OVAL

Inexpensive Microflow Coriolis Flowmeter

CoriMate Ⅱ

MODEL: CR002, CR003, CR004

asit INSTRUMENTS Srl

CE

■ GENERAL

Based on the knowledge and experience on Coriolis technologies OVAL has gained over many years, the Corimate is a compactly built Coriolis flowmeter integral with a transmitter and display. It is characterized by competitive price, outstanding performance, user friendliness, and operating safety to most effectively meet customer needs. It has expanded the range of precise metering at extreme low flow rates and the size of non-explosionproof instruments market.

■ FEATURES

1. Low priced Coriolis flowmeter series
2. Single case construction with built-in probe and transmitter (with display)
3. Vibration-proof base not required
4. Simple installation and easy to use
5. Wetted parts material: SUS316L equivalent
6. Flow range: 2.5 to 2700 g/min in three types
7. CE-Marking

■ TYPICAL APPLICATIONS

1. Mass flow measurement
2. Measurement of multiple kinds of liquid at laboratories or research facilities
3. Medicinal solution, solvent process
4. Slurry liquid, mixture process
5. Paint, spray, additive applications

■ GENERAL SPECIFICATIONS

Item		Description		
Model		CR002	CR003	CR004
Nominal Size		0.7mm	1.5mm	3mm
Materials	**Wetted parts**	SUS316L and SCS16A (※1)		
	Base	ADC12	ADC12	SUS304
	Housing and cover	ADC12		
	Display shield	Polycarbonate		
Process connection		Rc 1/8		
Acceptable fluid		Liquid (Density range: 0.3 to 2.0g/mL)		
Operating temperature range		–10 to +60°C (Free of dew condensation)		
Max. operating pressure		2MPa		
Flow directions		Forward flow only		
Power supply (※2)		20 to 30VDC		
Power consumption		Max. 10W		
Furnished cable		AWG24×7-conductor, φ6.8×3m		
Dustproof, waterproof construction		IP66		
Installation		• Horizontal installation (clamp not required) • Vertical installation (Bolthole provided)		
Display		Backlit dot matrix: 8 digits		
Variables displayed		Instant mass flow, mass flow total, temperature		
Weight		Aprrox. 3kg	Aprrox. 3kg	Aprrox. 6.5kg
Communication interface		Bell 202 (using the HART protocol)		
Pulse output (※3)		Mass flow total open collector output (30V, 50mADC max.) FS: 0.1 to 10000Hz selectable • CR002: 0.01g/P at 125Hz • CR003: 0.01g/P at 500Hz • CR004: 0.1g/P at 450Hz		
Analog output (※3)		4 to 20mADC Max. load 600Ω Instant mass flowrate Damping: 1 sec. (std.) • CR002: 0 to 75g/min • CR003: 0 to 300g/min • CR004: 0 to 2700g/min		
Applicable EU directive		EMC directive: 2004/108/EC		

(※1): Corrosion resistance of nickel brazing used in wetted parts is equivalent to SUS314.
(※2): SU1503 power unit is acceptable to this meter. (SU1303 power unit cannot be applied.)
(※3): The pulse output at the time of the shipment and analog output are standard setting. (Setting change possible)

OVAL Corporation

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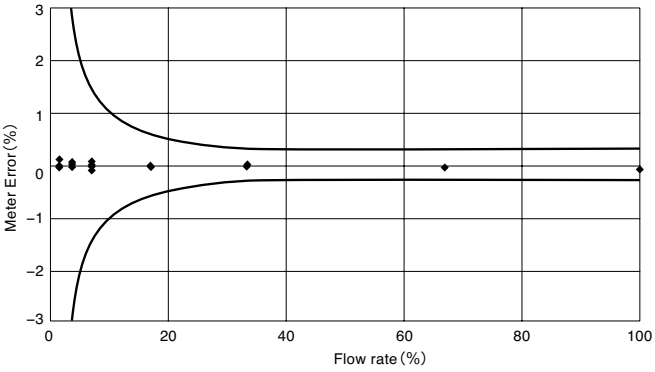
■ GENERAL PERFORMANCE

Item		Description		
Model		CR002	CR003	CR004
Flow rate (Liquid)	Max. Flow rate g/min	75	300	2700
	Min. Analog range g/min	5	20	180
	Cutoff g/min (※1)	1.5	6	54
	Factory calibration accuracy	±0.1% of F.S (Below 33% of flow rate) ±0.3% RD (33% to 100% of flow rate)		
	Repeatability	±0.07% of F.S. (Below 33% of flow rate) ±0.2% RD (33% to 100% of flow rate)		
	Analog accuracy	Accuracy ±0.1% of full scale		

