



HORIBA METRON

北京堀场汇博隆精密仪器有限公司



Mass Flow Controller 热式气体质量流量控制器

S48 28/HMT



* 流量规格 Full-scale flow rate

100L/min, 150L/min, 200L/min



S48 28热式气体质量流量控制器产品特点

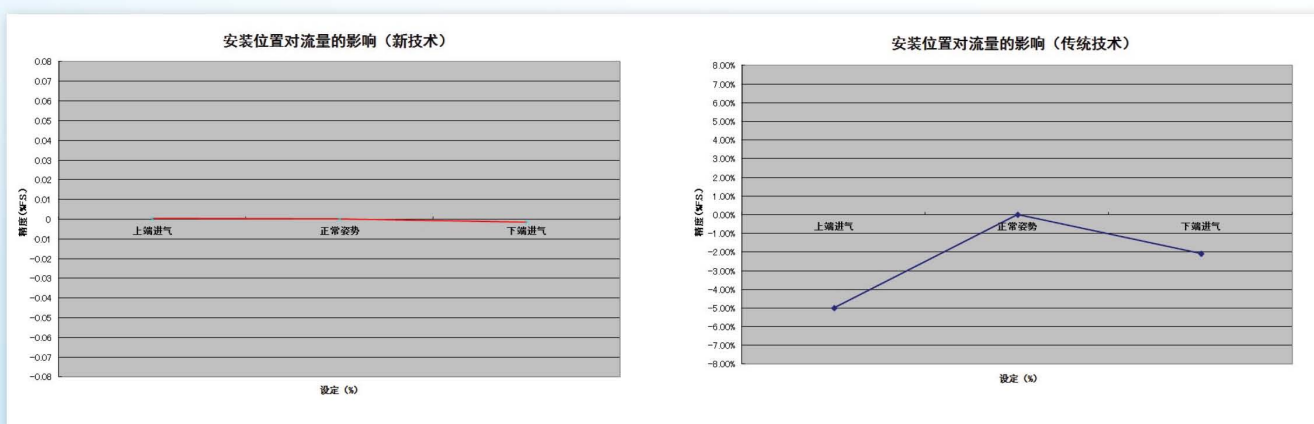
Characteristics of S48 28/HMT MFC

● 可以任意角度安装

S48系列模拟产品在设备的不同位置及角度安装时，对气体流量变化几乎没有影响，打破了传统MFC的安装条件限制，给用户带来便利。

Convenient Installation——at any angle

In different positions of the equipment or angles of installation, the gas flow of S48 series analog products changes little, breaking the traditional MFC installation conditions and giving users convenience.

