

Hand held ultrasonic flow meter



Main Unit

TDS-100H hand held ultrasonic flow meter is a battery power ultrasonic flow meter ,the capability of a full size flow meter. it is carefully designed for portability and easy for use .

- Better than 1% accuracy
- 0.2% of repeatability
- 4×16 English letters LCD display
- Operate with clamp on transducers
- RS 232 interface or 1-channel isolated OCT output
- Pipe diameters from 15mm to 6000mm
- Ni-MH battery operation of over 12 h
- 90~230VAC power supply
- Internal data logger

Outline Diagram



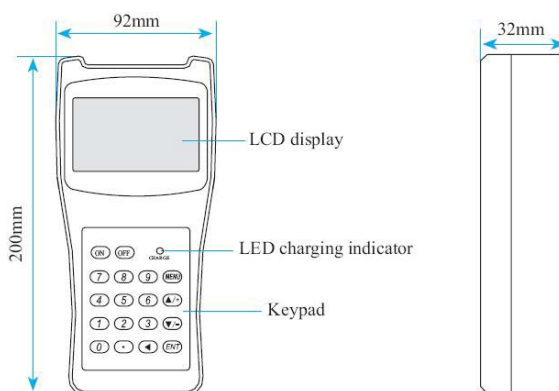
Dedicated shielded transducer cable 5 meter × 2



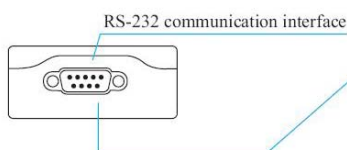
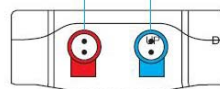
HM-type clamp-on transducer for DN50~DN700mm



Aluminum carrying case



upstream transducer socket downstream transducer socket



- 1 Charge the battery anode
- 2 RXD
- 3 TXD
- 4 Null
- 5 GND: GND
- 6 OCT output
- 7 Null
- 8 Charge the battery cathode
- 9 The ring input to Connect the modem

Portable ultrasonic flow meter



TDS-100P is a portable ultrasonic flow meter, built-in printer, with high accuracy battery-powered easy to use etc.

- Better than 1% accuracy
- 0.2% of repeatability
- 2×10 English letters LCD display
- Operate with clamp on transducers
- Pipe diameters from 15mm to 6000mm
- RS 485 interface
- Built-in thermal printer
- Ni-MH battery operation of over 24 h
- 220VAC or 110VAC power supply



Transducer cable 5 meter × 2

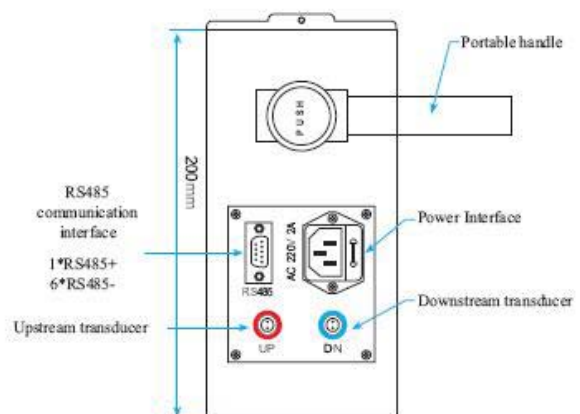
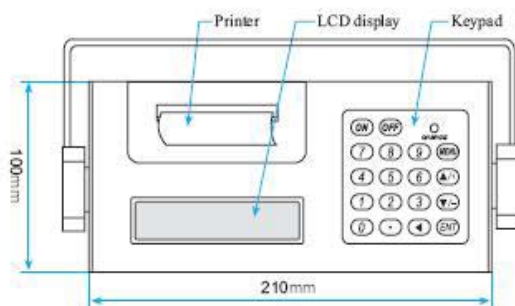


