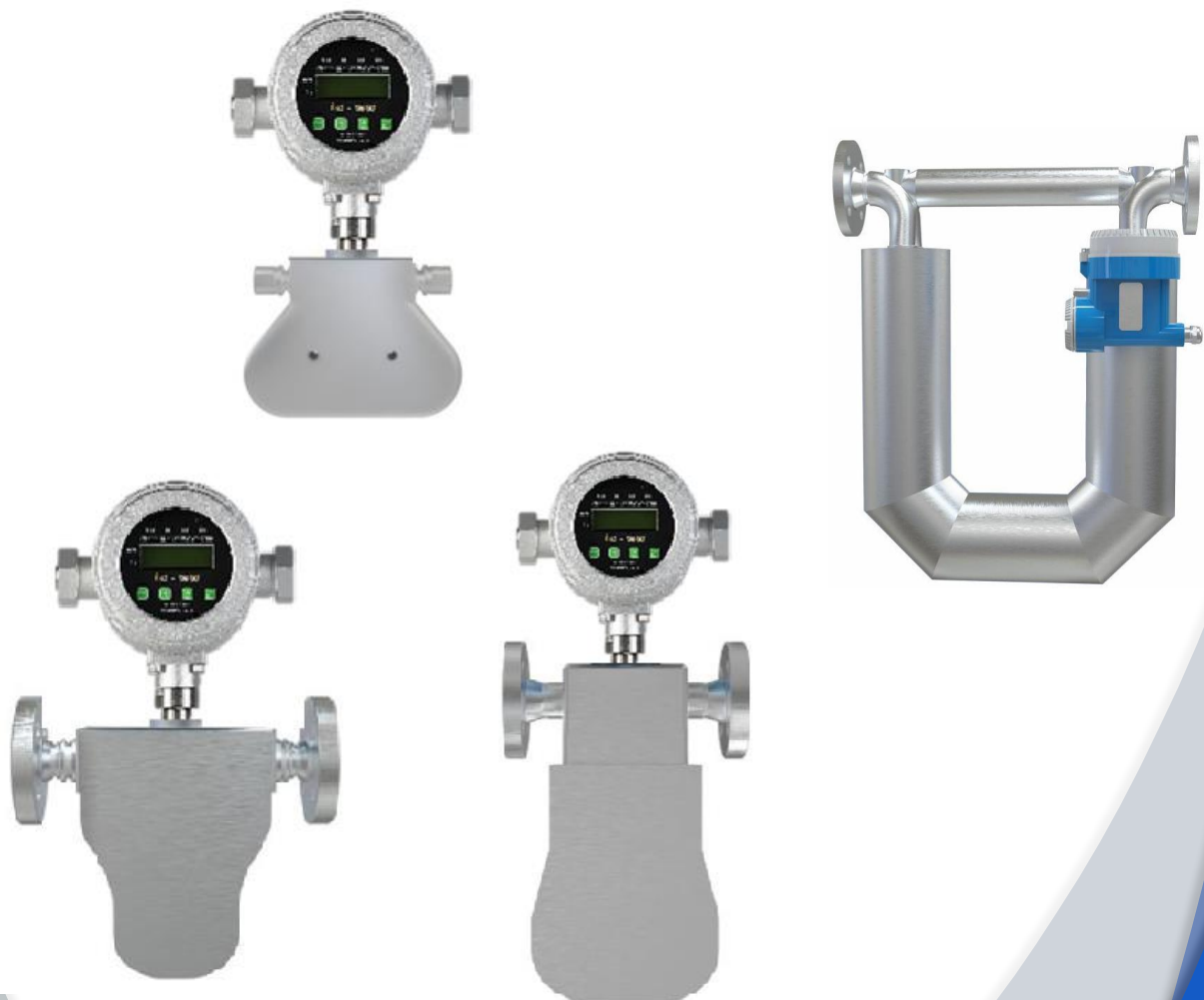


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CORIOLIS MASS FLOWMETER KC-7777-U (U-tube type : Liquid, Steam, Gas)



CORIOLIS MASS FLOW METER (KC-7777-U)

Product Features

- **Measuring diameters:**
DN01, DN02, DN03, DN04, DN08, DN15, DN20, DN25, DN40, DN50, DN80, DN100, DN150, DN200, DN250.
- **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**



KC-7777-U U-tube type
Liquid, Steam, Gas

Application

- Precision measurement from 0 to 2,9000 kg/min
- Suitable for process control of crude oil trade transfers and loading/unloading in industries such as petrochemicals, shipyards, power plants, aerospace, semiconductors, paper, power, steel, and metals.

