

Digital Vortex Flowmeter

digital YEW FLO

Multivariable Type



The perfect solution for energy-efficient steam flow measurement!

The World's First-ever Two-wire Multivariable Vortex Flowmeter with Built-in Temperature Sensor

digital YEWFLO



Ideal for Steam Flow Measurement

✓ Computations based on steam tables and built-in temperature sensor directly output mass flow rates of saturated steam.

Enables saturated steam flow rates to be measured with higher precision—ideal for planning energy efficiency programs and progress checks.

✓ Spectral signal processing (SSP) allows stabilized high accuracy over a broad range of changes in flow.

The improved resistance to vibration and enhanced output stability at low flow rates assure close tracking of sudden and large fluctuations in flow and temperature, thus maintaining precise measurement at all times.

Temperature Monitoring and Mass Flow Measurement

Can measure flow rates and temperature simultaneously.

Volumetric flow rate or mass flow rate (pulse output)

→ Totalized flow rate management

Temperature (analog output)

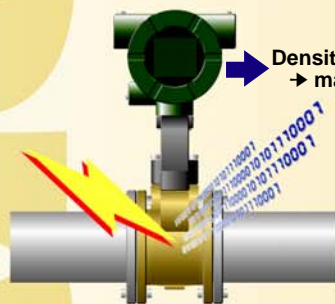
→ Process temperature management

digital YEWFLO can perform both liquid or gas temperature measurement and give a temperature-compensated flow rate output.

Computes the mass flow rate in real time based on the measured temperature.

Displays the flow rate and temperature in two rows.

Minimizes the instrumentation cost.

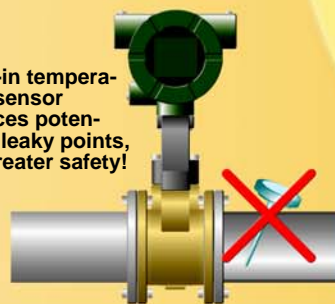


Density computation
→ mass flow rate



Mass flow rate and
temperature indications

Built-in temperature sensor
reduces potentially leaky points,
for greater safety!



Temperature Sensor Built into Vortex Shedder

Temperature Sensor
A Pt1000, Class A-equivalent sensor for process fluid temperature measurement is ruggedly built into the vortex shedder as a thermowell.

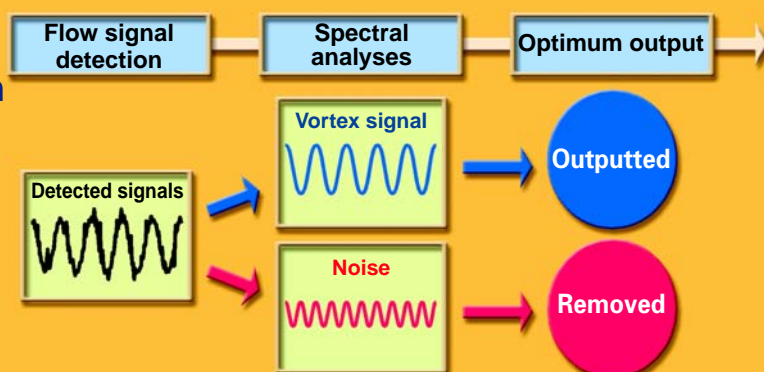
Spectral Signal Processing

SSP*, a leading-edge digital signal processing technology, allows the measurement conditions to be captured on target at all times to extract the optimum vortex signal.

By applying spectral analyses continuously to signals detected by piezoelectric sensors, the vortex signal and noise are distinguished and noise is eliminated automatically.

SSP thus delivers:

- **Improved resistance to vibration**
- **Stable output at low flow rates**
- **Powerful self-diagnostics**



(* Spectral signal processing (SSP) is Yokogawa's original spectral signal processing technology using leading-edge digital technologies.)

Specifications

Model	DY digital vortex flowmeter (Integral/Remote) DYA digital vortex flow converter (Remote)	Multivariable type (option code /MV)
Fluid to Be Measured	Liquid, gas, steam (avoid multiphase flow and sticky fluids)	Same as left
Size (Nominal Diameter)	1/2 to 12 inches (15 to 300 mm)	1 to 8 inches (25 to 200 mm)
Accuracy	Liquid: $\pm 0.75\%$ of reading Gas or steam: $\pm 1.0\%$ of reading (at flow speed of less than 35 m/s) $\pm 1.5\%$ of reading (at flow speed from 35 to 80 m/s)	Mass flow rate: $\pm 2.0\%$ of reading Fluid temperature: Saturated steam or liquid: $\pm 0.5^\circ\text{C}$ Superheated steam or gas: $\pm 1^\circ\text{C}$
Repeatability	$\pm 0.2\%$ of reading	Same as left
Output Signals	Dual outputs (analog and transistor contact output can be obtained simultaneously) Analog output: 4 to 20 mA DC, 2-wire transmitter signal Transistor contact output: 3-wire open collector Contact rating: 30 V DC, 120 mA DC Whether to use this contact for the pulse, alarm, or status output is selected by a parameter setting. Pulse frequency: Max. 10 kHz	Analog output: Selected from flow rate and temperature outputs Transistor contact output: When selecting pulse: Flow rate output When selecting alarm: Temperature sensor failure output When selecting status: Flow switch signal
Process Temperature Range	-40 to 260°C (general) -200 to 100°C (cryogenic version: option) -40 to 450°C (high process temperature version: option)	Temperature measuring range: -40 to 260°C Steam measuring range: 100 to 260°C
Process Pressure Limit	-0.1 MPa (-1 kg/cm 2) to flange rating	Same as left
Ambient Temperature Range	-40 to 85°C (general)	Same as left
Ambient Humidity	5 to 100% RH	Same as left
Mounting	Flange or wafer mounting for ANSI Class 150, 300, 600, or 900 (JIS 10k, 20k, or 40k)	Same as left
Electrical Connection	ANSI 1/2 NPT female, ISO M20 \times 1.5 female, or JIS G1/2 female	Same as left
Protection Class	IEC IP67, NEMA 4X water tightprotection Options: FM explosion-proof, FM intrinsically safe; FM non-incendive; CENELEC ATEX (KEMA) explosion-proof; CENELEC ATEX (KEMA) intrinsically safe; CSA explosion-proof; CSA intrinsically safe; SAA explosion-proof; SAA intrinsically safe; TIIS flame-proof Ex d IIC T6, Japan (see the General Specifications sheet for details).	A resistance temperature detector (Pt1000, Class A) is built into the vortex shedder.
Materials	Body (standard): SCS14A casting stainless steel (equivalent to 316SS) Vortex shedder bar: Duplex stainless steel (anti-corrosion option available) Gasket: 316SS stainless steel with polytetrafluoroethylene (Teflon) coating Converter housing, case, and cover: Aluminum alloy	Same as left

NOTICE

- Before operating the product, read the instruction manual thoroughly for proper and safe operation.
- If this product is for use with a system requiring safeguards that directly involve personnel safety, please contact the Yokogawa sales offices.

YOKOGAWA ◆

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