CAT. No. CAA031E-3

OVAL

OVAL

PRODUCTS GUIDE

[Flowmeter/Electronic Instruments]

Value added to the flow

OVAL Corporation

Flowmeter Product Name

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ULTRA OVAL



High accuracy, general versatility and positive displacement flowmeter

- High accuracy: ±0.5% RD (Option: ±0.2% RD)
- Since the metering chamber is a pocketless configuration, a wide range of fluids including chemical fluid are acceptable.
- Battery-operated model is also available (battery replaceable).
- Low pressure loss and high durability

Specifications

Item		Description
Type		Standard, High temperature service, Low temperature service
Nominal size		10, 20, 25, 40, 50mm
Connection standard		JIS10, 16, 20, 30K/ASME or JPI 150, 300 flange
Material	Wetted area	SCS14, other
	Case	SUS316, other
Flow range		0.2 L/h to 44 m^3/h (9 types) ※1
Accuracy		±0.5% RD (Option: ±0.2% RD)
Operating temp. range		-10 to +120℃ (Standard type) ※2
Max. operating pressure		2.94MPa
Configuration		Flameproof or intrinsic safety

※1: Viscosity 5 to 1000 mPa·s
※2: Max. 260℃ for high temperature,
Min. -60℃ for low temperature
※ Applicable to max. 1000m^3/h (350 mm)



Batch controller furnished

A field type ULTRA OVAL flowmeter equipped with a batch controller furnished counter. When used in conjunction with a all pneumatic automatic valve (ball valve, diaphragm valve), you can readily build a high performance batch system. The counter operates on a built-in battery and has lightweight compact construction. In accordance with the purpose of application, you can choose LW74E that opens and closes the valve in a single step, or, for more precise batch process, LW76E that opens and closes the valve in two steps. Both types have intrinsic safety and explosionproof construction.

Specifications

Item		Description
Flowmeters		ULTRA OVAL 39 to 65 type, ULTRA UF-II 80 to 88 types
Functions	Display	6-digit LCD
	Operation	Start, stop, reset with front button
	Setup	Batch setting: Initially controlled flow (counts) — For 2-step ON/OFF controlling Controlled flow timing before target set point (counts) — For 2-step ON/OFF controlling Missing pulse detection, overshoot (counts)
	Other	Repeat process, backup in EEPROM (Cumulative total count, batch set point, parameters)
Configuration		Water-proof (IP65) Non-explosionproof or intrinsic safety



Auto temperature compensator equipped

Ultra register finds extensive use in the transactions of petroleum products, or elsewhere where flow measurement under given reference temperature is required. It converts the flow information of process materials at the process temperature to that at the reference temperature. Can mount on ULTRA OVAL (39 to 65 types) and ULTRA UF-II (80 to 88 types) flowmeters.

Specifications

Item	Description
Flowmeters	ULTRA OVAL 39 to 65 types, ULTRA UF-II 80 to 88 types
Temp. input	Platinum temperature measuring resistance (Pt 100Ω)
Temp. range for correction	-10 to +150℃
Display	8-digit LCD
Output	2 outputs selectable from various pulse/analog signals
Calculation	Based on JIS K 2249 or JIS K 2240, and 3α correction
Conversion Accuracy	±0.1% or better

ECO OVAL



Inexpensive explosionproof positive displacement flowmeter

- High accuracy: ±0.5% RD (oils, chemical liquids) ±1.0% RD (water)
- Pattern approved meter for stationary oil measurement
- Applicable to various kinds of liquids
- Battery-operated model is also available (battery replaceable).

Specifications

Item		Description
Type		For oils, water, chemical liquids
Nominal size		8, 10, 20, 25, 40, 50 mm (depends on model)
Connection standard		JIS 10K or screw-mount
Material	Wetted area	FC250 (for oils), SCS13 or equivalent (chemical liquid for water)
	Rotor	Special resin (for oils and water), SUS316L sintered (chemical liquid)
Flow range		For oil: 5 to 24000 L/h (for 5 to 200 mPa·s) For water: 200 to 12000 L/h Chemical liquids: 4 to 20000 L/h (0.8 to 2 mPa·s)
Accuracy		±0.5% RD (oils, chemical liquids), ±1% RD (water)
Operating temp. range		0 to 120℃ (explosionproof: 0 to 100℃) ※
Max. operating pressure		1.96 MPa or 1.18 MPa (depends on type)
Configuration		Flameproof or intrinsic safety

※: 0 to 80℃ for water

FLOWPET-EG

Liquid



Inexpensive positive displacement flowmeter for supplying boiler with oil and water

- High accuracy: ±0.5% RD (oils)
  ±1.0% RD (water)
- High durability
- Display orientation is adjustable vertically in the range of 180°.
- Battery-operated model is also available (battery replaceable).

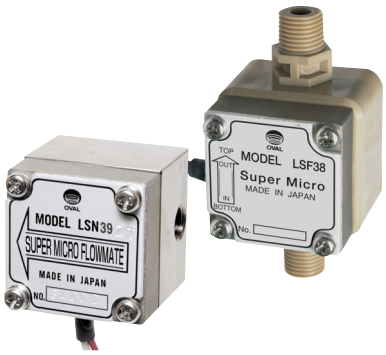
Specifications

Item		Description	
Type		For oils	For water
Nominal size		20, 25, 40, 50mm	
Connection standard		JIS10K	
Material	Body	FC250	Stainless
	Rotor	Special resin	
Flow range		7 to 24000L/h ※	200 to 12000L/h
Accuracy		±0.5%RD	±1.0%RD
Operating temp. range		0 to 120℃	0 to 80℃
Max. operating pressure		1.18MPa	

※: Viscosity 2 to 5 mPa·s
※: High temperature of max. 150℃ is available for oils.

Super Micro Flowmate

Liquid



Super fine, extremely small size positive displacement flowmeter (World's smallest and low cost)

A flowmeter best suited for monitoring extremely fine flow rate in the process of domestic-use fuel battery, and fine ceramic firing, experiment, and adding process.

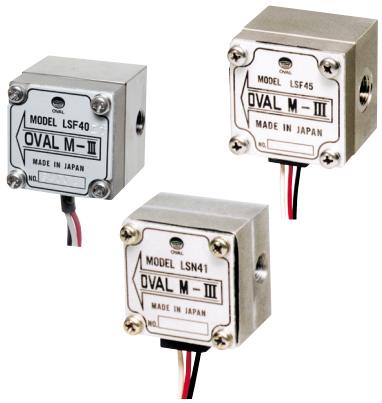
- Monitoring microflow of 1.5 mL/min or more is available (type 38).
- Built-in pulse generator
- Sturdy and low cost

Specifications

Item		Description	
Model		Type 38	Type 39
Connection standard		R1/4	Rc1/4
Material	Body	PEEK resin	SUS316
	Rotor	PEEK resin	PPS resin
Flow range		0.09 to 3 L/h	0.12 to 6 L/h
Accuracy		±3 to 10%RD	±3 to 8%RD
Operating temp. range		-10 to +60℃	-20 to +80℃
Max. operating pressure		0.3MPa	0.49MPa

Flowmate

Liquid



Micro flow, small size positive displacement flowmeter

A flowmeter best suited for measuring very small flow rates of various liquids in addition to the application as a fuel consumption meter for combustion chamber and heating equipment.