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-U)

Product Performance

- **Accuracy**
Liquid, Oil : R.D 0.15 / 0.2
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**
0~29,000kg/min
- **Function**
Flow Rate & Total, Volume, Mass, Density, Temperature Measurable

Operating Specification

- **Fluid**
Liquid, Oil, Steam, Liquid+Solid, Liquid+Gas Mixed Mass & 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-U)

- **Pressure (limitations)**

16 Bar Std.

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

- **Diplays**

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, prefereed 16MB of RS-485

communication Additional features: Zero cut-off adjustment / Linearization adjustment / Save /

Load configuration / For meter validatio

Physical Specification

- **Wetted Materials**

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

Body – SS 304, SS 316L

- **Cnclosure**

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

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

- **Electrical Connection**

2 X ½" NPT , M20X1.5

- **Mounting (Selection)**

ANSI 150lb Flange, JIS 10k RF Flange

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

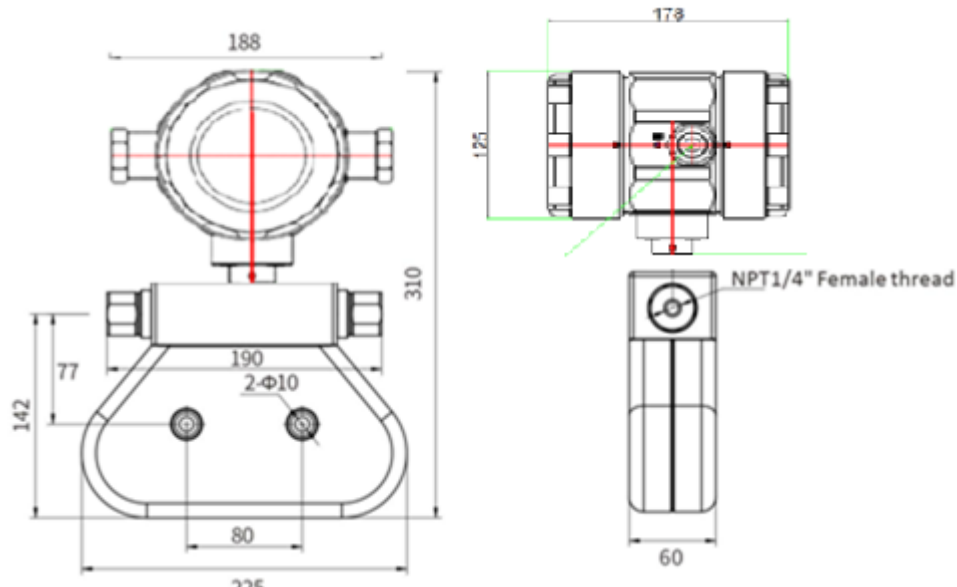
- **Certification**

CE (All Case)

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

Coriolis Mass Flow Meter (KC-7777-U)

❖ Drawing Dimension Specifications & Chart "U" (U-Tube sensor) Type



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

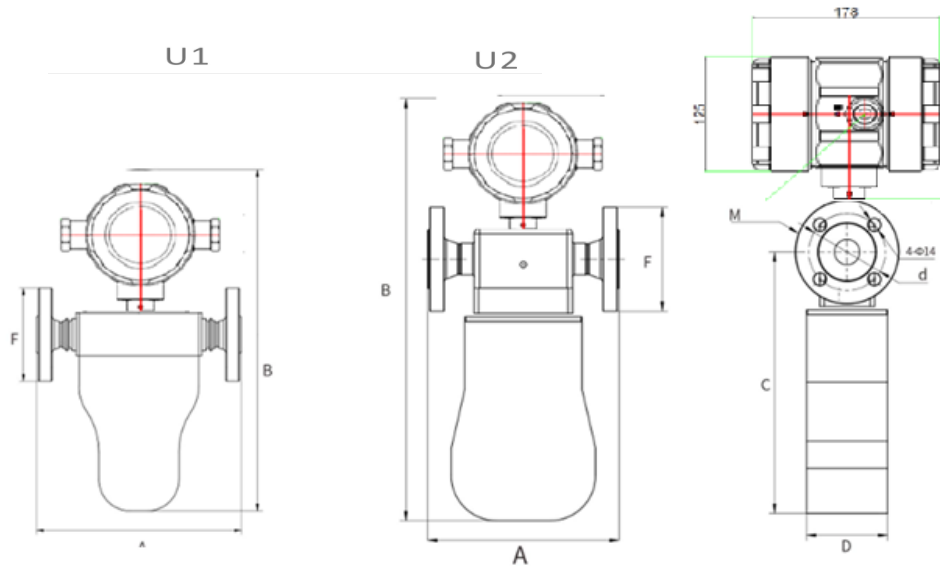
Size		Max. Flow Rate		Medium temp'	Max. Working Pressure
inch	mm	Kg/min	Lb/min		
1/12"	DN01	0.2	0.44	-50~150°C	≤100Bar
1/10"	DN02	1.6	3.53		

