



www.goldenrules.co.kr

Golden Rules CO.,Ltd

Air & Gas
Thermal Mass Flow Meter
Specialty Manufacture

KC-2600

Thermal Mass Flow Meter



The nation's development item, 100% domestic goods, Patent **NO.** 10-1660226

1. THERMAL MASS FLOW METER (Gases)

1-2 Inline type KC-2600 Series

Inline Type Thermal Mass Flowmeter



**Gas inline type
KC-2610GF
(IP67)**



**Gas inline type
KC-2620Ex
(IP66)**



**Gas inline MFM
KC-2610GM**



**Gas inline MFM
KC-2620Ex-GM**

Features

- Rate & total, volume, mass flow, indication
- Input Power DC 24 V or 100-240VAC
- Output accuracy $\pm 0.1\%$, $\pm 2.5 \mu A$ (4~20 mA)
- Field validation of flowmeter calibration settings
Smart program interface (RS-485 standard)
- Direct mass flow monitoring eliminates need for
Temperature and pressure compensation
- Simple signal Processing & calibration
- Excellent reproducibility
- Excellent long-term stability
- Best price-performance ratio
- Easy adaptable for different application or into housings
- No mechanical moved components
- Greatly reduces upstream piping requirements (7-5D)
- Outstanding range ability (Turn down ratio 1000:1)
- 0.1-second response to changes in flow rate
- Ex(IP66), KC

Description

Golden Rules' KC-2600 Series Smart inline mass flowmeter accommodates the change measurement Requirements and instrument-validation demands of fluid flow monitoring installations.

The versatile microprocessor-based transmitter integrates the function of flow measurement, flow-range Adjustment, meter validation and diagnostics, in either a probe-mounted or remote housing.

Mass flow rate and totalized flow, as well as other configuration variables are displayed on the meter's optional 2X16 LCD panel. The programmable transmitter is easily configured via an RS-485 communication port and Golden Rules Smart interface software, or via the display and magnetic switches in the instrument panel.

The Golden Rules KC-2600 Series allows you to configure or change the following parameters: flow range, Totalize, time response, low flow cutoff and a calibration correction factor that compensates for flow profile Flow variations. Golden Rules's Smart interface software guides you through a procedure to fully validate Instrument performance. The meter is available with variety of input signal, mounting and packaging option.

The information contained herein is subject to change without notice.

Performance Specification

- ◆ **Accuracy of Point Velocity**
±1.0% of Reading (Option : ±0.5 % of RD)
- ◆ **Repeatability**
±0.2 % of Full Scale
- ◆ **Temperature Coefficient**
±0.03 % Reading / ±(10 ~ 38) °C내에서 °C
±0.06 % Reading / ±(25 ~ 50) °C내에서 °C
- ◆ **Pressure Drop**
It can be ignored within ± 50 psig (3.4 bara).
- ◆ **Response Time**
1 second 63% of final velocity value
- ◆ **Measuring Range**
0.01 ~ 66.2 m/sec
- ◆ **Function**
Air, O2, N2, LNG, LPG Other Gas

Mass Flow Rates

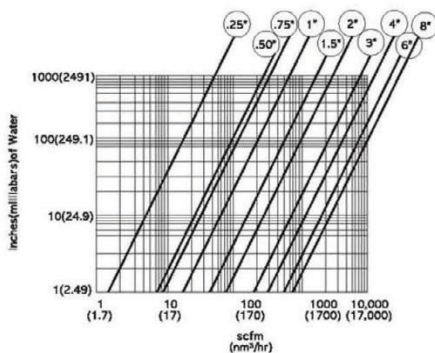
Air Flow Ranges							
Pipe Size		Minimum		Maximum		Weight (kg)	
A	B	Scfm	Nm ³ /h	Scfm	Nm ³ /h	방폭	일반
8A	¼-inch	0.5	-0.7	9	14	5	3
15A	½-inch	2	3.0	40	60	5	3
20A	¾-inch	4	5.9	75	120	5	3
25A	1-inch	6	8.9	120	180	6	4
40A	1½-inch	15	22	280	440	7.2	5.2
50A	2-inch	23	33	470	680	8.6	6.6
80A	3-inch	50	74	1000	1500	11	9
100A	4-inch	90	130	1800	2700	16.2	14.2
150A	6-inch	200	300	4000	5900		
200A	8-inch	350	520	7000	10,000		

