CAT.No.CBE005E-3

OVAL

Liquid

Clamp-On Design Ultrasonic Flowmeter

Psonic-S1

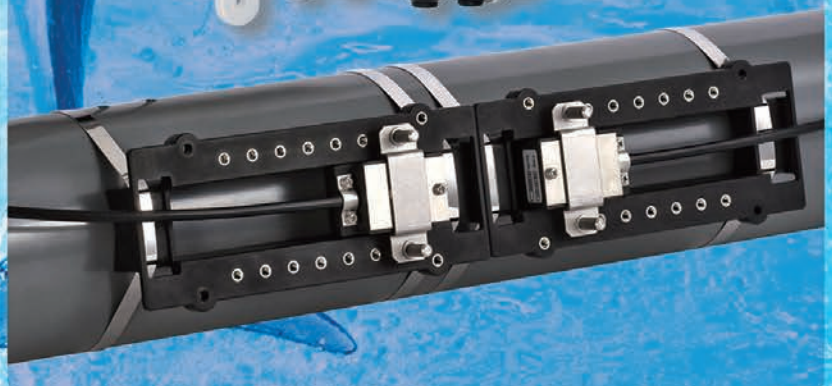
Various kinds of flow metering are available regardless of whether fluid conductivity is present or not.

The clamp-on design provides easy and low cost operations when installing sensors.

The small-size, lightweight design facilitates installation.

By the use of dedicated PC communication software, you can set the flowmeter easily.

You can enjoy the functions equivalent to existing higher-grade models at a low price.



Value added to the flow

OVAL Corporation

■ Standard Specifications

● Sensor Specifications

Item		Description
Applicable fluids		Homogeneous fluids where ultrasonic wave can propagate (clean water, waste water, industrial water, river water, ocean water, purified water, etc.) Turbidity: 10000mg/L (degree) max. Note) The fluid must not contain bubble. Note) Cannot support slurry. Note) For application to fluid other than water, contact OVAL office.
Fluid temp. range		-20 to 60˚C (fluid and ambient)
Nominal size		25 to 600mm
Piping materials		Steel pipe, SUS pipe, polyvinyl pipe, ductile cast-iron pipe, copper pipe, or other pipe made of material that can transmit ultrasonic wave steadily *1: Maximum applicable bore size may not be satisfied depending on the material or status of piping. *2: In the case of lining pipe, the lining must be in close contact with the main pipe. (Lining material is tar epoxy or mortar, or the like.)
Flow metering range		0 to ±10m/s
Number of metering lines		1 line
Metering system		Ultrasonic pulse transmission time difference system
Factory calibration accuracy	25 to 40mm	±2.5% of reading (±0.025m/s at a flowrate less than 1m/s)
	50 to 90mm	±2.0% of reading (±0.020m/s at a flowrate less than 1m/s)
	100 to 250mm	±1.5% of reading (±0.015m/s at a flowrate less than 1m/s)
	300 to 600mm	±1.0% of reading (±0.010m/s at a flowrate less than 1m/s)
		Note) Specification at the measurement of mass flow Note) The pipe must be full of liquid and the flowrate distribution must be ideal. Note) The flowrate must be 0.3m/s or more with specified length of straight pipe secured.
Sensor material		Resin (PBC, PMMA)
Protection class		Standard: IP65 (Option: IP67)

● Transmitter Specifications

Item		Description
Transmitter mounting configuration		Separately mounted type
Power supply		Standard : AC100 to 230V ±10%, 50/60Hz ±2Hz Option : DC24V ±20%
Power consumption		19VA max. at 100VAC, 23VA max. at 200VAC, 9W max. at 24VDC
Operating temp. range		−10 to +50˚C
Operating humidity range		90%RH max. (without dew condensation)
Protection class		IP65
Installation environment		Direct sunlight, radiation heat, corrosive atmosphere, and explosive atmosphere must be avoided.
Housing material		ABS resin (Color: white gray)
Analog output	Number of channels	1 channel
	Output content	Instantaneous flowrate
	Output type	4 to 20mA, 20.8mA at burnout Max. allowable load resistance: 600Ω, insulated outp
	Output accuracy	±0.2% F.S.
Contact output	Output content	Contact pulse, alarm, forward and reverse flow judgment
	Output type	Photocoupler output
	Contact capacity	DC48V, 0.4A
	Max. output rate	25Hz (Selected from among pulse widths 20, 100, 500, and 1000ms)
USB communication	Functions	Sets flowmeter by PC communication software (UFWconfig). Displays measurement value, Displays receiving waveform, Reads log data
	USB cable length	3m max.
	Connector	USB B terminal (hot plugging available)
Optional input		(1) Analog input: 4 to 20mA, 1 output (2) Digital communication: RS-485 (MODBUS-RTU), Transmission length: 1km max.
Functions		(1) Logging function: Instantaneous mass flow, Instantaneous flowrate, Forward and reverse total value, Measurement status, Error status, etc. Period: 0 to 3600s (Initial value: 60s) (2) Low flowrate cutoff: Settable at option (Initial value: 0) (3) Self diagnostic function (4) Simulated output: Analog current output, Total pulse count output
Display		16-digit, 2-line LCD display with backlight Instantaneous mass flow, Flowrate, Forward total flowrate, Reverse total flowrate, Status code, etc.
Explosionproof specifications		Nonexplosionproof