- Built-in pulse generator
- Sturdy and low cost

Specifications

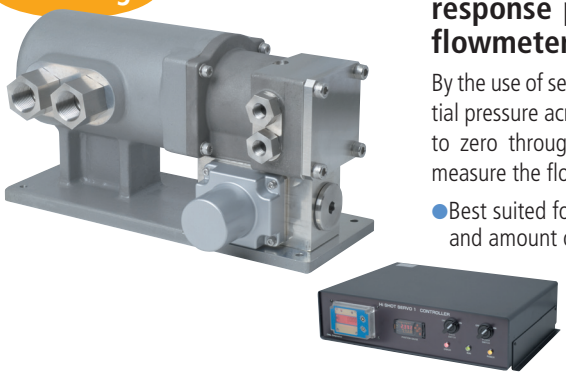
Item		Description		
Model		Type 40	Type 41	Type 45
Connection standard		Rp1/8		Rp1/4
Material	Body	SUS316 or Aluminum + Alumite finished		
	Rotor	Special resin	Special resin or SUS316L sintered	
Flow range		1 to 50L/h	2 to 100L/h	7 to 500L/h
Accuracy		±1.0%RD		
Operating temp. range		-20 to +80℃		
Max. operating pressure		0.98MPa		

※: Viscosity 0.8 to 2 mPa·s

Hi SHOT SERVO 1

Liquid

Wide range



Zero differential pressure, high response positive displacement flowmeter

By the use of servomechanism to set the differential pressure across the flow inlet and flow outlet to zero through high accuracy gears, you can measure the flow rate with high accuracy.

- Best suited for measuring injection quantity and amount of additives.

Specifications

Item		Description
Applicable fluids		Light oil, gasoline
Flow range		0.1 to 30 L/h, 0.2 to 60 L/h
Reproducibility		±0.02% (under temp. variation within ±1℃)
Repeatability		2σ = 0.04% (at 1/2 of full scale flow rate)
Output	Accumulated flow rate	Open collector Max. 50 kHz
	Temperature	4 to 20 mADC (0 to 100℃)
	Abnormality	Contact
Operating temp. range		-10 to +80℃ (standard)
Max. operating pressure		1 MPa
Configuration		Non-explosionproof or TIIS flameproof (Exd II BT4)

GAS OVAL

Gas



(Non-explosionproof)



(Explosionproof)

Positive displacement flowmeter for gas measurement

A high accuracy gas measuring flowmeter having the same structure as the OVAL flowmeter that has been established in both accuracy and experience as a flowmeter for measuring general liquids.

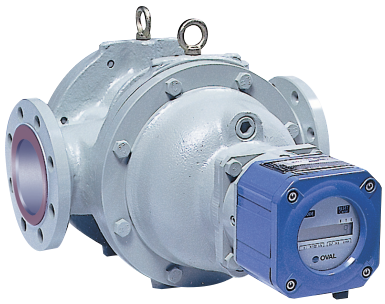
- Best suited for measuring general gas including air, carbon dioxide gas, and nitrogen gas.
- Battery-operated model is also available (battery replaceable).

Specifications

Item		Description
Nominal size		15, 20, 25, 40mm
Connection standard		JIS 10K
Material	Body	Aluminum (alumite finished)
	Rotor	Special resin
Flow range		180 (75) L/h to 20 m^3/h (5 types)
Accuracy		±1.0% RD, other
Operating temp. range		-10 to +60℃
Max. operating pressure		0.97MPa
Configuration		Non-explosionproof or flameproof, intrinsic safety

ULTRA UF-Ⅱ

Liquid



Low vibration, no pulsation and low noise positive displacement flowmeter

Constant speed rotation, constant flow rate, pulsation-free, and constant torque contribute to the operation with small pressure loss, extremely quiet and low oscillation.

- Small sizes for higher flowrates
- High durability
- Battery-operated model is also available (battery replaceable).

Specifications

Item		Description	
Nominal size		80, 100mm	150 to 450mm
Connection standard		JIS 10K/ASME125, 150	JIS 10, 20K/ASME150
Material	Body	FC250, SCPH2	SCPH2
	Rotor	FC250	
Flow range		12 to 2300(2800) m^3/h (9 types)※	
Accuracy		±0.2% RD	±0.5% RD or ±0.2% RD
Operating temp. range		-5 to +120℃	
Max. operating pressure		0.98MPa, 1.37MPa	1.96MPa
Configuration		Flameproof or intrinsic safety	

※: Light oil

ALTI*mass* TypeU

Liquid Gas



High performance high accuracy Coriolis flowmeter

- Wide range of lineups from ultra-micro to large bore flowmeters
- High accuracy:
  ±0.1% RD ± Zero stability error of reading (liquid)
  ±0.5% RD ± Zero stability error of reading (gas)
- Intelligent self-diagnosis function
- Field adjustable setting
- High speed response: 10 times or better than conventional transmitter
- Ease of maintenance
- Density measurement is available (option for liquids)
- Compliance with High Pressure Gas Safety Law (some type excluded)

Specifications

Item		Description
Nominal size		10, 15, 25, 40, 50, 80, 100, 150mm
Connection standard		JIS10, 20, 30, 40, 63K RF ASME or JPI 150, 300, 600/Ferrule/screw mount
Wetted parts material		SUS316L, Alloy C
Flow range		0 to 372000kg/h(12 types)
Accuracy	Liquid	±0.1% RD ± Zero stability error of reading
	Gas	±0.5% RD ± Zero stability error of reading
	Density	±0.0005g/mL (Varies with type)
Operating temp. range ※1		Single unit type: -20 to +90℃ Separate type: -200 to +200℃
Max. operating pressure		9.4MPa(Depends on process connection) ※2
		13.56MPa(CA100, CA150)
Configuration		Flameproof + Intrinsic safety

※1: In case of explosionproof type, explosionproof temp. class is applied.

※2: High-pressure type (43 MPa at normal temp.) is available in some models.



High performance large bore Coriolis flowmeter

- High accuracy: ±0.1% RD ± Zero stability error of reading
- Density measurement is available (option for liquids).
- Compliance with High Pressure Gas Safety Law



High performance super micro type

- Mass measurement from 0.4 (0.2) g/min is available (CA00A).
- Direct piping is available without requiring vibration-proof base.

Specifications

Item		Description	
Model		CA00A	CA001
Nominal size		1/4"	
Connection standard		R 1/4	
Material	Wetted parts	SUS316L	
	Case	SUS304	
Flow range		0.4(0.2) to 60g/min	1.5 to 225g/min
Accuracy		±0.2% RD ± Zero stability error of reading(liquid)	
Operating temp. range※		-200 to +200℃	
Max. operating pressure		Liquid:15MPa at 20℃, Gas:0.98MPa	
Configuration		Flameproof + Intrinsic safety	

※: In case of explosionproof type, explosionproof temp. class is applied.



