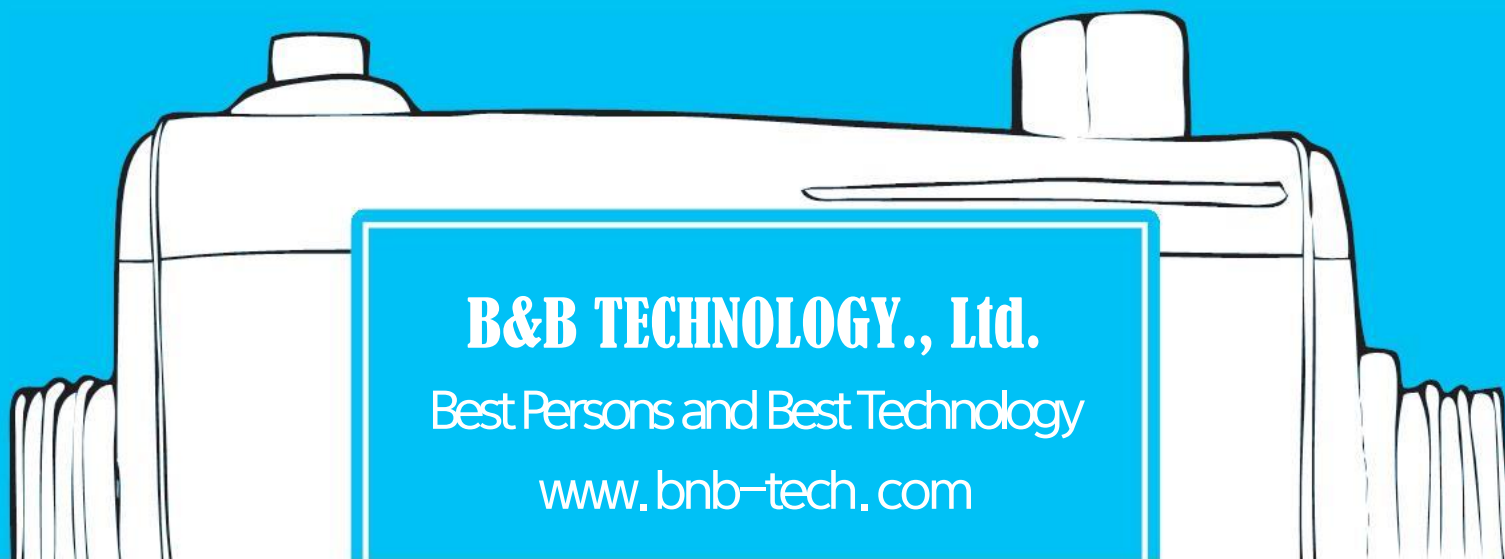




Electro-Pneumatic Proportion & Servo Regulator

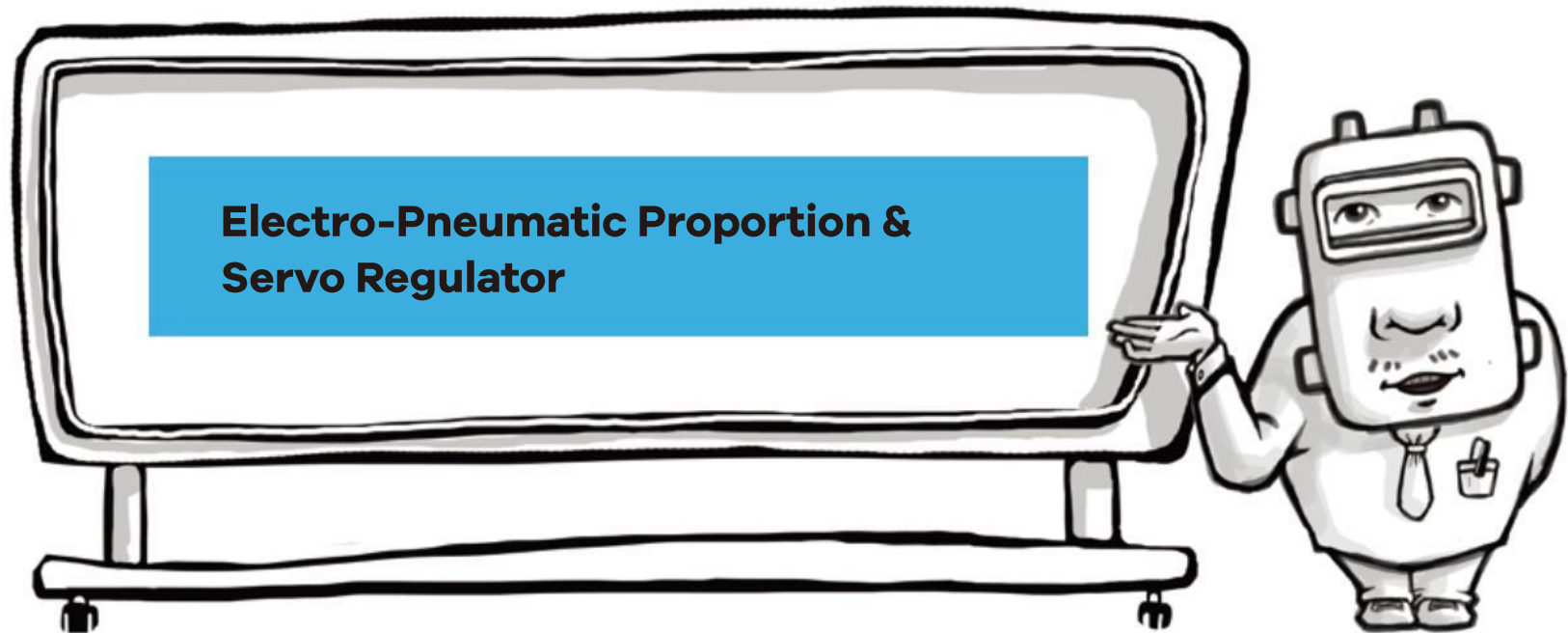


B&B TECHNOLOGY., Ltd.

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Proportion & Electronic Pressure Regulator With Integral Volume Booster



Electro-Pneumatic Proportion & Servo Regulator

1. Structure and operational principle of PSV4 Electro-Pneumatic Proportion & Servo Regulator



Components of PSV4 Regulator

- ▶ Poppet valve
- ▶ Pressure sensor
- ▶ Electronic circuit board
- ▶ Power and command signal connector
- ▶ Air block and body case
- ▶ Pilot Volume Booster

Operational principle of PSV4 Regulator

DESCRIPTION

The PSV4 is a closed loop electronic pressure regulator consisting of two solenoid valves, an internal pressure transducer, and an electronic control circuit integrally mounted to a unique volume booster. The output pressure is proportional to an electrical input (command signal). The pressure is controlled by activating the solenoid valves, which apply pressure to the pilot side of the volume booster. One valve functions as inlet control, the other as exhaust. The output pressure of the volume booster is measured by a pressure transducer, which is internally mounted and provides a feedback signal to the electronic control circuit. This feedback signal is compared against the command signal input. Any differences between the command signal and the pressure feedback signal causes one of the solenoid valves to open to adjust the pressure in the pilot of the volume booster. Pilot pressure is adjusted so that desired output pressure is achieved and maintained. Since it is the actual desired work pressure that being sensed and feed back to the control circuit, any mechanical hysteresis of the air piloted volume booster is automatically compensated for. This allows for our extraordinary accuracy and repeatability.

Command input come in a choice of either a 0-10 VDC or 4-20mA. The PSV4 also provides an electrical monitor signal for output to a panel meter or controller for data acquisition or quality assurance needs. The monitor signal comes from the internal pressure transducer. All PSV4 come standard with a 0-10 volt monitor signal with 4-20mA, Modbus 485, DeviceNet optional. Providing this monitor signal as part of our standard package eliminates the need to purchase a separate transducer.

