

# pFlow

## Ultrasonic Flowmeter D116



## About D116

D116 Series Ultrasonic Flowmeter is a state-of-the-art universal transit-time flowmeter designed using FPGA chip and low-voltage broadband pulse transmission.

Comparing with other traditional flowmeter or ultrasonic flowmeter, it has distinctive features such as high precision, high reliability, high capability and low cost, the flowmeter features other advantages:

TVT technology designed.

Less hardware components, low voltage broadband pulse transmission, low consumption power.

Clear, user-friendly menu selections make flowmeter simple and convenient to use.

Daily, monthly and yearly totalized flow

Parallel operation of positive, negative and net flow totalizes with scale factor (span) and 7 digit display, while the output of totalize pulse and frequency output are transmitted via relay and open collector.



## Applications

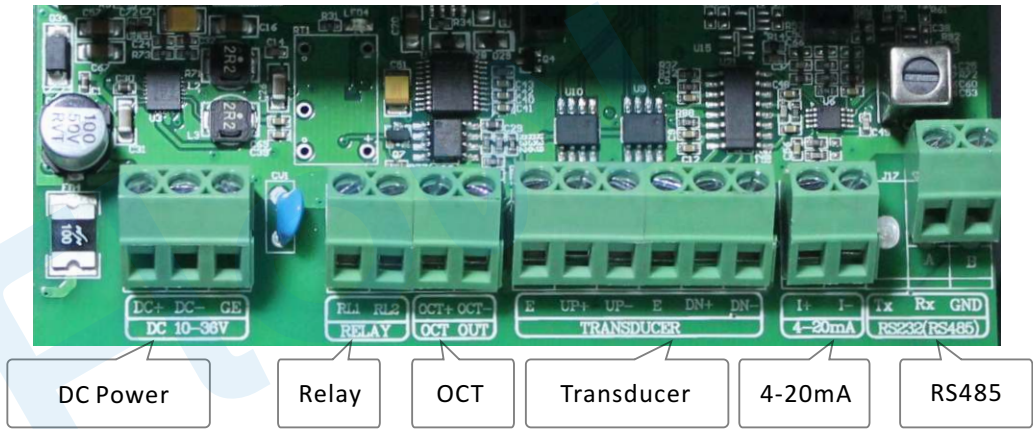


## Specification

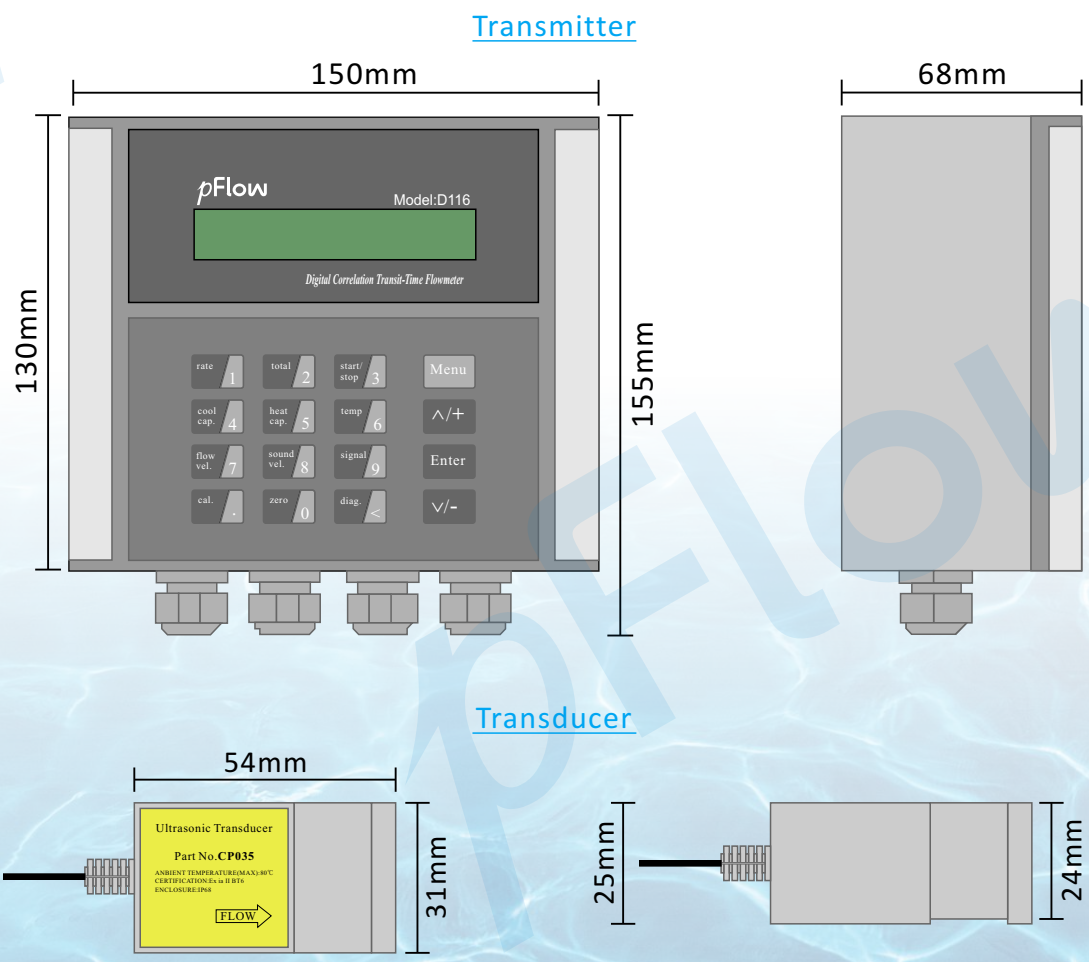