ALTI*mass* TypeS



Straight tube Coriolis flowmeter

- High accuracy: ±0.2% RD ± Zero stability error of reading
- Sensor is completely welded to a single straight tube.
- Excellent detergency without stagnation of liquid
- Intelligent self-diagnosis function
- Field adjustable setting
- High speed response: 10 times or better than conventional transmitter
- Ease of maintenance
- Density measurement is available (option for liquids).
- Compliance with High Pressure Gas Safety Law (some type excluded)

Specifications

Item	Description
Nominal size	15, 25, 40, 50, 80mm
Connection standard	JIS 10, 20K/ASME or JPI 150/Ferrule
Wetted parts material	SUS316, other
Flow range	0 to 108000 kg/h (6 types)
Accuracy	±0.2% RD ± Zero stability error of reading
Operating temp. range※	Single unit type: -25 to +90℃ Separate type: -40 to +130℃
Max. operating pressure	2.45MPa (Depends on process connection)
Configuration	Flameproof + Intrinsic safety

※: In case of explosionproof type, explosionproof temp. class is applied.

ALTI*mass* TypeB



General-purpose Coriolis flow-meter

- High accuracy: ±0.2% RD ± Zero stability error of reading
- Excellent detergency without stagnation of liquid
- Intelligent self-diagnosis function
- Field adjustable setting
- High speed response: 10 times or better than conventional transmitter
- Ease of maintenance

Specifications

Item	Description
Nominal size	10, 15, 25, 40, 50mm
Connection standard	JIS 10, 20, 30K/ASME or JPI 150, 300/Ferrule
Wetted parts material	SUS316L
Flow range	0 to 96000 kg/h (6 types)
Accuracy	±0.2% RD ± Zero stability error of reading
Operating temp. range※	Single unit type: -25 to +90℃ Separate type: -40 to +125℃
Max. operating pressure	7.9MPa (Depends on process connection)
Configuration	Flameproof + Intrinsic safety

※: In case of explosionproof type, explosionproof temp. class is applied.

95MPa Super High-pressure Coriolis flowmeter (MODEL: CN004H)



For the implementation of FCV super high-pressure hydrogen dispenser

- Pure made in Japan product based on OVAL's unique technology for implementing FCV super high pressure hydrogen dispenser. This is a super high-pressure Coriolis flowmeter to contribute to hydrogen energy society.
- The single flowmeter can cover broad flow range while serving to fill fuel tanks of small cars to large buses. (Measurable range:1:100)
- Compliance with High Pressure Gas Safety Law

Specifications

Item		Description
Nominal size		3/8"
Connection standard		High pressure corn & thread connection (male screw 3/4 to 16 UNF)
Material	Wetted parts	Alloy C (CN004H-HY-900R)
		SUS310S (CN004H-SS-900R)
	Case	SUS304
Flow range		0.04 to 4kg/min.
Accuracy		±1% RD ± Zero stability error of reading
Operating temp. range		Separate type: -40 to +130℃ (Explosionproof: -20 to +120℃)
Max. operating pressure		95MPa (93℃ max.) (CN004H-HY-900R)
		82MPa (40℃ max.) (CN004H-SS-900R)
Configuration		Intrinsic safety

CoriMate



Inexpensive microflow type Coriolis flowmeter

- 3 types with small bore of 3 mm max. in nominal size.
- Single case construction with built-in probe and transmitter (with display).
- Single tube structure
- Vibration-proof base not required.

Specifications

Item		Description		
Type		CR002	CR003	CR004
Nominal size		0.7mm	1.5mm	3mm
Connection standard		Rc 1/8		
Material	Wetted parts	SUS316L		
	Case	ADC12(Base SUS304)		
Flow range		2.5 to 75g/min	10 to 300g/min	90 to 2700g/min
Accuracy		±0.4% RD ± Zero stability error of reading		
Operating temp. range		-10 to +60℃		
Max. operating pressure		2MPa		
Configuration		Non-explosionproof		

Smart type EX DELTA

Liquid Steam Gas



High performance standard type vortex flowmeter

- Replaceable type model that allows online inspection and replacement of sensor.
- Battery-operated model is also available (battery replaceable).
- Dia-shaped bluff body applicable to "dirty" process (liquid only) is also available.

Specifications

Item		Description
Nominal size		Wafer:10 to 150mm, Flange:15 to 300mm
Connection standard		JIS 10, 16, 20, 30K/ASME or JPI 150, 300
Wetted parts material		SCS14A or SUS316
Flow range	Liquid	0.2 to 2510m³/h (water)
	Gas	1.8 to 15000m³/h (0.2 MPa air)
	Steam	0.013 to 47.6t/h (0.5 MPa saturated steam)
Accuracy		±1.0% RD or ±1.0% FS (Nominal size 10 mm is ±2.0% FS.)
Operating temp. range		-30 to +300℃ (Max. 460℃ for high temperature)
Max. operating pressure		5MPa (Depends on process connection rating)
Configuration		Flameproof or Intrinsic safety

Cryogenic EX DELTA

Liquid



Cryogenic vortex flowmeter

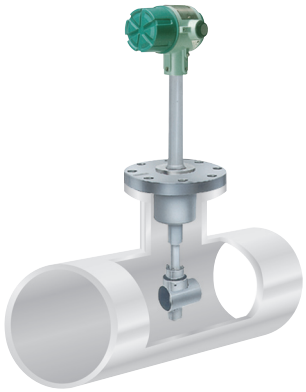
- Measurement of cryogenic fluids including liquid nitrogen, oxygen, and argon is possible.
- Endothermic fin is provided at the mounting tube.

Specifications

Item		Description
Nominal size		Wafer:10 to 150mm, Flange:15 to 300mm
Connection standard		JIS 10, 16, 20, 30K/ASME or JPI 150, 300
Wetted parts material		SUS316
Flow range	Liquid	0.2 to 2510m³/h
	Gas	2 to 15000m³/h
Accuracy		±1.0% RD or ±1.0% FS (Nominal size 10 mm is ±2.0% FS.)
Operating temp. range		-196 to +300℃
Max. operating pressure		5MPa (Depends on process connection rating)

Insertion type EX DELTA

Liquid Steam Gas



Wide flow range high accuracy vortex flowmeter

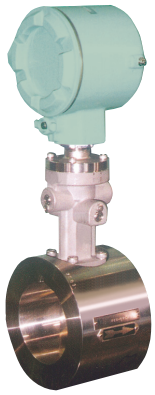
- Measurement of liquid, gas and steam is possible.
- There are two mounting types: fixed type and hot tap type (maintenance is possible without stopping flow).
- Battery operated model requiring no external power supply is also available (battery replaceable).

Specifications

Item		Description	
Mounting system		Fixed	Hot tap
Nominal size of acceptable pipeline		200, 250, 300, 400, 500, 600, 800, 1000, 1500, 2000mm	400, 500, 600, 800, 1000, 1500, 2000mm
Probe nominal size		50mm	
Connection standard		JIS 10K/ASME 150/JPI 150	
Major material	Body	SUS304	
	Bluff body	SUS304	
Flow range		Air (atmospheric pressure): 12 to 50 m/s, Water: 0.6 to 6 m/s	
Accuracy		±2% FS	
Operating temp. range		-30 to +300℃	
Max. operating pressure		Depends on flange rating.	

VF Series

Gas



Thermistor type (standard) vortex flowmeter

- Sensor has a replaceable construction. Maintenance and inspection is possible without stopping fluid.
- Besides standard type, gas purge type applicable to gas including dust mist and high/low temperature gas and insertion type applicable to big bore (200 to 2000 mm) are also available.

