

# Instruction and Operating Manual

## Air Volume Booster AVB Series



**Power-Genex Ltd.**

## 1. Introduction

### 1.1 General Information

This instruction and operating manual contains important notices the user should observe for a personal safety as well as for prevention against damage to property. Notices concerning a personal safety are highlighted by a safety alert symbol (⚠).

### 1.2 General Safety Instructions

This product was delivered out from the factory without any safety problems after a strict quality management process. In order to maintain this status and ensure a safe operation of this product, please be sure to read all safety instructions carefully described in this manual and observe safety information and symbols without exception.

### 1.3 Correct Usage

- ① This product can be used only for purposes specified in these instructions. If they are not definitely stated in these instructions, the user is fully responsible for all changes and retrofits to this product.
- ② In case of the intrinsically safe product supplied, please make sure to connect this product to the certified intrinsically safe circuits. These circuits should correspond with the intrinsic safety parameters indicated on the product nameplate or the certificates. If the circuits do not correspond with the intrinsic safety parameters on the product nameplate or the certificates, any safety required for approval can no longer be warranted.
- ③ This product is the electrostatic sensitive device that may be seriously damaged by voltages undetectable to a human. These kinds of voltages occur as soon as a electronic component or an assembly is touched by a person who is not grounded against a static electricity. Damage to a electronic component as a result of overvoltage cannot usually be detected immediately. It may become apparent after a long period of operation. Therefore, please make sure to avoid electrostatic charge.

### 1.4 Range and Responsibilities of Personnel

- ① Qualified personnel should be trained, instructed or authorized in operating and maintaining products and systems according to the safety regulations for electrical circuits, high pressures and hazardous atmosphere.
- ② For explosion proof products, they should be trained, instructed or authorized in carrying out work on electrical circuits for hazardous systems.
- ③ They should be trained or instructed in maintenance and use of proper safety equipment according to the safety instructions.
- ④ They should have a good experience to identify risks and avoid potential hazards when working with these products and systems.

### 1.5 Transport and Storage

Make sure that damages during delivery are prevented through proper packaging.

Products and replacement parts should be returned in their original packaging. If the original packaging is no longer available, please ensure that they should be packaged to provide sufficient protection against transport.

## 2. Overview

AVB is the strong valve activator to increase the actuator speed or decrease the loss of supply air coming from a distance by supplying a larger flow capacity

## 3. Specifications


	AVB
Max. Supply pressure	10 bar (150 psi)
Max. Signal pressure	8 bar (120 psi)
Output pressure rate	1 : 1
Flow(CV)	1.25
I/O Port size	Rc /14 or NPT 1/4
Signal Port size	Rc /14 or NPT 1/4
Operating Temperature	-20 ~ +70°C (standard) or -20 ~ +120°C (optional High Temp.)
Body Material	Aluminum die casting
Weight	0.6Kg

## 4. Part Numbering System and Nameplate Description

	AVB -	X	X
Piping	Rc 1/4 - Rc 1/4	1	
	Rc 3/8 - Rc 3/8	2	
	NPT 1/4 - NPT 1/4	3	
	NPT 3/8 - NPT 3/8	4	
Operating Temp.	-20 ~ +70°C		1
	-20 ~ +120°C		2