Performance specifications	
Flow range	$\pm 0.03\text{ft/s} \sim \pm 16\text{ft/s}$ ( $\pm 0.01\text{m/s} \sim \pm 5\text{m/s}$ )
Accuracy	$\pm 1.0\%$ of measured value
Pipe size	Clamp-on: 1"~48" (25mm~1200mm)
Fluid	Water.
Pipe material	Carbon steel, stainless steel, PVC.
Function specifications	
Outputs	OCT Pulse output: 0~5000Hz. Analog output: 4~20mA, max load 750 $\Omega$ .
Communication interface	RS485 MODBUS
Power supply	10~36VDC/1A
Keypad	16(4 $\times$ 4)key with tactile action
Display	20 $\times$ 2 lattice alphanumeric, back lit LCD.
Temperature	Transmitter: 14 $^{\circ}\text{F}$ ~122 $^{\circ}\text{F}$ (-10 $^{\circ}\text{C}$ ~50 $^{\circ}\text{C}$ ) Transducer: 32 $^{\circ}\text{F}$ ~176 $^{\circ}\text{F}$ (0 $^{\circ}\text{C}$ ~80 $^{\circ}\text{C}$ )
Humidity	Up to 99% RH, non-condensing
Physical specifications	
Transmitter	PC/ABS, IP65.
Transducer	Encapsulated design, IP68.
Transducer cable	Standard cable length: 30ft (9m).
Weight	Transmitter: approximately 0.7kg; Transducer: approximately 0.4kg



