

CORIOLIS MASS FLOWMETER KC-7777-H

(H2, CNG, High Press' Gas type)



CORIOLIS MASS FLOW METER (KC-7777-H)

Product Features

- **Measuring diameters:** DN01, DN02, DN03, DN04, DN08, DN15, DN25
- **Instantaneous and totalized flow rate, volumetric and mass flow rate, temperature, and density display**
- **Power supply:** AC 85–265 V (50/60 Hz), DC 18–36 V
- **Output accuracy:** $\pm 0.005\%$ F.S. (HART 4–20 mA)
- **Interface (RS-485) allows on-site adjustment in case of flow meter malfunctions**
- **Direct mass flow measurement eliminates the need for separate temperature and pressure compensation**
- **Simple on-site signal processing and calibration (precision calibration: 5–8 calibration points)**
- **Short upstream and downstream straight pipe sections (10D front end ~ 5D rear end)**
- **Excellent reproducibility and outstanding long-term stability**
- **Hygienic design with 3A certification**
- **CIP/SIP cleaning capability to ensure product quality**
- **Best price-to-performance ratio**
- **Easy adaptability to different applications**
- **Wide measurable flow rate range (100:1 turndown ratio)**
- **Fast response to flow rate changes (0.1 second)**
- **No moving parts**
- **CE, IP66, IP67**

Application

- 0~200kg/min precision measurement
- Excellent low-flow measurement performance makes it ideal for high-pressure gas metering, hydrogen/CNG metering platforms, and more.
- Testing is performed at 1.5 times the rated pressure, ensuring reliability and safety in ultra-high-pressure environments.
- The tube is smooth and free of other components, eliminating additional pressure loss during the measurement process.
- The contact media components are made of a composite metal material with excellent resistance to hydrogen embrittlement.

Product Introduction

The structure consists of two parts: the sensor and the transmitter, and features ARM pure digital drive, DSP signal processing, and high oscillation frequency.

It features a high-performance microprocessor and LCD display for convenient and fast parameter setting and self-checking and self-diagnosis functions.

It boasts high stability, high shock resistance, fast response, high accuracy, low pressure loss, and multi-parameter measurement (including mass flow rate, density, temperature, and percentage).

It has a wide range of applications (it can be used to measure all types of non-Newtonian fluids, slurries, suspensions, and high-viscosity fluids).

It has low installation requirements (straight pipe requirements before and after the Coriolis mass flow meter are low). It is stable and requires minimal maintenance.

Coriolis Mass Flowmeter (KC-7777-H)

Product Performance

- **Accuracy**

Gas : R.D $\pm 0.5\%$, $\pm 1.0\%$

- **Repeatability**

R.D 0.075%, 0.1%, 0.25%, 0.5%

- **Density Measurement**

Density range : 0.3 ~ 3.0 g/cm³

Accuracy : ± 0.001 g/cm³(± 1 kg/m³)

- **Response Time**

Within 0.1 second

- **Measurement Range**

0~200kg/min

- **Function**

Flow Rate & Total, Volume, Mass, Density, Temperature Measurable

Operating Specification

- **Fluid**

Hydrogen gas, CNG, high pressure gas mass measurement or volume measurement

- **Input Power (Optional)**

24VDC, 220VAC/24VDC self-adaption

- **Output Signal (Optional)**

pulse+4~20mA+RS485

pulse+4~20mA+HART

- **Pressure Drop**

0.15 kpa

- **Fluid & Environment Temperature**

Fluid : -50~+150 °C 옵션 : -50~+230 °C, -50~+350 °C

-200~+150 °C, -255~+150 °C

Environment : -20 ~ 60 °C (-4 ~ 140 °F)

Options : -40~60 °C (-40~140 °F)

Coriolis Mass Flow Meter (KC-7777-H)

- **Pressure (limitations)**

16 Bar Std.

40, 63, 100, 160, 200, 250, 300, 350, 400, 700, 900, 1200Bar (Option)

