pFlow

Ultrasonic Flowmeter D116

About D116

D116 Series Ultrasonic Flowmeter is a state-of-the-art iniversal 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.
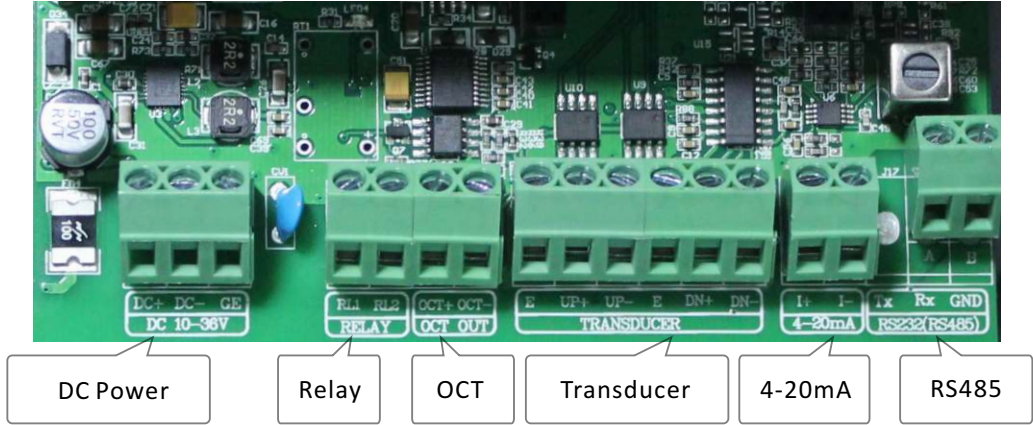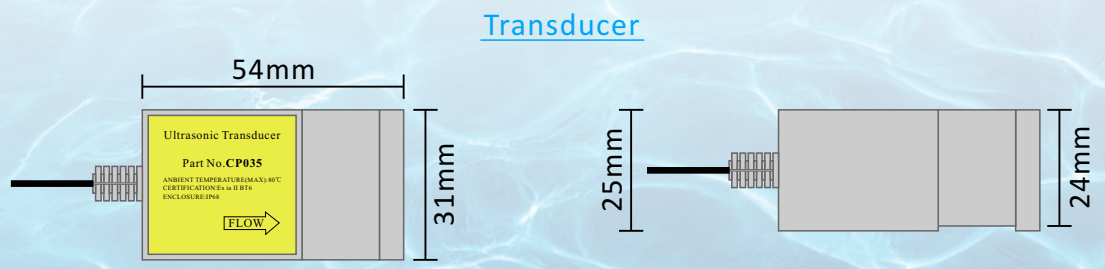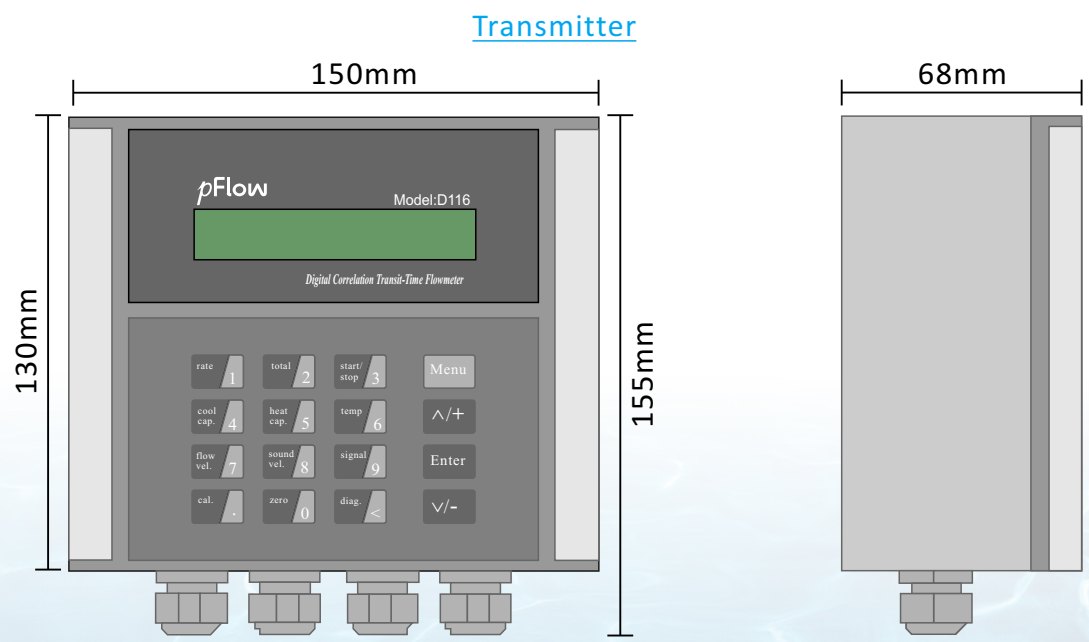
Applications

