Through proportional control and systematization, it supports FA/FMS.

Realizes highly advanced electronic control.

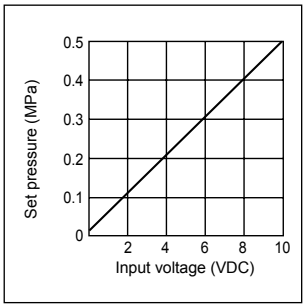
Proportional control technology

This technology attains an output proportional to the input voltage (current), with linearly proportional input and output. Using this technology expands applications of conventional ON-OFF control pneumatic components to enable continuous analog control.

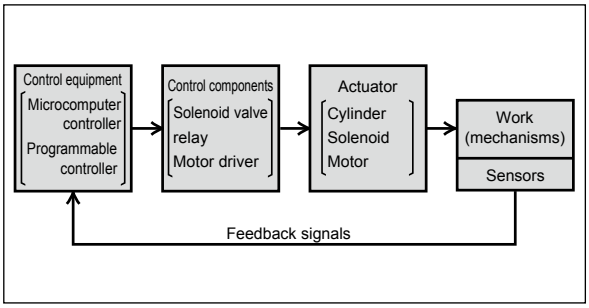
Advanced applications are possible

Proportional pressure controls enable the pneumatic cylinder's speed, thrust, position, etc., to be freely controlled. Continuous high accuracy variable device control, remote pressure setting of pneumatic lines, and use in FA and FMS are accurately realized.

● Static characteristics diagram of output for proportional control valve input



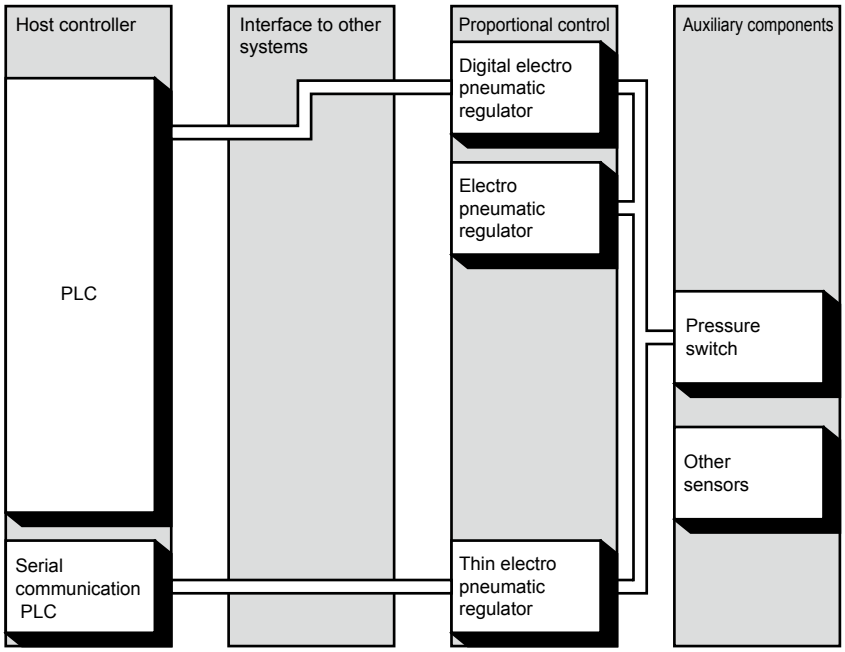
● Block diagram of control concept for machinery and equipment



Proportional pressure control system

The proportional pressure control system includes an interface that connects with the host controller (programmable controller, etc.), the regulator and proportional valve that conduct proportional control, and the pressure switch that also functions as the system sensor. These can be used in combination or independently based on the purpose and application.

● Proportional pressure control system



● Pressure proportional applications

- Spot welding gun pressure control
- Grinder pressure control
- Tension control of paper, cloth or film, etc.
- Balancer and lifter pressure control
- Die cushion control for press
- Air brake pressure control
- Robot handling force control
- Fluid and powder flow rate control using pneumatic pressure

