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Golden Rules Co.,Ltd

Air Inline type
Specialty Manufacture

MFM
KC-7720M Series
High temperature type



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

4. MASS FLOW METER (MFM)

4-2 High Temp' type MFM KC-7720M Series



**High Temp' type MFM
KC-7720M**

Feature

- Close loop control applied
- Power DC 24V (Standard)
- 24-bit analog-to-digital converter (ADC)
- Output Accuracy $\pm 0.1\%$, $\pm 2.5 \mu\text{A}$ (4 to 20 mA) & Pulse Basic
- High performance that can be adjusted in the field when a flowmeter
- Malfunctions Interface (RS-485) basic
- Direct mass flow measurement does not require separate temperature and pressure compensation.
- Simple signal processing and calibration in the field
- Excellent reproducibility
- Excellent long-term stability
- Best price/performance ratio
- Easy adaptability to other applications
- No drive
- There are few straight pipe parts of the upper pipe.(7D ~ 5D)
- Suitable for a wide flow range. (Turn Down 1000: 1)
- The response speed (1 sec) according to the flow rate change is fast.

Description

Golden Rules' KC-7720M 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-7720M 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.

제품성능

◆ **Accuracy**

±1.5% of F.S (Option: ±1.0%)

◆ **Repeatability**

±2.0 % of Full Scale

◆ **Temp' Compensation**

±0.3 % Reading / ±(10 ~ 38) °C내에서 °C

±0.6 % Reading / ±(25 ~ 50) °C내에서 °C

◆ **Pressure Compensation**

±50 psia (3.4 bara)

◆ **Response Time**

1 Sec

◆ **Measuring Range**

(0.01 ~ 66.2) m/sec

◆ **Function**

Flow Rate

Mass Flow Rates

Air Flow Ranges				
Pipe Size		Minimum	Maximum	Weight
A	B			
8A	1/4-inch	0 ~ 100SCCM	0 ~ 100SLPM	3kg
10A	3/8 - inch	0 ~ 100SLPM	0~ 300SLPM	3kg
15A	1/2-inch	0 ~ 400SLPM	0 ~ 700SLPM	3kg
20A	3/4-inch	0 ~ 800SLPM	0 ~3,000SLPM	3kg

운전사양

◆ **Fluid**

All Gases

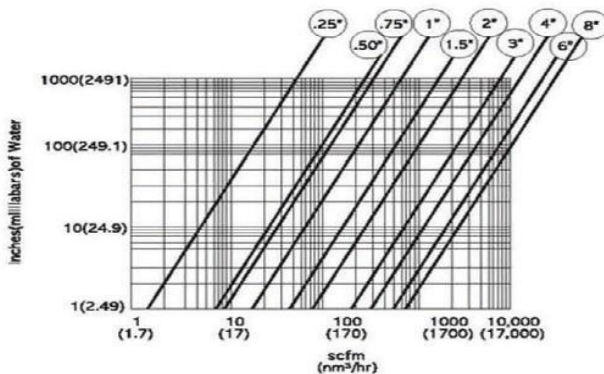
◆ **Gases Pressure Range**

- 3bar
- 10bar
- 30bar

◆ **Pressure Loss**

0.15

Notes: (1) Air & nitrogen flow standard conditions: 21°C (70°F) and 21°C (70°F)
 scfm:0°C, Nm³/h 1 atm, other gas, contact company
 (2) Available flow charts are available, contact the company
 (3) The maximum flow rate is limited to hazardous areas and high temperature versions, contact the company.



◆ Gases & Ambient temp'

Gases : -40 ~ 302 °F (-40 ~ 150 °C)

Ambient : -4 ~ 185 °F (-20 ~ 85 °C)

◆ Input Power

DC24 V ±10 %, 200 mA

◆ Output Signal (Standard)

Linear 4 ~ 20mA, 4-Wire

◆ LCD Display

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

Zero & Span

◆ Totalizer

10-digits (9,999,999,99.9 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 Spec'**◆ Wetted Material**

Flow Body – 304SS(Option: 316LSS),

O-ring – Viton(Option: FFKM)

◆ Enclosure

IP56

◆ Electrical Conneciton

9 Pin D-Sub

◆ Mounting (Selection)

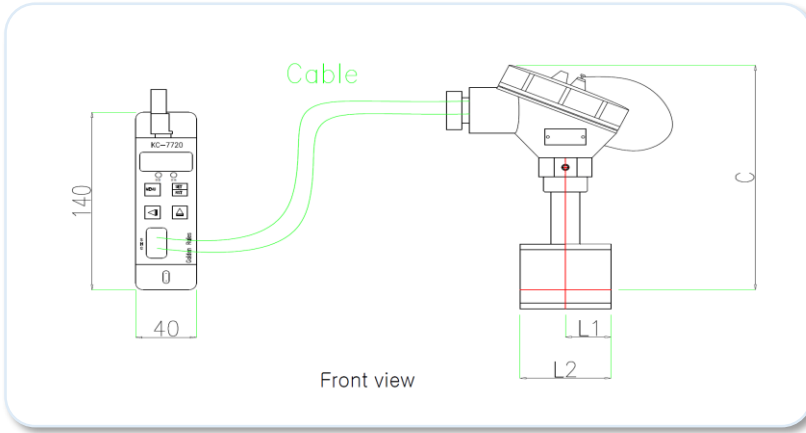
1/4", 3/8", 1/2", 3/4"

