

## APU series

**重复性 ACCURACY: ±0.1 %**  
**响应时间 QUICK RESPONSE: 0.5 s**

- 根据外部传感器的反馈瞬时控制压力流量
- 通过控制电压来连续控制压力/流量
- 允许通过外部传感器监测被测物前端的压力
- 使用了可以实现ΔP和恒差压力控制的外部压力传感器
- 可控制各种规格的流量
- 可用于控制多种压力规格（正压、负压、连成压）

- Feedback from external sensor instantly regulates pressure and flow rate.
- Capable of controlling pressure and flow rate by continuous voltage.
- An external sensor allows pressure monitoring just before the test piece.
- An external sensor enables ΔP control and constant differential pressure control.
- Various models available to control small to large flow volumes.
- Various models available for a variety of pressure applications.



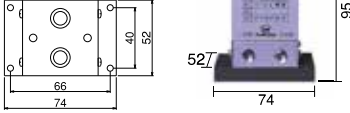
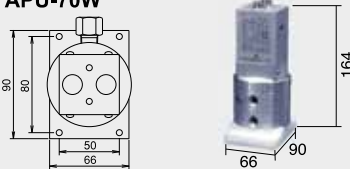
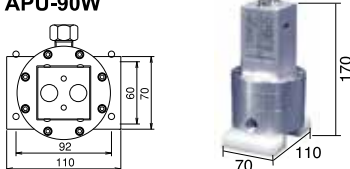
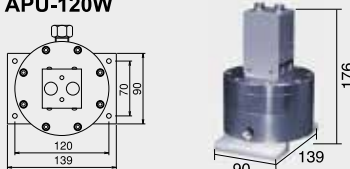
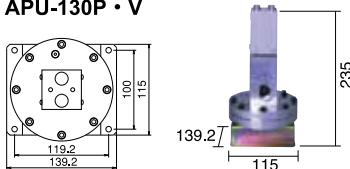
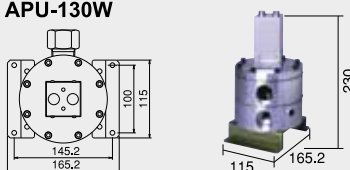
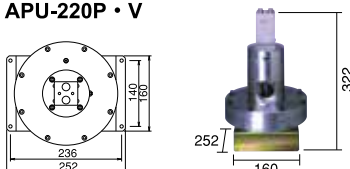
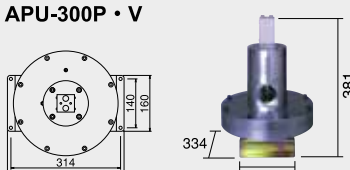
### 流量特性数据 Flow Rate Characteristics Data

负压 Negative Pressure					正压 Positive Pressure					
2500	2000	100	10	1	型号 Model	1	10	100	2000	2500
				0.4	APU-508W	1				
				0.4	APU-514W	3				
				0.7	APU-520W	5				
			9		APU-70W				180	
			23		APU-90W				240	
			55		APU-120W				280	
		130			APU-130W				500	
		130			APU-130P				500	
					APU-130V					
					APU-220P				1700	
	1500				APU-220V					
					APU-300P					2500
2200					APU-300V					


●对于APU的一次压力，当正压：F.S.+100kPa以上，或负压：-90kPa以下抽真空时，流量为最大流量。（视测量环境而定）  
 ●Pressure for APU primary pressure is the maximum flow rate when positive pressure is F.S. +100kPa or higher, or when negative pressure is vacuum drawing of -90kPa or lower (Varies depending on the measurement environment).

# APU可通过信号便捷灵活地控制压力

Capable of Freely Controlling Pressure Through Electronic Signals.