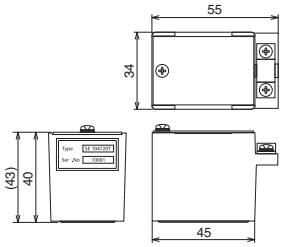
■ Flow range

(Reference value of maximum flowrate at each nominal size with pipe inner diameter = nominal size)

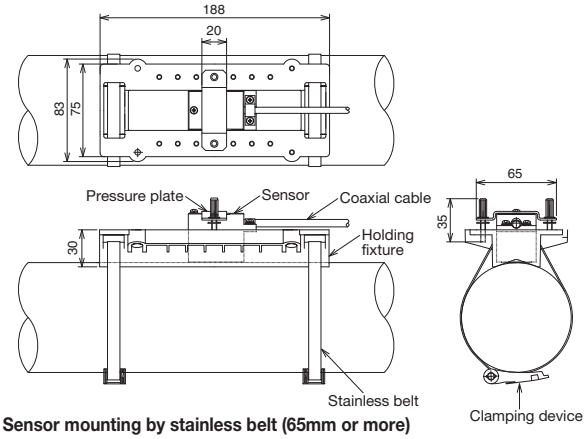
Nom. size (mm)	Max. Flowrate (m³/h)	Nom. size (mm)	Max. Flowrate (m³/h)	Nom. size (mm)	Max. Flowrate (m³/h)
25	17.6	100	282	300	2540
40	45.2	125	441	350	3460
50	70.6	150	636	400	4520
65	119	200	1130	500	7060
80	180	250	1760	600	10100

■ Dimensions (Unit in mm)

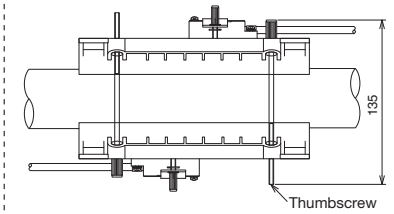
● Sensor



● Sensor mount ※ Which mounting method, V method or Z method, to be adopted is determined by the bore size, piping material, etc.

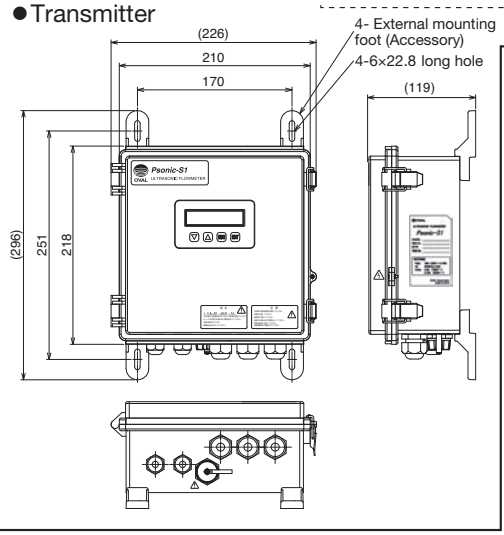


Sensor mounting by stainless belt (65mm or more)



Sensor mounting by thumbscrew (50mm or less)

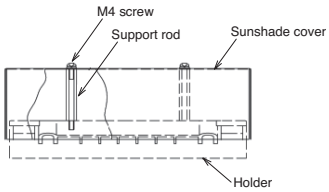
● Transmitter



■ Option

● Sunshade cover for sensor

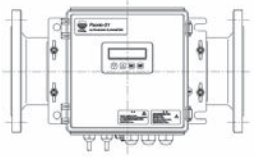
This is a sunshade cover for protecting the plastic sensor against direct sunlight when the instrument is installed outdoors.



● Specifications of pipe integrated type :

Shipment with piping (inline type) is also possible. (Built-to-order production)
High-accuracy actual flow calibration and traceability are obtainable with the inline type.
Various kinds of customization are available as required for piping. Contact OVAL representative.

※ Available piping specifications
Nominal size : 25 to 200 mm
Material : Stainless steel, Steel, PVC
Category : JIS pipe (product with lining is available)



The specification as of November 2019 is stated in this catalog. Specifications and design are subject to change without notice.

OVAL Corporation
3-10-8 Kamiochiai, Shinjuku-ku, Tokyo 161-8508
Phone: +81 3-3360-5121 FAX: +81 3-3365-8605
http://www.oval.co.jp/english

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