❖ Zero stability

Size		Zero stability(Kg/min)	Size		Zero stability(Kg/min)
1/12"	DN01	0.0002	1-1/2"	DN40	0.020
1/10"	DN02	0.0005	2"	DN50	0.025
1/8"	DN03	0.001	3"	DN80	0.050
1/6"	DN04	0.001	4"	DN100	0.100
1/4"	DN08	0.002	6"	DN150	0.200
1/2"	DN15	0.006	8"	DN200	0.300
3/4"	DN20	0.010	10"	DN250	0.750
1"	DN25	0.010			

Coriolis Mass Flow Meter (KC-7777-U)

❖ Drawing Dimension Specifications "U" (Small Size) Type



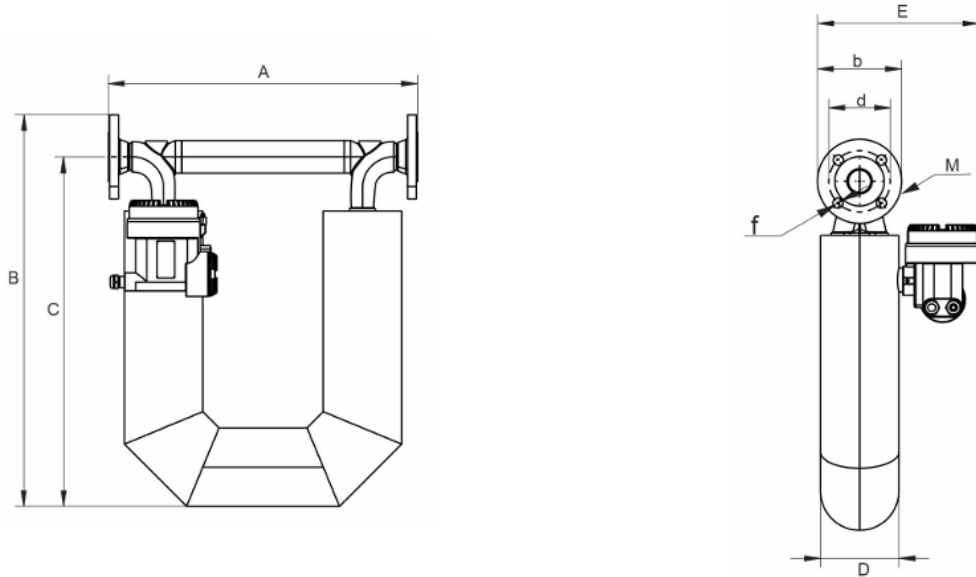
Type	A	B	F	C	D	d	M
U1	210	325	95	156.50	54	Φ65	NPT ¼" Female thread
		348		180			DN15 PN40 Flange
U2	212	458	115	289	90	Φ85	DN20 PN40 Flange
		458	115	289			DN25 PN40 Flange

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

Size		Max. Flow Rate		Medium temp'	Max. Working Pressure
inch	mm	Kg/min	Lb/min		
1/8"	DN03	3	6.61	-50~150°C	10Bar
1/6"	DN04	5	11		
1/4"	DN08	20	44		
1/2"	DN15	60	132		
3/4"	DN20	100	220		
1"	DN25	200	440		63Bar
3"	DN80	2000	4409		
4"	DN100	3000	6613		40Bar
6"	DN150	12000	26455		
8"	DN200	18000	39683		
10"	DN250	29000	63934		

Coriolis Mass Flow Meter (KC-7777-U)

❖ Drawing Dimension Specifications "U" (U-pipe sensor) Type



Size	A	B	C	D	E	d	b	F	M
DN40	552	699	624	Φ140	288	4-Φ18	Φ110	Φ150	DN40 PN40 Flange
DN50	600	747	665	Φ159	205	4-Φ18	Φ125	Φ165	DN50 PN40 Flange
DN80	763	950	850	Φ219	353	8-Φ18	Φ160	Φ200	DN80 PN40 Flange
DN100	963	1079	962	Φ273	416	8-Φ22	Φ190	Φ235	DN100 PN40 Flange
DN150	1164	1144	994	Φ324	467	8-Φ26	Φ250	Φ300	DN150 PN40 Flange
DN200	1266	1445	1257	Φ377	423	12-Φ30	Φ320	Φ375	DN200 PN40 Flange
DN250	1360	1904	1683	Φ448	500	12-Φ30	Φ385	Φ450	DN40 PN40 Flange