外形尺寸 Dimensions	孔径 Orifice	压力范围 (kPa) Pressure Range (kPa)	用途 Application
<b>APU-508W</b> <b>APU-514W</b> <b>APU-520W</b> 	APU-508W $\phi$ 0.8	P: 0~20, 50, 100, 200, 500, 990 V: 0~-20, -50, -100(-67) W: 0~ $\pm$ 20, $\pm$ 50, $\pm$ 100, $\pm$ 200, $\pm$ 500, $\pm$ 990	<ul style="list-style-type: none"> <li>●压力传感器的校正器</li> <li>●晶圆检测</li> <li>●硅片研磨</li> <li>• Standard pressure supply to the pressure sensor</li> <li>• Wafer test probing</li> <li>• Air supply for silicon wafer polishing</li> </ul>
	APU-514W $\phi$ 1.4	P: 0~5, 10, 20, 50, 100, 200, 500, 990 V: 0~-5, -10, -20, -50, -100(-67) W: 0~ $\pm$ 5, $\pm$ 10, $\pm$ 20, $\pm$ 50, $\pm$ 100, $\pm$ 200, $\pm$ 500, $\pm$ 990	
	APU-520W $\phi$ 2.0	P: 0~5, 10, 20, 50, 100, 200 V: 0~-5, -10, -20, -50, -100(-67) W: 0~ $\pm$ 5, $\pm$ 10, $\pm$ 20, $\pm$ 50, $\pm$ 100, $\pm$ 200	
<b>APU-70W</b> 	$\phi$ 3.5	P: 0~50, 100, 200, 500, 990 V: 0~-50, -100(-67) W: 0~ $\pm$ 50, $\pm$ 100, $\pm$ 200, $\pm$ 500, $\pm$ 990	<ul style="list-style-type: none"> <li>●成型设备的压力控制</li> <li>●气密检漏仪的气源</li> <li>●用于流量测量的气源</li> <li>●各种测量设备的气源</li> </ul>
<b>APU-90W</b> 	$\phi$ 5	P: 0~20, 50, 100, 200, 500, 700 V: 0~-20, -50, -100(-67) W: 0~ $\pm$ 20, $\pm$ 50, $\pm$ 100, $\pm$ 200, $\pm$ 500, $\pm$ 700	<ul style="list-style-type: none"> <li>• Pressure control for molding apparatus</li> <li>• Air supply for air leak testers</li> <li>• Air source for flow rate measurement</li> <li>• Air supply for various testing equipment</li> </ul>
<b>APU-120W</b> 	$\phi$ 7	P: 0~5, 10, 20, 50, 100, 200, 500 V: 0~-5, -10, -20, -50, -100(-67) W: 0~ $\pm$ 5, $\pm$ 10, $\pm$ 20, $\pm$ 50, $\pm$ 100, $\pm$ 200, $\pm$ 500	<ul style="list-style-type: none"> <li>●功能阀流量测量(汽车部件)</li> <li>●碳罐流量测量</li> <li>●微压流量测量</li> <li>●气体流量计流量检查、燃气用具流量检查</li> <li>●气密检漏仪气源</li> <li>●流量计气源</li> </ul>
<b>APU-130P·V</b> 	$\phi$ 17	P: 0~10, 20, 50, 100 V: 0~-10, -20, -50, -100(-67)	<ul style="list-style-type: none"> <li>• Flow rate measurement for function valves (Motor vehicle parts)</li> <li>• Flow rate measurement for canisters</li> <li>• Micro-pressure flow rate measurement</li> <li>• Gas meter flow inspection, gas appliance flow inspection</li> <li>• Air supply for air leak testers</li> <li>• Air supply for rate measurement</li> </ul>
<b>APU-130W</b> 	$\phi$ 12	P: 0~5, 10, 20, 50, 100, 200 V: 0~-5, -10, -20, -50, -100(-67) W: 0~ $\pm$ 5, $\pm$ 10, $\pm$ 20, $\pm$ 50, $\pm$ 100, $\pm$ 200	<ul style="list-style-type: none"> <li>●低压压铸压力控制</li> <li>●液晶面板密封设备</li> <li>●功能阀流量测量(汽车部件)</li> <li>●碳罐流量测量</li> <li>• Pressure control for low pressure die-casting</li> <li>• LCD panel sealing devices</li> <li>• Flow rate measurement for function valves (Motor vehicle parts)</li> <li>• Flow rate measurement for canisters</li> </ul>
<b>APU-220P·V</b> 	APU-220P $\phi$ 17 APU-220V $\phi$ 33	P: 0~10, 20, 50, 100 V: 0~-10, -20, -50, -100(-67)	<ul style="list-style-type: none"> <li>●功能阀流量测量(汽车部件)</li> <li>●控制膜片、纸张拉力和厚度</li> </ul>
<b>APU-300P·V</b> 	$\phi$ 46	P: 0~10, 20, 50, 100 V: 0~-10, -20, -50, -100(-67)	<ul style="list-style-type: none"> <li>• Flow rate measurement for function valves (Motor vehicle parts)</li> <li>• Tension and thickness control for film and paper</li> </ul>

