



**Growco GDMDFP Series** Doppler ultrasonic flow meter is designed to measure volumetric flow of liquid within closed conduit, the pipe line must be filled full of liquids, there must be a certain amount of air bubbles or suspended solids in liquid.

The Doppler ultrasonic flow meter can display flow velocity, flow rate and flow totalizer, etc, and is configured with 4-20mA, totalizer pulse and relay alarm output.







### Features:

- ◆ The system can be field configured to pipe sizes ranging from 15 to 4000mm.
- ◆ Excellent low flow rate measurement ability, low to 0.05 m/s.
- ◆ A wide range of flow measurement, high flow rate can reach 12m/s.
- ◆ Automatically signal gain adjustment.
- ◆ Do not need to shut down the pipe flow when installing the transducers.
- ◆ User-friendly configurations.
- ◆ 4-20mA, totalizer pulse and relay alarm output.
- ◆ Accuracy: 2.0% Calibrated span.
- ◆ Weight about 7 Kg.
- ◆ Contains lithium battery, can work up to 50 or more hours.

### Applications:

- ◆ Raw sewage
- ◆ Return activated sludge
- ◆ Waste activated sludge
- ◆ Ground water
- ◆ Pulp and paper slurries
- ◆ Chemical slurries
- ◆ Drainage
- ◆ Mining recirculation
- ◆ Animal renderings

## Technical Parameters:

 <p>Transmitter</p>	Accuracy	0.5% ~ 2.0%F.S.	
	Flow Velocity Range	0.05m/s ~ 12m/s	
 <p>Standard</p>  <p>K Type Transducer</p>  <p>High Temp Transducer</p>  <p>Stainless Steel Transducer</p>  <p>Couplant</p>  <p>S-S belt</p>	<b>Transmitter</b>		
	Enclosure	NEMA 4X [IP65], ABS 358L×250W×150H(mm) 14.1L×9.8W×5.9H(inch)	
	Power Supply	Rechargeable lithium battery, 12VDC, 14.4Ah Over 50 hours working time on a full-charge Charger: 100~240VAC, 50/60 HZ ±5%, 5VA Max	
	Display	2 line x 8 characters LCD 8-digit rate or 8-digit total (resettable)	
	Response Time	User selectable: 0-99 seconds	
	Outputs	4-20mA, Totalizer pulse and Relay alarm output	
	Temperature	-40 to +70°C	
	<b>Transducer</b>		
	Measuring Range	0.05m/s ~12m/s	
	Type	Clamp-on	
Liquid Temperature	Standard: -40 to +121°C Optional: -40 to +250°C		
Cable Length	Standard Lengths: 20Feet [6m] Optional Lengths: to 990 Feet [300m]		
Housing Material	Standard material: Aluminum Optional material: Engineering plastic Stainless Steel		
Protection Class	Standard	IP65	
	K Type	IP65	
	High Temp	IP65	
	Stainless Steel	IP65	

## Model Selection Table of GDMDFP Doppler Ultrasonic Flow Meter

MODEL	GDMDFP	-X	-X	-DP-X	-X	-X	-XXX	-X
<b>Power supply</b>		A-110VAC B-220VAC						
<b>Output Selection</b>		N-None 1: 4~20mA 2: Relay for Totalizer pulse 3: Relay for Alarm output <b>(Can select the three output at the same time)</b>						
<b>Transducer Type</b>		1: Standard Clamp-on (40~4000mm) 2: Small Size Clamp-on (15~50mm) 3: K15 Type Clamp-on(for small pipe) (15~25mm) 4: K20 Type Clamp-on(for small pipe) (20~32mm) 5: K32 Type Clamp-on(for small pipe) (32~50mm)						
<b>Transducer Material</b>		A: Aluminum S: Stainless Steel						
<b>Liquid Temperature</b>		N: -40~121°C H: -40~250°C (If transducer material selects stainless steel, Here H is not available)						
<b>Mounting Type</b>		N: Common (Only for Temperature Type : H) M: Magnetic (Only for Temperature Type : N)						
<b>Transducer Cable</b>		S1: 8 meters straight cable (STD.) L1: XXX – Max 300 meters						

### Selection example:

GDMDFP-A-123-DP-3-S-N-M-S1

### Description:

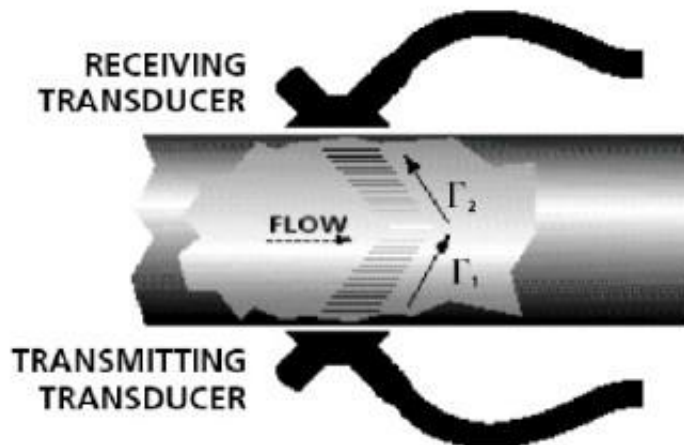
GDMDFP Doppler ultrasonic flow meter; 110VAC power supply; 4-20mA, Totalizer pulse and Relay alarm output; K15 Type Clamp-on Transducer; Stainless Steel Transducer; Liquid Temperature: -40 to 121°C; Mounting type magnetic; transducer cable length is 8 m.

## Principle of Measurement

The Doppler ultrasonic flow meter is designed to measure volumetric flow of liquid within closed conduit, the pipe line must be filled full of liquids, there must be a certain amount of air bubbles or suspended solids in liquid.

Transducers are clamp-on or hot-tapped probe types, user don't need to shut down the pipe flow when install the clamp-on transducers.

The flow meter operates by transmitting an ultrasonic sound from its transmitting transducer, the sound will be reflected by useful sonic reflectors suspended within the liquid and recorded by the receiving transducer. If the sonic reflectors are moving within the sound transmission path, sound waves will be reflected at a frequency shifted (Doppler frequency) from the transmitted frequency. The shift in frequency will be directly related to the speed of the moving particle or bubble. This shift in frequency is interpreted by the instrument and converted to various user defined measuring units.



There must be some particles large enough to cause longitudinal reflection – particles larger than 100 micron. When install the transducers, the installation location must have enough straight pipe length upstream and downstream. Commonly, the upstream needs 10D and downstream needs 5D straight pipe length, where D is pipe diameter.

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