Specification

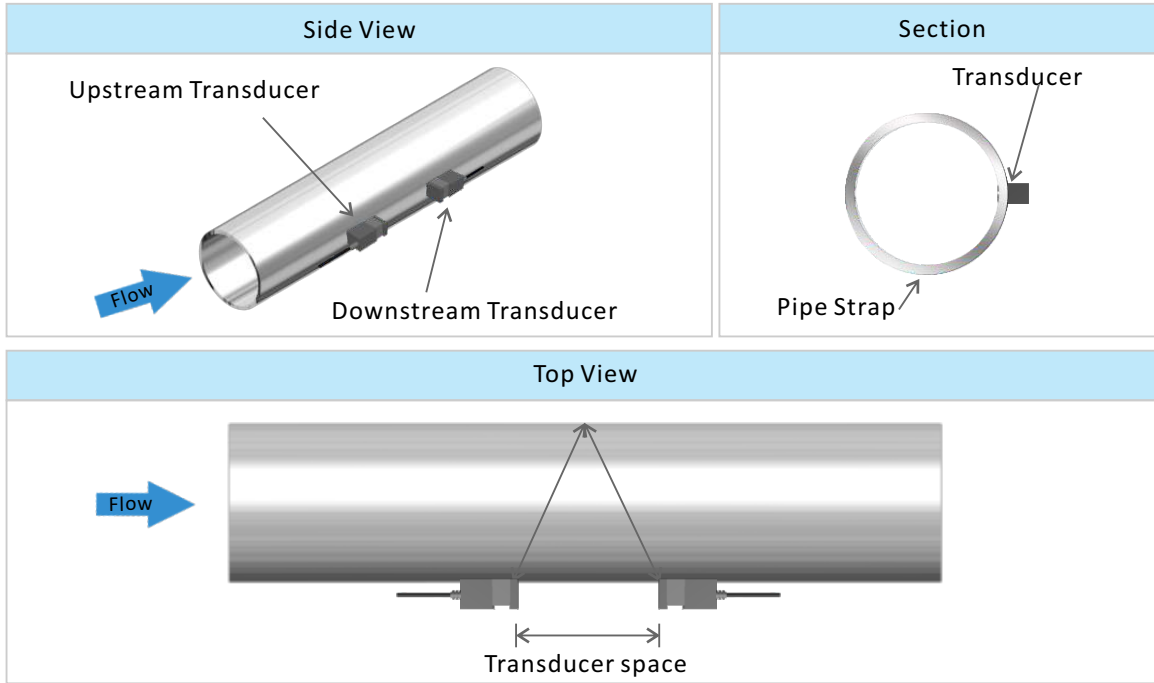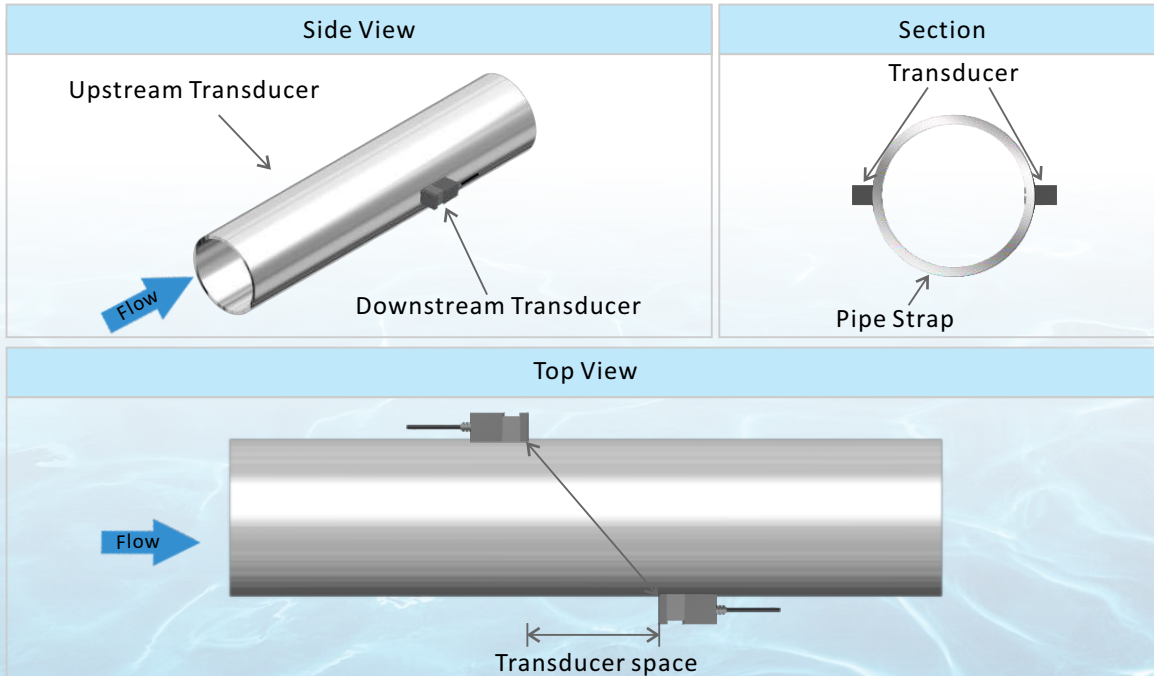| Performance specifications	
Flow range	±0.03ft/s ~ ±16ft/s (±0.01m/s ~ ±5m/s)
Accuracy	±1.0% of measured value
Pipe size	Clamp-on:1"~48"(25mm~1200mm)
Fluid	Water.
Pipe material	Carbon steel,stainless steel,PVC.
Function specifications	
Outputs	OCT Pulse output:0~5000Hz. Analog output:4~20mA,max load 750Ω.
Communication interface	RS485 MODBUS
Power supply	10~36VDC/1A
Keypad	16(4×4)key with tactile action
Display	20×2 lattice alphanumeric, back lit LCD.
Temperature	Transmitter:14℉~122℉(-10℃~50℃) Transducer:32℉~176℉(0℃~80℃)
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