## APU控制器 APU Controller

外形尺寸 Dimensions	设定电压规格 Set Voltage Specifications	功能 Function						
<b>APC-V-①</b> 	<table border="1"> <thead> <tr> <th>记号 Number</th> <th>设定电压 Set Voltage</th> </tr> </thead> <tbody> <tr> <td>1</td> <td><math>\pm</math> 1 V</td> </tr> <tr> <td>10</td> <td><math>\pm</math> 10 V</td> </tr> </tbody> </table>	记号 Number	设定电压 Set Voltage	1	$\pm$ 1 V	10	$\pm$ 10 V	<ul style="list-style-type: none"> <li>●将电源、可变设定器、数字显示器、切换开关等装在一个盒子里，通过面板安装装置的形式集成的控制器。</li> <li>●电源 AC100 V 0.5 A</li> <li>●显示器 APC-V-1 0~<math>\pm</math>1.0000 APC-V-10 0~<math>\pm</math>10.000</li> <li>●设定器切换开关 6位旋转开关</li> <li>• A controller which houses a power supply, variable setter, digital display unit, changeover switch, etc. in one unit with a design which can be fitted to equipment via panel mount.</li> <li>• Power supply 100 VAC 0.5 A</li> <li>• Indicator APC-V-1 0~<math>\pm</math>1.0000 APC-V-10 0~<math>\pm</math>10.000</li> <li>• Setter changeover switch 6 position rotary switch</li> </ul>
记号 Number	设定电压 Set Voltage							
1	$\pm$ 1 V							
10	$\pm$ 10 V							

# 应用 Applications

## 高精度流量测量 (定差压控制)

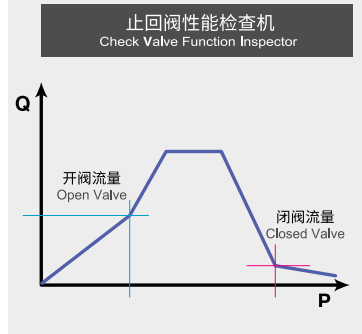
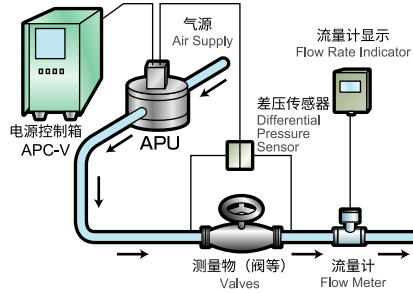
将测量物两端压差控制在一定范围, 同时测量流量

### 应用举例 Application Examples

- 各种喷嘴流量测量
- 各种阀开度测量
- 各种阀性能测量
- Various nozzle flow rate testing
- Various valve opening measurement
- Various valve performance testing

### 测量物举例 Applicable Parts

- 止回阀
- 节流阀
- 电磁阀
- 比例控制阀
- EGR阀
- Check Valves
- Throttle Valves
- Solenoid Valves
- Proportional Controlling Valves
- EGR Valves