Notes: Air or N2 Flow Standard Condition :21°C(70°F) & 21°C(70°F) scfm:0°C, Nm³/h 1atm

Operating Specification

- ◆ **Fluid**
Gases
- ◆ **Pressure (limitation)**
Compression Fittings : 508 psig (35 barg) option
150 lb Flange, JIS 10k RF PN16 DIN (-40 ~ 150) °C (-40 ~ 302) °F : 230 psig (15.9 barg)
150 lb Flange, JIS 10k RF PN16 DIN 121 °C (250 °F) : 185 psig (12.8 barg)
150 lb Flange, JIS 10k RF PN16 DIN 400 °C (752 °F) : 155 psig (10.7 barg)
NPT -40 ~ 150 °C ((-40 ~ 302) °F) : 508 psig (35 barg)
High Pressure Retract Valve : 1000 psig (70 barg)

◆ **Pressure Drop**



◆ Fluid & Ambient temp'

Gases : (-40 ~ 302) °F ((-40 ~ 150) °C)

Ambient : (-4 ~ 185) °F ((-20 ~ 85) °C)

◆ Input Power (selection)

DC24 V ±10 %, 200 mA

(100 ~ 240) V AC ±10 %, 10 watts

◆ Output Signal

Linear (4 ~ 20) mA & Pulse

◆ Display

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 1 ~ 7 sec / Correction factor setting 0.5 ~ 5 /

Zero & Span

Totalizer

8-digits (99,999,999 Count) in engineering units Reset table by

Software or remote control switch

◆ Software

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 Part Mat'l

Sensor Probe – Ceramic + 303SS (Platinum) Option : 316SS, 316LSS

Flow Body – 304SS (Option 316SS, 316LSS)

Enclosure

Hazardous-Area CASE (Ex d[ib] IIC T4 : IP66)

General-Area CASE (IP67)

◆ Electrical Connection

2 X ½"NPT or Exp Cable Gland(SS) 22C

◆ Mounting (selection)

¾" Compression Fitting과 ¾" Male NPT (Standard)

ANSI 150lb Flange, JIS 10k RF Flange (Option)

¾" Compression Fitting과 1" Male NPT (Option)

Ball Valve System (Option)

◆ Certification

Ex (Ex d[ib] IIC T4)

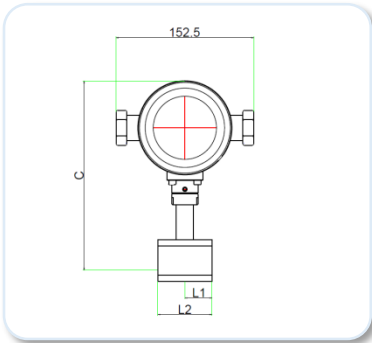
CE (CASE 전체)

KGS Certificate

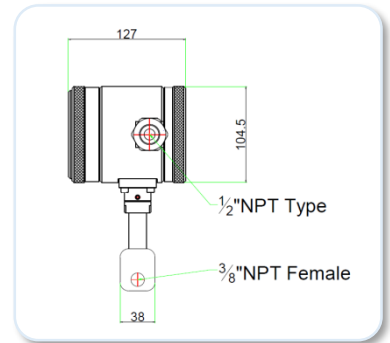
KC Certificate

Dimensional Specification & Chart | General type KC-2610BF (IP67)

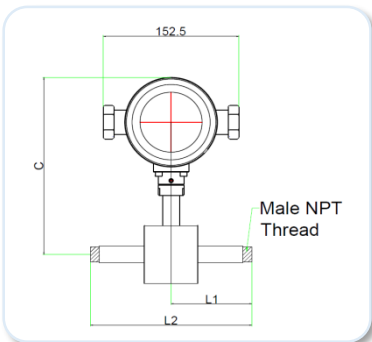
●1/4," 3/8" NPT – Front View (EN2)