◆ Certification

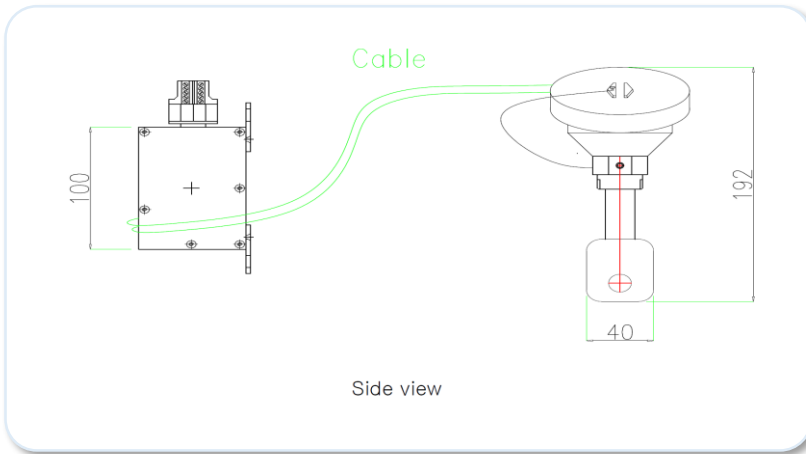
KC

Dimensional Specification & Chart I (KC-7720M)

● 1/4", 3/8", 1/2", 3/4" NPT – Front view



● 1/4", 3/8", 1/2", 3/4" NPT – Side view



SIZE for NPT			
Size	C	L1	L2
1/4"	177	30	60
3/8"	177	30	60
1/2"	177	30	60
3/4"	177	30	60

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

Piping Requirement (KC-7720M inline type)

Straight Pipe Length Requirements at 1 atm			
Piping condition	KC-7720M 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

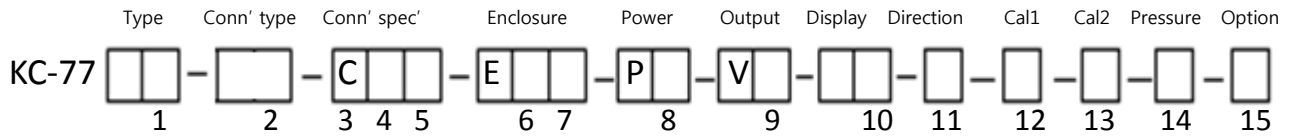
Note : (1) Number of diameters (D) of straight pipe required between upstream disturbance and the flowmeter.
 (2) Number of diameters (D) of straight pipe required downstream of the flowmeter.
 (3) For comparison purposes only. Table shows number of diameter(D) of upstream straight pipe length required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

제품특징

장점

- Microprocessor converter MC
- Fast maintenance with 100% localization
- Turndown ratio 1000:1 basic
- Instantaneous flow rate indication (LED)
- Mass flow measurement method
- Simple signal processing and calibration in the field
- DC24V, DC4~20mA, RS-485 basic function
- Fast response time, high accuracy, excellent durability, low price
- Excellent reproducibility, excellent long-term stability
- Best price/performance ratio, no moving parts
- Easy adaptability to other applications
- Wide flow range (NPT ¼" ~ ¾")
- Less direct pipe section of upper piping (10~5D)
- Fast response speed according to flow rate change (1 second)
- For high temperature gas: -40~150°C
- 10Bar Basic

Order Code - KC-7720M Series (High temp' type)



Type	Code 1
Gases	20M
Agency approved, customer specified	W

Input power	Code 8
DC 24 V ±10 %, 200 mA	2
Agency approved, customer specified	W

Calibration1(Air)	Code 12
Standard Calibration	A
Air, only for ½"(15A) and large pipe size	
Compressed Air, only for ½"(15A) and large pipe size	D
Customer Calibration	B
Air	

Connection type	Code 2
Female screw	1
LOK	2
VCR(Option)	3
Agency approved, customer specified	W

Output	Code 9
RS-485S	1
DC 4~20 mA	4
Agency approved, customer specified	W

Calibration2	Code 13
70 °F(21 °C) 14.7 psig (1.103 barg)	A
32 °F(0 °C) 14.7 psig (1.103 barg)	B
Agency approved, customer specified	W

Connection spec'	Code 3, 4, 5	
SIZE	NPT	PT
¼"	N1	P1
⅜"	N2	P2
½"	N3	P3
¾"	N4	P4
Agency approved, customer specified	W	

LED diplay	Code 10
No Readout	NR
Digital display	DD
Agency approved, customer specified	W

Pressure Limit	Code 14
Low pressure	L
Below 43 psig (3 barg)	
Medium pressure	M
Below 145 psig (10 barg)	
High pressure	H (option)
Below 435 psig (30 barg)	

Enclosure ⁵	Code 6,7
IP56 Remote control	N2
Agency approved, customer specified	W

Flow direction	Code 11
Horizontal Free or Vertical UP	1
Horizontal Free or Vertical Down	2
Agency approved, customer specified	W

Option	Code 15
Agency approved, customer specified	W
Sensor Probe : 316LSS	
Sensor Tube : 316SS, 316LSS	

Note

1. Screws should be classified into ¼", ⅜", ½", and ¾".
2. The flowmeter body requires T6 (104°F [40°C]) by the approval of the relevant agency.
- 3 Wire resistance should be 8Ω or less.
4. The turndown ratio is from 100:1 minimum to 1000:1 maximum.
5. SFPS stands for Standard Feet per Seconds and is based on 14.7 psia (1.01 bara) 70°F (21.1°C).
6. The customer's specifications must not exceed the temperature and pressure limits of Golden Rule's KC-7720 M series products.



Golden Rules

• GOLDEN RULES

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**Air & Gas
Mass & Total flowmeter
Specialized manufacturer**

전국 대리점

Certified in accordance with

KC Q ISO 9001 : 2015

KC Q ISO 14001 : 2015

 (주)골든룰