M1-type clamp on transducer



Aluminum carrying case

Outline Diagram



Portable ultrasonic flow meter

Transducer Options



Transducer Parameters

Technical parameters	S1-type	M1-type	L1-type	S1H-type	M1H-type
Pipe size (mm)	DN15~100	DN50~700	DN300~6000	DN15~100	DN50~700
Pipe size (inch)	(1/2~4")	(2~28")	(12~240")	(1/2~4")	(2~28")
Material	ABS			Special high-temp materials	
Frequency	1MHz				
Installation method	V(N/W)	V/Z	Z	V(N/W)	V/Z
Calibration	Calibrate with main unit				
Magnetism	Magnetic		No magnetic		
Temperature	32F~158F (0℃~70℃)			32F~320F (0℃~160℃)	
Protection class	IP65				
Dimension (mm)	45×30×30	60×45×45	80×70×55	90×85×24	90×82×29
Weight (g)	75	250	650	94	150
Liquid types	Water、 sea water、 waste water, chemical liquids, oil, crude oil, alcohol, beer, etc.				
Suspension concentration	< 10,000ppm and particle size less than 80um. May contain very small amount of air bubbles.				
Pipe material	Carbon steel、 stainless steel、 cast iron、 copper、 PVC、 aluminum、 fiberglass-epoxy, ect. Allow pipe liner				
Cable	Standard length 5m×2. Can be extended to 10m×2 or 15m×2				

Separate fixed ultrasonic flow meter



TDS-100F1 (wall mount)



TDS-100FS (Panel mount)

TDS-100F is a fixed mounted ultrasonic flow meter, and can operate with all our instruments transducer. Their electronic enclosures are rated as IP65, thus, can be installed for both indoor and outdoor.

- Better than 1% accuracy
- 0.2% of repeatability
- 2×20 English letters LCD display
- 4×4 key tactile-feedback membrane keypad
- 85~264VAC or 24VDC power supply
- Pipe diameters from 15mm to 6000mm
- Operate with clamp on, insertion and flow-cell transducer
- Five channel analogue 4-20mA input. (version 7)
- One channel programmable 4-20mA output
- Two channel programmable digital out (isolated OCT and Relay)
- Frequency output
- IP65

Transducer Options



S1-type clamp-on transducer



M1-type clamp-on transducer



L1-type clamp-on transducer



S1H-type clamp-on
high temperature transducer



M1H-type clamp-on
high temperature transducer



B-type insertion wetted transducer
(direct insertion)