- **Displays**

Display instructions: instantaneous & integration, volume, mass measurement

Alphanumeric 2 X 16 backlight LCD

Adjustable variables via remote control switch or Smart interface software

Adjustable : Full scale : (0 ~100) %

Flow: m³/h(m³), L/h(L), mL/h(mL), kg/h(kg)

Time response 0.1 sec / Correction factor setting 0.5 ~ 5 /

Zero & Span

- **Totalizer**

Flow rate and total oxygen point (0000. / 000.0/ 00.00 / 0.000)

Seven digits (9,999,999,99.9 Count) in engineering units Reset table by Software

- **Software (Option)**

Smart interface Windows® -based Software 8MB RAM of RAM, preferred 16MB of RS-485

communication Additional features: Zero cut-off adjustment / Linearization adjustment / Save / Load configuration / For meter validation

Physical Specification

- **Wetted Materials**

Measuring Tube – SS 316L, SS 316L+Nickel, HC Hastelloy, Titanium, PTFE (Option)

Body – SS 304, SS 316L

- **Enclosure**

General type IP66 & Waterproof, dustproof, explosion-proof IP67

(Ex d ib IIc T6 Gb : Ex db ia IIc T6 Gb Ex tb IIIC T80°C Db)

- **Electrical Connection**

2 X 1/2" NPT , M20X1.5

- **Mounting (Selection)**

ANSI 150lb Flange, JIS 10k RF Flange

ANSI 300lb Flange, JIS 20K RF Flange (Option)

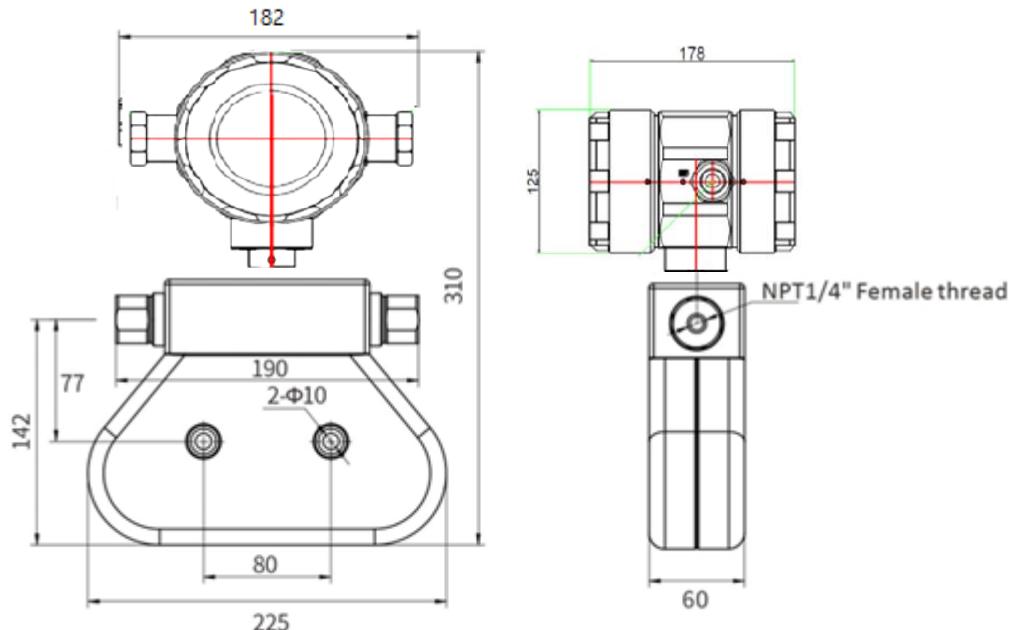
- **Certification**

CE (All Case)

[Korea Gas Safety Corporation is preparing for hydrogen explosion-proof certification.]