● Flow rate proportional control applications

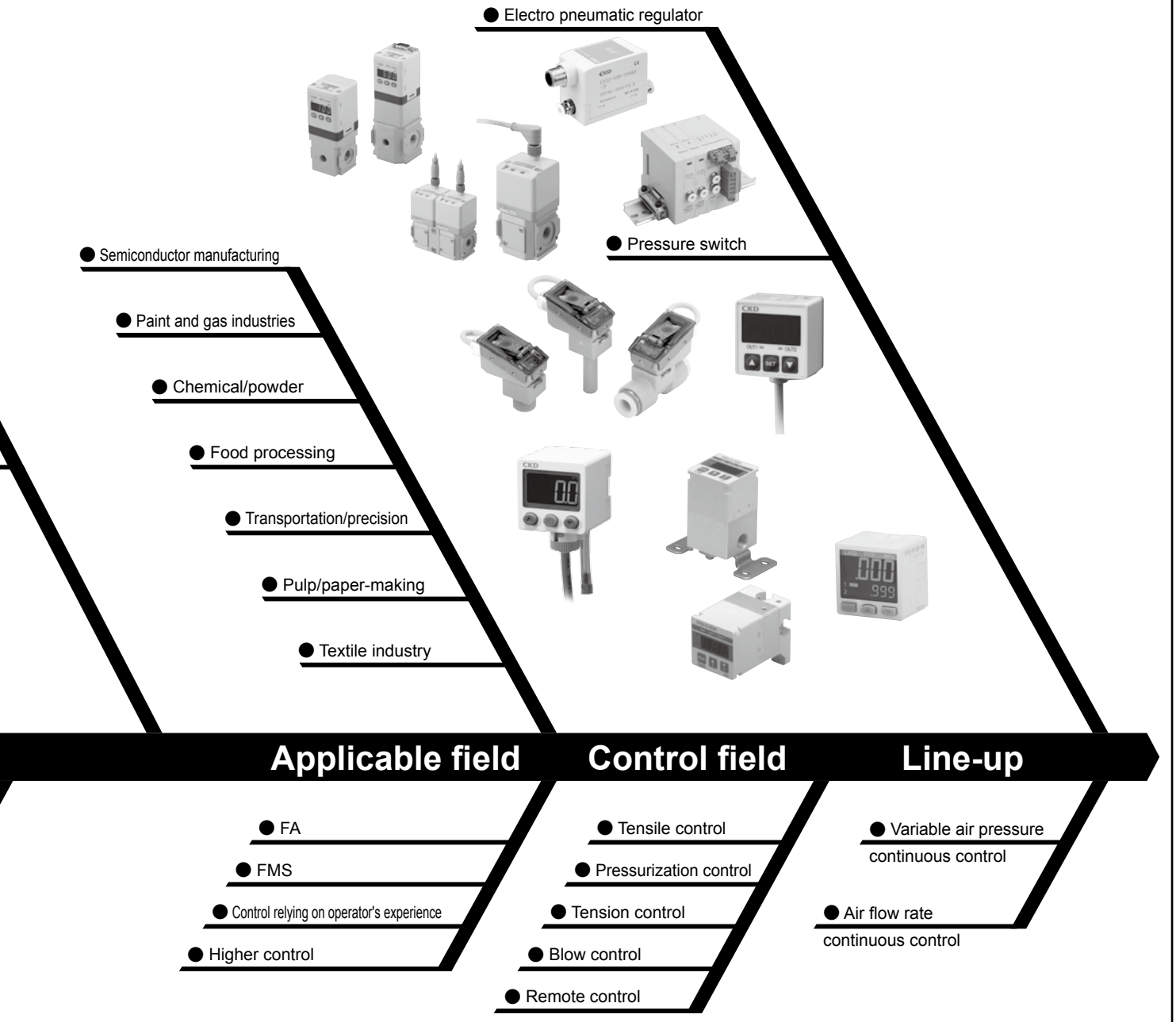
- Cylinder and pneumatic motor speed/rotation speed control
- Cylinder positioning control
- Various applications using air flow rate control (e.g.: Temperature control of film, aluminum foil, etc.)

Needs field

- Continuous
- Flexible
- Soft touch
- Detailed
- Precise
- Fine

⚠ Read the safety precautions before use.

An expansion of products for increased application possibilities



Series variation

Electro pneumatic regulator

Control method	Model		Wiring method: Terminal block	Wiring method: D sub-connector	Wiring method: Serial transmission	Wiring method: FA connector	Port size: M5	Port size: Rc1/4	Port size: Rc3/8	Port size: Push-in ø4	Port size: Push-in ø6	Input signal: 0 to 10 VDC	Input signal: 0 to 5 VDC	Input signal: 4 to 20 mA	Input signal: Parallel 10 bit	Input signal: 0 to 20 mA	Input signal: Variable resistance input	
Solenoid valve	EVD-1000	Functions include pressure and error display and direct memory. The 10-bit parallel model has been added to the input signal.		●				●				●	●	●	●			
	EVD-3000	Functions include pressure and error display and direct memory. The 10-bit parallel model has been added to the input signal. Larger flow rate than EVD-1000.		●				●	●			●	●	●	●			
	EVR	Feedback control with semiconductor pressure sensor and electronic control circuit is used. This electro pneumatic regulator allows continuous and precise control of air pressure by electrical signal.				●		●				●	●	●				
	EV2100V	Feedback control with semiconductor pressure sensor and electronic control circuit is used. This electro pneumatic regulator allows continuous and precise control of vacuum pressure by electric signal.				●		●				●	●	●			●	
	EVS2	Smaller than conventional models. Body takeout cable is used for this pneumatic proportional pilot valve to achieve ultimate convenience and space saving.				●				●	●	●	●	●		●		
	EVL	Compact electro pneumatic regulator for low pressure that enables flexible and high-precision proportional control from 0 kPa to 50 kPa.				●		●				●	●	●				
	MEVT	Reduced wiring thin shape. Ultimate space saving thanks to the manifold. Thin electro pneumatic regulator with higher accuracy and responsivity than conventional mechanisms.	●	●	●					●	●	●	●	●				

