

Extra Wide Range Temperature/ Pressure Sensor Built-in Flowmeter [Hybrid Multi Delta]



Hybrid Multi Delta

Hybrid Multi Delta is an ultra-wide range (1:900) flowmeter that can measure small flow rate equivalent to leakage from piping to flow rate at normal operation by "one unit" when installed on the compressed air piping at factory.

With this ...

- **Compressed air usage can be reduced = Reduction of power consumption & energy saving**
- **Advantages: usage management, leakage detection, load increase/decrease, and more**

Wide-range flow measurement made possible by incorporating two flowmeters

- **Measurement of leak amount to large flow rate possible with one unit**
- **Can be installed based on line size even with uncertain flow rate**
- **Sensor configuration unsusceptible to mist**

Vortex flowmeter

Principle:

Flow rate is measured by vortex shedding frequency

Advantage:

Suitable for measurement of large flow rate

Disadvantage:

Cannot measure small flow rate that does not generate vortex easily

Volume flowrate is measured in principle

Thermal mass flowmeter

Principle:

Controls the temperature so that the temperature difference between heater and fluid temperature remains constant and mass flow rate is measured from the amount of power applied to the heater

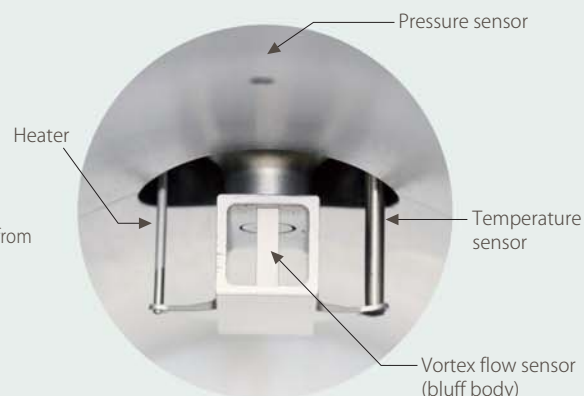
Advantage:

Good at measurement of small flowrate,

Capable of measuring mass flowrate

Disadvantage:

Sensitivity drops in large flowrate



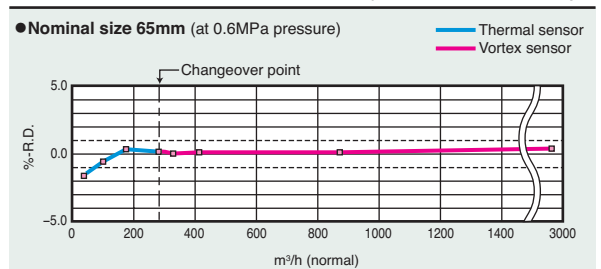
GENERAL SPECIFICATIONS

Model	TV1025	TV1040	TV1050	TV1065	TV1080	TV1100	TV1150	TV2150
Nominal size	25mm	40mm	50mm	65mm	80mm	100mm	150mm	150mm
Process connection	Rc 1 (Female)	Rc 1 · 1/2 (Female)	Rc 2 (Female)	JIS 10K RF Flanged			JIS 10K RF Flanged	50A JIS 10K FF Flanged
Fluid temperature	0 to 50°C							
Ambient temperature	0 to 50°C							
Pressure range	0 to 0.78MPa (Option 0 to 0.98MPa)							
Accuracy (Inclusive of linearity and pressure influence)	±5% of reading ±0.05% of max. flowrate							
Repeatability	±2% of reading ±0.05% of max. flowrate							
Temperature characteristic	±0.2% / °C of reading							
Display	7-segment 8-digit LCD (backlit with measurement units) Display is rotatable in 90°C steps. · Instantaneous rate : m ³ /h (normal), L/min (normal), m ³ /h, L/min, etc. · Resettable total and cumulative total : m ³ (normal), m ³ , etc. · Temperature : °C · Pressure : kPa abs LED ×2 (Lights up in an alarm condition.)							
Output	Flow pulse : Open collector output, Pulse width : 1 ms default (1 to 240 ms adjustable) Flow analog : 4 to 20mADC, ※ : Temperature output and pressure output are optional Flow alarms : 2 points, open collector outputs Any two output points are selectable. (See "output" of product code for combination.)							
Factored pulse unit	0.001m ³ /P (normal)			0.01m ³ /P (normal)			0.1m ³ /P (normal)	
Pressure loss	10kPa max.							
Power	24VDC±10% Max.150mA (4 to 20mA required for analog output is excluded.)							
Cable	4-conductor shielded cable (3-meter furnished)							

