



热式气体质量流量控制器/流量计

Grylls 5900

series product information



热式质量流量控制器/流量计

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Grylls 5900系列质量流量控制器/流量计可精确测量和控制气体流量。该系统的核心是一个非常可靠和准确的流量传感器，它产生与流量线性的电输出信号，用于反馈指示记录。

Grylls 5900系列质量流量控制器可以准确测量和控制气体流量，快速的指令变化，几乎没有超调。这个系列质量流量控制器提供独特的PID控制回路，该回路经过平衡，以匹配独特的传感器和阀门特性。全新设计的高精度小型比例电磁阀允许几乎在各种流量和压力条件下稳定运行。实际的流体动态受到控制，从而可在最短的时间内更平稳地过渡到稳定状态。



1.精确测量和控制

The 5900 series has high precision and wide control range.

Accuracy up to $\pm 1\%$ of full scale
Turndown ratio 50 : 1
(optional:100:1)

2.宽泛的流量范围

The 5900 Series can have a full scale flow as low as **2sccm**.

Model 5900 Series can monitor or control gas flows up to **3050 slm**.

3.多种通信选项

Traditional 0-5 Vdc and 4-20mA analog options as well as RS232/RS485 digital communications are available (Modbus RTU protocol).

4.多气体/多量程能力

The 5900 Series multi-gas and multi-range capabilities. Storage and pre-programming of up to 60 gas calibrations easily permits users to switch between different gasses and ranges on a single device.

5.可选项

- 1) High pressure rating - up to 1450 psi (g) / 100bar (g)
- 2) Water/dust-resistant : ip65

6.本体显示和按钮

Display of flow rate, total and measuring unit. Defining a set point (5900D series only)

7.Grylls UCS软件

Efficient device management with the free <Grylls-UCS> software:

- » **View flow rate & cumulative flow**
- » **Change set points**
- » **Change set communication address**
- » **Visualization of measured data**

- » **Adjusting control parameter**
- » **Datalogging**
- » **Change digital / analog communication mode**
- » **Multiple 5900 devices can be controlled at the same time**

8.应用

- | | | |
|--------------------------|---|---------------------------------|
| 1) Semiconductor | 5) Analytical instruments | 9) Experimental apparatus |
| 2) Photovoltaic industry | 6) Heat treatment | 10) Food, Beverage and Pharma |
| 3) Fuel cell | 7) Surface treatment | 11) Automobile electronics |
| 4) Vacuum industry | 8) CHEMICAL, PLASTICS, METAL AND GLASS INDUSTRY | 12) Bioprocessing & Bioreactors |

Note:

All specifications are 'typical specifications'. For an exact configuration, please contact Grylls for availability.

MODEL NAME	5910/11	5920/21	5930/31
FEATURE			
标准满标度流量 (氮气当量)	2SCCM~31SLM	30SLM ~ 305SLM	300SLM ~ 3050SLM
精度	±1% F.S.	±1% F.S.	±1% F.S.
调节比	5900 Series 50:1/ (optional:100:1) \ 5901 Series 100:1/ (optional:200:1)		
重复性	0.20% of Full Scale		
线性	Included in accuracy		
传感器响应时间	<300 ms		
整体反应时间 (达到满量程 ±2% 以内的稳定控制时间)	5910&5920-Series: <1 seconds 5930-Series: <1.5 seconds		
零点稳定性	<± 0.2% F.S. per year		
温度系数	Zero: <0.075% of F.S. per °C. Span: <1.0% of F.S. shift from original calibration over 10-50°C (50-122°F) range		
最大可控流量	103% Full Scale (N2), Digital mode only		
最大可测流量	110% Full Scale (N2), Digital mode only		