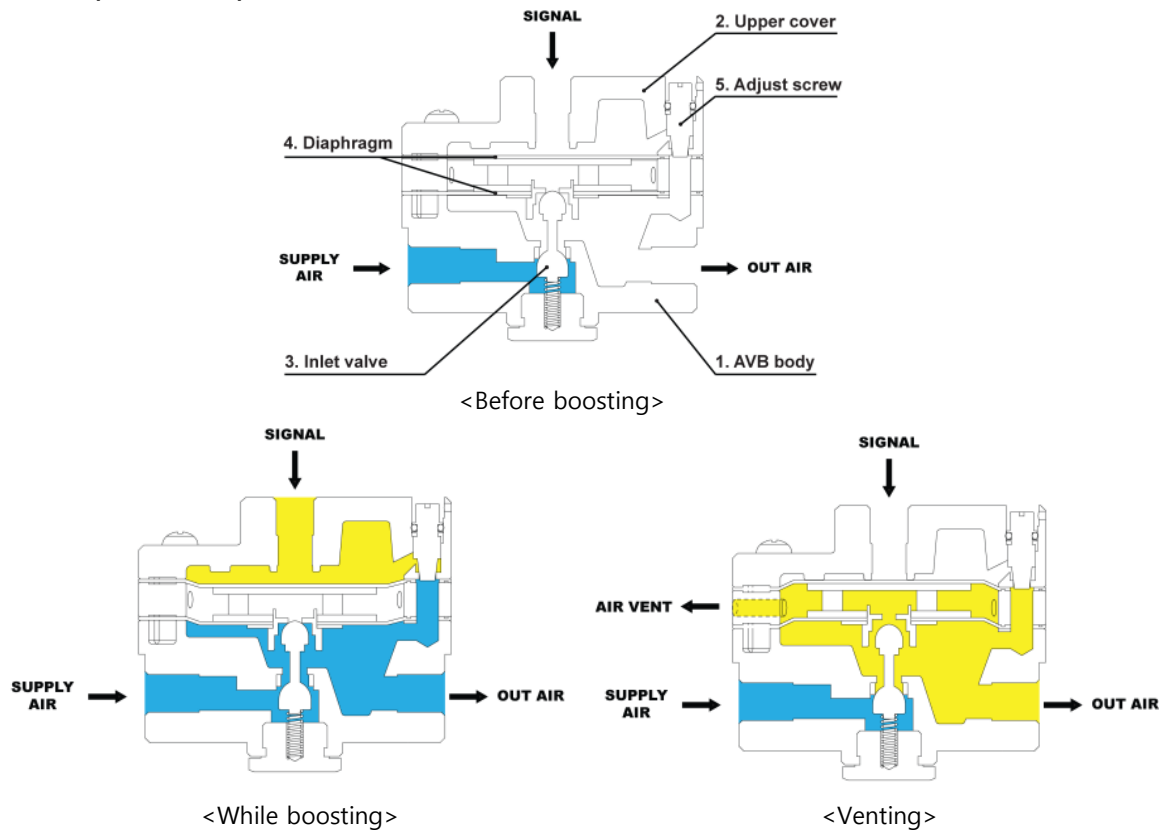
Air Volume Booster

Model No. :  
 Sup. Press. : Max. 10kgf/cm<sup>2</sup> In./Out. Press.:Max. 8 kgf/cm<sup>2</sup>  
 Serial No. :



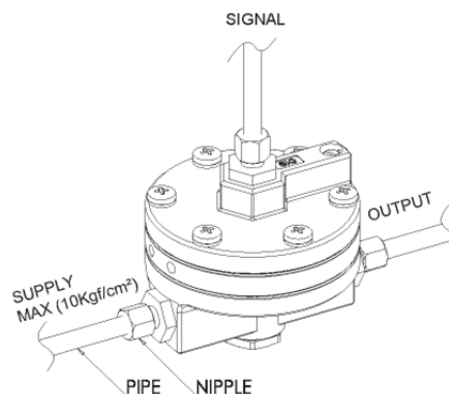
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INCHEON, KOREA  
WWW.POWERGENEX.COM