## 高精度负载控制

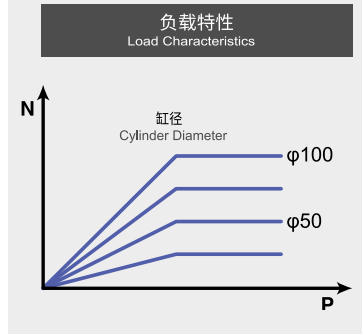
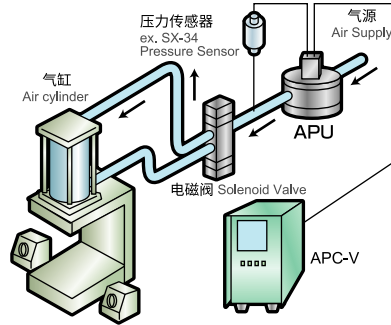
用于负载、加压管理

### 应用举例 Application Examples

- 冲压控制
- 填隙机
- 扭矩控制
- 机器人握力控制
- 精密研磨用负载控制
- 磁带制造
- 各种卷线工具
- 点焊
- Press pressure control
- Caulking devices
- Torque control
- Force control for robotic hands
- Load control for precision polishing
- Magnetic tape manufacturing
- Various coiling instruments
- Spot welding

### High Accuracy Load Control

Applied when managing load/ pressure, for instance.



## 各种传感器性能测试、各种传感器的综合测试

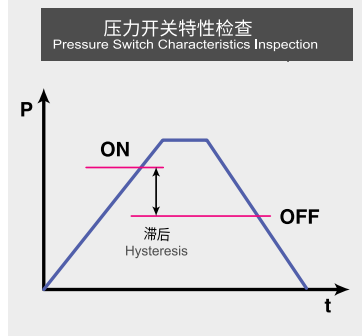
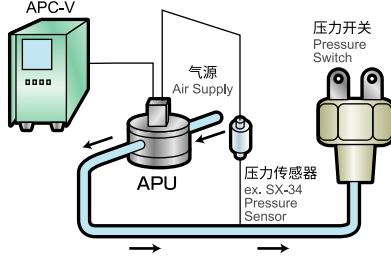
1. 压力传感器、负载传感器等
2. 压力表、压力开关

### 应用举例 Application Examples

- 基准器 (水柱、汞柱) 的控制
- 第二基准器 (高精度压力表) 的控制
- 各种压力开关的动作检查
- 滞后确认
- Controls primary standard manometers (Water/ mercury column manometers)
- Controls secondary standard manometers (High precision digital manometer)
- Function verification of various switches
- Hysteresis validation

### Various Sensor Performance Testing/ Various Sensor Comprehensive Inspections

1. Pressure sensor/ load sensor
2. Pressure gauge/ pressure switch

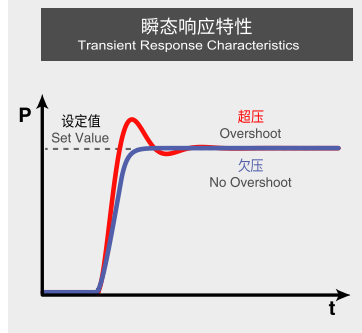
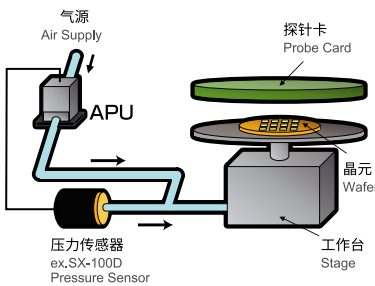


## 晶圆测试调查

- 通过调整响应速度来减少超调
- 气动执行机构高速高精度控制
- 更换高成本的电磁执行机构系统

### Wafer test probing

- Reducing an overshoot by adjusting response speeds.
- High speed and high precision control of pneumatic actuators
- Replacement of high cost electromagnetic actuator systems.