## Wiring Diagram

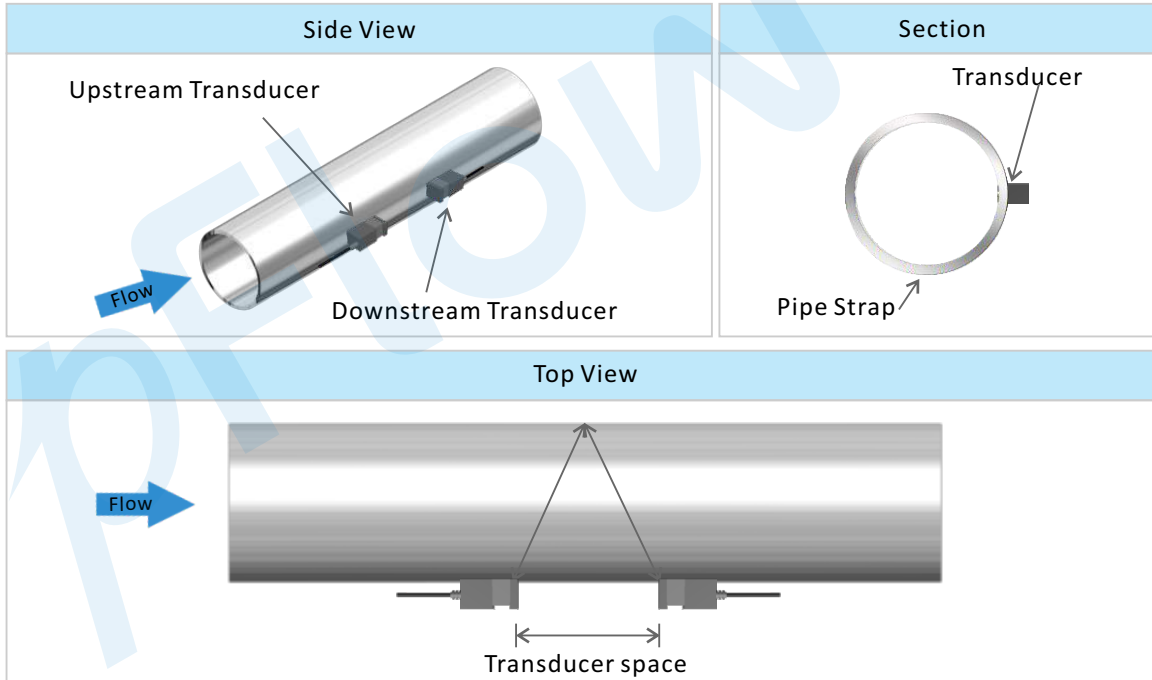


## Transmitter Dimensions

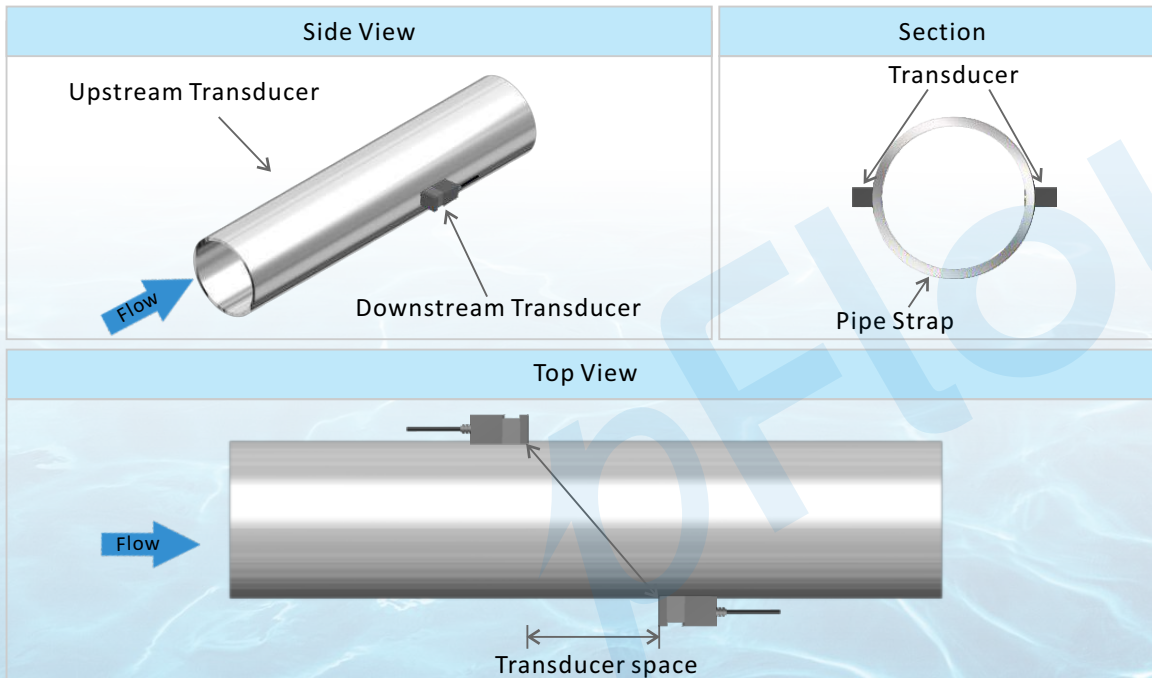


## Transducer Installation Methods

V method measuring pipe size : 25mm-400mm



Z method measuring pipe size: 100mm-800mm



# Installation Site Selection

When selecting a measurement site, it is important to select an area where the fluid flow profile is fully developed to guarantee a highly accurate measurement. Use the following guidelines to select a proper installation site:

