



Single Straight-Tube Coriolis Flowmeter Titanium Tube Type



ALTI_{mass} Type S

【Titanium tube for corrosion resistance】

【Easy-to-clean construction】

【Suitable for clean processes】

【Extensive maintenance and self-diagnostic functions】



Integrally mounted (Flange)

Separately mounted (Ferrule)

GENERAL PERFORMANCE

Item		Description				
Model		CS010	CS015	CS025	CS040	CS050/CSR50
Flowrate	Min. setting rate (kg/h)	72	240	720	1800	3600
	Max. service rate (kg/h)	1220	4080	12200	30600	61200
	Max. allowable rate (kg/h)	1830	6120	18300	45900	91800
	Accuracy	±0.15% ± zero stability error of reading				
	Repeatability	±0.075% ± 1/2 zero stability error of reading				
	Zero stability (kg/h)	0.12	0.41	1.22	3.06	6.12
Density accuracy (Option)		±0.002g/mL				

* Zero stability error = $\frac{\text{Zero stability}}{\text{Flowrate at the moment}} \times 100\%$

GENERAL SPECIFICATIONS

Item		Description					
Model		CS010	CS015	CS025	CS040	CS050	CSR50
Nominal size		10mm or 1/2"	15mm or 1/2"	25mm or 1"	40mm or 1-1/2"	50mm or 2"	80mm or 3"
Materials	Wetted parts	Titanium alloy					
	Housing	SB338 Grade-9 + TB480H					
Process connection		JIS10, 20K/ASME (JPI) 150/IDF Ferrule (*1)					
Applicable fluids		Liquid					
Measurable temperature range		- 40 to +130°C (*2)					
Heatproof temperature		Max. 150°C					
Max. operating pressure		Max. 2.45MPa (Depends on flange rating)					
Sensor housing withstand		2.8MPa					
Flow direction		Bidirectional					
Explosionproof specification		TIIS, ATEX, IECEx, KCs, CSA, EAC, NEPSI, ITRI					
Maritime Certification		DNV GL					

*1: Loose flange is applied. Ferrule connections of CS010 and CS015 comply with ISO2852.

*2: If temperature of the fluid exceeds 80°C for the measurement with integrally mounted type, make sure to keep the ambient temperature at 45°C or below.

TRANSMITTER SPECIFICATIONS

Item	Description	
Model	PAOK	
Power supply	85 to 264VAC (50/60Hz) or 20 to 30VDC (Safety rating: 100 to 240VAC 50/60Hz)	
Power consumption	Max. 15W	
Ambient temperature	-40 to +55°C (*1)	
Transmission length (separate type)	Max. 100m (Dedicated cable used) (*2)	
Dusttight, waterproof configuration	IP66/67	
Communication interface *Optional except for HART	HART (Standard)	HART protocol version 7, Bell202 (*3)
	Modbus	RS-485 Modbus protocol, Baudrate : 9600bps, 19200bps, 38400bps RTU or ASCII, Response time : 25 to 50 ms
	FOUNDATION fieldbus	AI block×4, IT block×2, with Link Master function
	PROFIBUS PA	AI block×4, TOT block×2
Damping (default)	Flow rate 0.8sec, density 4sec, temperature 2.5sec.	
Low flow cutoff (default)	Under 1.5% of max. service flow rate	
Pulse output (*5)	Open drain (equivalent to open collector) [Min. 10V to Max. 30V, 50mADC, ON resistance 0.6Ω or less] or Voltage pulse (Low level: 1.5V max., High level: 13V min. Output impedance: 2.2kΩ) Setting range: 0.1 to 10000Hz (Max. output 11000Hz)	
Analog output (*5)	4 to 20mADC (max. load 600Ω) Select two outputs from instant flowrate (mass or volume), temperature, and density.	
Status output (*5)	Open drain (equivalent to open collector) [Max. 30V, 50mADC, ON resistance 0.6Ω or less] Select one from error (*4), flow direction, or high/low alarm (default is error)	
Status input (*5)	Contact-closure input (Form "a" contact) Short: 200Ω max., Open: 100kΩ min. Select one from remote zero adjustment, total reset, 0% signal lock, or function off (default is function off).	

*1: Below -20°C, the display loses its visibility due to weakened contrast. Both the display and infrared sensor may exhibit slow responses below -20°C.

*2: If signal transmission length exceeds the max. transmission length, consult the factory.

*3: Of the two analog output systems, only analog output 1 is available for HART communication.

*4: Of error outputs, "zero is in progress" status output can also be set up.

*5: When FOUNDATION fieldbus, PROFIBUS PA is selected as the communication interface, all input and output signals will be turned off.

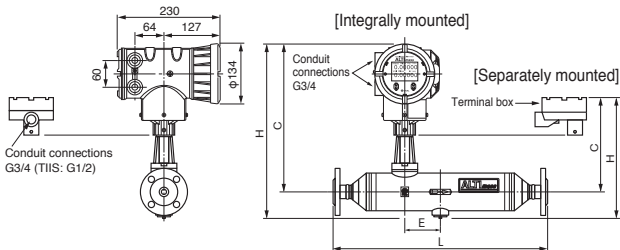
* Denoising parts are embedded in the lines between power source, output, communication, and the chassis.

Lower the applied voltage to the following levels in order to conduct insulation test or withstand voltage test on these lines.

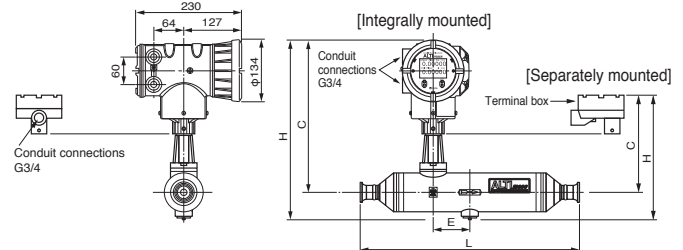
AC: 200V, DC: 250V

DIMENSIONS (Unit in mm)

● Flange connection (Integrally mounted, Separately mounted)



● Ferrule connection (Integrally mounted, Separately mounted)



Model	Nominal size	L		H		C		E	Approx. Weight (kg)		
		JIS10K Ferrule	JIS20K	ASME/JPI150	Integrally mounted	Separately mounted	Integrally mounted		Separately mounted	Integrally mounted JIS10K	Separately mounted JIS10K
		CS010	10(1/2"), 10A	426	452	458	390		246	340	197
CS015	15(1/2"), 15A	464	490	496	390	246	340	197	80	11	8
CS025	25(1"), 1-1/2S	529	555	570	423	280	353	210	88	18	15
CS040	40(1-1/2"), 2S	716	733	749	439	296	359	216	112	28	25
CS050	50(2"), 2-1/2S	882	906	919	474	332	372	229	153	38	35
CSR50	80(3"), 3-1/2S	1032	1046	1073	474	332	372	229	153	40	37

Nominal size: A = mm, S = inch (sanitary version)

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



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