OPERATING CONDITIONS			
操作温度	0-50°C		
最小工作压差 (控制器)	2.9psi(d)/0.2bar(d)	Min.: 7.25 psi(d)/0.5bar(d) <100 slm Min.: 14.5psi(d)/1bar(d) >100slm	Min.: 14.5 psi(d)/1bar(d) <500 slm Min.: 43.5psi(d)/3bar(d) >500slm
最大工作压差 (控制器)	72.5 psi(d)/5 bar(d)		145 psi(d)/10 bar(d)
最大操作压力	435 psi(g)/30bar(g)\Option:Max1450psi(g)/100bar(g)		
外部泄露率	1x10 ⁻⁹ atm. cc/sec He		

MECHANICAL			
阀门类型	5900 Series Normally Closed/Optional:Normally Open \ 5901 Series NO Valve		
接液材料	316L Stainless Steel\Viton seals\EPDM seals\Silicone seals\FFKM seals		
安装方向	May be mounted in any position		
重量	About 5910:1.25kg / 5911:0.8kg	About 5920:1.9kg / 5921:1.4kg	About 5930:4.1kg / 5931:3.0kg

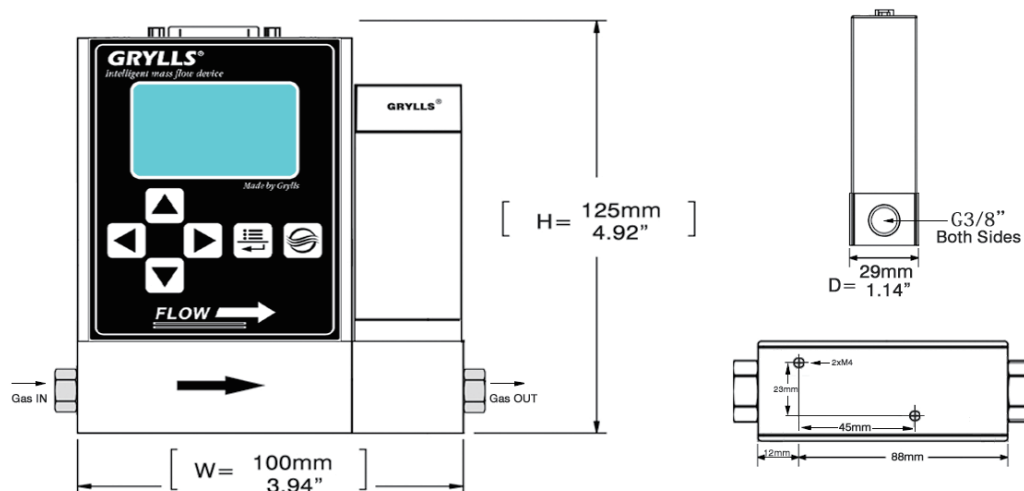
ELECTRICAL SPECIFICATIONS AND INTERFACE			
电气接口	15-Pin Male Sub D-Type (Digital mode only)/9-Pin Male Sub D-Type (Analog mode only)		
模拟量输入(控制器)	0-5 Vdc / 1-5 Vdc / 0-10 Vdc / 4-20 mA		
模拟量输出	0-5 Vdc / 1-5 Vdc / 0-10 Vdc / 4-20 mA		
数字量通讯	RS-232 Serial / RS-485 Serial / Modbus RTU Option: PROFIBUS / EtherNet/IP / DeviceNet / Modbus TCP/IP / EtherCAT / PROFIBUS-DP		
功率 供电电压 供电电流	About 12.0w 24Vdc @500 mA/ +15 Vdc @400 mA -15 Vdc @400 mA	About 18.0w 24Vdc @750 mA/ +15 Vdc @600 mA -15 Vdc @600 mA	About 24.0w 24Vdc @1000 mA

 LCD 显示屏
 本体操作按钮

1) Set point Flow , 2) Conversion of gas coefficient, 3) PID function, 4) LCD display (flow output, cumulative flow)

