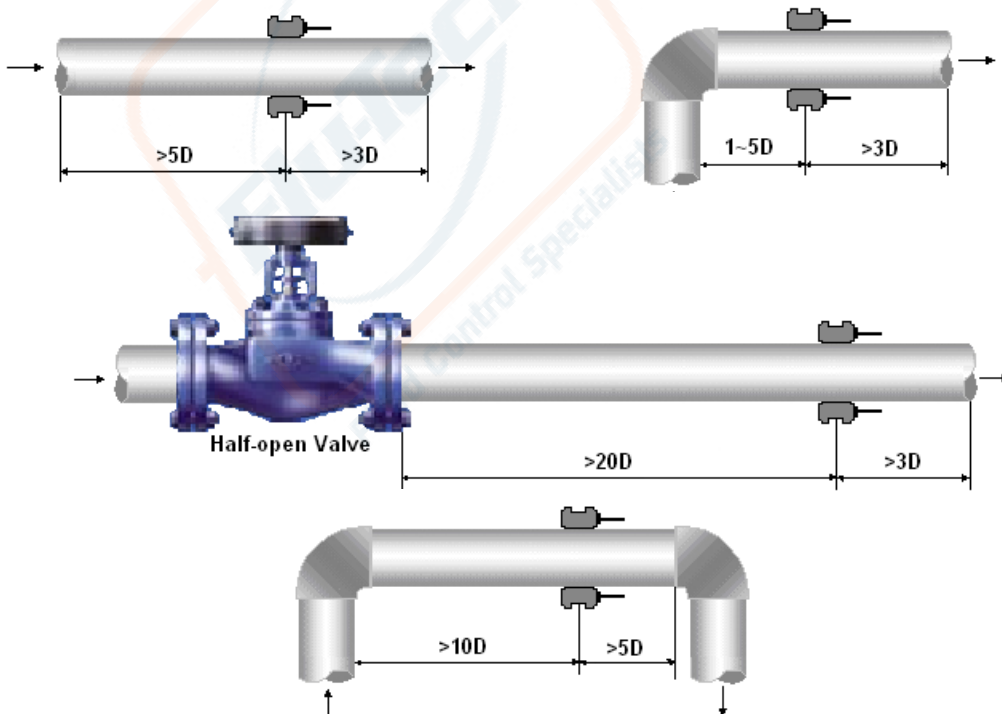


Mounting Belt



Measuring Tape

■ Straight Run Piping Requirement



Please contact your **SmartMeasurement** 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)

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EXAMPLE 1: ALSONIC-DDPL-WLM

EXAMPLE 2: ALSONIC-DDPL-POR

ALSONIC-DDPL-		**	**	**	DESCRIPTION	
Wall Mount	WLM				Flow Meter	
Portable	POR					
Hand-Held	HAH					
Standard Transducer 1" ~ 122" (25mm ~ 3048mm) -40°F ~ 180°F (-40°C ~ 82°C)		D1			Transducer	
High Temperature Transducer 1" ~ 122" (25mm ~ 3048mm) -40°F ~ 302°F (-40°C ~ 150°C)		D2				
Small Pipe Transducers ¼" ~ 3" (6 ~ 80mm) -40°F ~ 180°F (-40°C ~ 82°C)		D3				
Insertion 4" ~ 122" (100 ~ 3048mm) -40°F ~ 180°F (-40°C ~ 82°C) Ball valve included		C1				
110V _{AC} ~ 220V _{AC}			AC		Power Supply	
24V _{DC}			DC			
None				N	Output #1	
4-20 mA				1		
Rate Pulse				2		
Totalizer Pulse				3		
None				N	Output #2	
4-20 mA				1		
Rate Pulse				2		
Totalizer Pulse				3		
20 feet [6.1 m]					020	Cable Length
50 feet [15 m]					050	
100 feet [30 m] -Maximum length 330 feet [100 m]					100	