cement insertion wetted
transducer



Joint type transducer



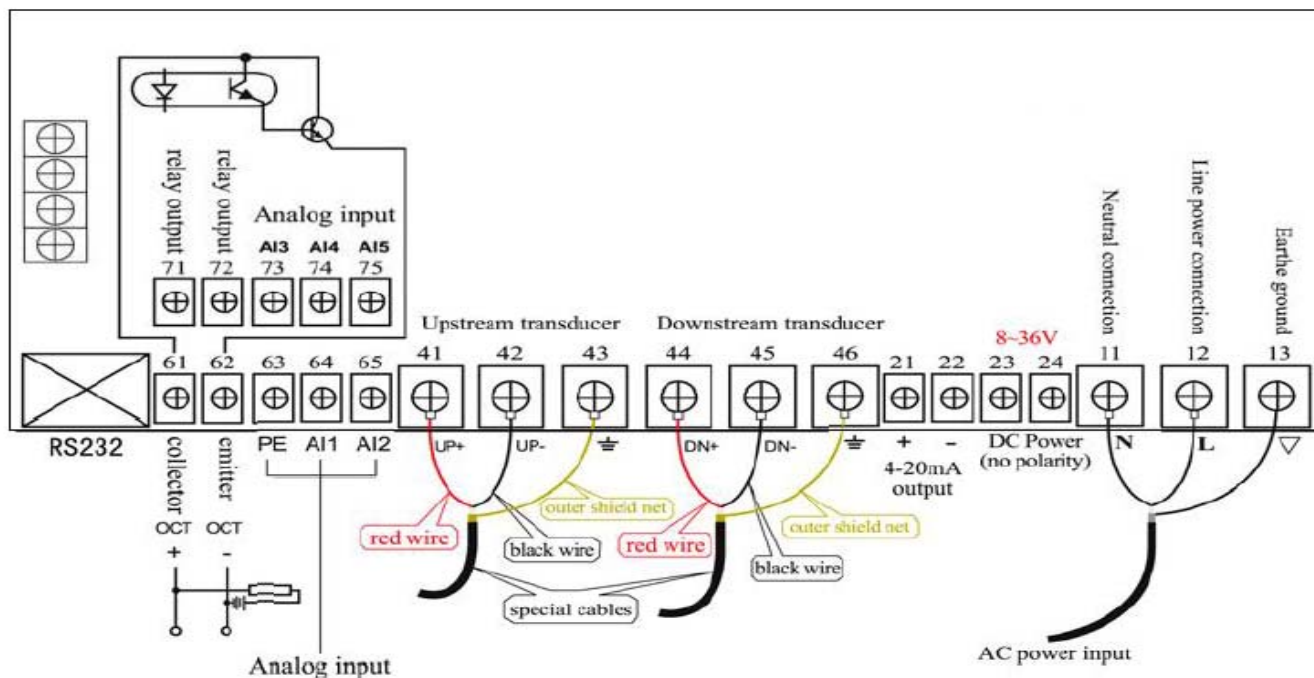
PI-type transducer



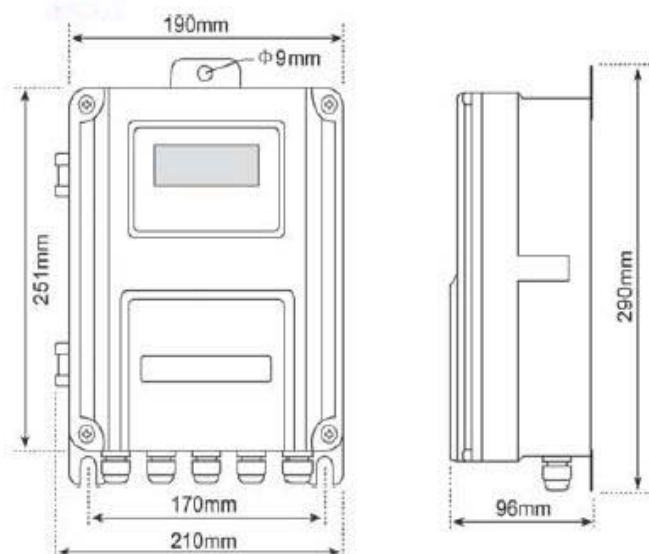
Standard pipe
transducer

Separate fixed ultrasonic flow meter

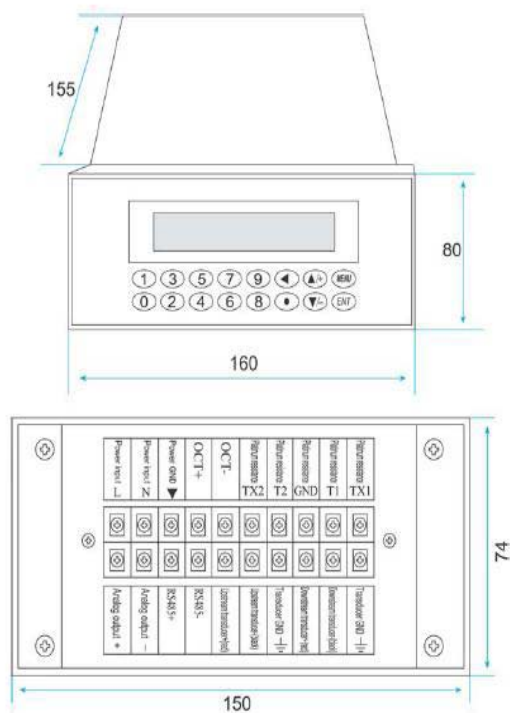
Wiring Diagram



TDS-100F1 (Wall- mount)