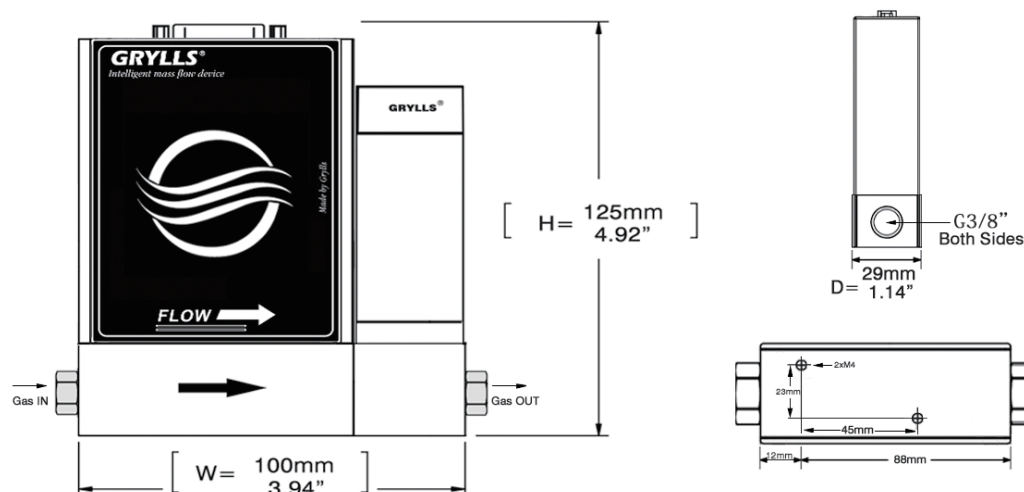
OPERATIONAL	5910/11 Series	5920/21 Series	5930/31 Series
满量程范围 (氮气当量)	2 sccm to 10 sccm	30slm to 50 slm	300slm to 500 slm
	10sccm to 50 sccm	50slm to 100 slm	500slm to 1000 slm
	50sccm to 500 sccm	100slm to 150slm	1000slm to 1500slm
	500sccm to 3000 sccm	150slm to 200 slm	1500slm to 2000 slm
	3slm to 10 slm	200slm to 250slm	2000slm to 2500slm
	10slm to 20 slm	250slm to 305slm	2500slm to 3050 slm
	20slm to 31 slm	/	/

5910D 系列质量流量控制器



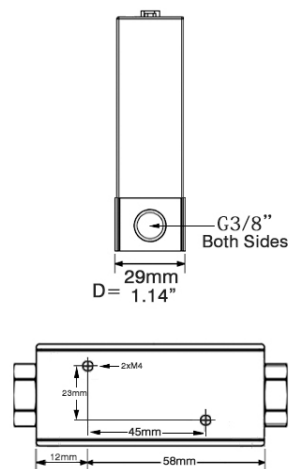
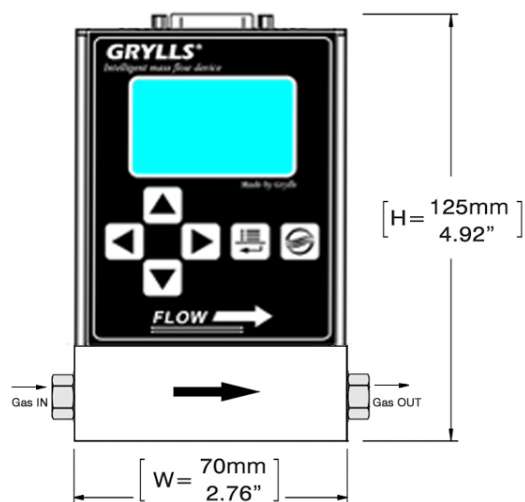
Electrical Connection	Mechanical Dimensions	Process Connections
DB15 male connector	4.92"H x 3.94"W x 1.14"D	G3/8 Female Thread