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

Size		Max. Flow Rate		Medium temp'	Max. Working Pressure
inch	mm	Kg/min	Lb/min		
1-3/4"	DN40	450	992	-50~150°C	10Bar
2"	DN50	650	1433		

Coriolis Mass Flow Meter (KC-7777-U)

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 setting

Upstream and downstream straight pipe conditions **(KC-7777-U U tube 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- - - - **E** - **P** - **V** - - - - -
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Type	Code 1
(Liquid) U-Tube type	UL
(Steam) U-Tube type	US
(Gas) U-Tube type	UG
(Mix) U-Tube type	MX
Agency approved, customer specified	W

Process Connection	Code 2
Thread	T
Tri-clamp	TC
Lok Fitting	L
DIN / ANSI / JIS Flange	D / A / J
Agency approved, customer specified	W

Connection Spec' ^{1,3}	Code 3,4,5		
Size	DIN	150lb	JIS10k
1/12" (DN01)	Thread or Lok		
1/10" (DN02)			
1/8" (DN03)			
1/6" (DN04)			
1/4" (DN08)			
1/2" (DN15)	D2	F2	J2
1" (DN20)	D3	F3	J3
1" (DN25)	D4	F4	J4
3" (DN80)	D9	F9	J9
4" (DN100)	D11	F11	J11
6" (DN150)	D13	F13	J13
8" (DN200)	D15	F15	J15
10" (DN250)	D16	F16	J16
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

Input Power	Code 8
DC 24V, 500mA	2
AC 220V or 22-245V, 60Hz	3
Agency approved, customer specified	W

Output Signal (Selection)	Code 9
Modbus RTU / RS-485S, Pulse active	1
Profibus PA Modbus RTU / RS-485, Pulse active	
DC 4~20 mA Hart or Current Loop	2
Agency approved, customer specified	W

Display	Code 10
No Readout	NR
Digital Display	DD
Agency approved, customer specified	W

Flow Direction	Code 11
Horizontal Left to Right or Vertical UP	1
Horizontal Right to Left or Vertical Down	2
Agency approved, customer specified	W

Calibration ¹⁹ (Liquid)	Code 12
Standard Calibration	A
Water, only for 1/2" and small pipe Size	
Water, only for 2" and large pipe size	D
Customer Calibration	B
Water	
Agency approved, customer specified	W

Calibration ²⁹ (Liquid)	Code 13
64.4 °F(18 °C) 14.7 psig (1.103 barg)	A
32 °F(0 °C) 14.7 psig (1.103 barg)	B
Agency approved, customer specified	W