## APU系列输出特性举例

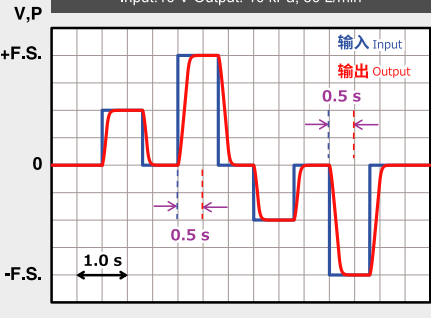
Examples of APU series Output Characteristics

特性取决于使用条件。

Characteristics depend on condition of usage.

### 阶跃输入/输出瞬态响应

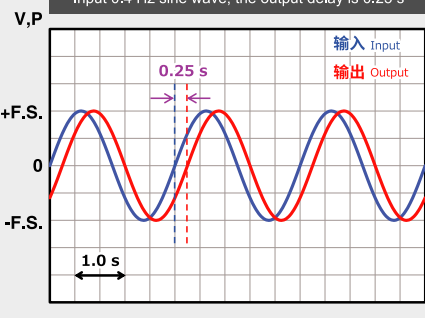
Step input/output transient response  
Input: 10 V Output: 10 kPa, 30 L/min



■ 针对阶跃输入, 在0.5s内响应  
Response time to step input is within 0.5 s.

### 正弦波输入/输出

Sine wave input/output  
Input 0.4 Hz sine wave, the output delay is 0.25 s



■ 输出压力可以跟踪输入波形。  
Output pressure can follow the input waveform.

# 型号 Model

# APU-120WP-20-2-1

- 1 形状 Size
- 2 压力控制范围 Pressure Control Range
- 3 压力范围 Pressure Range
- 4 传感器种类、精度、压力范围 Applied Sensor/ Sensor Sensitivity/ Pressure Range
- 5 控制电压 Control Voltage

## 1 形状 Size

记号 Number	形状 Size
508W	□ 50 mm
514W	
520W	
70W	○ 70 mm
90W	○ 90 mm
120W	○ 120 mm
130W	○ 130 mm
130P	
130V	
220P	○ 220 mm
220V	
300P	
300V	○ 300 mm

## 2 压力控制范围 Pressure Control Range

记号	压力控制范围
P	正压控制
V	负压控制
W	连程压控制
Number	Pressure Control Range
P	Positive Pressure Control
V	Negative Pressure Control
W	Compound Pressure Control

## 3 压力范围 (kPa) Pressure Range (kPa)

记号 Number
5
10
20
50
100
200
500
700
990

注: 负压的标准控制范围为-67kPa。  
Note: Typical vacuum pressure control range is up to -67 kPa.

## 4 传感器种类、精度、压力范围 Applied Sensor/ Sensor Sensitivity/ Pressure Range

记号 Number	传感器种类 Applied Sensor	传感器精度 Sensor Sensitivity	压力范围 Pressure Range
1	SX-100D	±0.15 % F.S.	5 ~ 990 kPa
2	SX-34	±1.0 % F.S.	20 ~ 700 kPa

## 5 控制电压 Control Voltage

记号	控制电压	压力控制范围
1	单压 0 ~ 1 V, 0 ~ -1 V	WP, WV, PP, VV
2	连程压 ±1 V	WW
3	单压 0 ~ 10 V, 0 ~ -10 V	WP, WV, PP, VV
4	连程压 ±10 V	WW
5	表压或连程压 0 ~ 5V ~ 10V (输出电压 ±5 V)	WW, WP, WV, PP, VV

Number	Control Voltage	Pressure Control Range
1	Gauge Pressure 0 ~ 1 V, 0 ~ -1 V	WP, WV, PP, VV
2	Compound Pressure ±1 V	WW
3	Gauge Pressure 0 ~ 10 V, 0 ~ -10 V	WP, WV, PP, VV
4	Compound Pressure ±10 V	WW
5	Gauge or Compound Pressure 0 ~ 5 V ~ 10 V (Voltage Output ±5 V)	WW, WP, WV, PP, VV