5910 系列质量流量控制器



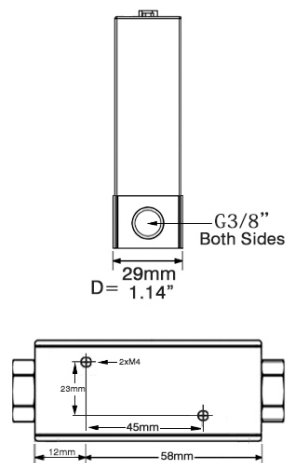
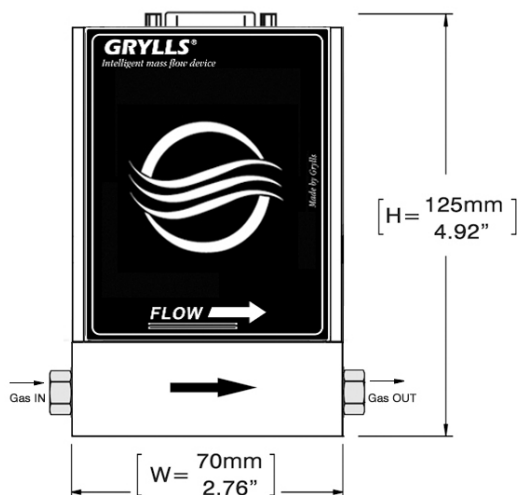
Electrical Connection	Mechanical Dimensions	Process Connections
DB9 male /DB15 female	4.92"H x 3.94"W x 1.14"D	G3/8 Female Thread

5911D 系列质量流量计



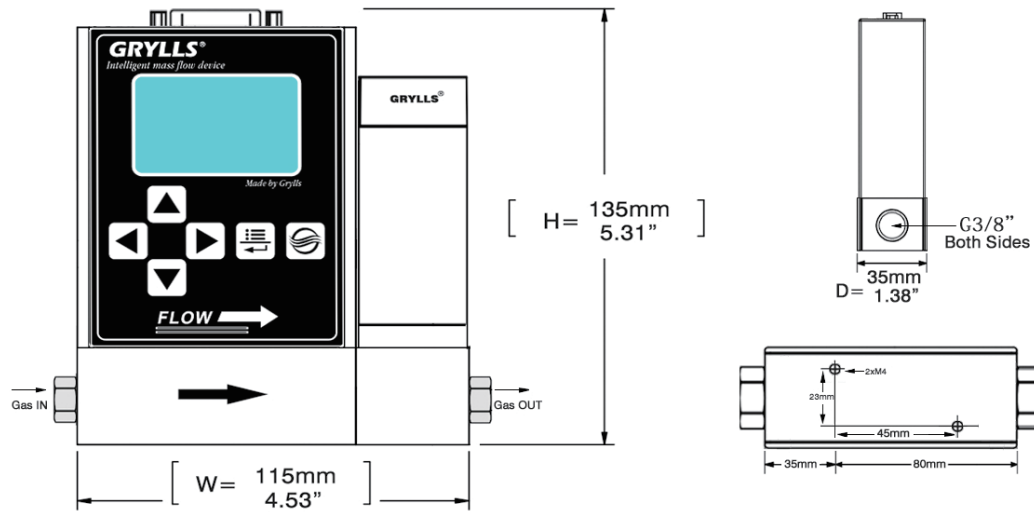
Electrical Connection	Mechanical Dimensions	Process Connections
DB15 male connector	4.92"H x 2.76"W x 1.14"D	G3/8 Female Thread