Coriolis Mass Flow Meter (KC-7777-H)

❖ Drawing Dimension Spec' & Chart "H2 & HG" (H2, CNG, High Press' Gas) Type



❖ Specifications by size (flow rate, temperature, pressure)

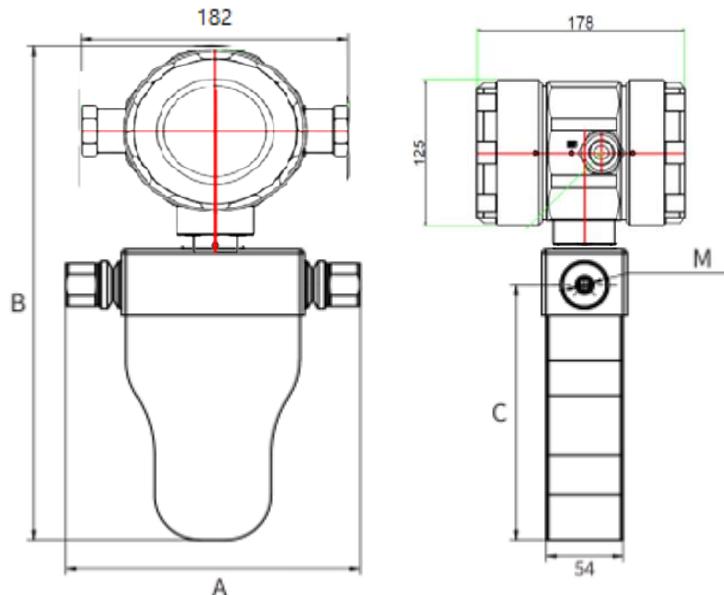
Size		Max. Flow Rate		Medium temp'	Max. Working Pressure
inch	mm	Kg/min	Lb/min		
1/12"	DN01	0.2	0.44	-50~150°C	450Bar
1/10"	DN02	1.6	3.53		200Bar

❖ Zero stability

Size		Zero stability(Kg/min)
1/12"	DN01	0.0002
1/10"	DN02	0.0005
1/8"	DN03	0.001
1/6"	DN04	0.001
1/4"	DN08	0.002
1/2"	DN15	0.006
1"	DN25	0.010

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❖ Drawing Dimension Spec' & Chart "H2 & HG" (H2, CNG, High Press' Gas) Type



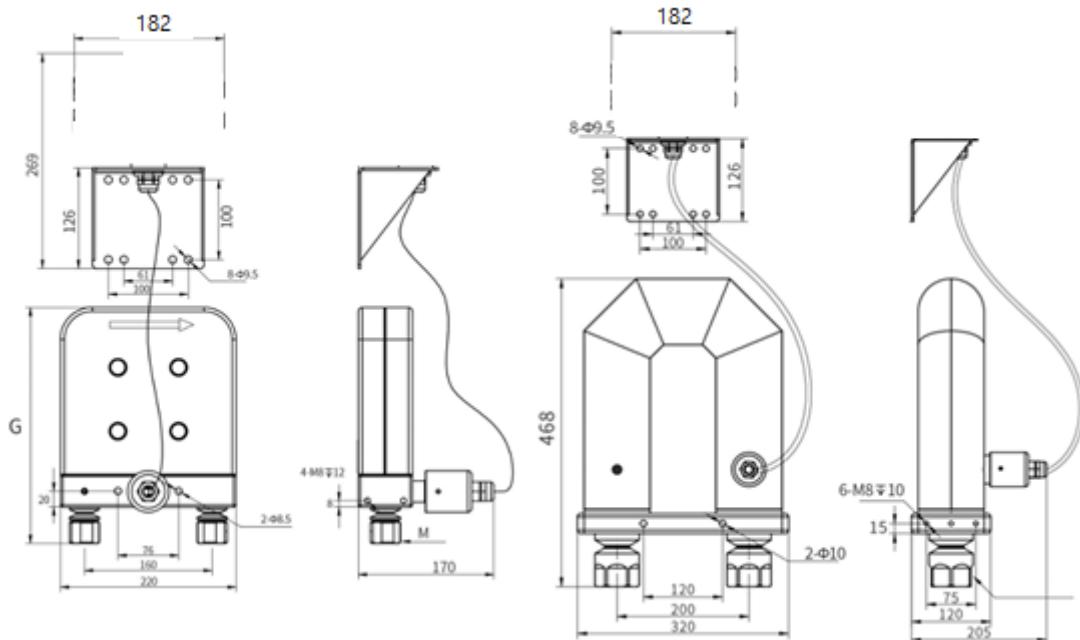
Size	A	B	C	Max.W.P	M
DN03	207	348	180	450Bar	NPT 1/4" Female thread
DN04				300Bar	
DN08	218	325	157	450Bar	13/16-16UNF Female thread
DN15	206	348	180	300Bar	G3/4"Female thread