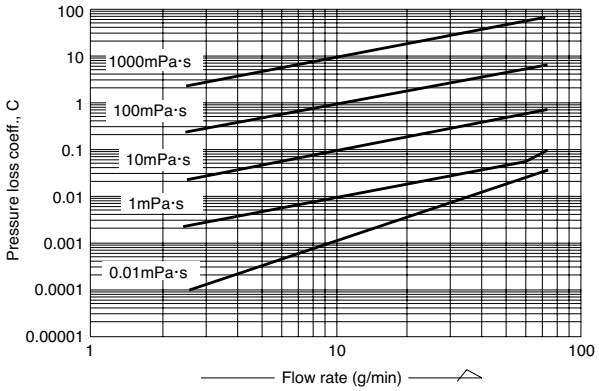
(※1): The flow rate (output signal and indication level) becomes zero at cutoff level or lower. (Setting change by the customer is available.)

■ METER ERROR

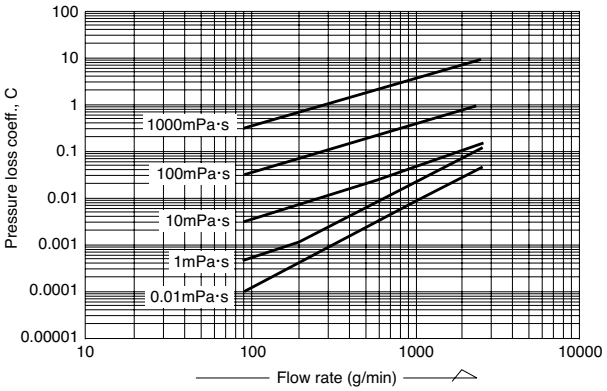


■ PRESSURE LOSSES

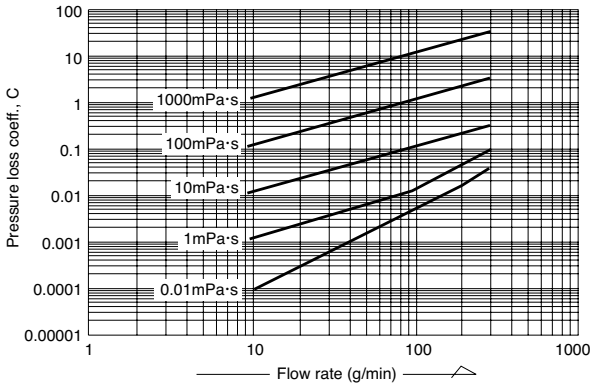
CR002



CR004



CR003



How to calculate the pressure loss

Find pressure loss coefficient C from flow rate (g/min) and viscosity (mPa·s). Then divide the coefficient C by specific gravity d (1 with water) to find the pressure loss. That is

$$\Delta P = \frac{C}{d} \text{ (MPa)}$$

For high viscosity liquids unable to calculate using these graphs, please consult us.

■ PRODUCT CODE EXPLANATION

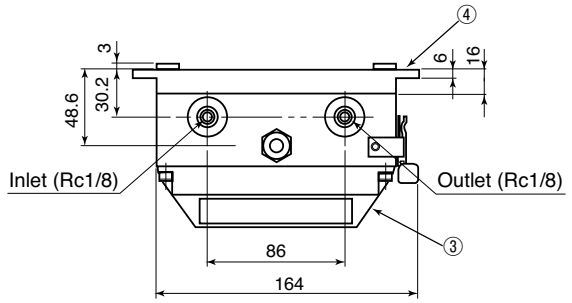
Item	Code No. ① ②	③ ④ ⑤	⑥	–	⑦ ⑧	–	⑨	⑩	⑪	⑫	⑬	Description
Model	C R											CoriMate
Nominal Size		0 0 2										0.7mm, Flow range (g/min) : 2.5 to 75 (Rc1/8)
		0 0 3										1.5mm, Flow range (g/min) : 10 to 300 (Rc1/8)
		0 0 4										3mm, Flow range (g/min) : 90 to 2700 (Rc1/8)
Structural category			D	–								CoriMate Ⅱ
Material					S S	–						SUS316L
Process connection							2					Screw connection
Connection rule								0				Always "0"
Pressure category									0			Always "0"
Transmitter construction										N		Non-explosionproof integral type transmitter
Version code											B	