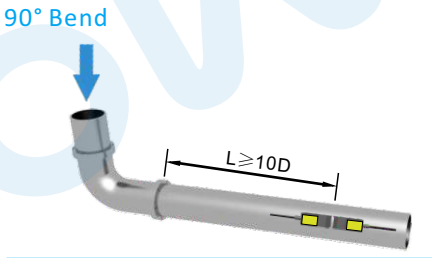
Choose a section of pipe that is always full of liquid, such as a vertical pipe with flow in the upward direction or a full horizontal pipe.

Ensure enough straight pipe length at least equal to the figure shown below for the upstream and downstream transducers installation.

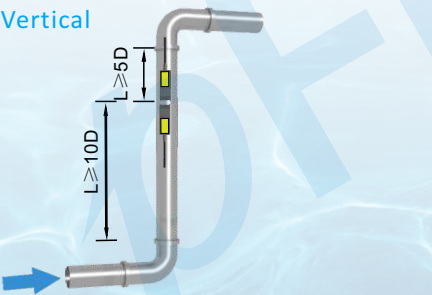
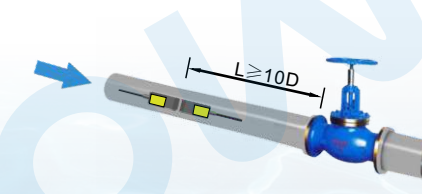
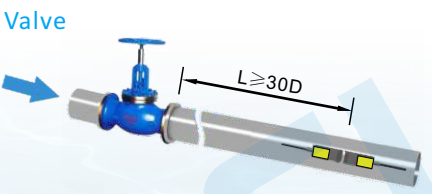
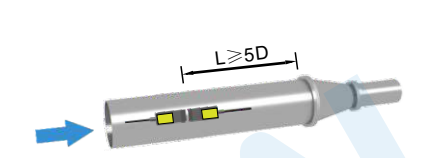
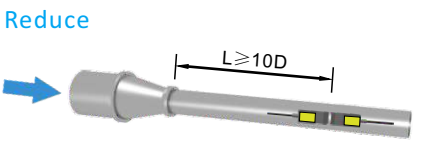
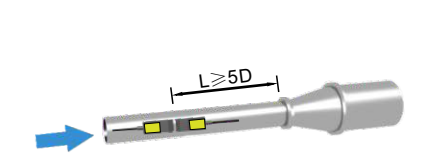
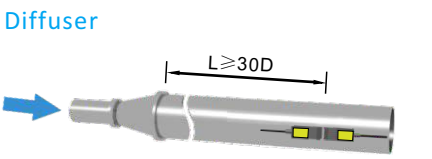
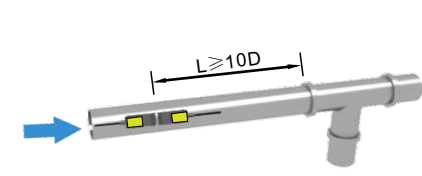
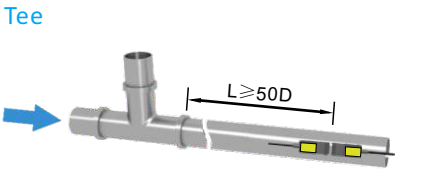
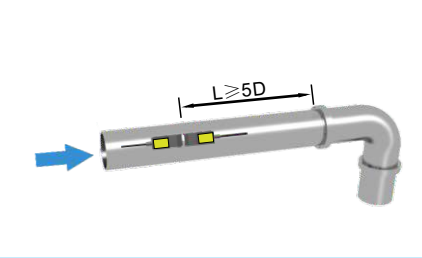
Ensure that the pipe surface temperature at the measuring point is within the transducer temperature limits.