2. PSV4 General Specifications & Performance Characteristics

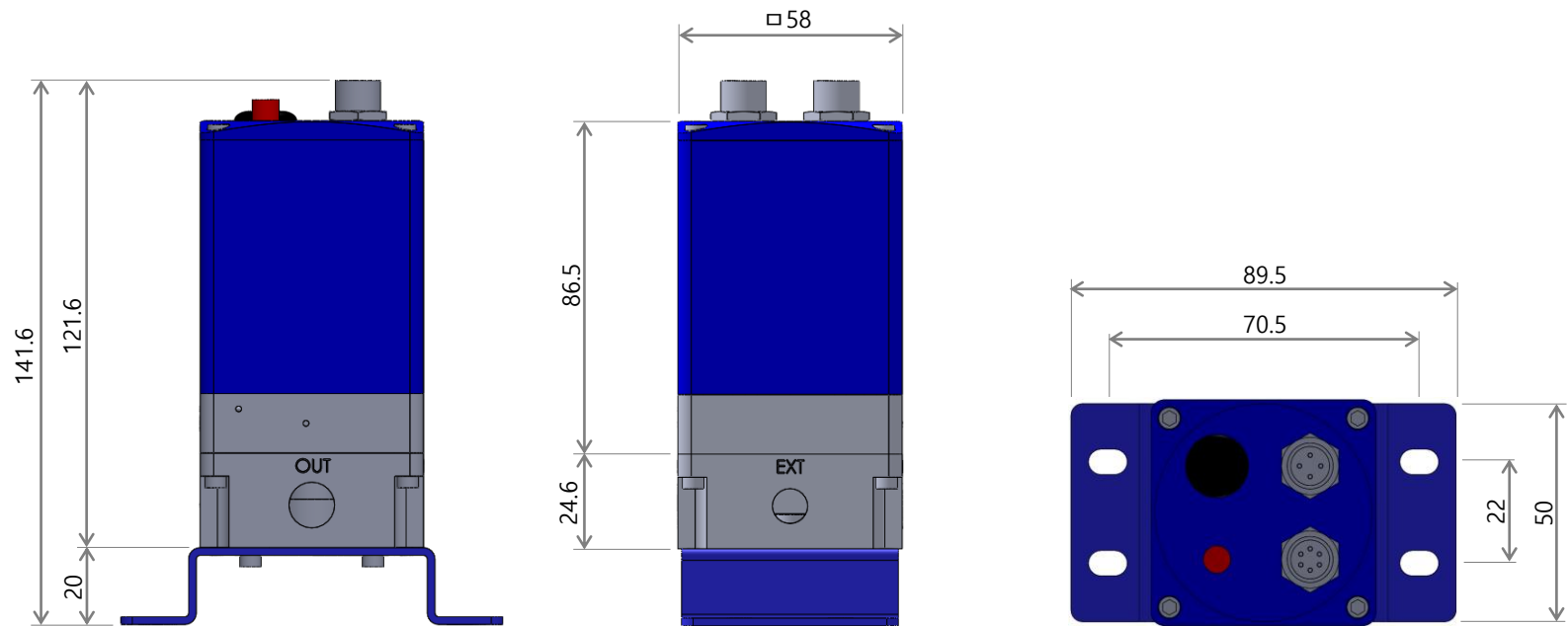
Electrical Characteristic	
Supply Voltage	DC24V ±10%
Current Consumption	typical 125mA, 200mA max
Command Input Signal	Voltage input (4.7kΩ) 0~10V DC / 0~5V DC Current input (250Ω) 4~20mA Modbus 485-Ascii, DeviceNet
Analog Monitor Output	Voltage output (20mA max): 0~10V DC Current input (500Ω max) 4~20mA

Physical Characteristic	
Operating Temperature	0 ~ 50 °C
Weight	0.7 Kg
Environment Protection	equivalent to IP65
Port Size	1/8" PT
Housing	Aluminum(Anodized)