5910 系列质量流量计



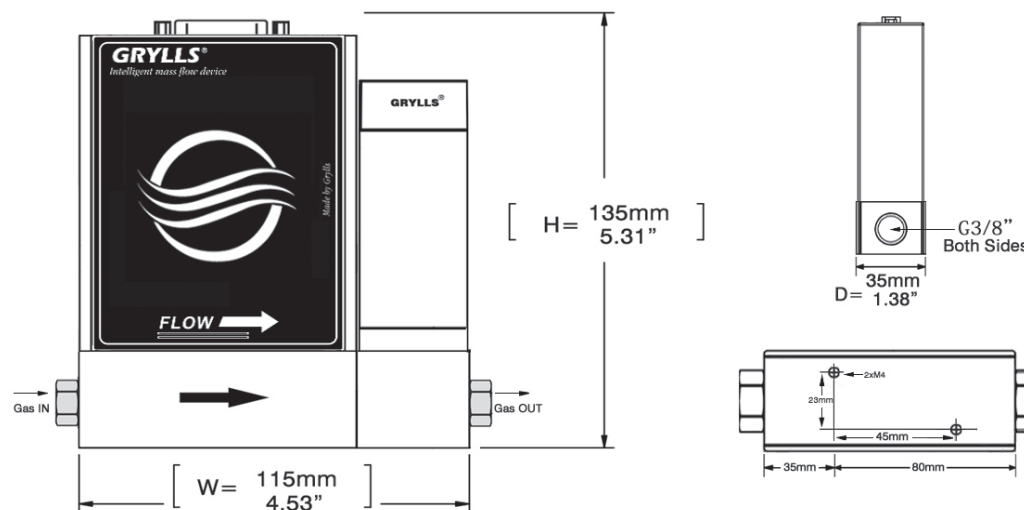
Electrical Connection	Mechanical Dimensions	Process Connections
DB9 male /DB15 female	4.92"H x 2.76"W x 1.14"D	G3/8 Female Thread

5920D 系列质量流量控制器



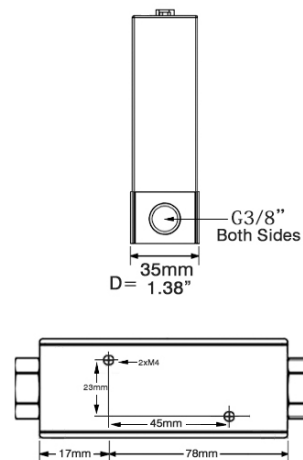
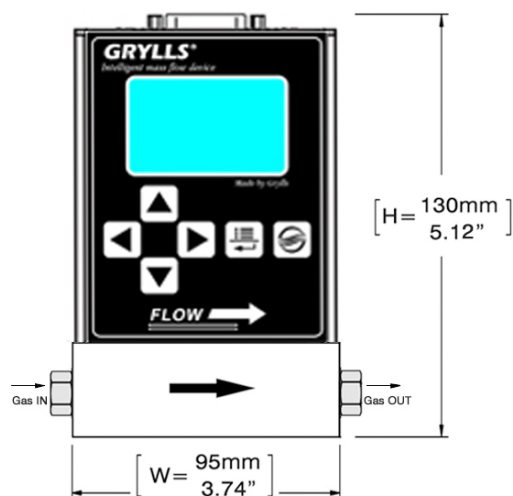
Electrical Connection	Mechanical Dimensions	Process Connections
DB15 male connector	5.31"H x 4.53"W x 1.38"D	G3/8 Female Thread

5920 系列质量流量控制器



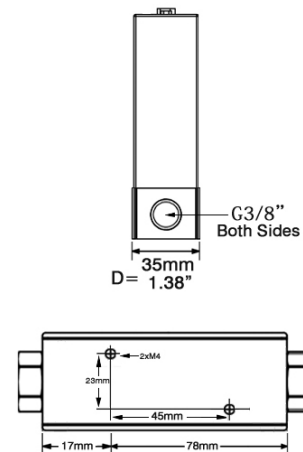
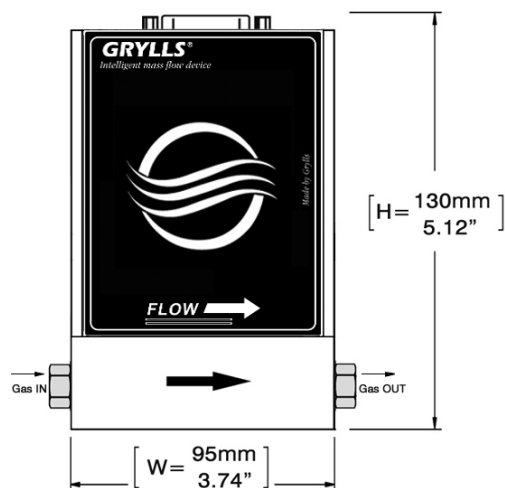
Electrical Connection	Mechanical Dimensions	Process Connections
DB9 male / DB15 female	5.31"H x 4.53"W x 1.38"D	G3/8 Female Thread

