

Ultrasonic Flow Meter for Liquids – Model TRA common specifications

Nominal diameter	40 mm	50 mm	80 mm	100 mm
Measurable fluids	Drinking water, industrial water, pure water, seawater, etc.			
Max. working pressure	1 MPa			
Flow-rate range	0.6 to 30 m³/h	1 to 50 m³/h	2 to 100 m³/h	4 to 200 m³/h
Accuracy	±2%RS	3 to 30 m³/h	5 to 50 m³/h	10 to 100 m³/h
	±5%RS	0.6 to 3 m³/h	1 to 5 m³/h	2 to 10 m³/h
Fluid temperature range	0 to 50°C			
Connection	Wafer (put and hold between JIS10K flanges)			
Installation position	Free			
Materials in contact with fluid	PVC			
Protection class	IP64 (can be installed outdoors)			

Note: The degreasing feature can be added as an option.

Ultrasonic Flow Meter for Liquids – Model TRA (Accumulated flow volume / instantaneous flow-rate display type) specifications

Display	Main	Total accumulated flow volume (m³) / Trip accumulated flow volume (m³): switchover by the button
	Sub	Instantaneous flow-rate (m³/h) / temperature (°C): switchover by the button
Display Digits	Main	m³: 10 digits (00000000.00 m³)
	Sub	m³/h: 4 digits (000.0 m³/h) °C: 3 digits (00.0°C)
Analog current output	4-20 mA (load resistance up to 400 Ω)	
Accumulated volume pulse output	Open drain output (2 output channels) Output 1: Unit pulse (0.01 m³/P, 0.1 m³/P, 1 m³/P) Output 2: Selection from flow-rate upper/lower limit alarm or exclusive electronic statement signal	
	Maximum load : 24 V DC, 10 mA Duty cycle : 35 to 65% Saturation voltage when ON : 1V or less Saturation voltage when OFF : 50 μA or less	
Power supply	(1) External power supply specifications: 24 V DC ± 10% (Power supply from its connector with utilizing the external connection cable) (2) Built-in battery specifications: Lithium battery with a life of 10 years (when used at 20°C)	

Ultrasonic Flow Meter for Liquids – Model TRA-S (Instantaneous flow-rate display type) specifications

Display	Main	Instantaneous flow-rate / Temperature: switchover by the button
	Sub	Flow-rate unit (m³/h, L/min) / Temperature unit (°C): switchover by the button
Display digits	Sub	4 digits (000.0 m³/h) / 5 digits (0000.0 L/min): switchover by the button 3 digits (00.0°C)
Power supply	Built-in lithium battery with a life of 10 years (when used at 20°C)	

External Dimensions

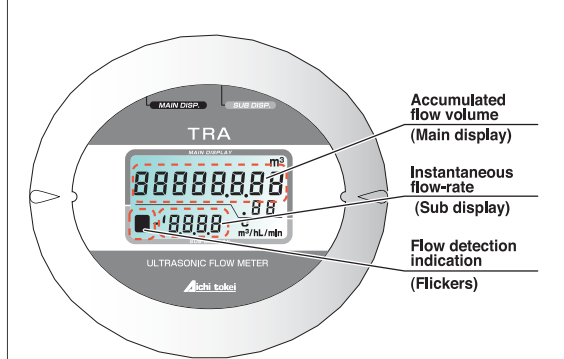
Unit: mm

Nominal diameter	Width	Depth	Height
40	123	82	174
50	133	97	189
80	153	127	220
100	173	152	244

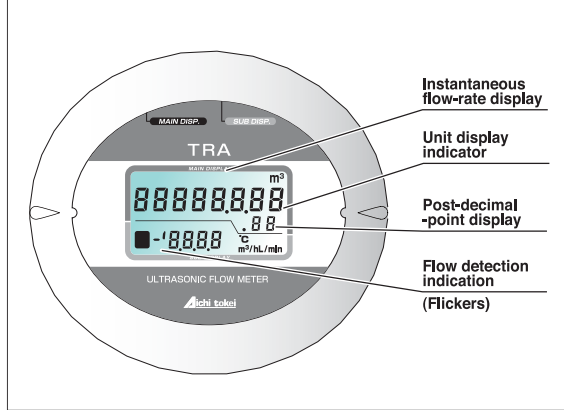
Weight (kg)	40	50	80	100
Built-in battery	2.3	2.7	4.3	5.6
External power supply	2.1	2.5	4.1	5.4

Display Diagrams

Accumulated flow volume / instantaneous flow-rate display type



Instantaneous flow-rate display type



Ultrasonic Flow Meter for Liquids

NEW model **TRA**

Introducing a new series of ultrasonic flow meters!
Possible to measure pure water and seawater as well!!



Energy conservation tool

Aichi tokei denki co., ltd.

The specifications outlined in this catalog are current as of April 2011.



This catalog uses soy ink and recycled paper.

Note These specifications are subject to change without notice to allow us to add performance improvements. If your catalog or materials are out of date, please update to the latest edition or send an inquiry to our company.

1.0

MK-TRA-030YA



Aichi tokei denki co., ltd.

