



AET control

HG5 SERIES METAL TUBE ROTAMETER



HG5 Series

Metal Tube Rotameter

HG5 series metal tube rotameter (also called variable area flow meter) is a kind of measuring meter which the flow rate is changing along with the area and is widely used in the process control of industrial automation. It has the merit of little volume, broad measuring range and convenience for use. It can be used to measure liquid, gas and vapor flow especially fits for the flow rate measurement of low flow velocity and little flow rate.



HG5 series metal tube rotameter has local indication type and smart remote type with a pointer LCD displaying instantaneous/ accumulated flow rate, upper-limit and lower-limit alarm output, accumulative pulse output, batch control, standard two-wire 4-20mA current output, ect. Additionally, this instrument employs advanced microprocessing central chip and high-quality industrialized components of Motorola corporation to ensure the good performances of flowmeters in all applicational fields.

For many years metal tube rotameter are well received by many industries such as petrochemical, steel and iron, electric power, metallurgy, light industry, food, pharmacy and water processing.

MAIN FEATURES

- Firm work, little maintenance and long life
- Low requirements to straight pipe part
- Broader ratio of flow rate 10:1
- Two-wire LCD indicator; instant/accumulated display of flow rate are available; backlight option.
- Single axis and sensitive display
- Rotation of non-contact magnetic coupling
- Can be applied to hazardous occasions such as flammable and explosive ones
- All-metal structure, fit for high temperature, high pressure and mediums with strong erosion.
- power supply such as two-wire system, battery, alternating current option ● Multi-parameters calibration function
- Function of date recovery, date copy and power-off protection

TECHNICAL PARAMETERS

Measuring range : water (20°C) 1- 200000 l/h

Air (20°C, 0.1013 Mpa) 003-4000m³/h

Make reference to flow rate sheet, order for special flow rate

Ratio of spans : standard type 10 : 1 special type 20 : 1

Accuracy : standard type class1.5 special type class1.0

Pressure Class : standard type : DN15-DN50 4.0Mpa DN80 –DN200 1.6Mpa

Special type : DN15-DN50 25Mpa DN80 –DN200 16Mpa

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Pressure class of clamp cover is 11.6 Mpa

Contact the plant for special type before choosing the type and ordering

Pressure loss : 7kPa-70kPa

Medium temperature : standard type : -80°C~ + 200°C : PTFE : 0°C~ 85°C

High temperature type : at most 400°C

Medium viscosity : DN 15 : $\eta < 5\text{mPa}\cdot\text{s}$ (F15.1-F15.3)

$\eta < 30\text{mPa}\cdot\text{s}$ (F15.4-F15.8)

DN 25 : $\eta < 250\text{mPa}\cdot\text{s}$

DN 50-DN 150 : $\eta < 300\text{mPa}\cdot\text{s}$

Ambient temperature : liquid crystal type -30°C~+85°C

Pointer type -40°C~ +120°C

Connection forms: standard type: DIN 2510 standard flange

Special type : flange and thread appointed by users of any standard

Cable interface : M20 × 1.5

Power Supply : standard type : 24V DC two-wire 4~20 mA (10.8 VDC ~ 36 VDC)

Alarm output : upper limit and lower limit instant flow rate alarm

Standard type: collect electrode open circuit output (at most 100mA@ 30VDC inner impedance 100Ω)

Special type : relay output (contact capacity at most 5A @ 250 VAC)

pulse output: accumulated pulse output, least interval 50 milliseconds

Liquid crystal display: indication range of instant flow rate : 0-50000

Indication range of accumulated flow rate : 0-99999999

Protection class : IP65

Explosion-proof symbols: intrinsically safe ia II CT6

MODEL SELECTION

Code	Measuring tube structure A	
HG-50	Low in and Top out	
HG-51	Low in and Top horizontally out	
HG-52	Low horizontally in and Top horizontally out	
HG-53R	Right in and left out	
HG-53L	Left in and right out	
Code	Connecting fluid material B	
R0	SS316	
R1	SS304	
Rp	PTFE (F4 liner) (only HG-51, HG-52, HG-53R, HG-53L)	
Ti	Ti alloy (only HG-51, HG-52, HG-53R, HG-53L)	
RL	316L	
Code	Tube caliber C	
DN15	15	
DN25	25	
DN50	50	
DN80	80	
DN100	100	
DN150	150	

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Explosion separation type d II CT6