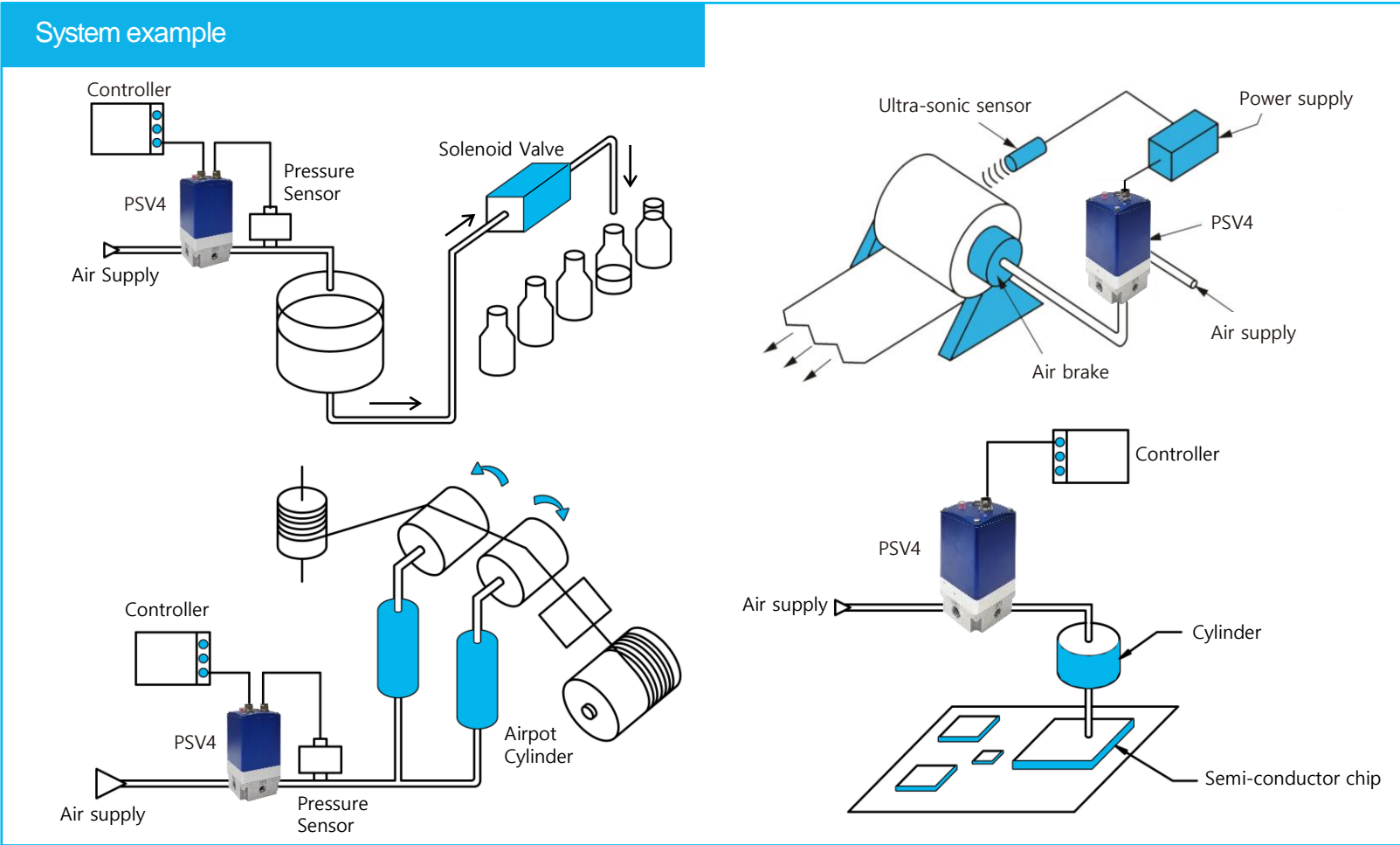
Mechanical Characteristics (Pneumatic Characteristics)	
Input pressure	0 ~ 10 bar
Pressure Range	0 ~ 10 bar Pressure ranges are customer specified
Working Fluid	Compressed air required filtration(40Micron)
Flow Rate	400 l/min @7 bar inlet
Accuracy	< ±0.25% F.S
Repeatability	< ±0.2% F.S
Wetted Parts	Elastomers-Buna-N Seal material : Viton,Buna-N