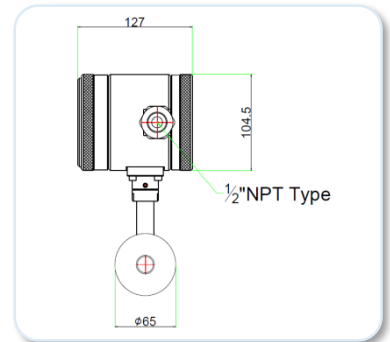
●Compression Fitting – Side View (EN2)



●1/2," 3/4" NPT – Front View (EN2)

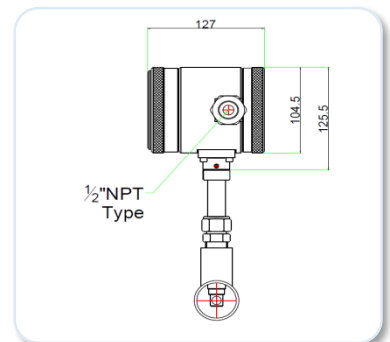


●1/2," 3/4" NPT – Side View (EN2)

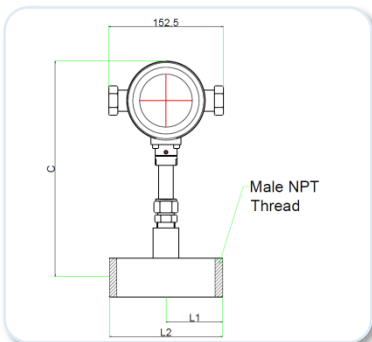


SIZE for NPT & Flange			
Size	C	L1	L2
1/4" & 3/8"	210.5	30	60
1/2"	210.5	90.7	181.4
3/4"	210.5	90.7	181.4
1"	272.5	101.5	203
1-1/2"	272.5	101.5	203
2"	272.5	101.5	203
3"	334.6	127	254
4"	334.6	127	254
6"	334.6		
8"	334.6		

●Compression Fitting – Side View (EN2)



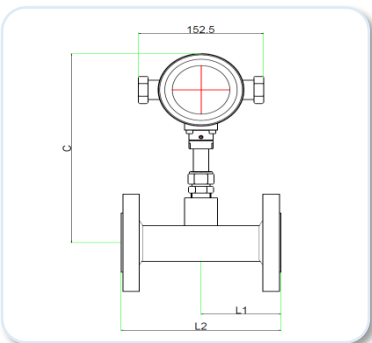
●1/4," 3/8" NPT – Front View (EN2)



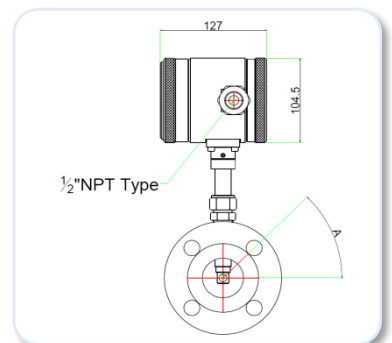
SIZE for ANSI 150# FLANGE				
Size	C	L1	L2	A
1/2"	210.5	101.5	203	45°
3/4"	210.5	101.5	203	45°

※ The shape of the sensor and Housing manufacturers are Subject to Change.

●1/2," 3/4" Flange – Front View (EN2)



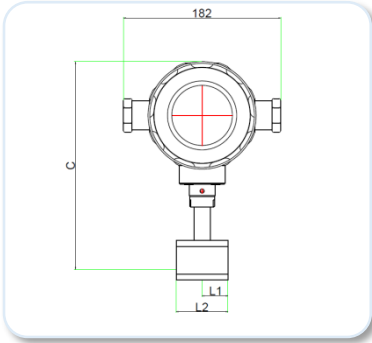
●1/2," 3/4" Flange – Side View (EN2)



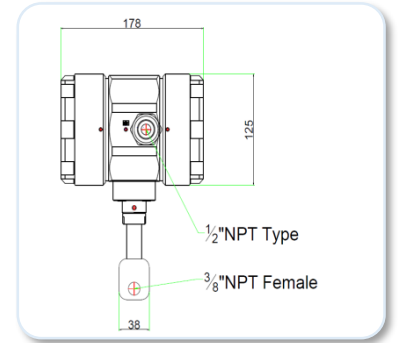
All dimensions are inches. Millimeters are in parentheses.