OVAL Coriolis Flowmeter CoriMate Ⅱ (Reference drawing)

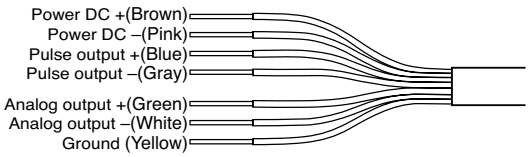
● CR002 and CR003

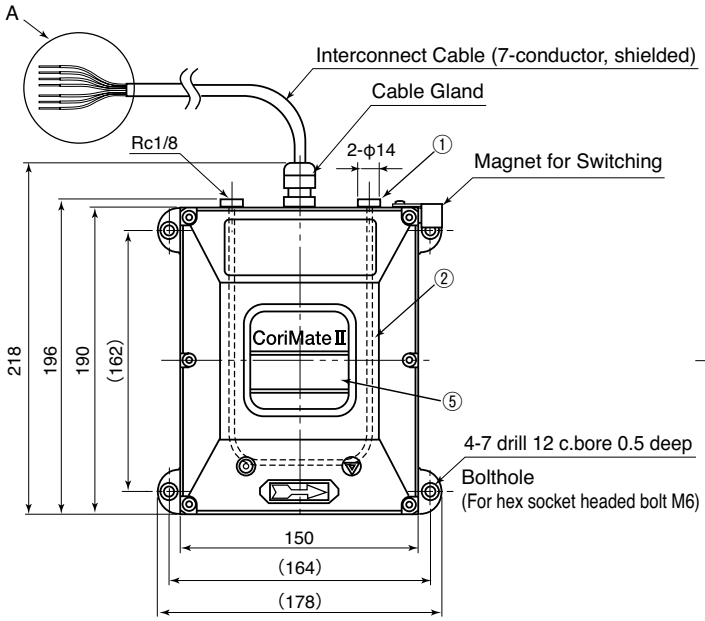
GS. No. GBN064E

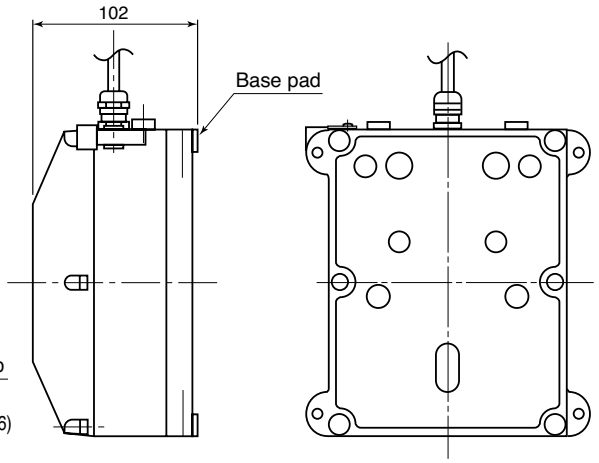
OUTLINE DIMENSIONS [Unit in mm]



Detail of A (Wiring)







※ The location of boltholes has been changed from that of the previous model (Production Code: CR004D-SS-200N).

■ PRODUCT CODE EXPLANATION

Model	Nominal Size	Max. allowable pressure (MPa)	Weight (Approx.) (kg)
CR002D-SS-200NB	Rc1/8	2.00	3.0
CR003D-SS-200NB	Rc1/8	2.00	3.0

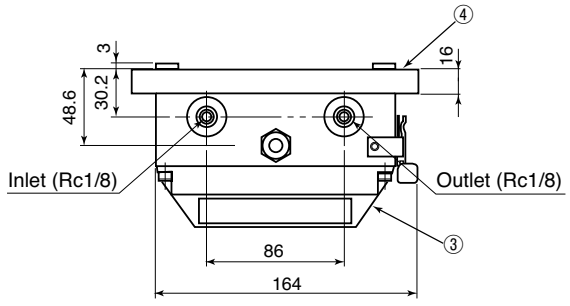
No.	Name	Material	Quantity
①	Nozzle	SCS16A	2
②	Flowtube	SUS316L-TP	1
③	Housing and Cover	ADC12 equivalent	1
④	Base	ADC12 equivalent	1
⑤	Display shielding	Polycarbonate	1

OVAL Coriolis Flowmeter CoriMate Ⅱ (Reference drawing)