Electro-Pneumatic Proportion & Servo Regulator

DIMENSIONS



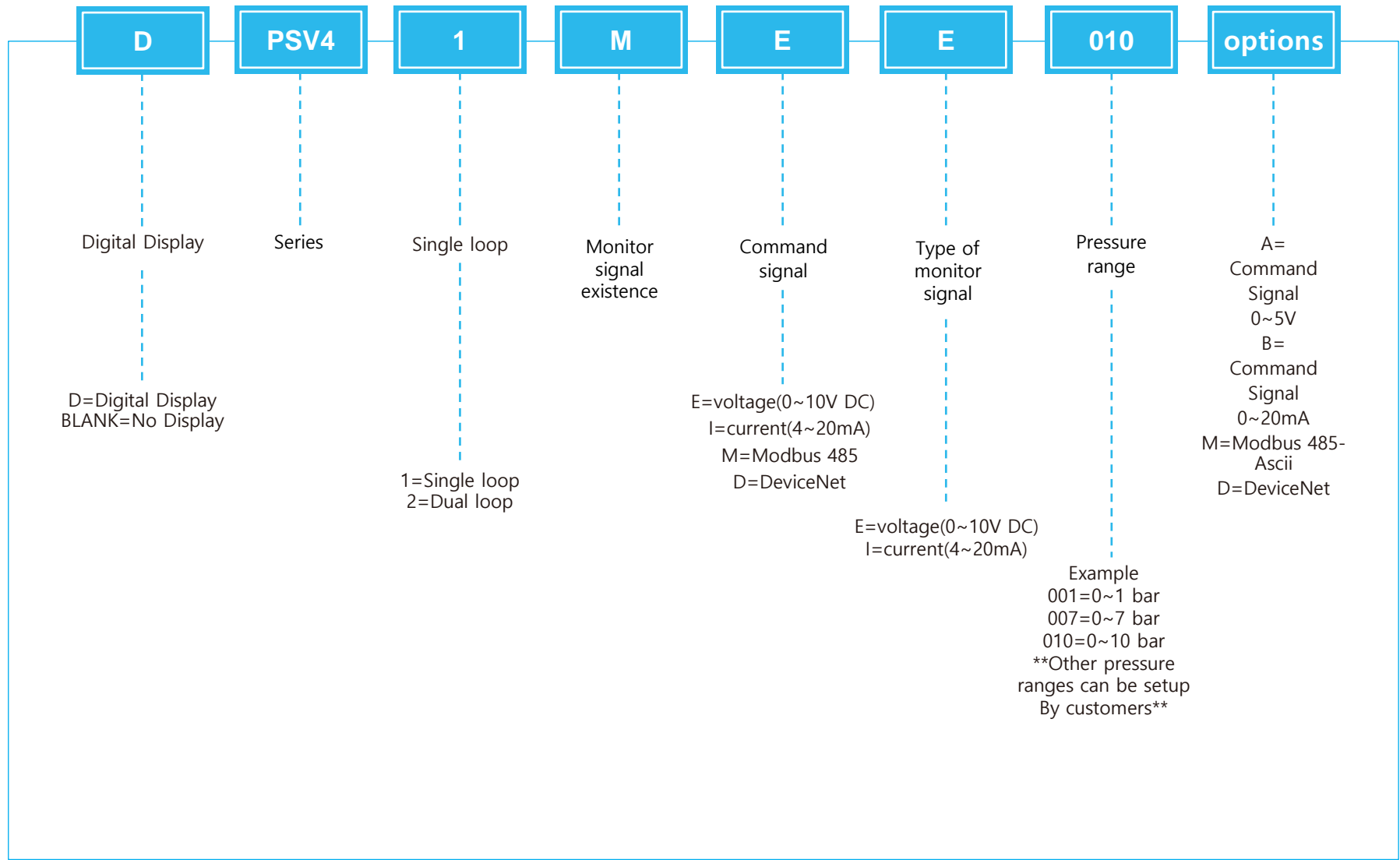
Electro-Pneumatic Proportion & Servo Regulator



3. Application Fields of PSV4 Electro-Pneumatic Proportion & Servo Regulator

- ▶ Manufacturing of Automation Machinery
- ▶ Spray painting
- ▶ Medical Equipment
- ▶ Paper manufacturing roll tension
- ▶ Cylinder position and strength control
- ▶ Control dispenser system
- ▶ Tire molding and test
- ▶ Plastic molding and foaming
- ▶ Precision Pressure control of semi-conductor Equipment
- ▶ Air Motor Velocity Control
- ▶ Tester manufacturer
- ▶ Torque control
- ▶ Gripper control
- ▶ Welder

4. Model Selection of PSV4 Electro-Pneumatic Proportion & Servo Regulator





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