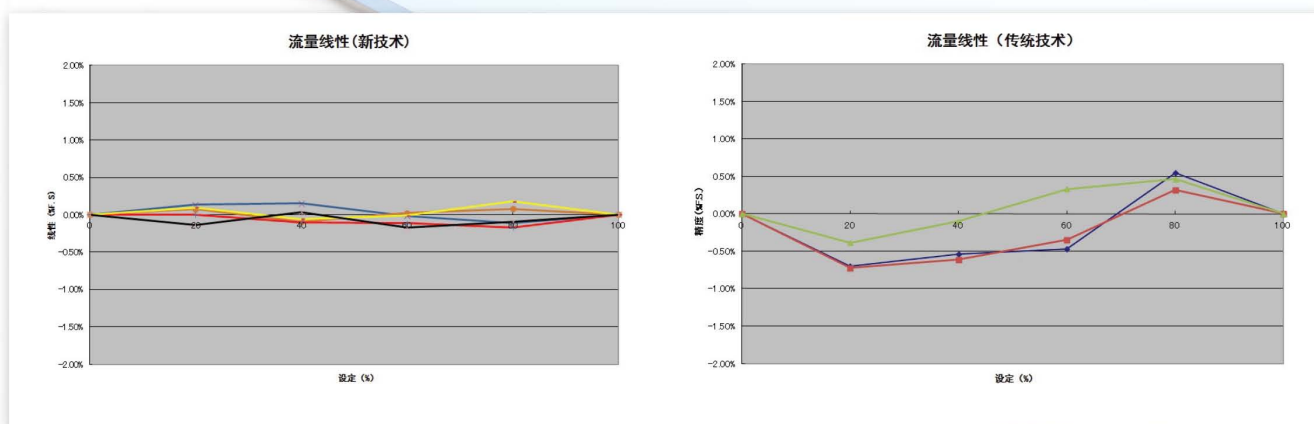


● 良好的线性——多段线性补偿

S48系列模拟产品在原有技术（两段线性修正技术）上，使用了先进的多段线性调整技术。使低端流量控制精度更加精确，实现良好的量程比。

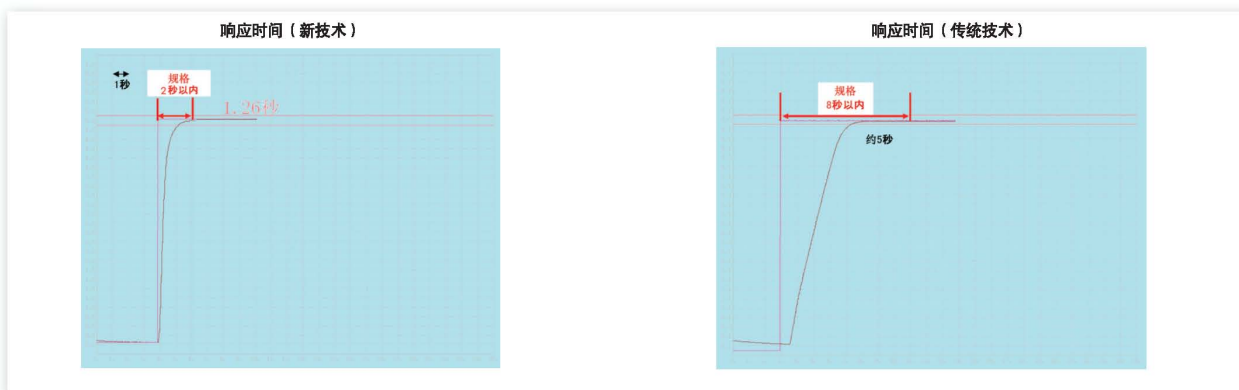
Fine Linearity——multi-segment linear compensation

On the basis of original technology (two-segment linear correction), S48 series analog products, using advanced multi-segment linear adjustment technology, make the flow control accuracy of the lower part of the range higher and turndown ratio better.



● 快速的响应

S48系列模拟产品2s以内的响应时间（电/气特性响应时间），使得系统响应速度加快，提高工艺与实验的水平和精度。



Fast Response

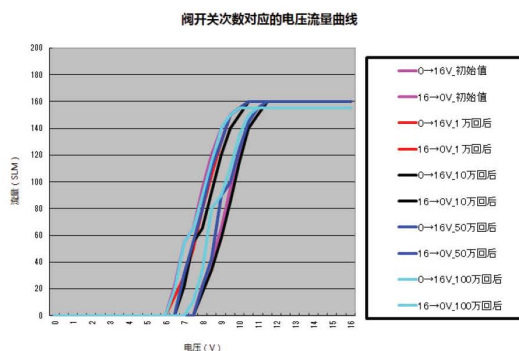
Response time (electricity / gas characteristic response time) of S48 series analog products is less than 2s, making the system response faster and improving the level and accuracy of users' process and experiment.

● 电磁阀使用寿命 ≥ 100 万次

S48 28/HMT产品的电磁比例阀通过耐久试验，可达到连续开启/关闭100万次以上，其电磁特性全部在规格范围内，充分确保了产品的耐久性和可靠性。

The service life of solenoid valve $\geq 1,000,000$ times

The solenoid proportional valve of S48 28/HMT series has passed through the endurance test. It can be turned on/off more than 1,000,000 times repeatedly and all of the solenoid properties are within the specifications. It fully ensure the durability and reliability of the product.



● 对零点漂移有效的抑制

零点漂移无法避免，影响数值的准确性。S48系列模拟产品采用先进技术，使零点漂移始终保持在0.06%F.S.(年漂移量)，提高了对目标气体的精密控制，减少误差、提高了产品质量。

Low Zero Drift—effective suppression of the zero drift

Zero drift affects the accuracy of the values, but it cannot be avoided. S48 series analog products have used advanced technology, so that the zero drift is always maintained at 0.06% F.S. (per year), improving the control precision of the target gas, reducing errors and improving the quality of products.

● 全球化的零配件供应

——传感器、分流器、精密元器件日本进口

引进分流器、精密电阻等部件，可以保证产品可靠性更高、极低的故障率。所采用的先进技术，使产品更加成熟、稳定。

Global supply of spare parts—

sensors, bypasses, precision components from Japan

To ensure high product reliability and low failure rate, we have introduced the bypasses, precision resistors and other components from Japan. Advanced technologies make our products more mature and stable.