Dimensional Specification & Chart II Ex-proof KC-2620Ex

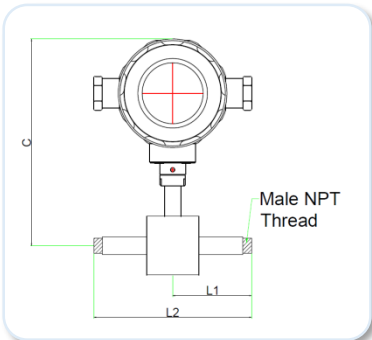
●1/4," 3/8" NPT – Front View (E2)



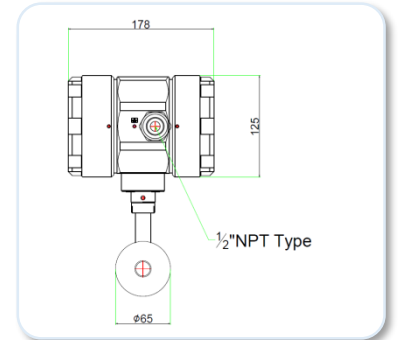
●Compression Fitting – Side View (E2)



●1/2," 3/4" NPT – Front View (E2)

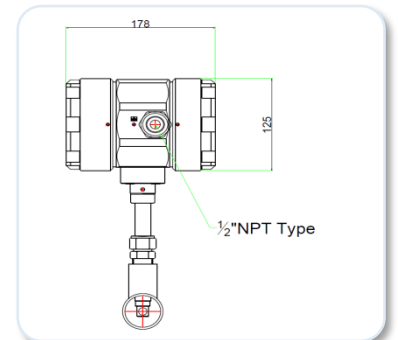


●1/2," 3/4" NPT – Side View (E2)

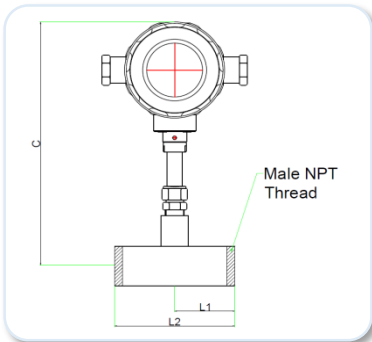


SIZE for NPT & Flange			
Size	C	L1	L2
1/4" & 3/8"	241.5	30	60
1/2"	241.5	90.7	181.4
3/4"	241.5	90.7	181.4
1"	283.5	101.5	203
1-1/2"	283.5	101.5	203
2"	283.5	101.5	203
3"	344.6	127	254
4"	344.6	127	254
6"	344.6		
8"	404.6		

●Compression Fitting – Side View (E2)



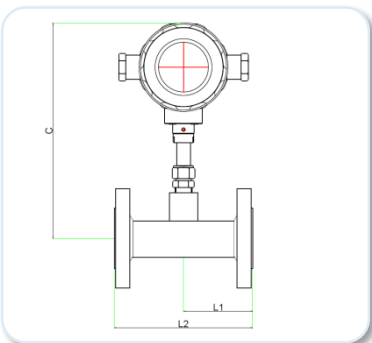
●1/4," 3/8" NPT – Front View (E2)



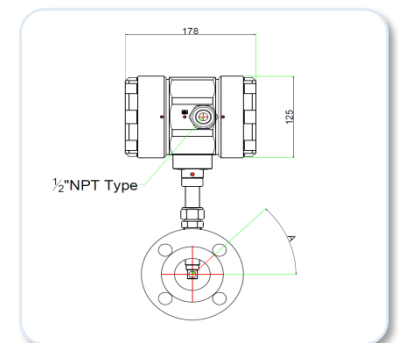
SIZE for ANSI 150# FLANGE				
Size	C	L1	L2	A
1/2"	241.5	101.5	203	45°
3/4"	241.5	101.5	203	45°

※ The shape of the sensor and Housing manufacturers are Subject to Change.

