



**Ultrasonic & Electro
Magnetic Flow / Heat Meters**

**ENERGY
METERING
QUICK & RELIABLE**

Transit Time UltraSonic Flow / Heat Meters

VIR-832 SERIES-



DESCRIPTION

The VIR-832 transit time ultrasonic flow meter/heat meter measures volumetric flow and cooling energy rates in chilled water applications. VIR-832 flow and energy meters can be with Insertion Sensors for direct water contact or clamp onto the outside of pipes and do not contact the internal liquid.

BENEFITS

An insertion-type flow sensor is a device designed to measure the flow rate of liquids or gases within a pipe or duct. It is installed directly into the flow path through a pocket or port, allowing easy installation and maintenance. These sensors typically use ultrasonic technology to detect flow rates. They are ideal for large-diameter pipes where traditional inline sensors may be impractical. Insertion-type sensors offer cost-effective solutions and are commonly used in industries

FEATURES

- ◆ Large, bi-directional flow measuring range.
- ◆ Data Logger
- ◆ Modbus RTU or BACnet MS/TP over EIA-485, Modbus TCP/IP BACnet/IP; connectivity options with Kamstrup make Multical 603.

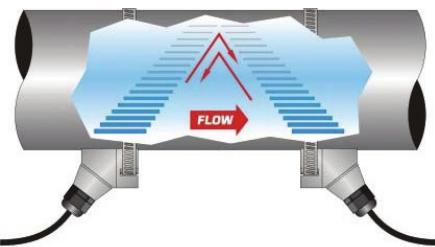
Ultrasonic speed and temperature compensation Large, easy-to-read graphical display Suitable for harsh environments

APPLICATIONS

The VIR-832 meter is available in a variety of configurations that permit the user to select a meter with features suitable to meet particular application requirements.

The VIR-832 meter is available in two versions:
A flow meter for water delivery, sewage, cooling water, water-glycol mixtures, alcohols and chemicals

A heating/cooling energy flow meter used in conjunction with dual insertion or clamp-on RTDs for temperature measurement-ideal for hydronic process and HVAC applications



OPERATION

Transit time flow meters measure the time difference between the travel time of an ultrasound wave going with the fluid flow and against the fluid flow. The time difference is used to calculate the velocity of the fluid traveling in a closed-pipe system. The transducers used in transit time measurements operate alternately as transmitters/receivers. Transit time measurements bi-directional and are most effective for fluids that have low concentrations of suspended solids and are sonically conductive.

An ultrasonic meter equipped with heat flow capabilities measures the rate and quantity of heat delivered or removed from devices such as heat exchangers. By measuring the volumetric flow rate of the heat exchanger liquid, the temperature at the inlet pipe and the temperature at the outlet pipe, the energy usage can be calculated.

Product Data Sheet



Main Unit	Accuracy	± 1%, ± 0.5% ±0.2% ± 0.025 ft/s (0.008 m/s)
	Repeatability	Better than 0.2%
	Principle	Transit-time measuring principle
	Measurement Period	500ms
	Display	LCD with backlight, display accumulated flow/heat, instantaneous flow/heat, velocity, time etc.
	Output	Analog output: 4-20mA or 0-20mA current output. Impedance 0.1kw. Accuracy 0.1%
		OCT output: Frequency signal (1-9999HZ)
		Relay output: Programmable (no signal, reverse flow etc.)
	RS 485 serial port	
	Input	Three analog input
	RTD For Heat Meter only	Two 2-wire, 3-wire Pt100/Pt1000/Pt 500 RTD 12-bit inputs; Range of -40...200° C; Clamp-on resistor kits available
	Other functions	Automatically record the totaliser data up to 5 years and 16 years Option
	Energy total (Heat Meters)	British Thermal Unit (Btu), MWH KWH
Pipe	Heat/cooling rate (Heat Meters)	Btu/hour, Kilowatts, Megawatts,
	Temperature (Heat Meters)	Fahrenheit, Celsius
	Power loss mode	The power-on time and corresponding flow rate of the last 64 power on and off events. Allow manual or automatic flow loss compensation
Liquid	Material	Steel, Stainless steel, Cast iron, Cement pipe, Copper, PVC, Aluminium, FRP etc. Liner is allowed
	Size	15-6000mm
	Straight pipe section	In the upstream it must be beyond 10D, in the downstream it must be beyond 5D. In the upstream the length must be beyond 30D from the access of the pump. (D Stands for pipe diameter)
Environment	Types	Water, sea water, industrial sewage, acid and alkali liquid, alcohol, beer, all kinds of oils which can transmit ultrasonic single uniform liquid
	Temperature	Standard : -10° C - 160° C
	Turbidity	Less than 10000ppm, with a little bubble
	Flow Direction	Bi-directional measuring, net flow/heat measuring
Cable	Ambient Temperature	Main Unit: -4...140° F (-20...60° C)
	Altitude Restriction	Up to 2000 m (6561 ft)
	Humidity	Main Units:0...85%, non-condensing
		Transducer : water-immersible, water depth less than 3m
Power Supply	SMPS	AC220V or DC24V
Power	Consumption	Less than 1.5W
Protocol	Communication Option	MODBUS-RTU Protocol Standard. Option of BACnet MS/TP or IP with MC-603 Kamstrup make calculator available.



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