FLOW RANGE

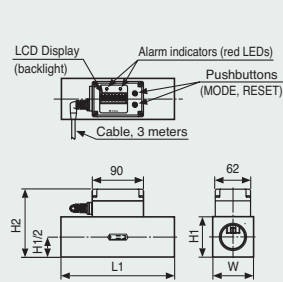
Nom. size Pressure	m ³ /h (normal)						
	25mm	40mm	50mm	65mm	80mm	100mm	150mm
0.3MPa	0.6 to 240	1.2 to 570	1.8 to 960	3 to 1440	4.2 to 1920	7.2 to 3360	16 to 7680
0.4MPa	0.6 to 300	1.2 to 720	1.8 to 1200	3 to 1800	4.2 to 2400	7.2 to 4200	16 to 9600
0.5MPa	0.6 to 360	1.2 to 864	1.8 to 1440	3 to 2160	4.2 to 2880	7.2 to 5040	16 to 11520
0.6MPa	0.6 to 420	1.2 to 1008	1.8 to 1680	3 to 2520	4.2 to 3360	7.2 to 5880	16 to 13440
0.7MPa	0.6 to 480	1.2 to 1150	1.8 to 1920	3 to 2880	4.2 to 3840	7.2 to 6720	16 to 15360

METER ERROR TEST DATA (TYPICAL EXAMPLE)

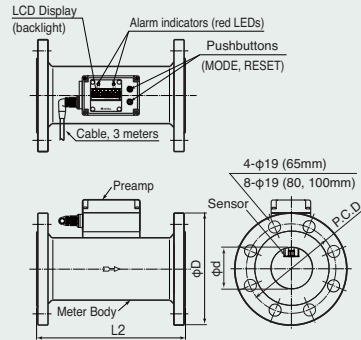


DIMENSIONS [Unit in mm]

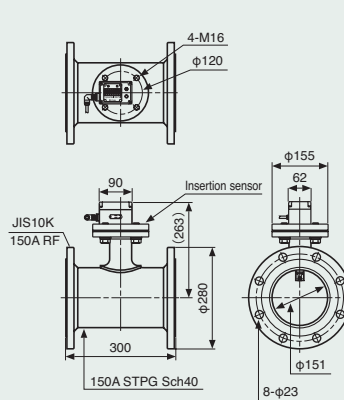
Integrally mounted type - 25, 40 and 50mm



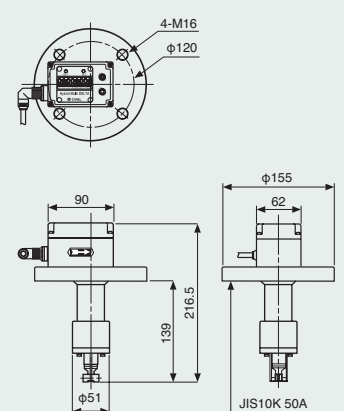
Integrally mounted type - 65, 80 and 100mm



Integrally mounted type - 150mm



Insertion type - 150mm



Nom.size	L1	W	H1	H2	Connecting screw
25mm	160	63.0	57.5	118	Rc1 (female)
40mm	200	71.5	71.5	132	Rc1 · 1/2 (female)
50mm	220	83.0	83.0	143.5	Rc2 (female)

Nom.size	L2	D	d	P.C.D	Connecting screw
65mm	235	175	65.6	140	JIS 10K 65A
80mm	250	185	77.7	150	JIS 10K 80A
100mm	250	210	101.8	175	JIS 10K 100A

• The specification as of March, 2016 is stated in this catalog. Specifications and design are subject to change without notice.

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