●1/2," 3/4" Flange – Front View (E2)

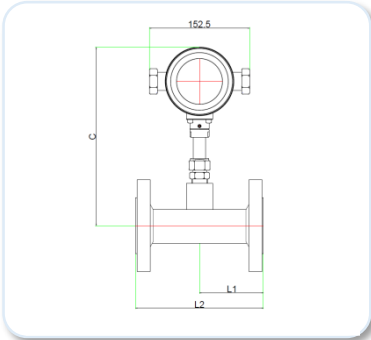


●1/2," 3/4" Flange – Side View (E2)

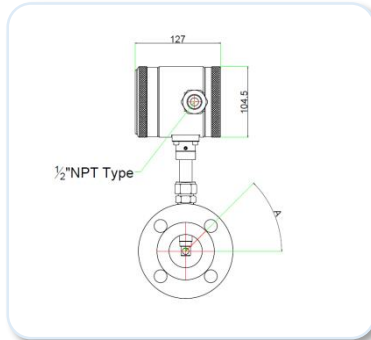


Dimensional Specification & Chart III KC-2610GF((IP67)

●1-1/2" ~ 8" – Front View (EN2)
150# Flange, JIS 10k RF Flange

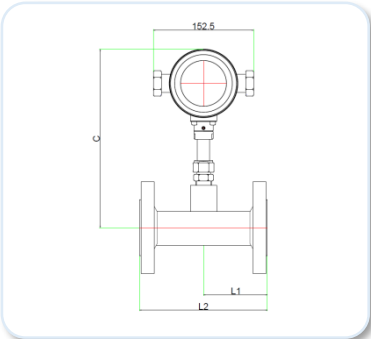


●1-1/2" ~ 8" – Side View (EN2)
150# Flange, JIS 10k RF Flange

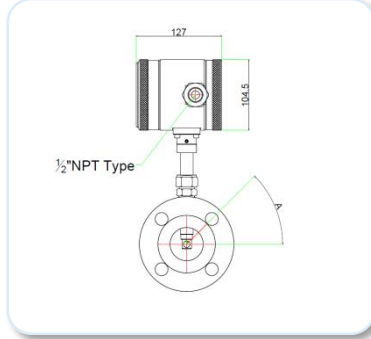


Size for ANSI 150# Flange				
Size	C	L1	L2	A
1-1/2"	283.5	101.5	203	45°
2"	283.5	101.5	203	45°
3"	344.6	127	254	45°
4"	344.6	127	254	22.5°
6"	344.6	127	254	22.5°
8"	404.6	127	254	22.5°

●DIN Flange – Front View (EN2)



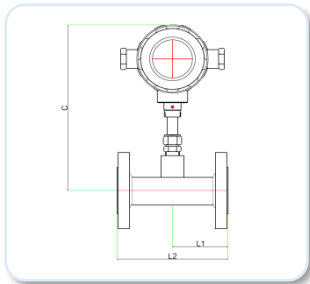
●DIN Flange – Side View (EN2)



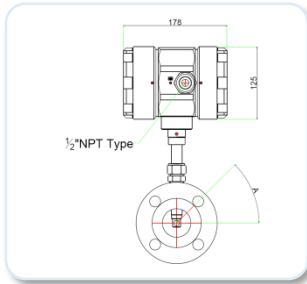
Size for PN16 DN Flange			
Size	C	L1	L2
DN40	283.5	101.5	203
DN50	283.5	101.5	203
DN80	344.6	127	254
DN100	344.6	127	254
DN150	344.6	127	254
DN200	404.6	127	254

Dimensional Specification & Chart III KC-2620Ex (Ex-proof)

●1-1/2" ~ 8" – Front View(E2)
150# Flange, JIS 10k RF Flange

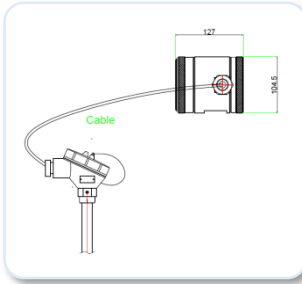


●1-1/2" ~ 8" – Side View(E2)
150# Flange, JIS 10k RF Flange

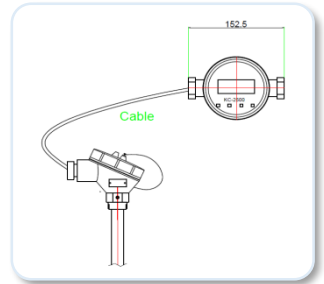


♣ **General Remot type KC-2610GF-R**

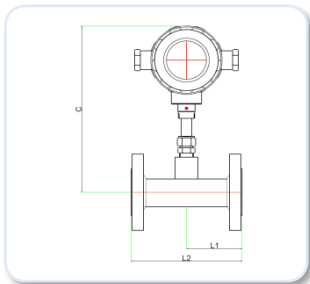
●Remote Mount Junction Box – Front View(EN4)



