DATASHEET

Flow

Clamp On Ultrasonic Flow Meter Module DIN Installation

Model PWF-U2000M

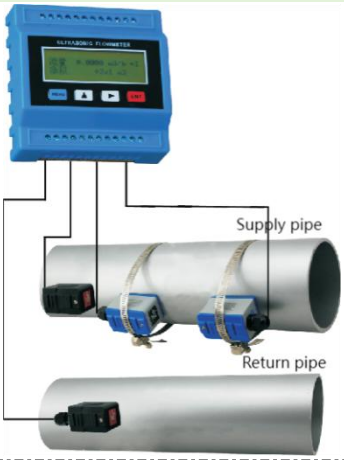
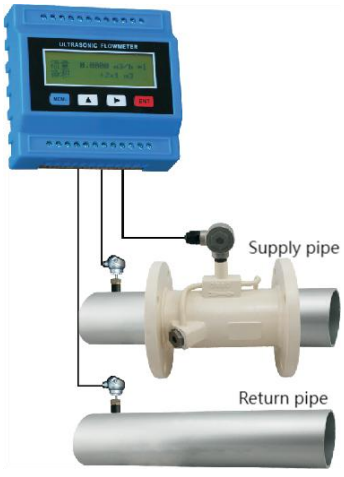
Description

PWF-U2000M Ultrasonic flow heat module/RTU is suitable for flow measurement of networked monitoring projects such as supporting projects of system integrators, water conservancy and water resources or heating systems. It has the characteristics of small size, low price, simple operation and complete output interface functions.

Features

- Measurement accuracy 1%
- Sensor protection level IP68
- Wide measurement range, pipe size from DN15 to DN6000
- High reliability: Low voltage, multi-pulse transmission circuit, high measuring accuracy, long service life.
- Compact size, rail-installation
- Wide fluid temperature range -30~160℃
- Powerful function: 1 way 4-20mA output as flow/heat transmitter; 2 way OCT output as flow/heat switch; 3 way 4-20mA input as data collector; 2 way 3-wire PT100 resistor as heat/energy meter

Measurement Diagram

Sensor Type	Flow Measurement	Heat Measurement	Features
Clamp on			·No need to cut off water, no pressure loss. ·Accuracy ±1% ·Easy to install and maintain. ·Suitable for good pipe condition.
Insertion			·No need to cut off water, no pressure loss. ·Accuracy ±1% ·After training, user can use hole opener to install. ·Long-time stability and reliable.
Pipe section			·Need to cut off pipe when installation. ·Accuracy ±0.5% ·Larger pipe diameter, higher cost. ·High accuracy, long-time stability.

Flow Sensor

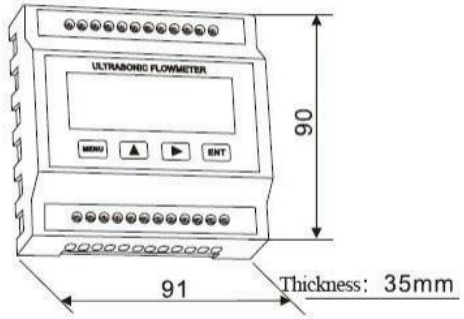
Please choose the suitable sensor, according to different liquids, pipe condition and installation method(please refer to measurement diagram)

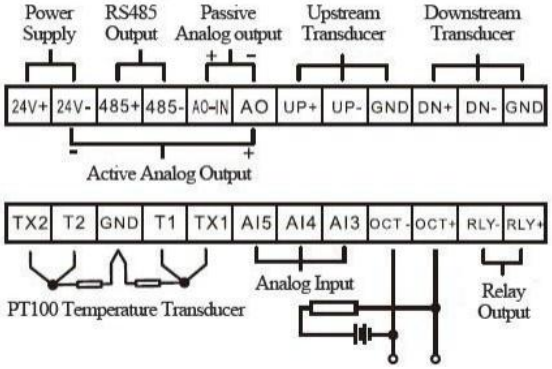
Types	Picture	Spec.	Model	Pipe Range	Temperature	Dimension	
Clamp on		Small Size	TS-2	DN15~DN100	-40~90℃	45×25×28mm	
		Medium Size	TM-1	DN50~DN700	-40~90℃	64×39×44mm	
		Large Size	TL-1	DN300~DN6000	-40~90℃	97×54×53mm	
High temp. clamp on		Small Size	TS-2-HT	DN15~DN100	-40~160℃	45×25×28mm	
		Medium Size	TM-1-HT	DN50~DN700	-40~160℃	64×39×44mm	
		Large Size	TL-1-HT	DN300~DN6000	-40~160℃	97×54×53mm	
Insertion		Standard	TC-1	DN80~DN6000	-40~160℃	190×80×55mm	
		Lengthen	TC-2	DN80~DN6000	-40~160℃	335×80×55mm	
Pipe section		π Type	G3	DN15~DN25	-40~160℃	SUS304 thread connection	Please refer to detailed pipe dimensions
		Standard	G2	DN32/DN40	-40~160℃	Carbon steel thread connection	
		Standard	G1	DN50~DN6000	-40~160℃	Carbon steel flange connection	