Electro pneumatic regulator

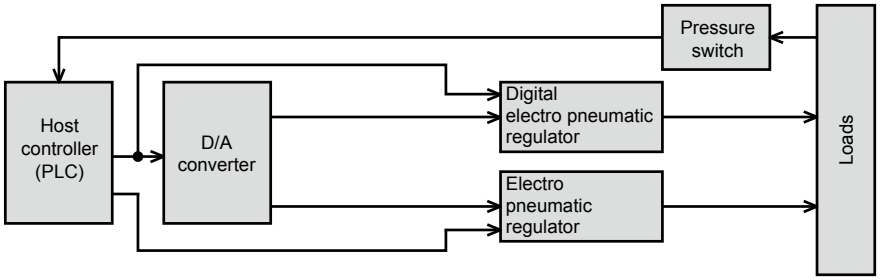
Series variation

◎: Optimum
○: Usable

	Pressure control range						Step response (No load)			Max. flow rate (ℓ/min (ANR))									Linearity (% F.S.)		Hysteresis (% F.S.)				Applications					Page
	-101.3 to 0 kPa	0 to 50 kPa	0 to 100 kPa	0 to 200 kPa	0 to 500 kPa	0 to 900 kPa	0.1 s or less	0.2 s or less	0.6 s or less	2	6	8	100	120	150	400	800	1500	±0.3 or less	±0.5 or less	0.3 or less	0.4 or less	0.5 or less	1.0 or less	Pilot pressure control	Tension	Push pressure	Blow	Workpiece suction	
			●		●	●		●								●			●				●			◎	◎	◎		586
			●		●	●		●										●	●				●			◎	◎	◎		590
			●	●	●	●		●									●			●	●					◎	◎	◎		612
	●								●					●	●					●				●					◎	625
			●		●		●			●		●								●		●			◎	○	○			622
		●							●				●							●			●					◎		630
			●		●		●			●	●									●			●		◎	○	○			638

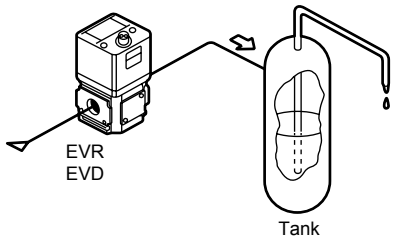
Basic system functions

Pneumatic proportional control components attain an output proportional to the input voltage or current. The input voltage and output pressure/flow rate must be linearly proportional. To achieve this, the pressure and flow rate are varied with electric signals, and an electric controller enables variable continuous control. When used as a system, the circuit is configured so signals from the host controller are converted to 0 to 10 VDC signals, etc., by the D/A converter (interface). These signals operate the proportional control valve via the controller, controlling the thrust and speed of each actuator, etc. When needed, highly accurate control is possible through feedback with sensors.

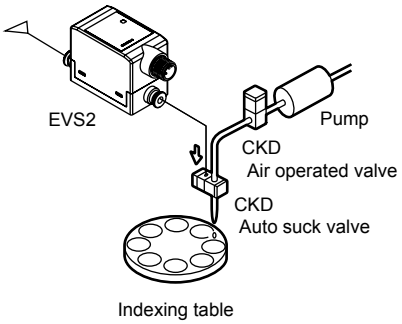


System application examples

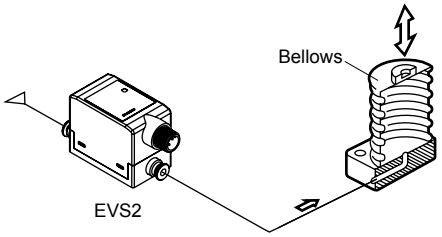
● Fluid discharge control



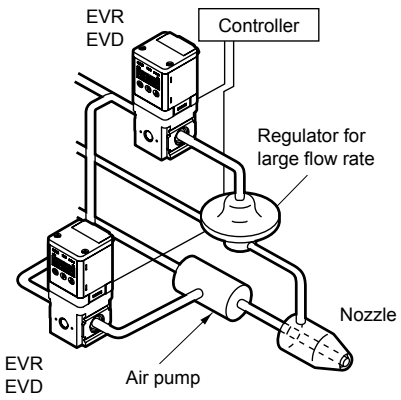
● Chemical liquid drip prevention control