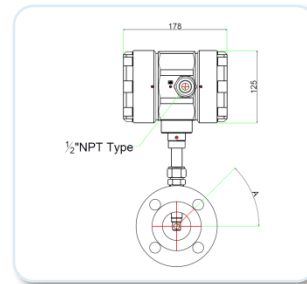
●Remote Mount Junction Box – Side View(EN4)



●DIN Flange – Front View(E2)

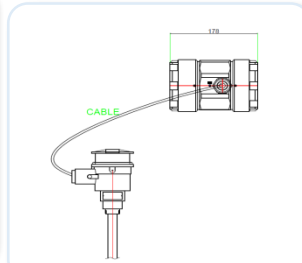


●DIN Flange – Side View(E2)

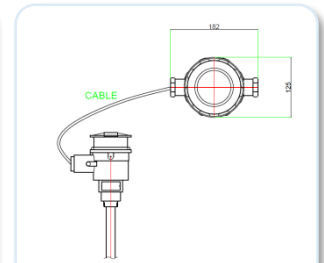


♣ **Ex-proof Remote type KC-2620Ex-R**

●Remote Mount Junction Box – Front View(E4)



●Remote Mount Junction Box – Side View(E4)

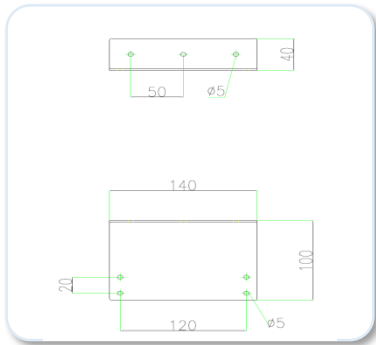
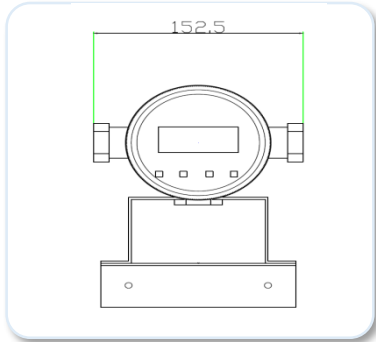


※ The shape of the sensor and Housing manufacturers are Subject to Change.

Dimensional Specification & Chart V

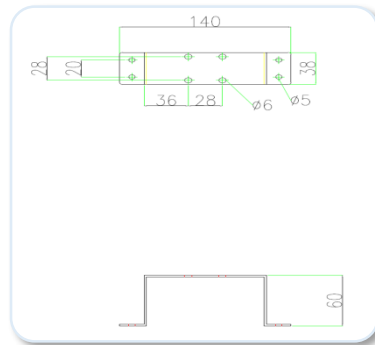
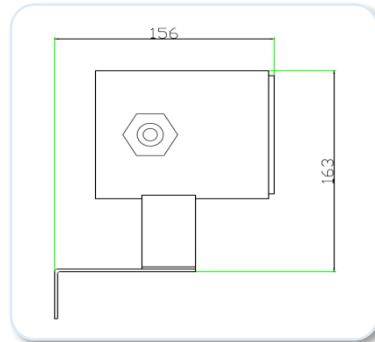
General Remote type KC-2610GF-R

● Remote Rear Bracket Electronics (EN4)



● panel mounting bracket 1

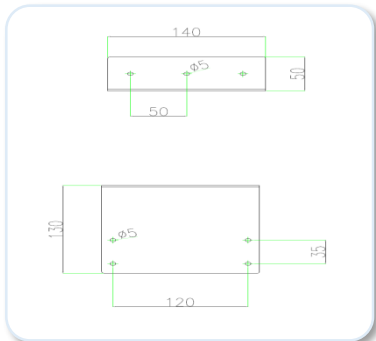
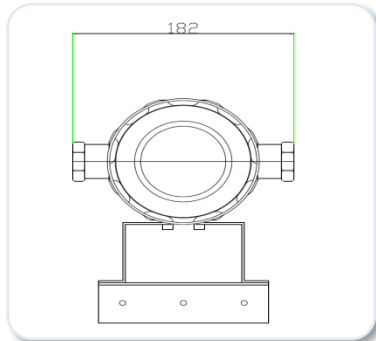
● Remote Side Bracket Mounted Electronics (EN4)