5920D 系列质量流量计



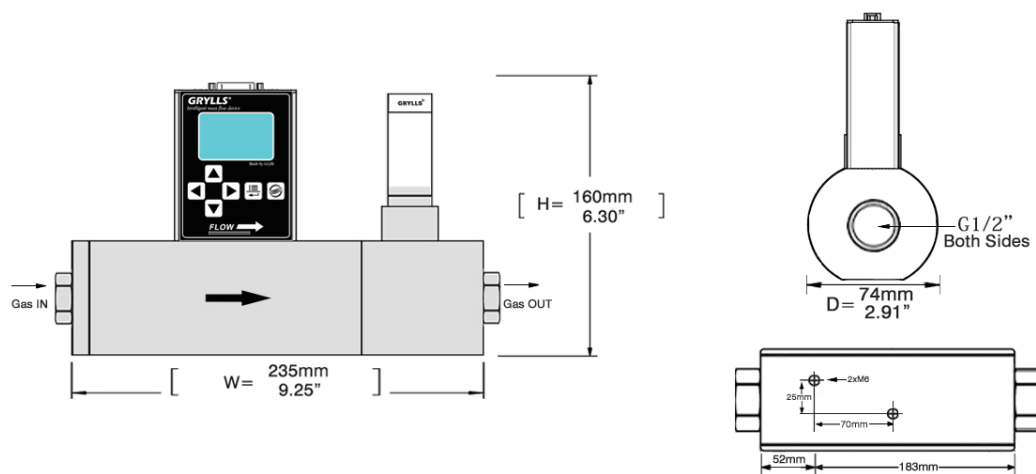
Electrical Connection	Mechanical Dimensions	Process Connections
DB15 male connector	5.12"H x 3.74"W x 1.38"D	G3/8 Female Thread

5920 系列质量流量计



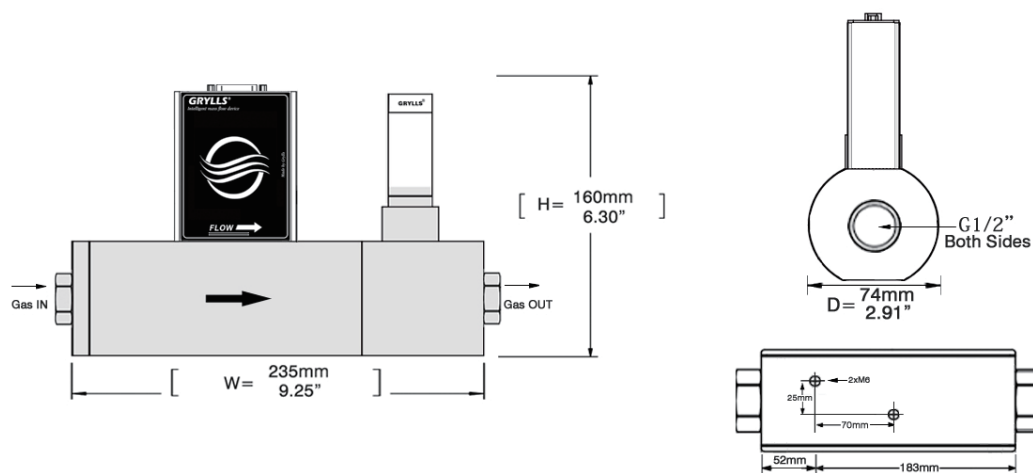
Electrical Connection	Mechanical Dimensions	Process Connections
DB9 male /DB15 female	5.12"H x 3.74"W x 1.38"D	G3/8 Female Thread