Consider the inside condition of the pipe carefully. If possible, select a section of pipe where the inside is free of excessive corrosion or scaling.

Straight length of upstream piping



Straight length of downstream piping




## Ordering Information

Description	
D116	Digital Correlation Transit Time Flowmeter Installation method: wall mount Transmitter: Flow Range: $\pm 0.03\text{ft/s} \sim \pm 16\text{ft/s}$ ( $\pm 0.01\text{m/s} \sim \pm 5\text{m/s}$ ) Accuracy: $\pm 1.0\%$ of measured value Repeatability: 0.3% Pipe Size Range: 1"~48" (25mm ~ 1200mm) Keyboard: 16 (4x4) touch keys Display: 20x2, alphanumeric, backlit LCD Power supply: 10-36V DC@1Amax Transmitter enclosure: IP65, ABS/PC enclosure Temperature: $-20^{\circ}\text{C} \sim 50^{\circ}\text{C}$ Output: OCT pulse output 0-10KHz, Relay output, 4-20mA optional Communication: RS232, Modbus Protocol Temperature: $-40^{\circ}\text{F} \sim +140^{\circ}\text{F}$ ( $-40^{\circ}\text{C} \sim 60^{\circ}\text{C}$ )
Output mode	
3	OCT output, Relay output, RS232, 4-20mA output
4	OCT output, Relay output, RS485, 4-20mA output
7	OCT output, Relay output, RS232, 4-20mA output, RTD input
8	OCT output, Relay output, RS485, 4-20mA output, RTD input
Type of transducers	
CP035	Clamp on transducer, Operating temperature: $32^{\circ}\text{F} \sim +140^{\circ}\text{F}$ ( $0^{\circ}\text{C} \sim +60^{\circ}\text{C}$ )
W210	Insertion transducer, Operating temperature: $-40^{\circ}\text{F} \sim +176^{\circ}\text{F}$ ( $-40^{\circ}\text{C} \sim +80^{\circ}\text{C}$ )
Transducer Cable Length	
030	Standard 30ft (9m)
xxx	Maximum lengthen to 305m(1000ft), per 5m is a lengthen unit.
Type of Temperature sensor	
PT1000	PT1000 Temperature sensor
Standard Model: D116-4-CP035-030 Description: standard flowmeter with Clamp-on transducers, OCT pulse output, Relay output, RS485, 9m cable.	

## Product Line

**D116 Dedicated Ultrasonic Flowmeter**




Accuracy:  $\pm 1\%$   
 Flow range: 0.03 ~  $\pm 16\text{ft/s}$   
 Pipe Size Range: 1" ~ 48"

**P116 Portable Ultrasonic Flowmeter**




Accuracy:  $\pm 1\%$   
 Flow range: 0.03 ~  $\pm 40\text{ft/s}$   
 Pipe Size Range: 1" ~ 48"

**D118 Dedicated Ultrasonic Flowmeter**




Accuracy:  $\pm 0.5\%$   
 Flow range: 0.03 ~  $\pm 40\text{ft/s}$   
 Pipe Size Range: 1" ~ 200"

**P118i Portable Ultrasonic Flowmeter**



Accuracy:  $\pm 0.5\%$   
 Flow range: 0.03 ~  $\pm 40\text{ft/s}$   
 Pipe Size Range: 0.6" ~ 240"

**D118i Dedicated Ultrasonic Flowmeter**



Accuracy:  $\pm 0.5\%$   
 Flow range: 0.03 ~  $\pm 40\text{ft/s}$   
 Pipe Size Range: 1" ~ 200"

**Application**

Perfect performance in single liquid medium.  
 Eg: Water, Pure water, Beer, Oil, etc.

Remark: The above mode choose doesn't including the spool piece, it is for customization.

Gentos Measurement & Control Co., Ltd.  
 12/F, Block A5, Nanshan Ipark, No.1001 College Rd.  
 Nanshan District, Shenzhen CHINA  
 Tel: 86-755-26745999  
 Fax: 86-755-26745333  
 E-mail: intl@gentos.com.cn

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