# 规格 Specifications

## 一般规格 General Specifications

控制精度	绝对精度: 视传感器而定 重复性: ±0.1% F.S	Control Accuracy	Absolute sensitivity: Conditional Repeatability: ± 0.1 % F.S.
控制电压	参照 5 控制电压选型	Control Voltage	Refer to 5 MODEL chart
电源	DC ±15 V 0.2 A	Power Supply	± 15 VDC 0.2 A
传感器精度	SX-100D (差压) 传感器耐压: 0 ~ 50 kPa 3倍F.S. 100 ~ 500 kPa 2倍F.S. 700 ~ 990 kPa 1.5倍F.S. 受压部材质: 黄铜 (BSB) 线性度: ±0.15% F.S. 温度特性: 零位移 ±0.03%F.S./°C 跨度位移 ±0.03%F.S./°C 压力范围: 5 ~ 990kPa	Sensor Sensitivity	SX-100D (Differential Pressure) Overpressure: Up to 0 ~ 50 kPa 3x of F.S. 100 ~ 500 kPa 2x of F.S. 700 ~ 990 kPa 1.5x of F.S. Material in Contact with Pressure Media: Brass (BSB) Linearity: ± 0.15 % F.S. Temperature Coefficient: Zero Shift ± 0.03 % F.S./ °C Span Shift ± 0.03 % F.S./ °C Pressure Range: 5 ~ 990 kPa
	SX-34 (直压) 传感器耐压: 2倍F.S. 受压部材质: 黄铜 (BSB) 线性度: ±1.0% F.S. 温度特性: 零位移 ±0.1%F.S./°C 跨度位移 ±0.1%F.S./°C 压力范围: 20 ~ 700kPa 负压只可选-100kPa		SX-34 (Gauge Pressure) Overpressure: 2x of F.S. Material in Contact with Pressure Media: Brass (BSB) Linearity: ± 1.0 % F.S. Temperature Coefficient: Zero Shift ± 0.1 % F.S./ °C Span Shift ± 0.1 % F.S./ °C Pressure Range: 20 ~ 700 kPa Vacuum pressure range is limited to -100kPa
使用气源	使用清洁稳定的干燥空气 推荐依据: ISO 8573-1: 2010 压缩空气纯度等级1、3、1	Test Air Supply	Use clean and stable air pressure Recommended conditions according to ISO 8573-1 : 2010 Compressed air purity classes 1, 3, 1

## APU规格 APU Specifications

型号 Model	流量 Flow Rate(L/min)		节流孔 Orifice (mm)	连接口径 Joint Size (inch)	P	W	V	阀 Valve Type
	正压 Positive Pressure	负压 Negative Pressure						
APU-508W	1	0.4	φ0.8	Rc1/8	○	○	○	三通阀 3 port valve
APU-514W	3	0.4	φ1.4	Rc1/8	○	○	○	
APU-520W	5	0.7	φ2.0	Rc1/8	○	○	○	
APU-70W	180	9	φ3.5	Rc1/4	○	○	○	
APU-90W	240	23	φ5	Rc3/8	○	○	○	
APU-120W	280	55	φ7	Rc3/8	○	○	○	二通阀 2 port valve
APU-130W	500	130	φ12	Rc1	○	○	○	
APU-130P	500	-	φ17	Rc3/4	○	-	-	
APU-130V	-	130	φ17	Rc3/4	-	-	○	
APU-220P	1700	-	φ17	Rc1 · 1/2	○	-	-	
APU-220V	-	1500	φ33	Rc1 · 1/2	-	-	○	
APU-300P	2500	-	φ46	Rc2	○	-	-	
APU-300V	-	2200	φ46	Rc2	-	-	○	

主要产品 ● 气密检漏仪 ● 数字压力表 ● 流量计 ● 自动压力、流量控制器 ● 密封性能检测专用设备



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