5930D 系列质量流量控制器



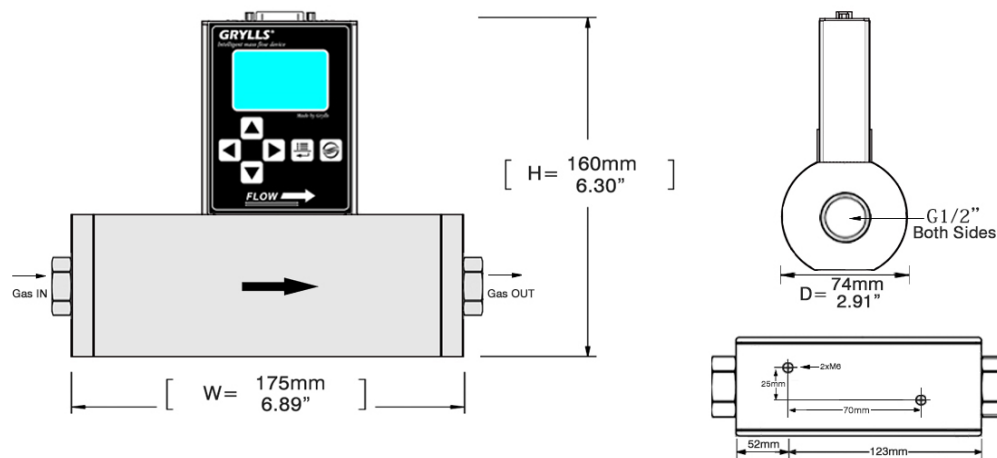
Electrical Connection	Mechanical Dimensions	Process Connections
DB15 male connector	6.30"H x 9.25"W x 2.91"D	G3/8 Female Thread

5930 系列质量流量控制器



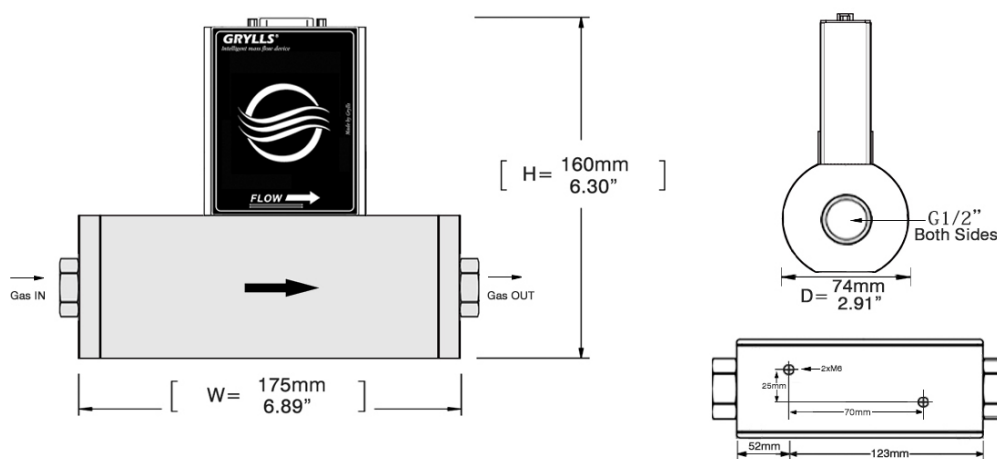
Electrical Connection	Mechanical Dimensions	Process Connections
DB15 male connector	6.30"H x 9.25"W x 2.91"D	G3/8 Female Thread

5930D 系列质量流量计



Electrical Connection	Mechanical Dimensions	Process Connections
DB15 male connector	6.30"H x 6.89"W x 2.91"D	G3/8 Female Thread

5930 系列质量流量计



Electrical Connection	Mechanical Dimensions	Process Connections
DB15 male connector	6.30"H x 6.89"W x 2.91"D	G3/8 Female Thread