● 良好的选择性

提供 $\pm 15V$ 双电源、24V单电源供电模式，并且电气连接插头有D-SUB15，D-SUB9两种可选。

Good Selectivity

Power mode: $\pm 15V$ dual power supply or 24V single supply
Electric connector: D-SUB15 or D-SUB9

应用领域
Application

• 半导体 Semiconductor • 分析仪器 Analysis instruments • 热处理 Heat treatment • 冶金 Metallurgy
• 真空镀膜 Vacuum deposition • 太阳能电池 Solar cell • 环境 Environment • 化工 Chemical industry

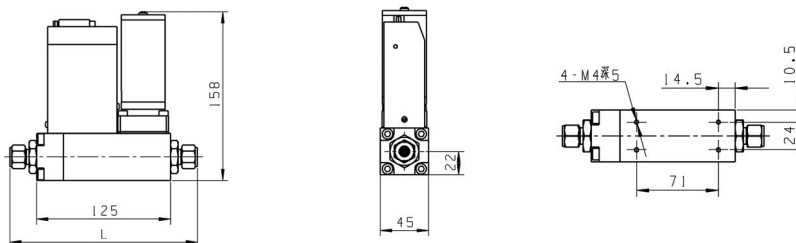
S48 28热式气体质量流量控制器技术指标和规格

Table S48 28/HMT MFC technical specifications

number	item	S48 28/HMT	
1	流量规格 Full-Scale Flow Rate	100L/min, 150L/min, 200L/min	
2	调节阀类型 Valve type	电磁调节阀 Solenoid valve	
3	调节阀静止状态 Valve rest position	常闭 Normal close	
4	安装角度 Mounting orientation	任意 Free	
5	流量控制范围 Flow rate control range	5%~100%	
6	流量测量范围 Flow rate measuring range	0~100%	
7	响应时间 Response time	2s(T98, 设定值的 set value's $\pm 2\%$ F.S.)	
8	工作环境温度 Operation temperature	5 C ~45 C	
9	精度保证温度 Accuracy guaranteed temperature range	15 C ~35 C	
10	精度 Accuracy	$\pm 1.0\%$ F.S.	
11	线性 Linearity	$\pm 0.5\%$ F.S.	
12	重复精度 Repeatability	$\pm 0.2\%$ F.S.	
13	工作压差范围 Differential pressure	100L/min:(0.1~0.3)MPa 150L/min:(0.15~0.3)MPa 200L/min:(0.2~0.3)MPa	
14	耐压 Pressure resistance	3MPa	
15	漏率 Leak Integrity	1×10^{-8} Pa · m ³ /s (He)	
16	管路接头 Fittings	Swagelok: 3/8" Φ 10mm VCR: 1/2"	
17	供电电源 Power supply	± 15 VDC ($\pm 5\%$) +15V, <100mA; -15V, <200mA	24VDC, <350 mA
18	流量设定信号 Flow rate setting signal	(0~5)VDC 输入阻抗 Input impedance > 1M Ω	4~20mA, or 1~5VDC, or 0~5VDC
19	流量输出信号 Flow Rate output Signal	(0~5)VDC 负载输出电流能力 Load output current capability ≤ 3 mA	4~20mA, or 1~5VDC, or 0~5VDC
20	电气接头 Electrical connector	D-SUB15, D-SUB9	
21	重量 Weight (kg)	2.8	

S48 28热式气体质量流量控制器产品尺寸

S48 28/HMT MFC external dimensions



接头形式	L
Swagelok $\Phi 10$	181
Swagelok 3/8"	181
VCR 1/2"	180

北京堀场汇博隆精密仪器有限公司由全球顶级热式质量流量控制器制造商——HORIBA STEC、与中国知名热式质量流量控制器制造商——北京汇博隆仪器有限公司共同出资成立，是以研发、生产、销售热式质量流量控制器为主业的高新技术企业。

Beijing HORIBA METRON Instruments Co., Ltd is co-founded by the world's top mass flow controller manufacturer - HORIBA STEC, and Chinese well-known mass flow controller manufacturer - Beijing METRON Instrument Co., Ltd. Beijing HORIBA METRON is a high-tech enterprise based on R & D, production, marketing of thermal mass flow controller.



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