Specifications

Item	Description
Nominal size	Wafer:20 to 150mm, Flange:200 to 500mm
Connection standard	JIS 10, 20, 30K/ASME 150, 300
Wetted parts material	SUS304, other
Flow range	2.87 to 19000m³/h (0.2 MPa air)
Accuracy	±1.0% RD or ±1.0% FS
Operating temp. range	-30 to +130℃ (for SUS304)
Max. operating pressure	5 MPa, 1.89 MPa for 400 mm or bigger
Configuration	Combination of intrinsic safety and flameproof

DELTA FLOWPET-DX



Pressure correction function furnished high accuracy, low cost vortex flowmeter

- Built-in pressure sensor (for steam and gas)
- Max. operating temperature is 200℃.
- Low pressure loss
- High accuracy and low cost type

Specifications

Item	Description
Nominal size	15, 25, 40, 50, 80, 100, 150mm
Connection	Wafer type
Connection standard	JIS 10, 16, 20, 30K/ASME or JPI 150, 300
Wetted parts material	SCS14A or SUS316, other
Flow range	12.4 to 8820kg/h (0.5 MPa saturated steam)
Accuracy	±2.0% RD (at 0.25 MPa or more)
Operating temp. range	Max. 200℃
Max. operating pressure	1.0MPa

※: Model without pressure correction is also available for steam, gas, liquid)

DELTA FLOWPET



High performance low cost type vortex flowmeter

- Measurement of max. 200℃ steam is available.
- Battery-operated model is also available (battery replaceable).
- Equipped with flow switch function
- Supporting quick delivery

Specifications

Item		Description
Nominal size		Wafer type :10, 15, 25, 40, 50, 80, 100mm
Connection standard		JIS 10, 16, 20, 30K/ASME or JPI 150, 300
Wetted parts material		SCS14A or SUS316, other
Flow range	Liquid	0.2 to 205m³/h (water)
	Gas	1.8 to 1280m³/h (0.2 MPa air)
	Steam	0.013 to 4t/h (0.5 MPa saturated steam)
Accuracy		±1.0% FS (±2.0% FS for only 10 mm)
Operating temp. range		-10 to +80℃ (Max. 200℃ for high temperature)
Max. operating pressure		4.51MPa (Depends on process connection rating)

Hybrid Multi DELTA



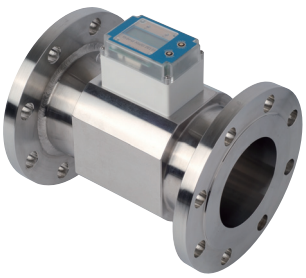
Integral screw-mount type

Vortex flowmeter with built-in temperature/pressure sensor

- Hybrid flow sensor configured by a combination of a vortex flowmeter and thermal mass flowmeter to cover wide flow range from extremely low flow to high flow rates in utility gas measurement.
- Multi flowmeter capable of outputting volume flowrate, mass flowrate, temperature, and pressure with built-in temperature and pressure sensors.

Specifications

Item	Description
Applicable fluids	Compressed air, nitrogen
Nominal size	25, 40, 50, 65, 80, 100, 150mm
Connection standard	50 mm max.: Rc internal thread 65 mm min.: JIS 10K/ASME150 flange
Body material	50 mm max.: aluminum, 65 mm min.: stainless
Flow range	0.6 to 13440Nm³/h at 0.6MPa
Accuracy	5% RD ±0.05% of max. flowrate
Operating temp. range	0 to 50℃
Max. operating pressure	0.78MPa



Integral flange type



Integral flange type (150 mm)



Insertion type

Eggs DELTA

Liquid Gas



Resin-molded inexpensive vortex flow monitor

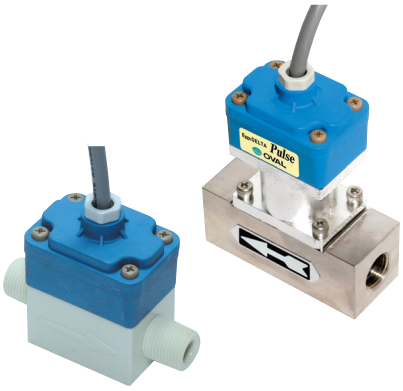
- Usable as a flow monitor for utility and various kinds of experiments.
- You can monitor instantaneous flowrate (/min. and /h) and total flow (L) through digital display.
- 4 to 20 mA output or pulse output are selectable.
- Flow switch function is provided. (option)
- Battery-operated model is also available (battery replaceable).

Specifications

Item		Description		
Type		Standard	Metal joint	High temp.
Nominal size		4, 8, 15, 25mm		8, 15mm
Connection standard		R screw, other	Rc screw	Rc screw
Wetted parts material		PPS resin	PPS + stainless	Stainless
Flow range	Liquid	0.4 to 133L/min		2 to 45L/min
	Gas	7.2 to 850L/min		—
Accuracy		±3% FS		
Operating temp. range		-10 to +80℃		-10 to +150℃
Max. operating pressure		0.98MPa		

Eggs DELTA Pulse

Liquid Gas



Resin-molded inexpensive vortex flow monitor dedicated to pulse output

- Small size, light weight, lowest price vortex flow monitor
- Construction durable against dust and mist.
- Maintenance free
- Liquid and gas measurable.

Specifications

Item		Description		
Type		Standard	Metal joint	High temp.
Nominal size		4, 8, 15, 25mm		8, 15mm
Connection standard		R screw, other	Rc screw	Rc screw
Wetted parts material		PPS resin	PPS + stainless	Stainless
Flow range	Liquid	0.4 to 133L/min		2 to 45L/min
	Gas	7.2 to 850L/min		—
Accuracy		±3% FS		
Operating temp. range		-10 to +80℃		-10 to +150℃
Max. operating pressure		0.98MPa		

※: Explosionproof type combined with barrier is also available (ATEX, TIIS)

ULTRA Egg

Liquid



Ultrasonic Vortex Flowmeter with All Teflon made Wetted Parts

By the employment of high corrosion resistant material, the ULTRA Egg is best suited for measuring the flowrate of ultra-pure water, chemicals, and fluids sensitive to chemical action or easy-to-change liquid.

- Absence of moving parts and a pocketless configuration
- Unsusceptible to mechanical noise such as tubing vibration
- Wide flow range and high accuracy

Specifications

Item	Description	
Nominal size	15mm	
Connection standard	Final lock joint or tube connection	
Wetted parts material	NEW PFA	
Flow range (water)	8 to 70L/min	3 to 70L/min
Accuracy ※	±3% RD	±3% FS.
Operating temp. range	-20 to +100℃	
Max. operating pressure	0.7MPa at 25℃	

※: ±1% RD or ±1% FS (Option)

MAG-OVAL Ⅱ

Liquid



Inexpensive general-purpose electromagnetic flowmeter

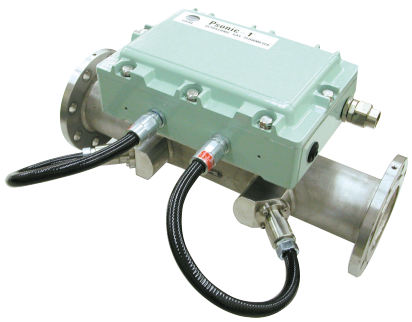
- Wide flow range and measurable from lower flow rates
- High speed pulse output of max. 1 kHz
- Nearly zero pressure loss
- Two-line display allows concurrent monitoring of total flowrate and % instantaneous flow

