

ALSONIC-DSP

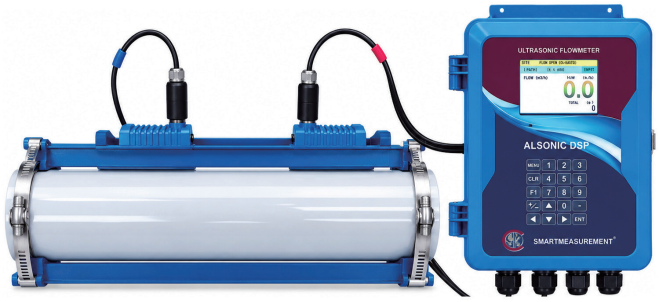
Clamp on Ultrasonic Gas Flowmeter

Model Alsonic-DSP-100GC

GENERAL

SMARTMEASUREMENT's **ALSONIC DSP-100GC** series is a fixed-mount, transit-time ultrasonic flowmeter with clamp-on transducers for non-invasive gas measurement at pressures greater than 5 barg (75 PSIG). Its fine-time measurement technology uses ultrasonic beams sampled at picosecond intervals. Digital signal processing, cross-correlation, and fast Fourier transform (FFT) techniques improve signal-to-noise performance for accurate, drift-free flow measurement.

FEATURES



- Non-invasive clamp-on ultrasonic sensors; no pipe cutting
- Wide velocity range from 0.05 to 30 m/s
- Wide measuring range of 200:1
- No moving parts and no pressure loss
- Field diagnostics with signal shape, gain, Delta T, and FFT
- Temperature sensing and volume compensation
- Simple installation and maintenance
- Standard (two-path) and explosion-proof (single-path) transmitter options

SPECIFICATIONS

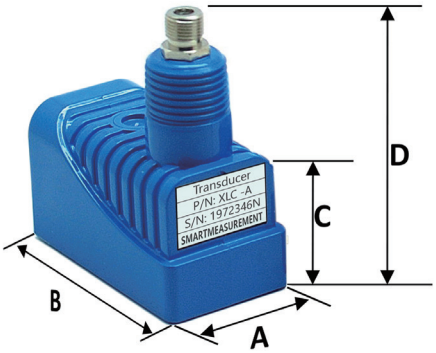
- **Principle:** Transit-time ultrasonic
- **Operating pressure:** >5 barg (75 PSIG)
- **Velocity:** 0.05-30 m/s, bidirectional
- **Accuracy:** ±1.0% of reading
- **Reproducibility:** 0.25%
- **Diagnostics:** Signal shape, gain, Delta T, FFT
- **Pipe Material:** Natural gas, fuel gas, compressed air
- **Transmitter:** Standard: two-path; Ex: single-path
- **Protection:** Standard IP65; Ex: Ex ia IIC T6 Ga / Ex db IIC T6 Gb
- **Temperature:** -20 to +80 C (transmitter)
- **Power:** AC 110-220 V; DC 12-24 V (option)
- **VO:** 2 digital outputs; 2 x 4-20 mA outputs; 1 x 4-20 mA input
- **Interface:** RS-232C; RS-485 (Modbus)
- **Transducers:** 316 SS, IP68; DN50-300 mm

MEASUREMENT HIGHLIGHTS		
0.05-30 m/s velocity	200:1 measuring range	+/-1.0% reading accuracy

TRANSDUCER SPECIFICATION

■ Standard transducers
Fluid Temperature : -5 ~ 250 °F (-20 ~ +120 ℃)

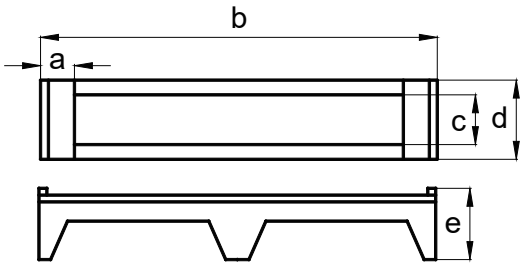
Model	A	B	C	D	Pipe Size (Nominal)
XLC	1.38" (35 mm)	2.56" (65 mm)	1.45" (37 mm)	4.35" (110.5 mm)	2" ~ 10" (DN 50 ~ 250 mm)
XLD	1.38" (35 mm)	3.66" (93 mm)	1.97" (50 mm)	3.38" (86 mm)	8" ~ 20" (DN200~500mm)