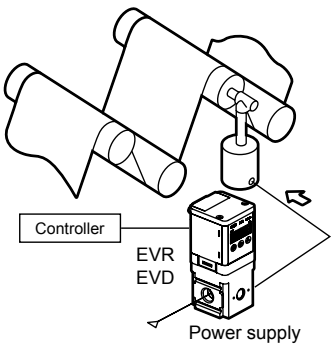
● Micro position control



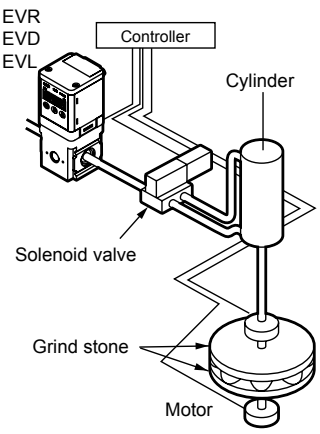
● Fluid pressure control



● Balancer tension control

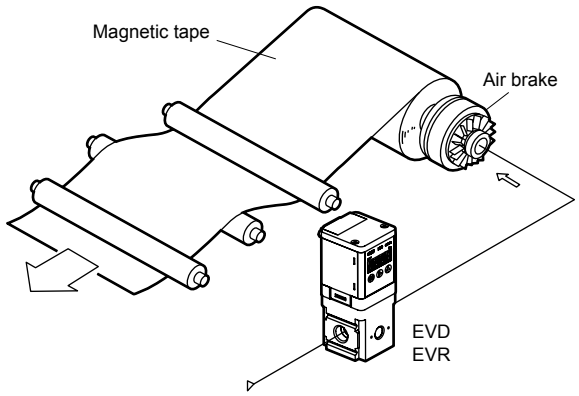


● Grinding force control

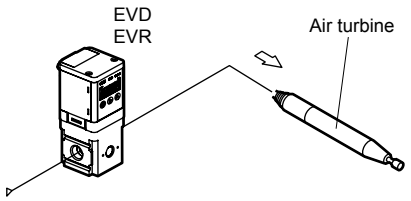


System application examples

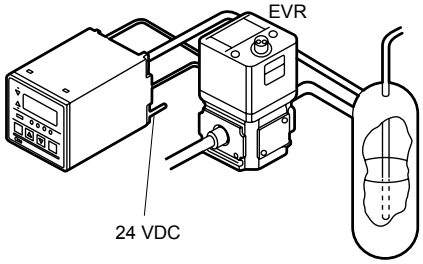
● Tension control using air brakes



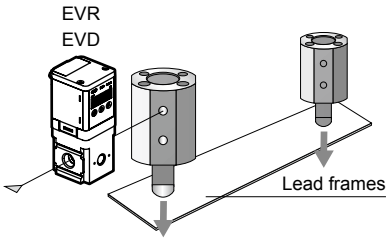
● Air turbine speed control



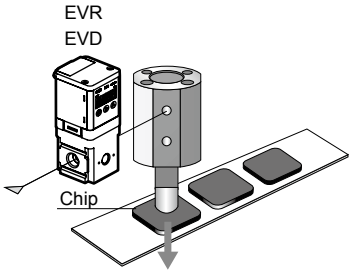
● Applications for fluid pressure feeding



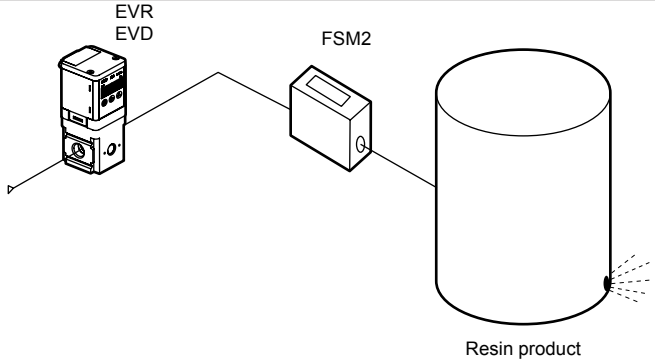
● Fixing lead frames, etc.



● Chip component assembly



● Leakage inspection



● CMP equipment