TDS-100FS (Panel mount)



Ultrasonic flow module



The TDS-100M modular ultrasonic flow meter can work alone without a LCD and Keypad module, the module can be used alone as a flow meter. Users can even integrate a number of the modules into a multi-channel flow meter that can measures up to several dozen of different pipes or a flow meter that has higher accuracy by measures the same pipe with all the channels, The design of the meter is intended to provide for users like system integrators and OEM users with a lowest cost but of high performance flow meter.

- 8-36VDC
- RS485 .4-20mA and OCT output
- 4-20mA and PT100 platinum resistance input
- 2×20 English letters LCD display
- 4 key tactile-feedback membrane keypad
- IP57
- Operate with clamp on, insertion and flow-cell transducer
- Pipe diameters from 15mm to 6000mm

Transducer Options



Transducer recommendation

Clamp-on transducer

A pair of clamp-on transducer to measure the flow from outside of a pipe, there is no pressure drop, no leaks and no Contamination. The installation is very simple and no special skills or tools are required.



S1-type clamp-on transducer



M1-type clamp-on transducer



L1-type clamp-on transducer


S1H-type clamp-on
high temperature transducer

M1H-type clamp-on
high temperature transducer

Transducer Options

Technical parameters	S1-type	M1-type	L1-type	S1H-type	M1H-type
Pipe size (mm)	DN15~100	DN50~700	DN300~6000	DN15~100	DN50~700
Pipe size (inch)	(1/2~4")	(2~28")	(12~240")	(1/2~4")	(2~28")
Material	ABS			Special high-temp materials	
Frequency	1MHz				
Installation method	V(N/W)	V/Z	Z	V(N/W)	V/Z
Calibration	Calibrate with main unit				
Magnetism	Magnetic		No magnetic		
Temperature	32F~158F (0℃~70℃)			32F~320F (0℃~160℃)	
Protection class	IP65				
Dimension (mm)	45×30×30	60×45×45	80×70×55	90×85×24	90×82×29
Weight (g)	75	250	650	94	150
Liquid types	Water、 sea water、 waste water, chemical liquids, oil, crude oil, alcohol, beer, etc.				
Suspension concentration	< 10,000ppm and particle size less than 80um. May contain very small amount of air bubbles.				
Pipe material	Carbon steel、 stainless steel、 cast iron、 copper、 PVC、 aluminum、 fiberglass-epoxy, ect. Allow pipe liner				
Cable	Standard length 5m×2. Can be extended to 10m×2 or 15m×2				

Insertion wetted transducer

A pair of insertion-type transducers are inserted into the pipe wall to interrogate the flow in the pipe. Since the transducers do not extrude into the flow, they do not generate any disturbance or cause any pressure drop. There is no moving parts to wear out.



B-type insertion wetted transducer
(direct insertion)



C-type insertion wetted transducer
(oblique insertion)



cement insertion wetted transducer

If the pipe material is carbon steel or stainless steel can be installed directly welding, but if the pipe material is cast iron, FRP,PVC or cement please contact with the manufacturer to order the dedicated pipe hoop. To prevent leak water please give the exact outside Diameter or perimeter to the manufacturer.