Specifications

Item		Description	
Nominal size		3 to 15mm	25 to 150mm
Connection		Screw type	Wafer type
Material	Lining	Teflon PFA	Teflon PTFE
	Electrode	SUS316L, Alloy C276, tantalum, platinum	
Flow speed range		Max.10m/s	
Flow range		Max.6.3m³/h	Max.640m³/h
Accuracy		±0.5%RD to (Depends on bore and flow speed.)	
Min. conductivity		10μS/cm	
Operating temp. range		-10 to +130℃	
Max. operating pressure		2.94MPa	
Configuration		Non-explosionproof	

Psonic-1

Gas



Ultrasonic flowmeter for gas service

- Highly accurate measurement is possible in wide flow range from small flow area.
- Measurement of forward and reverse flows is possible.
- Durable configuration with no moving part requiring little maintenance.
- Nearly zero pressure loss

Specifications

Item		Description
Nominal size		50, 80, 100, 150, 200, 250, 300mm ※
Connection		JIS10, 20, 30K/JPI150, 300
Material	Body	SUS304TP
	Flange	SUSF304 or SF440A (200mm or bigger)
Flow range		-30 to +30m/s
Accuracy		±1%RD ±0.03%FS
Operating temp. range		-30 to +80℃ (non-explosionproof)
Max. operating pressure		1.96MPa (Depends on flange rating)
Configuration		Transmitter: Pressure resistant explosionproof, Sensor: Special explosionproof

※: 350 to 600 mm are also available on demand.

Mass Flow Monitor

Gas



Inexpensive Mass Flow Monitor for Energy Saving Control

- 1:60 wide flow range
- Simple and durable sensor with no moving part while protected by sheath pipe
- Neither temperature nor pressure compensation required

Specifications

Item	Description
Nominal size	15, 20, 25, 40, 50mm
Connection	Rc female screw
Flow range	10 to 600L/min (normal)/ 135 to 8000L/min (normal) (5 types)
Operating temp. range	0 to 50℃
Pressure range	0 to 0.7MPa
Accuracy	±2%FS (Lower than 40% of FS) ±5%RD (More than 40% of FS)
Applicable fluids	Compressed air, nitrogen

High Accuracy Mass Flow Monitor

Gas



Inexpensive Mass Flow Monitor for Measuring City Gas (13A)

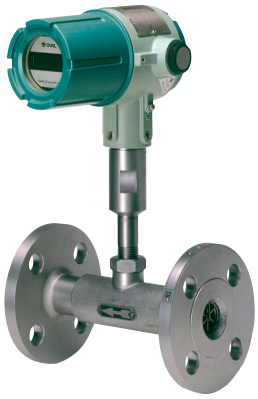
- Gas flow rate can be measured exactly on mass base.
- Simple and durable sensor with no moving part while protected by sheath pipe
- Suited for measuring the city gas use in the furnace, boiler, and air-conditioning equipment

Specifications

Item	Description
Nominal size	25, 40, 50mm
Connection	Rc female screw or JIS 10K flange
Flow range	40 to 600L/min (normal)/ 167 to 2500L/min (normal)
Operating temp. range	0 to 60℃
Pressure range	0 to 0.7MPa (0.98MPa possible)
Accuracy	±1%FS
Applicable fluids	City gas (13A), air, nitrogen

EX Turbine

Liquid



High Accuracy in wide viscosity range turbine flowmeter

Stable and highly accurate flow measurement is possible for liquids in wide viscosity range including low Reynolds number regions.

- High accuracy: 0.2%RD
- 13 nominal size lineups from 15 mm to 400 mm

Specifications

Item	Description	
Type	Standard, Low viscosity	Standard, High viscosity
Nominal size	15 to 50mm	80 to 400mm
Connection standard	JIS10, 16, 20, 30K/ASME or JPI150, 300	
Body material	SUS304, other	
Flow range	0.63 to 54m³/h (Standard)	15 to 4500m³/h (Standard)
Accuracy	±0.2%RD or ±0.5%RD	
Operating temp. range	-30 to +120℃ (Non-explosionproof) ※	
Max. operating pressure	Depends on connection standard rating.	

※: Models for High temperature of max. 350℃ and low temperature of min. -196℃ are also available.

Turbo Steam Meter

Steam



Turbine Flowmeter for Saturated Steam

- Simple and sturdy construction and ease of handling
- Both manual pressure adjustment and auto adjustment types are available.
- Total flow rate can be displayed directly in kg. Remote accumulation is also possible.

Specifications

Item	Description	
Type	Mini Type	Standard Type
Nominal size	25mm	50, 80, 100mm
Connection standard	JIS10K	
Flow range (0.49 Mpa steam)	15 to 200kg/h ※	79 to 8751kg/h ※
Accuracy	±2%RD	
Operating temp. range	Max. 220℃	
Max. operating pressure	0.98MPa	

※: Differs with selected nozzle or orifice plate besides nominal size.

Valve Position Indicator

Liquid



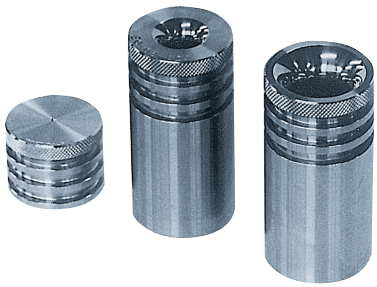
Connected in series with the hydraulic circuit of a hydraulic drive system, the valve position indicator shows the operating position of a cylinder exactly by measuring the quantity of oil delivered. As a highly accurate sturdy sensor having the structure of OVAL flowmeter, this is used for remotely monitoring central control of multiple hydraulic loading valves used in oil tankers.

Specifications

Item	Description
Nominal size	ϕ6 to ϕ20 (Rc3/8 to Rc3/4)
Body material	Standard type: FC250, High-pressure type: FCD450
Flow range	5 to 480L/h…150 to 6000L/h
Indicated accuracy	+3% (accuracy as flowmeter ±0.3%RD)
Operating temp. range	-10 to +80℃
Max. operating pressure	13.73Mpa 20.58Mpa (High pressure type)
Indicated accuracy	0 to +3%
Other	Microswitch and/or potentiometer can be installed.
Application	Detection of operating position for hydraulic cylinder with a capacity of 0.05 to 140 L

SV Meter

Gas

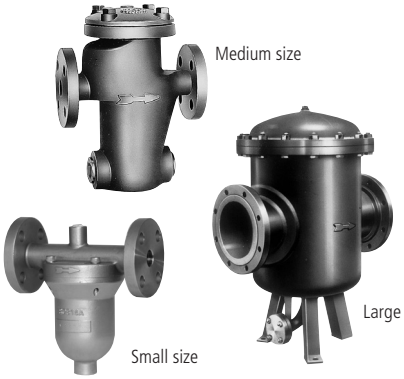


Critical nozzles are devices that can be used for flowmetering, making use of gas flow in the sonic velocity region (critical flow) and are characterized by a high degree of accuracy and repeatability. Because of their excellent repeatability, critical nozzles are accepted as national standards in calibrating gas flowmeters. In addition, they are used frequently in the performance test of various kinds of gas flow control equipment, making use of the characteristics of generating steady flow.