Temperature Sensor

Pictures	Specification	Model	Meas. Range	Temperature	Cut of water	Accuracy
	Clamp on 3-wire PT100 Temperature sensor	CT-1	≥DN50	-40~160℃	No	100℃±0.8℃
	Insertion 3-wire PT100 Temperature sensor	TCT-1	≥DN50	-40~160℃	Yes	
	Insertion 3-wire PT100 with pressure	PCT-1	≥DN50	-40~160℃	No	
	Insertion 3-wire PT100 small diameter pipe	SCT-1	<DN50	-40~160℃	Yes	

Converter Dimensions





Specifications

Parameters		Specification
Converter	Principle	Ultrasonic time difference principle, 4-byte IEEE754 floating point operation
	Accuracy	Flow ±1%; Temperature ±2%; Repeatability0.2%; Linearity 0.5%
	Display	4-button touch keyboard
	Signal output	1 way 4~20mA current output, electric resistance 0~1K, accuracy 0.1%(optional)
		1 way OCT pulse output (pulse width 6~1000ms, default 200ms)
		1way Relay output
	Signal Input	3 way 4~20mA inputs, accuracy 0.1%, can collect temperature, pressure, liquid level and other signals
		Connect 3-wire PT100 platinum resistor to achieve heat/energy measurement
	Data Interface	Isolated RS485 serial interface, the flow meter can be upgraded through a PC, supporting MODBUS protocols
Special Cable		Twisted-pair cable. Generally the cable length less than 50 meters; Transmission distance can over 1000m for RS485
Pipe Condition	Pipe Material	Steel, stainless steel, cast iron, cement pipe, copper, PVC, aluminum, fiberglass and other dense pipes, lining is allowed
	Pipe ID	DN15~DN6000mm
	Straight Pipe	Sensor installation should follow: Upstream 10D, downstream 5D, 30D from pump.
Measuring Medium	Types	Water, seawater, industrial sewage, acid and alkali solution, alcohol, beer, and other single and uniform liquids that can conduct ultrasonic waves
	Temperature	-30℃~160℃
	Turbidity	<10000ppm and small bubble content
	Velocity	0~±10m/s
Working Environment	Temperature	Converter: -20~60℃; Sensor -30~160℃
	Humidity	Converter: 85%RH; Sensor: Can be dipped in the water≤2 meter(after glue-filling)
Power Supply		DC8~36V or AC85~264V
Power Consumption		1.5W

How to Order

Example Part Number: U2000M TM-1 80 0 06 5 N 0

Model No.	PWF-U2000M	U2000M
Flow Sensor	TS-2 TM-1 TL-1 TS-2-HT TM-1-HT TL-1-HT TC-1 TC-2 G1 G2 G3 (please refer to the Optional Flow Sensor Table)	TM-1
Pipe Inner Diameter (mm)	15=DN15mm 32=DN32mm 50=DN50mm 80=DN80mm 100=DN100mm ... 6000=DN6000mm	80
Pipe Material	0=Carbon Steel 1=Stainless Steel 2= Cast Iron 3=Glass Fiber Reinforced 4=PVC 5=Cement 6=Others	0
Pressure Rating	06=0.6MPa 16=1.6MPa X=Others	06
Cable Length	5=5m 10=10m ...	5
Temperature Sensor	N=None CT-1 TCT-1 PCT-1 SCT-1 (please refer to the Optional Temperature Sensor Table)	N
SD Memory Card	0=With 1=Without	0