❖ Specifications by size (flow rate, temperature, pressure)

Size		Max. Flow Rate		Medium Temp'	Max. W.P
inch	mm	Kg/min	Lb/min		
1/8"	DN03	3	6.61	-50~150°C	900Bar
1/6"	DN04	5	11		350Bar
1/4"	DN08	20	44		300Bar
1/2"	DN15	60	132		450Bar

Coriolis Mass Flow Meter (KC-7777-H)

❖ Drawing Dimension Spec' & Chart "H2 & HG" (H2, CNG, High Press' Gas) Type



Size	G	Max.W.P	M
DN03	275	900Bar	9/16-18UNF Female thread
		500Bar	
		400Bar	
		350Bar	
DN08	296	300Bar	3/4 Card sleeve
		450Bar	13/16-16UNF Female thread
DN15	296	300Bar	3/4 Card sleeve
		450Bar	13/16-16UNF Female thread

❖ Specifications by size (flow rate, temperature, pressure)

Size		Max. Flow Rate		Medium Temp'	Max. W.P
inch	mm	Kg/min	Lb/min		
1/8"	DN03	3	6.61	-50~150°C	900Bar
1/6"	DN04	5	11		350Bar
1/4"	DN08	20	44		300Bar
1/2"	DN15	60	132		450Bar
1"	DN25	200	440		

Coriolis Mass Flow Meter (KC-7777-H)

The Coriolis mass flow meter realizes the following control with the current output signal:

01 – Mass flow(kg/h) Control	02 – Density (g/cm ²) Measuring
03 – Volume flow(m ³ /h) Control	04 – Temperature('C) Measuring

Application : Batch Control / Mixed / Process Control / Filling & Dispensing / Loading & UnLoading / Measurement of commercial and process liquids and oils

 Respond to customer needs with fast response speeds and achieve energy savings with $\pm 0.1\%$ F.S. precision control, minimizing losses in industrial settings.

Upstream and downstream straight pipe conditions (**KC-7777-H H2 & HG type**)

Vertical pipe length required for measurement			
Line Condition	KC-7777 Smart-IN™		Orifice Plate(3)
	upstream(1)	downstream(2)	
90° Elbow or T-Junction	10D	5D	28D
Reduction (4:1)	10D	5D	14D
Expansion (4:1)	10D	5D	30D
After the control valve	10D	5D	32D
Two 90° elbows (same horizontal plane)	10D	5D	36D
Two 90° elbows (different horizontal planes)	10D	5D	62D

Note:

- (1) The straight pipe diameter multiple (D) is the straight pipe required between obstructions upstream of the flow meter.
- (2) The required straight pipe length can be shortened due to field-specific calibration.
- (3) For comparison with our flow meter, this is the straight pipe required for an orifice flow meter with a diameter ratio of 0.7, as defined by ISO-5167.
- (4) For pressure effects, please contact the manufacturer.