Specifications

Item		Description
Applicable fluids		Air
Expansion uncertainty		U=0.32% (k=2)
Sound velocity range		0.5 max. (downstream press/upstream press)
Material		SUS304
Operating range	Temperature	10 to 35℃
	Pressure	50 kPa (abs) min.
	Relative humidity	0 to 70%

Strainer



Strainer is a device that is installed at the inlet side of a flowmeter. It protects the flowmeter by capturing foreign solids suspended in the fluid being metered. It is usually necessary to provide a strainer for a flowmeter with moving parts (OVAL flowmeter, UF-II flowmeter, some turbine flowmeters).

Specifications

Item		Description		
		Small size	Medium size	Large size
Nominal size		10 to 20mm	25 to 200mm	150 to 400mm
Connection standard		JIS10, 20, 30K, JPI/ASME150, 300		
Material	Body	SCS14A	SCS14A/FC250	SS400
	Net	SUS316	SUS304/SUS316	SUS304
Net mesh (Depends on bore rating)		200	25 to 100	25 to 30
Max. operating pressure at JIS 10K		1.18MPa	0.98MPa	1.18MPa

Air Eliminator

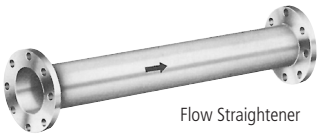

For loading/unloading service

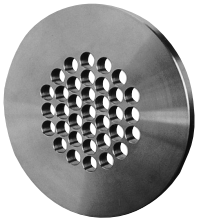
Air eliminator is a device that is used in the loading, unloading, or other similar process of petroleum oils, etc. It mainly eliminates the gas entrained in the liquid being metered immediately after the start or before the end of liquid flow and discharges the gas outside the pipeline. It is installed at the inlet of a flowmeter to ensure the condition for exact flow rate measurement.

Specifications

Item		Description	
		For loading service	For unloading service
Nominal size		50 to 500mm	100 to 500mm
Connection standard		JIS10K, JPI/ASME150	
Material	Body	SS400	
	Float	SUS304	
	Outlet valve	SCS13, SUS304	
	Outlet valve base	Viton	
Max. operating Pressure		0.97MPa	
Max. operating temp.		80℃	
Standard		Second Class pressure vessel certified product	

Flow Straightener and Honey Vane S


Flow Straightener


Honey Vane S

Located upstream of the vortex or turbine flowmeter, a flow straightener or Honey Vane S serves to stabilize disturbances in the flow velocity pattern into a uniform flow distribution, thus providing the right conditions for accurate flow measurement. It not only eliminates the need for extra lengths of straight pipe required for certain piping conditions, but also substantially reduces space required.

Specifications

Item		Description	
		Flow Straightener	Honey Vane S (Wafer type)
Nominal size		20 to 600mm	25 to 300mm
Connection standard		JIS10, 20, 30K, JPI/ASME150, 300	
Material	Body	STPG370, STPY400, SB410, SUS304TP, SUS316TP	SUS316
	Flange	SS400, SF440A, SFVC2A, SUS304, SUS316, SUSF304, SUSF316	—
	Inner tube	SUS304, SUS316	—
Applicable fluid temp.		Steel: -10 to +300℃(Flange: SS400 Outer tube: In case of STPY400, SB400, 0 to 300℃) Stainless steel: -196 to +300℃	

Totalizer



MODEL EL0122



MODEL EL0123

This compactly built LCD counter a pulse signal from the flowmeter and displays both the totalized flow and instantaneous flowrate digitally.

Totalizer Specifications

Item		Description	
Model		EL0122	EL0123
Input signal	signal	Contact pulse, voltage pulse, current pulse, open collector pulse	
	Response pulse	200 Hz (50 Hz with contact input) Can respond to 2 kHz with 1/10 or 1/100 frequency division.	
	Supply to pulser	13.5V or 24V 50mA	—
Output signal	Pulse	Open collector after optical isolation	Open collector
	Analog	4 to 20mADC or 1 to 5VDC	—
	Alarm	Open MOS-FET × 2	—
Display		LCD Instantaneous (/h, /min), total flow (resettable, nonresettable)	
Power supply		85 to 264VAC 50/60Hz	Battery operated (replaceable)

Batch Counter



Standard type EL1810



Explosionproof type EL7310

When combined with a flowmeter and auto ON/OFF valve, it provides a design flexibility to build a flow meter capable of measuring given total flow rate (preset flow). With high performance type batch counter, start, stop and reset can be controlled from counter outside. Standard panel mount type and explosionproof type are also available.

Batch counter specifications

Item	Description	
Model	Batch counter (EL1810)	Explosionproof batch counter (EL7310)
Input signal	Contact pulse, Open collector pulse Voltage pulse, Current pulse	
Parameter setting	Batch setting, Grand total setup, Initial- and Final -count setup, Missing pulse setup, Scaler setup, Overmeasurement setup, Frequency division	
Output signal	Valve (Regulation, Upper-limit signal) End-of-batch, Remote totalizer pulse Alarm (Missing pulse, Overmeasurement, Parameter error)	
Ambient temperature	-10 to +50℃	
Power supply	85 to 264VAC 50/60Hz	
Configuration	Non-explosionproof	Flamproof : Exd II BT4
Installation	Panel mount type	Wall mount or stanchion type

SU Series

With a wide choice of power supplies, the F/I and other converters in the form of small, lightweight plug-ins are available. The series offers convenience in the design of an instrumentation system that may consist of a flowmeter, sensor, controller, recorder, flow indicator, etc. The series includes, by function, power supplies, F/I converter, pulse distributor, pulse divider, pulse scaler, and meter selector.



SU Series Specifications

Batch counter specifications

Item		Description				
Name and Model		Pulse distributor SU1308	Pulse divider SU1304	F/I converter SU1312	Pulse scaler SU1313	Meter selector SU1352
Input signal		Contact pulse, Current pulse, Voltage pulse, Open collector pulse				
Output signal	Pulse	Open MOS-FET (3 outputs) 0.2A Pulse width:1ms, 50ms	Open MOS-FET (3 outputs) 0.2A Pulse width:1ms, 50ms Frequency division: OUT1 1/1 to 1/1000 OUT2 1/1 to 1/1000 OUT3 1/10 to 1/10000	Input sync Open collector pulse (20mA)	Input sync pulse output: Open collector pulse Pulse output after scaler correction Open MOS-FET 0.2A (2 circuits) Pulse width:1ms, 50ms Scaler:0.0001 to 1.9999 Frequency division:1/1 to 1/1000	Flow rate after selection: Open MOS-FET 50mA Valve control: Open MOS-FET
	Analog	—	—	4 to 20mADC (Load resistance: 350Ω) or 1 to 5VDC (Impedance: 250Ω)	—	—
Response frequency		Max.500Hz	2 kHz (500 Hz for output)	2kHz		Max.2kHz
Ambient temp.		-10 to +50℃				
Power supply		85 to 264VAC 50/60Hz or 20 to 30VDC				
Installation		Plug-in type				

Item			Description
Name and Model			Power supply unit SU1503
Output	Supply voltage for power generator	12VDC	13.5VDC±10%
		24VDC	24.0VDC±10%
	Max. current		500mA
	Ripple		50mVp-p About
Display			7-segment LED 3 digit display
Ambient temp.			-10 to +50℃
Power supply			85 to 264VAC 50/60Hz

Flow and Density Computer



EL4101

EL 4001 series, adopting an easy-to-read large LCD counter, is an advanced flow computer features IC cards to identify the specific model, change parameters, and data logging. It is characterized by small size and lightweight cabinet, abundant monitoring information, and external output function. It accepts information from various flowmeters, density meter, thermometer, and pressure gauge and processes these information into a measure of flow rate and density at the reference temperature and pressure. Functionally classified, the series are grouped into two - flow computer and density computers of a total of six models. Another model, simple-to-use steam computer, which accepts monitored information with fixed pressure systems, is also available.