Technical parameters	B-type insertion wetted transducer (direct insertion)	C-type insertion wetted transducer (oblique insertion)	Cement insertion wetted transducer
Pipe size	More than DN80mm		
Material	Ball valve and transducer pole's material: stainless steel, Valve base's material is carbon steel (stainless steel is optional)		
Frequency	1MHZ		
Pipe material	All metals, most plastics, fiber glass,etc.		
Installation method	Z method		
Application of temperature	-40℃-160℃		
Bore size	Φ19mm (please use the manufacture's dedicated tools to drill, it can install with pressure.)		
Pressure class	1.6MPa(less than 0.8MPa when installing)		
Protection class	IP68 (can work in water and water depth ≤ 3 meter)		
Mounting Space	More than 550mm between the well wall and the pipe wall	More than 360mm between the well wall and the pipe wall	More than 700mm between the well wall and the pipe wall
Length	186mm	228mm	330mm
Liquid types	Water, sea water. Waste water, chemical liquids, oil, crude oil, alcohol, beer, etc		
Suspension concentration	≤2000ppm, may contain very small amount of air bubbles		
Cable	Shielded transducer cable, can be extended to 500 meter×2 contact the manufacturer for longer cable requirement, but the cable for water meter transducer do not more than 5 meter.		

Flow-cell transducer

Transducer is a flow-cell (or spool-piece), where a pair of ultrasonic sensors have already been built in. the flow cell transducer Is a accurately calibrated in the factory. When it is put in line with the testing pipe, the accuracy normally does not change .with high accuracy, good stability, easy to use, etc.



Joint type transducer



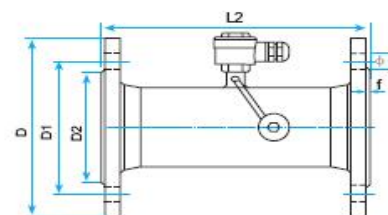
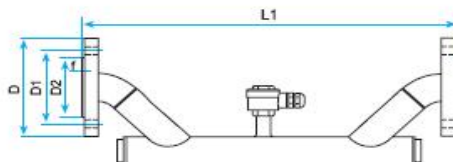
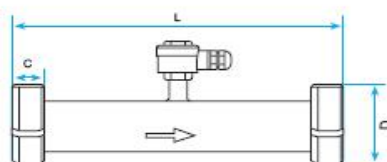
PI-type transducer



Standard pipe transducer

Transducer parameters

Technical parameters	Joint type transducer	PI-type transducer	Standard pipe transducer
Main unit	Integrated type, wall-mount, converter, module		Integrated type, wall-mount, converter, Module, water meter
Pipe size	DN25-DN80mm	DN15-DN40mm	DN50-DN1000
Material	Stainless steel		Carbon steel (stainless steel is optional)
Frequency	1MHZ		
Connection	Joint type	Flange type	
Application of temperature	-40℃-160℃		
Calibration	Calibrate with the main unit		
Protection class	IP68 (can work in water, and water depth ≤ 3 meter)		
Dimension	Refer to the following table		
Nominal pressure	Refer to the following table		
Liquid types	Water, sea water. Waste water, chemical liquids , oil crude oil, alcohol, beer, etc.		
Suspension concentration	≤ 20000 ppm , may contain very small amount of air bubbles.		
Cable	Shielded transducer cable, can be extended to 500 meter ×2 contact the manufacturer for longer cable requirement, but the cable for water meter transducer do not more than 5 meter.		



Flow-cell transducer

Joint type

Nominal diameter DN (mm)	Rated pressure (MPa)	Pipe material	Joint dimension			
			L	H	D	C
25	4.0	Stainless steel	300	282	51	19
40			300	300	74	23
50			300	310	84	24
65			350	330	100	28
80			400	345	114	30