| DC Power | Relay | OCT | Transducer | 4-20mA | RS485 |

Transmitter Dimensions

Transmitter

150mm

130mm

155mm

68mm

Transducer

54mm

31mm

25mm

24mm

Ultrasonic Transducer
Part No.CP035

FLOW

Transducer Installation Methods

V method measuring pipe size : 25mm-400mm

Side View	Section

Upstream Transducer

Flow

Downstream Transducer

Transducer

Pipe Strap

Top View

Flow

Transducer space

Z method measuring pipe size: 100mm-800mm

Side View	Section

Upstream Transducer

Flow

Downstream Transducer

Transducer

Pipe Strap

Top View

Flow

Transducer space

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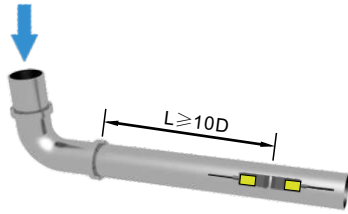
Ensure that the pipe surface temperature at the measuring point is within the transducer temperature limits.

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.
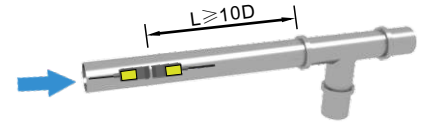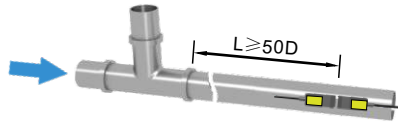
Straight length of upstream piping
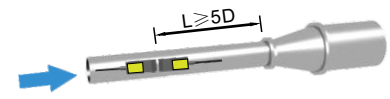
Straight length of downstream piping

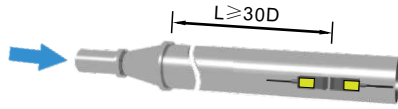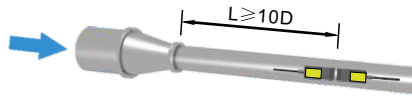90° Bend

$L \geq 10D$

$L \geq 5D$

Tee

$L \geq 50D$

$L \geq 10D$

Diffuser

$L \geq 30D$

$L \geq 5D$

Reduce

$L \geq 10D$

$L \geq 5D$

Valve

$L \geq 30D$

$L \geq 10D$

Vertical

$L \geq 5D$

$L \geq 10D$

$L \geq 50D$
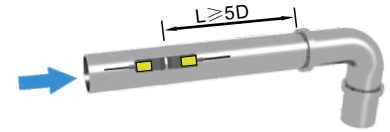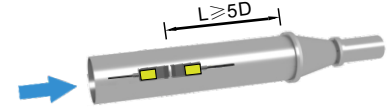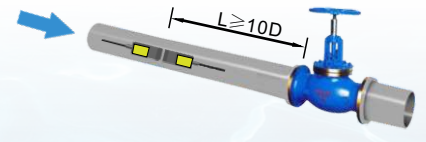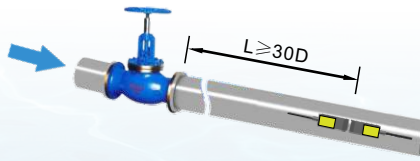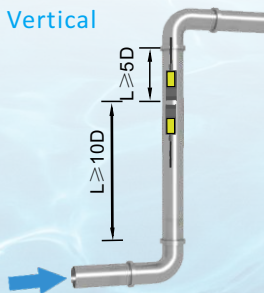
Ordering Information

Description	
D116	Digital Correlation Transit Time Flowmeter Installation method:wall mount Transmitter: Flow Range:±0.03ft/s～±16ft/s (±0.01m/s～±5m/s) Accuracy: ±1.0% of measured value Repeatability: 0.3% Pipe Size Range:1"~48" (25mm～1200mm) Keyboard:16 (4×4) touch keys Display:20×2,alphanumeric,backlit LCD Power supply:10-36V DC@1Amax Transmitter enclosure:IP65,ABS/PC enclosure Temperature:-20℃~50℃ Output: OCT pulse output 0-10KHz, Relay output, 4-20mA optional Communication: RS232, Modbus Protocol Temperature: -40℉~+140℉ (-40℃~60℃)

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℉~ +140℉(0℃~+60℃)
W210	Insertion transducer, Operating temperature:-40℉~+176℉(-40℃~+80℃)

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.