Flow Computer Specifications

Item			Description	
Name and Model			Saturated steam flow computer EL4101	Superheated steam flow computer EL4111
Input signal		Flowrate	Contact pulse, Voltage pulse, Current pulse, Open collector pulse	
		Temperature	—	Pt 100Ω at 0℃, 3-wire or 4 to 20 mADC or 1 to 5 VDC
		Pressure	4 to 20 mADC or 1 to 5 VDC	
Output signal	Pulse	Total mass flowrate	Open MOS-FET, Pulse width:1ms/50ms	
		Total thermal flowrate		
		Input sync	Open collector pulse 13.5 VDC	
	Analog		4 to 20mADC (Max. load resistance: 500Ω) or 1 to 5VDC(Output impedance: 250Ω)	
	Alarm		Open MOS-FET	
Display		Type	ST display (128x128 dots) with backlight, 8-digit	
		Item	Total flowrate (mass, thermal), Instantaneous flow pressure, Compensating factors, Specific gravity, Error	
Accuracy		Flow rate in terms of weight	±0.5% or better for flowrate displayed	
		Flow rate in terms of calories	±0.6% or better for flowrate displayed	
		Pressure	±0.1% of SPAN	±0.1% of SPAN
		Temperature	—	Pt100Ω at 0℃: ±0.3% of SPAN
				4 to 20mADC or 1 to 5VDC: ±0.1% of SPAN
Communication			Interface: RS485 multipoint (max. 16 units are connectable.) dedicated protocol Baud rate: Standard: 4800bps Max.: 9600bps	
Ambient temperature			-10 to +50℃	
Power supply			85 to 264VAC 50/60Hz or 20 to 30VDC	
Installation			Panel-mount type	

Flow Computer Specifications

Item			Description							
Name and Model			Gas service with temp./ pressure compensator EL4121		Liquid service with temp. compensator EL4131		Gas service for mass conversion with temp./ pressure compensator EL4201		Liquid service for mass conversion with temp. compensator EL4211	
Input signal		Flowrate	Contact pulse, Voltage pulse, Current pulse, Open collector pulse							
		Temperature	Pt 100Ω at 0℃, 3-wire or 4 to 20 mADC or 1 to 10 VDC							
		Pressure	4 to 20mADC or 1 to 5VDC		—		4 to 20mADC or 1 to 5VDC		—	
Output signal	Pulse	Total flowrate before correction	Open MOS-FET, Pulse width: 1 ms/50 ms							
		Total flowrate after correction								
		Input sync	Open collector pulse							
	Analog		4 to 20 mADC (Load resistance: 500Ω) or 1 to 5 VDC (Impedance: 250Ω), Accuracy: Better than ±0.1% of full scale):							
	Alarm		Open MOS-FET							
Display		Type	ST indicator (128x128 dots) with backlight, Digits: 8							
		Item	Before/after compensation: (Total, Instantaneous),temp., pressure, comp. coefficient, error		Before/after compensation: (Total, Instantaneous),temp., pressure, comp. coefficient, error		Before/after compensation: (Total, mass) temp., pressure, comp. coefficient, error		Before/after compensation: (Total, mass) temp., pressure, comp. coefficient, density, error	
Accuracy		Flow rate in terms of weight	1/2Pmax. to Pmax.	±0.2% max. of reading	After compensation	±0.2% max. of reading	After compensation 1/2max to Pmax	±0.2% max. of reading	After compensation	±0.2% max. of reading
							1/5Pmax to Pmax	±0.5% max. of reading		
		Flow rate in terms of calories	1/5Pmax. to Pmax.	±0.5% max. of reading	—		—		—	
		Pressure	±0.1% of SPAN		—		±0.1% of SPAN		—	
		Temperature	Pt100Ω at 0℃: ±0.3% of SPAN 4 to 20mADC or 1 to 5VDC: ±0.1% of SPAN							
Communication			Interface: RS-485, Max. 16 units can be connected, Velocity: 4800 bps (standard)							
Ambient temperature			-10 to +50℃							
Power supply			85 to 264VAC 50/60Hz or 20 to 30VDC							
Installation			Panel-mount type							

Density Computer Specifications

Item			Description
Name and Model			Density computer for oscillating-spool densitometer for gas service EL4321
Input signal	Temp. input	Temp. resistor	Pt 100Ω at 0℃ 3-wire system
		Analog	4 to 20 mADC or 1 to 5 VDC
	Pressure input		4 to 20 mADC or 1 to 5 VDC
	Density input		Density period signal: Pulse frequency: 162 to 650 μs
Output signal	Density after correction		4 to 20 mADC or 1 to 5 VDC
	Alarm output		Open MOS-FET
Display			Density before and after correction, Density frequency, Temperature, Pressure, Molecular weight, Specific gravity, Error
Accuracy	Density before correction		±0.1% of SPAN ±0.006% g/l
	Temperature	Pt100Ω	±0.3% of SPAN
		4 to 20 mADC or 1 to 5 VDC	±0.1% of SPAN
Communication			Interface: RS485 Multipoint (Up to 16 units can be corrected), Dedicated protocol, Baud rate: 4800 bps, Max. 9600 bps
Ambient temperature			-10 to +50℃
Power supply			85 to 264 VAC, 50/60 Hz or 20 to 30 VDC
Installation			Panel mount type

Density Computer Specifications

Item			Description	
Name and Model			Density computer for mass flowmeter EL4301	Density computer for mass flowmeter (with sold content flow calculating capacity provided) EL4311
Input signal	Flowrate		—	Voltage pulse, Open collector pulse
	Temp. input	Temp. resistance bulb	Pt 100Ω at 0℃, 3-wire system	
		Analog	4 to 20 mADC or 1 to 5 VDC, 10 mV/℃ or 5 mV/℃	
	Density input		Tube period signal	
	Pulse	Totalizing (Mass, Solid content)	—	Open MOS-FET
		Total input period	—	Open collector pulse
Output signal	Analog output	Density after correction or Temperature (%MASS)	4 to 20 mADC or 1 to 5 VDC	
	Alarm output		Open MOS-FET	
Display			Density before/after correction, Temperature, Density period, %MASS, Error	Density before/after correction, Temperature, Total (Mass, Solid content), Instantaneous (Mass, Solid content) temp., Density period, Factor, Error
Accuracy	ULTRAmass MK II density before correction		±0.001 g/ml (Factory calibration accuracy: option)	
	ULTRAmass MK II density after correction		±0.002 g/ml (※1), ±0.006 g/ml (※2)	
	Temperature	Pt100Ω	±0.3% of SPAN	
		4 to 20 mADC or 1 to 5 VDC	±0.1% of SPAN	
		10 mV/℃ or 5 mV/℃		
	Total solid content flow		—	±0.2% of reading
Communication			Interface: RS485 Multipoint (Up to 16 units can be corrected) Dedicated protocol, Baud rate: 4800 bps, Max. 9600 bps	
Ambient temperature			-10 to +50℃	
Power supply			85 to 264 VAC, 50/60 Hz or 20 to 30 VDC	
Installation			Panel mount type	