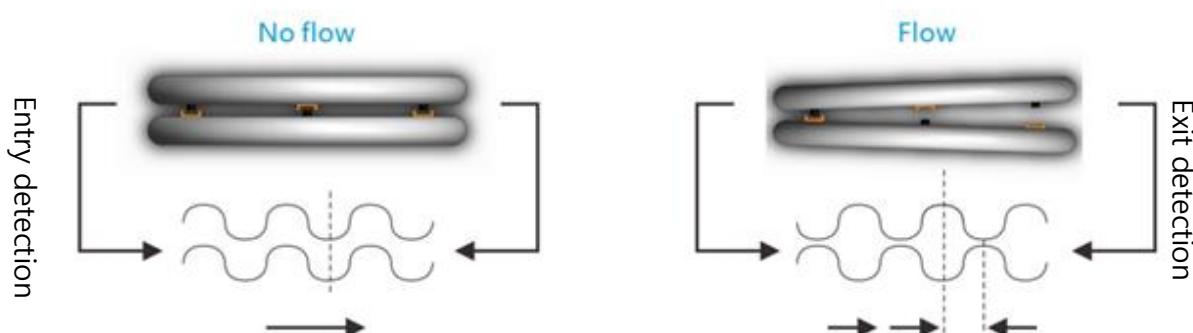
Order Code-Coriolis Mass Flow Meter (KC-7777-U)

Type	Flange	Conn' Spec'	Enclosure	Power	Output	Display	Direction	Cal1	Cal2	Press'	Option	
KC-7777-	<input type="text"/>	<input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>									
	1	2	3	4	5	6	7	8	9	10	11	
										12	13	
										14	15	
Type		Code 1	Input Power		Code 8	Calibration ²⁹ (Gas)		Code 13				
H2 Gas, CNG type		H2/CNG	DC 24V, 500mA		2	70 °F(21 °C) 14.7 psig (1.103 barg)		A				
High Pressure Gas type		HG	AC 220V or 22-245V, 60Hz		3	32 °F(0 °C) 14.7 psig (1.103 barg)		B				
Agency approved, customer specified		W	Agency approved, customer specified		W	Agency approved, customer specified		W				
Process Connection		Code 2	Output Signal		Code 9	Pressure Limit		Code 14				
Thread		T	Modbus RTU / RS-485S, Pulse active		1	40 bar		1				
Tri-clamp		TC	Profibus PA Modbus RTU / RS-485, Pulse active			100 bar		2				
Lok Fitting		L	DC 4~20 mA Hart or Current Loop		2	900 bar		3				
DIN / ANSI / JIS Flange		D / A / J	Agency approved, customer specified		W	Agency approved, customer specified		W				
Agency approved, customer specified		W	Display		Code 10	Option		Code 15				
Conneciton Spec ^{1,3}		Code 3,4,5	No Readout		NR	High Temp'(-50~+230 or -255~150°C)		ST				
Size		DIN 150lb JIS10k	Digital Display		DD	High Press' (max.1,200 Bar)		HP				
1/12" (DN01)		Thread or Lok	Agency approved, customer specified		W	Mat'l : HC Hastelloy, Titanium, PTFE		SM				
1/10" (DN02)			Flow Direction		Code 11	Agency approved, customer specified		W				
1/8" (DN03)			Horizontal Left to Right or Vertical UP		1	Calibration ¹⁹ (Gas)		Code 12				
1/6" (DN04)			Horizontal Right to Left or Vertical Down		2	Standard Calibration		A				
1/4" (DN08)			Agency approved, customer specified		W	Air, only for 1/2" and small pipe Size						
1/2" (DN15)		D2 F2 J2	Compressed Air, only for 2" and large pipe size		D	Customer Calibration		B				
1" (DN25)		D4 F4 J4	Air			Agency approved, customer specified		W				
Agency approved, customer specified		W										
Enclosure ⁵		Code 6,7										
Hazardous-Area Location Enclosure		2										
Remote Hazardous-Area Location Enclosure(Only with Meter)		3(Ft)										
Remote Hazardous-Area Location Enclosure(Only with Junction Box)		4(Ft)										
IP66 or IP67		N2										
Remote IP66 with Junction Box		N4(Ft)										
Agency approved, customer specified		W										