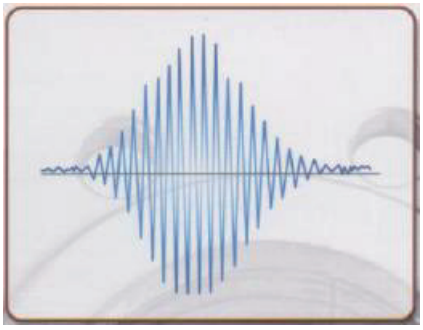
■ Mounting Track Size

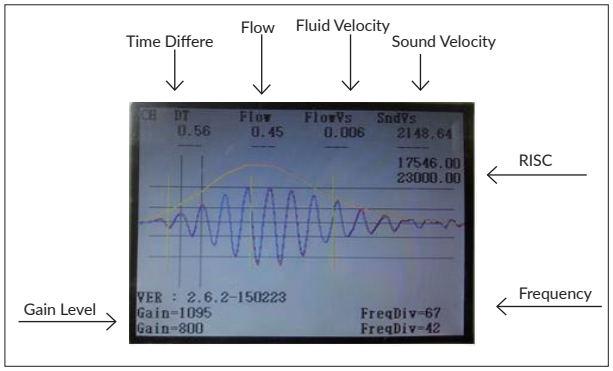
Model	a	b	c	d
M-XLC	1.57" (40 mm)	14.96" (380 mm)	1.38" (35 mm)	1.69" (43 mm)
M-XLD	1.57" (40 mm)	27.55" (700 mm)	1.38" (35 mm)	1.69" (43 mm)





■ Oscilloscope Function (Diagnostic)





ALSONIC DSP-100GC TRANSMITTER

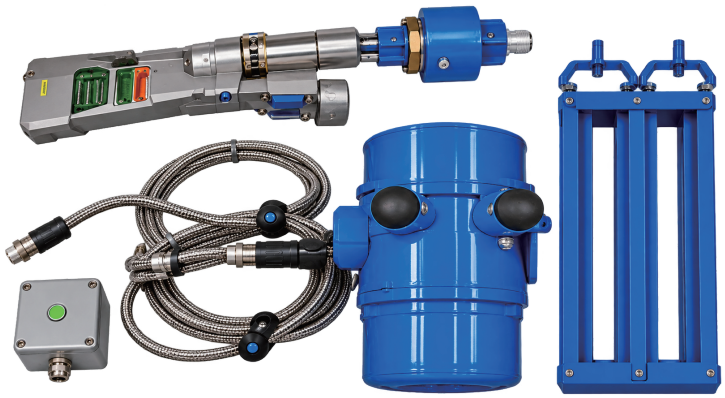
- Standard transmitter: two-path measurement with 316SS clamp-on transducers.
- Explosion-proof transmitter: single-path measurement for hazardous-area gas flow measurement.
- Graphic LCD display and field diagnostics with signal shape, gain, Delta T, and FFT.
- RS-232C/ RS-485 (Modbus) communications.
- Available analog and digital I/O for flow measurement and compensation.

■ STANDARD VERSION (10OLGC)



Two-path measurement

■ EXPLOSION-PROOF (10LXGC)



Single-path measurement

TRANSMITTER COMPARISON

Parameter	100LGC	10LXGC
Measurement paths	Two-path	Single-path
Enclosure	IP65	Ex ia IIC T6 Ga / Ex db IIC T6 Gb
Power	AC 110-220 V	DC 12-24 V (AC option)
Temperature	-20 to +80 °C	-20 to +80 °C
Communications	RS-232C / RS-485	RS-232C / RS-485

Please contact your **SmartMeasurement** application engineer
You also need to provide the following information:

GAS / FLUID	Gas composition, operating density and viscosity
PIPE SIZE	Nominal diameter, outside diameter and wall thickness
PRESSURE/TEMPERATURE	Normal and maximum operating pressure and temperature
PIPE MATERIAL	Material, lining and thickness, if applicable
INSTALLATION	Straight pipe lengths, site classification and mounting conditions
ELECTRONICS	Required outputs, power and communication interface

ALSONIC-DSP-100GC						
ALSONIC-DSP-100GC		**	**	**		DESCRIPTION
Standard two-path gas flow transmitter	100LGC					Transmitter
Explosion-proof single-path gas flow transmitter	10LXGC					
Clamp-on 316SS transducer, DN50-250 mm (2-10 in)		XLC				Transducers
Clamp-on 316SS transducer, DN200-500 mm (8-20 in)		XLD				
Standard 10 m signal cable			C10			Singal Cable
Other cable length (confirm required length)			C**			
Mounting track for XLC transducer				MTCGC		Mounting Hardware
Mounting track for XLD transducer				MTDGC		
Remote control for 10LGC / compatible configuration					RC	Remote Control