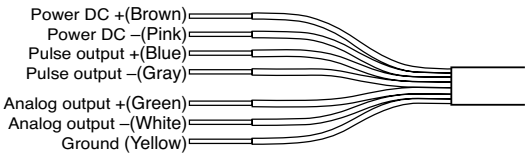
● **CR004**

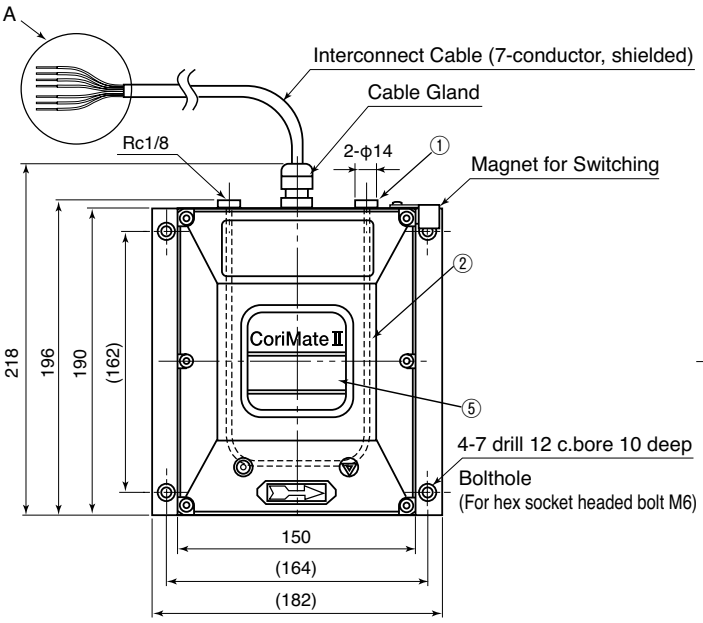
GS. No. GBN064E

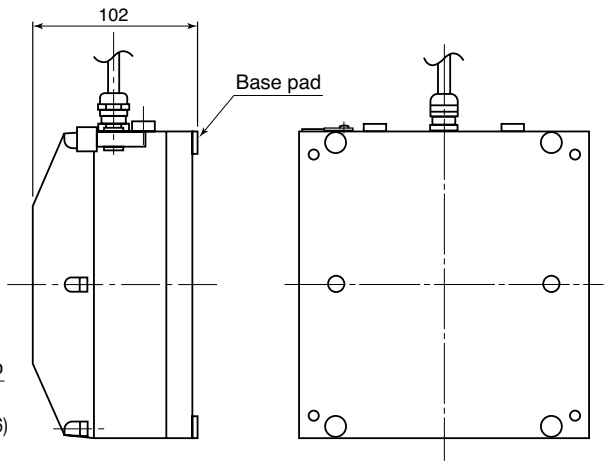
OUTLINE DIMENSIONS [Unit in mm]



Detail of A (Wiring)







※ The location of boltholes has been changed from that of the previous model (Production Code: CR004D-SS-200N).

■ PRODUCT CODE EXPLANATION

Model	Nominal Size	Max. allowable pressure (MPa)	Weight (Approx.) (kg)
CR004D-SS-200NB	Rc1/8	2.00	6.5

No.	Name	Material	Quantity
①	Nozzle	SCS16A	2
②	Flowtube	SUS316L-TP	1
③	Housing and Cover	ADC12 equivalent	1
④	Base	SUS304	1
⑤	Display shielding	Polycarbonate	1

■ PLEASE SUPPLY THE FOLLOWING INFORMATION WHEN YOU INQUIRE

(Fill in the form below to the extent possible. Further details will be finalized in later consultation.)

1.	**Sensor unit**	CR □□□ D–SS–200NB
2.	**Process fluid(※1)**	Name_____ SP. gr_____ Viscosity_____ Concentration_____%
3.	**Flow range**	Max._____ Normal_____ Full scale_____ □ g/min □ Others_____
4.	**Fluid temperature**	Max._____°C Normal_____°C Min._____°C
5.	**Operating pressure**	Max._____MPa Normal_____MPa Min._____MPa
6.	**Ambient temperature**	Max._____°C Normal_____°C

※1 : Special fluids, such as of high viscosity fluids or slurries, should be stated precisely and in detail.

GS.No.GBN064E

初版	改訂	印刷
11.09	14.05	12.06

(500)

The specification as of May, 2014 is stated in this GS Sheet. Specifications and design are subject to change without notice.

Sales Representative:

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