Coriolis Mass Flow Meter (KC-7777)

Measurement Principle

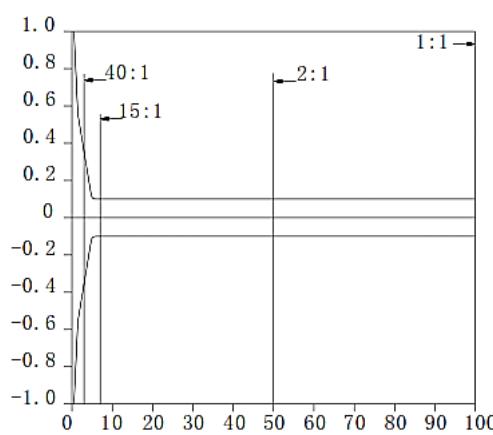
A Coriolis mass flow meter vibrates a flowmeter tube as fluid passes through it, based on the Coriolis principle. A sensor detects and analyzes the frequency, phase difference, and temperature changes in the flowmeter tube. This allows for direct measurement of the fluid's mass flow rate, and density is calculated from the vibration frequency. Other process variables, such as mass flow rate, volume flow rate, density, and temperature, can also be obtained.



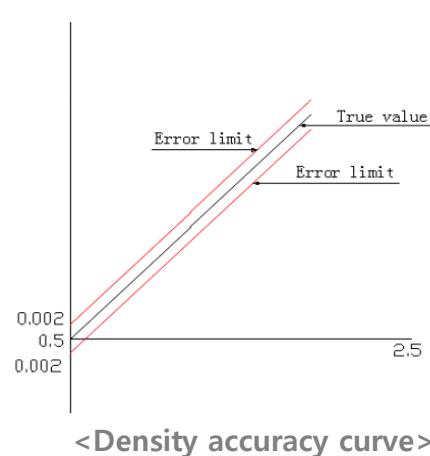
Instantaneous Flow Accuracy: $\pm 0.20\%$

Flow Rate $\pm [(Zero\ Stability/Flow\ Rate) * 100] \%$

Flow Rate Response Time: Factory set to 1 second (user adjustable)



Density measurement accuracy: $\pm 0.002 \text{ g/cm}^3$ (applicable to liquids only) As shown in the graph below, the origin coordinates start at 0.5.



Coriolis Mass Flow Meter (KC-7777)

KOLAS Standard equipment : SONIC NOZZLE(Gas)



CORIOLIS MASS FLOW METER (Liquid)



Disclaimer:

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Related technical details are subject to change for further improvement.

Coriolis Mass Flow Meter (KC-7777)

※ Just choose the one that suits your needs.

Application	Type	Mass Flowmeter	
		Coriolis Mass	
Object of Measurement	Liquid, Oil	O	
	Gas	O	
	Vaper	O	
	steam	O	
Application	control	O	
	Monitor	O	
	Supply	O	
Operating condition	Temperature (max)	Gas, Liquid	-50 ~ 230°C -255 ~ 155°C
	Pressure (max)	Max 1,200 Bar (120 MPa)	
	Pressure loss	Negligible	
	Range ability	Large	
Installing condition	Bore	Ø3 to Ø150	
	Straight	upstream	10D
	Pipe length	downstream	5D
	Piping work		Required
	Explosion-proofing		O
Performance	Accuracy	Liquid	±0.15~0.2% R.D
		Gas	±0.5%, 1.0% R.D
	Flow Range Velocity	Liquid, Gas	0.2 ~ 29,000 kg/min
Turndown Ratio	Up to 100:1 ~ max 1000:1 (for low frequencies)		

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www.goldenrules.co.kr

Gas, Liquid, Steam type Mass & Volume Flow Meter
Professional manufacturing

Detailer

Certified in accordance with

KC Q ISO 9001 : 2015

KC Q ISO 14001 : 2015

032-817-1240

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