Flange type

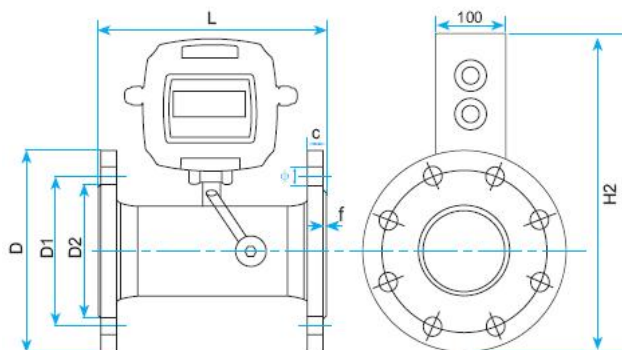
Nominal diameter DN(mm)	Rated pressure (MPa)	PI-type	Standard- pipe	Flange dimension (mm)					
		L1	L2	D	D1	D2	f	N-Φ	Thickness
15	2.5	320		95	65	46	2	14×4	14
20		360		105	75	56	2	14×4	16
25		390		115	85	65	3	14×4	16
32		450		140	100	76	3	18×4	18
40		500		150	110	84	3	18×4	18
50	1.6		200	165	125	99	3	18×4	20
65			200	185	145	118	3	18×4	20
80			225	200	160	132	3	18×8	20
100			250	220	180	156	3	18×8	22
125			250	250	210	184	3	18×8	22
150			300	285	240	211	3	22×8	24
200			350	340	295	266	3	22×12	24
250			450	405	355	319	3	26×12	26
300			500	460	410	370	4	26×12	28
350			550	520	470	429	4	26×12	30
400			600	580	525	480	4	26×16	32
450			700	640	585	548	4	30×20	34
500	1.0		800	670	620	585	4	25×20	32
600			1000	780	725	685	5	30×20	36
700	0.6		1100	860	810	775	5	24×25	32
800			1200	975	920	880	5	24×30	32
900			1300	1075	1020	980	5	24×30	34
1000			1400	1175	1120	1080	5	28×30	36

Ultrasonic water meter



TDS-100W Battery-powered ultrasonic flow meter suitable for don't have work power work site. It have low power, non-stop production installation, local display characteristics. and especially suitable for the measure of field or city pipe network.

- Accuracy : $\pm 2\%$
- Repeatability: $\pm 0.2\%$
- Measuring period: 500ms~49m (default settings 10s)
- Flow rate: 0~32m/s
- Working power: 3.6V lithium battery can continuous working above four years
- Display: Local 96 low power consumption LCD
- Operate special secondary instrument or PC software, use RS485 setting parameter, it can browse 44 content of windows
- Output: One channel RS485
 - Dual isolation OCT output
 - One channel USART(TTL) output
- Input: Two channel 2-wire PT1000
- Protect: IP68
- Other : Automatically record the following information
 - The totaliser data of last 512 day/ 128 months/ 10 years
 - The power-on time corresponding flow rate of the last 30 power on and power off events. Allow manual or automatic flow loss compensation and can read by MODBUS.
- Sensor type :clamp on or insertion





DN	Pressure (Mpa)	L(mm)	High		Flange outside Diameter(D)	Center circular of bolt hole (D1)	Bolthole DN×Φ×n	Seal board		Flange thickness C
			H1	H2				D2	f	
50	1.6	200	234	255	165	125	18×4	99	3	20
65		200	254	275	185	145	18×4	118	3	20
80		225	268	289	200	160	18×8	132	3	20
100		250	287	308	220	180	18×8	156	3	22
125		250	315	336	250	210	18×8	184	3	22
150		300	345	366	285	240	22×8	211	3	24
200		350	403	424	340	295	22×12	266	3	24
250		450	462	483	405	355	26×12	319	3	26
300		500	516	537	460	410	26×12	370	4	28
350		550	572	593	520	470	26×12	429	4	30
400		600	626	647	580	525	26×16	480	4	32
450		700	682	703	640	585	30×20	548	4	34
500	1.0	800	745	766	670	620	33×20	585	4	32
600		1000	858	879	780	725	36×20	685	5	36
700	0.6	1100	938	959	860	810	36×24	775	5	32
800		1200	1046	1067	975	920	39×24	880	5	32
900		1300	1146	1167	1075	1020	39×28	980	5	34
1000		1400	1261	1282	1175	1120	42×28	1080	5	36

Thank you for your attention

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