● panel mounting bracket 2

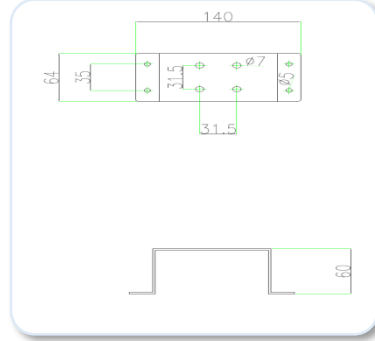
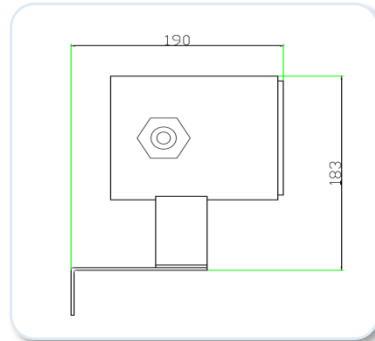
Ex-proof Remote type KC-2620Ex-R

● Remote Rear Bracket Electronics (E4)



● panel mounting bracket 1

● Remote Side Bracket Mounted Electronics (E4)



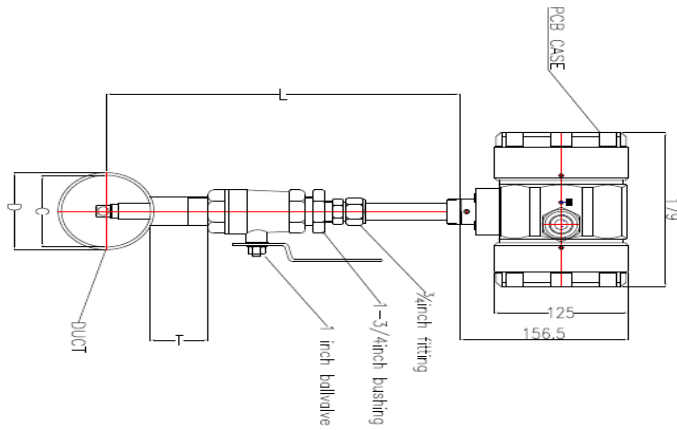
● panel mounting bracket 2

Low Pressure Ball Valve Dimensional & Specification

●Side View

VARIABLE

- L = Normal Probe Length
- D = Duct O.D
- C = Duct I.D
- T = Height of "Threadolet" or Customer provided weldolet



±0.25 All dimensions are inches. Millimeters are in parentheses.
 All drawings save a ±0.25 inch(6.4 mm) tolerance.
 Certified and available be on request.

Piping Requirement (KC-2600GF inline type)

Straight Pipe Length Requirements at 1 atm			
Piping condition	KC-2600 Smart- IN™		Orifice Plate(3)
	Upstream(1)	Downstream(2)	
90° Elbow or T-Piece	10D	5D	28D
Reduction (4:1)	10D	5D	14D
Expansion (4:1)	10D	5D	30D
After Control Valve	10D	5D	32D
Two 90° Elbows (in same plane)	10D	5D	36D
Two 90° Elbows (in same plane)	10D	5D	62D

- Note :
- (1) Number of diameters (D) of straight pipe required between upstream disturbance and the flowmeter.
 - (2) Number of diameters (D) of straight pipe required downstream of the flowmeter.
 - (3) For comparison purposes only. Table shows number of diameter(D) of upstream straight pipe length required for an ISO Standard 5167 Orifice plate with a beta ration of 0.7
 - (4) Consult factory for pressure effects.



Golden Rules

• GOLDEN RULES

www.goldenrules.co.kr

GAS & LIQUID
Mass & Total flowmeter
Specialized manufacturer

Distributor

Certified in accordance with

KC Q ISO 9001 : 2015

KC Q ISO 14001 : 2015

 (주)골든룰