DN200	200	
	Code	Accessory mechanism D
	None	
	T	Clamped type (only HG-51, HG-52, HG-53R, HG-53L)
	Z	Damping type
	G	High temperature type
	Y	High pressure type
	Code	Code combination of Indicator
	E	See the following sheet

HG-50 R0 DN50 G E

Measuring Tube structure A		Connect-liquid material B		Pipe caliber C		Accessory mechanism D	
50	Low in and Top out	R0	0Cr18Ni12Mo2Ti	DN15	DN100	None	
		R1	1Cr18Ni9Ti	DN25	DN150	T	Clamp type
		Rp	PTFE (F4 liner)	DN50	DN200	Z	Damping type
		Ri	Ti alloy	DN80		G	High temperature type
		RL	316L			Y	High pressure type
51	Low in and Top horizontally out	R0	0Cr18Ni12Mo2Ti	DN15	DN100	None	
		R1	1Cr18Ni9Ti	DN25	DN150	Z	Damping type
		RL	316L	DN50	DN200	G	High temperature type
				DN80		Y	High pressure type
52	Low horizontally in and Top horizontally out	R0	0Cr18Ni12Mo2Ti	DN15	DN100	None	
		R1	1Cr18Ni9Ti	DN25	DN150	Z	Damping type
		RL	316L	DN50	DN200	G	Hi-temperature type
				DN80		Y	Hi-pressure type

E	Indicator
M1	Local indication, square shell body, mechanical pointer displaying instant flow rate

M2	Power supply type square shell body, mechanical pointer displays instant flow rate, LCD display of instant/accumulated flow	
M3	Power supply type round shell body, no mechanical pointer indicates, LCD display of instant/accumulated flow	
	Power supply	
	No	Only for M1 indicator
	A	220VAC 50Hz power supply,4-20mA signal output, back light allowed
	B	Battery power supply, no signal output
	C	24VDC two wire power supply, 4-20mA signal output, no back light
	D	24VDC three-or-four-wire power supply, 4-20mA signal output, back light allowed
	Explosion-proof symbol	
	No	Normal non-explosion-proof
	1	Intrinsically safe ia II CT5 square shell body
	d	Explosion separation type d II BT4 round shell body
	C alarm or pulse output	
	No	No alarm or pulse output
	K1	Upper-limit alarm or one-way pulse output
	K2	Lower-limit alarm or one-way pulse output
	K3	Upper-limit or Lower-limit alarm or two-way pulse output
	EN	English

If M1 indicator chooses alarm, its mode is that starter goes with the transistor relay to perform alarm.

FLOW RATE SHEET

Water (L/h)				Air
Caliber	Float No.	Material Ro, R1, Ni, RL	Material PTFE	m3/h
DN15	F15.0 F15.1	1~10		0.03~0.3 0.05~0.5
	F15.2	1.6~16		0.07~0.7
	F15.3	2.5~25	1.6~16	0.11~1.1
	F15.4	4.0~40	2.5~25	0.18~1.8
	F15.5	6.3~63	4.0~40	0.28~2.8
	F15.6	10~100	6.0~60	0.4~4
	F15.7	16~160	10~100	0.7~7
	F15.8	25~250	16~160	1.0~10
	F15.9	40~400	25~250	1.6~16
		63~630	40~400	
DN25	F25.0 F25.1	63~630		
	F25.2	100~1000	63~630	3.0~30
	F25.3	160~1600	100~1000	4.5~45
	F25.4	200~2000		
	F25.5	250~2500	60~1600	7.0~70
	F25.6	320~3200		
	F25.7	400~4000	200~2000	12~120
	F25.8	500~5000	250~2500	
		630~6300	320~3200	18~180
DN50	F50.0 F50.1	500~5000		
	F50.2	630~6300	400~4000	18~180
	F50.3	1000~10000	630~6300	25~250
	F50.4	1600~16000	1000~10000	40~400
	F50.5	2000~20000	1600~16000	
		2500~25000		63~630
DN80	F80.0	1600~16000		
	F80.1	2000~20000		
	F80.2	2500~25000	1600~16000	70~700
	F80.3	4000~40000	2500~25000	120~1200
	F80.4	6300~63000	4000~40000	180~1800
DN100	F100.0 F100.1	4000~40000		
	F100.2	6300~63000	4000~40000	180~1800
	F100.3	8000~80000	6000~60000	
		10000~100000	8000~80000	300~3000

DN150	F150.0 F150.1 F150.2 F150.3	8000~80000 10000~10000 15000~150000 20000~200000	8000~80000	300~3000
DN200	F200.0 F200.1	15000~150000 20000~200000		