Energy conservation tool

Ultrasonic measurement, as the measure hereafter!

Ultrasonic Flow Meter for Liquids – model TRA



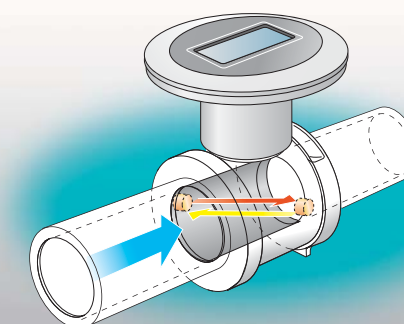
model TRA-S
Instantaneous flow-rate display type

Note: Accumulated flow volume / instantaneous flow-rate display type is also available.

Measurement Principals

“Ultrasonic propagation time difference” method superior in repeatability

The flow meter is equipped with two ultrasonic sensors, one each for the inflow side and outflow side.
When a fluid flows in the direction indicated by the arrow, velocity of the fluid causes difference between diffusion time of ultrasonic wave from the inflow side sensor to the outflow side sensor and that of ultrasonic wave from the outflow side sensor to the inflow side sensor.
By detecting flow-rate of the fluid from such time difference, based on the cross sectional area of the flow meter's measuring pipe and the detected flow-rate, the flow volume is calculated.



Wide rangeability, high durability, and low pressure drop are realized taking advantage of the properties of ultrasonic waves.

Pursuing user-friendliness, the built-in lithium battery provides enough power for 10 years of continuous measurement. (Note: This applies for the built-in battery type. An external-power supply type [DC24V] is also available). Model TRA helps energy conservation controls at various kinds of factories and facilities.

Selectable Power Source

It is selectable from built-in lithium battery or DC24V.

Maintenance Free

Features a sensor that is free from fluid contact, resulting in superior durability!

Extremely Low Pressure Drop, as there is no Mechanically Moving Parts

Nothing to disturb flow!

Wide Rangeability

Approx. 10 times wider than that of a rotameter!

Display turns in 90° each to fix its facing direction

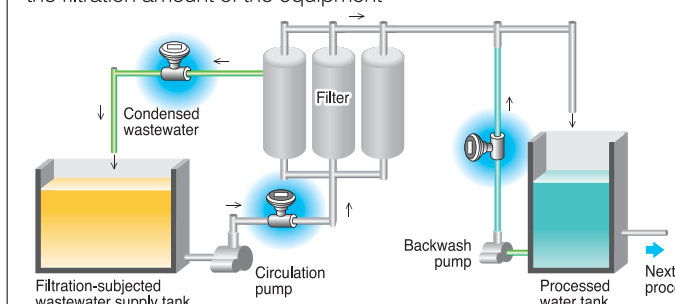
Adjustments can be made easily with a hex wrench!



Application Examples

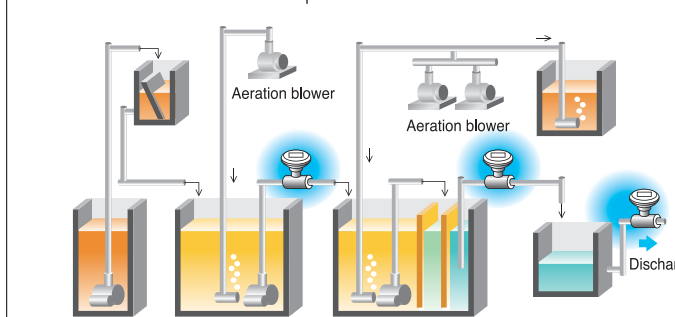
Filtration facility

Flow monitoring for the purpose of operation adjustment of the filtration amount of the equipment



Wastewater processing facility

Volume control for the transport of treated wastewater



The best match for the Model TRA

Aichi remote display model TR101 **NEW**



Specifications

Display (Note 1)	Accumulated flow volume (Note 2)	0000000000 (10 digits, unit in m³ or Nm³)
	Instantaneous flow-rate	00000 (5 digits, unit in m³ or Nm³)
	Pressure	0000 (4 digits, unit in kPa)
	Temperature	00.0 (3 digits, unit in °C)
Alarm display	E-1: Communication error between the flow meter and the remote display	
	E-2: Flow meter [ALARM 1] display – ultrasonic receiving error	
	E-3: Flow meter [ALARM 2] display – low battery voltage	
	E-4: Both E-1 and E-2	
	Low battery voltage of the remote display	
Input	Exclusive electronic statement signal from the ultrasonic flow meter	
Output	None	
Power supply	Lithium battery	
Installation environment Temperature and humidity	-10 to 60°C, 90% relative humidity or less	
Casing material	ABS resin	
Structure	IPX3 (rainproof)	
External dimensions	H188 x W100 x D43 (mm)	
Weight	Approximately 300 g	

Note 1: Displayed data is automatically updated every 10 minutes. You can also manually update the display data.
Note 2: The most significant integer digit of the accumulated flow volume displayed on a TRW cannot be displayed on the remote display because of its position in relation to its decimal point position.