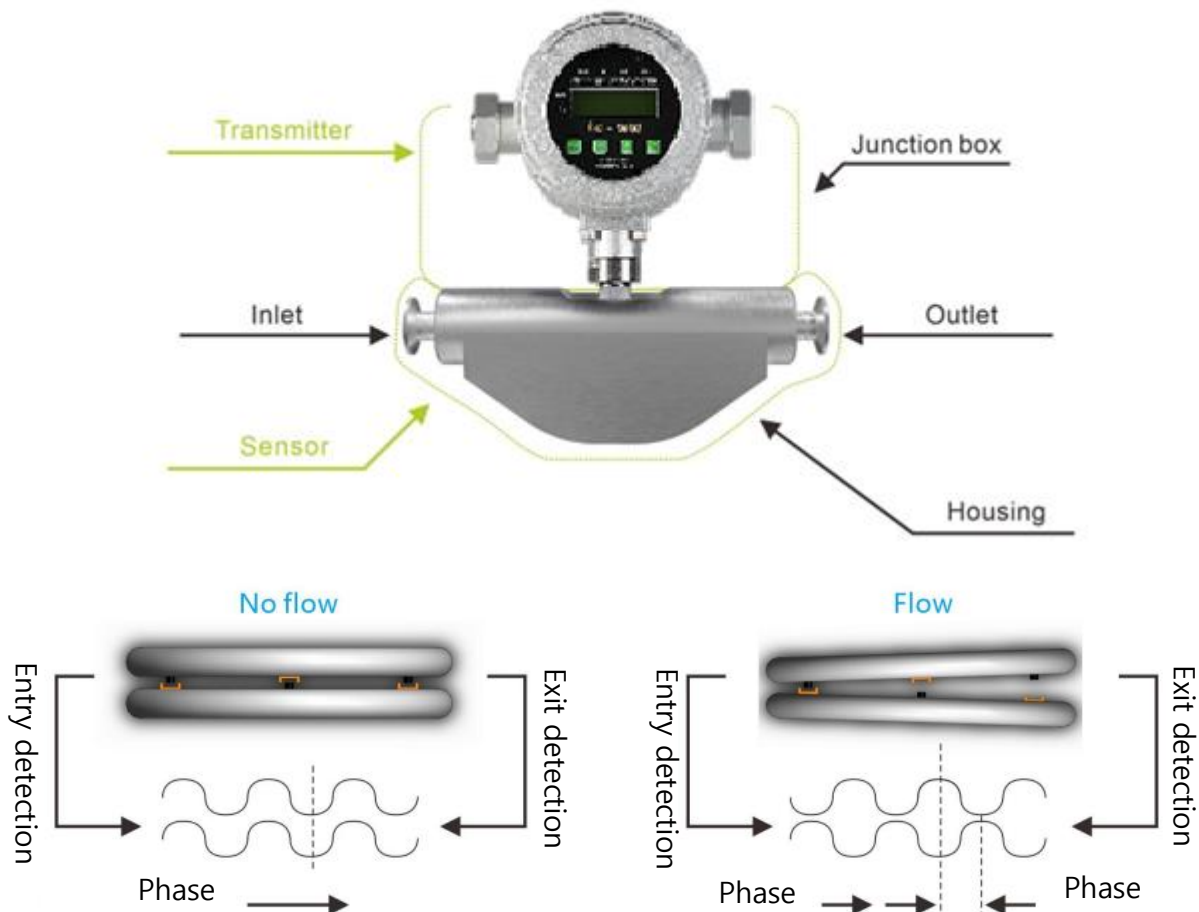
Pressure Limit	Code 14
16 bar	1
40 bar	2
900 bar	3
Agency approved, customer specified	W

Option	Code 15
High Temp'(-50~+230 or -255~150°C)	ST
High Press' (max.1,200 Bar)	HP
Mat'l : HC Hastelloy, Titanium, PTFE	SM
Agency approved, customer specified	W

Coriolis Mass Flow Meter (KC-7777)

Measurement Principle

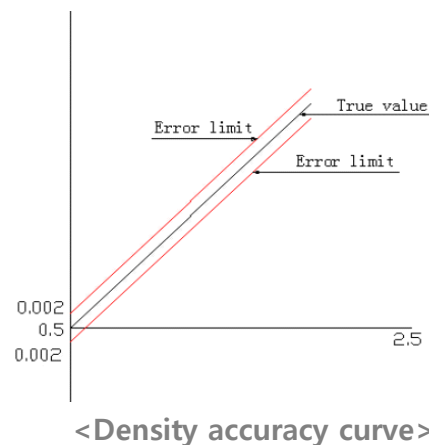
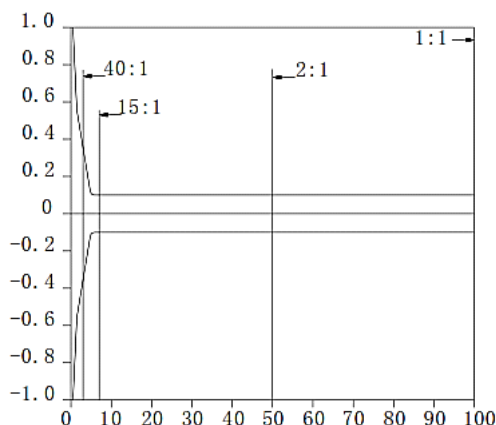
A Coriolis mass flow meter vibrates a flowmeter tube as fluid passes through it, based on the Coriolis principle. A sensor detects and analyzes the frequency, phase difference, and temperature changes in the flowmeter tube. This allows for direct measurement of the fluid's mass flow rate, and density 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:

All data used in product descriptions is not legally binding.

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		○	
	Gas		○	
	Vaper		○	
	steam		○	
Application	control		○	
	Monitor		○	
	Supply		○	
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		○	
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, Mixed type Mass & Volume Flow Meter
specialized manufacturing company**

Detailer

Certified in accordance with

KC Q ISO 9001 : 2015

KC Q ISO 14001 : 2015

032-817-1240

goldenrules2014@naver.com

A-1805, Songdo Mirae-ro 30, Yeonsu-gu, Incheon (Songdo Smart Valley)



(주)골든룰