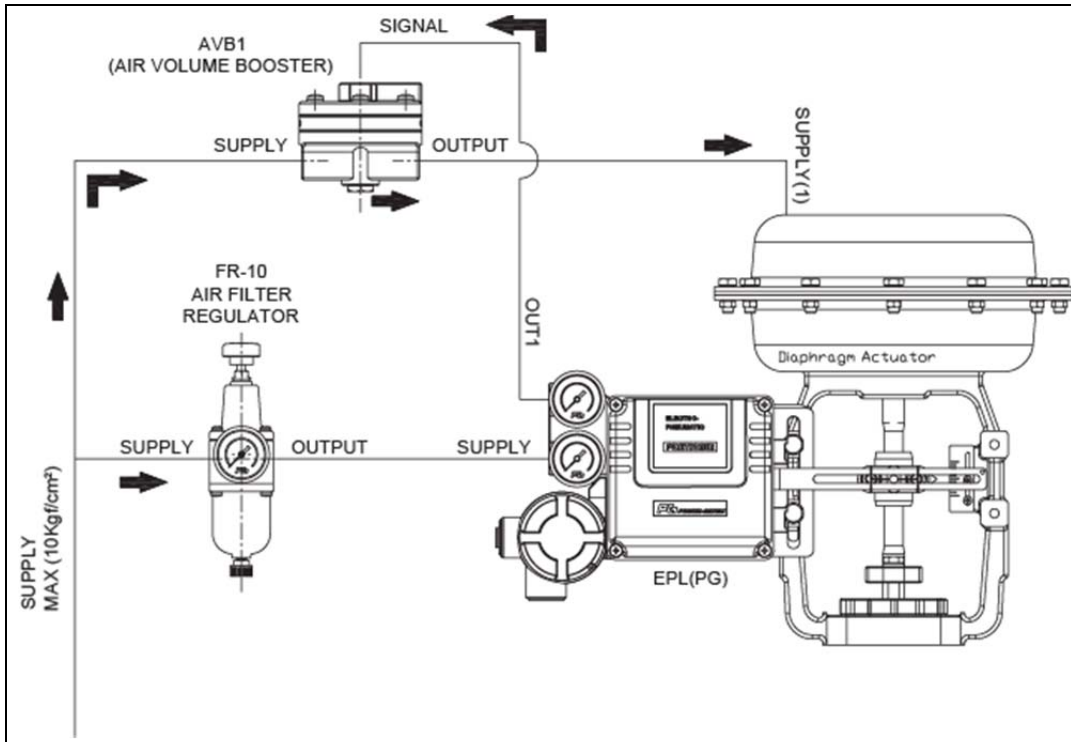
## 5. Principle of Operation



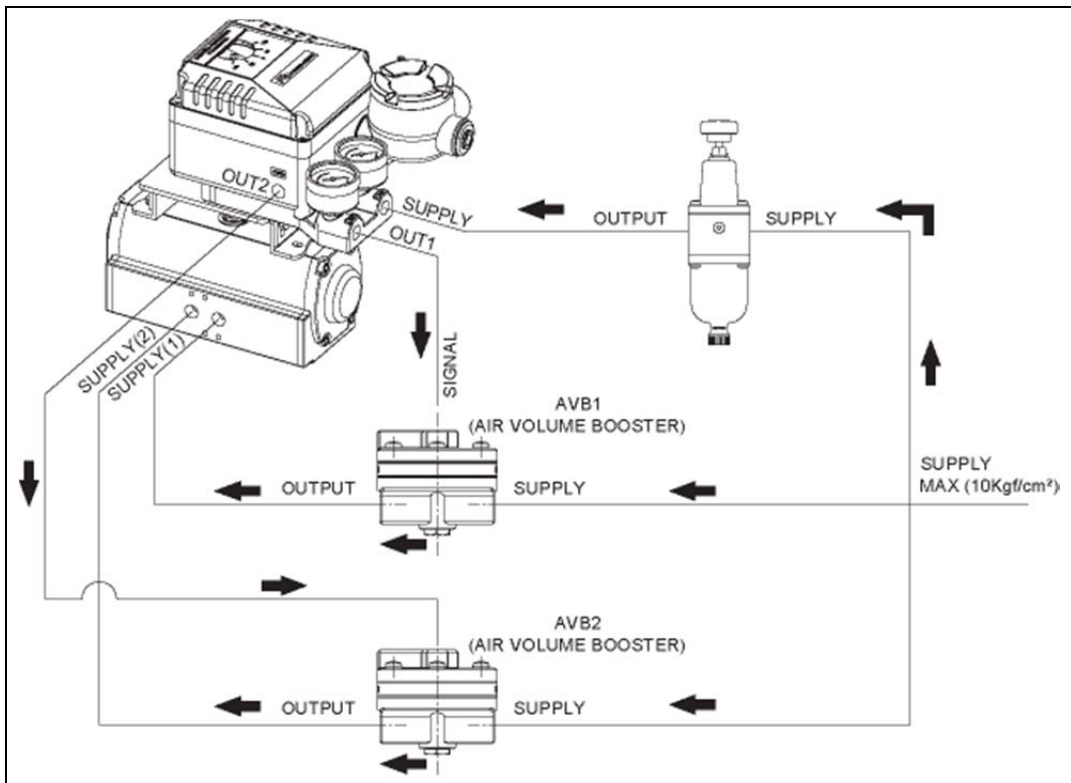
- 1) Without the signal air from the positioner, a supply air from the air filter regulator cannot go through the inlet valve due to a spring tension.
- 2) If the signal air comes from the positioner, it pushes the diaphragms (4) downward.
- 3) The inlet valve is moved downward and a supply air can go directly into the actuator through the inlet valve and it helps the actuator move faster until the output air pressure to the actuator becomes the same with the signal air pressure from the positioner and the inlet valve blocks a supply air by moving upward due to a spring tension.
- 4) If the supply air doesn't come from the positioner, the diaphragms (4) are moved upward and the inlet valve blocks a supply air due to a spring tension.
- 5) If the output air pressure is bigger than the signal air pressure, the diaphragms are moved upward and the existing air between the air volume booster and the actuator is vented out.
- 6) Sensitivity can be adjusted by the screw (5).

## 6. Air Connections





<With single acting actuator>



<With double acting actuator>



8. Dimensions