※1: In case temperature input is 4 to 20 mADC, 1 to 5 VDC
※2: In case temperature input is Pt100Ω at 0℃, 3-wire system

Temperature Compensation Specifications

Item			Description	
Name and Model			Flow computer for compensating blend oil temperature EL4401	Flow computer with multifunction temperature compensator EL4501 (without comm. interface), EL4511 (with comm. interface)
Input signal		Flowrate	Contact pulse, voltage pulse, current pulse, open collector pulse	
		Temperature	Pt 100Ω at 0℃, 3-wire system 4 to 20mADC or 1 to 5VDC	
		Blend	4 to 20mADC or 1 to 5VDC	—
Output signal	Pulse	Total flow before correction	Open MOS-FET, Pulse width: 1 ms/50 ms	
		Total flow after correction	Open MOS-FET, Pulse width: 1 ms/50 ms	—
		After viscosity correction	—	Open MOS-FET, Pulse width: 1 ms/50 ms
		After viscosity temperature correction	—	Open MOS-FET, Pulse width: 1 ms/50 ms
		Input period	Open collector pulse 13.5VDC	
	Analog		4 to 20 mADC (Max. load resistance: 500Ω) or 1 to 5 VDC (Output impedance: 250Ω)	
	Alarm		Open MOS-FET	
Display		System	Super Twisted Nematic display (128x128 dots) with backlight, 8 digits	
		Item	Total flow (before and after correction), Temperature, Blend, Total error, Conversion factor, Error	Total flow (before correction, after viscosity correction, after viscosity temp. correction), Temperature, Setting (Density, Viscosity), Correction factor, Frequency, Error
Accuracy		Total after correction	±0.2% max. of reading	—
		Total after temp. correction	—	±0.075% max. of reading
		Temperature	Pt 100Ω at 0℃ ±0.3% of SPAN 4 to 20 mADC or 1 to 5 VDC ±0.1% of SPAN	
Communication			Interface: RS485 Multipoint (Up to 16 units can be corrected) Dedicated protocol, Baud rate: 4800 bps, Max. 9600 bps	
Ambient temperature			-10 to +50℃	
Power supply			85 to 264 VAC, 50/60 Hz or 20 to 30 VDC	
Installation			Panel mount type	

Converter and Compensator

This flow converter/compensator functions as a flow converter which receives the pulse signal from a flowmeter and converts the signal to units, divided frequency, and analog signal, and as a compensator which compensates the signal for the flow under the reference temperature and pressure of a process fluid (steam, gas, liquid). You can select either function in accordance with your object.
A small, lightweight rack-mount type converter/compensator series



Flow Converter/Compensator

Item		Description
Name and Model		Flow converter (EL0841) Steam service temperature/pressure compensator (EL0842) Gas service temperature/pressure compensator (EL0843) Liquid service temperature compensator (EL0844)
Input signal	Flow input	Contact closure pulse, Current pulse, Open collector pulse
	Temp. input	1 to 5VDC or 4 to 20mADC or 3-wire Pt 100Ω at 0℃
	Pressure input	1 to 5VDC or 4 to 20mADC (Power supply for pressure transmitter: Max. 24VDC, 30mA provided)
Output signal	Analog output	1 to 5VDC or 4 to 20mADC
	Pulse 1 output	Open MOS-FET
	Pulse 2 output or Alarm output	Open MOS-FET
Computing accuracy	Temperature/pressure compensation for steam	Flow rate in terms of weight: ±0.5%, Flow rate in terms of calories: ±0.6% of RD
	Temperature/pressure compensation for gas	1/2PMax. to PMax.:±0.2% of RD 1/5PMax. to PMax.:±0.5% of RD
	Temperature/pressure compensation for liquid	±0.1% of RD
Ambient temperature		-10 to +50℃
Power supply		85 to 264VAC, 50/60 Hz or 20 to 30VDC
Installation		Panel mount type

Steam Flow Computer

Specifically intended for steam service, this instrument has a built-in processor and accepts signals from a steam service Delta Flowmeter (EX DELTA).
It performs steam pressure setting, bore setting and individual meter calibration and indicates the total flow in terms of weight for precise steam flow measurement.



Steam flow computer EL4061

Steam Flow Computer Specifications

Item		Description
Name and Model		Steam flow computer EL4061
Input signal	Flow rate	2-wire current pulse, "1": 20mADC min. "0": 4mADC max., Velocity: Max. 2500 Hz
	Sensor error	Detects overcurrent
Output signal	Pulse	Open collector pulse, Pulse width: 1 to 4ms, 40 to 60ms
	Analog (Instantaneous)	4 to 20mADC, 1 to 5VDC, 0 to 10mVDC, 10 to 50mADC or 0 to 100μADC
Total counter display		7-digit electromagnetic counter (non-resettable)
Setting	Pressure	Set with front-panel digital switches (0.00 to 1.99 Mpa)
	Nominal size	Set with hexadecimal rotary switch
	Meter error correction	Adjustable with a jumper (Max. ±7.5% in 0.5% steps)
	Frequency division	Set with a jumper, For total: 1/10, 1/100, For output: 1/1, 1/10, 1/100
Accuracy		±0.3% of reading
Ambient temperature		-10 to +50℃
Power supply		100V, 110V/115V, 200V, 220/230VAC ±10% 50/60Hz

Smart Communication Unit

The Smart Communication Unit is a communication terminal unit that enables the operator to set up, alter, adjust parameters, or read out variables in the field or remotely through interactive communications when used in combination with OVAL Smart series flowmeter. Using a Windows PC at hand as the terminal, it connects to the 4 to 20 mADC signal transmission lines of the flowmeter to show multiple process windows.



Smart Communication Unit Specifications

Item		Description
Name and Model		Smart Communication Unit EL2310
Interface	Connector	USB (A type)
	Input/output	Bell 202 ⟷ USB
	Operating temp.	-5 to +60℃
	Outline dims.	Body: 59×33×19mm Flexible probe: 250 to 1500mm
	Case	Plastics (black)
Comm. protocol		HARTTM protocol
Comm. terminal resistance		Load resistance 250Ω min.
Functions		●Reads, sets up, and saves parameters. ●Monitors output. ●Adjusts analog output ●Checks analog output loop.
Supported OS		Windows 2000, Windows XP (Japanese and English versions)

Pulse Checker

This pulse checker is a versatile servicing tool which offers such capabilities as pulse integration, frequency measurement, and has variable frequency output and batch pulse output required to ease inspection, adjustment and maintenance of digital industrial instruments.

Not only output signal check of flowmeters but also nearly all basic inspection and adjustment of flowmeters, converters, receiving instruments, computing instruments, etc. manufactured by OVAL can be done by this instrument.



PC2201

The specification as of May., 2011 is stated in this catalog. Specifications and design are subject to change without notice.

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